Your (Half Yearly Compliance Report) has been Submitted with following details	
Proposal No	IA/AS/MIS/57418/2016
Compliance ID	126031301
Compliance Number(For Tracking)	EC/M/COMPLIANCE/126031301/2025
Reporting Year	2025
Reporting Period	01 Jun(01 Oct - 31 Mar)
Submission Date	23-05-2025
RO/SRO Name	Ms Imtienla Ao
RO/SRO Email	ms180@ifs.nic.in
State	ASSAM
RO/SRO Office Address	Integrated Regional Offices, Guwahati
Note:- SMS and E-Mail has been sent to Ms Imtienla Ao, ASSAM with Notification to Project Proponent.	

adani

Ref.no: GIAL/CAO/F-20/01/2025-26

Date: 05th May 2025

To
The Addl. Principal Chief Conservator of Forest (C).
Ministry of Environment Forest 8- Climate Change.
Regional Office (NEZ). Lumbatngen,
Shillong - 793021

Subject: Submission of Environmental Clearance Compliance Report for the Period October 2024 to March 2025 – New Integrated Terminal Building at LGBI Airport, Guwahati, Assam

Ref: Environmental Clearance for the Construction of New Integrated Terminal Building at LGBI Airport, Guwahati, Assam, as per MoEF&CC Letter No. 10-58/2016-IA-III dated 16th April 2018.

Dear Sir.

Greetings from Guwahati International Airport.

We are pleased to submit the condition-wise Environmental Clearance (EC) compliance report for the period of October 2024 to March 2025, pertaining to the construction of the New Integrated Terminal Building at LGBI Airport, Guwahati, Assam.

The project has been granted Environmental Clearance for the development of a state-of-the-art terminal building to cater to both domestic and international operations.

In accordance with the stipulated conditions, please find enclosed the compliance report for your kind perusal and necessary action.

Kindly consider the above submission.

Yours Sincerely

Ashwin Noronha
Chief Airport Officer
Guwahati International Airport Ltd.
LGBI Airport, Guwahati

GUWAHATI INTERNATIONAL AIRPORT LIMITED ★ GIAL ★ Guwahati-781015

Encl: As mentioned above.

Cc:

1. The Director (Monitoring-IA Division), Ministry of Environment, Forest e- Climate Change, Indira Paryavaran Bhawan, Jor Bagh Road, New Delhi-110003.
2. The Member secretary, Pollution Control Board Assam, Bamunimaidam, Guwahati-21.
3. The Regional Director, Central Pollution Control Board, Regional Directorate, Northeast. Lower Motinagar, Shillong-793014.
4. The Regional Officer, Regional Office, Pollution Control Board Assam, Bamunimaidam Guwahati-781021.

Guwahati International Airport Limited
Lokpriya Gopinath Bordoloi International Airport
Borjhar, Guwahati
Kamrup, Assam 781 015

Ph: +91 361 284 0009
www.adani.com/lgbia-guwahati-airport

Half Yearly Compliance Report

of

Construction of 'New Integrated Terminal Building at LGBI Airport, Guwahati"

(File No. 10-58/2016-IA-III Issuance dt. 16th April 2018)

For

(For the period: October' 2024 to March' 2025)

BY

Lokpriya Gopinath Bordoloi International Airport

Borjhar, Guwahati, Assam-781015

New Integrated Terminal Building at LGBI Airport, Guwahati	From: Oct 24 to To : Mar 25
Status of the conditions stipulated in Environment Clearance	

Half yearly Compliance report of Environment Clearance for the Construction of 'New Integrated Terminal Building at LGBI Airport', Guwahati for the period of Apr 24- Sep 24

Sr.No	Conditions	Compliance Status as on 31st Mar 2024
A. Specific Conditions		
i.	As proposed, Environmental Clearance is for Construction of 'New Integrated Terminal Building' at LGBI Airport, Guwahati by M/s Airports Authority of India Guwahati.	**Complied** Lokpriya Gopinath Bordoloi International Airport (LGBIA) was established in 1958 and Terminal 1 and its associated Airside and Landside components were developed and operationalized prior to 1994. Airport Authority of India had constructed the New Integrated Terminal Building (NITB), after obtaining Environment Clearance from MoEF&CC vide file no. 10-58/2016-IA-III, dated 16th April 2018. Copy of Environment Clearance attached as **Annexure-1** Copy of EC was submitted as apart of earlier Compliance report (October 2023 - March 2024), vide dtd 29.05.2024 A concession Agreement for Operation, Maintenance, and Management & Development of airport has been signed between Airports Authority of India (AAI) and Guwahati International Airport Limited (GIAL) on 19th January 2021 and GIAL has commenced its operation from 8th October 2021.
ii	Project Proponent shall obtain clearance from Directorate General of Civil Aviation (DGCA) and Airports Authority of India (AAI) for safety and project facilities.	**Complied** Inline to the concession agreement signed between AAI and GIAL, GIAL was required to submit the master plan to Airport Authority of India. Master plan has been prepared by GIAL inline to the concession agreement and same has been submitted to AAI vide dtd. 9th August 2022. Copy Attached as **Annexure 2** DGCA clearance for existing Airport is attached as **Annexure 2** Further DGCA approval for NITB will be obtained prior to operation.
iii.	Consent to Establish/Operate for the project shall be obtained from the State Pollution Control Board as required under the Air (Prevention and Control of Pollution) Act, 1981 and the Water (Prevention and Control of Pollution) Act, 1974.	**Complied** Consent to Establish (CTE) for NITB from ASPCB has been obtained vide dtd. 4th October 2019. Consent to Operate (CTO) from ASPCB will be taken before the commencement of operation. Copy of CTE is attached as **Annexure -3**
iv.	Clearance from National Board for Wildlife (NBWL) is required before commencement of project/ activity.	**Partially Complied**

v.	Construction site should be adequately barricaded before the construction begins.	**Complied** Adequate barricades are in place to isolate the site, and to minimize the environmental impact. Photograph showing barricades are attached as **Annexure-4**
vi.	Soil and other construction materials should be sprayed with water prior to any loading, unloading or transfer operation to maintain the dusty material wet.	**Complied** LGBI is ensuring the compliance by taking the following measures: • Fugitive dust emission due to transport movement is controlled by sprinkling water at the site. Dust emissions at site are minimized by wheel washing and damping down. All the vehicles delivering materials to the site are covered using impervious tarpaulin sheet to avoid spillage of material/dust and no leak from any vehicle has been ensured at site Photographs showing Construction Phase Environment Management Practices area attached as Annexure -**5,6.**
vii	The soil/construction materials carried by the vehicle should be covered by impervious sheeting to ensure that the dusty materials do not leak from the vehicle	**Complied** Photographs showing Construction related Environment Management Practices area attached as **Annexure -6**

viii	The excavation working area should be sprayed with water after operation to maintain the entire surface wet.	**Complied** To minimize dust emissions from excavation, leveling, transportation, and stockpiling activities, regular water sprinkling is employed. After operations, the excavation working area is sprayed with water to keep the entire surface wet. This proactive measure effectively reduces the dispersion of dust particles, ensuring a safer and healthier environment for workers and minimizing the negative impact on the surroundings. Photographs showing Construction related Environment Management Practices area attached as **Annexure-5**
ix	Soil stockpile shall be managed in such a manner that dust emission and sediment runoffs are minimized. Ensure that soil stockpiles are designed with no slope greater than 2:1 (horizontal/vertical). Topsoil shall be separately stored and used in the development of green belt.	**Complied**. As per the Soil analysis report, the topsoil is not suitable for crop production. The detailed report is attached as **Annexure 7**. Further the topsoil will be used for site levelling purposes.
x	A detailed drainage plan for rainwater shall be drawn up and implemented.	**Complied** A rainwater harvesting tank of 1500 KL has been scientifically designed inline to GRIHA standards for collection of rooftop Water collection. Copy of approved Rainwater harvesting design structure designed by NUDES is attached as **Annexure 8.**
xi	Ground water abstraction and rainwater recharge shall be as may be prescribed by the CGWA. A clearance of the CGWA shall be obtained in this regard.	**Complied** The water table for Guwahati region is high so ground water recharging as part of rainwater recharge at LGBIA is not feasible. However, A rainwater harvesting tank of 1500 KL has been scientifically designed inline to GRIHA standards for collection of rooftop Water collection. Copy of approved Rainwater harvesting design structure designed by NUDES is attached as **Annexure 8.** CGWA NOC for Groundwater Extraction is attached as **Annexure 9**.

xii	Noise from vehicles and power machinery and equipment on-site should not exceed the prescribed limit. Equipment should be regularly serviced. Attention should also be given to muffler maintenance and enclosure of noisy equipment.	**Complied** Presently the NITB is under Construction phase. However, considering existing operation and Construction activity, Noise Monitoring is conducted by MoEFCC/NABL accredited laboratory at five locations including two funnel zones. All the results are observed to be within norms. Noise monitoring report for the compliance period April 24 to Sep 24 is attached as **Annexure 10**
xiii	Where construction activity is likely to cause noise nuisance to nearby residents, restrict operation hours between 7 am to 6 pm.	Complied Following Noise Monitoring measures are adopted at the construction site 1. DG sets fitted with Acoustic Enclosures. 2. Vehicular movement with safe limiting Speed. 3. Regular machinery maintenance. 4. Regular noise monitoring on site Attached as Annexure 10
xiv	Solid inert waste found on construction sites consists of building rubble, demolition material, concrete; bricks, timber, plastic, glass, metals, bitumen etc shall be reused/recycled or disposed off as per Solid Waste Management Rule, 2016 and Construction and Demolition Waste Rules, 2016.	Complied Solid waste generation is being segregated at source and further being handed over to recyclers as per Solid Waste Management Rule, 2016. C&D waste is being handled in line to C&D waste rules and is used within site for level raising. GIAL is working on the concept of Zero waste to landfill with and managing waste inline to 5R principle... Refer Annexure 11
xv	Diesel power generating sets proposed as source of backup power for elevators and common area illumination during operation phase should be of enclosed type and conform to rules made under the Environment (Protection) Act, 1986. The height of stack of DG sets should be equal to the height needed for the combined capacity of all proposed DG sets. Use of low Sulphur diesel. The location of the DG sets may be decided with in consultation with State Pollution Control Board.	**Complied** Presently the NITB is under construction phase. DG sets installed for existing operation and construction phase are in conformance to applicable safety norms. In operation low sulfur diesel is being used. Photograph are attached as **Annexure 12**
xvi	Aircraft maintenance, sensitivity of the location where activities are undertaken, and control of runoff of potential contaminants, chemicals etc. shall be properly implemented and reported.	**Complied.** The Spill control Management Plan including controlling measures for potential contaminants, chemicals etc. have been developed and implemented. Copy attached as **Annexure 13**

xvii	Proper drainage systems, emergency containment in the event of a major spill during monsoon season etc. shall be provided.	**Complied** Storm water drainage has been designed to maximize utilization of Rainwater Harvesting. Excess runoff will be routed through silt/oil traps for final disposal through dedicated outfalls. The Storm water drainage has been developed and same has been approved by IIT Guwahati. The schematic layout plan showing Storm Water management plan and IIT approval is attached as **Annexure 14**
xviii	The runoff from paved structures like Runways, Taxiways, can be routed through drains to oil separation tanks and sedimentation basins before being discharged into rainwater harvesting structures.	**Complied** The Storm water drainage has been developed and same has been approved by IIT Guwahati. The schematic layout plan showing Storm Water management plan and IIT approval is attached as **Annexure 14**
xix	Storm water drains are to be built for discharging storm water from the airfield to avoid flooding/water logging in project area during monsoon season / cloud bursts.	**Complied** The Storm water drainage has been developed and same has been approved by IIT Guwahati. The schematic layout plan showing Storm Water management plan and IIT approval is attached as **Annexure 14**
xx	Rainwater harvesting for roof run-off and surface runoff, as plan submitted should be implemented. Before recharging the surface run off, pre-treatment must be done to remove suspended matter, oil and grease.	**Complied** A rainwater harvesting tank of 1500 KL has been scientifically designed inline to GRIHA standards for collection of rooftop Water collection. Copy of approved Rainwater harvesting design structure designed by NUDES is attached as **Annexure 8.**
xxi	Total freshwater requirement from existing bore wells shall not exceed 710 KLD with permission from CGWB.	**Agreed to Comply.** Presently the NITB is under construction phase. NOC for groundwater extraction has already been obtained. Copy of Ground water NOC is attached as **Annexure 9.**
xxii	Sewage Treatment Plant (STP) of 1000 KLD capacity to treat the wastewater generated from airport. Treated water will be reused for flushing, horticulture, D.G. cooling and HVAC purposes.	**Complied** Sewage Treatment Plant of 1000 KLD capacity based on MBBR Technology is being constructed at site. Treated water will be reused for flushing, landscaping and HVAC cooling. As proposed the Airport will operate on zero liquid discharge principle. Proposed STP layout is attached as **Annexure-15** At present, Wastewater generated from Terminal -1 is being treated in 100 KLD STP (MBBR

		technology). Regular monitoring of treated water is being carried out by MoEF&CC & NABL accredited laboratory and all the results have been observed to be within standards. Reports are regularly being submitted to all the concerned regulatory authorities. A copy of STP analysis report is attached as **Annexure 15**
xxiii	Acoustic enclosures for DG sets, noise barriers for ground-run bays, ear plugs for operating personnel shall be implemented as mitigation measures for noise impact due to ground sources.	**Complied.** Presently the NITB is under construction phase. However, existing DG sets installed at site are in conformance and applicable safety norms. Photograph attached as **Annexure 12**
xxiv	During the airport operation period, noise should be controlled to ensure that it does not exceed the prescribed standards. During nighttime the noise levels measured at the boundary of the building shall be restricted to the permissible levels to comply with the prevalent regulations. A monitoring station for ambient air and noise levels shall be provided in the village nearest to the airport.	**Complied.** Noise Monitoring is regularly conducted by MoEFCC/NABL accredited laboratory at 5 locations including 2 funnel zones. All the results are observed to be within standards and same are also being submitted to all the concerned regulatory authorities, as a part of the compliance report. Monitoring report, covering analysis report for noise monitoring for the compliance period Apr 24 to Sept 24 is attached as **Annexure 10** Photographs showing the all the Ambient Air and noise monitoring location along with GPS coordinates is attached as **Annexure 16**
xxv	The solid wastes shall be segregated as per the norms of the Solid Waste Management Rules, 2016.Recycling of wastes such as paper, glass (produced from terminals and aircraft caterers), metal (at aircraft xxv. maintenance site), plastics (from aircrafts, terminals and offices), wood, waste oil and solvents (from maintenance and engineering operations), kitchen wastes and vegetable oils (from caterers) shall be carried out.	**Complied.** Presently the project is under Construction phase. As part of the existing Operation & Construction phase, the solid waste generated is segregated and disposed through 3rd party, inline to SWM rule 2016. Solid waste generation is being segregated at source and further being handed over to authorized vendors and recyclers as per Solid Waste Management Rule, 2016.We are working on the concept of Zero waste to landfill with 5R principle of waste management. The Solid Waste Management plan is attached as **Annexure 17.**
xxvi	Traffic congestion near the entry and exit points from the roads adjoining the Airport shall be avoided. Parking should be fully internalized, and no public space should be utilized.	**Agreed to comply.** As a part of overall Traffic management plan, the widening of the existing approach road to the airport is planned by Assam PWD from 2 lane to 6 lane.

		LGBIA as a part of master plan has further planned for internal road circulation to smoothen the arrival and departure, by providing separate entry and exit and provision of adequate parking in consideration of peak hour passengers.
xxvii	Traffic Management Study and Mitigation measures as given in the EIA Report shall be implemented in letter and spirit. Apart an assessment of the cumulative impact of all activities being carried out or proposed to be carried out by the project, shall be made for traffic densities and parking capabilities in a 02 kms radius from the site. A detailed traffic management and a traffic decongestion plan drawn up through an organization of repute and specializing in Transport Planning shall be implemented to the satisfaction of the State Urban Development and Transport Departments shall also include the consent of all the concerned implementing agencies.	**Complied** Airport Authority of India had obtained the Environment Clerance for development of New Integrated Terminal Building (NITB), vide MoEF&CC file no. 10-58/2016-IA-III, dated 16th April 2018. Zonal level Traffic study has been conducted for Guwahati city by the State government. And based on which M/s Rites has prepared upgradation and widening of roads which include the road connectivity to LGBIA Airport. Based on the reports, the State govt has already started implementation of the recommendation of consultant. As part of the road improvement by GoA near airport, the existing Road from VIP junction to SOS junction shall be widened to 45 mt. which will be widened from two lanes to six lanes with two service lanes and a footpath. The existing Road from SOS junction to Garal junction shall be widened to 30 mt which will be widened from two lanes to six lanes with footpath. The above actions along with improvement in internal circulation by GIAL, will ensure smooth traffic flow. GIAL will be further carrying out Traffic Impact assessment as a part of master plan and will be submitting to the authorities. Copy of road upgradation plan by M/s Rites is attached as **Annexure 18.**
xxviii	Energy conservation measures like installation of LED/CFLs/TFLs for the lighting the areas outside the building should be integral part of the project design and should be in place before project commissioning. Used CFLs and TFLs should be properly collected and disposed off/sent for recycling as per the prevailing guidelines/ rules of the regulatory authority to avoid mercury contamination.	**Complied.** The new Integrated Terminal building will be developed inline to GRIHA standards to attain Green Building. LGBIA has visioned to attain Carbon Net Zero by 2029. GRIHA certification Enrollment is attached as **Annexure 19**

xxix	An onsite disaster management plan shall be drawn up to account for risks and accidents. This onsite plan shall be dovetailed with the onsite management plan for the district.	**Agreed to comply.** GIAL is already having an Airport Emergency plan in place and implemented. Copy of the same is attached as **Annexure 20.**
XXX	The company shall draw up and implement a corporate social Responsibility plan as per the Company's Act of 2013.	**Complied** GIAL is committed to implement CSR activity through Adani Foundation, inline to "The Company's Act 2013 in the field of Education, Community Health, Sustainable Livelihood Development, Community Infrastructure Development, Skill Development for the overall improvement of living standards in the region. Various CSR works like Redevelopment of the school at Kahikuchi village, Donation to flood victims, health camps. tree plantations under the Assam Forest Development, Creating STEAM (Science, Technology, Engineering Arts Mathematics) Lab for SOS Childrens Village Guwahati, Financial Support to Jarugaon School Chaygaon etc has been carried out by GIAL. A total INR 3.3 Crore has been spent by GIAL in social related works since October 2021. Year wise & activity wise fund assured by third party (amount in lakhs) as a part of social related works are attached as **Annexure 21** **Additionally, CSR activities is also carried out by Adani Foundation team with the plan of action of 6 Cr for next 5 years.**
xxxi	A water security plan to the satisfaction of the CGWA shall be drawn up to include augmenting water supply and sanitation facilities and recharge of ground water in at least two villages and schools, as part of the C.S.R. activities.	**Agreed to comply.** Ground water table in this region is very high thus, ground water recharge is not feasible. However, LGBIA has plan to attain water neutral status by 2027 CSR activity as listed at point no XXX, are being carried out GIAL and additionally further activities will be taken up in coordination with local administration and applicable regulations.

Part B – General Conditions		
i	A copy of the environmental clearance letter shall also be displayed on the website of the concerned State Pollution Control Board. The EC letter shall also be displayed at the Regional Office, District Industries Centre, and Collector's Office/ Tehsildar's office for 30 days.	**Complied** Environmental Clearance Letter Displayed on website. https://www.adani.com/en/lgbia-guwahati-airport/downloads
ii	The funds earmarked for environmental protection measures shall be kept in a separate account and shall not be diverted for other purpose. Year-wise expenditure shall be reported to this Ministry and its concerned Regional Office.	**Complied.** A CAPEX amount of INR 7.65 Cr has been approved for ESG and Environment for FY25. Out of which INR 5.7 crore has been spent during FY 2024-25, which include Airport Quality Management, Wastewater Management, Green Area development, Energy Conservation, Solid Waste Management, Environment awareness etc. Annual Calendar wrt expenditure done (amount in Lacs) as a part of Environment Management plan is attached as **Annexure 22**. In FY26: 12.8 Cr is budgeted for ESG and Environment
iii	Officials from the Regional Office of MoEF&CC, Shillong who would be monitoring the implementation of environmental safeguards should be given full cooperation, facilities and documents/data by the project proponents during their inspection. A complete set of all the documents submitted to MoEF&CC shall be forwarded to the APCCF, Regional Office of MoEF&CC, Shillong.	**Agreed to comply.**
iv	In the case of any change(s) in the scope of the project, the project would require a fresh appraisal by this ministry.	**Agreed to comply.**
v	The Ministry reserves the right to add additional safeguard measures subsequently, if found necessary, and to take action including revoking of the environment clearance under the provisions of the Environmental (Protection) Act, 1986, to ensure effective implementation of the suggested safeguard measures in a time bound and satisfactory manner.	**Agreed to comply.**

vi	The project proponent shall advertise in at least two local newspapers widely circulated in the region, one of which shall be in the vernacular language informing that the project has been accorded Environmental Clearance and copies of clearance letters are available with the State Pollution Control Board and may also be seen on the website of the Ministry of Environment, Forest and Climate Change at http://www.envfor.nic.in. The advertisement shall be made within Seven days from the date of receipt of the Clearance letter and a copy of the same shall be forwarded to the Regional Office of this Ministry at Shillong.	**Complied** Copy of EC is available on MoEF&CC website as link below:- https://t.ly/0J28j
viii	Any appeal against this clearance shall lie with the National Green Tribunal, if preferred, within a period of 30 days as prescribed under Section 16 of the National Green Tribunal Act, 2010.	**Agreed to comply**
ix	A copy of the clearance letter shall be sent by the proponent to concerned Panchayat, Zilla Parisad/Municipal Corporation, Urban Local Body and the Local NGO, if any, from whom suggestions/ representations, if any, were received while processing the proposal. The clearance letter shall also be put on the website of the company by the proponent.	**Complied.** Airport Authority of India had obtained the Environment Clerance for development of New Integrated Terminal Building (NITB), vide MoEF&CC file no. 10-58/2016-IA-III, dated 16th April 2018. Post Concession agreement, Transfer of Environment clearance from AAI to GIAL has been obtained vide MoEF&CC file No. 10-58/2016-IA-III dated 1st November 2022 As a part of communication to the stakeholders, Environmental Clearance Letter is displayed on companies' website and is also available on MoEFCC website. A copy of the clearance letter has already been submitted to local authorities. Copy of the same is attached as **Annexure 23.**
x	The proponent shall upload the status of compliance of the stipulated EC conditions, including results of monitored data on their website and shall update the same periodically. It shall simultaneously be sent to the Regional Office of MoEF&CC, the respective Zonal Office of CPCB and the	**Complied** Compliance report for the period Oct 23 to Mar 24 was submitted APCCF, Shilong office, with vide letter no GIAL/CAO/ F-20/03/24-25/1748 dated 29.05.2024 along all the reports & annexures. A

	SPCB. criteria pollutant levels namely, SPM, RSPM, SO2, NOx (ambient levels as well as stack emissions) or critical sectoral parameters, indicated for the project shall be monitored and displayed at a convenient location near the main gate of the company in the public domain.	copy of the compliance report is also displayed on the company's website. https://www.adani.com/en/lgbia-guwahati-airport/downloads Ambient Air monitoring is being regularly carried out by an authorized agency. Records for the period Oct 24 to Mar 25 is attached as **annexure 24.**
xi	The environmental statement for each financial year ending 31stMarch in Form-V as is mandated to be submitted by the project proponent to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently, shall also be put on the website of the company along with the status of compliance of EC conditions and shall also be sent to the respective Regional Offices of MoEF&CC by email.	**Complied** Environmental statement (Form V) for FY 2023-24 submitted with vide letter no. GIAL/CAO/F-20/10/2024-25 dated 18.09.2024. A copy of the Environment Statement displayed on the company's website. https://www.adani.com/en/lgbia-guwahati-airport/downloads
xii	This issues with the approval of the Competent Authority.	**Agreed to comply**

List of annexures

Annexure-1	Environment Clearance Copy
Annexure-2	Submission of Master Plan/ Aerodrome License of LGBI Airport
Annexure-3	Consent to Established Copy
Annexure-4	Barricade Wall
Annexure-5	Water sprinkling for dust suppression
Annexure-6	Covered Trucks
Annexure-7	Soil Health Card.
Annexure-8	Rainwater Harvesting Plan

Annexure-9	Ground water NOC
Annexure-10	Noise Reports
Annexure-11	Solid waste Management
Annexure-12	DG Set Acoustic Enclosure
Annexure-13	Spill Control Plan
Annexure-14	Storm Water Drainage
Annexure 15	STP Layout & report
Annexure 16	Noise and Ambient Locations
Annexure 17	SOP Solid waste
Annexure 18	Rites Report
Annexure 19	Griha Certification
Annexure 20	Aerodrome Emergency Response Plan.
Annexure 21	CER Certificate
Annexure 22	Year to year Expenditures
Annexure 23	Letter to Panchayat
Annexure 24	Ambient Air reports.

F. No. 10-58/2016-IA-III
Government of India
Ministry of Environment, Forest and Climate Change
(IA.III Section)

Indira Paryavaran Bhawan,
Jor Bagh Road, New Delhi - 3

Date: 16th April, 2018

To,

The Airport Director
M/s Airports Authority of India,
Lokpriya Gopinath Bordoloi International Airport,
Borjhar, Guwahati, Assam- 781015
E-mail: guwahatiairportec@gmail.com

Subject: Construction of 'New Integrated Terminal Building at LGBI Airport', Guwahati by M/s Airports Authority of India Guwahati - Environmental Clearance - reg.

Sir,

This has reference to your online proposal No. IA/AS/MIS/57418/2016 dated 9th January, 2018, submitted to this Ministry for grant of Environmental Clearance (EC) in terms of the provisions of the Environment Impact Assessment (EIA) Notification, 2006 under the Environment (Protection) Act, 1986.

2. The proposal for grant of environmental clearance to the project 'Construction of New Integrated Terminal Building at LGBI Airport, Guwahati by M/s Airports Authority of India Guwahati was considered by the Expert Appraisal Committee (Infra-2) in its 27th meeting held on 25th January, 2018. The details of the project, as per the documents submitted by the project proponent, and also as informed during the above meeting, are under:-

(i) The proposed project is "Construction of New Integrated Terminal Building at LGBI Airport, Guwahati" in Assam State.

(ii) Construction of new integrated terminal building conforming to GRIHA 4 star rating with all modern facilities in an area of 90,000 sqm excluding service area of 7,500 sqm in basement. Designed passenger capacity of new integrated terminal building is 2900 domestic and 200 international passengers at a time. The building includes Departure area, arrival area, security hold area and concourse area. Multilevel car parking with all amenities is proposed for 500 cars and surface parking for VIP cars & 10 buses.

(iii) The site is already well connected from the National Highway. State Government will widen existing two lane road to 4 lane road for better connectivity.

(iv) There is no critically polluted area within 10 Km radius area from the new terminal building site at Guwahati Airport.

(v) Fresh water requirement: 710 KLD for domestic, food courts, retail, offices, HVAC, etc. (Total water requirement including recycled water - 1010 KLD)

and will be extracted through bore wells at the airport. Necessary permission will be obtained for ground water extraction.

(vi) Approximately 810 KLD sewage will be generated after the operation of integrated terminal building which will be treated in STP of capacity 1000 KLD. Membrane Bio-Reactor (MBR) Technology will be used for treatment of waste water at the airport. After treatment, treated wastewater will be reused for HVAC, landscaping and green belt purpose. No wastewater will be discharged outside the airport premises.

(vii) Approximately 3100 kg per day solid waste will be generated during operation of the project, which will be collected, segregated and managed by external agency for disposal. Used lubricating waste oil from maintenance of DG sets and batteries, electronic wastes will be collected separately and will be sold to authorize recyclers as per CPCB/ PCBA guidelines.

(viii) Landscape and greenery will be developed at and around the new integrated terminal building. More than 60% of existing airport is open and grasses, trees and shrubs.

(ix) The passenger capacity of proposed new terminal building will be designed for 2900 domestic (including 200 International) at one point of time. The multilevel car parking facility will be provided for at least 1500 cars and 10 buses.

(x) ToR was granted by the Ministry vide letter No. 10-58/2016-IA-III dated 26th October, 2016 along with Public Hearing.

(xi) The Project Proponent sought amendment in the ToR on 29th October, 2017 for revised built-up area, water requirement and cost of the project. The EIA/EMP report was prepared after incorporating these amendments and submitted to SPCB for Public hearing. ToR was further amended vide letter dated 22nd March, 2018.

(xii) Public hearing was conducted for the New Integrated Terminal Building at LGBI Airport Guwahati, on 30th December, 2017 at Circle Office, Azara in District Kamprup, Assam.

(xiii) Deepor Beel Bird Sanctuary is located at distance of 3.2 km in north-east direction. Application for permission from NBWL has already been submitted.

(xiv) Cost of the project is Rs. 1232 Crores.

(xv) Employment Potential: Direct- 360, Indirect, More than 2000.

(xvi) Benefit of the project: The direct and indirect benefits of the New Integrated Terminal Building at Guwahati Airport are Better infrastructure facilities for passengers, Promotion of tourism, trade, commerce, etc. Increase in regional economy as it will boost tourism and commercial activities in the region. Generation of more revenue to the state, hence more development of the region, More employment opportunity to people and More business and industrial opportunities.

3. The project/activity is covered under category A of item 7 (a) i.e. 'Airports' of the schedule to the EIA Notification, 2006 and its amendments, and requires appraisal at Central level by sectoral EAC.

4. The EAC deliberated on the information provided by the project proponent and noted that the present Airport was established in 1958. Further in 1989, Air Traffic Control Tower (ATC) was built up along with expansion of existing building which was commissioned in the year 1991-92. Environmental Clearance was not required at that time. The Committee also noted that the Public hearing was conducted on 30th December, 2017 incorporating the revised built-up area and water requirement. The EAC deliberated upon the issues raised during the public hearing/public consultation meeting conducted by the Assam State Pollution Control Board. The issues were raised regarding impact on the surrounding area, Traffic problem due to connectivity with National highway and CSR initiatives. The Committee noted that issues have satisfactorily been responded by the project proponent and incorporated in the final EIA-EMP report.

5. The EAC, on being satisfied with the submissions of the project proponent, recommended the project for Construction of 'New Integrated Terminal Building at LGBI Airport', Guwahati by M/s Airports Authority of India Guwahati for grant of environmental clearance and stipulated the following specific conditions along with other environmental conditions while considering for accord of environmental clearance:-

PART A – SPECIFIC CONDITIONS:

(i) As proposed, Environmental Clearance is for Construction of 'New Integrated Terminal Building' at LGBI Airport, Guwahati by M/s Airports Authority of India Guwahati.

(ii) Project Proponent shall obtain clearance from Directorate General of Civil Aviation (DGCA) and Airports Authority of India (AAI) for safety and project facilities.

(iii) Consent to Establish/Operate for the project shall be obtained from the State Pollution Control Board as required under the Air (Prevention and Control of Pollution) Act, 1981 and the Water (Prevention and Control of Pollution) Act, 1974.

(iv) Clearance from National Board for Wildlife (NBWL) is required before commencement of project/ activity.

(v) Construction site should be adequately barricaded before the construction begins.

(vi) Soil and other construction materials should be sprayed with water prior to any loading, unloading or transfer operation so as to maintain the dusty material wet.

(vii) The soil/construction materials carried by the vehicle should be covered by impervious sheeting to ensure that the dusty materials do not leak from the vehicle.

(viii) The excavation working area should be sprayed with water after operation so as to maintain the entire surface wet.

(ix) Soil stockpile shall be managed in such a manner that dust emission and sediment runoff are minimized. Ensure that soil stockpiles are designed with no slope greater than 2:1 (horizontal/vertical). Top soil shall be separately

stored and used in the development of green belt.

(x) A detailed drainage plan for rain water shall be drawn up and implemented.

(xi) Ground water abstraction and rain water recharge shall be as may be prescribed by the CGWA. A clearance of the CGWA shall be obtained in this regards.

(xii) Noise from vehicles and power machinery and equipment on-site should not exceed the prescribed limit. Equipment should be regularly serviced. Attention should also be given to muffler maintenance and enclosure of noisy equipments.

(xiii) Where construction activity is likely to cause noise nuisance to nearby residents, restrict operation hours between 7 am to 6 pm.

(xiv) Solid inert waste found on construction sites consists of building rubble, demolition material, concrete; bricks, timber, plastic, glass, metals, bitumen etc shall be reused/recycled or disposed off as per Solid Waste Management Rule, 2016 and Construction and Demolition Waste Rules, 2016.

(xv) Diesel power generating sets proposed as source of backup power for elevators and common area illumination during operation phase should be of enclosed type and conform to rules made under the Environment (Protection) Act, 1986. The height of stack of DG sets should be equal to the height needed for the combined capacity of all proposed DG sets. Use of low sulphur diesel. The location of the DG sets may be decided with in consultation with State Pollution Control Board.

(xvi) Aircraft maintenance, sensitivity of the location where activities are undertaken, and control of runoff of potential contaminants, chemicals etc shall be properly implemented and reported.

(xvii) Proper drainage systems, emergency containment in the event of a major spill during monsoon season etc shall be provided.

(xviii) The runoff from paved structures like Runways, Taxiways, can be routed through drains to oil separation tanks and sedimentation basins before being discharged into rainwater harvesting structures.

(xix) Storm water drains are to be built for discharging storm water from the air-field to avoid flooding/water logging in project area during monsoon season / cloud bursts.

(xx) Rain water harvesting for roof run-off and surface run-off, as plan submitted should be implemented. Before recharging the surface run off, pre-treatment must be done to remove suspended matter, oil and grease.

(xxi) Total fresh water requirement from existing bore wells shall not exceed 710 KLD with permission from CGWB.

(xxii) Sewage Treatment Plant (STP) of 1000 KLD capacity to treat the wastewater generated from airport. Treated water will be reused for flushing, horticulture, D.G. cooling and HVAC purposes.

(xxiii) Acoustic enclosures for DG sets, noise barriers for ground-run bays, ear plugs for operating personnel shall be implemented as mitigation measures for noise impact due to ground sources.

(xxiv) During airport operation period, noise should be controlled to ensure that it does not exceed the prescribed standards. During night time the noise levels measured at the boundary of the building shall be restricted to the permissible levels to comply with the prevalent regulations. A monitoring station for ambient air and noise levels shall be provided in the village nearest to the airport.

(xxv) The solid wastes shall be segregated as per the norms of the Solid Waste Management Rules, 2016. Recycling of wastes such as paper, glass (produced from terminals and aircraft caterers), metal (at aircraft maintenance site), plastics (from aircrafts, terminals and offices), wood, waste oil and solvents (from maintenance and engineering operations), kitchen wastes and vegetable oils (from caterers) shall be carried out.

(xxvi) Traffic congestion near the entry and exit points from the roads adjoining the Airport shall be avoided. Parking should be fully internalized and no public space should be utilized.

(xxvii) Traffic Management Study and Mitigation measures as given in the EIA Report shall be implemented in letter and spirit. Apart an assessment of the cumulative impact of all activities being carried out or proposed to be carried out by the project, shall be made for traffic densities and parking capabilities in a 02 kms radius from the site. A detailed traffic management and a traffic decongestion plan drawn up through an organization of repute and specializing in Transport Planning shall be implemented to the satisfaction of the State Urban Development and Transport Departments shall also include the consent of all the concerned implementing agencies.

(xxviii) Energy conservation measures like installation of LED/CFLs/TFLs for the lighting the areas outside the building should be integral part of the project design and should be in place before project commissioning. Used CFLs and TFLs should be properly collected and disposed off/sent for recycling as per the prevailing guidelines/ rules of the regulatory authority to avoid mercury contamination.

(xxix) An onsite disaster management plan shall be drawn up to account for risks and accidents. This onsite plan shall be dovetailed with the onsite management plan for the district.

(xxx) The company shall draw up and implement a corporate social Responsibility plan as per the Company's Act of 2013.

(xxxi) A water security plan to the satisfaction of the CGWA shall be drawn up to include augmenting water supply and sanitation facilities and recharge of ground water in at least two villages and schools, as part of the C.S.R. activities.

PART B - GENERAL CONDITIONS

(i) A copy of the environmental clearance letter shall also be displayed on the website of the concerned State Pollution Control Board. The EC letter shall also be displayed at the Regional Office, District Industries centre and Collector's Office/ Tehsildar's office for 30 days.

(ii) The funds earmarked for environmental protection measures shall be kept in separate account and shall not be diverted for other purpose. Year-wise expenditure shall be reported to this Ministry and its concerned Regional Office.

(iii) Officials from the Regional Office of MoEF&CC, Shillong who would be monitoring the implementation of environmental safeguards should be given full cooperation, facilities and documents/data by the project proponents during their inspection. A complete set of all the documents submitted to MoEF&CC shall be forwarded to the APCCF, Regional Office of MoEF&CC, Shillong.

(iv) In the case of any change(s) in the scope of the project, the project would require a fresh appraisal by this Ministry.

(v) The Ministry reserves the right to add additional safeguard measures subsequently, if found necessary, and to take action including revoking of the environment clearance under the provisions of the Environmental (Protection) Act, 1986, to ensure effective implementation of the suggested safeguard measures in a time bound and satisfactory manner.

(vi) All other statutory clearances such as the approvals for storage of diesel from Chief Controller of Explosives, Fire Department, Civil Aviation Department, the Forest Conservation Act, 1980 and the Wildlife (Protection) Act, 1972 etc. shall be obtained, as applicable by project proponents from the respective competent authorities.

(vii) These stipulations would be enforced among others under the provisions of the Water (Prevention and Control of Pollution) Act, 1974, the Air (Prevention and Control of Pollution) Act 1981, the Environment (Protection) Act, 1986, the Public Liability (Insurance) Act, 1991 and the EIA Notification, 2006.

(viii) The project proponent shall advertise in at least two local Newspapers widely circulated in the region, one of which shall be in the vernacular language informing that the project has been accorded Environmental Clearance and copies of clearance letters are available with the State Pollution Control Board and may also be seen on the website of the Ministry of Environment, Forest and Climate Change at http://www.envfor.nic.in. The advertisement shall be made within Seven days from the date of receipt of the Clearance letter and a copy of the same shall be forwarded to the Regional Office of this Ministry at Shillong.

(ix) Any appeal against this clearance shall lie with the National Green Tribunal, if preferred, within a period of 30 days as prescribed under Section 16 of the National Green Tribunal Act, 2010.

(x) A copy of the clearance letter shall be sent by the proponent to concerned Panchayat, Zilla Parisad/Municipal Corporation, Urban Local Body and the Local NGO, if any, from whom suggestions/ representations, if any, were received while processing the proposal. The clearance letter shall also be put on the website of the company by the proponent.

(xi) The proponent shall upload the status of compliance of the stipulated EC conditions, including results of monitored data on their website and shall update the same periodically. It shall simultaneously be sent to the Regional Office of MoEF&CC, the respective Zonal Office of CPCB and the SPCB. The

criteria pollutant levels namely; SPM, RSPM, SO_2, NOx (ambient levels as well as stack emissions) or critical sectoral parameters, indicated for the project shall be monitored and displayed at a convenient location near the main gate of the company in the public domain.

(xii) The environmental statement for each financial year ending 31st March in Form-V as is mandated to be submitted by the project proponent to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently, shall also be put on the website of the company along with the status of compliance of EC conditions and shall also be sent to the respective Regional Offices of MoEF&CC by e-mail.

6. This issues with the approval of the Competent Authority.

(Kushal Vashist)
Director

Copy to:

(i) The Secretary (Environment), Environment and Forest Department, Government of Assam, Aranya Bhawan, Panjabari Guwahati, Assam - 781037.

(ii) The Chairman, Central Pollution Control Board, Parivesh Bhavan, CBD-cum-Office Complex, East Arjun Nagar, Delhi - 110032.

(iii) The Addl. Principal Chief Conservator of Forests (C), Ministry of Environment, Forests and Climate Change, Law-U-Sib, Lumbatngen, Near MTC Workshop, Shillong - 793021.

(iv) The Member Secretary, Pollution Control Board Assam, Bamunimaidam, Guwahati - 21, Assam.

(v) Monitoring Cell, MoEF&CC, Indira Paryavaran Bhavan, New Delhi.

(vi) Guard File/ Record File/ Notice Board.

(vii) MoEF&CC Website.

(Kushal Vashist)
Director

Annexure 2

adani

Ref No: GIAL/CAO/F-18/01/22-23 Date: 29.08.2022

To

The Executive Director – SIU
Airports Authority of India
Rajiv Gandhi Bhawan
Safdarjung Airport, New Delhi 110003

Subject: Submission of copies of Master Plan in respect of Lokpriya Gopinath Bordoloi International Airport, Guwahati.

Dear Sir,

Greetings from Guwahati International Airport Limited.

Please find enclosed eight copies of the Concept Master Plan for Lokpriya Gopinath Bordoloi International Airport, Guwahati. Soft copy of the same has also been submitted to the Coordination In-Charge (CIC) and Regional Executive Director, NE Regional AAI on 8 Aug, 2022.

Kindly forward a word of acknowledgement.

Thanking You,

Yours Faithfully

Utpal Baruah
Chief Airport Officer

Lokpriya Gopinath Bordoloi International Airport Guwahati-781015 GIAL

Enclosures:

1. 8 copies of Concept Master Plan

Guwahati International Airport Limited
(Formerly known as Adani Guwahati International Airport Ltd.)
GIAL Building
Lokpriya Gopinath Bordoloi International Airport, Borjhar,
Guwahati – 781 015
Assam, India
CIN: U6303GJ2019PLC110032

Tel +91 0361 2840009
Fax +91 0361 2840009
Email: airport.guwahati@adani.com
Website: www.adani.com/lgbia-guwahati-airport

Registered Office: Adani Corporate House, Shantigram, Near Vaishno Devi Circle, S. G. Highway, Khodiyar, Ahmedabad – 382 421

GOVERNMENT OF INDIA

Annexure 2.1

OFFICE OF THE
DIRECTOR GENERAL OF CIVIL AVIATION
OPP. SAFDARJUNG AIRPORT,
NEW DELHI – 110003.
TELE-011-24653883/24622495 Ext.380

भारत सरकार
महानिदेशक नागर विमानन का कार्यालय
सफदरजंग एयरपोर्ट के सामने
नई दिल्ली -११०००३

Refer. No.: 2023/ASD/Renewal/0000000727
Dated: 16.06.2023

To
Chief Airport Officer
LGBI Airport
Guwahati International Airport Limited
Assam.

Sub:- **Extension of Aerodrome license (AL/PUBLIC/015) to M/s Guwahati International Airport Limited (GIAL) for LGBI Airport, Guwahati.**

Sir,

Please refer to eGCA Id: 2023/ASD/Renewal/00000000727 dated 08th May 2023 forwarding Application/documents for the purpose of extension of the aerodrome license of LGBI Airport, Guwahati.

Please find enclosed the original aerodrome license no. AL/Public/015, extended by competent authority for a period of **04 years and 06 months** i.e. from **09.06.2023** to **08.12.2027** respect of LGBI Airport, Guwahati under the same terms and conditions as mentioned in Annexure-I.

GIAL is directed to take action on the following points:-

1. Strict adherence to submitted PDCs for the open observations of surveillance inspections.
2. Strictly adhere to the action plan for compliance for aforesaid CAR non-compliance and strictly implement all current mitigation measures suggested in the submitted safety assessment.

Further, GIAL is also advised to ensure necessary notification for indicating the status of licensing of LGBI Airport to AIS.

Amit Srivastava

(Amit Srivastava)
Deputy Director (Ops.) (Aero-Stds.)
For Director General of Civil Aviation

Copy to:
1. O/o DDG (ER), Kolkata-DGCA.

सत्यमेव जयते

GOVERNMENT OF INDIA
OFFICE OF THE DIRECTOR GENERAL OF CIVIL AVIATION
DGCA COMPLEX, OPP. SAFDARJUNG AIRPORT, NEW DELHI-110 003

File No. AV.20025/11/06-AL
License No. AL/Public/ 015

AERODROME LICENSE - PUBLIC USE

The Director General of Civil Aviation, in exercise of the powers under Rule 78 of the Aircraft Rules, 1937 delegated vide S.O. No. 727 (E) dated the 4th October, 1994, hereby grants license to,

Guwahati International Airport Limited
(Name of License holder)

for

Lokpriya Gopinath Bordoloi International Airport, Guwahati
(Name & Place of Aerodrome)

Latitude **26° 06´ 18.08˝** N, Longitude **091° 35´ 07.58˝** E *(WGS-84)*

The ARFF category of the aerodrome and other details are as contained in its Aerodrome Manual.

This license authorizes the aerodrome to be used as regular place of landing and departure to all persons on equal terms and conditions for operation by aircraft requiring specifications of runway and associated facilities including granted exemptions equal to or less than those indicated in the Aerodrome Manual, subject to the conditions as contained in schedule-I and for a period as shown in Schedule-II hereto.

The license is liable to be suspended/ modified/ withdrawn/ and/or any limitations or conditions may be imposed, if any violation of the provisions of the Aircraft Act 1934, Aircraft Rules 1937, or any orders/ directions/ requirements issued under the said Act, rules or of the limitations or conditions as in schedule-I are observed.

This Aerodrome License is not transferable.

(SEAL)

Date of issue: 09th Dec, 2022
Place: New Delhi

DIRECTOR GENERAL OF CIVIL AVIATION

SCHEDULE-I

GENERAL CONDITIONS

1. The Licensee shall ensure that aerodrome facilities, equipment, services and procedures are operated and / or maintained properly and efficiently in accordance with the Aerodrome Manual submitted to DGCA, the applicable standards set out in the CARs and conditions specified in this license

2. The Licensee shall ensure that the copies of the Aerodrome Manual and Safety Management System (SMS) Manual, accepted by DGCA are always kept complete and current. The Licensee shall ensure that each member of the aerodrome operating staff is aware of the contents of the every part of the aerodrome manual and SMS manual, relevant to his duties and undertakes his duties in conformity with the relevant provisions of these manuals.

3. The Licensee shall ensure that an adequate number of qualified and skilled personnel are employed to perform all critical activities for the operation and maintenance of its aerodrome, and that a programme to upgrade the competency for the personnel is in place.

4. The Licensee shall notify the agency responsible for Aeronautical Information Services and the air traffic control unit immediately of any obstacles, obstructions or hazards, change in level of service at the aerodrome as set out in any publication by the aeronautical information services or variation from the Standards; closure of the movement area of the aerodrome; significant change in aerodrome facility or the physical layout of the aerodrome; and any other condition that could affect aviation safety at the aerodrome and against which precautions are warranted.

5. The Licensee shall notify the agency responsible for Aeronautical Information Services of any change to any aerodrome facility or equipment or level of service at the aerodrome which has been planned in advance and which is likely to affect the accuracy of the information contained in any publication by the agency before effecting the change.

6. The licensee shall be responsible to ensure that all security and anti-hijacking arrangements stipulated from time to time by the Bureau of Civil Aviation Security for the aerodrome are complied with.

7. When so demanded by an officer duly authorized under the Aircraft Rules, 1937, this license and any other relevant documents shall be produced for inspection.

8. The licensee shall be responsible for payment to the concerned authorities of all applicable charges pertaining to the services provided by such authorities in connection with the aerodrome operation such as water supply, electricity supply, telephone lines etc.

9. Licensee shall maintain record of all aircraft landing at and taking-off from the aerodrome.

10. The Licensee shall have legally tenable agreement with CNS and ATM service provider(s) to ensure continuity and reliability of CNS and ATM to ensure the safety of aircraft in the airspace associated with aerodrome, and that proper coordination with the agencies responsible for aeronautical information services, meteorological services, security and other areas related to safety are established.

11. The aerodrome shall at all reasonable times be open to use by any aircraft in the service of the Central Government.

12. The licensee shall ensure that during the validity of the license the capability of the services/facilities, etc. is not degraded below the notified level.

13. The licensee is to submit the application for renewal in prescribed proforma along with relevant enclosures and fee, at least 2 months before expiry of license to the Director General of Civil Aviation. The license may be renewed if DGCA is satisfied that all requirements have been fulfilled.

14. Other requirements of Central Government and State Government as applicable shall be complied with

License No. AL/Public/ 015

Annexure-I

Annexure to Sl. No. 18 of General Conditions of license.

Actions required to be taken by the licensee for consideration of renewal of license validity of Lokpriya Gopinath Bordoloi International Airport, Guwahati:-

i. Submit the quarterly progress report on pending observations contained in this office inspection report and on self-assessed non-compliances based on CAR provisions.

ii. Submit exemption application complete in all respect for non-compliances identified (if any) for aerodrome facilities in CAR Section 4 Series B Part I and observations raised by DGCA.

iii. Continue to develop the operating procedures for all activities required to be performed for operation and maintenance of the aerodrome and carry out safety assessment of the same.

iv. Submit updated SMS Implementation status at the aerodrome.

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15. The aerodrome meets the design criteria and reference code 4D as defined in the CAR Section 4 Series B Part I and designed for operation of A321 type or equivalent aircraft.

16. The licensee shall maintain ARFF category defined in the Aerodrome manual or as notified by NOTAM issued in this regards.

17. The aerodrome is licensed for use in IFR (All weather) conditions.

18. Any other conditions :-

i) Actions required to be completed by the licensee for consideration of renewal of license validity as contained in Annexure-I, hereto.

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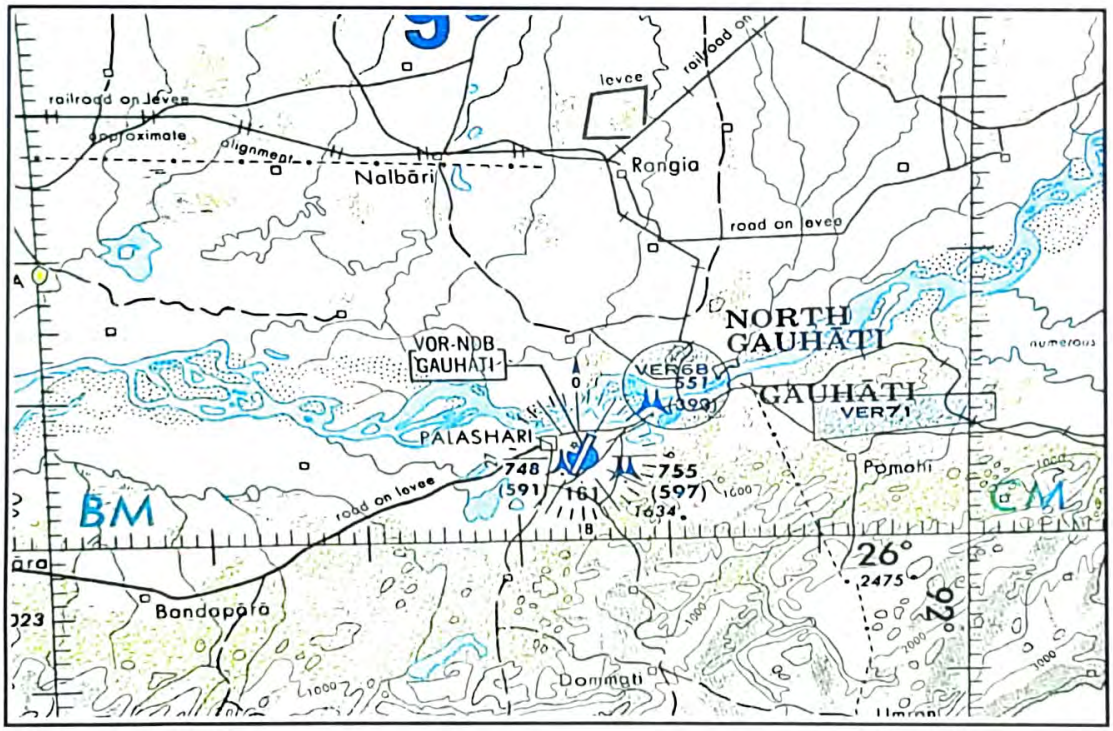
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Portion of map showing exact location of aerodrome.



License No. AL/Public/ 015

SCHEDULE-II

VALIDITY OF THE LICENSE

Lokpriya Gopinath Bordoloi International Airport, Guwahati

(Name & Place of Aerodrome)

FROM	TO	SIGNATURE
09.12.2022	08.06.2023 (Provisional)	
09 JUN 2023	08 DEC 2027	महानिदेशक नागर विमानन भारत Director General of Civil Aviation India

Pollution Control Board:: Assam
Bamunimaidam; Guwahati-21
(Department of Environment & Forests :: Government of Assam)
Phone: 0361-2652774 & 2550258; Fax: 0361-2550259
Website: www.pcbassam.org

No.WB/GUW/T-3935/19-20/10 768

Dated Guwahati, the 4/10 2019

"CONSENT TO ESTABLISH"

"CONSENT TO ESTABLISH" is hereby granted to **M/s AIRPORT AUTHORITY OF INDIA NITB GUWAHATI (A UNIT OF AIRPORTS AUTHORITY OF INDIA)** for setting up a New Airport terminal for Domestic and International Flights with designed capacity about 700 Domestic & 20 International Flight per day located at SOS Village Road, Borjhar, Pin-781005, Dist.: Kamrup (M) (Assam) under Section 25 of Water (Prevention & Control of Pollution) Act, 1974 and Section 21 of Air (Prevention & Control of Pollution) Act, 1981 as amended under the following terms & conditions:

1. No Air, Water, Soil pollution shall be created by the unit beyond the permissible limits prescribed by the Board. The unit would incorporate adequate pollution control measures before they put the plant into operation.
2. To maintain the environment and ecology in the area provisions for planting selected species of tree within the compound and approaches along with provisions for park, garden and fountain shall have to be made. Massive aforestation will have to be made by the unit in the factory and township if any.
3. As per provisions of Water (Prevention & Control of Pollution) Act, 1974 and Air (Prevention & Control of Pollution) Act, 1981 any officer, employed by this Board on its behalf shall without any interruption, shall have the right at any time to enter the unit for inspection, to take samples for analysis and any call for any information etc. violation of this right will lead to the withdrawal of this permission.
4. As per provisions of the Act, regular monitoring of Air, Water etc. is to be done by the unit from the location/points fixed by the Board and the report to be submitted to the board monthly.
5. Effluent carrying drains must be segregated from storm water drain. Any effluent generated must be treated and disposed after compliance of prescribed standard fixed by the Authority.
6. Standard linings on flat embankment of effluent pond shall have to be provided in the pond to prevent and control of overflow seepage and leakage of effluent to the nearby areas and ground water.
7. To regularise the subsequent "Consent to Operate" the legal provisions of "Consent to Operate" as per Act and Cess Returns as per Cess Act, 1977 shall have to be timely adhered to.
8. Gaseous pollution due to the burning of fuel to run engine boiler, kiln etc. should be controlled by adopting preventive measures adequately.
9. Solid waste that arises during the operation should be properly graded and disposed of scientifically without causing environmental degradation.
10. For Low lying areas, special care is to be taken by the unit to prevent any overflow, seepage and leakage of effluent.

Contd....p/2

11. Fire warning (Alarm, Siren) is to be installed by the unit to guard against accidental pollution/ mishap together with fire fighting devices.

12. All pipe connection, Joints; fittings etc. in the factory and plant are to be frequently checked and shall be leak proof all the time.

13. Proper housekeeping and adequate maintenance has to be ensured/ enforced as per provisions of Acts.

14. All unwanted Toxic Chemical/Fluid/Gases are to be taken care of as per prescribed norms.

15. Production process is to be monitored and in the event of danger immediate shut down is to be ensured by the unit.

16. **"CONSENT TO ESTABLISH"** has been issued basing on the particulars furnished by the applicant and subject to imposition to further/more conditions if warranted by the subsequent development.

17. **"CONSENT TO ESTABLISH" will be valid till the date of commissioning of the unit or 5 (five) years whichever is earlier.**

18. Healthy working environment for the worker must be maintained and there should not be health Hazard to the workers for in adequate arrangement for ventilation, dust removal arrangements should be adequate and full proof for the health of the workers. Their health should be regularly monitored.

19. The unit must submit compliance report of action taken on the conditions given by the Board before commissioning of the plant.

20. Adequate trees should be planted and maintained in the vacant space of the premises and all around the factory and township if any.

21. The Board will be at liberty to withdraw the **"CONSENT TO ESTABLISH"** at any time without notice, if necessary steps for prevention of pollution and prevention of degradation of environment is not taken by the unit as per mentioned conditions.

22. This issuance of the **"CONSENT TO ESTABLISH"** does not convey any property right in their real or personal property or any exclusive privileges nor does it authorize any injury to private property nor any invasion right any infringement of Central, State or Local Laws or Regulations.

23. The **"CONSENT TO ESTABLISH"** does not authorize or approve the construction of any physical structures or facilities or the undertaking of any work in any natural watercourse except of the works specially instructed herein.

24. The unit shall not discharge any wastewater outside the campus.

25. No fugitive emission shall be created by the unit.

26. The applicant shall maintain the general ambient air quality standards.

27. The unit shall not use any fuel, which may create pollution problem.

28. No noise pollution is to be created by the unit.

29. Noise dampening wall have to be arranged.

30. The unit must construct primary Effluent Treatment Plant (ETP) before commissioning of the unit.

Contd....p/3

31. The Unit should strictly follow the guidelines of E-Waste (Management) Rules, 2016 / Solid Waste Management Rules, 2016 / Hazardous & Other Waste (Management & Transboundary Movement) Rules, 2016 / Plastic Waste Management Rules, 2016.

32. The unit must comply to the National Ambient Air Quality Standards as per Schedule – VII under Rule, 3(3B) of the Environment (Protection) Rules, 1986.

33. Necessary steps are to be taken to maintain Ambient Air Quality standards in respect of Noise as per the Noise Pollution (Regulation and Control) Rules, 2000 as amended till date.

34. Adequate fire fighting measures with fitting like fire hydrant etc. shall have to be provided in order to prevent accident.

35. The Board will have the liberty to withdraw the **"CONSENT TO ESTABLISH"** if adequate pollution control and safety measures are not taken.

Member Secretary (i/c)

Memo No. WB/GUW/T-3935/19-20/10-A, Dated Guwahati, the 4/10 2019

Copy to:

1. M/s. Airport Authority of India NITB Guwahati (A Unit of Airports Authority of India), Plot No. 60, Brahmaputra Industrial Park, Sila, Pin-781001, Dist.: Kamrup (M) (Assam) for information & necessary action. The **"CONSENT TO ESTABLISH"** is valid subject to fulfillment of above terms & conditions and also subject to obtaining necessary permission from other Competent Authorities. This has reference to his online application vide **UAIN: PCB/CTE/KM/001813/05/2019**.
2. The Deputy Secretary to the Govt. of Assam, Department of Environment & Forest, Dispur, Guwahati – 6 for favour of information.
3. The Deputy Commissioner, Kamrup (M) district for favour of information.
4. The General Manager, DI&CC, Kamrup (M) for favour of information.
5. The Sr. Env. Engineer; Regional Office; Guwahati-1; Pollution Control Board, Assam for information & necessary action. The **"CONSENT TO ESTABLISH"** is valid subject to fulfillment of above terms and conditions and also subject to obtaining necessary permission from other competent Authorities.

Member Secretary (i/c)

Annexure 4 - Barricades at Construction site and along the site periphery











Annexure 5 – Water Sprinkling







Annexure 6

Construction materials handled by covered Trucks.







Department of Agriculture & Cooperation, Ministry of Agriculture & Farmers Welfare Government of India.

Krishi Vigyan Kendra, Bishnupur District, Manipur, ATARI, Zone-VII.

SOIL HEALTH CARD

Swasth Dhara, Khet Haraa

SOIL HEALTH CARD			Name of Laboratory	Soil Testing Unit, KVK-Bishnupur, Manipur			
Farmer's Details							
Name	SPCPL (NITB-AAI) Guwahati						
Address	SOS ROAD, CPP, Kiranshree Grand						
Village	Borjhar						
Sub-District	-						
District	Kamrup						
PIN	781015						
Aadhaar Number	-						
Mobile Number	9283747741						
Soil Sample Details							
Soil Sample Number	0137469						
Sample Collected on	08/12/18						
Survey No.	NIL						
Khasra No. / Dag No.	NIL						
Farm Size	NIL						
Geo Position (GPS)	Latitude: NIL	Longitude: NIL					
Irrigated / Rainfed	NIL						

SOIL TEST RESULTS

S. No.	Parameter	Test Value	Unit	Rating
1	pH	**5.22**	1-14 scale	**Strongly acidic**
2	EC	**1.0**	dSm^{-1}	**Certified for growth**
3	Organic Carbon (OC)	**0.6**	P.C.	**Low**
4	Available Nitrogen (N)	**100.3**	Kg/ha	**Low**
5	Available Phosphorus (P)	**10.1**	Kg/ha	**Low**
6	Available Potassium (K)	**90.2**	Kg/ha	**Low**
7	Available Sulphur (S)	**6.4**	mg/kg soil	**Low**
8	Available Zinc (Zn)	**0.1**	mg/kg soil	**low**
9	Available Boron (B)		mg/kg soil	**NIL**
10	Available Iron (Fe)	**10.2**	mg/kg soil	**High**
11	Available Manganese (Mn)	**11.5**	mg/kg soil	**High**
12	Available Copper (Cu)	**0.1**	mg/kg soil	**Low**

Remark: Not suitable for crop production

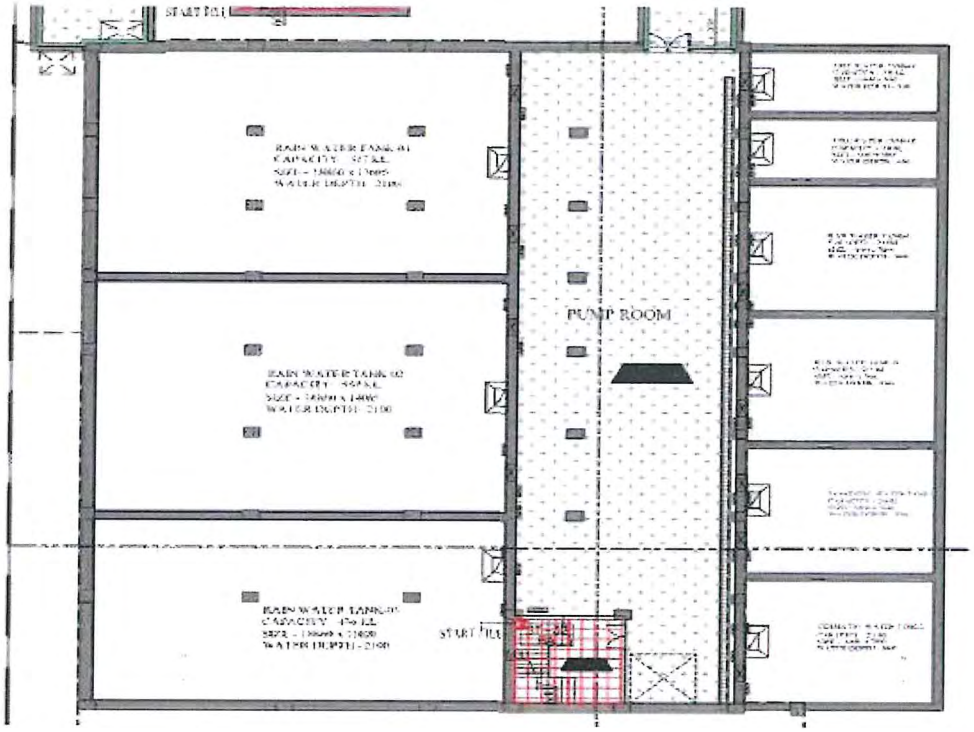
Date of issue : 29/12/2018

Principal Scientist & Head

Rain Water harvesting Capacity 1500 KL. (approx.)

Rain Water Tank Dimension (Constructed at site) :-

- Rain Water Tank -01 : 18.86 x 13.60 m
- Rain Water Tank -02 : 18.86 x 14.06 m
- Rain Water Tank -03 : 18.86 x 11.02 m



GIAL * GUWAHATI INTERNATIONAL AIRPORT LIMITED * Guwahati-781015

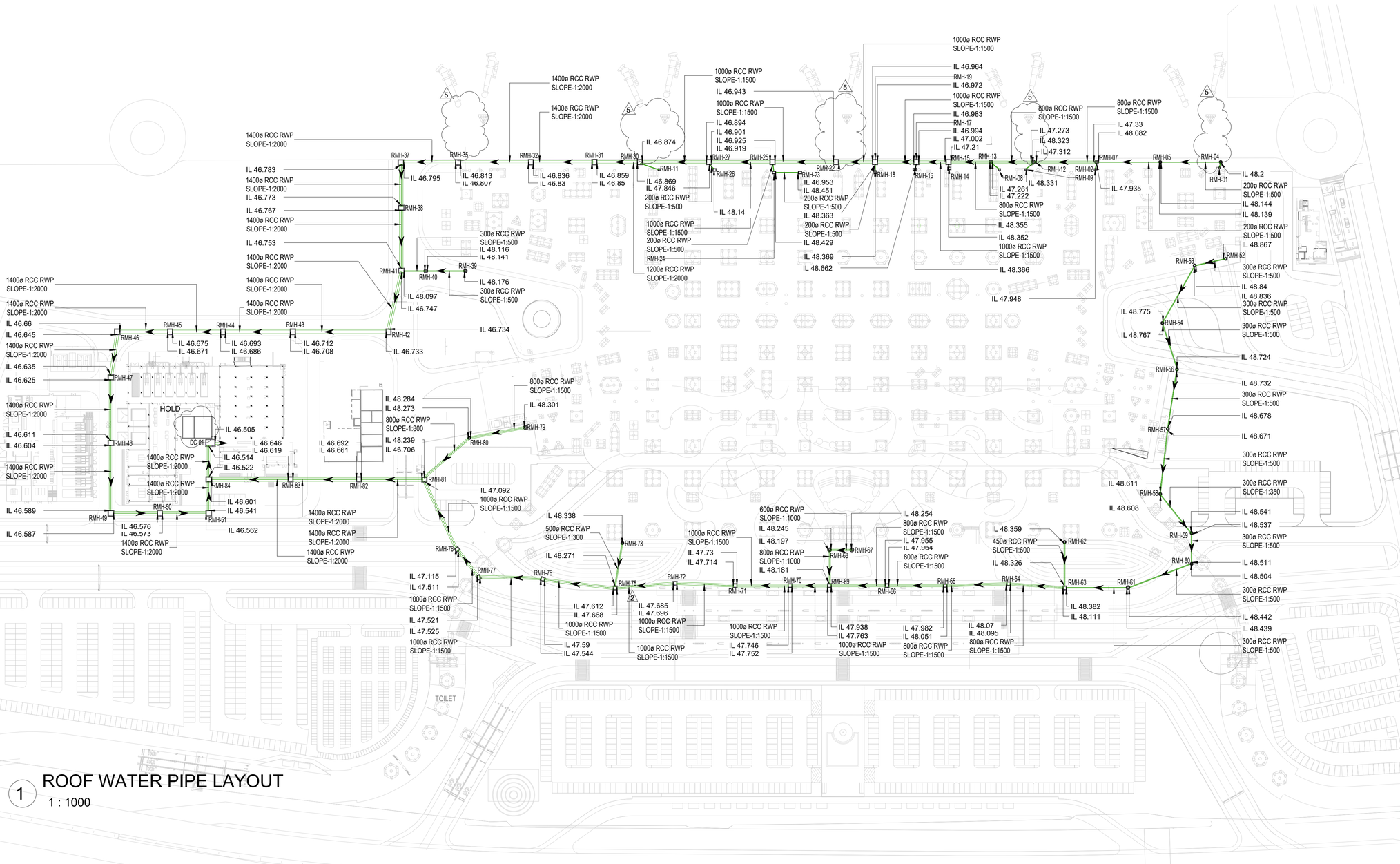
Architect YOGESHWAGH

RAIN WATER MANHOLE SCHEDULE							
RMH Tag	X Coordinate	Y Coordinate	FGL	MH Width	MH Length	MH Dia	MH Depth
RMH-01	359907.106	2890048.567	49.043	0.6	0.6		0.47
RMH-02	359884.664	2889994.310	48.578	0.6	0.6		1.4
RMH-04	359904.882	2890050.244	48.610			0.9	1.05
RMH-05	359893.562	2890024.013	48.545			0.9	1.04
RMH-07	359881.664	2889996.456	48.110			1.2	2
RMH-08	359866.739	2889952.762	48.758	0.6	0.6		1
RMH-09	359871.696	2889964.300	48.758	0.6	0.6		1
RMH-11	359802.947	2889804.939	48.758	0.6	0.6		1
RMH-12	359869.763	2889968.915	48.101			1.2	2.11
RMH-13	359861.826	2889950.494	48.096			1.2	2.06
RMH-14	359856.768	2889931.267	48.850	1.2	0.9		1.1
RMH-15	359853.872	2889932.060	47.908	2	2		2.303
RMH-16	359850.792	2889916.009	48.850	1.2	0.9		1.12
RMH-17	359847.842	2889918.088	47.918	2	2		2.351
RMH-18	359844.591	2889898.362	48.850	1.2	0.9		1.1
RMH-19	359840.114	2889900.181	47.932	2	2		2.375
RMH-22	359832.783	2889883.196	47.945	2	2		2.431
RMH-23	359830.581	2889865.634	48.898	1.2	0.9		1.2
RMH-24	359825.715	2889854.358	48.873	1.2	0.9		1.25
RMH-25	359820.895	2889855.652	47.964	2	2		2.435
RMH-26	359813.440	2889828.997	48.598	1.2	0.9		1.8
RMH-27	359808.992	2889828.070	47.959	2	2		2.65

RAIN WATER MANHOLE SCHEDULE							
RMH Tag	X Coordinate	Y Coordinate	FGL	MH Width	MH Length	MH Dia	MH Depth
RMH-30	359796.034	2889798.047	47.957	2	2		2.7
RMH-31	359787.515	2889778.307	47.971	2	2.2		2.75
RMH-32	359775.700	2889750.730	47.968	2	2.2		2.79
RMH-35	359762.122	2889719.066	47.990	2	2.2		2.9
RMH-37	359751.518	2889694.194	47.985	2.3	2.3		2.9
RMH-38	359771.137	2889685.901	48.148	2.3	2		2.95
RMH-39	359810.612	2889701.859	48.818			1.2	1.5
RMH-40	359803.211	2889684.687	48.778			1.2	1.55
RMH-41	359798.494	2889674.138	48.083	2.3	2		3
RMH-42	359822.609	2889657.145	48.121	2	2.3		3.05
RMH-43	359804.675	2889615.589	48.098	2	2.3		3
RMH-44	359791.598	2889585.290	48.048	2	2.3		3
RMH-45	359781.692	2889562.337	48.028	2	2.3		3
RMH-46	359771.785	2889539.383	48.046	2.3	2.3		2.975
RMH-47	359790.392	2889528.085	47.978	2.3	2		2.9
RMH-48	359818.854	2889515.801	47.947	2.3	2		2.95
RMH-49	359849.323	2889502.655	47.921	2.3	2.3		2.935
RMH-50	359858.455	2889523.904	47.956	2	2.3		2.99
RMH-51	359867.620	2889545.138	47.949	2.3	2.3		2.985
RMH-52	359947.781	2890034.316	49.057			0.9	0.75
RMH-53	359944.884	2890019.560	49.098			0.9	0.79
RMH-54	359963.805	2889994.786	49.061			0.9	0.8

RAIN WATER MANHOLE SCHEDULE							
RMH Tag	X Coordinate	Y Coordinate	FGL	MH Width	MH Length	MH Dia	MH Depth
RMH-56	359986.655	2889992.438	49.160			0.9	1.05
RMH-57	360010.661	2889977.346	49.195			0.9	1.21
RMH-58	360037.579	2889961.860	49.184			0.9	1.42
RMH-59	360060.414	2889968.121	49.097			0.9	1.31
RMH-60	360073.763	2889962.360	49.012			0.9	1.25
RMH-61	360072.181	2889930.337	49.087			1.2	1.5
RMH-62	360040.556	2889911.298	48.962			0.9	1.25
RMH-63	360060.431	2889902.764	48.893	1.4	1.4		1.8
RMH-64	360048.116	2889879.217	48.863	1.4	1.4		1.8
RMH-65	360037.055	2889851.316	48.818	1.4	1.2		1.9
RMH-66	360026.158	2889826.067	48.785	1.4	1.4		1.975
RMH-67	360004.072	2889817.497	48.941			1.2	1.65
RMH-68	359999.872	2889807.768	48.880			1.2	1.75
RMH-69	360015.361	2889801.050	48.702	1.4	1.4		2.101
RMH-70	360007.991	2889783.973	48.652	1.4	1.4		2.124
RMH-71	359997.688	2889760.101	48.638	1.4	1.4		2.17
RMH-72	359985.406	2889734.469	48.638	1.4	1.4		2.2
RMH-73	359958.080	2889719.174	48.852			0.9	1.35
RMH-75	359976.248	2889707.624	48.600	1.4	1.4		2.314
RMH-76	359958.824	2889677.807	48.678	1.4	1.4		2.45
RMH-77	359946.054	2889650.286	48.478	1.4	1.6		2.15
RMH-78	359929.866	2889646.234	48.488	1.6	1.4		3

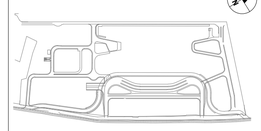
RAIN WATER MANHOLE SCHEDULE							
RMH Tag	X Coordinate	Y Coordinate	FGL	MH Width	MH Length	MH Dia	MH Depth
RMH-79	359889.717	2889698.569	49.037			1.2	1.65
RMH-80	359883.796	2889672.337	49.007			0.9	1.4
RMH-81	359893.452	2889645.052	48.216	2	2		3.2
RMH-82	359881.062	2889616.635	48.168	2	2		3.25
RMH-83	359868.263	2889586.979	48.043	2	2		3.05
RMH-84	359852.968	2889551.539	47.988	2.3	2		3.1



1 ROOF WATER PIPE LAYOUT

1 : 1000

KEY PLAN



GENERAL NOTES

1. DO NOT SCALE DRAWING.
2. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH RELEVANT STRUCTURAL AND SERVICES DRAWINGS.
3. THE DRAWING IS IN METRIC SCALE.
4. ALL LEVELS TO BE VERIFIED ON SITE.
5. FOLLOW WRITTEN DIMENSIONS ONLY, UNLESS SPECIFIED OTHERWISE.
6. INCASE OF ANY DISCREPANCY PLEASE CONTACT THE ENGINEER.

LEGENDS

LEGEND :-

	RWP	ROOF WATER NETWORK
		FLOW DIRECTION
	RMH	RECTANGULAR MANHOLE
	RMH	CIRCULAR MANHOLE
	CB	CATCH BASIN

REVISION	DATE	DESCRIPTION
5	25-JAN-2024	GOOD FOR CONSTRUCTION
4	03-JAN-2024	GOOD FOR CONSTRUCTION
3	28-DEC-2023	GOOD FOR CONSTRUCTION
2	27-DEC-2023	GOOD FOR CONSTRUCTION
1	19-DEC-2023	GOOD FOR CONSTRUCTION

DRAWING STATUS GOOD FOR CONSTRUCTION

PURPOSE GOOD FOR CONSTRUCTION

MASTER ARCHITECT :-

NUDES

214/314, Vasan Udyog Bhawan, Lower Parel, Mumbai 400013.
Phone: +91 22 62372299
www.nudesfirm.com

SUB CONSULTANT :-

CLIENT / OWNER

GUWAHATI INTERNATIONAL AIRPORT LTD.

LEAD CONSULTANT

AECOM
9th Floor, Infinity Tower-'C', DLF Cybercit, DLF Phase 2, Gurgaon, 122002
T: +91 124 4830700
F 91 124 4830108
Email : www.aecom.com

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PROJECT: PROJECT MANAGEMENT CONSULTANT FOR CONSTRUCTION OF A NEW INTEGRATED TERMINAL BUILDING AT GUWAHATI AIRPORT

DRAWING TITLE :

LANDSIDE NITB ROOF WATER PIPE LAYOUT

DWG NO : GWA-ACM-TB-BS-DR-CV-015

REV. 5

DRAWN BY:	DESIGNED BY:	CHECKED BY:	APPROVED BY:	DATE OF FIRST
MA	SS	SH	UJ	29.11.2023

PROJECT NO : 1170

0 25 50 75 100 125

SCALE @ 1000

SHEET SIZE A1

भारत सरकार
जल शक्ति मंत्रालय
जल संसाधन, नदी विकास
और गंगा संरक्षण विभाग
केन्द्रीय भूमि जल प्राधिकरण
Government of India
Ministry of Jal Shakti
Department of Water Resources,
River Development & Ganga Rejuvenation
Central Ground Water Authority

(भूजल निकासी हेतु अनापत्ति प्रमाण पत्र)

NO OBJECTION CERTIFICATE (NOC) FOR GROUND WATER ABSTRACTION

Project Name:	Guwahati Airport Integrated Terminal Building		
Project Address:	Shapoorji Pallonji And Company Private Limited, Oppo Krian Shree Grand Hotel, Sos Village Road		
Village:	Mairapur	Block:	Rani
District:	Kamrup	State:	Assam
Pin Code:			
Communication Address:	Shapoorji Pallonji And Company Private Limited, Opo Kiran Shree Grand Hotel, Sos Village Road, Rani, Kamrup, Assam - 781015		
Address of CGWB Regional Office :	Central Ground Water Board North Eastern Region, Betkuchi, Opposite Isbt,, Nh-37, Guwahati,, Kamrup Metro, Assam - 781005		

1.	**NOC No.:**	CGWA/NOC/INF/ORIG/2022/15292			
2.	Application No.:	21-4/1688/AS/INF/2022	3.	Category: (GWRE 2020)	Safe
4.	Project Status:	New Project	5.	NOC Type:	New
6.	**Valid from:**	26/04/2022	7.	**Valid up to:**	25/04/2027
8.	Ground Water Abstraction Permitted:				

Fresh Water		Saline Water		Dewatering		Total	
m³/day	m³/year	m³/day	m³/year	m³/day	m³/year	m³/day	m³/year
80.00	29200.00						

9. Details of ground water abstraction /Dewatering structures

	Total Existing No.:4						Total Proposed No.:0					
	DW	DCB	BW	TW	MP	MPu	DW	DCB	BW	TW	MP	MPu
Abstraction Structure*	0	0	4	0	0	0	0	0	0	0	0	0

*DW- Dug Well; DCB-Dug-cum-Bore Well; BW-Bore Well; TW-Tube Well; MP-Mine Pit;MPu-Mine Pumps

10.	Ground Water Abstraction/Restoration Charges paid (Rs.):	29200.00

11.	Number of Piezometers(Observation wells) to be constructed/ monitored & Monitoring mechanism.	No. of Piezometers	Monitoring Mechanism		
			Manual	DWLR**	DWLR With Telemetry
	**DWLR - Digital Water Level Recorder	1	0	1	0

(Compliance Conditions given overleaf)

This is an auto generated document & need not to be signed.

18/11, जामनगर हाउस, मानसिंह रोड, नई दिल्ली - 110011 / 18/11, Jamnagar House, Mansingh Road, New Delhi-110011
Phone: (011) 23383561 Fax: 23382051, 23386743
Website: cgwa-noc.gov.in

पानी बचाये – जीवन बचाये
SAVE WATER - SAVE LIFE

Validity of this NOC shall be subject to compliance of the following conditions:

Mandatory conditions:

1) Installation of tamper proof digital water flow meter with telemetry on all the abstraction structure(s) shall be mandatory for all users seeking No Objection Certificate and intimation regarding their installation shall be communicated to the CGWA within 30 days of grant of No Objection Certificate.

2) Proponents shall mandatorily get water flow meter calibrated from an authorized agency once in a year.

3) Construction of purpose-built observation wells (piezometers) for ground water level monitoring shall be mandatory as per Section 14 of Guidelines. Water level data shall be made available to CGWA through web portal. Detailed guidelines for construction of piezometers are given in Annexure-II of the guidelines.

4) Proponents shall monitor quality of ground water from the abstraction structure(s) once in a year. Water samples from bore wells/ tube wells / dug wells shall be collected during April/May every year and analysed in NABL accredited laboratories for basic parameters (cations and anions), heavy metals, pesticides/ organic compounds etc. Water quality data shall be made available to CGWA through the web portal.

5) In case of mining projects, additional key wells shall be established in consultation with the Regional Director, CGWB for ground water level monitoring four (4) times a year (January, May, August and November) in core as well as buffer zones of the mine.

6) In case of mining project the firm shall submit water quality report of mine discharge/ seepage from Govt. approved/ NABL accredited lab.

7) The firm shall report compliance of the NOC conditions online in the website (www.cgwa-noc.gov.in) within one year from the date of issue of this NOC.

8) Industries abstracting ground water in excess of 100 m 3 /d shall undertake annual water audit through certified auditors and submit audit reports within three months of completion of the same to CGWA. All such industries shall be required to reduce their ground water use by at least 20% over the next three years through appropriate means.

9) Application for renewal can be submitted online from 90 days before the expiry of NOC. Ground water withdrawal, if any, after expiry of NOC shall be illegal & liable for legal action as per provisions of Environment (Protection) Act, 1986.

10) This NOC is subject to prevailing Central/State Government rules/laws/norms or Court orders related to construction of tube well/ground water abstraction structure / recharge or conservation structure/discharge of effluents or any such matter as applicable.

General conditions:

11) No additional ground water abstraction and/or de-watering structures shall be constructed for this purpose without prior approval of the Central Ground Water Authority (CGWA).

12) The proponent shall seek prior permission from CGWA for any increase in quantum of groundwater abstraction (more than that permitted in NOC for specific period).

13) Proponents shall install roof top rain water harvesting in the premise as per the existing building bye laws in the premise.

14) The project proponent shall take all necessary measures to prevent contamination of ground water in the premises failing which the firm shall be responsible for any consequences arising thereupon.

15) In case of industries that are likely to contaminate the ground water, no recharge measures shall be taken up by the firm inside the plant premises. The runoff generated from the rooftop shall be stored and put to beneficial use by the firm.

16) Wherever feasible, requirement of water for greenbelt (horticulture) shall be met from recycled / treated waste water.

17) Wherever the NOC is for abstraction of saline water and the existing wells (s) is /are yielding fresh water, the same shall be sealed and new tubewell(s) tapping saline water zone shall be constructed within 3 months of the issuance of NOC. The firm shall also ensure safe disposal of saline residue, if any.

18) Unexpected variations in inflow of ground water into the mine pit, if any, shall be reported to the concerned Regional Director, Central Ground Water Board.

19) In case of violation of any NOC conditions, the applicant shall be liable to pay the penalties as per Section 16 of Guidelines.

20) This NOC does not absolve the proponents of their obligation / requirement to obtain other statutory and administrative clearances from appropriate authorities.

21) The issue of this NOC does not imply that other statutory / administrative clearances shall be granted to the project by the concerned authorities. Such authorities would consider the project on merits and take decisions independently of the NOC.

22) In case of change of ownership, new owner of the industry will have to apply for incorporation of necessary changes in the No Objection Certificate with documentary proof within 60 days of taking over possession of the premises.

23) This NOC is being issued without any prejudice to the directions of the Hon'ble NGT/court orders in cases related to ground water or any other related matters.

24) Proponents, who have installed/constructed artificial recharge structures in compliance of the NOC granted to them previously and have availed rebate of upto 50% (fifty percent) in the ground water abstraction charges/ground water restoration charges, shall continue to regularly maintain artificial recharge structures.

25) Industries which are likely to cause ground water pollution e.g. Tanning, Slaughter Houses, Dye, Chemical/ Petrochemical, Coal washeries, pharmaceutical, other hazardous units etc. (as per CPCB list) need to undertake necessary well head protection measures to ensure prevention of ground water pollution as per Annexure III of the guidelines.

26) In case of new infrastructure projects having ground water abstraction of more than 20 m3/day, the firm/entity shall ensure implementation of dual water supply system in the projects.

27) In case of infrastructure projects, paved/parking area must be covered with interlocking/perforated tiles or other suitable measures to ensure groundwater infiltration/harvesting.

28) In case of coal and other base metal mining projects, the project proponent shall use the advance dewatering technology (by construction of series of dewatering abstraction structures) to avoid contamination of surface water.

29) The NOC issued is conditional subject to the conditions mentioned in the Public notice dated 27.01.2021 failing which penalty/EC/cancellation of NOC shall be imposed as the case may be.
30) This NOC is issued subject to the clearance of Expert Appraisal Committee (EAC) (if applicable).

(Non-compliance of the conditions mentioned above is likely to result in the cancellation of NOC and legal action against the proponent.)

CENTRAL GROUND WATER AUTHORITY

Department of Agriculture & Cooperation, Ministry of Agriculture & Farmers Welfare Government of India.

Krishi Vigyan Kendra, Bishnupur District, Manipur, ATARI, Zone-VII.

SOIL HEALTH CARD

Swasth Dhara, Khet Haraa

SOIL HEALTH CARD			Name of Laboratory	Soil Testing Unit, KVK-Bishnupur, Manipur			
Farmer's Details							
Name	SPCPL (NITB-AAI) Guwahati						
Address	SOS ROAD, CPP, Kiranshree Grand						
Village	Borjhar						
Sub-District	-						
District	Kamrup						
PIN	781015						
Aadhaar Number	-						
Mobile Number	9283747741						
Soil Sample Details							
Soil Sample Number	0137469						
Sample Collected on	08/12/18						
Survey No.	NIL						
Khasra No. / Dag No.	NIL						
Farm Size	NIL						
Geo Position (GPS)	Latitude: NIL	Longitude: NIL					
Irrigated / Rainfed	NIL						

SOIL TEST RESULTS

S. No.	Parameter	Test Value	Unit	Rating
1	pH	**5.22**	1-14 scale	**Strongly acidic**
2	EC	**1.0**	dSm^{-1}	**Certified for growth**
3	Organic Carbon (OC)	**0.6**	P.C.	**Low**
4	Available Nitrogen (N)	**100.3**	Kg/ha	**Low**
5	Available Phosphorus (P)	**10.1**	Kg/ha	**Low**
6	Available Potassium (K)	**90.2**	Kg/ha	**Low**
7	Available Sulphur (S)	**6.4**	mg/kg soil	**Low**
8	Available Zinc (Zn)	**0.1**	mg/kg soil	**low**
9	Available Boron (B)		mg/kg soil	**NIL**
10	Available Iron (Fe)	**10.2**	mg/kg soil	**High**
11	Available Manganese (Mn)	**11.5**	mg/kg soil	**High**
12	Available Copper (Cu)	**0.1**	mg/kg soil	**Low**

Remark: Not suitable for crop production

Date of issue : 29/12/2018

Principal Scientist & Head

भारत सरकार
जल शक्ति मंत्रालय
जल संसाधन, नदी विकास
और गंगा संरक्षण विभाग
केन्द्रीय भूमि जल प्राधिकरण
Government of India
Ministry of Jal Shakti
Department of Water Resources,
River Development & Ganga Rejuvenation
Central Ground Water Authority

(भूजल निकासी हेतु अनापत्ति प्रमाण पत्र)

NO OBJECTION CERTIFICATE (NOC) FOR GROUND WATER ABSTRACTION

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Project Address:	Shapoorji Pallonji And Company Private Limited, Oppo Krian Shree Grand Hotel, Sos Village Road		
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District:	Kamrup	State:	Assam
Pin Code:			
Communication Address:	Shapoorji Pallonji And Company Private Limited, Opo Kiran Shree Grand Hotel, Sos Village Road, Rani, Kamrup, Assam - 781015		
Address of CGWB Regional Office :	Central Ground Water Board North Eastern Region, Betkuchi, Opposite Isbt,, Nh-37, Guwahati,, Kamrup Metro, Assam - 781005		

1.	**NOC No.:**	CGWA/NOC/INF/ORIG/2022/15292			
2.	Application No.:	21-4/1688/AS/INF/2022	3.	Category: (GWRE 2020)	Safe
4.	Project Status:	New Project	5.	NOC Type:	New
6.	**Valid from:**	26/04/2022	7.	**Valid up to:**	25/04/2027
8.	Ground Water Abstraction Permitted:				

Fresh Water		Saline Water		Dewatering		Total	
m³/day	m³/year	m³/day	m³/year	m³/day	m³/year	m³/day	m³/year
80.00	29200.00						

9. Details of ground water abstraction /Dewatering structures

	Total Existing No.:4						Total Proposed No.:0					
	DW	DCB	BW	TW	MP	MPu	DW	DCB	BW	TW	MP	MPu
Abstraction Structure*	0	0	4	0	0	0	0	0	0	0	0	0

*DW- Dug Well; DCB-Dug-cum-Bore Well; BW-Bore Well; TW-Tube Well; MP-Mine Pit;MPu-Mine Pumps

10.	Ground Water Abstraction/Restoration Charges paid (Rs.):	29200.00

11.	Number of Piezometers(Observation wells) to be constructed/ monitored & Monitoring mechanism.	No. of Piezometers	Monitoring Mechanism		
			Manual	DWLR**	DWLR With Telemetry
	**DWLR - Digital Water Level Recorder	1	0	1	0

(Compliance Conditions given overleaf)

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18/11, जामनगर हाउस, मानसिंह रोड, नई दिल्ली - 110011 / 18/11, Jamnagar House, Mansingh Road, New Delhi-110011
Phone: (011) 23383561 Fax: 23382051, 23386743
Website: cgwa-noc.gov.in

पानी बचाये – जीवन बचाये
SAVE WATER - SAVE LIFE

Validity of this NOC shall be subject to compliance of the following conditions:

Mandatory conditions:

1) Installation of tamper proof digital water flow meter with telemetry on all the abstraction structure(s) shall be mandatory for all users seeking No Objection Certificate and intimation regarding their installation shall be communicated to the CGWA within 30 days of grant of No Objection Certificate.

2) Proponents shall mandatorily get water flow meter calibrated from an authorized agency once in a year.

3) Construction of purpose-built observation wells (piezometers) for ground water level monitoring shall be mandatory as per Section 14 of Guidelines. Water level data shall be made available to CGWA through web portal. Detailed guidelines for construction of piezometers are given in Annexure-II of the guidelines.

4) Proponents shall monitor quality of ground water from the abstraction structure(s) once in a year. Water samples from bore wells/ tube wells / dug wells shall be collected during April/May every year and analysed in NABL accredited laboratories for basic parameters (cations and anions), heavy metals, pesticides/ organic compounds etc. Water quality data shall be made available to CGWA through the web portal.

5) In case of mining projects, additional key wells shall be established in consultation with the Regional Director, CGWB for ground water level monitoring four (4) times a year (January, May, August and November) in core as well as buffer zones of the mine.

6) In case of mining project the firm shall submit water quality report of mine discharge/ seepage from Govt. approved/ NABL accredited lab.

7) The firm shall report compliance of the NOC conditions online in the website (www.cgwa-noc.gov.in) within one year from the date of issue of this NOC.

8) Industries abstracting ground water in excess of 100 m 3 /d shall undertake annual water audit through certified auditors and submit audit reports within three months of completion of the same to CGWA. All such industries shall be required to reduce their ground water use by at least 20% over the next three years through appropriate means.

9) Application for renewal can be submitted online from 90 days before the expiry of NOC. Ground water withdrawal, if any, after expiry of NOC shall be illegal & liable for legal action as per provisions of Environment (Protection) Act, 1986.

10) This NOC is subject to prevailing Central/State Government rules/laws/norms or Court orders related to construction of tube well/ground water abstraction structure / recharge or conservation structure/discharge of effluents or any such matter as applicable.

General conditions:

11) No additional ground water abstraction and/or de-watering structures shall be constructed for this purpose without prior approval of the Central Ground Water Authority (CGWA).

12) The proponent shall seek prior permission from CGWA for any increase in quantum of groundwater abstraction (more than that permitted in NOC for specific period).

13) Proponents shall install roof top rain water harvesting in the premise as per the existing building bye laws in the premise.

14) The project proponent shall take all necessary measures to prevent contamination of ground water in the premises failing which the firm shall be responsible for any consequences arising thereupon.

15) In case of industries that are likely to contaminate the ground water, no recharge measures shall be taken up by the firm inside the plant premises. The runoff generated from the rooftop shall be stored and put to beneficial use by the firm.

16) Wherever feasible, requirement of water for greenbelt (horticulture) shall be met from recycled / treated waste water.

17) Wherever the NOC is for abstraction of saline water and the existing wells (s) is /are yielding fresh water, the same shall be sealed and new tubewell(s) tapping saline water zone shall be constructed within 3 months of the issuance of NOC. The firm shall also ensure safe disposal of saline residue, if any.

18) Unexpected variations in inflow of ground water into the mine pit, if any, shall be reported to the concerned Regional Director, Central Ground Water Board.

19) In case of violation of any NOC conditions, the applicant shall be liable to pay the penalties as per Section 16 of Guidelines.

20) This NOC does not absolve the proponents of their obligation / requirement to obtain other statutory and administrative clearances from appropriate authorities.

21) The issue of this NOC does not imply that other statutory / administrative clearances shall be granted to the project by the concerned authorities. Such authorities would consider the project on merits and take decisions independently of the NOC.

22) In case of change of ownership, new owner of the industry will have to apply for incorporation of necessary changes in the No Objection Certificate with documentary proof within 60 days of taking over possession of the premises.

23) This NOC is being issued without any prejudice to the directions of the Hon'ble NGT/court orders in cases related to ground water or any other related matters.

24) Proponents, who have installed/constructed artificial recharge structures in compliance of the NOC granted to them previously and have availed rebate of upto 50% (fifty percent) in the ground water abstraction charges/ground water restoration charges, shall continue to regularly maintain artificial recharge structures.

25) Industries which are likely to cause ground water pollution e.g. Tanning, Slaughter Houses, Dye, Chemical/ Petrochemical, Coal washeries, pharmaceutical, other hazardous units etc. (as per CPCB list) need to undertake necessary well head protection measures to ensure prevention of ground water pollution as per Annexure III of the guidelines.

26) In case of new infrastructure projects having ground water abstraction of more than 20 m3/day, the firm/entity shall ensure implementation of dual water supply system in the projects.

27) In case of infrastructure projects, paved/parking area must be covered with interlocking/perforated tiles or other suitable measures to ensure groundwater infiltration/harvesting.

28) In case of coal and other base metal mining projects, the project proponent shall use the advance dewatering technology (by construction of series of dewatering abstraction structures) to avoid contamination of surface water.

29) The NOC issued is conditional subject to the conditions mentioned in the Public notice dated 27.01.2021 failing which penalty/EC/cancellation of NOC shall be imposed as the case may be.
30) This NOC is issued subject to the clearance of Expert Appraisal Committee (EAC) (if applicable).

(Non-compliance of the conditions mentioned above is likely to result in the cancellation of NOC and legal action against the proponent.)

CENTRAL GROUND WATER AUTHORITY

ABNS SCIENTIFIC SERVICES

এবিএনএচ চাইন্টিফিক চার্ভিচেচ

এবীএনএস সাইংটীফীক সর্বীসেজ

H-152, Keteki Path, near Radisson Blu, NH 27, Guwahati 781033, Assam

केतेकी पथ, रैडिसन ब्लू के पास, एन एइच २७, गुवाहाटी ७८१०३३, असम

Email: info@abnsscientific.com, abnsscientific@gmail.com Phone: 98640 68513, 98640 89951

TEST REPORT

Report No.: ABNS/EM/010925/06 **Date : 09/01/2025**

Name & Address of the Customer :

M/S ADANI GUWAHATI INTERNATIONAL AIRPORT LIMITED.

Lokpriya Gopinath Bordoloi Internation Airport,

Borjhar, Guwahati, Kamrup (M), Assam-781015.

Ref.: SO:5700336280, Dated:02/01/2024

Sample Description: Ambient Noise

Date of sampling: From 27/12/2024 to 28/12/2024

Test Locations: NITB

ANALYSIS RESULT

Sl. No.	Day Time (Hrs)	Results Leq dB(A) (Day)	Night Time (Hrs)	Results Leq dB(A) (Night)	Reference Method
1	6.00	**53.9**	22.00	**67.3**	IS 9989-2003
2	7.00	**57.6**	23.00	**68.5**	
3	8.00	**70.2**	24.00	**66.3**	
4	9.00	**72.4**	1.00	**61.9**	
5	10.00	**71.9**	2.00	**59.7**	
6	11.00	**73.6**	3.00	**58.2**	
7	12.00	**72.8**	4.00	**55.7**	
8	13.00	**71.9**	5.00	**54.3**	
9	14.00	**72.6**			
10	15.00	**73.1**			
11	16.00	**72.4**			
12	17.00	**70.3**			
13	18.00	**69.5**			
14	19.00	**70.2**			
15	20.00	**68.3**			
16	21.00	**69.4**			
	Leq Day	**69.4**	Leq Night	**61.5**	
	Max (Day)	**73.6**	Max (Night)	**68.5**	
	Min (Day)	**53.9**	Min (Night)	**54.3**	

Ambient Noise Standards(CPCB):

Area Code	Category of Area	Limit in dB(A) Leq	
		Day time	Night time
A.	Industrial area	75	70
B.	Commercial area	65	55
C.	Residential area	55	45
D.	Silence Zone	50	40

***Note**: The results relate to the parameter tested only. Industrial activities are in operation at the time of monitoring.*

----------*End of Report*----------

For ABNS Scientific Services,

Report reviewed By: Dr. Bidyut Jyoti Sarmah (TM)

09/01/2025

Authorized Signatory

(Dr. Mayur Jyoti Mahanta)

ABNS SCIENTIFIC SERVICES

এবিএনএচ চাইন্টিফিক চার্ভিচেচ

এবীএনএস সাইংটীফীক সর্বীসেজ

H-152, Keteki Path, near Radisson Blu, NH 27, Guwahati 781033, Assam

केतेकी पथ, रैडिसन ब्लू के पास, एन एइच २७, गुवाहाटी ७८१०३३, असम

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TEST REPORT

Report No.: ABNS/EM/010925/05 **Date : 09/01/2025**

Name & Address of the Customer :

M/S ADANI GUWAHATI INTERNATIONAL AIRPORT LIMITED.

Lokpriya Gopinath Bordoloi Internation Airport,

Borjhar, Guwahati, Kamrup (M), Assam-781015.

Ref.: SO:5700336280, Dated:02/01/2024 Date of sampling: From 06/12/2024 to 07/12/2024

Sample Description: Ambient Noise **Test Locations: KFC**

ANALYSIS RESULT

Sl. No.	Day Time (Hrs)	Results Leq dB(A) (Day)	Night Time (Hrs)	Results Leq dB(A) (Night)	Reference Method
1	6.00	**55.6**	22.00	**62.5**	IS 9989-2003
2	7.00	**57.3**	23.00	**67.3**	
3	8.00	**62.4**	24.00	**65.8**	
4	9.00	**63.8**	1.00	**59.7**	
5	10.00	**67.8**	2.00	**56.4**	
6	11.00	**71.4**	3.00	**53.9**	
7	12.00	**72.3**	4.00	**54.2**	
8	13.00	**70.5**	5.00	**49.6**	
9	14.00	**69.8**			
10	15.00	**67.4**			
11	16.00	**70.2**			
12	17.00	**67.6**			
13	18.00	**64.3**			
14	19.00	**66.4**			
15	20.00	**67.3**			
16	21.00	**64.2**			
	Leq Day	**66.1**	Leq Night	**58.7**	
	Max (Day)	**72.3**	Max (Night)	**67.3**	
	Min (Day)	**55.6**	Min (Night)	**49.6**	

Ambient Noise Standards(CPCB):

Area Code	Category of Area	Limit in dB(A) Leq	
		Day time	Night time
A.	Industrial area	75	70
B.	Commercial area	65	55
C.	Residential area	55	45
D.	Silence Zone	50	40

***Note**: The results relate to the parameter tested only. Industrial activities are in operation at the time of monitoring.*

----------*End of Report*----------

For ABNS Scientific Services,

Report reviewed By: Dr. Bidyut Jyoti Sarmah (TM)

09/01/2025

Authorized Signatory

(Dr. Mayur Jyoti Mahanta)

ABNS SCIENTIFIC SERVICES

এবিএনএচ চাইন্টিফিক চার্ভিচেচ

এবীএনএস সাইংটীফীক সর্বীসেজ

H-152, Keteki Path, near Radisson Blu, NH 27, Guwahati 781033, Assam

केतेकी पथ, रैडिसन ब्लू के पास, एन एइच २७, गुवाहाटी ७८१०३३, असम

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TEST REPORT

Report No.: ABNS/EM/010925/04	**Date : 09/01/2025**

Name & Address of the Customer :

M/S ADANI GUWAHATI INTERNATIONAL AIRPORT LIMITED.

Lokpriya Gopinath Bordoloi Internation Airport,

Borjhar, Guwahati, Kamrup (M), Assam-781015.

Ref.: SO:5700336280, Dated:02/01/2024	Date of sampling: From 12/12/2024 to 13/12/2024
Sample Description: Ambient Noise	**Test Locations: Power House**

ANALYSIS RESULT

Sl. No.	Day Time (Hrs)	Results Leq dB(A) (Day)	Night Time (Hrs)	Results Leq dB(A) (Night)	Reference Method
1	6.00	**54.7**	22.00	**58.5**	IS 9989-2003
2	7.00	**53.8**	23.00	**59.6**	
3	8.00	**62.4**	24.00	**55.2**	
4	9.00	**65.3**	1.00	**57.3**	
5	10.00	**68.4**	2.00	**54.9**	
6	11.00	**64.9**	3.00	**53.1**	
7	12.00	**69.3**	4.00	**52.6**	
8	13.00	**68.5**	5.00	**51.9**	
9	14.00	**65.2**			
10	15.00	**68.7**			
11	16.00	**67.4**			
12	17.00	**65.2**			
13	18.00	**69.8**			
14	19.00	**63.5**			
15	20.00	**63.1**			
16	21.00	**62.2**			
	Leq Day	**64.5**	Leq Night	**55.4**	
	Max (Day)	**69.8**	Max (Night)	**59.6**	
	Min (Day)	**53.8**	Min (Night)	**51.9**	

Ambient Noise Standards(CPCB):

Area Code	Category of Area	Limit in dB(A) Leq	
		Day time	Night time
A.	Industrial area	75	70
B.	Commercial area	65	55
C.	Residential area	55	45
D.	Silence Zone	50	40

***Note**: The results relate to the parameter tested only. Industrial activities are in operation at the time of monitoring.*

----------*End of Report*----------

For ABNS Scientific Services,

Report reviewed By: Dr. Bidyut Jyoti Sarmah (TM)

Authorized Signatory

(Dr. Mayur Jyoti Mahanta)

ABNS SCIENTIFIC SERVICES

এবিএনএচ চাইন্টিফিক চার্ভিচেচ

এবীএনএস সাইंटीफीक सर्वीसेज

H-152, Keteki Path, near Radisson Blu, NH 27, Guwahati 781033, Assam

केतेकी पथ, रैडिसन ब्लू के पास, एन एइच २७, गुवाहाटी ७८१०३३, असम

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TEST REPORT

Report No. :ABNS/EM/010925/07	**Date : 07/01/2025**

Name & Address of the Customer :

M/S ADANI GUWAHATI INTERNATIONAL AIRPORT LIMITED.

Lokpriya Gopinath Bordoloi Internation Airport,

Borjhar, Guwahati, Kamrup (M), Assam-781015.

Ref.: SO:5700336280, Dated:02/01/2024	**Test Locations: Plane Landing Side (Dekapara Village)**
Sample Description: **Noise Level Monitoring**	(**latitude:** 26.098357N, **longitude:** 91.587898E)

ANALYSIS RESULT

Date of sampling: 04/12/2024

Sl. No.	Day Time (Hrs)	Results Leq dB(A) (Day)	Night Time (Hrs)	Results Leq dB(A) (Night)	Reference Method
1	6.00	**60.5**	22.00	**53.4**	
2	7.00	**57.7**	23.00	**52.7**	
3	8.00	**59.3**	24.00	**52**	
4	9.00	**58.0**	1.00	**51.3**	
5	10.00	**67.4**	2.00	**50.6**	
6	11.00	**59.8**	3.00	**49.9**	
7	12.00	**56.2**	4.00	**49.2**	
8	13.00	**55.6**	5.00	**48.5**	
9	14.00	**65.0**			
10	15.00	**64.4**			**IS 9989-2003**
11	16.00	**59.8**			
12	17.00	**58.2**			
13	18.00	**62.6**			
14	19.00	**62.0**			
15	20.00	**64.4**			
16	21.00	**60.8**			
	Leq Day	**60.7**	Leq Night	**51.0**	
	Max (Day)	**67.4**	Max (Night)	**53.4**	
	Min (Day)	**55.6**	Min (Night)	**48.5**	

Date of sampling: 05/12/2024					
Sl. No.	Day Time (Hrs)	Results Leq dB(A) (Day)	Night Time (Hrs)	Results Leq dB(A) (Night)	Reference Method
1	6.00	56.3	22.00	50.2	IS 9989-2003
2	7.00	58.4	23.00	52.7	
3	8.00	60.2	24.00	55.2	
4	9.00	62.2	1.00	53.7	
5	10.00	64.2	2.00	54.2	
6	11.00	66.1	3.00	57.7	
7	12.00	68.1	4.00	55.2	
8	13.00	65.0	5.00	57.7	
9	14.00	62.0			
10	15.00	63.9			
11	16.00	55.9			
12	17.00	57.8			
13	18.00	69.8			
14	19.00	61.7			
15	20.00	68.7			
16	21.00	65.6			
	Leq Day	62.9	Leq Night	54.6	
	Max (Day)	69.8	Max (Night)	57.7	
	Min (Day)	55.9	Min (Night)	50.2	

Date of sampling: 06/12/2024					
Sl. No.	Day Time (Hrs)	Results Leq dB(A) (Day)	Night Time (Hrs)	Results Leq dB(A) (Night)	Reference Method
1	6.00	57.3	22.00	51.6	IS 9989-2003
2	7.00	60.2	23.00	53.8	
3	8.00	63.3	24.00	55.3	
4	9.00	61.5	1.00	51.7	
5	10.00	58.4	2.00	49.6	
6	11.00	59.5	3.00	51.3	
7	12.00	60.7	4.00	53.7	
8	13.00	62.2	5.00	55.4	
9	14.00	67.7			
10	15.00	65			
11	16.00	61.8			
12	17.00	58.8			
13	18.00	53.6			
14	19.00	58.3			
15	20.00	57.3			
16	21.00	54.5			
	Leq Day	60.0	Leq Night	52.8	
	Max (Day)	67.7	Max (Night)	55.4	
	Min (Day)	53.6	Min (Night)	49.6	

Manjunatha 10/01/2025

Date of sampling: 07/12/2024					
Sl. No.	Day Time (Hrs)	Results Leq dB(A) (Day)	Night Time (Hrs)	Results Leq dB(A) (Night)	Reference Method
1	6.00	62.8	22.00	53.8	IS 9989-2003
2	7.00	60.3	23.00	53.9	
3	8.00	57.8	24.00	54.0	
4	9.00	55.3	1.00	50.1	
5	10.00	62.8	2.00	54.7	
6	11.00	60.3	3.00	53.6	
7	12.00	57.8	4.00	50.4	
8	13.00	65.3	5.00	54.7	
9	14.00	62.8			
10	15.00	56.3			
11	16.00	57.8			
12	17.00	55.3			
13	18.00	62.8			
14	19.00	60.3			
15	20.00	57.8			
16	21.00	55.3			
	Leq Day	59.4	Leq Night	53.2	
	Max (Day)	65.3	Max (Night)	54.7	
	Min (Day)	55.3	Min (Night)	50.1	

Date of sampling: 08/12/2024					
Sl. No.	Day Time (Hrs)	Results Leq dB(A) (Day)	Night Time (Hrs)	Results Leq dB(A) (Night)	Reference Method
1	6.00	57.8	22.00	51.9	IS 9989-2003
2	7.00	62.3	23.00	56.3	
3	8.00	66.8	24.00	55.7	
4	9.00	61.3	1.00	52.1	
5	10.00	55.8	2.00	49.5	
6	11.00	60.3	3.00	53.9	
7	12.00	64.8	4.00	58.3	
8	13.00	59.3	5.00	52.7	
9	14.00	53.8			
10	15.00	58.3			
11	16.00	62.8			
12	17.00	57.3			
13	18.00	61.8			
14	19.00	56.3			
15	20.00	60.8			
16	21.00	65.3			
	Leq Day	60.3	Leq Night	53.8	
	Max (Day)	66.8	Max (Night)	58.3	

Date of sampling: 09/12/2024

Sl. No.	Day Time (Hrs)	Results Leq dB(A) (Day)	Night Time (Hrs)	Results Leq dB(A) (Night)	Reference Method
1	6.00	**63.4**	22.00	**55.4**	IS 9989-2003
2	7.00	**62.8**	23.00	**54.6**	
3	8.00	**60.3**	24.00	**53.3**	
4	9.00	**59.1**	1.00	**52.3**	
5	10.00	**57.5**	2.00	**51.3**	
6	11.00	**66.0**	3.00	**50.2**	
7	12.00	**54.4**	4.00	**49.2**	
8	13.00	**58.9**	5.00	**48.1**	
9	14.00	**61.3**			
10	15.00	**57.8**			
11	16.00	**58.2**			
12	17.00	**56.7**			
13	18.00	**55.1**			
14	19.00	**63.6**			
15	20.00	**56.0**			
16	21.00	**60.5**			
	Leq Day	**59.5**	Leq Night	**51.8**	
	Max (Day)	**66.0**	Max (Night)	**55.4**	
	Min (Day)	**54.4**	Min (Night)	**48.1**	

Date of sampling: 10/12/2024

Sl. No.	Day Time (Hrs)	Results Leq dB(A) (Day)	Night Time (Hrs)	Results Leq dB(A) (Night)	Reference Method
1	6.00	**56.6**	22.00	**49.7**	IS 9989-2003
2	7.00	**57.3**	23.00	**52.3**	
3	8.00	**61.4**	24.00	**54.9**	
4	9.00	**62.5**	1.00	**57.5**	
5	10.00	**64.9**	2.00	**60.1**	
6	11.00	**57.1**	3.00	**52.7**	
7	12.00	**69.4**	4.00	**55.3**	
8	13.00	**61.4**	5.00	**57.9**	
9	14.00	**63.6**			
10	15.00	**55.8**			
11	16.00	**58.0**			
12	17.00	**57.2**			
13	18.00	**62.3**			
14	19.00	**64.5**			
15	20.00	**56.7**			
16	21.00	**56.9**			
	Leq Day	**60.3**	Leq Night	**55.1**	
	Max (Day)	**69.4**	Max (Night)	**60.1**	
	Min (Day)	**55.8**	Min (Night)	**49.7**	

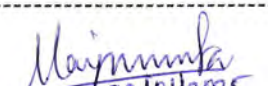
Ambient Noise Standards(CPCB):

Area Code	Category of Area	Limit in dB(A) Leq		
		Day time	Night time	
A.	Industrial area	75	70	Day time: 6.00-22.00 hr. Night time: 22.00-6.00 hr
B.	Commercial area	65	55	
C.	Residential area	55	45	
D.	Silence Zone	50	40	

***Note**: The results relate to the parameter tested only.*

----------*End of Report*----------

For ABNS Scientific Services,



Report reviewed By: Dr. Bidyut J Sarmah (TM)

Authorized Signatory

ABNS SCIENTIFIC SERVICES

এবিএনএচ চাইন্টিফিক চার্ভিচেচ

এবীএনএস সাইংটীফীক সর্বীসেজ

H-152, Keteki Path, near Radisson Blu, NH 27, Guwahati 781033, Assam

केतेकी पथ, रैडिसन ब्लू के पास, एन एइच २७, गुवाहाटी ७८१०३३, असम

Email: info@abnsscientific.com, abnsscientific@gmail.com Phone: 98640 68513, 98640 89951

TEST REPORT

Report No. :ABNS/EM/010925/08	**Date : 09/01/2025**
Name & Address of the Customer : **M/S ADANI GUWAHATI INTERNATIONAL AIRPORT LIMITED.** Lokpriya Gopinath Bordoloi Internation Airport, Borjhar, Guwahati, Kamrup (M), Assam-781015.	
Ref.: SO:5700336280, Dated:02/01/2024 Sample Description: **Noise Level Monitoring**	**Test Locations: Plane Take Off Side (Kuhabari Village)** (**latitude:** 26.138901N, **longitude:** 91.603376E)

ANALYSIS RESULT

Date of sampling: 12/12/2024

Sl. No.	Day Time (Hrs)	Results Leq dB(A) (Day)	Night Time (Hrs)	Results Leq dB(A) (Night)	Reference Method
1	6.00	**54.7**	22.00	**49.7**	IS 9989-2003
2	7.00	**55.2**	23.00	**51.3**	
3	8.00	**55.8**	24.00	**50.4**	
4	9.00	**56.3**	1.00	**50.2**	
5	10.00	**56.9**	2.00	**51.5**	
6	11.00	**57.4**	3.00	**52.9**	
7	12.00	**58.0**	4.00	**52.2**	
8	13.00	**53.3**	5.00	**49.6**	
9	14.00	**56.1**			
10	15.00	**59.6**			
11	16.00	**60.2**			
12	17.00	**60.7**			
13	18.00	**63.5**			
14	19.00	**60.8**			
15	20.00	**62.4**			
16	21.00	**62.9**			
	Leq Day	**58.4**	Leq Night	**51.0**	
	Max (Day)	**63.5**	Max (Night)	**52.9**	
	Min (Day)	**53.3**	Min (Night)	**49.6**	

Date of sampling: 13/12/2024					
Sl. No.	Day Time (Hrs)	Results Leq dB(A) (Day)	Night Time (Hrs)	Results Leq dB(A) (Night)	Reference Method
1	6.00	55.3	22.00	50.2	IS 9989-2003
2	7.00	51.7	23.00	45.6	
3	8.00	62.3	24.00	51	
4	9.00	64.4	1.00	56.4	
5	10.00	64.5	2.00	51.8	
6	11.00	59.0	3.00	52.2	
7	12.00	62.1	4.00	52.6	
8	13.00	55.2	5.00	49.2	
9	14.00	58.3			
10	15.00	51.4			
11	16.00	64.5			
12	17.00	57.6			
13	18.00	60.7			
14	19.00	63.9			
15	20.00	57.0			
16	21.00	60.1			
	Leq Day	59.2	Leq Night	51.1	
	Max (Day)	64.5	Max (Night)	56.4	
	Min (Day)	51.4	Min (Night)	45.6	

Date of sampling: 14/12/2024					
Sl. No.	Day Time (Hrs)	Results Leq dB(A) (Day)	Night Time (Hrs)	Results Leq dB(A) (Night)	Reference Method
1	6.00	64.4	22.00	56.3	IS 9989-2003
2	7.00	59.2	23.00	53.7	
3	8.00	54	24.00	51.1	
4	9.00	58.8	1.00	48.5	
5	10.00	63.6	2.00	55.9	
6	11.00	68.4	3.00	50.3	
7	12.00	63.2	4.00	55.7	
8	13.00	58	5.00	49.1	
9	14.00	62.8			
10	15.00	57.6			
11	16.00	62.4			
12	17.00	67.2			
13	18.00	62			
14	19.00	53.2			
15	20.00	58.4			
16	21.00	63.6			
	Leq Day	61.1	Leq Night	52.6	
	Max (Day)	68.4	Max (Night)	56.3	
	Min (Day)	53.2	Min (Night)	48.5	

Date of sampling: 15/12/2024					
Sl. No.	Day Time (Hrs)	Results Leq dB(A) (Day)	Night Time (Hrs)	Results Leq dB(A) (Night)	Reference Method
1	6.00	55.6	22.00	50.7	IS 9989-2003
2	7.00	57.3	23.00	51.5	
3	8.00	56.6	24.00	49.3	
4	9.00	57.5	1.00	50.1	
5	10.00	58.2	2.00	53.9	
6	11.00	57.5	3.00	51.7	
7	12.00	58.4	4.00	52.5	
8	13.00	59.3	5.00	53.3	
9	14.00	60.6			
10	15.00	60.5			
11	16.00	60.8			
12	17.00	61.4			
13	18.00	58.5			
14	19.00	59.2			
15	20.00	54.3			
16	21.00	56.5			
	Leq Day	58.3	Leq Night	51.6	
	Max (Day)	61.4	Max (Night)	53.9	
	Min (Day)	54.3	Min (Night)	49.3	

Date of sampling: 16/12/2024					
Sl. No.	Day Time (Hrs)	Results Leq dB(A) (Day)	Night Time (Hrs)	Results Leq dB(A) (Night)	Reference Method
1	6.00	61.4	22.00	54.2	IS 9989-2003
2	7.00	60.3	23.00	52.8	
3	8.00	57.3	24.00	50.4	
4	9.00	56.8	1.00	48.7	
5	10.00	64.8	2.00	56.8	
6	11.00	63.1	3.00	54.9	
7	12.00	61.4	4.00	56.0	
8	13.00	62.7	5.00	56.1	
9	14.00	58.0			
10	15.00	66.4			
11	16.00	54.7			
12	17.00	59.0			
13	18.00	61.3			
14	19.00	59.6			
15	20.00	61.0			
16	21.00	61.3			
	Leq Day	60.6	Leq Night	53.7	
	Max (Day)	66.4	Max (Night)	56.8	
	Min (Day)	54.7	Min (Night)	48.7	



Date of sampling: 17/12/2024					
Sl. No.	Day Time (Hrs)	Results Leq dB(A) (Day)	Night Time (Hrs)	Results Leq dB(A) (Night)	Reference Method
1	6.00	60.5	22.00	55.2	IS 9989-2003
2	7.00	59.7	23.00	54.3	
3	8.00	62.5	24.00	53.4	
4	9.00	62.7	1.00	52.5	
5	10.00	63.2	2.00	58.6	
6	11.00	57.4	3.00	50.7	
7	12.00	60.2	4.00	55.8	
8	13.00	61.5	5.00	54.9	
9	14.00	67.2			
10	15.00	59.4			
11	16.00	59.9			
12	17.00	60.4			
13	18.00	63.5			
14	19.00	61.3			
15	20.00	63.2			
16	21.00	64.9			
	Leq Day	61.7	Leq Night	54.4	
	Max (Day)	67.2	Max (Night)	58.6	
	Min (Day)	57.4	Min (Night)	50.7	

Date of sampling: 18/12/2024					
Sl. No.	Day Time (Hrs)	Results Leq dB(A) (Day)	Night Time (Hrs)	Results Leq dB(A) (Night)	Reference Method
1	6.00	58.3	22.00	51.7	IS 9989-2003
2	7.00	61.5	23.00	55.3	
3	8.00	59.4	24.00	52.4	
4	9.00	60.3	1.00	52.3	
5	10.00	55.9	2.00	50.1	
6	11.00	58.2	3.00	51.6	
7	12.00	61.7	4.00	52.5	
8	13.00	62.5	5.00	53.3	
9	14.00	60.4			
10	15.00	58.8			
11	16.00	57.2			
12	17.00	63.6			
13	18.00	62.0			
14	19.00	60.4			
15	20.00	60.8			
16	21.00	62.1			
	Leq Day	60.2	Leq Night	52.4	
	Max (Day)	63.6	Max (Night)	55.3	
	Min (Day)	55.9	Min (Night)	50.1	

Ambient Noise Standards(CPCB):

Area Code	Category of Area	Limit in dB(A) Leq		
		Day time	Night time	
A.	Industrial area	75	70	Day time: 6.00-22.00 hr. Night time: 22.00-6.00 hr
B.	Commercial area	65	55	
C.	Residential area	55	45	
D.	Silence Zone	50	40	

***Note**: The results relate to the parameter tested only.*

----------*End of Report*----------

For ABNS Scientific Services,

09/01/2025

Report reviewed By: Dr. Bidyut J Sarmah (TM)

Authorized Signatory
(Dr. Mayur Jyoti Mahanta)

ABNS SCIENTIFIC SERVICES

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এবীএনএস সাইংটীফীক সর্বীসেজ

H-152, Keteki Path, near Radisson Blu, NH 27, Guwahati 781033, Assam

केतेकी पथ, रैडिसन ब्लू के पास, एन एइच २७, गुवाहाटी ७८१०३३, असम

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TEST REPORT

Report Number: ABNS/EM/010925/24	**Date : 09/01/2025**
Name & Address of the Customer : **M/S ADANI GUWAHATI INTERNATIONAL AIRPORT LIMITED.** Lokpriya Gopinath Bordoloi Internation Airport, Borjhar, Guwahati, Kamrup (M), Assam-781015.	
Ref.: SO:5700336280, Dated:02/01/2024 **Sample Description: Noise Level (DG)** DG Details:DG-4(750 KVA JAKSON) (Sr. No: DV2.5102) Location: Power House	*Sample Id: ABNS/GHY/123024/DGNL06* Date of sampling: 30/12/2024

ANALYSIS RESULT

Sl. No.	Test Locations	Approx. distance from source	Noise Level in dB(A) in Leq	Remarks	Reference Method
1	750 KVA	1 meter-East	74.6	DG Set is in operation	IS/ISO 8528 (Part 10), Reaff.2019
2		1 meter-North	73.4		
3		1 meter-West	73.7		
4		1 meter-South	74.1		

Note:

- *The results relate to the parameter tested only.*
- *All data are collected during day time.*
- *Acoustic Enclosure Enclosed.*
- *Noise Level for DG set 75dB (A) at 1 meter distance.*

----------*End of Report*----------

For ABNS Scientific Services,

09/01/2025

Report reviewed By: Dr. Bidyut J Sarma (TM)

Authorized Signatory
Dr. Mayur Jyoti Mahanta(QM)

ABNS SCIENTIFIC SERVICES

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TEST REPORT

Report Number: ABNS/EM/010925/23	**Date : 09/01/2025**
Name & Address of the Customer : **M/S ADANI GUWAHATI INTERNATIONAL AIRPORT LIMITED.** Lokpriya Gopinath Bordoloi Internation Airport, Borjhar, Guwahati, Kamrup (M), Assam-781015.	
Ref.: SO:5700336280, Dated:02/01/2024 **Sample Description: Noise Level (DG)** DG Details:DG-3(750 KVA JAKSON) (Sr. No: CJS-07113318) Location: Power House	*Sample Id: ABNS/GHY/123024/DGNL05* Date of sampling: 30/12/2024

ANALYSIS RESULT

Sl. No.	Test Locations	Approx. distance from source	Noise Level in dB(A) in Leq	Remarks	Reference Method
1	750 KVA	1 meter-East	74.1	DG Set is in operation	IS/ISO 8528 (Part 10), Reaff.2019
2		1 meter-North	73.8		
3		1 meter-West	74.3		
4		1 meter-South	73.7		

Note:

- *The results relate to the parameter tested only.*
- *All data are collected during day time.*
- *Acoustic Enclosure Enclosed.*
- *Noise Level for DG set 75dB (A) at 1 meter distance.*

----------*End of Report*----------

For ABNS Scientific Services,

09/01/2025

Authorized Signatory
Dr. Mayur Jyoti Mahanta(QM)

Report reviewed By: Dr. Bidyut J Sarma (TM)

ABNS SCIENTIFIC SERVICES

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H-152, Keteki Path, near Radisson Blu, NH 27, Guwahati 781033, Assam

केतेकी पथ, रैडिसन ब्लू के पास, एन एइच २७, गुवाहाटी ७८१०३३, असम

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TEST REPORT

Report Number: ABNS/EM/010925/22	**Date : 09/01/2025**

Name & Address of the Customer :

M/S ADANI GUWAHATI INTERNATIONAL AIRPORT LIMITED.

Lokpriya Gopinath Bordoloi Internation Airport,

Borjhar, Guwahati, Kamrup (M), Assam-781015.

Ref.: SO:5700336280, Dated:02/01/2024 **Sample Description: Noise Level (DG)** DG Details:DG-2(750 KVA JAKSON) (Sr. No: CJS-07123593) Location: Power House	*Sample Id: ABNS/GHY/123024/DGNL04* Date of sampling: 30/12/2024

ANALYSIS RESULT

Sl. No.	Test Locations	Approx. distance from source	Noise Level in dB(A) in Leq	Remarks	Reference Method
1	750 KVA	1 meter-East	73.5	DG Set is in operation	IS/ISO 8528 (Part 10), Reaff.2019
2		1 meter-North	73.9		
3		1 meter-West	74.3		
4		1 meter-South	74.7		

Note:

- *The results relate to the parameter tested only.*
- *All data are collected during day time.*
- *Acoustic Enclosure Enclosed.*
- *Noise Level for DG set 75dB (A) at 1 meter distance.*

----------*End of Report*----------

For ABNS Scientific Services,

09/01/2025

Report reviewed By: Dr. Bidyut J Sarma (TM)

Authorized Signatory

Dr. Mayur Jyoti Mahanta(QM)

ABNS SCIENTIFIC SERVICES

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H-152, Keteki Path, near Radisson Blu, NH 27, Guwahati 781033, Assam

কেতেকী পথ, রৈডিসন ব্লু কে পাস, এন এইচ ২৭, গুবাহাটী ৭৮১০৩৩, অসম

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TEST REPORT

Report Number: ABNS/EM/010925/21	**Date : 09/01/2025**
Name & Address of the Customer : **M/S ADANI GUWAHATI INTERNATIONAL AIRPORT LIMITED.** Lokpriya Gopinath Bordoloi Internation Airport, Borjhar, Guwahati, Kamrup (M), Assam-781015.	
Ref.: SO:5700336280, Dated:02/01/2024 **Sample Description: Noise Level (DG)** DG Details:DG-1(750 KVA JAKSON) (Sr. No: CJS-07113339) Location: Power House	*Sample Id: ABNS/GHY/123024/DGNL03* Date of sampling: 30/12/2024

ANALYSIS RESULT

Sl. No.	Test Locations	Approx. distance from source	Noise Level in dB(A) in Leq	Remarks	Reference Method
1	750 KVA	1 meter-East	73.8	DG Set is in operation	IS/ISO 8528 (Part 10), Reaff.2019
2		1 meter-North	74.6		
3		1 meter-West	73.4		
4		1 meter-South	74.2		

Note:

- *The results relate to the parameter tested only.*
- *All data are collected during day time.*
- *Acoustic Enclosure Enclosed.*
- *Noise Level for DG set 75dB (A) at 1 meter distance.*

----------*End of Report*----------

For ABNS Scientific Services,

09/01/2025

Report reviewed By: Dr. Bidyut J Sarma (TM)

Authorized Signatory
Dr. Mayur Jyoti Mahanta(QM)

ABNS SCIENTIFIC SERVICES

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H-152, Keteki Path, near Radisson Blu, NH 27, Guwahati 781033, Assam

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TEST REPORT

Report Number: ABNS/EM/010925/20	**Date : 09/01/2025**
Name & Address of the Customer : **M/S ADANI GUWAHATI INTERNATIONAL AIRPORT LIMITED.** Lokpriya Gopinath Bordoloi Internation Airport, Borjhar, Guwahati, Kamrup (M), Assam-781015.	
Ref.: SO:5700336280, Dated:02/01/2024 **Sample Description: Noise Level (DG)** DG Details:DG-2(250 KVA JAKSON) (Sr. No: CJK-17010994) Location: Near Radar	*Sample Id: ABNS/GHY/123024/DGNL02* Date of sampling: 30/12/2024

ANALYSIS RESULT

Sl. No.	Test Locations	Approx. distance from source	Noise Level in dB(A) in Leq	Remarks	Reference Method
1	250 KVA	1 meter-East	72.7	DG Set is in operation	IS/ISO 8528 (Part 10), Reaff.2019
2		1 meter-North	73.2		
3		1 meter-West	73.6		
4		1 meter-South	72.9		

Note:

- *The results relate to the parameter tested only.*
- *All data are collected during day time.*
- *Acoustic Enclosure Enclosed.*
- *Noise Level for DG set 75dB (A) at 1 meter distance.*

----------*End of Report*----------

For ABNS Scientific Services,

09/01/2025

Report reviewed By: Dr. Bidyut J Sarma (TM)

Authorized Signatory
Dr. Mayur Jyoti Mahanta(QM)

ABNS SCIENTIFIC SERVICES

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TEST REPORT

Report Number: ABNS/EM/010925/19	**Date : 09/01/2025**

Name & Address of the Customer :

M/S ADANI GUWAHATI INTERNATIONAL AIRPORT LIMITED.

Lokpriya Gopinath Bordoloi Internation Airport,

Borjhar, Guwahati, Kamrup (M), Assam-781015.

Ref.: SO:5700336280, Dated:02/01/2024 **Sample Description: Noise Level (DG)** DG Details: DG-1(250 KVA JAKSON) (Sr. No: CJK-17010995) Location: Near Radar	*Sample Id: ABNS/GHY/123024/DGNL01* Date of sampling: 30/12/2024

ANALYSIS RESULT

Sl. No.	Test Locations	Approx. distance from source	Noise Level in dB(A) in Leq	Remarks	Reference Method
1	250 KVA	1 meter-East	72.8	DG Set is in operation	IS/ISO 8528 (Part 10), Reaff.2019
2		1 meter-North	73.1		
3		1 meter-West	73.6		
4		1 meter-South	73.9		

Note:

- *The results relate to the parameter tested only.*
- *All data are collected during day time.*
- *Acoustic Enclosure Enclosed.*
- *Noise Level for DG set 75dB (A) at 1 meter distance.*

----------*End of Report*----------

For ABNS Scientific Services,

Mayjmumika 09/01/2025

Report reviewed By: Dr. Bidyut J Sarma (TM)

Authorized Signatory

Dr. Mayur Jyoti Mahanta(QM)

ABNS SCIENTIFIC SERVICES

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এবীএনএস সাইংটীফীক সর্বীসেজ

H-152, Keteki Path, near Radisson Blu, NH 27, Guwahati 781033, Assam

কেতেকী পথ, রৈডিসন ব্লূ কে পাস, এন এইচ ২৭, গুবাহাটী ৭৮১০৩৩, অসম

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TEST REPORT

Report No.: ABNS/EM/111124/06 **Date : 11/11/2024**

Name & Address of the Customer :

M/S ADANI GUWAHATI INTERNATIONAL AIRPORT LIMITED.

Lokpriya Gopinath Bordoloi Internation Airport,

Borjhar, Guwahati, Kamrup (M), Assam-781015.

Ref.: SO:5700336280, Dated:02/01/2024 Date of sampling: From 07/11/2024 to 08/11/2024

Sample Description: Ambient Noise **Test Locations: NITB**

ANALYSIS RESULT

Sl. No.	Day Time (Hrs)	Results Leq dB(A) (Day)	Night Time (Hrs)	Results Leq dB(A) (Night)	Reference Method
1	6.00	**61.4**	22.00	**63.7**	IS 9989-2003
2	7.00	**69.3**	23.00	**68.5**	
3	8.00	**72.2**	24.00	**59.3**	
4	9.00	**70.5**	1.00	**58.2**	
5	10.00	**71.3**	2.00	**60.4**	
6	11.00	**69.8**	3.00	**53.7**	
7	12.00	**71.4**	4.00	**54.8**	
8	13.00	**72.5**	5.00	**54.9**	
9	14.00	**70.3**			
10	15.00	**69.8**			
11	16.00	**71.5**			
12	17.00	**69.4**			
13	18.00	**66.7**			
14	19.00	**72.4**			
15	20.00	**69.3**			
16	21.00	**58.6**			
	Leq Day	**69.2**	Leq Night	**59.2**	
	Max (Day)	**72.5**	Max (Night)	**68.5**	
	Min (Day)	**58.6**	Min (Night)	**53.7**	

Ambient Noise Standards(CPCB):

Area Code	Category of Area	Limit in dB(A) Leq	
		Day time	Night time
A.	Industrial area	75	70
B.	Commercial area	65	55
C.	Residential area	55	45
D.	Silence Zone	50	40

***Note**: The results relate to the parameter tested only. Industrial activities are in operation at the time of monitoring.*

----------*End of Report*----------

For ABNS Scientific Services,

Report reviewed By: Dr. Bidyut Jyoti Sarmah (TM)

Authorized Signatory

(Dr. Mayur Jyoti Mahanta)

ABNS SCIENTIFIC SERVICES

এবিএনএচ চাইন্টিফিক চার্ভিচেচ

এবীএনএস সাইংটীফীক সর্বীসেজ

H-152, Keteki Path, near Radisson Blu, NH 27, Guwahati 781033, Assam

केतेकी पथ, रैडिसन ब्लू के पास, एन एइच २७, गुवाहाटी ७८१०३३, असम

Email: info@abnsscientific.com, abnsscientific@gmail.com Phone: 98640 68513, 98640 89951

TEST REPORT

Report No.: ABNS/EM/111124/05 **Date : 11/11/2024**

Name & Address of the Customer :

M/S ADANI GUWAHATI INTERNATIONAL AIRPORT LIMITED.

Lokpriya Gopinath Bordoloi Internation Airport,

Borjhar, Guwahati, Kamrup (M), Assam-781015.

Ref.: SO:5700336280, Dated:02/01/2024 Date of sampling: From 04/10/2024 to 05/10/2024

Sample Description: Ambient Noise **Test Locations: KFC**

ANALYSIS RESULT

Sl. No.	Day Time (Hrs)	Results Leq dB(A) (Day)	Night Time (Hrs)	Results Leq dB(A) (Night)	Reference Method
1	6.00	**54.3**	22.00	**61.5**	IS 9989-2003
2	7.00	**63.4**	23.00	**66.9**	
3	8.00	**71.2**	24.00	**60.4**	
4	9.00	**70.3**	1.00	**57.2**	
5	10.00	**69.5**	2.00	**56.8**	
6	11.00	**71.3**	3.00	**52.3**	
7	12.00	**72.5**	4.00	**55.6**	
8	13.00	**70.9**	5.00	**52.2**	
9	14.00	**68.7**			
10	15.00	**69.3**			
11	16.00	**68.5**			
12	17.00	**70.7**			
13	18.00	**71.6**			
14	19.00	**67.3**			
15	20.00	**65.5**			
16	21.00	**66.7**			
	Leq Day	**68.2**	Leq Night	**57.9**	
	Max (Day)	**72.5**	Max (Night)	**66.8**	
	Min (Day)	**54.3**	Min (Night)	**52.2**	

Ambient Noise Standards(CPCB):

Area Code	Category of Area	Limit in dB(A) Leq	
		Day time	Night time
A.	Industrial area	75	70
B.	Commercial area	65	55
C.	Residential area	55	45
D.	Silence Zone	50	40

***Note**: The results relate to the parameter tested only. Industrial activities are in operation at the time of monitoring.*

----------*End of Report*----------

For ABNS Scientific Services,

Report reviewed By: Dr. Bidyut Jyoti Sarmah (TM)

ABNS Scientific Services Guwahati, Assam

11/11/2024

Authorized Signatory

(Dr. Mayur Jyoti Mahanta)

ABNS SCIENTIFIC SERVICES

এবিএনএচ চাইন্টিফিক চার্ভিচেচ

এবীএনএস সাইংটীফীক সর্বীসেজ

H-152, Keteki Path, near Radisson Blu, NH 27, Guwahati 781033, Assam

केतेकी पथ, रैडिसन ब्लू के पास, एन एइच २७, गुवाहाटी ७८१०३३, असम

Email: info@abnsscientific.com, abnsscientific@gmail.com Phone: 98640 68513, 98640 89951

TEST REPORT

Report No.: ABNS/EM/111124/04 **Date : 11/11/2024**

Name & Address of the Customer :

M/S ADANI GUWAHATI INTERNATIONAL AIRPORT LIMITED.

Lokpriya Gopinath Bordoloi Internation Airport,

Borjhar, Guwahati, Kamrup (M), Assam-781015.

Ref.: SO:5700336280, Dated:02/01/2024 Date of sampling: From 04/10/2024 to 05/10/2024

Sample Description: Ambient Noise **Test Locations: Power House**

ANALYSIS RESULT

Sl. No.	Day Time (Hrs)	Results Leq dB(A) (Day)	Night Time (Hrs)	Results Leq dB(A) (Night)	Reference Method
1	6.00	**52.8**	22.00	**67.3**	IS 9989-2003
2	7.00	**53.4**	23.00	**65.1**	
3	8.00	**59.7**	24.00	**59.3**	
4	9.00	**61.3**	1.00	**62.0**	
5	10.00	**66.4**	2.00	**53.4**	
6	11.00	**63.9**	3.00	**52.9**	
7	12.00	**64.2**	4.00	**51.2**	
8	13.00	**60.5**	5.00	**49.6**	
9	14.00	**59.7**			
10	15.00	**67.3**			
11	16.00	**66.2**			
12	17.00	**69.8**			
13	18.00	**65.2**			
14	19.00	**61.8**			
15	20.00	**62.3**			
16	21.00	**60.5**			
	Leq Day	**62.2**	Leq Night	**57.6**	
	Max (Day)	**69.8**	Max (Night)	**67.3**	
	Min (Day)	**52.8**	Min (Night)	**49.6**	

Ambient Noise Standards(CPCB):

Area Code	Category of Area	Limit in dB(A) Leq	
		Day time	Night time
A.	Industrial area	75	70
B.	Commercial area	65	55
C.	Residential area	55	45
D.	Silence Zone	50	40

***Note**: The results relate to the parameter tested only. Industrial activities are in operation at the time of monitoring.*

----------*End of Report*----------

For ABNS Scientific Services,

Report reviewed By: Dr. Bidyut Jyoti Sarmah (TM)

Authorized Signatory

(Dr. Mayur Jyoti Mahanta)

ABNS SCIENTIFIC SERVICES

এবিএনএচ চাইন্টিফিক চার্ভিচেচ

এবীএনএস সাইংটীফীক সর্বীসেজ

H-152, Keteki Path, near Radisson Blu, NH 27, Guwahati 781033, Assam

केतेकी पथ, रैडिसन ब्लू के पास, एन एइच २७, गुवाहाटी ७८१०३३, असम

Email: info@abnsscientific.com, abnsscientific@gmail.com Phone: 98640 68513, 98640 89951

TEST REPORT

Report No.: ABNS/EM/120524/04 **Date : 05/12/2024**

Name & Address of the Customer :

M/S ADANI GUWAHATI INTERNATIONAL AIRPORT LIMITED.

Lokpriya Gopinath Bordoloi Internation Airport,

Borjhar, Guwahati, Kamrup (M), Assam-781015.

Ref.: SO:5700336280, Dated:02/01/2024

Sample Description: Ambient Noise

Date of sampling: From 04/11/2024 to 05/11/2024

Test Locations: Power House

ANALYSIS RESULT

Sl. No.	Day Time (Hrs)	Results Leq dB(A) (Day)	Night Time (Hrs)	Results Leq dB(A) (Night)	Reference Method
1	6.00	**53.2**	22.00	**60.1**	IS 9989-2003
2	7.00	**57.6**	23.00	**59.3**	
3	8.00	**61.3**	24.00	**61.8**	
4	9.00	**64.8**	1.00	**59.1**	
5	10.00	**65.2**	2.00	**58.7**	
6	11.00	**69.8**	3.00	**55.3**	
7	12.00	**70.5**	4.00	**49.8**	
8	13.00	**68.5**	5.00	**46.7**	
9	14.00	**66.3**			
10	15.00	**67.2**			
11	16.00	**69.4**			
12	17.00	**68.7**			
13	18.00	**70.2**			
14	19.00	**64.3**			
15	20.00	**62.8**			
16	21.00	**61.7**			
	Leq Day	**65.1**	Leq Night	**56.4**	
	Max (Day)	**70.5**	Max (Night)	**61.8**	
	Min (Day)	**53.2**	Min (Night)	**46.7**	

Ambient Noise Standards(CPCB):

Area Code	Category of Area	Limit in dB(A) Leq	
		Day time	Night time
A.	Industrial area	75	70
B.	Commercial area	65	55
C.	Residential area	55	45
D.	Silence Zone	50	40

***Note**: The results relate to the parameter tested only. Industrial activities are in operation at the time of monitoring.*

----------*End of Report*----------

For ABNS Scientific Services,

Report reviewed By: Dr. Bidyut Jyoti Sarmah (TM)

05/12/2024

Authorized Signatory

(Dr. Mayur Jyoti Mahanta)

ABNS SCIENTIFIC SERVICES

এবিএনএচ চাইন্টিফিক চার্ভিচেচ

এবীএনএস সাইংটীফীক সর্বীসেজ

H-152, Keteki Path, near Radisson Blu, NH 27, Guwahati 781033, Assam

केतेकी पथ, रैडिसन ब्लू के पास, एन एइच २७, गुवाहाटी ७८१०३३, असम

Email: info@abnsscientific.com, abnsscientific@gmail.com Phone: 98640 68513, 98640 89951

TEST REPORT

Report No.: ABNS/EM/120524/05 **Date : 05/12/2024**

Name & Address of the Customer :

M/S ADANI GUWAHATI INTERNATIONAL AIRPORT LIMITED.

Lokpriya Gopinath Bordoloi Internation Airport,

Borjhar, Guwahati, Kamrup (M), Assam-781015.

Ref.: SO:5700336280, Dated:02/01/2024 Date of sampling: From 04/11/2024 to 05/11/2024

Sample Description: Ambient Noise **Test Locations: KFC**

ANALYSIS RESULT

Sl. No.	Day Time (Hrs)	Results Leq dB(A) (Day)	Night Time (Hrs)	Results Leq dB(A) (Night)	Reference Method
1	6.00	**53.7**	22.00	**62.4**	IS 9989-2003
2	7.00	**55.6**	23.00	**65.7**	
3	8.00	**58.9**	24.00	**59.8**	
4	9.00	**67.5**	1.00	**60.7**	
5	10.00	**68.9**	2.00	**55.2**	
6	11.00	**71.3**	3.00	**50.9**	
7	12.00	**69.4**	4.00	**54.1**	
8	13.00	**71.2**	5.00	**48.5**	
9	14.00	**69.7**			
10	15.00	**70.3**			
11	16.00	**66.8**			
12	17.00	**68.5**			
13	18.00	**69.2**			
14	19.00	**67.4**			
15	20.00	**64.9**			
16	21.00	**65.2**			
	Leq Day	**66.2**	Leq Night	**57.2**	
	Max (Day)	**71.3**	Max (Night)	**65.7**	
	Min (Day)	**53.7**	Min (Night)	**48.5**	

Ambient Noise Standards(CPCB):

Area Code	Category of Area	Limit in dB(A) Leq	
		Day time	Night time
A.	Industrial area	75	70
B.	Commercial area	65	55
C.	Residential area	55	45
D.	Silence Zone	50	40

***Note**: The results relate to the parameter tested only. Industrial activities are in operation at the time of monitoring.*

----------*End of Report*----------

For ABNS Scientific Services,

Report reviewed By: Dr. Bidyut Jyoti Sarmah (TM)

05/12/2024

Authorized Signatory

(Dr. Mayur Jyoti Mahanta)

ABNS SCIENTIFIC SERVICES

এবিএনএচ চাইন্টিফিক চার্ভিচেচ

এবীএনএস সাইংটীফীক সর্বীসেজ

H-152, Keteki Path, near Radisson Blu, NH 27, Guwahati 781033, Assam

কেতেকী পথ, রৈডিসন ব্লু কে পাস, এন এইচ ২৭, গুবাহাটী ৭৮১০৩৩, অসম

Email: info@abnsscientific.com, abnsscientific@gmail.com Phone: 98640 68513, 98640 89951

TEST REPORT

Report No.: ABNS/EM/120524/06 **Date : 05/12/2024**

Name & Address of the Customer :

M/S ADANI GUWAHATI INTERNATIONAL AIRPORT LIMITED.

Lokpriya Gopinath Bordoloi Internation Airport,

Borjhar, Guwahati, Kamrup (M), Assam-781015.

Ref.: SO:5700336280, Dated:02/01/2024 Date of sampling: From 06/11/2024 to 07/11/2024

Sample Description: Ambient Noise **Test Locations: NITB**

ANALYSIS RESULT

Sl. No.	Day Time (Hrs)	Results Leq dB(A) (Day)	Night Time (Hrs)	Results Leq dB(A) (Night)	Reference Method
1	6.00	**54.6**	22.00	**66.3**	IS 9989-2003
2	7.00	**61.7**	23.00	**67.9**	
3	8.00	**69.8**	24.00	**65.9**	
4	9.00	**71.2**	1.00	**59.7**	
5	10.00	**70.4**	2.00	**58.2**	
6	11.00	**72.5**	3.00	**55.4**	
7	12.00	**70.8**	4.00	**53.7**	
8	13.00	**73.1**	5.00	**51.2**	
9	14.00	**71.9**			
10	15.00	**72.6**			
11	16.00	**69.8**			
12	17.00	**68.7**			
13	18.00	**68.3**			
14	19.00	**69.5**			
15	20.00	**70.2**			
16	21.00	**61.4**			
	Leq Day	**68.5**	Leq Night	**59.8**	
	Max (Day)	**73.1**	Max (Night)	**67.9**	
	Min (Day)	**54.6**	Min (Night)	**51.2**	

Ambient Noise Standards(CPCB):

Area Code	Category of Area	Limit in dB(A) Leq	
		Day time	Night time
A.	Industrial area	75	70
B.	Commercial area	65	55
C.	Residential area	55	45
D.	Silence Zone	50	40

***Note**: The results relate to the parameter tested only. Industrial activities are in operation at the time of monitoring.*

----------*End of Report*----------

For ABNS Scientific Services,

Report reviewed By: Dr. Bidyut Jyoti Sarmah (TM)

Authorized Signatory

(Dr. Mayur Jyoti Mahanta)

ABNS SCIENTIFIC SERVICES

এবিএনএচ চাইন্টিফিক চার্ভিচেচ

এবীএনএস সাইংটীফীক সর্বীসেজ

H-152, Keteki Path, near Radisson Blu, NH 27, Guwahati 781033, Assam

কেতেকী পথ, রৈডিসন ব্লু কে পাস, এন এইচ ২৭, গুবাহাটী ৭৮১০৩৩, অসম

Email: info@abnsscientific.com, abnsscientific@gmail.com Phone: 98640 68513, 98640 89951

TEST REPORT

Report No.: ABNS/EM/021025/04	**Date : 10/02/2025**

Name & Address of the Customer :

M/S ADANI GUWAHATI INTERNATIONAL AIRPORT LIMITED.

Lokpriya Gopinath Bordoloi Internation Airport,

Borjhar, Guwahati, Kamrup (M), Assam-781015.

Ref.: SO:5700336280, Dated:02/01/2024	Date of sampling: From 07/01/2025 to 08/01/2025
Sample Description: Ambient Noise	**Test Locations: KFC**

ANALYSIS RESULT

Sl. No.	Day Time (Hrs)	Results Leq dB(A) (Day)	Night Time (Hrs)	Results Leq dB(A) (Night)	Reference Method
1	6.00	**48.3**	22.00	**56.4**	IS 9989-2003
2	7.00	**49.3**	23.00	**52.2**	
3	8.00	**55.2**	24.00	**50.1**	
4	9.00	**58.8**	1.00	**48.4**	
5	10.00	**62.4**	2.00	**45.3**	
6	11.00	**70.2**	3.00	**44.1**	
7	12.00	**69.4**	4.00	**43.2**	
8	13.00	**70.2**	5.00	**50.9**	
9	14.00	**72.4**			
10	15.00	**71.8**			
11	16.00	**68.6**			
12	17.00	**70.2**			
13	18.00	**70.4**			
14	19.00	**68.2**			
15	20.00	**60.4**			
16	21.00	**59.4**			
	Leq Day	**64.1**	Leq Night	**48.8**	
	Max (Day)	**72.4**	Max (Night)	**56.4**	
	Min (Day)	**48.3**	Min (Night)	**43.2**	

Ambient Noise Standards(CPCB):

Area Code	Category of Area	Limit in dB(A) Leq	
		Day time	Night time
A.	Industrial area	75	70
B.	Commercial area	65	55
C.	Residential area	55	45
D.	Silence Zone	50	40

***Note**: The results relate to the parameter tested only. Industrial activities are in operation at the time of monitoring.*

----------*End of Report*----------

For **ABNS Scientific Services,**

ABNS Scientific Services * Guwahati, Assam *

10/02/2025

Report reviewed By: Dr. Bidyut J Sarmah (TM)

Authorized Signatory

ABNS SCIENTIFIC SERVICES

এবিএনএচ চাইন্টিফিক চার্ভিচেচ

এবীএনএস সাইংটীফীক সর্বীসেজ

H-152, Keteki Path, near Radisson Blu, NH 27, Guwahati 781033, Assam

কেতেকী পথ, রৈডিসন ব্লু কে পাস, এন এইচ ২৭, গুবাহাটী ৭৮১০৩৩, অসম

Email: info@abnsscientific.com, abnsscientific@gmail.com Phone: 98640 68513, 98640 89951

TEST REPORT

Report No.: ABNS/EM/021025/05	**Date : 10/02/2025**

Name & Address of the Customer :

M/S ADANI GUWAHATI INTERNATIONAL AIRPORT LIMITED.

Lokpriya Gopinath Bordoloi Internation Airport,

Borjhar, Guwahati, Kamrup (M), Assam-781015.

Ref.: SO:5700336280, Dated:02/01/2024	Date of sampling: From 07/01/2025 to 08/01/2025
Sample Description: Ambient Noise	**Test Locations: Power House**

ANALYSIS RESULT

Sl. No.	Day Time (Hrs)	Results Leq dB(A) (Day)	Night Time (Hrs)	Results Leq dB(A) (Night)	Reference Method
1	6.00	**53.2**	22.00	**58.2**	IS 9989-2003
2	7.00	**54.4**	23.00	**50.2**	
3	8.00	**58.2**	24.00	**53.4**	
4	9.00	**65.4**	1.00	**53.7**	
5	10.00	**67.5**	2.00	**48.1**	
6	11.00	**71.1**	3.00	**49.2**	
7	12.00	**73.1**	4.00	**50.3**	
8	13.00	**72.2**	5.00	**53.1**	
9	14.00	**72.5**			
10	15.00	**70.1**			
11	16.00	**73.4**			
12	17.00	**69.1**			
13	18.00.	**68.2**			
14	19.00	**63.1**			
15	20.00	**64.2**			
16	21.00	**62.1**			
	Leq Day	**66.1**	Leq Night	**52.0**	
	Max (Day)	**73.4**	Max (Night)	**58.2**	
	Min (Day)	**53.2**	Min (Night)	**48.1**	

Ambient Noise Standards(CPCB):

Area Code	Category of Area	Limit in dB(A) Leq	
		Day time	Night time
A.	Industrial area	75	70
B.	Commercial area	65	55
C.	Residential area	55	45
D.	Silence Zone	50	40

***Note**: The results relate to the parameter tested only. Industrial activities are in operation at the time of monitoring.*

----------*End of Report*----------

For **ABNS Scientific Services,**

Report reviewed By: Dr. Bidyut J Sarmah (TM)

ABNS Scientific Services Guwahati, Assam

10/02/2025

Authorized Signatory

ABNS SCIENTIFIC SERVICES

এবিএনএচ চাইন্টিফিক চার্ভিচেচ

এবীএনএস সাইংটীফীক সর্বীসেজ

H-152, Keteki Path, near Radisson Blu, NH 27, Guwahati 781033, Assam

কেতেকী পথ, রৈডিসন ব্লু কে পাস, এন এইচ ২৭, গুবাহাটী ৭৮১০৩৩, অসম

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TEST REPORT

Report No.: ABNS/EM/021025/06	**Date : 10/02/2025**
Name & Address of the Customer : **M/S ADANI GUWAHATI INTERNATIONAL AIRPORT LIMITED.** Lokpriya Gopinath Bordoloi Internation Airport, Borjhar, Guwahati, Kamrup (M), Assam-781015.	
Ref.: SO:5700336280, Dated:02/01/2024 Sample Description: Ambient Noise	Date of sampling: From 10/01/2025 to 11/01/2025 **Test Locations: NITB**

ANALYSIS RESULT

Sl. No.	Day Time (Hrs)	Results Leq dB(A) (Day)	Night Time (Hrs)	Results Leq dB(A) (Night)	Reference Method
1	6.00	**57.4**	22.00	**56.2**	IS 9989-2003
2	7.00	**60.3**	23.00	**54.1**	
3	8.00	**65.5**	24.00	**48.2**	
4	9.00	**70.2**	1.00	**47.1**	
5	10.00	**72.1**	2.00	**49.1**	
6	11.00	**73.1**	3.00	**47.3**	
7	12.00	**72.4**	4.00	**46.2**	
8	13.00	**72.1**	5.00	**45.1**	
9	14.00	**73.8**			
10	15.00	**72.1**			
11	16.00	**70.6**			
12	17.00	**70.2**			
13	18.00	**68.4**			
14	19.00	**69.2**			
15	20.00	**66.1**			
16	21.00	**65.1**			
	Leq Day	**68.7**	Leq Night	**49.2**	
	Max (Day)	**73.8**	Max (Night)	**56.2**	
	Min (Day)	**57.4**	Min (Night)	**45.1**	

Ambient Noise Standards(CPCB):

Area Code	Category of Area	Limit in dB(A) Leq	
		Day time	Night time
A.	Industrial area	75	70
B.	Commercial area	65	55
C.	Residential area	55	45
D.	Silence Zone	50	40

***Note**: The results relate to the parameter tested only. Industrial activities are in operation at the time of monitoring.*

----------*End of Report*----------

For **ABNS Scientific Services,**

Report reviewed By: Dr. Bidyut J Sarmah (TM)

10/02/2024

Authorized Signatory

ABNS SCIENTIFIC SERVICES

এবিএনএচ চাইন্টিফিক চার্ভিচেচ

এবীএনএস সাইंटीफीक सर्वीसेज

H-152, Keteki Path, near Radisson Blu, NH 27, Guwahati 781033, Assam

केतेकी पथ, रैडिसन ब्लू के पास, एन एइच २७, गुवाहाटी ७८१०३३, असम

Email: info@abnsscientific.com, abnsscientific@gmail.com Phone: 98640 68513, 98640 89951

TEST REPORT

Report No. : ABNS/EM/030825/09	**Date : 08/03/2025**

Name & Address of the Customer :

M/S ADANI GUWAHATI INTERNATIONAL AIRPORT LIMITED.

Lokpriya Gopinath Bordoloi International Airport,

Borjhar, Guwahati, Kamrup (M), Assam-781015.

Ref.: SO:5700363902, Dated:04/02/2025	**Test Locations: Plane Landing Side (Dekapara Village)**
Sample Description: **Noise Level Monitoring**	(**Latitude:** 26.098357N, **longitude:** 91.587898E)

ANALYSIS RESULT

Date of sampling: 20/02/2025

Sl. No.	Day Time (Hrs)	Results Leq dB(A) (Day)	Night Time (Hrs)	Results Leq dB(A) (Night)	Reference Method
1	6.00	**44.01**	22.00	**48.50**	IS 9989-2003
2	7.00	**47.58**	23.00	**43.49**	
3	8.00	**49.65**	24.00	**46.58**	
4	9.00	**47.81**	1.00	**43.95**	
5	10.00	**45.67**	2.00	**41.02**	
6	11.00	**44.22**	3.00	**45.07**	
7	12.00	**46.64**	4.00	**44.96**	
8	13.00	**50.64**	5.00	**42.63**	
9	14.00	**52.64**			
10	15.00	**50.50**			
11	16.00	**51.59**			
12	17.00	**49.10**			
13	18.00	**51.27**			
14	19.00	**48.83**			
15	20.00	**46.65**			
16	21.00	**46.74**			
	Leq Day	**48.34**	Leq Night	**44.52**	
	Max (Day)	**52.64**	Max (Night)	**48.50**	
	Min (Day)	**44.01**	Min (Night)	**41.02**	

Date of sampling: 21/02/2025					
Sl. No.	Day Time (Hrs)	Results Leq dB(A) (Day)	Night Time (Hrs)	Results Leq dB(A) (Night)	Reference Method
1	6.00	44.48	22.00	48.88	IS 9989-2003
2	7.00	43.68	23.00	43.82	
3	8.00	47.95	24.00	47.02	
4	9.00	50.03	1.00	45.74	
5	10.00	49.71	2.00	43.95	
6	11.00	45.88	3.00	43.34	
7	12.00	50.83	4.00	43.16	
8	13.00	52.34	5.00	43.55	
9	14.00	46.87			
10	15.00	49.80			
11	16.00	51.59			
12	17.00	49.60			
13	18.00	48.82			
14	19.00	44.65			
15	20.00	46.70			
16	21.00	47.14			
	Leq Day	48.12	Leq Night	44.93	
	Max (Day)	52.34	Max (Night)	48.88	
	Min (Day)	43.68	Min (Night)	43.16	

Date of sampling: 22/02/2025					
Sl. No.	Day Time (Hrs)	Results Leq dB(A) (Day)	Night Time (Hrs)	Results Leq dB(A) (Night)	Reference Method
1	6.00	44.57	22.00	49.52	IS 9989-2003
2	7.00	42.09	23.00	42.35	
3	8.00	45.87	24.00	46.72	
4	9.00	46.58	1.00	47.34	
5	10.00	49.53	2.00	45.18	
6	11.00	45.08	3.00	43.14	
7	12.00	49.34	4.00	40.14	
8	13.00	47.54	5.00	43.64	
9	14.00	49.13			
10	15.00	49.56			
11	16.00	49.77			
12	17.00	51.90			
13	18.00	49.74			
14	19.00	48.56			
15	20.00	46.49			
16	21.00	43.39			
	Leq Day	47.44	Leq Night	44.75	
	Max (Day)	51.90	Max (Night)	49.52	
	Min (Day)	42.09	Min (Night)	40.14	

Date of sampling: 23/02/2025					
Sl. No.	Day Time (Hrs)	Results Leq dB(A) (Day)	Night Time (Hrs)	Results Leq dB(A) (Night)	Reference Method
1	6.00	44.15	22.00	46.13	IS 9989-2003
2	7.00	43.34	23.00	45.80	
3	8.00	46.79	24.00	46.07	
4	9.00	45.85	1.00	46.23	
5	10.00	46.17	2.00	44.85	
6	11.00	44.34	3.00	39.91	
7	12.00	49.21	4.00	39.32	
8	13.00	49.19	5.00	43.45	
9	14.00	47.48			
10	15.00	52.52			
11	16.00	52.43			
12	17.00	50.72			
13	18.00	49.47			
14	19.00	44.77			
15	20.00	49.04			
16	21.00	47.11			
	Leq Day	47.66	Leq Night	43.97	
	Max (Day)	52.52	Max (Night)	46.23	
	Min (Day)	43.34	Min (Night)	39.32	

Date of sampling: 24/02/2025					
Sl. No.	Day Time (Hrs)	Results Leq dB(A) (Day)	Night Time (Hrs)	Results Leq dB(A) (Night)	Reference Method
1	6.00	47.77	22.00	46.44	IS 9989-2003
2	7.00	40.62	23.00	43.41	
3	8.00	51.13	24.00	48.57	
4	9.00	45.76	1.00	45.99	
5	10.00	50.22	2.00	42.88	
6	11.00	48.62	3.00	44.62	
7	12.00	48.82	4.00	39.89	
8	13.00	53.01	5.00	41.37	
9	14.00	49.90			
10	15.00	50.10			
11	16.00	51.79			
12	17.00	50.61			
13	18.00	49.18			
14	19.00	44.28			
15	20.00	46.29			
16	21.00	44.25			
	Leq Day	48.27	Leq Night	44.14	
	Max (Day)	53.01	Max (Night)	48.57	
	Min (Day)	40.62	Min (Night)	39.89	

Date of sampling: 25/02/2025

Sl. No.	Day Time (Hrs)	Results Leq dB(A) (Day)	Night Time (Hrs)	Results Leq dB(A) (Night)	Reference Method
1	6.00	**48.14**	22.00	**51.17**	IS 9989-2003
2	7.00	**41.43**	23.00	**41.98**	
3	8.00	**49.29**	24.00	**47.69**	
4	9.00	**46.60**	1.00	**43.78**	
5	10.00	**49.75**	2.00	**44.64**	
6	11.00	**42.93**	3.00	**45.04**	
7	12.00	**48.70**	4.00	**42.61**	
8	13.00	**51.43**	5.00	**43.02**	
9	14.00	**50.45**			
10	15.00	**49.85**			
11	16.00	**48.93**			
12	17.00	**51.90**			
13	18.00	**49.30**			
14	19.00	**46.18**			
15	20.00	**47.05**			
16	21.00	**49.81**			
	Leq Day	**48.23**	Leq Night	**44.99**	
	Max (Day)	**51.90**	Max (Night)	**51.17**	
	Min (Day)	**41.43**	Min (Night)	**41.98**	

Date of sampling: 26/02/2025

Sl. No.	Day Time (Hrs)	Results Leq dB(A) (Day)	Night Time (Hrs)	Results Leq dB(A) (Night)	Reference Method
1	6.00	**42.22**	22.00	**45.55**	IS 9989-2003
2	7.00	**45.38**	23.00	**42.47**	
3	8.00	**49.28**	24.00	**51.06**	
4	9.00	**48.23**	1.00	**47.20**	
5	10.00	**46.20**	2.00	**41.59**	
6	11.00	**44.70**	3.00	**39.32**	
7	12.00	**48.06**	4.00	**44.79**	
8	13.00	**49.26**	5.00	**41.20**	
9	14.00	**51.21**			
10	15.00	**53.02**			
11	16.00	**49.03**			
12	17.00	**49.54**			
13	18.00	**50.36**			
14	19.00	**43.98**			
15	20.00	**45.05**			
16	21.00	**43.34**			
	Leq Day	**47.42**	Leq Night	**44.14**	
	Max (Day)	**53.02**	Max (Night)	**51.06**	
	Min (Day)	**42.22**	Min (Night)	**39.32**	

Ambient Noise Standards(CPCB):

Area Code	Category of Area	Limit in dB(A) Leq		
		Day time	Night time	
A.	Industrial area	75	70	Day time: 6.00-22.00 hr. Night time: 22.00-6.00 hr
B.	Commercial area	65	55	
C.	Residential area	55	45	
D.	Silence Zone	50	40	

***Note**: The results relate to the parameter tested only.*

----------*End of Report*----------

For **ABNS Scientific Services,**

Scientific Services ★ ABNS ★ Guwahati

08/03/2025

Report reviewed By: Dr. Bidyut J Sarmah (TM)

Authorized Signatory

ABNS SCIENTIFIC SERVICES

এবিএনএচ চাইন্টিফিক চার্ভিচেচ

এবীএনএস সাইংটীফীক সর্বীসেজ

H-152, Keteki Path, near Radisson Blu, NH 27, Guwahati 781033, Assam

केतेकी पथ, रैडिसन ब्लू के पास, एन एइच २७, गुवाहाटी ७८१०३३, असम

Email: info@abnsscientific.com, abnsscientific@gmail.com Phone: 98640 68513, 98640 89951

TEST REPORT

Report No. : ABNS/EM/030825/10	**Date : 08/03/2025**

Name & Address of the Customer :

M/S ADANI GUWAHATI INTERNATIONAL AIRPORT LIMITED.

Lokpriya Gopinath Bordoloi Internation Airport,

Borjhar, Guwahati, Kamrup (M), Assam-781015.

Ref.: SO:5700363902, Dated:04/02/2025	**Test Locations: Plane Take Off Side (Kuhabari Village)**
Sample Description: **Noise Level Monitoring**	(**latitude:** 26.138901N, **longitude:** 91.603376E)

ANALYSIS RESULT

Date of sampling: 11/02/2025

Sl. No.	Day Time (Hrs)	Results Leq dB(A) (Day)	Night Time (Hrs)	Results Leq dB(A) (Night)	Reference Method
1	6.00	**57.42**	22.00	**55.59**	IS 9989-2003
2	7.00	**52.24**	23.00	**53.30**	
3	8.00	**54.06**	24.00	**57.23**	
4	9.00	**58.09**	1.00	**51.18**	
5	10.00	**54.84**	2.00	**52.35**	
6	11.00	**52.79**	3.00	**52.27**	
7	12.00	**57.63**	4.00	**55.26**	
8	13.00	**51.37**	5.00	**55.36**	
9	14.00	**53.99**			
10	15.00	**53.30**			
11	16.00	**54.10**			
12	17.00	**50.68**			
13	18.00	**56.01**			
14	19.00	**51.81**			
15	20.00	**50.34**			
16	21.00	**52.49**			
	Leq Day	**53.82**	Leq Night	**54.06**	
	Max (Day)	**58.09**	Max (Night)	**57.23**	
	Min (Day)	**50.34**	Min (Night)	**51.18**	

ABNS

Date of sampling: 12/02/2025					
Sl. No.	Day Time (Hrs)	Results Leq dB(A) (Day)	Night Time (Hrs)	Results Leq dB(A) (Night)	Reference Method
1	6.00	50.92	22.00	52.61	IS 9989-2003
2	7.00	51.24	23.00	50.09	
3	8.00	51.75	24.00	52.40	
4	9.00	52.23	1.00	50.02	
5	10.00	58.05	2.00	50.67	
6	11.00	52.78	3.00	47.97	
7	12.00	54.93	4.00	54.46	
8	13.00	52.96	5.00	49.14	
9	14.00	53.24			
10	15.00	54.84			
11	16.00	51.67			
12	17.00	49.02			
13	18.00	49.47			
14	19.00	49.27			
15	20.00	49.82			
16	21.00	49.87			
	Leq Day	52.00	Leq Night	50.92	
	Max (Day)	58.05	Max (Night)	54.46	
	Min (Day)	49.02	Min (Night)	47.97	

Date of sampling: 13/02/2025					
Sl. No.	Day Time (Hrs)	Results Leq dB(A) (Day)	Night Time (Hrs)	Results Leq dB(A) (Night)	Reference Method
1	6.00	48.09	22.00	53.06	IS 9989-2003
2	7.00	51.76	23.00	54.04	
3	8.00	51.64	24.00	50.90	
4	9.00	53.02	1.00	50.52	
5	10.00	55.03	2.00	50.30	
6	11.00	48.47	3.00	50.46	
7	12.00	53.96	4.00	52.33	
8	13.00	50.71	5.00	50.89	
9	14.00	48.95			
10	15.00	53.98			
11	16.00	53.06			
12	17.00	51.86			
13	18.00	56.78			
14	19.00	56.91			
15	20.00	53.30			
16	21.00	51.88			
	Leq Day	52.46	Leq Night	51.56	
	Max (Day)	56.91	Max (Night)	54.04	
	Min (Day)	48.09	Min (Night)	50.30	

Scientific Services ABNS

Date of sampling: 14/02/2025					
Sl. No.	Day Time (Hrs)	Results Leq dB(A) (Day)	Night Time (Hrs)	Results Leq dB(A) (Night)	Reference Method
1	6.00	48.49	22.00	48.11	IS 9989-2003
2	7.00	52.77	23.00	58.19	
3	8.00	56.96	24.00	55.00	
4	9.00	56.57	1.00	48.39	
5	10.00	55.00	2.00	54.91	
6	11.00	51.57	3.00	54.21	
7	12.00	49.76	4.00	49.47	
8	13.00	57.11	5.00	51.27	
9	14.00	57.28			
10	15.00	53.92			
11	16.00	56.90			
12	17.00	51.02			
13	18.00	50.36			
14	19.00	51.04			
15	20.00	55.79			
16	21.00	52.14			
	Leq Day	53.54	Leq Night	52.44	
	Max (Day)	57.28	Max (Night)	58.19	
	Min (Day)	48.49	Min (Night)	48.11	

Date of sampling: 15/02/2025					
Sl. No.	Day Time (Hrs)	Results Leq dB(A) (Day)	Night Time (Hrs)	Results Leq dB(A) (Night)	Reference Method
1	6.00	47.90	22.00	56.59	IS 9989-2003
2	7.00	48.72	23.00	53.55	
3	8.00	53.34	24.00	57.25	
4	9.00	55.82	1.00	49.57	
5	10.00	57.23	2.00	55.68	
6	11.00	52.34	3.00	53.90	
7	12.00	55.73	4.00	48.91	
8	13.00	50.87	5.00	57.48	
9	14.00	53.65			
10	15.00	53.35			
11	16.00	56.82			
12	17.00	52.02			
13	18.00	47.58			
14	19.00	49.59			
15	20.00	48.50			
16	21.00	56.70			
	Leq Day	52.51	Leq Night	54.11	
	Max (Day)	57.23	Max (Night)	57.48	
	Min (Day)	47.58	Min (Night)	48.91	

Scientific Services ABNS Tezpur, Assam

Date of sampling: 16/02/2025

Sl. No.	Day Time (Hrs)	Results Leq dB(A) (Day)	Night Time (Hrs)	Results Leq dB(A) (Night)	Reference Method
1	6.00	**57.46**	22.00	**51.69**	IS 9989-2003
2	7.00	**54.17**	23.00	**52.05**	
3	8.00	**51.27**	24.00	**49.65**	
4	9.00	**50.05**	1.00	**52.78**	
5	10.00	**51.38**	2.00	**55.31**	
6	11.00	**48.69**	3.00	**55.83**	
7	12.00	**52.77**	4.00	**52.58**	
8	13.00	**54.09**	5.00	**50.88**	
9	14.00	**48.80**			
10	15.00	**49.92**			
11	16.00	**48.22**			
12	17.00	**55.73**			
13	18.00	**51.44**			
14	19.00	**56.43**			
15	20.00	**48.78**			
16	21.00	**50.74**			
	Leq Day	**51.87**	Leq Night	**52.59**	
	Max (Day)	**57.46**	Max (Night)	**55.83**	
	Min (Day)	**48.22**	Min (Night)	**49.65**	

Date of sampling: 17/02/2025

Sl. No.	Day Time (Hrs)	Results Leq dB(A) (Day)	Night Time (Hrs)	Results Leq dB(A) (Night)	Reference Method
1	6.00	**53.50**	22.00	**49.16**	IS 9989-2003
2	7.00	**51.96**	23.00	**52.02**	
3	8.00	**55.07**	24.00	**55.46**	
4	9.00	**57.58**	1.00	**54.07**	
5	10.00	**56.64**	2.00	**52.93**	
6	11.00	**49.15**	3.00	**49.11**	
7	12.00	**52.77**	4.00	**53.25**	
8	13.00	**52.74**	5.00	**53.15**	
9	14.00	**55.31**			
10	15.00	**50.21**			
11	16.00	**53.73**			
12	17.00	**57.77**			
13	18.00	**47.74**			
14	19.00	**53.59**			
15	20.00	**54.64**			
16	21.00	**47.87**			
	Leq Day	**53.14**	Leq Night	**52.39**	
	Max (Day)	**57.77**	Max (Night)	**55.46**	
	Min (Day)	**47.74**	Min (Night)	**49.11**	

Ambient Noise Standards(CPCB):

Area Code	Category of Area	Limit in dB(A) Leq		
		Day time	Night time	
A.	Industrial area	75	70	Day time: 6.00-22.00 hr. Night time: 22.00-6.00 hr
B.	Commercial area	65	55	
C.	Residential area	55	45	
D.	Silence Zone	50	40	

***Note**: The results relate to the parameter tested only.*

----------*End of Report*----------

For **ABNS Scientific Services,**

Report reviewed By: Dr. Bidyut J Sarmah (TM)

Authorized Signatory

ANNEXURE 11 – WASTE SENT TO RECYCLERS.









Annexure 12 – DG Set with Acoustic Enclosures





Spill Control Plan
Guwahati International Airport Limited

Date – 25th Dec 2021
Version 1

Spillage of any substance that is likely to contaminate stormwater or natural ground is considered to be Spill. Substances may include, but are not restricted to, oils and fuels, chemicals etc.

Airport operators are responsible for spill notification, containment, control, clean up and disposal of waste materials for operations. Airside Operators are required to inspect the parking bay for spills or pavement damage immediately following an aircraft operation or completion of aircraft refueling or maintenance.

Spill Response Procedure

In case of spill reported, immediately provide a verbal report to Airport Operations for spills and location

Ensure the safety of people – Move people, and equipment if it is safe to do so, from the immediate vicinity of the spill.
Assess the spill – Establish whether the right equipment and sufficient quantities to deal with the spillage
Assess the location – Establish whether there are any drains nearby that need protection and determine whether any material has entered the drains.
Control the spill – Stop the spill from spreading by placing absorbent material in a down-slope position and by blocking stormwater inlets.
Clean up the spill – Apply absorbent material, sweep up residue and place it in a container for disposal. If soil has been contaminated, dig up the affected soil and place it in a container for disposal.
Dispose of contaminated spill response material or soil inline to Hazardous Waste Rules, amended till date

Spill Containment

Minor Spill
Absorbent materials absorb liquid spills to prevent or minimize the amount of spill entering stormwater drains, reduce pavement damage and provide a safer working environment. Absorbent materials may include absorbent socks, booms, bunds and mats.

Major Spill
Action to be taken as per a Minor Spill and ARFF and the Aerodrome Operations Supervisor should be contacted immediately for required external support, if any.

Fuel Spill

The ground handling coordinator or fuel agent should STOP the refueling operations, advise the Captain, call the ARFFS and the Aerodrome Operations Supervisor.

- Based on the severity of the spill and advice of fire services evacuate all persons from the immediate area.

- Mobilize all available firefighting equipment as standby protection until the arrival of the airport emergency services. Control the movement of unauthorized personnel and equipment into the area.
- As far as possible, restrict all activities inside and outside the spill area to reduce the risk of ignition.
- All electrical equipment in use during the fueling operation must be switched off immediately.
- Unload the Ground Power Unit (GPU) and shut it down. Do not start the GPU until the spilled fuel is removed and there is no further risk of spilled fuel or vapors. Emergency services will make this call.
- Normal operations must not be resumed on the aircraft, or any engines started before the person in charge of the emergency determines it is safe to continue.

Cleaning up a spill

Personal Protective Equipment (PPE) is to be worn when handling fuel, oil and hazardous substances. PPE including gloves, goggles and disposable coveralls are available in the spill kits. All airport staff shall also comply with the airport minimal PPE requirements and their company's PPE Policy and/or procedures.

Use absorbent material to contain the spill to prevent or minimize the amount of spill that will damage pavement, create a safety hazard, or pollute stormwater drains.

Operators will be requested by Airport Operations to clean the ground surface after the absorbent materials have absorbed most of the spill if the pavement is slippery.

Prior to moving items of plant/equipment that have been involved in a spill, measures must be taken to ensure the plant/equipment is no longer leaking to safeguard against the spill being traversed to other locations on the airport.

Disposal of spill waste

Depending on the nature of the spill, it may produce hazardous waste. All saturated absorbent material must be put in purpose-built sealed plastic bags to prevent the material from leaking. Dispose of used absorbent material in accordance with regulatory requirements. All the waste to be considered hazardous and to be handled inline to hazardous waste rules, amended till date.

Spill Response Equipment

A spill station shall be provided in all areas where liquid chemicals, oils or other fluids are used or stored. Fueling locations and jobsite trailers will contain large spill stations. Large spill stations shall provide sufficient absorbent and response materials to mitigate a variety of spill conditions and situations. The spill station shall be contained in a weather-proof box, drum, wheeled/lidded container, or trunk which can be mobilized to the spill site. They shall have the following attributes:

- Bulk Oil Absorbent Pads: A sufficient quantity of bulk oil absorbent pads will be maintained onsite for response to spills to land or water. Pads must be hydrophobic and float on water.

- Loose Absorbent: Granular absorbent will be maintained for use in areas where there is a likelihood of small spills, drips, or splashes of oil. Granular absorbent can be clay, cellulose, peat, cat litter, or other appropriate biodegradable or natural proven absorbent material. Loose absorbent will be packaged or containerized in such a manner as to facilitate ease of use and distribution. Polypropylene or other man-made, non- biodegradable materials are not permitted.
- Typical Project-Assembled Spill Kit Supplies
  - Plastic/metal barrel or wheeled trash container with lid and labeled.
  - Bulk granular, diatomaceous earth, absorbent material
  - Oil-absorbent pads and booms.
  - Large trash bags
  - Rubber gloves
  - Safety goggles
  - Tyvek suits and coverall

Spill Prevention

Every facility at the airport that handles, stores, uses, or transports substances that could contaminate the environment or endanger people and property will have a dedicated SOP to carry out the work. A preliminary commitment is to avoid any kind of spillage or if there is any minor spillage, same to be arrested within the confinement to avoid runoff in storm water drain. Storm water drainage from the site will be provided with Oil traps/ Silt traps before connection to outside Natural drainage system. Regular Monitoring (Physical and sample monitoring) will be carried out in Monsoon season, to assess the quality of Natural drainage system

Dr. H. Sharma
Associate Professor

Indian Institute of Technology, Guwahati,
North Guwahati, Guwahati-781 039,
Assam, India.

Phone : +91-361-258- 3326
Fax : +91-361-258-2440
email : shrishi@iitg.ac.in

DEPT. OF CIVIL ENGINEERING

Date: 12th March 2024

To,
Mr. Utpal Baruah
Chief Airport Officer
LGBI Airport, Guwahati

Subject: Drawings Submission for Storm Water Drainage Vide letter No: GIAL/CAO/F-6/58/23-24/1506 dated 8th March 2024

Dear Mr. Utpal Baruah, Chief Airport Officer,LGBI Airport, Guwahati

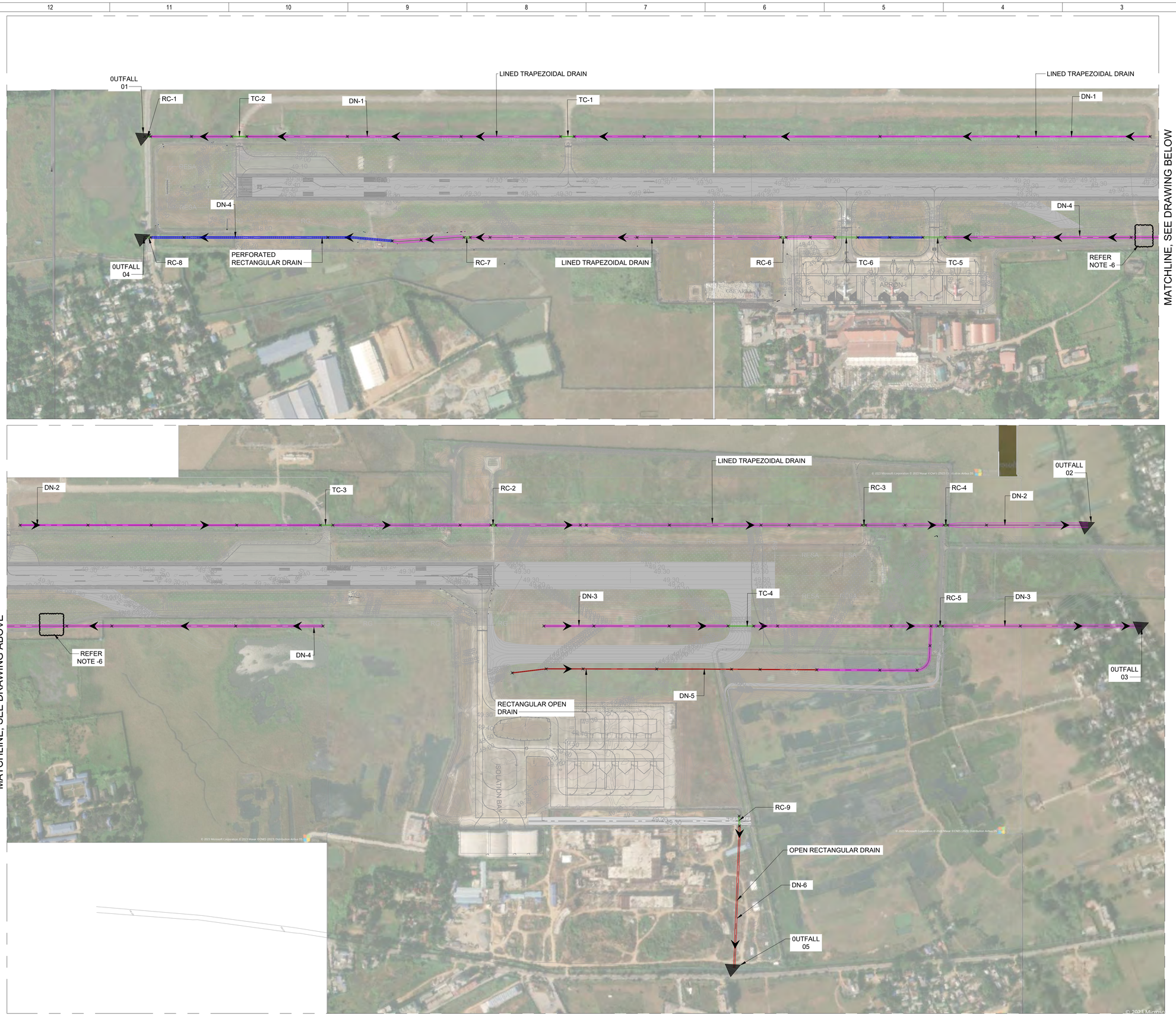
Please find attached duly approved drawings for Storm Water Drainage

Kindly let us know in case you need additional information.

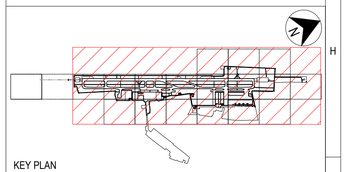
With regards

Dr. Hrishikesh Sharma
Associate Professor / सह प्राध्यापक
Department of Civil Engineering
सिविल अभियांत्रिकि विभाग
Indian Institute of Technology Guwahati
भारतीय प्रौद्योगिकी संस्थान गुवाहाटी
Guwahati-781039, India
गुवाहाटी-781039, भारत

Prof. Subashisa Dutta and Dr. Hrishikesh Sharma
Department of Civil Engineering
Indian Institute of Technology, Guwahati, Guwahati-781 039, Assam, India
Email id: shrishi@iitg.ac.in, Ph No: +91-9435321894



GUWAHATI INTERNATIONAL AIRPORT LTD.
(GIAL)



KEY PLAN

NOTES:

1. ALL DIMENSIONS ARE METERS UNLESS OTHERWISE SPECIFIED.
2. FOR GENERAL ARRANGEMENT LAYOUT, REFER DRAWING No.GIAL-1001-JAC-CVL-DRG-1001-01 To 08.
3. FOR GRADING PLAN LAYOUT REFER DRAWING No. GIAL-1001-JAC-CVL-DRG-1006-01 TO 08.
4. FOR CATCHMENT LAYOUT PLAN REFER DRAWING No. GIAL-3003-JAC-SWD-DRG-3002-01 & 02.
5. FOR STORM WATER DRAINAGE PLAN REFER DRAWING No. GIAL-3003-JAC-SWD-DRG-3005-01 TO 12.
6. WHILE CONSTRUCTION OF DRAINS IF THE ROADS ARE STILL OPERATIONAL, THEN 3 CULVERTS OF 600MM DIA TO BE INTRODUCED AS TEMPORARY ARRANGEMENT.
7. AT OUTFALL LOCATIONS AND DESIGN NODES WHERE GROUND LEVELS FROM THE GRADING FILE / TOPO FILE IN UNAVAILABLE, GROUND ELEVATIONS ARE PICKED FROM SD DRAWINGS.
8. CULVERTS INTRODUCED AT LOCATIONS OF EXISTING TAXIWAYS & ROADS SHALL FOLLOW SAME PAVEMENT EDGE LEVELS AS EXISTING.
9. IN ABSENCE OF GROUND LEVELS IN THE AIR FORCE REGION, GRADING IS EXTENDED AS PER ICAO GUIDELINES AS IS ADOPTED FOR DRAINAGE DESIGN.

LEGEND:

- LINED TRAPEZOIDAL DRAIN
- PERFORATED RECTANGULAR DRAIN
- OPEN RECTANGULAR DRAIN
- CULVERT
- FLOW ARROW
- PLANNED OUTFALL
- DESIGN NODE

ABBREVIATION

DN-XX	- DRAIN NETWORK NAME
RC-XX	- ROAD CULVERT
TC-XX	- TAXIWAY CULVERT

APPROVAL ISSUE

SCALE 1:400 @ A1 ; 1:800 @ A3 — METRES

REV. NO.	DESCRIPTION	DESIGNED	DRAWN	CHECKED	APPROVED
B	DETAIL DESIGN ISSUE	SS 07-11-23	SP 07-11-23	AG 07-11-23	BR 07-11-23
A	DETAIL DESIGN ISSUE	SS 25-10-23	SP 25-10-23	AG 25-10-23	BR 25-10-23

CLIENT:

adani

GUWAHATI INTERNATIONAL AIRPORT LTD.
(GIAL)

CONSULTANT:

Jacobs

CH2M HILL (INDIA) PRIVATE Ltd
184,1ST FLOOR, PLOT No.184,
PLATINUM TOWER, UDYOG
VIHAR, PHASE-1
GURUGRAM -122016
www.jacobs.com

PROJECT :

DESIGN CONSULTANCY SERVICES FOR
AIRSIDE CIVIL & AGL DEVELOPMENT WORKS AND
CAT-I APPROACH LIGHTING SYSTEM (ALS) AT
RWY-02 END DEVELOPMENT WORKS

STATUS :

DETAILED DESIGN

DRAWING TITLE :

STORMWATER DRAINAGE
OVERALL LAYOUT

JOB No. : 87F35800 — SCALE : 1:4000 — SIZE : A1

	NAME	SIGN	DATE
DSGN	SS		25/10/2023
DRWN	SP		25/10/2023
CHKD	AG		25/10/2023
APPD	BR		25/10/2023

PROJECTION

DRAWING NO.

GIAL-3003-JAC-SWD-DRG-3004-01

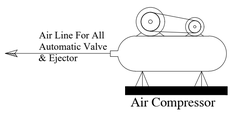
REV: B

RELEASED FOR

☐ INFORMATION ☐ TENDER ☒ APPROVAL ☐ CONSTRUCTION ☐ AS BUILT

Legend

Mark	Description
	Air Line
	Sludge Line
	Treated Line
	Soft Water Line
	Water Level
	Butterfly Valve
	Non Return Valve
	Pressure Gauge
	Pump
	Air Blower
	Ball Valve
	High Level
	Low Level
	Diffuser
EMF	Electro Magnetic Flow Meter
PIT	Pressure Indicator Transmitter
HST	Hydro Static Transmitter
	Automatic Valve
	Air Rotameter
	Y Strainer
	Water Rotameter
VG	Vacuum gauge
	Ejector
	Mixer
	Centrifuge
	Softener/Filter
	Ultraviolet System
	Fine Screen
	Manual Screen
	Air Compressor



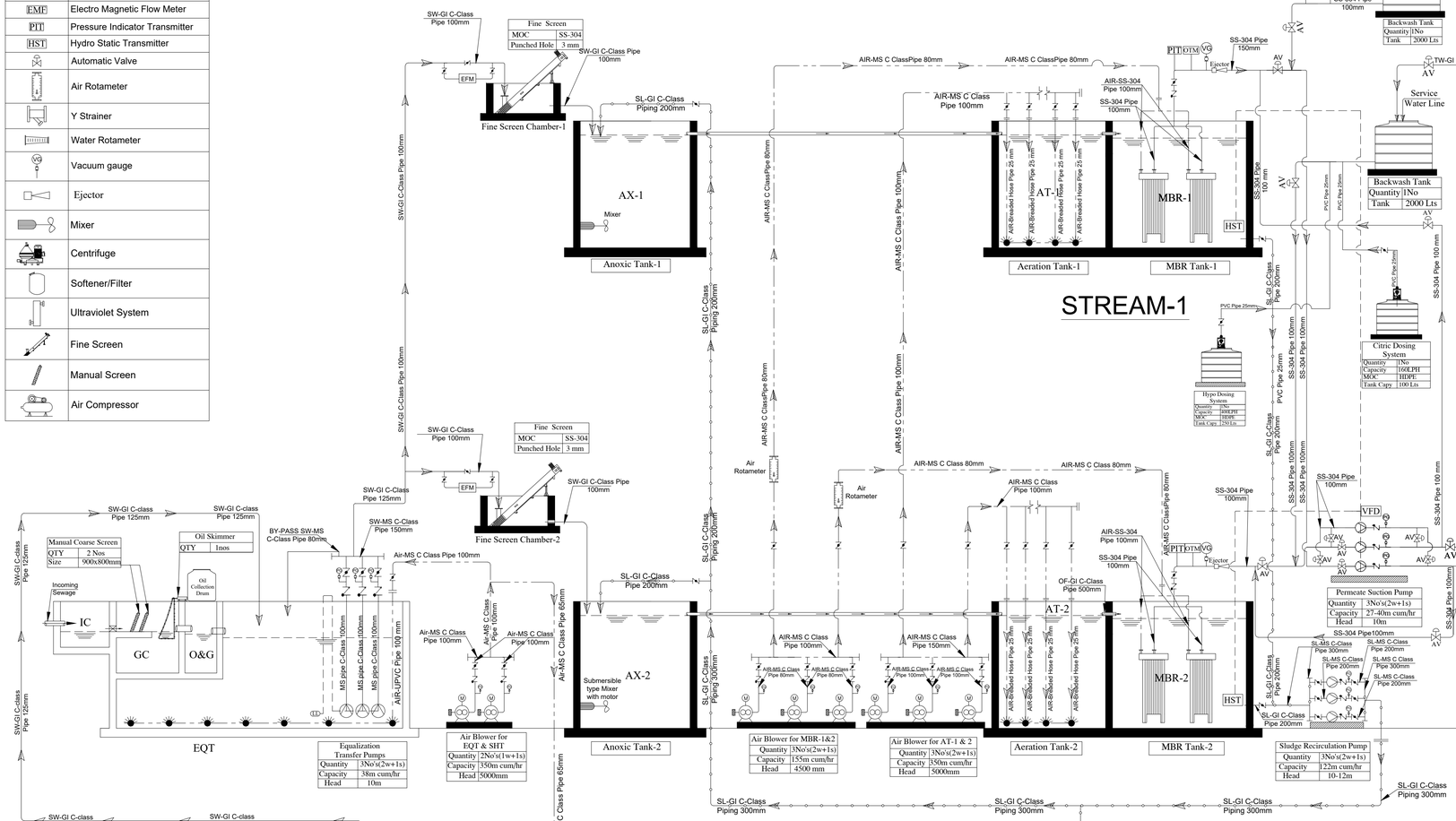


KEY PLAN

Notes - General :

1. GFC-GOOD FOR CONSTRUCTION OF SHOP DRAWING IS FOR THE REFERENCE OF CONTRACTOR. THE CONTRACTOR IS RESPONSIBLE FOR THE COORDINATION OF ALL SERVICES & SUBMISSION OF SHOP DRAWING FOR APPROVAL PRIOR TO PROCUREMENT & INSTALLATION.
2. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH STRUCTURE, ARCHITECTURE DETAILS, MEP DRAWINGS & SPECIFICATIONS.
4. ALL THE MATERIAL SHALL BE AS PER THE APPROVED MATERIAL SUBMITTAL.

GOOD FOR CONSTRUCTION	R0	18-04-2024
DESCRIPTION	REVISION	DATE



STP OUTLET PARAMETERS

1.	Daily Average Flow	2x500m³/Day
2.	pH	6.0-8.5
3.	BOD	Less than 5.0 MG/L
4.	S.Solids	Less than 1.0 MG/L (Not measurable)
5.	COD	Less than 30.0 MG/L
6.	Oil & Grease	Less than 3.0 MG/L
7.	NH4-N	Less than 5.0 MG/L
8.	TP	Less than 1.0 MG/L

STP INLET PARAMETERS

1.	Daily Average Flow	2x500m³/Day
2.	PH	6.5-8.5
3.	BOD	250-450 MG/L
4.	COD	400-600 MG/L
5.	Oil & Grease	50 MG/L
6.	NH4-N	10 MG/L
7.	S.Solids	200-400 MG/L
8.	TP	10 MG/L

List Of Tank for STP

Mark	Description
SC	Screen Chamber
O&G	Oil & Grease Trap
EQT	Equalization Tank
AX1&2	Anoxic Tank 1&2
AT1&2	Aeration Tank 1&2
MBR1&2	Membrane Bio Reactor 1&2
TWT	Treated Water Tank
SHT	Sludge Holding Tank
CST	Collection Sump Tank
SWT	Soft Water Tank

P&ID FOR SEWAGE TREATMENT PLANT OF CAPACITY 2x500 KLD

Mark	Description
SL	Sludge Line
SW	Sewage Line
Air	Air Line
TW	Treated Water Line
SWL	Soft Water Line

List of STP Electromechanical unit

Mark	Description	Unit	Capacity	Head
ETP	Equalization Transfer Pump	(2W+1S)	38.0m³/hr	10.0Mtrs
CSTP	Collection Sump Transfer Pump	(2W+1S)	25.0m³/hr	16.0Mtrs
SRP	Sludge Recycling Pump	(2W+1S)	122.0m³/hr	10-12 Mtrs
AB	Air Blower for EQT,SHT	(1W+1S)	300.0m³/hr	5.0 Mtrs
AB	Air Blower for AT-1 & AT-2	(2W+1S)	350.0m³/hr	5.0 Mtrs
AB	Air Blower for MBR-1 & MBR-2	(2W+1S)	155.0m³/hr	4.5 Mtrs
SP	Screw Pumps	(1W+1S)	3.0m³/hr	50 Mtrs
PSP	Permeate Pumps	(2W+1S)	27.0-40.0m³/hr	10 Mtrs
SFP	Softener Feed Pumps	(2W+1S)	25.0m³/hr	20 Mtrs
SM	Submersible type Mixer with Motor	(2W)	1 hp, 1400 RPM	
BK	Backwash Tank	2 No	2000 Lts HDPE	
CF	Centrifuge	1 No	Dia= 900mm	
HYP	Hypo Dosing System	2 No's	Pumps 400 LPH Tank=250 Lts HDPE	
CRT	Citric Dosing System	2 No's	Pumps 0-160 LPH Tank=100 Lts HDPE	
SOF	Softener	1 Set	Dia=2400	Hos=2000
BT	Brine Tank	1 No's		Capacity 5000 Lts
PDS	Poly Dosing System	1 No's	Pumps 0-50 LPH Tank=500 Lts HDPE	
MC	Manual screen	2 No's	-	
FC	Fine Screen	2 No's	-	
UV	UV System	1 No's	50.0m³/hr	-

PROJECT:-

PROJECT MANAGEMENT FOR CONSTRUCTION OF A NEW INTEGRATED TERMINAL BUILDING AT GUWAHATI AIRPORT

CLIENT:-

adani

GUWAHATI INTERNATIONAL AIRPORT LTD

CONSULTANT:-

AECOM

9th FLOOR, INFINITY TOWER- 'C', DLF CYBERCITI, DLF PHASE 2, GURGAON, 122002
T: +91 124 4830 100
F: 91 124 4830 108
Email:- www.aecom.com

MAIN CONTRACTOR:-

Shapoorji Pallonji ENGINEERING & CONSTRUCTION

PS SRIJAN CORPORATE PARK, TOWER-1, 7TH FLOOR, PLOT NO-G-2, BLOCK- GP, SEC-V, SALTLAKE, KOLKATA-700091.

STP CONTRACTOR:-

PREMIER TECH WATER AND ENVIRONMENT

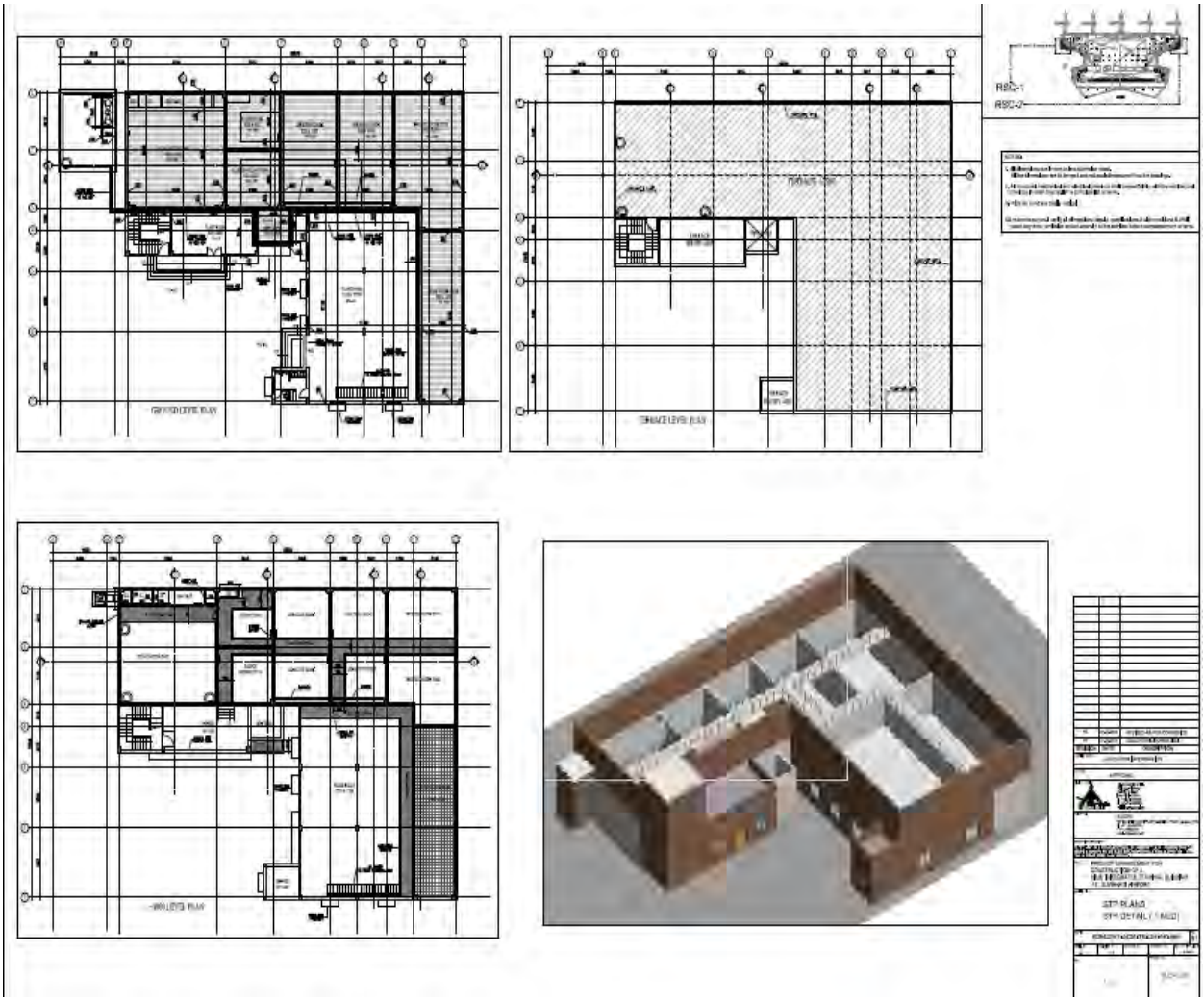
2nd Floor, B-26-27, Sector-1, Gautambuddha Nagar, Noida, UP
Tel.No: 0120-4352010/4315474

DWG DETAIL:-

P&ID
For 2X500 KLD STP BUILDING

SCALE	1:100	DRAWN BK	ANSA	CHKD RS RAWM
DWG No:	SHOP DWG-STP-PT-P&ID-001			REV 00

Annexure 15 – STP layout



ABNS SCIENTIFIC SERVICES

এবিএনএচ চাইন্টিফিক চার্ভিচেচ

এবীএনএস সাইংটীফীক সর্বীসেজ

H-152, Keteki Path, near Radisson Blu, NH 27, Guwahati 781033, Assam

কেতেকী পথ, রৈডিসন ব্লু কে পাস, এন এইচ ২৭, গুবাহাটী ৭৮১০৩৩, অসম

Email: info@abnsscientific.com, abnsscientific@gmail.com Phone: 98640 68513, 98640 89951

TEST REPORT

Report No. :ABNS/EM/021025/07	**Date : 10/02/2025**
Name & Address of the Customer : **M/S ADANI GUWAHATI INTERNATIONAL AIRPORT LIMITED.** Lokpriya Gopinath Bordoloi Internation Airport, Borjhar, Guwahati, Kamrup (M), Assam-781015.	
Ref.: SO: 5700363902, Dated:03/02/2025 Sample Description: Waste Water Source: STP Outlet	**Date of Sampling: 30/01/2025** Sampling done by: Mr. Chinmay Kalita (Sampler) Sampling Protocol: IS 3025 (Part 1): 1987, Reaff. 1999
	Analysis Start Date: 30/01/2025 Analysis End Date: 06/02/2025
Environmental Condition: *Temperature 24.4°C, Relative Humidity: 68%*	

ANALYSIS RESULT

Sl No	Water Quality PARAMETERS	UNIT	RESULT	REFERENCE METHOD	Permissible limit (CPCB)
1	pH	-	**7.20**	IS 3025 (Part 11)1983 (Reaffirmed 2017)	5.5 – 9.0
2	Total Suspended Solids (TSS)	mg/L	**34.4**	IS 3025 (Part 17)1984 (Reaffirmed 2017)	100 mg/L
3	Total Dissolved Solids (TDS)	mg/L	**668.0**	IS 3025 (Part 16)1984 (Reaffirmed 2017)	2100mg/L
4	Total Hardness	mg/L	**364.0**	IS: 3025-(part21) 2009	-
5	Total Nitrogen	mg/L	**30.4**	IS 3025 (Part 34) 1988 (Reaffirmed 2003)	100mg/L
6	Ammonical Nitrogen	mg/L	**16.6**	IS 3025 (Part 34) 1988 (Reaffirmed 2003)	-
7	Residual Chlorine	mg/L	**0.2**	IS 3025 (Part 26) 1986 (Reaffirmed 2003)	-
8	BOD	mg/L	**26.0**	IS 3025 (Part 44)1993 (Reaffirmed 2019)	30 mg/L
9	COD	mg/L	**134.0**	IS 3025 (Part 58)2006: Reaffirmed 2017	250 mg/L
10	Oil and grease	mg/L	**9.20**	IS 3025 (Part 39)1991 (Reaffirmed 2019)	10 mg/L
11	Faecal Coliform	CFU/100	**740**	IS 1622 -1981 (Reaffirmed 2003)	-

Note*: The results relate to the parameter tested only.*

----------*End of Report*----------

For **ABNS Scientific Services,**

Report reviewed By: Dr. Bidyut J Sarmah (TM)

10/02/2025

Authorized Signatory

ABNS SCIENTIFIC SERVICES

এবিএনএচ চাইন্টিফিক চার্ভিচেচ

এবীএনএস সাইংটীফীক সর্বীসেজ

H-152, Keteki Path, near Radisson Blu, NH 27, Guwahati 781033, Assam

কেতেকী পথ, রৈডিসন ব্লূ কে পাস, এন এইচ ২৭, গুবাহাটী ৭৮১০৩৩, অসম

Email: info@abnsscientific.com, abnsscientific@gmail.com Phone: 98640 68513, 98640 89951

TEST REPORT

Report No. :ABNS/EM/021025/08	**Date : 10/02/2025**
Name & Address of the Customer : **M/S ADANI GUWAHATI INTERNATIONAL AIRPORT LIMITED.** Lokpriya Gopinath Bordoloi Internation Airport, Borjhar, Guwahati, Kamrup (M), Assam-781015.	
Ref.: SO: 5700363902, Dated:03/02/2025 Sample Description: Waste Water Source: STP Inlet	**Date of Sampling: 30/01/2025** Sampling done by: Mr. Chinmay Kalita (Sampler) Sampling Protocol: IS 3025 (Part 1): 1987, Reaff. 1999
	Analysis Start Date: 30/01/2025 Analysis End Date: 06/02/2025
Environmental Condition: *Temperature 24.4^{0}C, Relative Humidity: 68%*	

ANALYSIS RESULT

Sl No	Water Quality PARAMETERS	UNIT	RESULT	REFERENCE METHOD	Permissible limit (CPCB)
1	pH	-	**7.40**	IS 3025 (Part 11)1983 (Reaffirmed 2017)	5.5 – 9.0
2	Total Suspended Solids (TSS)	mg/L	**98.0**	IS 3025 (Part 17)1984 (Reaffirmed 2017)	100 mg/L
3	Total Dissolved Solids (TDS)	mg/L	**784.0**	IS 3025 (Part 16)1984 (Reaffirmed 2017)	2100mg/L
4	Total Hardness	mg/L	**298.0**	IS: 3025-(part21) 2009	-
5	Total Nitrogen	mg/L	**59.7**	IS 3025 (Part 34) 1988 (Reaffirmed 2003)	100mg/L
6	Ammonical Nitrogen	mg/L	**24.0**	IS 3025 (Part 34) 1988 (Reaffirmed 2003)	-
7	Residual Chlorine	mg/L	**0.80**	IS 3025 (Part 26) 1986 (Reaffirmed 2003)	-
8	BOD	mg/L	**43.0**	IS 3025 (Part 44)1993 (Reaffirmed 2019)	30 mg/L
9	COD	mg/L	**398.0**	IS 3025 (Part 58)2006: Reaffirmed 2017	250 mg/L
10	Oil and grease	mg/L	**32.4**	IS 3025 (Part 39)1991 (Reaffirmed 2019)	10 mg/L
11	Faecal Coliform	CFU/100	**4.2×10^3**	IS 1622 -1981 (Reaffirmed 2003)	-

Note*: The results relate to the parameter tested only.*

----------*End of Report*----------

For **ABNS Scientific Services,**

ABNS Guwahati

10/02/2025

Authorized Signatory

Report reviewed By: Dr. Bidyut J Sarmah (TM)

ABNS SCIENTIFIC SERVICES

এবিএনএচ চাইন্টিফিক চার্ভিচেচ

এবীএনএস সাইংটীফীক সর্বীসেজ

H-152, Keteki Path, near Radisson Blu, NH 27, Guwahati 781033, Assam

কেতেকী পথ, রৈডিসন ব্লু কে পাস, এন এইচ ২৭, গুবাহাটী ৭৮১০৩৩, অসম

Email: info@abnsscientific.com, abnsscientific@gmail.com Phone: 98640 68513, 98640 89951

TEST REPORT

Report No.: ABNS/EM/120524/08 **Date : 05/12/2024**

Name & Address of the Customer :

M/S ADANI GUWAHATI INTERNATIONAL AIRPORT LIMITED.

Lokpriya Gopinath Bordoloi Internation Airport,

Borjhar, Guwahati, Kamrup (M), Assam-781015.

Ref.: SO:5700336280, Dated:02/01/2024

Sample Description: Waste Water

Source: STP Inlet

Sample Id: ABNS/GHY/112124/WW02

Date of Sampling: 20/11/2024

Sampling done by: Mr. Chinmay Kalita (Sampler)

Sampling Protocol: IS 17614 (Part 1): 2021

Analysis Start Date: 21/11/2024

Analysis End Date: 26/11/2024

Environmental Condition: *Temperature 22.6^{0}C, Relative Humidity:67%*

ANALYSIS RESULT

Sl No	Water Quality PARAMETERS	UNIT	RESULT	REFERENCE METHOD	Permissible limit (CPCB)
1	pH	-	**6.86**	IS 3025 (Part 11)1983 (Reaffirmed 2022)	5.5 – 9.0
2	Total Suspended Solids (TSS)	mg/L	**14**	IS 3025 (Part 17)1984 (Reaffirmed 2022)	100 mg/L
3	Total Dissolved Solids (TDS)	mg/L	**810**	IS 3025 (Part 16)1984 (Reaffirmed 2023)	2100mg/L
4	Total Hardness	mg/L	**312.65**	IS: 3025-(part21) 2009 (Reaffirmed 2019)	-
5	Total Nitrogen	mg/L	**29.7**	IS 3025 (Part 34) 1988 (Reaffirmed 2019)	100mg/L
6	Ammonical Nitrogen	mg/L	**42.0**	IS 3025 (Part 34) 1988 (Reaffirmed 2019)	-
7	Residual Chlorine	mg/L	**0.58**	IS 3025 (Part 26) 1986 (Reaffirmed 2003)	-
8	BOD	mg/L	**16.0**	IS 3025 (Part 44)1993 (Reaffirmed 2023)	30 mg/L
9	COD	mg/L	**82.0**	IS 3025 (Part 58)2006 (Reaffirmed 2019)	250 mg/L
10	Oil and grease	mg/L	**9.5**	IS 3025 (Part 39)1991 (Reaffirmed 2021)	10 mg/L
11	Faecal Coliform	CFU/100	**4.2×10^5**	IS 1622 -1981 (Reaffirmed 2003)	-

Note*: The results relate to the parameter tested only.*

----------*End of Report*----------

For ABNS Scientific Services,

Report reviewed By: Dr. Bidyut Jyoti Sarmah (TM)

05/12/2024

Authorized Signatory

(Dr. Mayur Jyoti Mahanta)

ABNS SCIENTIFIC SERVICES

এবিএনএচ চাইন্টিফিক চার্ভিচেচ

এবীएनएस साइंटीफीक सर्वीसेज

H-152, Keteki Path, near Radisson Blu, NH 27, Guwahati 781033, Assam

केतेकी पथ, रैडिसन ब्लू के पास, एन एइच २७, गुवाहाटी ७८१०३३, असम

Email: info@abnsscientific.com, abnsscientific@gmail.com Phone: 98640 68513, 98640 89951

TEST REPORT

Report No.: ABNS/EM/120524/07	**Date : 05/12/2024**

Name & Address of the Customer :

M/S ADANI GUWAHATI INTERNATIONAL AIRPORT LIMITED.

Lokpriya Gopinath Bordoloi Internation Airport,

Borjhar, Guwahati, Kamrup (M), Assam-781015.

Ref.: SO:5700336280, Dated:02/01/2024	**Date of Sampling: 20/11/2024**
Sample Description: Waste Water	Sampling done by: Mr. Chinmay Kalita (Sampler)
Source: STP Outlet	Sampling Protocol: IS 17614 (Part 1): 2021
Sample Id: ABNS/GHY/112124/WW01	Analysis Start Date: 21/11/2024
	Analysis End Date: 26/11/2024

Environmental Condition: *Temperature 22.6°C, Relative Humidity:67%*

ANALYSIS RESULT

Sl No	Water Quality PARAMETERS	UNIT	RESULT	REFERENCE METHOD	Permissible limit (CPCB)
1	pH	-	**7.11**	IS 3025 (Part 11)1983 (Reaffirmed 2022)	5.5 – 9.0
2	Total Suspended Solids (TSS)	mg/L	**7**	IS 3025 (Part 17)1984 (Reaffirmed 2022)	100 mg/L
3	Total Dissolved Solids (TDS)	mg/L	**486**	IS 3025 (Part 16)1984 (Reaffirmed 2023)	2100mg/L
4	Total Hardness	mg/L	**252.78**	IS: 3025-(part21) 2009 (Reaffirmed 2019)	-
5	Total Nitrogen	mg/L	**26.3**	IS 3025 (Part 34) 1988 (Reaffirmed 2019)	100mg/L
6	Ammonical Nitrogen	mg/L	**5.8**	IS 3025 (Part 34) 1988 (Reaffirmed 2019)	-
7	Residual Chlorine	mg/L	**0.2**	IS 3025 (Part 26) 1986 (Reaffirmed 2003)	-
8	BOD	mg/L	**6.0**	IS 3025 (Part 44)1993 (Reaffirmed 2023)	30 mg/L
9	COD	mg/L	**34.0**	IS 3025 (Part 58)2006 (Reaffirmed 2019)	250 mg/L
10	Oil and grease	mg/L	**5.9**	IS 3025 (Part 39)1991 (Reaffirmed 2021)	10 mg/L
11	Faecal Coliform	CFU/100	**2.4×10^3**	IS 1622 -1981 (Reaffirmed 2003)	-

Note*: The results relate to the parameter tested only.*

----------*End of Report*----------

For ABNS Scientific Services,

Report reviewed By: Dr. Bidyut Jyoti Sarmah (TM)

05/12/2024

Authorized Signatory

(Dr. Mayur Jyoti Mahanta)

ABNS

ABNS SCIENTIFIC SERVICES

এবিএনএচ চাইন্টিফিক চার্ভিচেচ
এবীএনএস সাইংটীফীক সর্বীসেজ

H-152, Keteki Path, near Radisson Blu, NH 27, Guwahati 781033, Assam
केतेकी पथ, रैडिसन ब्लू के पास, एन एइच २७, गुवाहाटी ७८१०३३, असम
Email: info@abnsscientific.com, abnsscientific@gmail.com Phone: 98640 68513, 98640 89951

TEST REPORT

Report No.: ABNS/EM/111124/08 **Date : 11/11/2024**

Name & Address of the Customer :

M/S ADANI GUWAHATI INTERNATIONAL AIRPORT LIMITED.
Lokpriya Gopinath Bordoloi Internation Airport,
Borjhar, Guwahati, Kamrup (M), Assam-781015.

Ref.: SO:5700336280, Dated:02/01/2024
Sample Description: Waste Water
Source: STP Inlet
Sample Id: ABNS/GHY/100424/WW02

Date of Sampling: 04/10/2024
Sampling done by: Mr. Chinmay Kalita (Sampler)
Sampling Protocol: IS 17614 (Part 1): 2021

Analysis Start Date: 04/10/2024
Analysis End Date: 09/10/2024

***Environmental Condition**: Temperature 22.9°C, Relative Humidity:68%*

ANALYSIS RESULT

Sl No	Water Quality PARAMETERS	UNIT	RESULT	REFERENCE METHOD	Permissible limit (CPCB)
1	pH	-	**6.73**	IS 3025 (Part 11)1983 (Reaffirmed 2022)	5.5 – 9.0
2	Total Suspended Solids (TSS)	mg/L	**15**	IS 3025 (Part 17)1984 (Reaffirmed 2022)	100 mg/L
3	Total Dissolved Solids (TDS)	mg/L	**768**	IS 3025 (Part 16)1984 (Reaffirmed 2023)	2100mg/L
4	Total Hardness	mg/L	**289.76**	IS: 3025-(part21) 2009 (Reaffirmed 2019)	-
5	Total Nitrogen	mg/L	**33.4**	IS 3025 (Part 34) 1988 (Reaffirmed 2019)	100mg/L
6	Ammonical Nitrogen	mg/L	**36.0**	IS 3025 (Part 34) 1988 (Reaffirmed 2019)	-
7	Residual Chlorine	mg/L	**0.81**	IS 3025 (Part 26) 1986 (Reaffirmed 2003)	-
8	BOD	mg/L	**14.0**	IS 3025 (Part 44)1993 (Reaffirmed 2023)	30 mg/L
9	COD	mg/L	**112.0**	IS 3025 (Part 58)2006 (Reaffirmed 2019)	250 mg/L
10	Oil and grease	mg/L	**8.2**	IS 3025 (Part 39)1991 (Reaffirmed 2021)	10 mg/L
11	Faecal Coliform	CFU/100	**3.7×10^4**	IS 1622 -1981 (Reaffirmed 2003)	-

***Note**: The results relate to the parameter tested only.*

----------*End of Report*----------

For ABNS Scientific Services,

Report reviewed By: Dr. Bidyut Jyoti Sarmah (TM)

Authorized Signatory
(Dr. Mayur Jyoti Mahanta)

ABNS SCIENTIFIC SERVICES

এবিএনএচ চাইন্টিফিক চার্ভিচেচ

এবীএনএস সাইন্টীফীক সর্বীসেজ

H-152, Keteki Path, near Radisson Blu, NH 27, Guwahati 781033, Assam

কেতেকী পথ, রৈডিসন ব্লূ কে পাস, এন এইচ ২৬, গুবাহাটী ৬৮১০৩৩, অসম

Email: info@abnsscientific.com, abnsscientific@gmail.com Phone: 98640 68513, 98640 89951

TEST REPORT

Report No.: ABNS/EM/111124/07 **Date : 11/11/2024**

Name & Address of the Customer :

M/S ADANI GUWAHATI INTERNATIONAL AIRPORT LIMITED.

Lokpriya Gopinath Bordoloi Internation Airport,

Borjhar, Guwahati, Kamrup (M), Assam-781015.

Ref.: SO:5700336280, Dated:02/01/2024

Sample Description: Waste Water

Source: STP Outlet

Sample Id: ABNS/GHY/100424/WW01

Date of Sampling: 04/10/2024

Sampling done by: Mr. Chinmay Kalita (Sampler)

Sampling Protocol: IS 17614 (Part 1): 2021

Analysis Start Date: 04/10/2024

Analysis End Date: 09/10/2024

Environmental Condition: *Temperature 22.9°C, Relative Humidity:68%*

ANALYSIS RESULT

Sl No	Water Quality PARAMETERS	UNIT	RESULT	REFERENCE METHOD	Permissible limit (CPCB)
1	pH	-	**7.15**	IS 3025 (Part 11)1983 (Reaffirmed 2022)	5.5 – 9.0
2	Total Suspended Solids (TSS)	mg/L	**9**	IS 3025 (Part 17)1984 (Reaffirmed 2022)	100 mg/L
3	Total Dissolved Solids (TDS)	mg/L	**583**	IS 3025 (Part 16)1984 (Reaffirmed 2023)	2100mg/L
4	Total Hardness	mg/L	**246.25**	IS: 3025-(part21) 2009 (Reaffirmed 2019)	-
5	Total Nitrogen	mg/L	**23.7**	IS 3025 (Part 34) 1988 (Reaffirmed 2019)	100mg/L
6	Ammonical Nitrogen	mg/L	**6.5**	IS 3025 (Part 34) 1988 (Reaffirmed 2019)	-
7	Residual Chlorine	mg/L	**0.3**	IS 3025 (Part 26) 1986 (Reaffirmed 2003)	-
8	BOD	mg/L	**5.0**	IS 3025 (Part 44)1993 (Reaffirmed 2023)	30 mg/L
9	COD	mg/L	**28.0**	IS 3025 (Part 58)2006 (Reaffirmed 2019)	250 mg/L
10	Oil and grease	mg/L	**5.2**	IS 3025 (Part 39)1991 (Reaffirmed 2021)	10 mg/L
11	Faecal Coliform	CFU/100	**2.3×10^2**	IS 1622 -1981 (Reaffirmed 2003)	-

Note*: The results relate to the parameter tested only.*

----------*End of Report*----------

For ABNS Scientific Services,

Report reviewed By: Dr. Bidyut Jyoti Sarmah (TM)

11/11/2024

Authorized Signatory

(Dr. Mayur Jyoti Mahanta)

ENVIRONMENTAL MONITORING DETAILS AS PER REQUIREMENT

FOR

LokPriya Gopinath Bordoloi International Airport

Site

Guwahati International Airport Limited
Lok Priya Gopinath Bordoloi International Airport, Borjhar,
Guwahati, Kamrup, Kamrup Metropolitan, Assam, 781015.

Monitoring done by:

ABNS SCIENTIFIC SERVICES.

KETEKI PATH,PADUMBARI
JALUKBARI GUWAHATIGUWAHATI-11

1. Ambient Air Monitoring –

a) Power House sampling station



b) KFC sampling station



c) NIBT sampling Site



2. Ambient Noise Monitoring –

a) Power House sampling station



b) KFC sampling station



c) NIBT sampling Site



3. Continuous Noise Monitoring (Landing Side)



4. Continuous Noise Monitoring (Take off Side)



Thank You



Department Manual

Waste Management Manual

GUWAHATI INTERNATIONAL AIRPORT LIMITED [Document No.01]

Waste Management plan

Document Control & Version Control

Document Title:	Waste management plan
Document No:	01
Document Type:	Waste Management Plan
First Issue Date:	01.06.2023
Total No of Pages:	23

Guwahati International Airport Limited

Department Manual

Rev	Date	Revision Description	Signature			
			Originator	Checked	Approved	Date

Signatories	Name	Signatures
Originator	Siddartha Phukan Manager Environment	
Reviewer	Srinivasan Gangadharan Head Operation	
Approver	Utpal Baruah Chief Airport Officer	

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1. INTRODUCTION

1.1 Purpose

This document describes the procedure of handling waste that is generated at the Guwahati International Airport.
It documents a responsible and effective waste management procedure, in a structured manner, to minimize the risk of environmental incidents and liabilities, and compliance to permit-conditions granted by Assam State Pollution Control Board, MoEF&CC and other legal environmental requirements.

1.2 Intended Audience

All company & contractor personnel working under direct operational control and influence of Guwahati International Airport.

1.3 Scope

This procedure is aimed at line managers, company personnel, and contractor personnel working under direct control and influence of Guwahati International Airport. The procedure is applicable for the operational & project activities of the GIAL, for which ASPCB conditions extend and all the functions and actions which can lead to non-compliance of Consent to Operate & Consent to establish granted by the ASPCB and also include other Environmental Compliance.

1.4 Definitions

CPCB	Central Pollution Control Board
ASPCB	Assam State Pollution Control Board
Hazardous Waste (HW)	Any waste which by reason of any of its physical, chemical, reactive, toxic, flammable, explosive or corrosive characteristics causes danger or is likely to cause danger to health or environment, whether alone or when in contact with other waste or substances and shall include: Waste specified under column (3) of Schedule-I. Waste having equal to, or more than the concentration limits specified for the constituents in Class-A and Class-B of Schedule-II or any of the characteristics as specified in Class-C of Schedule II; and Wastes specified in Part-A of Schedule-III in respect of import or export of such wastes, or the wastes not specified in Part-A but exhibit hazardous characteristics specified in Part-C of Schedule-III; as per the Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016 & amendment till.
Manifest	Transporting document(s) prepared and signed by the occupier in accordance with rule 19 (1) of Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016.
Recycling	Reclamation and processing of hazardous or other wastes in an environmentally sound manner for the originally intended purpose or for other purposes.

Registered recycler or Re-refiner or Re-user	A recycler or re-refiner or re-user registered for reprocessing waste material with the Central Government in the Ministry of Environment and Forests or the Central Pollution Control Board / Rajasthan State Pollution Control Board, as the case may be, for recycling or reprocessing hazardous materials.
Reuse	Hazardous or other waste for the purpose of its original use or other use.
Storage	Storing any waste materials in a licensed storage facility for a temporary period, at the end of which such materials are processed.
Transport	Off-site movement of waste by air, rail or road
Transporter	A person engaged in the off-site transportation of waste by air, rail, road or water.
Waste	Any unavoidable material from an Airport operation for which there is no economic demand and which must be disposed off.

For the purposes of this document the following definitions apply:

Shall - The word 'shall' is to be understood as 'must be done always'
Should - The word 'should' is to be understood as 'strongly recommended'
May - The word 'may' is to be understood as indicating a 'possible course of action'

1.5 Related documents

- Consent to Operate (CTO) and Consent to Establish (CTE)
- Hazardous Waste: The Hazardous and Other Wastes (Management & Transboundary Movement) Rules, 2016
- Bio-Medical Waste: The Bio-Medical Waste Management Rules, 2016
- Plastic Waste: The Plastics Waste Management (PWM) Rules, 2016 and amendment rules, 2022
- E-waste: The E-waste (Management) Rules, 2022
- Used Batteries: Batteries (Management and Handling) Rules, 2022
- ISO 9001: 2015 Standards
- ISO 14001: 2015 Standards
- OHSAS 45001: 2018 Standards.
- IMS - Manual

1.6 Change control

Any change required in the procedure can be communicated to the document owner.

2. RESPONSIBILITIES

All waste generated by various functions in the Airport shall be handled in a responsible way as per the prevailing rules and procedure described in various sections of this document. Further, efforts will be made at all relevant function levels to 'prevent, reduce, reuse and recover' waste generated. It is the responsibility of relevant asset and function line Head/ managers, to ensure that such efforts are made and also to keep records of all waste generated / handled in line with this procedure.

2.0 Primary Responsibility

HOD (Inventory/Store) to classify, quantify and coordinate for collection and storage of hazardous and Non-hazardous (MS Scrap, e-waste, battery etc.) waste generated.

HOD (Operations & Admin) to classify, quantify and coordinate for disposal of garbage generated.

HOD (Techno-commercial) to classify, quantify and coordinate for disposal of Hazardous & Non-hazardous waste generated.

2.1 Secondary Responsibility

All HOD/HOS to implement the waste management practice as outlined in this procedure.

HOD – Techno-Commercial and environment to identify the vendors for disposal / transportation of wastes.

HOD (Environment) to evaluate the hazardous waste or non-hazardous purchaser/ party/ vendor and if required he may audit their facilities.

The waste pertaining to various categories of Hazardous Waste shall be properly packed and labeled with the category and quantity by the generator (functional user) before handing it over to Environment Department at Hazardous waste storage facility within the premises. The Non-Hazardous Waste will be collected & safely handover to store department.

Below table lists various activities and responsibilities related to waste handling / management:

S. No.	Activity	Responsibility
1.	Generation of Hazardous Waste by the user / function	Function generating waste shall be responsible to ensure that proper resources are in place for: (i) Collection, (ii) Segregation of Hazardous waste at the source of generation, (iii) Transportation and hand over it to the Inventory Function at Hazardous waste storage facility situated within the premises with due intimation to environment dept.
2.	Collection, Transportation & Disposal of Non-Hazardous Wastes	Operations or Admin function will be responsible to coordinate and manage the Housekeeping Contractor / Vendor and ensure proper collection and disposal of garbage waste from site. The Non-Hazardous Waste will be collected & safely handed over to store department for further disposal of authorized recycler vendor.

3.	Disposal / Transportation of Hazardous Waste	Environment Function shall ensure that Hazardous Waste generated at its premises is disposed off / transported in line with the CTO/CTE granted by the RSPCB and/ or in environmentally friendly manner.
4.	Maintain Records of HW Waste Generated / Stored/Transported / Disposed etc.	Function generating waste and Environment Function shall ensure that records are maintained as per the relevant formats appended to this procedure.
5.	Submitting various records / Documents to the Regulatory Authorities	Environment Function shall ensure timely and periodic submission of various details / records to the ASPCB as per the prevailing Rules.
6.	Conducting audits for the procedure, records etc.	Environment shall conduct inspections, audit of the waste segregation and storage areas, the waste management practices as well as various records maintained at site.

- For various other contracts related to various operation /maintenance activities, routine jobs; the contract holder of particular contract shall make the contract staff aware about their roles and responsibilities described under various sections of the Procedure.
- For any other types of waste (not specifically mentioned in this Procedure) being / likely to be generated due to various operational activities, the function should seek advice from the Environment Department for its Safe Handling / Treatment / Disposal / Management Procedure.

3. WASTE MANAGEMENT

The organization has put in place the management and control systems to handle the waste generated by its activities in compliance to the Group and other local regulatory requirements and also to minimize waste generation.

Hazardous and non-hazardous waste is identified, segregated, appropriately stored and managed including its disposal at approved disposal sites and by approved methods.

The organization has put in place appropriate mitigation measures to manage the risks involved with the waste management process.

The organization shall ensure that no waste is disposed-off on land, within or outside airport premises, sold out to traders/dealers or transferred, which is not in line with statutory approvals.

3.1 Types Of Waste Generated/Handled By Guwahati International Airport Limited

Various types of waste to be generated by Jaipur International Airport are:

3.1.1 Non-Hazardous Solid Waste

1. Recyclable waste- MS Scrap, plastic, wood etc.
2. Bio-degradable waste- Horticulture waste and canteen food waste etc.

3.1.2 Hazardous Waste

Below listed "Hazardous Wastes" are to be generated as per Hazardous waste authorization obtained from Assam State Pollution Control Board (ASPCB)

Sr. No.	Type of Waste	Quantity	Category	Mode of disposal
1.	Waste or residues containing oil	1.5 MT/Annum	5.2	Collection, storage, Transportation and Disposal by sent to approved CHWIF/ co-processing facility
2.	Used /Spent Oil	5 KL/Annum	5.1	Collection, storage, transportation and disposal by utilized for lubrications of machine s & remaining selling to register refiners/re-processors
3.	Waste Lead Acid batteries)	0.500 MT/Annual	1160	Collection, storage, Transportation and Disposal by sent to approved CHWIF/ co-processing facility
4.	Empty barrels/containers/liners contaminated with hazardous chemical/waste	500 Nos /Annual	I-33.1	Collection, Storage, Decontamination Transportation & disposal by selling to approved recyclers
5.	Aluminum Scrap	5 MT/Annum	1010	Collection, storage, Transportation and Disposal by sent to approved CHWIF/co-processing facility

The waste pertaining to above listed category shall be properly packed and labelled with the category and quantity by the generator (functional user) before handing it over to the Inventory Department at Hazardous waste storage facility within the premises.

3.1.3 Bio-Medical Waste from OHC

The medical waste shall be segregated into containers/ bags prior to its storage, transportation, treatment, and disposal. This type of waste shall be transported to the designated waste site for incineration. The on – site clinic shall ensure that the waste is not mixed with other types of wastes.

3.1.4 Waste Batteries

The waste batteries from the cars, UPS, fire tender etc. collected and stored separately. The same shall be sent to the authorised dealer / recycler as per the Batteries (Management and Handling) Rules.

3.1.5 Wastes from the Aircraft

The Hazardous wastes shall not be accepted from the aircraft; however non-hazardous waste can be accepted after verification and confirmation of respective function.

3.1.6 E-Waste:

The E-waste generated from various location. User department collected and handover to store department separately. The same shall be sent to the authored recycler as per the E-waste management rules and CTO.

3.2 Waste Handling

It includes collection of various waste generated at the site, segregation, storage, treatment at site and/or transportation as well as disposal at the location or through the operator of treatment facility; disposal at approved disposal sites and by approved methods / approved in CTO and Hazardous waste authorization to Operate granted by the Assam State Pollution Control Board.

3.2.1 Non-Hazardous Solid Waste

1. Recyclable waste:

Paper, plastic, glass, wooden blocks, tin, tyres etc. generated at the site shall be collected by the waste management contractor daily. Care should be taken by all including canteen contractor to ensure that food (bio-degradable) waste is not allowed to contaminate with other type of waste and stored separately in bins.
The recyclable waste shall be sent to the recycler and records should be maintained by the Contractor and monitored by the concerned function.

2. Bio-degradable waste

It consists of usually food waste from the pantry, canteen etc. which are bio-degradable in nature. The Company shall ensure that same is collected separately, transported and composted in environmentally responsible manner.

3.2.2 Sludge from the Sewage Treatment plant (STP)

The sludge from the sewage treatment plan shall be collected periodically and shall be used as manure for the plantation site.

3.3 Transportation of waste

The waste after segregation and stored at the waste storage facility shall be either transported to the recycler site or to the authorised/designated CHWIF site.
The Company shall maintain related records in connection with the contract as per the prevailing Rules.

- The staff and contractual manpower shall be made aware on the Hazards, Risks and Control measures associated (including contact numbers and PPEs during waste handling)
- Hazardous and Non-hazardous waste should not be stored and transported together. The waste shall be packed and covered properly to avoid any nuisance on the way to disposal site.
- The Company shall maintain all related records for the waste generated & transported outside.

3.3.1 Transportation of Hazardous Waste

For the transportation of hazardous waste from premises to designated TSDF/CHWIF Site, the company shall ensure that the copies of the manifests will be generated as per the Authorization granted by ASPCB.

As per the Hazardous and Other Wastes (Management and Handling) Rules, 2016, the Company shall ensure that the transporter carries copies of the manifest (during hazardous waste transportation) as per the colour codes indicated below:

Copy Number with Colour Code	Purpose
Copy 1 (White)	To be forwarded by the sender to the State Pollution Control Board after signing all the seven copies.
Copy 2 (Yellow)	To be retained by the sender after taking signature on it from the transporter and the rest of the five signed copies to be carried by the transporter.
Copy 3 (Pink)	To be retained by the receiver (actual user or treatment storage and disposal facility operator) after receiving the waste and the remaining four copies are to be duly signed by the receiver.
Copy 4 (Orange)	To be handed over to the transporter by the receiver after accepting waste.
Copy 5 (Green)	To be sent by the receiver to the State Pollution Control Board.
Copy 6 (Blue)	To be sent by the receiver to the sender
Copy 7 (Grey)	To be sent by the receiver to the State Pollution Control Board of the sender in case the sender is in another State.

The Company shall maintain records of hazardous waste generation, storage, and Disposal in Form-3.

3.4 Control of Waste spill / leak

The organization shall ensure that necessary controls are in place and are effective to contain the accidental spillage of waste oil, used oil etc. from the drum.

The organization through the Waste Management Contract Holder shall ensure that necessary resources are in place to control escape of waste from its containment and in case of any spillage.
The spilled waste oil shall be mopped / contained then oily rags and mops containing oily residues shall be transported along with this type of waste (oily rags).

3.5 Reporting of Accident

The organization shall report incident and near miss measures occurred at the site related to hazardous waste handling, or during transportation of the hazardous waste, to the Rajasthan State Pollution Control Board in the specific format and as per incident reporting procedure.

3.6 Waste Minimization

The organization through various functions shall assess the opportunities for:

- Reduction at source, meaning less waste through the use of more efficient practices.
- Reuse materials or products in their original form or after processing.
- Recycling and recovery of material, or the conversion of waste into usable materials after some form of processing or extraction of energy, to the extent feasible.

3.7 Waste Monitoring, Reporting and Training

- Treated wastewater and air emissions shall be sampled and tested by outsource agency conformance with the permits granted by various Regulatory Authorities and all relevant records shall be maintained by the Environment Department.
- For the other categories of waste – food waste, non-hazardous solid wastes, bio-degradable waste and hazardous waste - Housekeeping Contract Holder/Respective Department shall maintain records related to type and quantity of waste generated, stored at site, transported / disposed as per the Authorization.
- The site Medical Investigation Room (MI)/Health Centre shall maintain the records of medical wastes generated and transported for disposal at designated site and shall communicate to the environment department
- The waste management procedure shall be made available to the organization and contractor staff and the Head - HSE shall make them aware about individual responsibility in line with the procedure.
- The Waste Management Contractor's staff shall be trained for segregation, storage, handling, of various types of waste. Head- HSE & the Waste Management Contract Holder shall ensure that the contract staffs is trained for waste handling / management within the airport limits, handling the spills, or in case of fire at the Waste Segregation / handling area.
- For various other Contacts related to various operation /maintenance activities, routine jobs; the Contract holder of particular contract shall make the contract staff aware about their roles and responsibilities described under various sections of the Procedure.

3.8 Additional category of Hazardous Waste

- The details including its category [Ref.: Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016 with the predicted quantity shall be communicated by the generator (functional user) to the environment department well in advance considering time frame for the application preparation and process of application by the regulatory authorities, can be considered minimum 5-6 months).

- The organization shall make application for new category of hazardous waste (other than for which already authorization is obtained) to the RSPCB for authorization under the Hazardous and Other Wastes (Management & Transboundary Movement) Rules, 2016.
- The renewal of authorization will be requested through the format (Form-I) in connection to rule 6(1) of the Hazardous and Other Wastes (Management & Transboundary Movement) Rules, 2016.

APPENDICES:

WM/ F/001: Form-3 For maintaining records of hazardous & other wastes at the facility:

FORM - 3

[See rules 6(5), 13(7), 14(6), 16(5) and 20 (1)]

FORMAT FOR MAINTAINING RECORDS OF HAZARDOUS AND OTHER WASTES

1. Name and address of the facility :

2. Date of issuance of authorization and its reference number :

3. Description of hazardous and other wastes handled (Generated or Received):

Date	Type of waste with category as per Schedule I, II and III of these rules	Total quantity (Metric Tonnes)	Method of Storage	Destined to or Received from

* Fill up above table separately for indigenous and imported waste.

4. Date wise description of management of hazardous and other wastes including products sent and whom in case of Recyclers or Pre-processor or Utilizer:

5. Date of environmental monitoring (as per authorization or guidelines of Central Pollution Control Board):

Signature of occupier

Date:

Place:

WM/F/002: Form-4 For Filling Annual Returns of Hazardous & Other Wastes:

FORM 4

[See rules 6(5), 13(8), 16(6) and 20 (2)]

FORM FOR FILING ANNUAL RETURNS

[To be submitted to State Pollution Control Board by 30th day of June of every year for the preceding period April to March]

1. Name and address of facility:

2. Authorization No. and Date of issue:

3. Name of the authorized person and full address with telephone, fax number and e-mail:

4. Production during the year (product wise), wherever applicable

Part A. To be filled by hazardous waste generators

1. Total quantity of waste generated category wise

2. Quantity dispatched
   i. to disposal facility
   ii. to recycler or co-processors or pre-processor
   iii. others

3. Quantity utilized in-house, if any -

4. Quantity in storage at the end of the year –

Part B. To be filled by Treatment, storage and disposal facility operators

1. Total quantity received -

2. Quantity in stock at the beginning of the year -

3. Quantity treated –

4. Quantity disposed in landfills as such and after treatment –

5. Quantity incinerated (if applicable) -

6. Quantity processed other than specified above -

7. Quantity in storage at the end of the year –

Part C. To be filled by recyclers or co-processors or other users

1. Quantity of waste received during the year –
   iv. domestic sources
   v. imported (if applicable)

2. Quantity in stock at the beginning of the year -

3. Quantity recycled or co-processed or used –

4. Quantity of products dispatched (wherever applicable) –

5. Quantity of waste generated -

6. Quantity of waste disposed -

7. Quantity re-exported (wherever applicable)-

8. Quantity in storage at the end of the year -

Signature of the Occupier or
Operator of the disposal facility

Date……..

Place……

WM/F/003: Hazardous Materials/Waste Manifest:

FORM 10

[See rule 19 (1)]

MANIFEST FOR HAZARDOUS AND OTHER WASTE

1.	Sender's name and mailing address (including Phone No. and e-mail)	:	
2.	Sender's authorization No.	:	
3.	Manifest Document No.	:	
4.	Transporter's name and address (including Phone No. and e-mail)	:	
5.	Type of vehicle	:	(Truck/Tanker/Special Vehicle)
6.	Transporter's registration No.	:	
7.	Vehicle registration No.	:	
8.	Receiver's name and mailing address (including Phone No. and e-mail)	:	
9.	Receiver's authorization No.	:	
10.	Waste description	:	
11.	Total quantity	:	.....m^3 or MT
	No. of Containers	:	.....Nos.
12.	Physical form	:	(Solid/Semi-Solid/Sludge/Oily/Tarry/Slurry/Liquid)
13.	Special handling instructions and additional information	:	
14.	Sender's Certificate	:	I hereby declare that the contents of the consignment are fully and accurately described above by proper shipping name and are categorized, packed, marked, and labelled, and are in all respects in proper conditions for transport by road according to applicable national government regulations.
	Name and stamp: Signature:		Month Day Year
15.	Transporter acknowledgement of receipt of Wastes		
	Name and stamp: Signature:		Month Day Year
16.	Receiver's certification for receipt of hazardous and other waste		
	Name and stamp: Signature:		Month Day Year

WM/F/004: Format for Reporting Of An Accident:

FORM 11

[See rule 22]

FORMAT FOR REPORTING ACCIDENT

[To be submitted by the facility or sender or receiver or transporter to the State Pollution Control Board]

1. The date and time of the accident :

2. Sequence of events leading to accident :

3. Details of hazardous and other wastes involved in accident :

4. The date for assessing the effects of the accident on health or the environment :

5. The emergency measures taken :

6. The steps taken to alleviate the effects of accidents :

7. The steps take to prevent the recurrence of such an accident :

Date: **Signature:**

Place: **Designation:**

WM/F/005: Form for Handing Over Non-hazardous and Hazardous Waste to Inventory Function by Function Generating Waste

Name of Function/Dept.:
Date:

S. No.	Name of Hazardous Waste	Approx. Quantity	Mode of packing	Mode of Transportation	Remarks

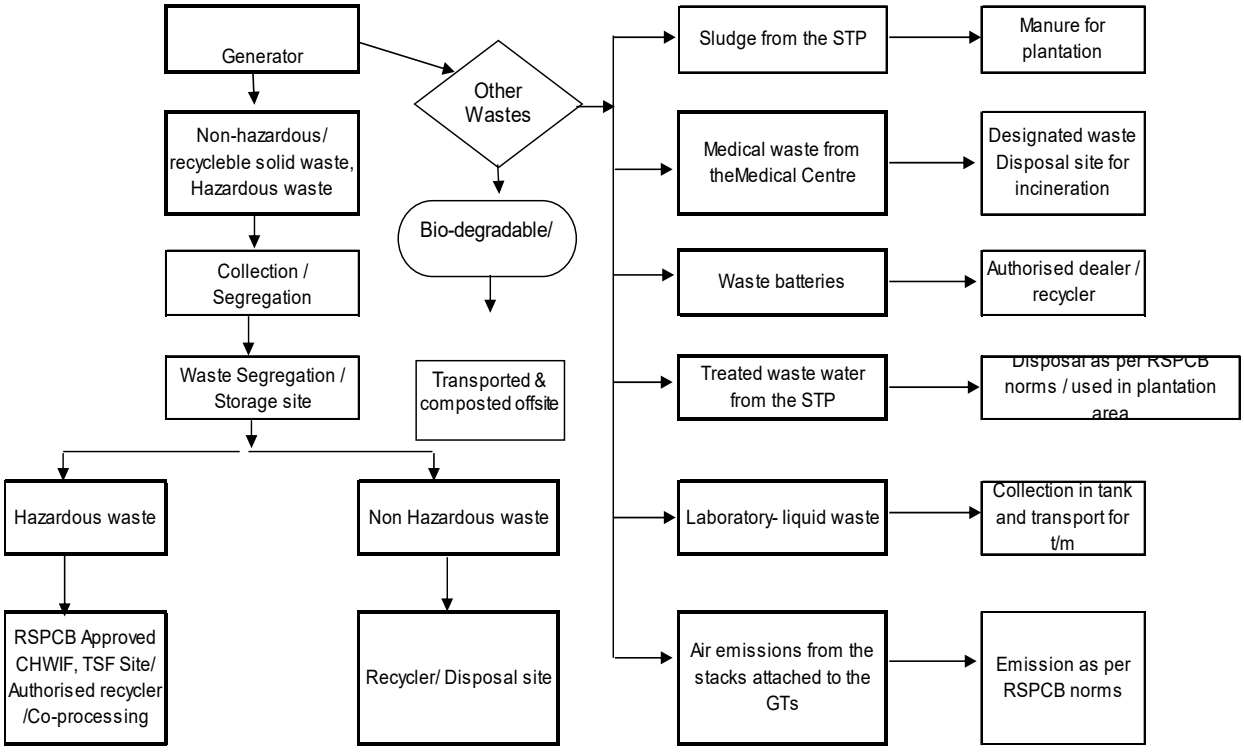
Name & Signature of: Waste Supplier/Generator Inventory Function

WM/F/006: Form for Filling Details of the Hazardous waste (Used/Spent Oil/cotton waste for fire mock drill) Reused or Recycled:

Date	Description of Hazardous waste	Details of Activity In which the hazardous waste reused	Total Quantity	Remarks

Name & Signature of: Waste Supplier/User Function Inventory Function

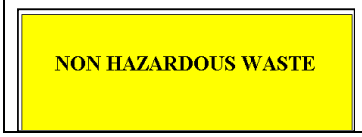
A. Waste Management Flow Diagram



B. Waste Segregation / Storage area

- It should completely contain the types and quantities of hazardous waste generated by the Company.
- It shall be separated in parts / areas: each dedicated to different type of hazardous waste i.e. Solid Waste, Liquid Waste, E-waste, and batteries and shall be properly labelled.
- It should be covered with lockable gate.
- It shall have following sign boards:
  - " No smoking"
  - "Authorized Personnel Only"
- The appropriate type(s) and numbers of fire extinguishers shall be provided at site.
- Oily rags, Waste oil etc. hazardous waste should be stored in good condition (e.g. no severe rusting, holes, cracks and other types of structural defects)
- Hazardous waste-bearing containers should be kept closed or covered.
- Containers/bags/drums bearing hazardous wastes should be labelled in a manner that facilitates the safe and proper handling, storage and treatment/disposal of the contained waste.
- The base/floor of a hazardous waste storage area should be of impervious layer and leachates should be collected separately.
- It should be covered with an appropriate sized cover or roof of a suitable material.

C. Colour Coding for Waste Bins:

Color Coding & labeling	Type of Waste	Examples
	**Hazardous**	1) Oil Cotton Waste 2) Used Oil 3) Used Batteries 4) E-waste 5) Bio-Medical Wastes 6) Discarded Containers
	**Non-Hazardous**	1) Paper, Card Boards 2) Plastic bags, Bottles 3) Wooden Blocks 4) Metal Scrap etc.
	**Kitchen**	All food & kitchen wastes and other bio-degradable waste (Horticulture Waste)

Records:

RECORD	DESCRIPTION	RETENTION TIME
WM/ F/ 001	Form-3 for maintaining records of hazardous waste at the facility	2 Year
WM/ F/ 002	Form-4 for Filling Annual Return of Hazardous Waste	3 Year
WM/ F/ 003	Hazardous Materials/Waste Manifest	3 Year
WM/ F/ 004	Accident Report Form	3 Year
WM/ F/ 005	Form for Handing over Non-Hazardous and Hazardous Waste to Inventory Function by Function Generating Waste	1 Year
WM/ F/ 006	Form for filling Details of the Hazardous waste (Used/Spent Oil) reused or recycled:	1 Year

GOVERNMENT OF ASSAM
PUBLIC WORKS (ROADS)

Upgradation/Widening of Proposed 4 Lane Configuration Road to 6-Lane Road Connecting LGB International Airport, Guwahati from VIP Junction to Dharapur Junction including (i) 6 Lane Grade Separated Junction at Dharapur (ii) 3-Lane Access Road from SOS Junction to Existing Terminal Building and (iii) 2 Lane Temporary Exit from Existing Terminal Building under SOPD (G)



Summary and Abstract of Cost

November 2023

Submitted by:

राइट्स
इंफ्रास्ट्रक्चर विशेषज्ञ

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CHAPTER 1 Summary and Abstract of Cost

1.1 Project Background

Lokpriya Gopinath Bordoloi International Airport (LGBIA), also known as **Guwahati International Airport**, is the biggest and busiest international airport of North-Eastern India. The Construction of *New Integrated Terminal Building* is in progress to meet the futuristic demands of Guwahati & North-Eastern Region and add to the infrastructural development of the expanding city. The Government of Assam intended to upgrade the Approach Road to the **LGBIA, Guwahati** aiming at smooth and quick transportation to & from the existing as well as the new terminus.

Public Works Road Department, Government of Assam vide Letter Number CE/DEV/TB/1/2022-23/03 dated 25.05.2022 has issued **Letter of Acceptance (LoA)** of RITES proposal submitted vide letter number RITES/HW/BD/Assam/2022 dated 05.05.2022 for providing "*Consultancy Services for preparation of Detailed Project Report for improvement and widening of existing 8.80 km long approach road to LGB International Airport to 4-Lane divided carriageway.*"

The Contract Agreement between PWRD and RITES was signed on 15.07.2022. The Final Detailed Project Report was submitted as per schedule on 31.03.2023.

The Government of Assam, in August 2023, has decided **to provide 6–Lane of connectivity to LGBI Airport** and including 6-Laning of VIP Junction to Jalukbari Section of NH-37 (New NH-17) in view of the ever-increasing development demands.

Given the above, the consultant has worked out the preliminary designs and abstract of cost thereof for development of ***"6 lane connectivity to LGBI Airport, Guwahati from VIP Junction to Dharapur Junction through SOS Junction and Garal Junction including the 6 Lane Grade Separator Structure on NH-17 at Dharapur"***.

Further, the State Government has decided for Project Implementation of above 6 laning under two concurrent phases under to different fundings i.e.

(1) 2 to 4 Lane under funds from PM-DevINE and

(2) 4 Lane to 6 Lane under SOPD funds

The DPR for 4 lane is under process of approval under PM-DevINE and the proposal for widening of this proposed 4 lane to 6 lane facility shall be taken by the State under SOPD funds.

Accordingly, the Consultant has worked out the bifurcation of the Cost Estimate as per above requirement, keeling in view the ultimate requirement of 6 Lane development. The abstract of Cost Estimate for two phases is presented in table below.

Table 1-1 : Abstract of Cost for 4 Lane under PM-DevINE and 4 to 6 Lane under SODP

Bill No.	Description	Amount (INR) - 4 Lane under PM-DeINE	Additional Amount for 6 lane (under SOPD)	Total for 6 Lane (Both PM-DevINE and SOPD)
1	Site Clearance	2,12,77,543	6,63,763	2,19,41,306
2	Earthworks	6,60,72,000	13,18,90,500	19,79,62,500
3	Granular Layers, Medians and Roundabouts	39,13,50,100	25,20,33,600	64,33,83,700
4	Bituminous Works	15,00,13,500	16,79,90,400	31,80,03,900
5	Culverts	8,44,07,966	5,84,77,412	14,28,85,378
6	Bridges	17,21,81,238	16,61,19,986	33,83,01,224
7	Elevated Structure	87,66,74,439	1,06,38,48,909	1,94,05,23,348

Bill No.	Description	Amount (INR) - 4 Lane under PM-DeINE	Additional Amount for 6 lane (under SOPD)	Total for 6 Lane (Both PM-DevINE and SOPD)
8	Drainage and Protective work	82,68,27,398	14,45,99,978	97,14,27,376
9	Road Signs, Road Markings and Road Appurtenances	5,11,76,967	7,53,48,531	12,65,25,498
10	Miscellaneous Items	1,40,00,000	3,32,58,000	4,72,58,000
A	**Subtotal for Civil Works**	**2,65,39,81,151**	**2,09,42,31,079**	**4,74,82,12,230**
B	GST on Sub-total for Civil Works under PM-DevINE @ 18 % and 12% for SOPD Civil Works Cost	47,77,16,607	25,13,07,730	72,90,24,337
C	Labour Cess on Sub-total for Civil Works @ 1 %	2,65,39,812	2,09,42,311	4,74,82,123
D	Third Party Quality Control @ 1%	2,65,39,812		2,65,39,812
E	Maintenance for 4 Years (1st Year - Nil; @0.5 % for next three years)	3,98,09,717		3,98,09,717
F	Contingencies @ 2%	5,30,79,623	4,18,84,622	9,49,64,245
G	Construction Supervision including Quality Control		8,00,00,000	8,00,00,000
H	Utility Shifting Estimate	36,01,14,685		36,01,14,685
I	Land Acquisition Cost		1,67,07,09,443	1,67,07,09,443
J	**Total (A to I)**	**3,63,77,81,407**	**4,15,90,75,185**	**7,79,68,56,592**

*as per amount communicated by respective utility department for 4 lane project
#on prorated basis, based on land acquisition cost given by the District Administration for 4 Laning project. *Land acquisition cost for 4 lane (27.5 bighas) is Rs. 50,21,25,789/-. Actual Cost would be provided by Concerned Department* at later stage.

The existing and improvement proposals for the six laning are defined as follows:

1.2 The Existing Project Road Sections

The Project Section for the purpose of Consultancy Services assignment

➔ **Starts** at VIP Junction from National Highway 37 (New NH 17) and

➔ **Ends** at Dharapur Junction near km 140 of National Highway 37 (New NH 17) after traversing through SOS Junction and Garal Junction.

The Northing and Easting Location based on WGS 84 Global Position System for the Start and End Point are:

Table 1-2 : GPS Coordinates for Start and End Point

Description	Northing (m)	Easting (m)	Description	Northing (m)	Easting (m)
Start Point	359889.85	2887514.89	End Point	362876.27	2891619.87

The Distance between the Start Point and End Point along the project road section is 6.8 km. The Project Road sections and available Right of Way after the ongoing Land Acquisition process for 4 lane development is broadly summarised as below:

Table 1-3 : Project Road Sections and Existing Right of Way

Project Road Section	Length, m	Existing Right of Way (m)*
VIP Junction to SOS Junction	600	45
SOS Junction to Garal Junction	4200	30
Garal Junction to Dharapur Junction	2000	28
Total	6800	
**Right of Way after the Land Acquisition Process for 4 Lane*		

In addition to above length, the Project requires improvement / upgradation of following Junctions and two spur sections to / from (temporary) the Existing Terminal Building:

➔ **Junctions requiring Improvement are:**

1) VIP Junction (Start point)
2) SOS Junction
3) Garal Junction
4) Dharapur Junction (End point)
5) Creation of new junctions for Entry to departure / arrival terminal of NITB^ of LGBI Airport
6) Creation of new junctions for Exit from departure / arrival terminal of NITB of LGBI Airport

^*New Integrated Terminal Building*

➔ Improvement of

- Existing Connectivity from SOS Junction to Existing Terminal Building (600 m long) and
- Creation of temporary Exit from Existing Terminal Building (360 m long).



Photo 1-1 : Start and End Point for Airport Connect

The Key Plan for the Project Road Section is presented in Figure below:

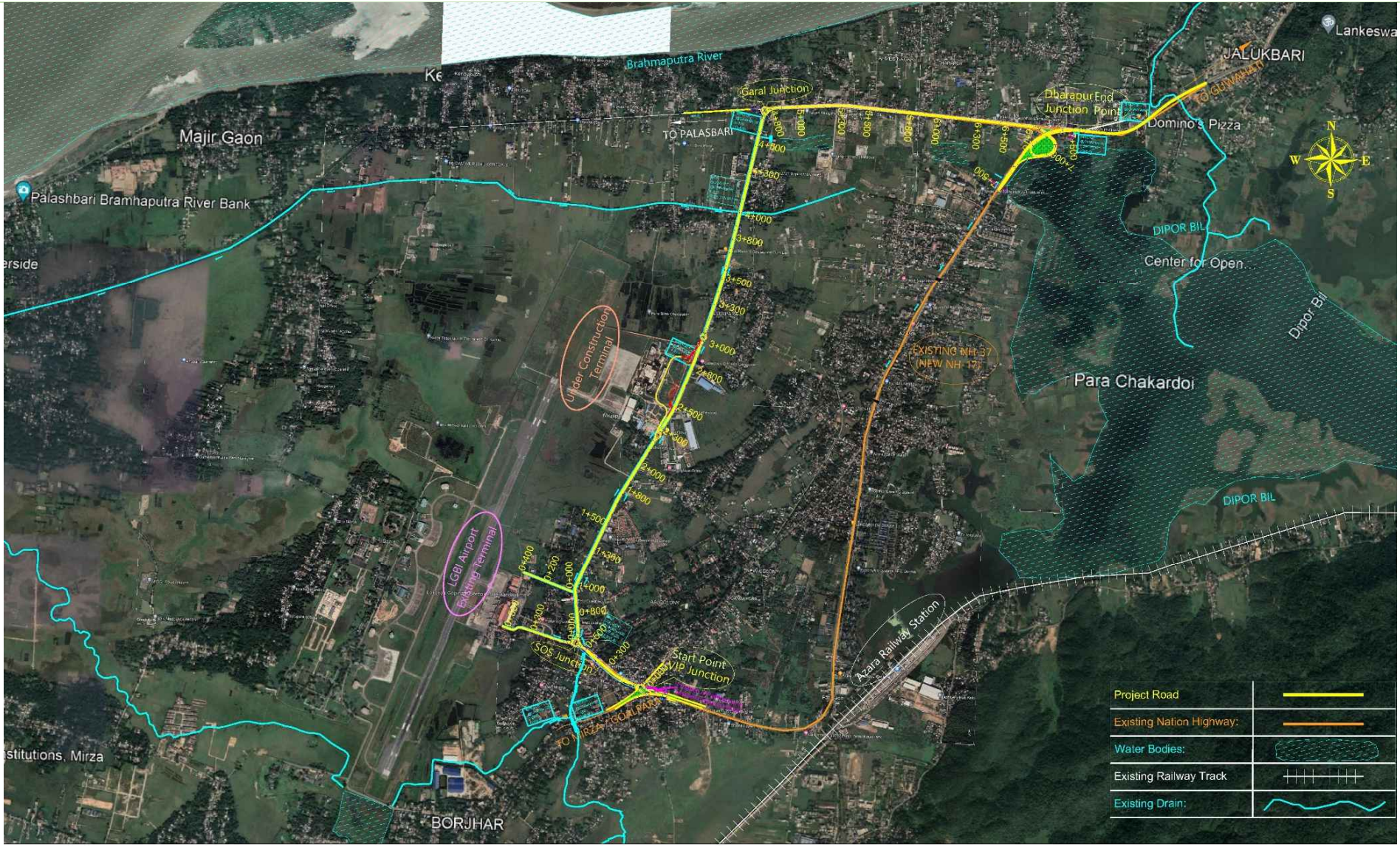


Figure 1-1: Key Plan for the Project Road Section

1.3 Design Options for 6 Lane Road

The Government of Assam has decided for 6 Lane Connectivity loop for the Existing and NITB of LGBI Airport Guwahati. The 6 Lane connectivity to require upgradation of following road sections:

- ➔ Upgradation of existing 2 lane section from VIP Junction to Dharapur Junction through SOS Junction and Garal Junction to 6 Lane configuration [The Subject Project Road Section]
- ➔ Upgradation of existing 4 lane section of New NH-17 from VIP Junction to Jalukbari Junction to 6 Lane configuration. The Project Road Section under PWD NH jurisdiction. This is being dealt with as a separate project by the concerned department.

Given the above, the following options have been explored for 6 Laning of the Project Road Section for providing 6 Lane connectivity to both terminals of LGBI Airport.

- ➔ **Option 1:** 6 Lane with Service Road (45 m Proposed Right of Way)
- ➔ **Option 2:** 6 Lane without Service Road (45 / 38 / 33 m of Proposed Right of Way)
- ➔ **Option 3:** 6 Lane with / without Service Road having 3 Lane Elevated Road from SOS to Garal (45 / 30 (41) / 28 of Proposed Right of Way)

All options to have 6 lane Grade Separated Interchange at Dharapur Junction providing efficient and safe connectivity to the LGBI Airport.

The above options have been explained in detailed in the Appendix 1 to this report. The comparison summary of options is presented below:

Table 1-4 : Comparison of Options for 6 Laning

Description	Option 1 6 Lane with Service Road having 45 m Proposed Right of Way	Option 2 6 Lane with/without Service Road having 45 m / 38 m / 33 m of Right of Way	Option 3 6 Lane with/without Service Road having 45 m / 30 (41) m and 28 m Right of Way.
VIP Junction to SoS Junction			
Main Carriageway	6 Lane (2 x 10.5 m)	6 Lane (2 x 10.5 m)	6 Lane (2 x 10.5 m)
Service Road	2 x 5.5 m	2 x 5.5 m	2 x 5.5 m
Drain Width	2 x 1.92	2 x 1.92	2 x 1.92
Proposed Right of Way	45	45	45
Existing Right of Way	45	45	45
Land Requirement beyond EROW (width)	-	-	-
Land Requirement	-	-	-

Description	Option 1 6 Lane with Service Road having 45 m Proposed Right of Way	Option 2 6 Lane with/without Service Road having 45 m / 38 m / 33 m of Right of Way	Option 3 6 Lane with/without Service Road having 45 m / 30 (41) m and 28 m Right of Way.
beyond EROW (Area), bigha			
Structures to be acquired	-	-	-
SOS Junction to Garal Junction			
Main Carriageway	6 Lane (2 x 10.5 m)	6 Lane (2 x 10.5 m)	3 Lane (1 x 10.5 m) – On Ground and 3 Lane (1 x 10.5 m) Elevated
Service Road	2 x 5.5 m	-	2 x 5.5 m
Drain Width	2 x 1.92 m	2 x 4.2 m (below footpath)	2 x 4.2 m (below Service Road)
Proposed Right of Way	45	38	30
Existing Right of Way	30	30	30
Land Requirement beyond EROW (width)	15	8	Nil / 10.5m at approaches of Elevated Structure
Land Requirement beyond EROW (Area), bigha	49.4	29.86	25.13
Structures to be acquired	73	31	15
Garal Junction to Dharapur Junction			
Main Carriageway	6 Lane (2 x 10.5 m)	6 Lane (2 x 10.5 m)	6 Lane (2 x 10.5 m)
Service Road	2 x 5.5 m	-	-
Drain Width	2 x 4.2 m	2 x 1.92 m (below footpath)	2 x 1.92 m (below footpath)
Proposed Right of Way	45	33	28
Existing Right of Way	28	28	28
Land Requirement beyond EROW (width)	17	5	-

Description	Option 1 6 Lane with Service Road having 45 m Proposed Right of Way	Option 2 6 Lane with/without Service Road having 45 m / 38 m / 33 m of Right of Way	Option 3 6 Lane with/without Service Road having 45 m / 30 (41) m and 28 m Right of Way.
Land Requirement beyond EROW (Area), bigha	31.55	17.52	14.12
Structures to be acquired	231	208	10
For Project Road Section			
Traffic Segregation	Main Road Traffic and Local Traffic are segregated and Hence Safest Option	Main Road Traffic and Local Traffic would ply on the same carriageway. Not Safe Option	Main Road Traffic and Local Traffic would ply on the same carriageway for Garal to Dharapur Section – Not a Safe Option
Land Requirement, Structure (Numbers) Acquisition and Land Acquisition Cost	28*+81^(31.55+49.4) = 109 bighas 304 Numbers Highest	28*+47 (29.86+17.52)^ = 75 bighas 239 Numbers Medium	28*+40 (25.13+14.12)^ = 68 bighas 25 Numbers Minimum
Civil Construction Cost	Medium (405 Cr.)	Lowest among options (383 Cr.)	Highest (762 Cr.) [Option involves construction of 4 km 3 lane elevated road]

*Land Acquisition in process for 4 lane; ^ additional for 6 Lane Proposals

The detailed discussions were held with PWRD Officials on 21.08.2023 on the above options in office of Commissioner PWRD.

Considering the (i) Requirement of Segregation of Airport bound traffic and local traffic by providing service road on both sides, (ii) Available Right of Way of 45m from VIP to SOS and possibility of exploring old records of on an average Right of Way of 40-45m on Garal to Dharapur Section [being a section of Assam Trunk Road] (iii) 6 laning of VIP to Jalukbari Stretch of NH-17 (New) requiring curve improvement at Dharapur and (iv) On going construction for the 4 lane development, the following was decided for further project preparation:

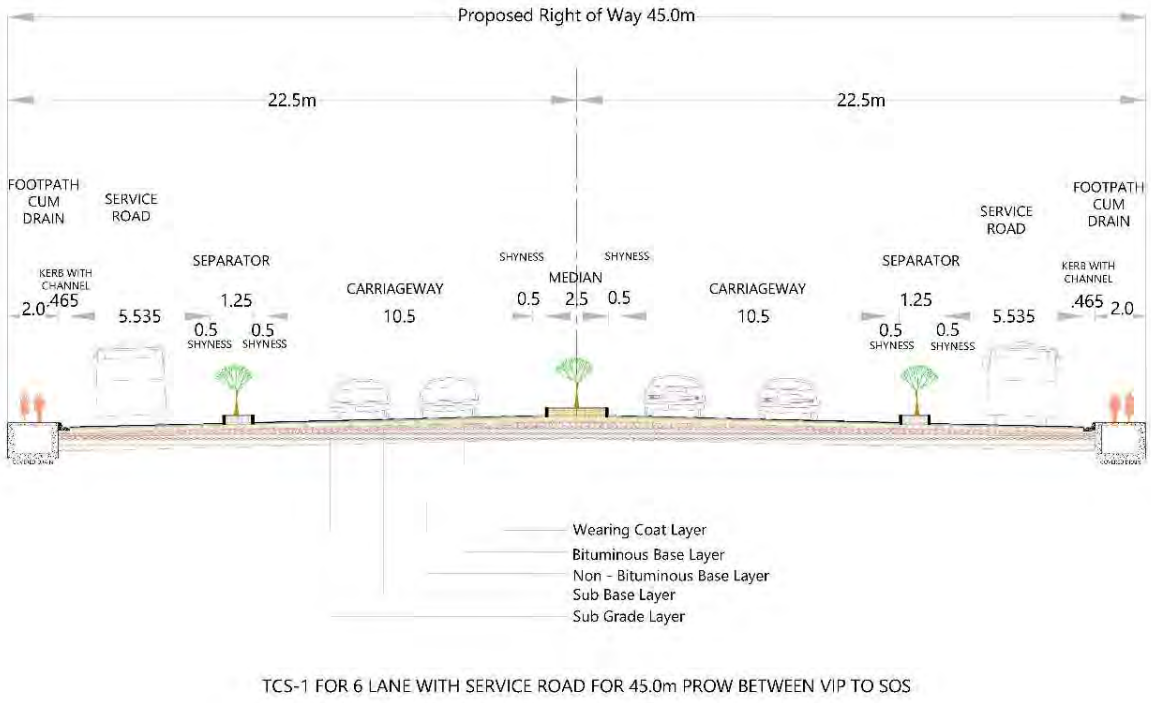
(1) Adopt 45 m Right of Way for providing 6 Lane with 5.5 m wide service road for VIP to SOS and Garal to Dharapur Section of the Project Road

(2) Adopt 38 m Right of Way for providing 6 Lane with 5.5 m wide service on Airport Side and 3.5 m wide service road on other side. Drains shall be 5.5 m wide and 3.5 m wide below the service road.

(3) 6 Lane Grade Separator for Dharapur Junction.
However, during discussion and deliberations held 11.09.2023, it was concluded that for Dharapur Interchange to provide **3 Lane Leg for traffic from Jalukbari / Guwahati to New**

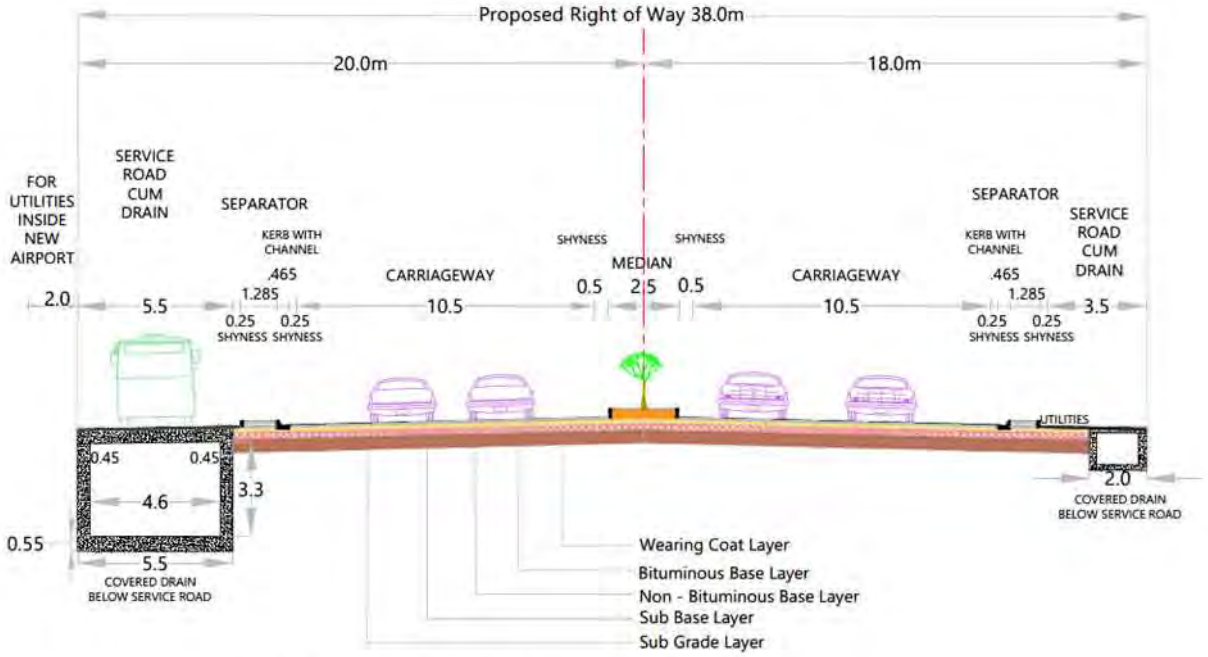
Airport Terminal and 2 Lane Leg for Traffic from Airport to Goalpara. The Service Road Leg for traffic from Airport to Jalukbari / Guwahati shall be 3 lane. It also defibrated to not to include FOB in the present estimate. These can be taken up as separate Project, if required

Accordingly, the cross sections adopted for 6 Laning are as follows:



TCS-1 FOR 6 LANE WITH SERVICE ROAD FOR 45.0m PROW BETWEEN VIP TO SOS

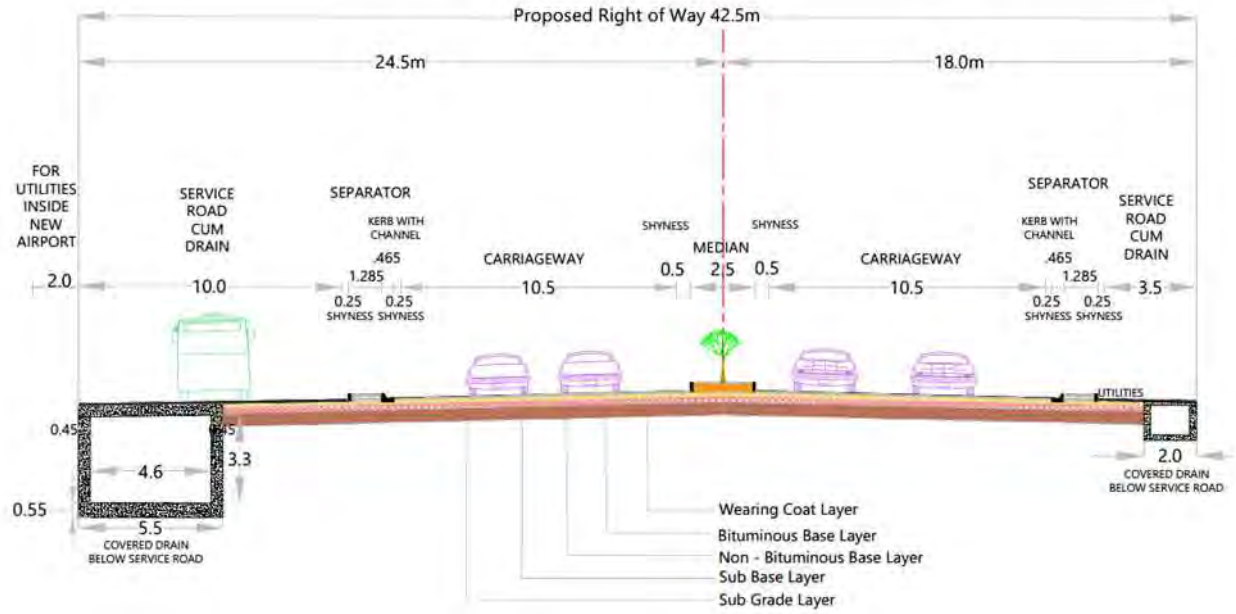
Figure 1-2 : 6 Lane Section from VIP to SOS with 45 m PROW



TCS-2A FOR 6 LANE WITH SERVICE ROAD FOR 38.0m PROW BETWEEN SOS TO GARAL

FROM km 0+650 TO km 2+270 and FROM km 3+055 TO 4+010

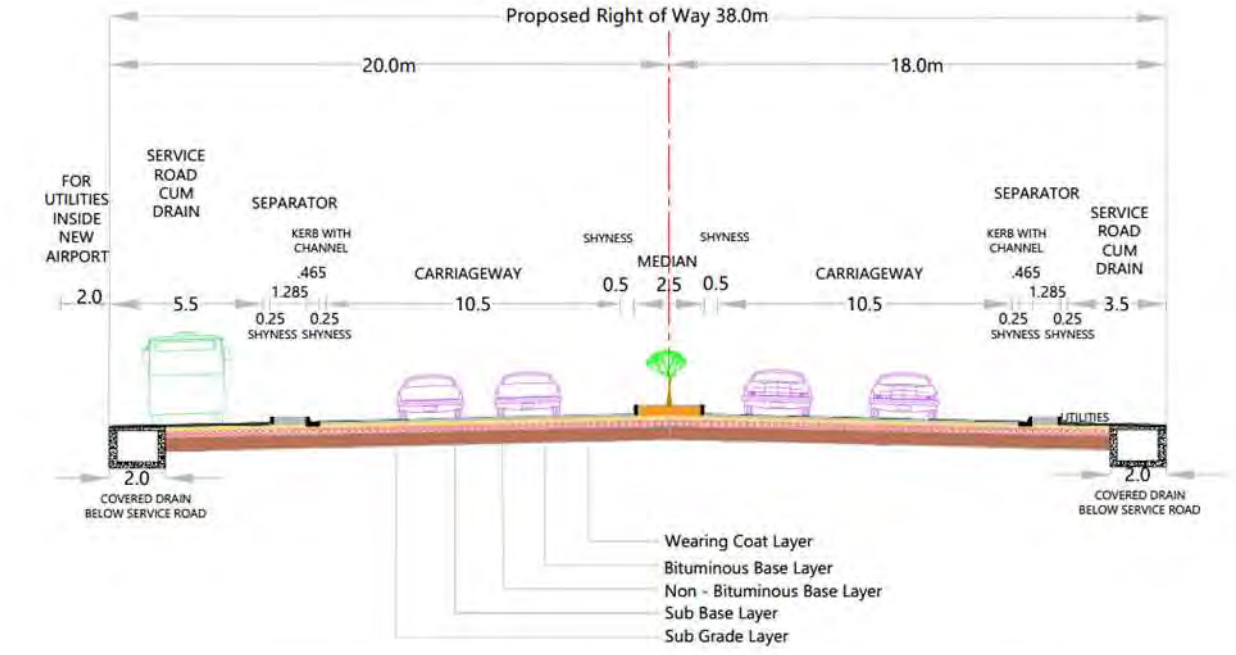
Figure 1-3 : 6 Lane Section between SOS to Garal with 38 m PROW



TCS-2B FOR 6 LANE WITH SERVICE ROAD FOR 42.5m PROW BETWEEN SOS TO GARAL

FROM km 2+270 TO km 3+055

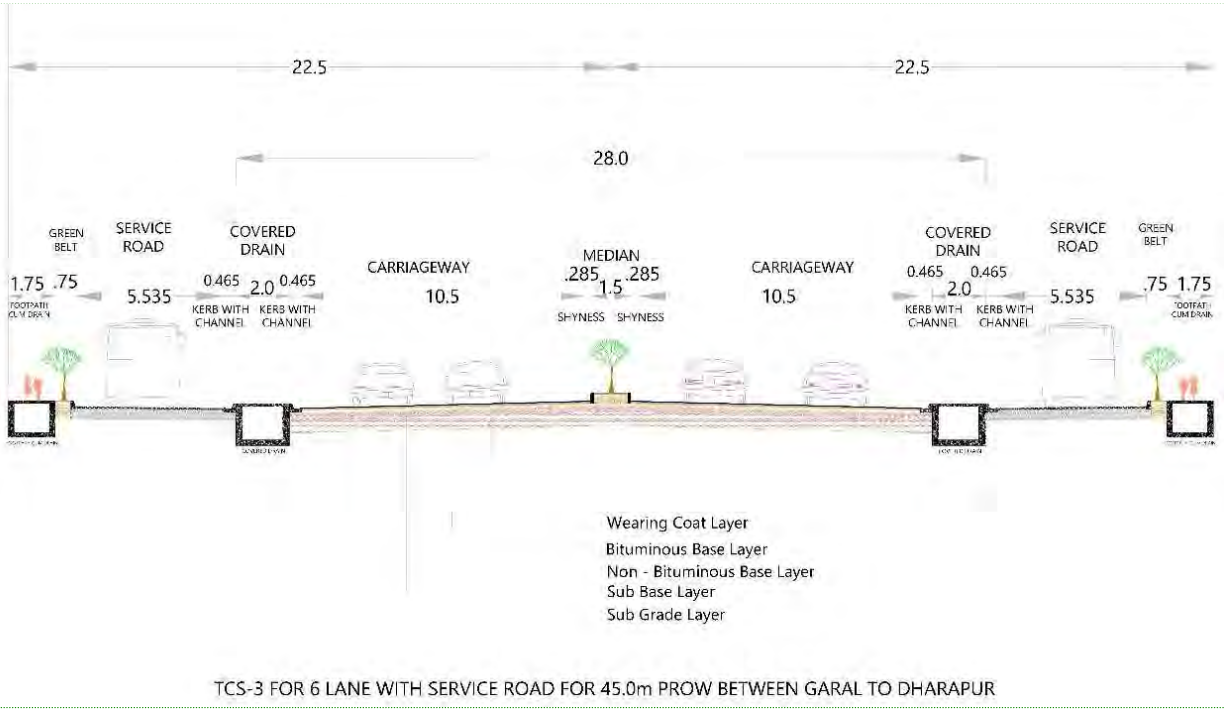
Figure 1-4 : 6 Lane Section between SOS to Garal with 42.5 m PROW



TCS-2C FOR 6 LANE WITH SERVICE ROAD FOR 38.0m PROW BETWEEN SOS TO GARAL

FROM km 4+010 TO km 4+780

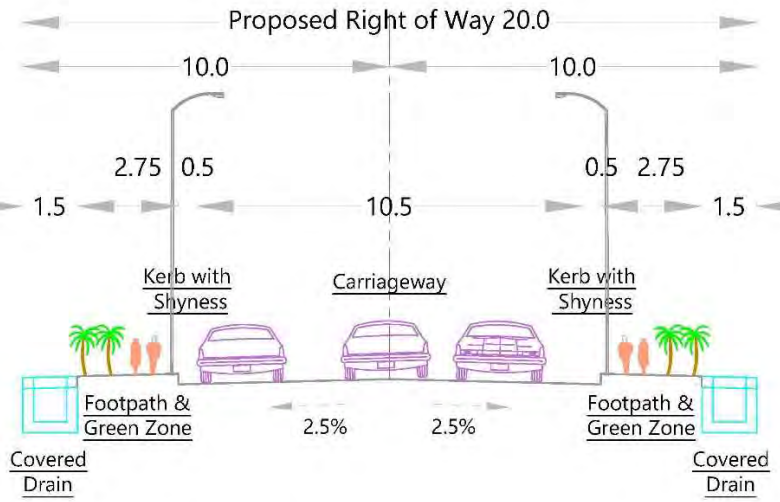
Figure 1-5 : 6 Lane Section between SOS to Garal with 38 m PROW



TCS-3 FOR 6 LANE WITH SERVICE ROAD FOR 45.0m PROW BETWEEN GARAL TO DHARAPUR

Figure 1-6 : 6 Lane Section from Garal to Dharapur with 45 m PROW

The Cross sections proposed in submitted Final DPR for Airport Entry and Temporary Exit are used and are presented below:



TCS 4: TYPICAL CROSS SECTION FOR 20m ROW

PROPOSED FROM
SOS JUNCTION To EXISTING AIRPORT TERMINAL

Figure 1-7 : 3 Lane Section from SOS to Existing Terminal with 20 m PROW

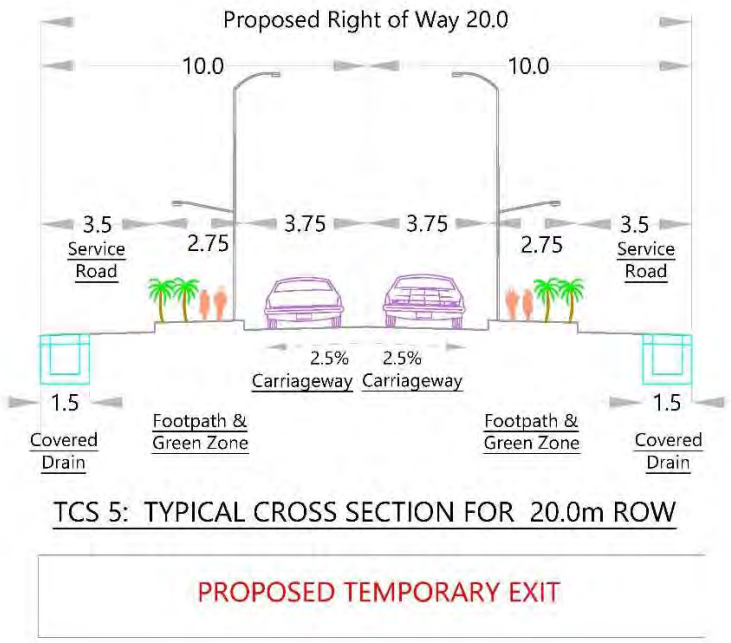


Figure 1-8 : 2 Lane Section for Temporary Exit from Existing Terminal 20 m PROW

The Cross Section for Dharapur Grade Separator is presented below:

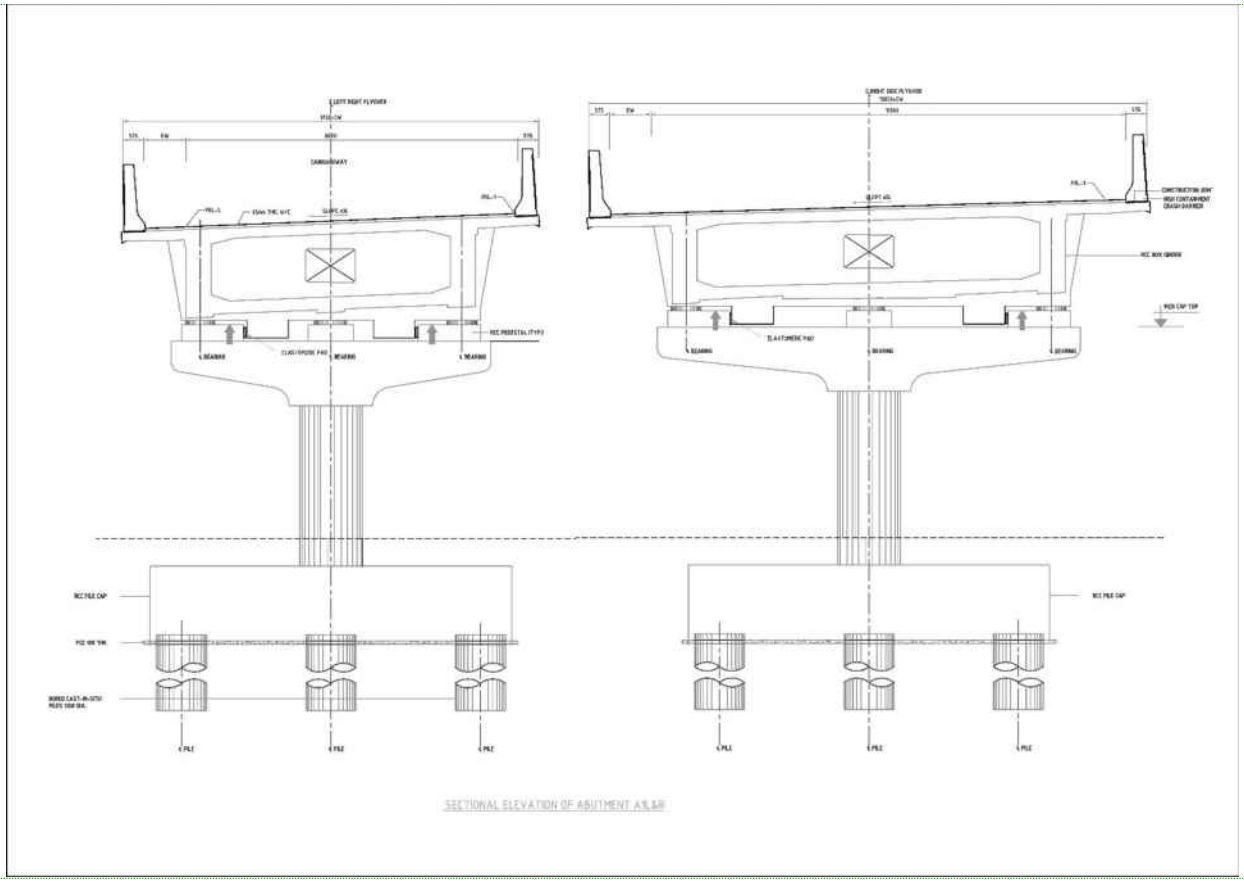


Figure 1-9 : 6 Lane Section for Dharapur Grade Separator (2 Lane and 3 lane)

The Summary of Project Improvement Proposal components is:

- 6 Lane Road from VIP Junction to Dharapur Junction
- Junctions
  - VIP Junction - At Grade Oval Shape Roundabout
  - SOS Junction – At Grade Circular Roundabout
  - Entry to New Terminal Building – At Grade Circular Roundabout
  - Exit from New Terminal Building – At Grade Circular Roundabout
  - Garal Junction – At Grade Circular Roundabout
  - **Dharapur – 3 + 2 Lane Grade Separated Interchange with free movement on all legs**
- 3 Minor Bridges at 2+818 km, 4+005 km and 4+575 km
- 15 Culverts, [Box Culverts]
- Longitudinal Covered Drains on both sides.
  - VIP Junction to SOS Junction is 1.92 m (overall widths)
  - SOS Junction to Garal Junction is 5.5 m wide on Airport Side and 2.0 m wide on other side. **The water way of existing channels beyond PWRD limits to be made clear by the concerned department(s)**.
  - Garal Junction to Dharapur Junction is 2.0 m (drains are besides both Main Carriageway and Service Road)
- Service Road on both sides of the 6-lane carriageway within Proposed Right of Way with
  - 5.5 m width from VIP Junction to SOS Junction and Garal to Dharapur
    - 5.5 m width from SOS Junction to Garal Junction [Cover slab of Longitudinal Drain shall be used as service road] on Airport Side. This Service Road widens to 10 m between the Airport Entry and Exit Roundabouts.
    - 3.5 m width from SOS Junction to Garal Junction on other side (opposite to Airport)
- 3 Lane wide Entry from SOS Junction to Existing Terminal Building
- 2 Lane wide Temporary Exit from Existing Terminal Building

1.4 Land Requirement for 6 Lane Proposals

The Land requirement beyond the Land Boundary earmarked for 4 Lane development for developing the project as 6 Lane Road has been worked out and presented as Appendix to this Summary and Cost Abstract Report: Appendix I: Land Requirement Plan (Development from Proposed 4 Lane to 6 Lane).

The Summary of Land Requirement is presented in table below:

Table 1-5 : Summary of Land Requirement for 6 Lane Development from Proposed 4 Lane

From	To	PROW for 6 Lane	PROW for 4 Lane*	Required Additional Area beyond 4 Lane ROW Limit for 6 Lane			
				LHS	RHS	Area (in Sqm)	Area (in Bigha)
VIP Junction	SOS Junction	45m	45	-	-	-	-
SOS Junction	GARAL Junction	38/42.5/38	30	12,690.00	17,303.00	29,993.00	22.42
GARAL Junction	Dharapur Junction	45m	28	10,554.00	12,399.00	22,953.00	17.16
						52,946.00	**39.58**
Junctions							
VIP Junction						103.66	0.08
SOS Junction						928.00	0.69
Airport Entry						2,297.00	1.72
Airport Exit						2,349.00	1.76
Garal Junction						4,713.00	3.52
Dharapur Junction				5,673.00	27,891.00	33,564.00	25.09
						43,954.66	**32.86**
					Additional Area Required	**96,900.66**	**72.44**
						1 Sq m = 10.764 Sq ft	
						1 Bigha = 14400 Sq. ft	

*** PROW for 4 Lane is in the process of finalization by Revenue Department.**

1.5 Cost Estimate (Civil works) – 4 Lane and Additional 4-6 Lane

The Quantities required to be executed for 4 Lane and 6 Lane development have been arrived at. In order to evaluate the cost estimates. In order to evaluate the additional amounts required for construction / widening from 4 lane proposal to 6 lane proposal, both estimates have been clubbed and quantities are compared to arrive at the amounts. The comparison and amounts are presented in the table below.

Here it is important to note that, there are certain items where in the requirement of quantities is in negative, this is due to changes in design requirements arising out of lane configuration changes. These quantities would be taken as 'Zero' in the bill of quantities for the widening from 4 to 6 under SOPD funds.

Table 1-6 : Cost Estimate for 4 Lane, additional Qty for 4 -6 lane and total 6 Lane

Item Number	Item Description	Unit	Quantity (4 Lane) Under PM-DevINE	Quantity (addl. Qty. for 6 lane) under SOPD	Rate, INR	Amount (INR) - PM - DevINE -4 Lane	Amount (in INR). - SOPD (for 4 lane to 6 lane)	Total Amount (INR)- 6 Lanes
1	**Bill Number–1: Site Clearance**							
1.01	Clearing and Grubbing of Road Land containing Road Embankment, Drains, Cross-drainage Structures and such other areas complete as per Drawings and Technical Specifications Clause 201 of Section 200 and/or as directed by the Engineer.	ha	22.00	12.00	36,215.00	7,96,730.00	4,34,580.00	12,31,310.00
1.02	Cutting/felling of Trees and Removal of Stumps including cutting of Trunks, Branches and Stacking of Serviceable Materials with all leads and lifts and back-filling of resulting depression/Pit to required compaction levels complete as per Technical Specifications Clause 201 of Section 200 and 305 of Section 300 and/or as directed by the Engineer.							
a	Girth from 300mm to 600mm	number	226.00	46.00	608.00	1,37,408.00	27,968.00	1,65,376.00
b	Girth above 600mm to 900mm	number	191.00	39.00	911.00	1,74,001.00	35,529.00	2,09,530.00
c	Girth above 900mm to1800mm	number	108.00	22.00	1,393.00	1,50,444.00	30,646.00	1,81,090.00
d	Girth above 1800mm	number	158.00	32.00	4,220.00	6,66,760.00	1,35,040.00	8,01,800.00
1.03	Dismantling of Existing Pavement, Culverts, Bridges, Retaining Walls, Kerbs and Other structures in the Right of Way including T&P and scaffolding wherever necessary, complete as per Drawings and Technical Specifications Clause 202 of Section 200 and/or as directed by the Engineer.							
a	Brick Masonry	cum	130.00		419.00	54,470.00	-	54,470.00
b	Stone Masonry	cum	1,380.00		419.00	5,78,220.00	-	5,78,220.00
c	Plain Cement Concrete Grade up to M10	cum	-		490.00	-	-	-

Item Number	Item Description	Unit	Quantity (4 Lane) Under PM-DevINE	Quantity (addl. Qty. for 6 lane) under SOPD	Rate, INR	Amount (INR) - PM - DevINE -4 Lane	Amount (in INR). - SOPD (for 4 lane to 6 lane)	Total Amount (INR)- 6 Lanes
d	Plain / Reinforced Cement Concrete Grade M15 and M20	cum	640.00		805.00	5,15,200.00	-	5,15,200.00
e	Prestressed / Reinforced Cement Concrete Grade M20 above	cum	2,750.00		1,261.00	34,67,750.00	-	34,67,750.00
f	Bituminous Layers of Existing Road	cum	4,780.00		470.00	22,46,600.00	-	22,46,600.00
g	Granular Layers (Base / Subbase) of Existing Road	cum	15,940.00		670.00	1,06,79,800.00	-	1,06,79,800.00
h	km Stones	number	-		272.00	-	-	-
i	Fencing (All types)	rm	70.00		56.00	3,920.00	-	3,920.00
j	Handrail / Guard Rail / Metal Beam Crash Barrier	rm	2,540.00		101.00	2,56,540.00	-	2,56,540.00
k	Kerb Stone	rm	820.00		25.00	20,500.00	-	20,500.00
l	Water Pipeline	rm	50.00		187.00	9,350.00	-	9,350.00
m	Cement Concrete Pipe of Sewer Gutter	rm	50.00		253.00	12,650.00	-	12,650.00
n	Telephone/Electric Poles	number	260.00		208.00	54,080.00	-	54,080.00
o	Road / Advertisement Signs	number	570.00		208.00	1,18,560.00	-	1,18,560.00
p	Pipes from Existing Pipe Culverts up to 600 mm	rm	-		183.00	-	-	-
q	Pipes from Existing Pipe Culverts 600 - 900 mm	rm	180.00		249.00	44,820.00	-	44,820.00
r	Pipes from Existing Pipe Culverts more than 900 mm	rm	-		425.00	-	-	-
s	Structural Steel	mt	10.00		1,714.00	17,140.00	-	17,140.00
t	Paver Blocks along with its Bed Beneath	sqm	6,060.00		210.00	12,72,600.00	-	12,72,600.00
						2,12,77,543.00	**6,63,763.00**	**2,19,41,306.00**
2.00	**Bill Number–2: Earthworks**							
2.01	Roadway Excavation in Soil necessary for the Construction of the Roadway complete as per Drawings and Technical Specifications Clause 301 of Section 300 and/or as directed by the Engineer	cum	82,000.00	1,34,000.00	117.00	95,94,000.00	1,56,78,000.00	2,52,72,000.00
2.02	Embankment Construction using materials obtained from Roadway Excavation complete as per Drawings and Technical	cum	41,000.00	2,200.00	224.00	91,84,000.00	4,92,800.00	96,76,800.00

Item Number	Item Description	Unit	Quantity (4 Lane) Under PM-DevINE	Quantity (addl. Qty. for 6 lane) under SOPD	Rate, INR	Amount (INR) - PM - DevINE -4 Lane	Amount (in INR). - SOPD (for 4 lane to 6 lane)	Total Amount (INR)- 6 Lanes
	Specifications Clause 305 of Section 300 and/or as directed by the Engineer							
2.03	Embankment Construction using materials obtained from Borrow Areas complete as per Drawings and Technical Specifications Clause 305 of Section 300 and/or as directed by the Engineer	cum	23,000.00	90,200.00	766.00	1,76,18,000.00	6,90,93,200.00	8,67,11,200.00
2.04	Subgrade Construction using materials obtained from Roadway Excavation complete as per Drawings and Technical Specifications Clause 305 of Section 300 and/or as directed by the Engineer	cum	1,000.00	-	263.00	2,63,000.00	-	2,63,000.00
2.05	Subgrade Construction using materials obtained from Borrow Areas complete as per Drawings and Technical Specifications Clause 305 of Section 300 and/or as directed by the Engineer	cum	27,600.00	52,400.00	805.00	2,22,18,000.00	4,21,82,000.00	6,44,00,000.00
2.06	Loosening, levelling/grading and re-compacting ground after clearing & grubbing for a depth of 250 mm to facilitate placement of the first embankment layer complete as per Drawings and Technical Specifications Clause 305 of Section 300 and/or as directed by the Engineer	cum	7,500.00	54,600.00	60.00	4,50,000.00	32,76,000.00	37,26,000.00
2.07	Loosening, levelling/grading and Compacting of Existing Ground after clearing & grubbing/dismantling of existing pavement layers for a depth of 500 mm (in two layers of 250 mm each) as Subgrade Layer complete as per Drawings and Technical Specifications Clause 305 of Section 300 and/or as directed by the Engineer	cum	71,000.00	12,300.00	95.00	67,45,000.00	11,68,500.00	79,13,500.00
						6,60,72,000.00	**13,18,90,500.00**	**19,79,62,500.00**

Item Number	Item Description	Unit	Quantity (4 Lane) Under PM-DevINE	Quantity (addl. Qty. for 6 lane) under SOPD	Rate, INR	Amount (INR) - PM - DevINE -4 Lane	Amount (in INR). - SOPD (for 4 lane to 6 lane)	Total Amount (INR)- 6 Lanes
3	**Bill Number–3: Granular Layers, Medians and Roundabouts**							
3.01	Granular Sub Base (GSB) by Plant Mix Method Complete as per Drawings and Technical Specifications Clause 401 of Section 400 and/or as directed by the Engineer.	cum	1,100.00	1,500.00	4,664.00	51,30,400.00	69,96,000.00	1,21,26,400.00
3.02	Cement Treated Sub-Base (CTSB) by Plant Mix Method complete as per Drawings and Technical Specifications Clause 403 of Section 400 and/or as directed by the Engineer.	cum	35,700.00	29,600.00	5,094.00	18,18,55,800.00	15,07,82,400.00	33,26,38,200.00
3.03	Wet Mix Macadam (WMM) complete as per Drawings and Technical Specifications Clause 406 of Section 400 and/or as directed by the Engineer.	cum	25,300.00	13,300.00	4,872.00	12,32,61,600.00	6,47,97,600.00	18,80,59,200.00
3.04	Earthwork in fill for Island with Borrow Area materials complete as per Drawings and Technical Specifications Clause 408 of Section 400 and/or as directed by the Engineer.	cum	10,500.00	15,500.00	766.00	80,43,000.00	1,18,73,000.00	1,99,16,000.00
3.05	Providing and Construction of Cement Concrete Kerb without Channel in M30 Grade for Central Median Island, Footpath, Green Verges etc. complete as per Drawings and Technical Specifications Clause 409 of Section 400 and/or as directed by the Engineer.	rm	26,200.00	5,400.00	518.00	1,35,71,600.00	27,97,200.00	1,63,68,800.00
3.06	Providing and Construction of Cement Concrete Kerb with Channel in M20 Grade for Roundabout, Footpath, Green Verges, along Longitudinal Drains edge towards carriageway etc. complete as per Drawings and Technical Specifications Clause 409 of	rm	27,100.00	-8,300.00	904.00	2,44,98,400.00	-75,03,200.00	1,69,95,200.00

Item Number	Item Description	Unit	Quantity (4 Lane) Under PM-DevINE	Quantity (addl. Qty. for 6 lane) under SOPD	Rate, INR	Amount (INR) - PM - DevINE -4 Lane	Amount (in INR). - SOPD (for 4 lane to 6 lane)	Total Amount (INR)- 6 Lanes
	Section 400 and/or as directed by the Engineer.							
3.07	Providing and Construction of Footpath/Separators with M30 grade 60 mm thick interlocking Precast Cement Concrete blocks laid over 30 mm thick sand bedding complete as per Drawings and Technical Specifications Clause 410 of Section 400 and/or as directed by the Engineer.	sqm	20,600.00	-13,600.00	938.00	1,93,22,800.00	-1,27,56,800.00	65,66,000.00
3.08	Providing and Construction of Footpath/Separators with M30 grade 12 mm thick interlocking Precast Cement Concrete Tiles laid over 1:3 Cement Mortar complete as per Drawings and Technical Specifications Clause 410 of Section 400 and/or as directed by the Engineer.	sqm		37,000.00	984.00	-	3,64,08,000.00	3,64,08,000.00
3.09	Providing and Construction of Interlocking Precast Cement Concrete Blocks with M40 grade 80 mm thick laid over 30 mm thick sand bedding complete as per Drawings and Technical Specifications Clause 410 of Section 400 and/or as directed by the Engineer.	sqm	7,900.00	-7,900.00	1,125.00	88,87,500.00	-88,87,500.00	-
3.10	Painting of Kerb complete as per drawings and Additional Technical Specifications A-6 and/or as directed by the Engineer	sqm	11,800.00	6,600.00	296.00	34,92,800.00	19,53,600.00	54,46,400.00
3.11	100 mm dia PVC Pipe Beneath Footpath/Green zones/Roundabouts @ 5 m interval from Carriageway Edge to Drain complete as per Drawings and Technical Specifications Clause 309 and/or as directed by the Engineer	m	6,200.00	11,600.00	280.00	17,36,000.00	32,48,000.00	49,84,000.00
3.12	Underground Drain below Pavement from Roundabout to Drain in M25 Grade Concrete complete as per Drawings and	m	200.00	300.00	7,751.00	15,50,200.00	23,25,300.00	38,75,500.00

Item Number	Item Description	Unit	Quantity (4 Lane) Under PM-DevINE	Quantity (addl. Qty. for 6 lane) under SOPD	Rate, INR	Amount (INR) - PM - DevINE -4 Lane	Amount (in INR). - SOPD (for 4 lane to 6 lane)	Total Amount (INR)- 6 Lanes
	Technical Specifications Section 1700 and/or as directed by the Engineer							
						39,13,50,100.00	**25,20,33,600.00**	**64,33,83,700.00**
4	**Bill Number–4: Bituminous Works**							
4.01	Prime Coat complete as per Drawings and Technical Specifications Clause 501 and 502, Section 500 and/or as directed by the Engineer.	sqm	1,60,000.00	1,41,000.00	56.00	89,60,000.00	78,96,000.00	1,68,56,000.00
4.02	Tack Coat complete as per Drawings and Technical Specifications Clause 501 and 503, Section 500 and/or as directed by the Engineer.	sqm	1,84,300.00	1,32,000.00	11.00	20,27,300.00	14,52,000.00	34,79,300.00
4.03	Dense Graded Bituminous Macadam (DBM) complete as per Drawings and Technical Specifications Clause 501 and 505, Section 500 and/or as directed by the Engineer.	cum	8,300.00	10,000.00	10,242.00	8,50,08,600.00	10,24,20,000.00	18,74,28,600.00
4.04	Bituminous Concrete (BC) wearing course complete as per Drawings and Technical Specifications Clause 501 & 507, Section 500 and/or as directed by the Engineer.	cum	4,900.00	5,100.00	11,024.00	5,40,17,600.00	5,62,22,400.00	11,02,40,000.00
						15,00,13,500.00	**16,79,90,400.00**	**31,80,03,900.00**
5	**Bill Number–5: Culverts**							
5.01	Earthwork in Excavation for Foundation of structures in Soil complete as per Drawings and Technical Specifications Clause 304 of Section 300 and/or as directed by the Engineer	cum	5,050.00	2,170.00	48.00	2,42,400.00	1,04,160.00	3,46,560.00
5.02	500 mm Materials below Structure Foundation Levelling Course including compaction in 2 layers complete as per Drawings, Technical Specifications Clause 305 of Section 300 and/or as directed by the Engineer	cum	2,500.00	1,567.00	766.00	19,15,000.00	12,00,322.00	31,15,322.00

Item Number	Item Description	Unit	Quantity (4 Lane) Under PM-DevINE	Quantity (addl. Qty. for 6 lane) under SOPD	Rate, INR	Amount (INR) - PM - DevINE -4 Lane	Amount (in INR). - SOPD (for 4 lane to 6 lane)	Total Amount (INR)- 6 Lanes
5.03	Plain Cement Concrete in M15 Grade Concrete for Levelling Course below Box Cell, Curtain Wall, Retaining Wall, Return Wall, Approach Slab, Floor Apron in Bed Protection works etc. complete as per Drawings and Technical Specifications Section 1500, 1700 and 2100 and/or as directed by the Engineer	cum	770.00	484.00	8,245.00	63,48,650.00	39,90,580.00	1,03,39,230.00
5.04	Reinforced Cement Concrete in M30 Grade for all components of Box Cell structure, Retaining Wall, Return Wall, Median Wall and any other substructure component excluding Reinforcement Complete as per Drawings and Technical Specifications Section 1500, 1700 and 2200 and/or as directed by the Engineer	cum	2,700.00	2,340.00	9,611.00	2,59,49,700.00	2,24,89,740.00	4,84,39,440.00
5.05	Thermo-Mechanically Treated HYSD Fe–500D Grade Reinforcement Bars in Foundations, Substructures, Superstructures etc. complete as per Drawings and Technical Specifications Section 1600 and/or as directed by the Engineer.	mt	182.00	140.00	71,860.00	1,30,78,520.00	1,00,60,400.00	2,31,38,920.00
5.06	20 mm thick Pre-moulded Joint Filler in Expansion Joint to cater for Horizontal movement up to 20 mm, covered with sealant complete as per Drawings and Technical Specifications Clause 2604 and Section 2600 and/or as directed by the Engineer	rm	860.00	557.00	480.00	4,12,800.00	2,67,360.00	6,80,160.00
5.07	Type 1 Wearing Coat (50 mm Bituminous Concrete in single layer) complete as per Drawings, Technical Specifications Clause 2702 and Section 2700 and/or as directed by the Engineer	cum	210.00	161.00	11,024.00	23,15,040.00	17,74,864.00	40,89,904.00

Item Number	Item Description	Unit	Quantity (4 Lane) Under PM-DevINE	Quantity (addl. Qty. for 6 lane) under SOPD	Rate, INR	Amount (INR) - PM - DevINE -4 Lane	Amount (in INR). - SOPD (for 4 lane to 6 lane)	Total Amount (INR)- 6 Lanes
5.08	Drainage Spouts complete as per Drawings and Technical Specifications Clause 2705 and Section 2700 and/or as directed by the Engineer	number	58.00	8.00	7,737.00	4,48,746.00	61,896.00	5,10,642.00
5.09	Reinforced Cement Concrete Crash Barrier in M40 Grade excluding reinforcement complete as per drawings and Technical Specifications Sections 1500, 1600, 1700 and 2700 or as directed by Engineer.	rm	310.00	51.00	4,873.00	15,10,630.00	2,48,523.00	17,59,153.00
5.10	Reinforced Cement Concrete for Approach Slabs in M30 Grade including Reinforcement complete as per Drawings and Technical Specifications Clause 2704 and Section 2700 and/or as directed by the Engineer	cum	910.00	578.00	13,780.00	1,25,39,800.00	79,64,840.00	2,05,04,640.00
5.11	Filter Media behind Box Cell, Retaining Wall, Return Wall or any Earth Retaining Structure complete as per drawings and Technical Specifications Section 2500 and/or as directed by the Engineer	cum	1,370.00	997.00	4,608.00	63,12,960.00	45,94,176.00	1,09,07,136.00
5.12	Back filling behind Box Cell, Retaining Wall, Return Wall or any Earth Retaining Structure complete as per Drawings and Technical Specifications Clause 304 and 305 of Section 300 and/or as directed by the Engineer	cum	2,210.00	1,229.00	2,977.00	65,79,170.00	36,58,733.00	1,02,37,903.00
5.13	AC Pipe Weep Holes with No Fine Concrete Block on Earth Side in Box wall, Return Wall, Retaining Wall or any other earth Retaining Structure complete as per Drawings and Technical Specifications Clause 2706 and Section 2700 and/or as directed by the Engineer	number	1,960.00	1,625.00	275.00	5,39,000.00	4,46,875.00	9,85,875.00
5.14	150 mm thick Flat Stone Apron Embedded in 300mm Thick Cement Concrete in M15	cum	250.00	64.00	8,245.00	20,61,250.00	5,27,680.00	25,88,930.00

Item Number	Item Description	Unit	Quantity (4 Lane) Under PM-DevINE	Quantity (addl. Qty. for 6 lane) under SOPD	Rate, INR	Amount (INR) - PM - DevINE -4 Lane	Amount (in INR). - SOPD (for 4 lane to 6 lane)	Total Amount (INR)- 6 Lanes
	Grade for Bed Protection Works Complete as per Drawings and Technical Specifications Clause 2505 and Section 2500 and/or as directed by the Engineer							
5.15	Plain Cement Concrete in M20 Grade in Upstream and Downstream Curtain Walls etc. complete as per Drawings and Technical Specifications Clause 2507.1 and Section 2500 and/or as directed by the Engineer	cum	180.00	44.00	10,122.00	18,21,960.00	4,45,368.00	22,67,328.00
5.16	Hand Packed Boulder Pitching in launching and Flexible Apron and Protection works etc. complete as per drawings and Technical Specifications Clause 2504 and Section 2500 and/or as directed by the Engineer	cum	560.00	150.00	4,080.00	22,84,800.00	6,12,000.00	28,96,800.00
5.17	Painting and Lettering Culvert Number, Span and Flow Directions etc. complete as per Drawings and Additional Technical Specifications A-4 and/or as directed by the Engineer.	number	20.00	-3.00	55.00	1,100.00	-165.00	935.00
5.18	Tar Paper Bearing complete as per Drawings and Additional Technical Specifications A-5 and/or as directed by the Engineer.	sqm	258.00	167.00	180.00	46,440.00	30,060.00	76,500.00
						8,44,07,966.00	**5,84,77,412.00**	**14,28,85,378.00**
6	**Bill Number–6: Bridges**							
6.01	Earthwork in excavation for foundation for structures in soil complete as per Technical Specifications Clause 304 of Section 300 and/or as directed by the Engineer	cum	4,000.00	3,212.00	77.00	3,08,000.00	2,47,324.00	5,55,324.00
6.02	500 m thick Materials below Structure Foundation Levelling Course including compaction in 2 layers complete as per Drawings, Technical Specifications Clause	cum	200.00	133.00	766.00	1,53,200.00	1,01,878.00	2,55,078.00

Item Number	Item Description	Unit	Quantity (4 Lane) Under PM-DevINE	Quantity (addl. Qty. for 6 lane) under SOPD	Rate, INR	Amount (INR) - PM - DevINE -4 Lane	Amount (in INR). - SOPD (for 4 lane to 6 lane)	Total Amount (INR)- 6 Lanes
	305 of Section 300 and/or as directed by the Engineer							
6.03	Plain Cement Concrete in M15 Grade Concrete in Levelling Course below Pile caps, Curtain Wall, Retaining Wall, Return Wall, Approach Slab, Floor Apron for Bed Protection works etc., complete as per Drawings and Technical Specifications Section 1700 and/or as directed by the Engineer.	cum	340.00	272.00	8,245.00	28,03,300.00	22,42,640.00	50,45,940.00
6.04	Reinforced Cement Concrete in M30 Grade in Open Foundations excluding cost of reinforcement complete as per Drawings and Technical Specifications Section 2100/or and as directed by the Engineer.	cum	110.00	7.00	9,163.00	10,07,930.00	64,141.00	10,72,071.00
6.05	1200 mm dia. bored Cast in Situ Reinforced Cement Concrete Piles in M 35 Grade excluding Steel reinforcement complete as per Drawings and Technical Specifications Section 1100 and/or as directed by the Engineer. (10-20m depth)	rm	1,920.00	2,304.00	19,297.00	3,70,50,240.00	4,44,60,288.00	8,15,10,528.00
6.06	Reinforced Cement Concrete in M 35 Grade in Pile Caps excluding Reinforcement complete as per drawings and Technical Specifications Sections 1100 and/or as directed by the Engineer.	cum	1,660.00	1,647.00	9,286.00	1,54,14,760.00	1,52,94,042.00	3,07,08,802.00
6.07	Reinforced Cement Concrete in followings Grades in Pedestals, Cantilever Abutment, Abutment Cap, Box Cell structure, Seismic-restrainer, Dirt Wall, Retaining Wall, Return Wall, Median Wall, Inspection Ladders for Bridges complete as per Drawings and Technical Specifications Section 2200 and/or as directed by the Engineer						-	-
a	M 30	cum	150.00	9.00	9,856.00	14,78,400.00		15,67,104.00

Item Number	Item Description	Unit	Quantity (4 Lane) Under PM-DevINE	Quantity (addl. Qty. for 6 lane) under SOPD	Rate, INR	Amount (INR) - PM - DevINE -4 Lane	Amount (in INR). - SOPD (for 4 lane to 6 lane)	Total Amount (INR)- 6 Lanes
							88,704.00	
b	M 35	cum	1,510.00	1,482.00	9,946.00	1,50,18,460.00	1,47,39,972.00	2,97,58,432.00
6.08	Reinforced Cement Concrete in M 35 Grade in T-Beam and Slab Superstructure complete as per drawings and Technical Specifications Section 2300 and/or as directed by the Engineer.	cum	500.00	513.00	11,170.00	55,85,000.00	57,30,210.00	1,13,15,210.00
6.09	Thermo-Mechanically Treated HYSD Fe 500 D Grade Reinforcement Bars in Foundations, Substructures, Superstructures etc. complete as per Drawings and Technical Specifications Section 1600 and/or as directed by the Engineer	mt	762.00	813.00	73,144.00	5,57,35,728.00	5,94,66,072.00	11,52,01,800.00
6.10	Type 1 Wearing Coat (50 mm Bituminous Concrete in single layer) complete as per Drawings, Technical Specifications Clause 2702 and Section 2700 and/or as directed by the Engineer	cum	80.00	78.00	11,024.00	8,81,920.00	8,59,872.00	17,41,792.00
6.11	Free/Fixed/Guided POT-cum-PTFE bearings with following capacity, true to line and level Complete as per Drawings and Technical Specifications Section 2000 and/or as directed by the Engineer							
a	Free Bearings (100 ± 25 MT)	number	18.00	2.00	1,20,000.00	21,60,000.00	2,40,000.00	24,00,000.00
b	Fixed Bearings (150 ± 12.5 MT)	number	4.00	-	1,00,000.00	4,00,000.00	-	4,00,000.00
c	Guide Bearings (100 ± 12.5 MT)	number	18.00	2.00	1,20,000.00	21,60,000.00	2,40,000.00	24,00,000.00
6.12	20 mm thick Pre-moulded Joint Filler in Expansion Joint to cater for Horizontal movement up to 20 mm, covered with sealant complete as per Drawings and Technical Specifications Clause 2604 and	rm	57.00	42.00	480.00	27,360.00	20,160.00	47,520.00

Item Number	Item Description	Unit	Quantity (4 Lane) Under PM-DevINE	Quantity (addl. Qty. for 6 lane) under SOPD	Rate, INR	Amount (INR) - PM - DevINE -4 Lane	Amount (in INR). - SOPD (for 4 lane to 6 lane)	Total Amount (INR)- 6 Lanes
	Section 2600 and/or as directed by the Engineer							
6.13	Strip Seal Expansion Joint catering to maximum horizontal movement up to 80 mm complete as per Drawings and Technical Specifications Clause 2606 and Section 2600 and/or as directed by the Engineer.	rm	106.00	114.00	4,758.00	5,04,348.00	5,42,412.00	10,46,760.00
6.14	Drainage Spouts complete as per Drawings and Technical Specifications Section Clause 2705 and Section 2700 and/or as directed by the Engineer.	number	19.00	17.00	7,737.00	1,47,003.00	1,31,529.00	2,78,532.00
6.15	Reinforced Cement Concrete for Approach Slabs in M30 Grade including Reinforcement complete as per Drawings and Technical Specifications Clause 2704 and Section 2700 and/or as directed by the Engineer	cum	180.00	156.00	13,780.00	24,80,400.00	21,49,680.00	46,30,080.00
6.16	Reinforced Cement Concrete Crash Barrier in M40 Grade excluding reinforcement complete as per drawings and Technical Specifications Sections Clause 2703 and 2700 and/or as directed by the Engineer	rm	370.00	246.00	4,873.00	18,03,010.00	11,98,758.00	30,01,768.00
6.17	Providing and Construction of Cement Concrete Kerb with Channel in M30 Grade for Footpath complete as per Drawings and Technical Specifications Clause 409 of Section 400 and/or as directed by the Engineer.	rm	31.00	2.00	904.00	28,024.00	1,808.00	29,832.00
6.18	AC Pipe Weep Holes with No Fine Concrete Block on Earth Side in Box wall, Return Wall, Retaining Wall or any other earth Retaining Structure complete as per Drawings and Technical Specifications	number	600.00	449.00	275.00	1,65,000.00	1,23,475.00	2,88,475.00

Item Number	Item Description	Unit	Quantity (4 Lane) Under PM-DevINE	Quantity (addl. Qty. for 6 lane) under SOPD	Rate, INR	Amount (INR) - PM - DevINE -4 Lane	Amount (in INR). - SOPD (for 4 lane to 6 lane)	Total Amount (INR)- 6 Lanes
	Clause 2706 and Section 2700 and/or as directed by the Engineer							
6.19	Carrying out sub soil investigation / confirmatory boreholes at specified foundation locations before commencement of construction, except in case of well foundation where confirmatory boring shall be carried out before bottom plugging for confirmation of strata at base of well foundation complete as per drawings and Technical Specifications section 2400 or as directed by Engineer.							
	(a) In soil	rm		99.00	2,000.00	-	1,98,000.00	1,98,000.00
	(b) In soft rock and boulder strata	rm				-	-	-
	(c) In hard rock	rm				-	-	-
6.20	Filter Media behind Box Cell, Retaining Wall, Return Wall or any Earth Retaining Structure complete as per drawings and Technical Specifications Section 2500 and/or as directed by the Engineer	cum	490.00	315.00	4,608.00	22,57,920.00	14,51,520.00	37,09,440.00
6.21	Back filling behind Box Cell, Retaining Wall, Return Wall or any Earth Retaining Structure complete as per Drawings and Technical Specifications Clause 304 and 305 of Section 300 and/or as directed by the Engineer	cum	4,740.00	3,872.00	4,188.00	1,98,51,120.00	1,62,15,936.00	3,60,67,056.00
6.22	Hand Packed Boulder Pitching on Slopes of Embankment, in front of Abutments and in Launching Apron complete as per Drawings and Technical Specifications Clause 2504 and Section 2500 and as directed by the Engineer.	cum	270.00	17.00	4,080.00	11,01,600.00	69,360.00	11,70,960.00
6.23	150 mm thick Filter Media underneath Slope Pitching complete as per Drawings and	cum	72.00	7.00	4,795.00	3,45,240.00	33,565.00	3,78,805.00

Item Number	Item Description	Unit	Quantity (4 Lane) Under PM-DevINE	Quantity (addl. Qty. for 6 lane) under SOPD	Rate, INR	Amount (INR) - PM - DevINE -4 Lane	Amount (in INR). - SOPD (for 4 lane to 6 lane)	Total Amount (INR)- 6 Lanes
	Technical Specifications Clause 2504 and Section 2500 and/or as directed by the Engineer							
6.24	Floor Protection Works complete consisting of following as per Drawings and Technical Specifications and/or as directed by the Engineer.			-			-	-
a	150 mm thick Flat Stone Apron Embedded in 300mm Thick Cement Concrete in M15 Grade for Bed Protection Works Complete as per Drawings and Technical Specifications Clause 2505 and Section 2500 and/or as directed by the Engineer	cum	130.00	4.00	8,245.00	10,71,850.00	32,980.00	11,04,830.00
b	Plain Cement Concrete in M20 Grade in Upstream and Downstream Curtain Walls etc. complete as per Drawings and Technical Specifications Clause 2507.1 and Section 2500 and/or as directed by the Engineer	cum	140.00	10.00	10,122.00	14,17,080.00	1,01,220.00	15,18,300.00
c	Hand Packed Boulder Pitching in Flexible Apron complete as per Drawings and Technical Specifications Clause 2504 and Section 2500 and as directed by the Engineer.	cum	190.00	10.00	4,080.00	7,75,200.00	40,800.00	8,16,000.00
6.25	Water Based Paint on Exposed Concrete Surface of Crash Barrier etc. complete as per Drawings and Additional Technical Specifications A-4 and/or as directed by the Engineer	sqm	160.00	110.00	296.00	47,360.00	32,560.00	79,920.00
6.26	Painting and Lettering Bridge Number, Span and Flow Directions etc. complete as per Drawings or Additional Technical Specifications A-4 and/or as directed by the Engineer.	number	3.00	-	55.00	165.00	-	165.00

Item Number	Item Description	Unit	Quantity (4 Lane) Under PM-DevINE	Quantity (addl. Qty. for 6 lane) under SOPD	Rate, INR	Amount (INR) - PM - DevINE -4 Lane	Amount (in INR). - SOPD (for 4 lane to 6 lane)	Total Amount (INR)- 6 Lanes
6.27	Tar Paper Bearing complete as per Drawings and Additional Technical Specifications A-5 and/or as directed by the Engineer.	sqm	9.00	6.00	180.00	1,620.00	1,080.00	2,700.00
						17,21,81,238.00	**16,61,19,986.00**	**33,83,01,224.00**
7	**Bill Number–7: Elevated Structure**							
7.01	Earthwork in excavation for foundation for structures in soil complete as per Technical Specifications Clause 304 of Section 300 and/or as directed by the Engineer	cum	7,200.00	4,744.00	77.00	5,54,400.00	3,65,288.00	9,19,688.00
7.02	500 m thick Materials below Structure Foundation Levelling Course including compaction in 2 layers complete as per Drawings, Technical Specifications Clause 305 of Section 300 and/or as directed by the Engineer	cum	720.00	476.00	766.00	5,51,520.00	3,64,616.00	9,16,136.00
7.03	Plain Cement Concrete in M15 Grade Concrete in Levelling Course below Pile caps, Return Wall, Approach Slab, Friction Slab etc., complete as per Drawings and Technical Specifications Section 1700 and/or as directed by the Engineer.	cum	270.00	171.00	8,245.00	22,26,150.00	14,09,895.00	36,36,045.00
7.04	1200 mm dia. bored Cast in Situ Reinforced Cement Concrete Piles in M 35 Grade excluding Steel reinforcement complete as per Drawings and Technical Specifications Section 1100 and/or as directed by the Engineer.	rm	8,530.00	10,137.00	19,297.00	16,46,03,410.00	19,56,13,689.00	36,02,17,099.00
7.05	Permanent Steel Liners for Bored Cast in Situ Piles Complete as per Drawings and Technical Specifications Clause 1107 and Section 1100 and 1900 and/ or as directed by Engineer.	mt	3.00	6,315.00	84,548.00	2,53,644.00	53,39,20,620.00	53,41,74,264.00
7.06	Reinforced Cement Concrete in M 35 Grade in Pile Caps excluding Reinforcement	cum	4,400.00	2,946.00	9,286.00	4,08,58,400.00	2,73,56,556.00	6,82,14,956.00

Item Number	Item Description	Unit	Quantity (4 Lane) Under PM-DevINE	Quantity (addl. Qty. for 6 lane) under SOPD	Rate, INR	Amount (INR) - PM - DevINE -4 Lane	Amount (in INR). - SOPD (for 4 lane to 6 lane)	Total Amount (INR)- 6 Lanes
	Complete as per Drawings and Technical Specifications Sections 1100 and/or as directed by the Engineer.							
7.07	Reinforced Cement Concrete in M 40 Grade in Pedestals, Cantilever Abutment, Abutment Cap, Pier, Pier Cap, Seismic-restrainer, Dirt wall, Return wall, Inspection ladders for Bridges complete as per drawings and Technical Specifications Section 2200 and/or as directed by the Engineer	cum	2,530.00	1,167.00	13,691.00	3,46,38,230.00	1,59,77,397.00	5,06,15,627.00
7.08	Reinforced Cement Concrete in M 40 Grade in Cast -In Situ Box Girder Superstructure complete as per Drawings and Technical Specifications Section 2300 and/or as directed by the Engineer	cum	6,600.00	1,931.00	13,691.00	9,03,60,600.00	2,64,37,321.00	11,67,97,921.00
7.09	Post Tensioned PSC Concrete in Simply Supported Precast Segment Box Girder in M 50 Grade Complete as per Drawings and Technical Specifications Section 2300 and/or as directed by the Engineer	cum	850.00	249.00	14,230.00	1,20,95,500.00	35,43,270.00	1,56,38,770.00
7.10	Thermo-Mechanically Treated HYSD Fe 500 D Grade Reinforcement Bars in Foundations, Substructures, Superstructures etc. complete as per Drawings and Technical Specifications Section 1600 and/or as directed by the Engineer	mt	3,847.00	2,625.00	73,144.00	28,13,84,968.00	19,20,03,000.00	47,33,87,968.00
7.11	High tensile steel complete as per Drawings and Technical Specifications Section 1800 and/or as directed by the Engineer	mt	47.00	14.00	1,25,808.00	59,12,976.00	17,61,312.00	76,74,288.00
7.12	Type 1 Wearing Coat (50 mm Bituminous Concrete in single layer) complete as per Drawings, Technical Specifications Clause	sqm	450.00	148.00	11,024.00	49,60,800.00	16,31,552.00	65,92,352.00

Item Number	Item Description	Unit	Quantity (4 Lane) Under PM-DevINE	Quantity (addl. Qty. for 6 lane) under SOPD	Rate, INR	Amount (INR) - PM - DevINE -4 Lane	Amount (in INR). - SOPD (for 4 lane to 6 lane)	Total Amount (INR)- 6 Lanes
	2702 and Section 2700 and/or as directed by the Engineer							
7.13	Free/Fixed/Guided POT-cum-PTFE bearings with following capacity, true to line and level Complete as per Drawings and Technical Specifications Section 2000 and/or as directed by the Engineer			-			-	-
a	Free Bearings (400 ± 25 MT)	number	112.00	11.00	2,80,000.00	3,13,60,000.00	30,80,000.00	3,44,40,000.00
b	Pin Bearings (450 ± 12.5 MT)	number	15.00	2.00	5,20,000.00	78,00,000.00	10,40,000.00	88,40,000.00
c	Metallic Guide Bearings (180 ± 12.5 MT)	number	41.00	2.00	2,80,000.00	1,14,80,000.00	5,60,000.00	1,20,40,000.00
7.14	Elastomeric Stopper Pad for Seismic Restrainer complete as per Drawings and Technical Specifications Clause 2005 and Section 2000 and /or as directed by the Engineer	cucm	16,43,000.00	1,64,300.00	0.64	10,51,520.00	1,05,152.00	11,56,672.00
7.15	Strip Seal Expansion Joint catering to maximum horizontal movement up to 80 mm complete as per Drawings and Technical Specifications Clause 2606 and Section 2600 and/or as directed by the Engineer.	rm	40.00	14.00	4,758.00	1,90,320.00	66,612.00	2,56,932.00
7.16	Modular Box Seal Expansion Joint catering to maximum horizontal movement up to 80 mm complete as per Drawings and Technical Specifications Clause 2607 and Section 2600 and/or as directed by the Engineer.	rm	107.00	65.00	36,350.00	38,89,450.00	23,62,750.00	62,52,200.00
7.17	Drainage Spouts complete as per Drawings and Technical Specifications Section Clause 2705 and Section 2700 and/or as directed by the Engineer.	number	411.00	-162.00	7,737.00	31,79,907.00	-12,53,394.00	19,26,513.00

Item Number	Item Description	Unit	Quantity (4 Lane) Under PM-DevINE	Quantity (addl. Qty. for 6 lane) under SOPD	Rate, INR	Amount (INR) - PM - DevINE -4 Lane	Amount (in INR). - SOPD (for 4 lane to 6 lane)	Total Amount (INR)- 6 Lanes
7.18	PVC down take 100 mm diameter pipe and runner pipe including joining with drainage spout pipe complete as per Drawings and Technical Specifications Clause 2705 and Section 2700 and/or as directed by the Engineer	rm	3,091.00	-1,367.00	180.00	5,56,380.00	-2,46,060.00	3,10,320.00
7.19	Reinforced Cement Concrete for Approach Slabs in M30 Grade including Reinforcement complete as per Drawings and Technical Specifications Clause 2704 and Section 2700 and/or as directed by the Engineer	cum	33.00	18.00	13,780.00	4,54,740.00	2,48,040.00	7,02,780.00
	Carrying out sub soil investigation / confirmatory boreholes at specified foundation locations before commencement of construction, except in case of well foundation where confirmatory boring shall be carried out before bottom plugging for confirmation of strata at base of well foundation complete as per drawings and Technical Specifications section 2400 or as directed by Engineer.							
	(a) In soil	rm		1,980.00	2,000.00		39,60,000.00	39,60,000.00
	(b) In soft rock and boulder strata	rm		-			-	-
	(c) In hard rock	rm		-			-	-
7.20	Reinforced Cement Concrete Crash Barrier in M40 Grade excluding reinforcement complete as per drawings and Technical Specifications Sections Clause 2703 and 2700 and/or as directed by the Engineer	rm	4,588.00	-813.00	4,873.00	2,23,57,324.00	-39,61,749.00	1,83,95,575.00
7.21	Providing and Construction of Cement Concrete Kerb without Channel in M30 Grade for Median in Cross Section with RE Wall complete as per Drawings and	rm	39.00	63.00	518.00	20,202.00	32,634.00	52,836.00

Item Number	Item Description	Unit	Quantity (4 Lane) Under PM-DevINE	Quantity (addl. Qty. for 6 lane) under SOPD	Rate, INR	Amount (INR) - PM - DevINE -4 Lane	Amount (in INR). - SOPD (for 4 lane to 6 lane)	Total Amount (INR)- 6 Lanes
	Technical Specifications Clause 409 of Section 400 and/or as directed by the Engineer.							
7.22	Construction of Reinforced Earth Retaining Structures together with construction of earthwork in layers, assembling & erection of reinforcing elements and placing of facia panels and all associated components as per Drawings and Technical Specifications Section 300, 1700, 3100 and/or as directed by the Engineer							
a	Excavation for Reinforced EarthStructures(RES)in soil complete as per approved Drawings and Technical Specifications Clause 301 of Section 300 and/or as directed by the Engineer	cum	548.00	19.00	46.00	25,208.00	874.00	26,082.00
b	Plain Cement Concrete Strips level footing (35cm X 15cm) in M 15 Grade Complete as per technical Specifications sections 1700 and 3100 and/or drawing and/or as directed by the Engineer	cum	60.00	-6.00	8,245.00	4,94,700.00	-49,470.00	4,45,230.00
c	Precast Concrete Facia Panels in M 35 Grade complete as per Drawings and Technical Specifications Section 3100 and/or as directed by the Engineer	sqm	4,720.00	819.00	13,071.00	6,16,95,120.00	1,07,05,149.00	7,24,00,269.00
d	Back filling behind Earth Retaining Structure complete as per Drawings and Technical Specifications Clause 304 and 305 of Section 300 and/or as directed by the Engineer	cum	10,530.00	4,521.00	4,188.00	4,40,99,640.00	1,89,33,948.00	6,30,33,588.00
e	Reinforced Cement Concrete in M 40 Grade for Crash Barrier with Friction Slab including reinforcement complete as per Drawings and Technical Specifications Section 3100 and/or as directed by the Engineer	rm	960.00	-3.00	15,255.20	1,46,44,992.00	-45,765.60	1,45,99,226.40

Item Number	Item Description	Unit	Quantity (4 Lane) Under PM-DevINE	Quantity (addl. Qty. for 6 lane) under SOPD	Rate, INR	Amount (INR) - PM - DevINE -4 Lane	Amount (in INR). - SOPD (for 4 lane to 6 lane)	Total Amount (INR)- 6 Lanes
f	Filter Media behind Earth Retaining Structure complete as per drawings and Technical Specifications Section 2500 and/or as directed by the Engineer	cum	2,190.00	394.00	2,276.00	49,84,440.00	8,96,744.00	58,81,184.00
g	PVC down take 100 mm diameter pipe complete as per Drawings and Technical Specifications Clause 2705 and Section 2700 and/or as directed by the Engineer	rm	462.00	65.00	180.00	83,160.00	11,700.00	94,860.00
7.23	Water Based Paint on Exposed Concrete Surface of Crash Barrier etc. complete as per Drawings and Additional Technical Specifications A-4 and/or as directed by the Engineer	sqm	20,281.00	-2,959.00	296.00	60,03,176.00	-8,75,864.00	51,27,312.00
7.24	Retaining wall/ Toe wall complete with following components as per Drawings and Technical Specifications Section 300,1400, 1500, 1600, 1700, 2100 and 2200 and/or as directed by the Engineer							
a	Excavation in Soil complete as per Drawings and Technical Specifications Clause 301 of Section 300 and/or as directed by the Engineer.	cum	2,360.00	1,030.00	46.00	1,08,560.00	47,380.00	1,55,940.00
b	Granular Materials below Levelling Course including compaction in layers complete as per Drawings, Technical Specifications Clause 305 of Section 300 and/or as directed by the Engineer	cum	236.00	104.00	766.00	1,80,776.00	79,664.00	2,60,440.00
c	Plain Cement Concrete in M15 Grade for Levelling Course as per Drawings and Technical Specifications Section 2100 and/or as directed by the Engineer	cum	177.00	78.00	8,245.00	14,59,365.00	6,43,110.00	21,02,475.00
d	Reinforced Cement Concrete in M25 Grade for all components but excluding Reinforcement Complete as per Drawings	cum	1,444.00	1,209.00	9,611.00	1,38,78,284.00	1,16,19,699.00	2,54,97,983.00

Item Number	Item Description	Unit	Quantity (4 Lane) Under PM-DevINE	Quantity (addl. Qty. for 6 lane) under SOPD	Rate, INR	Amount (INR) - PM - DevINE -4 Lane	Amount (in INR). - SOPD (for 4 lane to 6 lane)	Total Amount (INR)- 6 Lanes
	and Technical Specifications Section 2200 and/or as directed by the Engineer							
e	Thermo-Mechanically Treated HYSD Fe 500D Grade Reinforcement in all components complete as per Drawings and Technical Specifications Section 1600 and/or as directed by the Engineer	mt	65.00	54.00	68,210.00	44,33,650.00	36,83,340.00	81,16,990.00
f	Filter Media complete as per drawings and Technical Specifications Clause 2504 and Section 2500 and/or as directed by the Engineer	cum	620.00	458.00	4,795.00	29,72,900.00	21,96,110.00	51,69,010.00
i	Back filling complete as per Drawings and Technical Specifications Clause 304 and 305 of Section 300 and/or as directed by the Engineer	cum	2,229.00	3,215.00	263.00	5,86,227.00	8,45,545.00	14,31,772.00
j	AC Pipe Weep Holes with No Fine Concrete Block on Earth Side in complete as per Drawings and Technical Specifications Clause 2706 and Section 2700 and/or as directed by the Engineer	number	1,032.00	764.00	275.00	2,83,800.00	2,10,100.00	4,93,900.00
7.25	Embankment Construction using materials obtained from Borrow Areas complete as per Drawings and Technical Specification Clause 305 of Section 300 and/or as directed by the Engineer	cum		14,630.00	475.00		69,49,250.00	69,49,250.00
	Pipe Culvert (M-25)	rm		44.00	9,883.00		4,34,852.00	4,34,852.00
7.26	Providing and constructing temporary island for construction of pile foundation with depth of water upto 4.0m complete as per technical specification.	nos.		21.00	56,383.00		11,84,043.00	11,84,043.00
						87,66,74,439.00	**1,06,38,48,909.40**	**1,94,05,23,348.40**
8	**Bill Number–8: Drainage and Protective work**							

Item Number	Item Description	Unit	Quantity (4 Lane) Under PM-DevINE	Quantity (addl. Qty. for 6 lane) under SOPD	Rate, INR	Amount (INR) - PM - DevINE -4 Lane	Amount (in INR). - SOPD (for 4 lane to 6 lane)	Total Amount (INR)- 6 Lanes
8.01	Reinforced Cement Concrete Covered Drain capable of traffic plying with following as per Drawings and Technical Specifications Section 300, 1600, 1700 and 2500 and/or as directed by the Engineer							
a	Excavation in Soil complete as per Drawings and Technical Specifications Clause 301 of Section 300 and/or as directed by the Engineer	cum	13,900.00	400.00	46.00	6,39,400.00	18,400.00	6,57,800.00
b	Granular Materials below Levelling Course including compaction in layers complete as per Drawings, Technical Specifications Clause 305 of Section 300 and/or as directed by the Engineer	cum	27,447.00	2,745.00	766.00	2,10,24,402.00	21,02,670.00	2,31,27,072.00
c	Plain Cement Concrete in M15 Grade for Levelling Course as per Drawings and Technical Specifications Section 2100 and/or as directed by the Engineer	cum	4,170.00	120.00	8,245.00	3,43,81,650.00	9,89,400.00	3,53,71,050.00
d	Reinforced Cement Concrete in M25 Grade for all components including cover slab but excluding Reinforcement Complete as per Drawings and Technical Specifications Section 2200 and/or as directed by the Engineer	cum	56,900.00	-11,536.00	9,059.00	51,54,57,100.00	-10,45,04,624.00	41,09,52,476.00
e	ReinforcedCement Concrete in M40 Grade for top cover slab but excluding Reinforcement Complete as per Drawings and Technical Specification Section 1500, 1700 and 2200 and/or as directed by the Engineer	cum		16,918.00	13,691.00		23,16,24,338.00	23,16,24,338.00
f	Thermo-Mechanically Treated HYSD Fe 500D Grade Reinforcement in all components complete as per Drawings and Technical Specifications Section 1600 and/or as directed by the Engineer	mt	2,212.00	233.00	68,070.00	15,05,70,840.00	1,58,60,310.00	16,64,31,150.00

Item Number	Item Description	Unit	Quantity (4 Lane) Under PM-DevINE	Quantity (addl. Qty. for 6 lane) under SOPD	Rate, INR	Amount (INR) - PM - DevINE -4 Lane	Amount (in INR). - SOPD (for 4 lane to 6 lane)	Total Amount (INR)- 6 Lanes
g	Filter Media complete as per drawings and Technical Specifications Clause 2504 and Section 2500 and/or as directed by the Engineer	cum	12,490.00	-1,248.00	4,795.00	5,98,89,550.00	-59,84,160.00	5,39,05,390.00
h	AC Pipe Weep Holes with No Fine Concrete Block on Earth Side complete as per Drawings and Technical Specifications Clause 2706 and Section 2700 and/or as directed by the Engineer	number	204.00	-30.00	275.00	56,100.00	-8,250.00	47,850.00
8.02	Retaining wall/ Toe wall complete with following components as per Drawings and Technical Specifications Section 300,1400, 1500, 1600, 1700, 2100 and 2200 and/or as directed by the Engineer							
a	Excavation in Soil complete as per Drawings and Technical Specifications Clause 301 of Section 300 and/or as directed by the Engineer.	cum	2,600.00	260.00	46.00	1,19,600.00	11,960.00	1,31,560.00
b	Granular Materials below Levelling Course including compaction in layers complete as per Drawings, Technical Specifications Clause 305 of Section 300 and/or as directed by the Engineer	cum	300.00	30.00	766.00	2,29,800.00	22,980.00	2,52,780.00
c	Plain Cement Concrete in M15 Grade for Levelling Course as per Drawings and Technical Specifications Section 2100 and/or as directed by the Engineer	cum	390.00	39.00	8,245.00	32,15,550.00	3,21,555.00	35,37,105.00
d	Reinforced Cement Concrete in M25 Grade for all components but excluding Reinforcement Complete as per Drawings and Technical Specifications Section 2200 and/or as directed by the Engineer	cum	1,830.00	183.00	9,611.00	1,75,88,130.00	17,58,813.00	1,93,46,943.00
e	Thermo-Mechanically Treated HYSD Fe 500D Grade Reinforcement in all components complete as per Drawings and	mt	137.00	14.00	68,210.00	93,44,770.00	9,54,940.00	1,02,99,710.00

Item Number	Item Description	Unit	Quantity (4 Lane) Under PM-DevINE	Quantity (addl. Qty. for 6 lane) under SOPD	Rate, INR	Amount (INR) - PM - DevINE -4 Lane	Amount (in INR). - SOPD (for 4 lane to 6 lane)	Total Amount (INR)- 6 Lanes
	Technical Specifications Section 1600 and/or as directed by the Engineer							
f	Filter Media complete as per drawings and Technical Specifications Clause 2504 and Section 2500 and/or as directed by the Engineer	cum	1,060.00	106.00	4,795.00	50,82,700.00	5,08,270.00	55,90,970.00
i	Back filling complete as per Drawings and Technical Specifications Clause 304 and 305 of Section 300 and/or as directed by the Engineer	cum	2,878.00	288.00	2,977.00	85,67,806.00	8,57,376.00	94,25,182.00
j	AC Pipe Weep Holes with No Fine Concrete Block on Earth Side in complete as per Drawings and Technical Specifications Clause 2706 and Section 2700 and/or as directed by the Engineer	number	2,400.00	240.00	275.00	6,60,000.00	66,000.00	7,26,000.00
						82,68,27,398.00	**14,45,99,978.00**	**97,14,27,376.00**
9	**Bill Number–9: Road Signs, Road Markings and Road Appurtenances**							
9.01	Road Signs in the following shapes complete as per Drawings and Technical Specifications Clause 801 of Section 800 and/or as directed by the Engineer							
a	Octagonal Sign – 750 mm side	number	5.00	40.00	6,542.00	32,710.00	2,61,680.00	2,94,390.00
b	Triangular Sign – 900 mm side	number	11.00	25.00	3,595.00	39,545.00	89,875.00	1,29,420.00
c	Triangular Sign – 750 mm side	number	76.00	35.00	4,200.00	3,19,200.00	1,47,000.00	4,66,200.00
d	Facility Information Signs 600mm x 800mm	number	56.00	-	5,200.00	2,91,200.00	-	2,91,200.00
e	Chevron Signs 600mm x 500mm - Single Face	number	213.00	-	5,778.00	12,30,714.00	-	12,30,714.00
f	Triple Chevron Sign (600 mm x 2300 mm) - Single Face pasted on Roundabouts	number		50.00	2,000.00		1,00,000.00	1,00,000.00

Item Number	Item Description	Unit	Quantity (4 Lane) Under PM-DevINE	Quantity (addl. Qty. for 6 lane) under SOPD	Rate, INR	Amount (INR) - PM - DevINE -4 Lane	Amount (in INR). - SOPD (for 4 lane to 6 lane)	Total Amount (INR)- 6 Lanes
9.02	Direction and Place Identification Road Signs complete as per Drawings and Technical Specifications Clause 801 of Section 800 and/or as directed by the Employer							
a	up to 0.9 sqm	number	16.00	16.00	9,000.00	1,44,000.00	1,44,000.00	2,88,000.00
b	more than 0.9 sqm	number	16.00	16.00	86,625.00	13,86,000.00	13,86,000.00	27,72,000.00
c	Project Sign Board	number	3.00	-	66,000.00	1,98,000.00	-	1,98,000.00
9.03	Fabrication Supply and Installation of Overhead traffic signs on road complete consisting of following components as per Drawings and Technical Specifications Clause 801, 802 of Section 800 Clause 304 & 305 of Section 300 Section 1500 1600, 1700 and 1900 and/or as directed by the Engineer.						-	-
a	Fabrication Erection and Installation of Over Head Gantry / Cantilever structure complete unit as per drawings Technical Specifications Clause 802 of Section 800, Section 1900 and/or as directed by the Engineer	mt	6.00	2.00	98,500.00	5,91,000.00	1,97,000.00	7,88,000.00
b	Fabrication supply and installation of 2mm thick aluminium sheet complete as per Drawings and Technical Specifications Clause 801 of Section 800 and/or as directed by the Engineer	sqm	120.00	-16.00	6,000.00	7,20,000.00	-96,000.00	6,24,000.00
c	Earthwork in Excavation for all type of soils to required line and grade complete as per Drawings and Technical Specifications Clause 304 of Section 300 and/or as directed by the Engineer.	cum	100.00	-34.00	283.00	28,300.00	-9,622.00	18,678.00

Item Number	Item Description	Unit	Quantity (4 Lane) Under PM-DevINE	Quantity (addl. Qty. for 6 lane) under SOPD	Rate, INR	Amount (INR) - PM - DevINE -4 Lane	Amount (in INR). - SOPD (for 4 lane to 6 lane)	Total Amount (INR)- 6 Lanes
d	Providing and laying levelling Plain Cement Concrete of Grade M15 complete as per Drawings and Technical Specifications Section 1500 & 1700 and/or as directed by the Engineer.	cum	50.00	-48.00	5,788.00	2,89,400.00	-2,77,824.00	11,576.00
e	Providing and laying Reinforced Cement Concrete of Grade M 20 complete as per drawing and Technical Specifications Section 1500 & 1700 and/or as directed by the Engineer.	cum	50.00	-34.00	5,822.00	2,91,100.00	-1,97,948.00	93,152.00
f	Providing and fixing in position TMT reinforcement complete as per drawing and Technical Specifications Section 1600 and/or as directed by the Engineer.	mt	1.00	1.00	68,070.00	68,070.00	68,070.00	1,36,140.00
9.04	Road Marking (Centre Line / Edge / Transverse / Zebra Crossing / Directional Arrows / Transverse Bar Marking / Any other Type) Complete as per Technical Specifications Clause 803 of Section 800 and/or as directed by the Engineer						-	-
a	Lane / Edge / Transverse Zebra Crossing / Directional Arrows	sqm	12,750.00	8,450.00	750.00	95,62,500.00	63,37,500.00	1,59,00,000.00
b	Raised Transverse Bar Marking	sqm	450.00	350.00	1,313.00	5,90,850.00	4,59,550.00	10,50,400.00
9.05	Reflective Pavement Marker (Road Studs) complete as per Drawings and Technical Specifications Clause 804 of Section 800 and/or as directed by the Engineer	number					-	-
a	Uni-directional	number	3,900.00	20,100.00	600.00	23,40,000.00	1,20,60,000.00	1,44,00,000.00
b	Bi-directional	number	250.00	-	900.00	2,25,000.00	-	2,25,000.00
9.06	Distance Indicator Posts complete as per Drawings and Technical Specifications						-	-

Item Number	Item Description	Unit	Quantity (4 Lane) Under PM-DevINE	Quantity (addl. Qty. for 6 lane) under SOPD	Rate, INR	Amount (INR) - PM - DevINE -4 Lane	Amount (in INR). - SOPD (for 4 lane to 6 lane)	Total Amount (INR)- 6 Lanes
	Clause 805 of Section 800 and / or as directed by the Engineer							
a	Hectometre Stone	number	56.00	-	862.00	48,272.00	-	48,272.00
b	km Stone	number	10.00	-	3,289.00	32,890.00	-	32,890.00
c	5th km Stone	number	4.00	-	5,429.00	21,716.00	-	21,716.00
9.07	Road Delineators in following shapes Complete as per Drawings and Technical Specifications Clause 806 of Section 800 and/or as directed by the Engineer						-	-
a	Roadway Indicator	number	100.00	25,800.00	1,000.00	1,00,000.00	2,58,00,000.00	2,59,00,000.00
b	Object Hazard Marker (900mm x 300mm)	number	180.00	-	1,500.00	2,70,000.00	-	2,70,000.00
c	Delineators with Circular Reflector	number	2,503.00	-2,003.00	250.00	6,25,750.00	-5,00,750.00	1,25,000.00
9.08	Metal Beam Crash Barrier Complete as per Drawings and Technical Specifications Clause 811 of Section 800 and/or as directed by the Engineer						-	-
a	Metal Beam Railing Members	rm	750.00	-	3,475.00	26,06,250.00	-	26,06,250.00
b	Terminal / Anchor Members	number	10.00	-	6,950.00	69,500.00	-	69,500.00
9.09	Providing configuration furnishing installation of Traffic Impact Attenuation Devices at hazardous location(s) complete as per Drawings and Technical Specifications Clause 814 of Section 800 and/or as directed by the Engineer.	numbers	5.00	-2.00	2,50,000.00	12,50,000.00	-5,00,000.00	7,50,000.00
9.10	Pedestrian Guard Steel Railing along footpath / green verges with 3 Rows of Horizontal Pipe Bars complete as per	rm	5,000.00	10,000.00	2,964.00	1,48,20,000.00	2,96,40,000.00	4,44,60,000.00

Item Number	Item Description	Unit	Quantity (4 Lane) Under PM-DevINE	Quantity (addl. Qty. for 6 lane) under SOPD	Rate, INR	Amount (INR) - PM - DevINE -4 Lane	Amount (in INR). - SOPD (for 4 lane to 6 lane)	Total Amount (INR)- 6 Lanes
	Drawings and technical Specifications Clause 809 of Section 800 and/or directed by the Engineer							
9.11	Steel Railing consisting of vertical posts @ 1 m & steel chain in 2 rows complete along inner edge of footpath on roundabouts as per Drawings and Technical Specifications Clause 809 of Section 800 and/or directed by the Engineer	rm	1,000.00	-	3,145.00	31,45,000.00	-	31,45,000.00
9.12	PVC Pipe of 200 mm dia below Footpath, Green Verges or service road at a level below Sub Base Layer to act as utility duct complete as per Drawings and Technical Specifications Clause 309 of Section 300 and/or as directed by the Engineer	rm	12,300.00	300.00	800.00	98,40,000.00	2,40,000.00	1,00,80,000.00
						5,11,76,967.00	**7,53,48,531.00**	**12,65,25,498.00**
10	**Bill Number–10: Miscellaneous Items**							
10.01	Providing Construction & installation of Rainwater Harvesting Structure complete as per Drawings and Additional Technical Specifications A-1 and/or or as directed by the Engineer	number		26.00	50,000.00	-	13,00,000.00	13,00,000.00
10.02	Bus Stop Shelter complete as per Drawing and Additional Technical Specifications A-2 and/or as directed by the Engineer	number	10.00	-	8,00,000.00	80,00,000.00	-	80,00,000.00
10.03	Providing Supplying fixing and erecting fully functional Street Lighting with overhang on both sides complete as per drawings and Additional Technical Specifications Clause A-3 and/or as directed by the Engineer.	number		247.00	48,000.00	-	1,18,56,000.00	1,18,56,000.00
10.04	Providing Supplying fixing and erecting fully functional Street lighting with overhang on one side complete as per drawings and Additional Technical Specifications A-3 and/or as directed by the Engineer.	number		529.00	38,000.00	-	2,01,02,000.00	2,01,02,000.00

Item Number	Item Description	Unit	Quantity (4 Lane) Under PM-DevINE	Quantity (addl. Qty. for 6 lane) under SOPD	Rate, INR	Amount (INR) - PM - DevINE -4 Lane	Amount (in INR). - SOPD (for 4 lane to 6 lane)	Total Amount (INR)- 6 Lanes
10.05	Providing Supplying fixing and erecting fully functional High Mast Lighting complete as per drawings and Additional Technical Specifications A-3 and/or as directed by the Engineer.	number	6.00	-	10,00,000.00	60,00,000.00	-	60,00,000.00
						1,40,00,000.00	**3,32,58,000.00**	**4,72,58,000.00**

Annexure 1-1 : Options for 6 Laning of Airport Road (Presented on 21.08.2023)

1. Background

It is required to work out the Feasibility for 6–Laning of connectivity to LGBI Airport in view of directions from the Government of Assam. In addition to above 6-Laning, the Government of Assam is also taking up the 6 Laning to Jalukbari – VIP Section of NH-37 (New NH-17). The following development configurations are required for 6-lane connectivity to LGBI Airport:

- 6 Lane Carriageway along with 5.5 m wide Service Road on either side to provide segregated movement of local traffic of roadside built up.
- 6 Lane Grade Separated Intersection at Dharapur

2. Existing Project Road Sections

Project Road Section	Length, m	Existing Right of Way (m)
VIP Junction to SOS Junction	600	45
SOS Junction to Garal Junction	4160	30
Garal Junction to Dharapur Junction (Grade Separator included)	2540	28
Total	7300	

3. Options for 6 Laning

The 6 Laning for the Project can be development for different combinations of Proposed Right of Ways & improvement requirements along the Project Road Sections are required.

➔ Option 1: 6 Lane with Service Road (45 m Proposed Right of Way)
➔ Option 2: 6 Lane without Service Road
➔ Option 3: 6 Lane without Service Road having 3 Lane Elevated Road from SOS to Garal

The brief on each option along with Land Requirement is presented in following paragraphs.

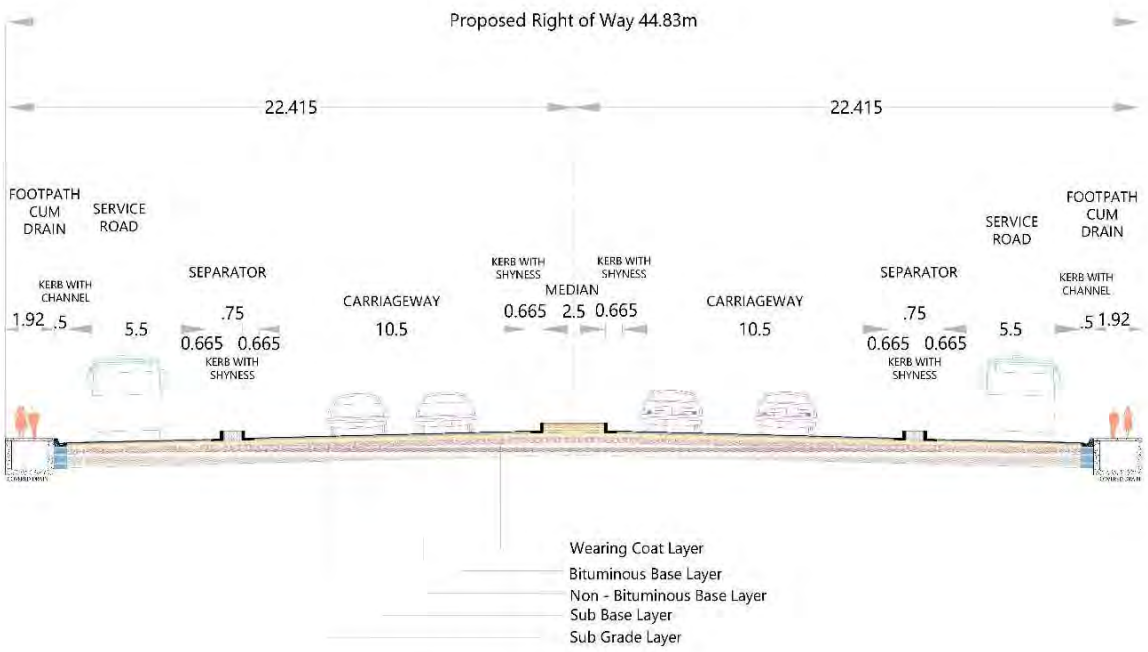
4. Option 1: Development to 6 Lanes with Service Road (45 m Proposed Right of Way)

The cross-sectional elements along the different Project Road Sections are as follows:

Description	VIP to SOS	SOS to Garal	Garal to Dharapur
Length	600	4160	2540
Existing Right of Way	**45**	**30**	**28**
Typical Cross Section	Type		
Carriageway (2 x 10.5 m)	21	21	21
Central Median (2.5 m)	2.5	2.5	2.5
Kerb with Shyness on either side of Central Median (2 x (0.5+0.165) m)	1.33	1.33	1.33
Separator between Carriageway & Service Road including Kerb & Shyness (2 x (0.665+0.75+0.665) m)	4.16	4.16	4.16
Service Road (2 x 5.5 m)	11	-	11
5.5 m wide Service Road with combination of 4.2 m wide covered drain slab & 1.3 m wide carriage way (2 x 5.5m)	-	11	-
Kerb with Channel (2 x 0.5m)	1	1	1
Footpath cum Covered Drain (2 x 1.92m)	3.84		3.84
Footpath & Utilities (2 x 1.8 m)		3.6	

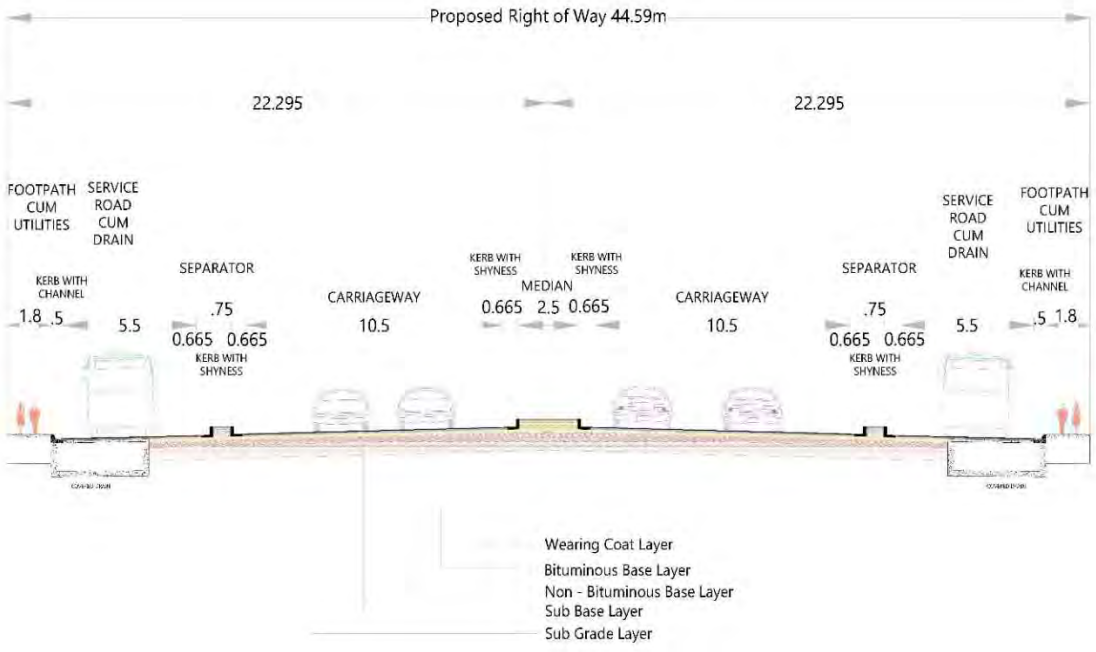
Description	VIP to SOS	SOS to Garal	Garal to Dharapur
	44.83	**44.59**	**44.83**
Right of Way Required beyond Existing ROW, m	-	15	17

The typical Cross Sections are presented in following figures:



TCS 1A: TYPICAL CROSS SECTION FOR 44.83m (Say 45m) ROW

Option 1: TCS for 6 lanes with Service Road from VIP Junction to SOS Junction and Garal Junction to Dharapur Junction



TCS 1B: TYPICAL CROSS SECTION FOR 44.59m (Say 45m) ROW

Option 1 : TCS for 6 lanes with Service Road from SOS Junction to Dharapur Junction

Land Requirement and Structures within the required land

The Land Requirement for the Construction of 6 Lane with Service Road is approximate 10.83 ha (81 bighas) [1 bigha = 14400 square feet].

From	To	PROW, m	Existing ROW, m	Required Additional Area			
				LHS (Sqm)	RHS (Sqm)	Area (Sqm)	Area (Bigha)
VIP Junction	SOS Junction	45	45	-	-	-	-
SOS Junction	Garal Junction	45	30	23,048.80	35,388.64	58,437.43	43.68
Garal Junction	Dharapur Junction	45	28	11,159.47	12,154.38	23,313.85	17.43
						81,751.29	**61.11**
Junctions							
VIP Junction						103.66	0.08
SOS Junction						841.68	0.63
Airport Entry						981.54	0.73
Airport Exit						981.54	0.73
Garal Junction						4,755.16	3.55
Dharapur Junction				4,346.59	14,548.64	18,895.23	14.12
						26,558.81	**19.84**
					Additional Area Required	**1,08,310.09**	**80.95**

The above land requirement area for Six Lane with Service Road would acquisition of 304 Structures. The Structure type and Number of floors of these structures is summarised below.

Road Section	Start	End	Length		Kacha	Semi Pucca	Pucca	Total	No of Floors 1	2	3	4	5	6	7
SOS to Garal	600	4800	4200	Residential	1	17	20	38	28	6	2	1	0	0	1
				Comm	1	14	20	35	18	9	2	3	0	1	2
				Sub Total				73							
Garal to Dharapur	4800	7300	2600	Residential	0	30	12	42	34	6	2	0	0	0	0
				Comm	6	143	40	189	173	5	9	1	0	1	0
				Sub Total				231							
Total								304							

5. Option 2: Development to 6 Lanes without Service Road

The cross-sectional elements along the different Project Road Sections are as follows:

Description	VIP to SOS	SOS to Garal	Garal to Dharapur
Length	600	4160	2540
Existing Right of Way	45	30	28
Typical Cross Section			
Carriageway (2 x 10.5 m)	21	21	21
Central Median (2.5 m)	2.5	2.5	2.5
Kerb with Shyness on either side of Central Median (2 x (0.5+0.165) m)	1.33	1.33	1.33
Separator between Carriageway & Service Road including Kerb & Shyness (2 x (0.665+0.75+0.665) m)	4.16	-	-
Service Road (2 x 5.5 m)	11	-	-
Kerb with Channel & Shyness (2 x (0.465+0.5)) m	-	1.93	1.93
Footpath cum covered drain (2 x 4.20 m)	-	8.4	-
Kerb with Channel (2 x 0.5m)	1	-	-
Footpath cum Covered Drain (2 x 1.92m)	3.84	-	3.84
Utilities (2 x 1 m)	-	2.0	2.0

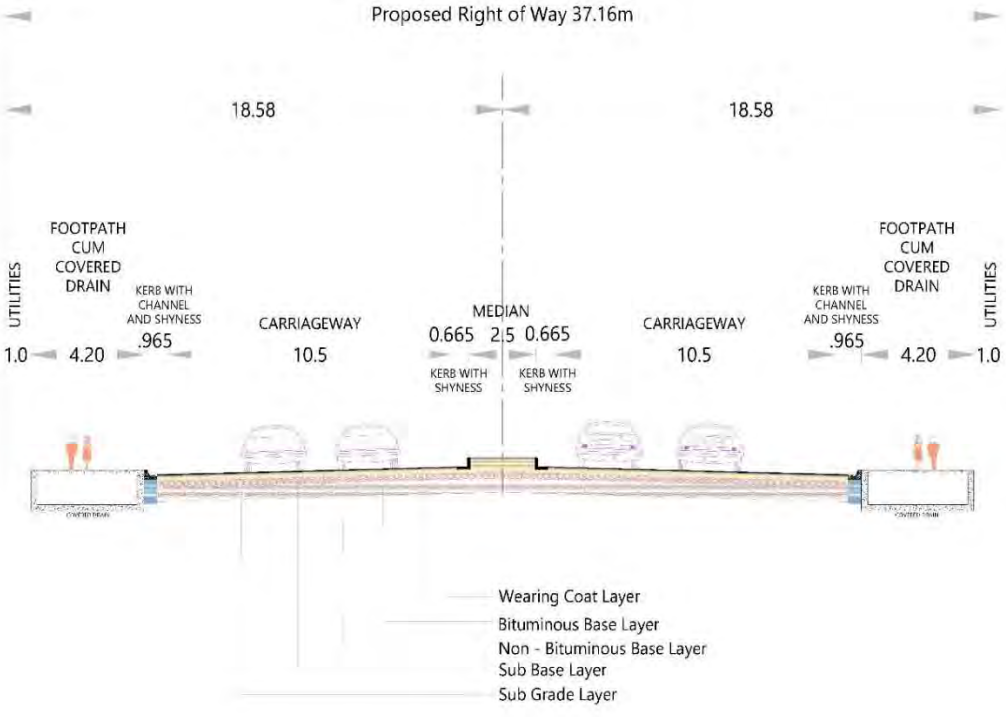
Description	VIP to SOS	SOS to Garal	Garal to Dharapur
	44.83	**37.16**	**32.6**
Right of Way Required beyond Existing ROW, m	-	8	5

The typical Cross Sections are presented in figures below:



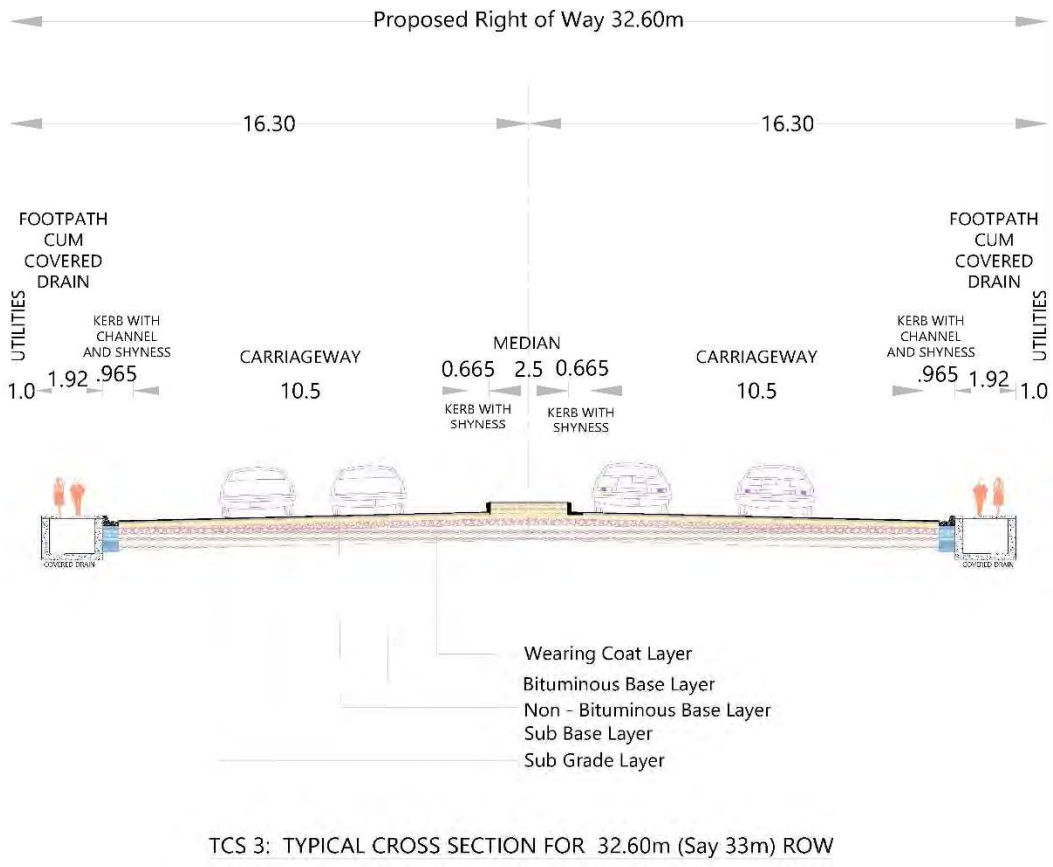
TCS 1A: TYPICAL CROSS SECTION FOR 44.83m (Say 45m) ROW

Option 2: TCS for 6 lanes without Service Road from VIP Junction to SOS Junction



TCS 2: TYPICAL CROSS SECTION FOR 37.16m (Say 38m) ROW

Option 2: TCS for 6 lanes without Service Road from SOS Junction to Garal Junction



TCS 3: TYPICAL CROSS SECTION FOR 32.60m (Say 33m) ROW

Option 2: TCS for 6 lanes without Service Road from Garal Junction to Dharapur Junction

The Land Requirement for the Construction of 6 Lane without Service Road is approximate 6.34 ha (47.38 bighas) [1 bigha = 14400 square feet].

From	To	PROW, Existing ROW, m		Required Additional Area			
				LHS (Sqm)	RHS (Sqm)	Area (Sqm)	**Area (Bigha)**
VIP Junction	SOS Junction	45	45	-	-	-	-
SOS Junction	Garal Junction	38	30	11,806.79	20,488.14	32,294.93	24.14
Garal Junction	Dharapur Junction	33	28	1,532.02	3,022.58	4,554.60	3.40
						36,849.53	**27.54**
Junctions							
VIP Junction						103.66	0.08
SOS Junction						841.68	0.63
Airport Entry						981.54	0.73
Airport Exit						981.54	0.73
Garal Junction						4,755.16	3.55
Dharapur Junction				4,346.59	14,548.64	18,895.23	14.12
						26,558.81	**19.84**
					Additional Area Required	**63,408.34**	**47.38**

The above land requirement area for Six Lane with Service Road would acquisition of 239 Structures. The Structure type and Number of floors of these structures is summarised below.

Road Section	Start	End	Length		Kacha	Semi Pucca	Pucca	Total	No of Floors 1	2	3	4	5	6	7
	600	4800	4200	Residential	1	7	6	14	12	2	0	0	0	0	0

Road Section	Start	End	Length		Kacha	Semi Pucca	Pucca	Total	No of Floors 1	2	3	4	5	6	7
SOS to Garal				Comm	0	9	8	17	15	2	0	0	0	0	0
				Sub Total				31							
Garal to Dharapur	4800	7300	2600	Residential	0	15	12	27	18	7	2	0	0	0	0
				Comm	6	139	36	181	168	5	7	1	0	0	0
				Sub Total				208							
Total								239							

The Land Requirement Plan and the Chainage wise Structure Summary is presented in Annexure 3 and Annexure 4 respectively.

6. Option 3: Development to 6 Lane Road with combinations of with/without Service Road & 3 lane elevated road from SOS to Garal

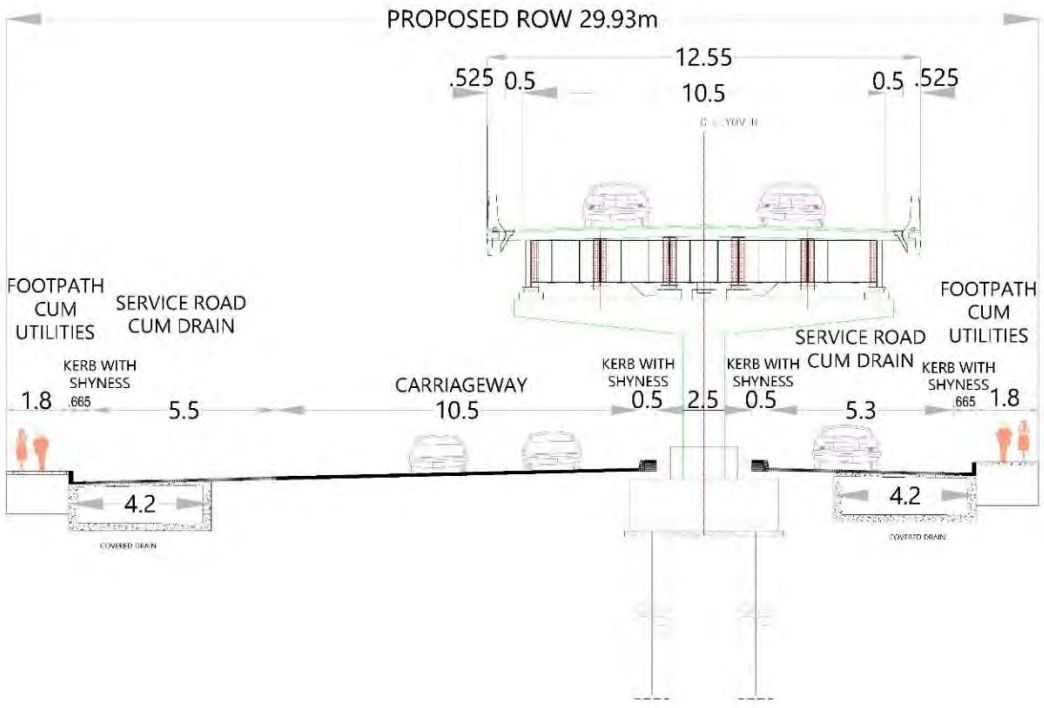
Description	VIP to SOS	SOS to Garal		Garal to Dharapur
Length	600	4160		2540
Existing Right of Way	45	30		28
Typical Cross Section	At Ground	Elevated + Ground	At Ground	At Ground
Carriageway At Ground	2*10.5=21	1*10.5=10.5	2*10.5=21	2*10.5=21
Carriageway Elevated (1 x 10.5 m)		10.5		
Shyness Elevated (2*0.5m)		1.0		
Crash Barrier Elevated (2*0.525m)		1.05		
Central Median at Ground	2.5	2.5	2.5	1.5
Kerb with Shyness on either side of Central Median	2x0.665=1.33	2 x 0.5 =1.0	2 x 0.5 =1.0	-
Separator between Carriageway & Service Road including Kerb & Shyness (2 x (0.665+0.75+0.665) m)	4.16	-	-	-
Service Road (2 x 5.5 m)	11	11	11	-
Kerb with Channel & Shyness	2*0.5=1.0	2*0.665=1.33	2*0.665=1.33	2*0.8=1.6
Footpath cum Utilities (2 x 1.8 m)	-	3.6	3.6	-
Footpath cum Covered Drain (2 x 1.92 m)	3.84			3.84
	44.83	**29.93**	40.43	**27.94**
Right of Way Required beyond Existing ROW, m	-	-	10.5 (near approach sections)	-

The typical cross sections are presented in figures below:



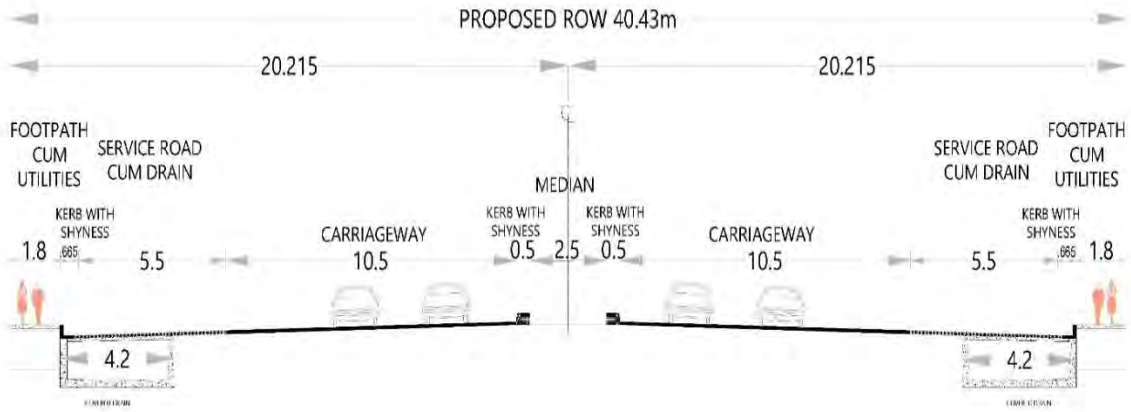
TCS 1A: TYPICAL CROSS SECTION FOR 44.83m (Say 45m) ROW

TCS for 6 lanes with Service Road from VIP Junction to SOS Junction



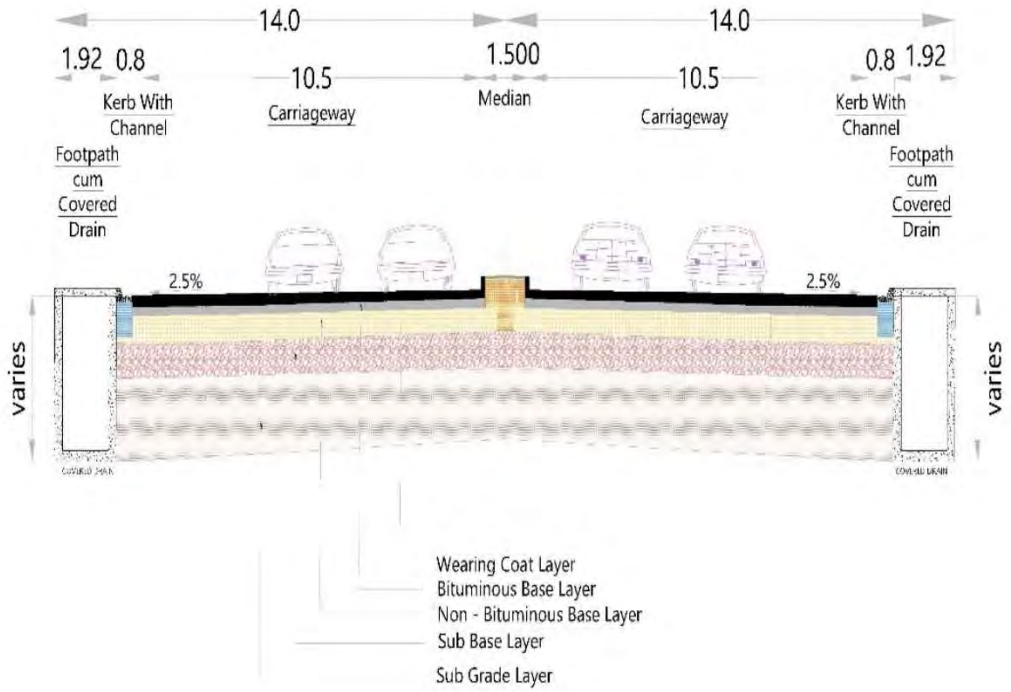
TCS 4: TYPICAL CROSS SECTION FOR 29.93m (Say 30m) ROW

TCS for 6 lanes with Service Road from SOS Junction to Garal Junction



TCS 5: TYPICAL CROSS SECTION FOR (APPROACHES) 40.43m ROW

TCS for 6 lanes with Service Road from SOS Junction to Garal Junction (Approaches of Flyover)



TCS 6: TYPICAL CROSS SECTION FOR 28m ROW

TCS for 6 lanes without Service Road from Garal Junction to Dharapur

The Land Requirement for the Construction of 6 Lane with and without Service Road is approximate 5.25 ha (39.23 bighas) [1 bigha = 14400 square feet].

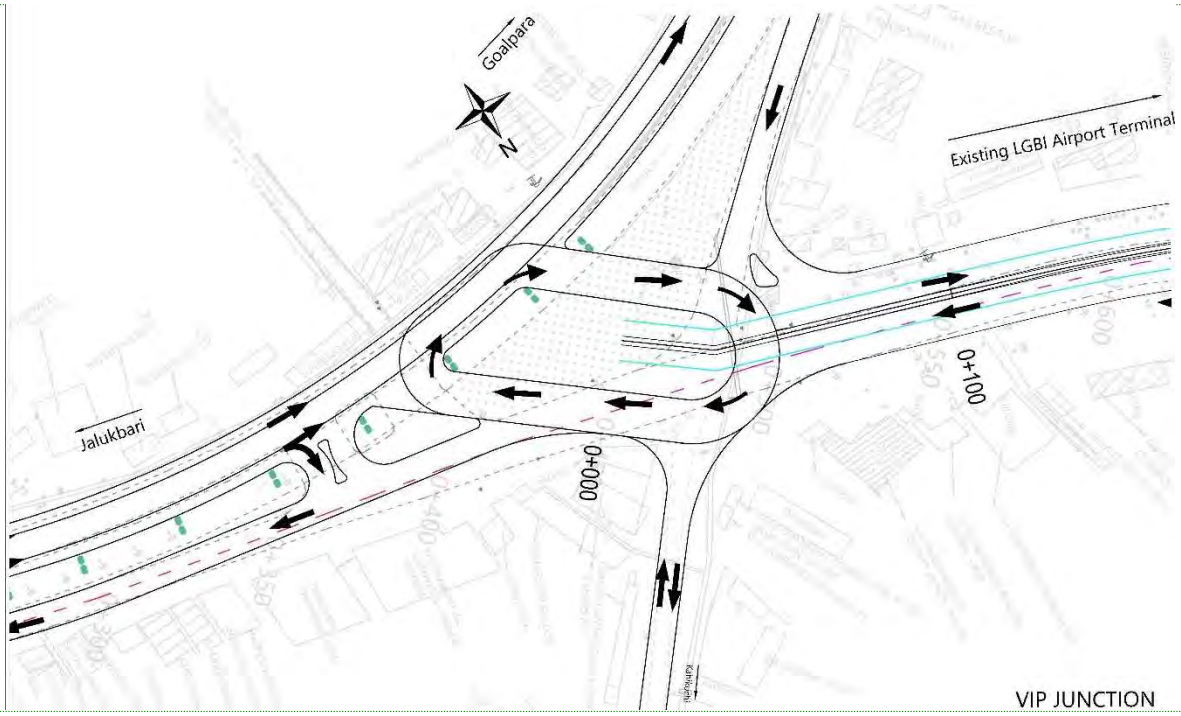
From	To	PROW, m	Existing ROW, m	Required Additional Area			
				LHS (Sqm)	RHS (Sqm)	Area (Sqm)	Area (Bigha)
VIP Junction	SOS Junction	45	45	-	-	-	-

From	To	PROW, m	Existing ROW, m	Required Additional Area			
				LHS (Sqm)	RHS (Sqm)	Area (Sqm)	Area (Bigha)
SOS Junction	Garal Junction	30 / 44	30	17,310.11	4,608.33	21,918.44	16.38
Garal Junction	Dharapur Junction	28	28	-	-	-	-
						21,918.44	16.38
Junctions							16.38
VIP Junction						103.66	0.08
SOS Junction						841.68	0.63
Airport Entry				842.08	4,161.96	5,004.04	3.74
Airport Exit						981.54	0.73
Garal Junction						4,755.16	3.55
Dharapur Junction				4,346.59	14,548.64	18,895.23	14.12
						30,581.31	**22.85**
Additional Area Required						**52499.75**	**39.23**

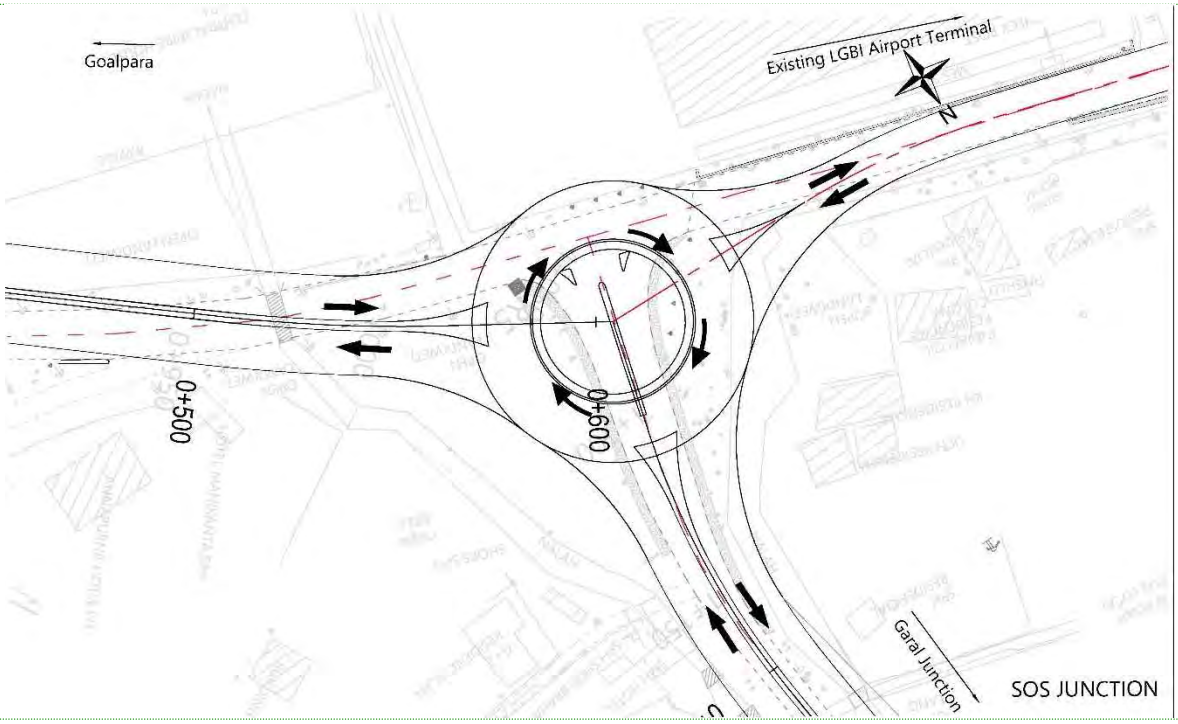
The Impact on 25 Structures along the project road section.

7. Junctions

Typical Arrangement for all this major Junction is presented below:



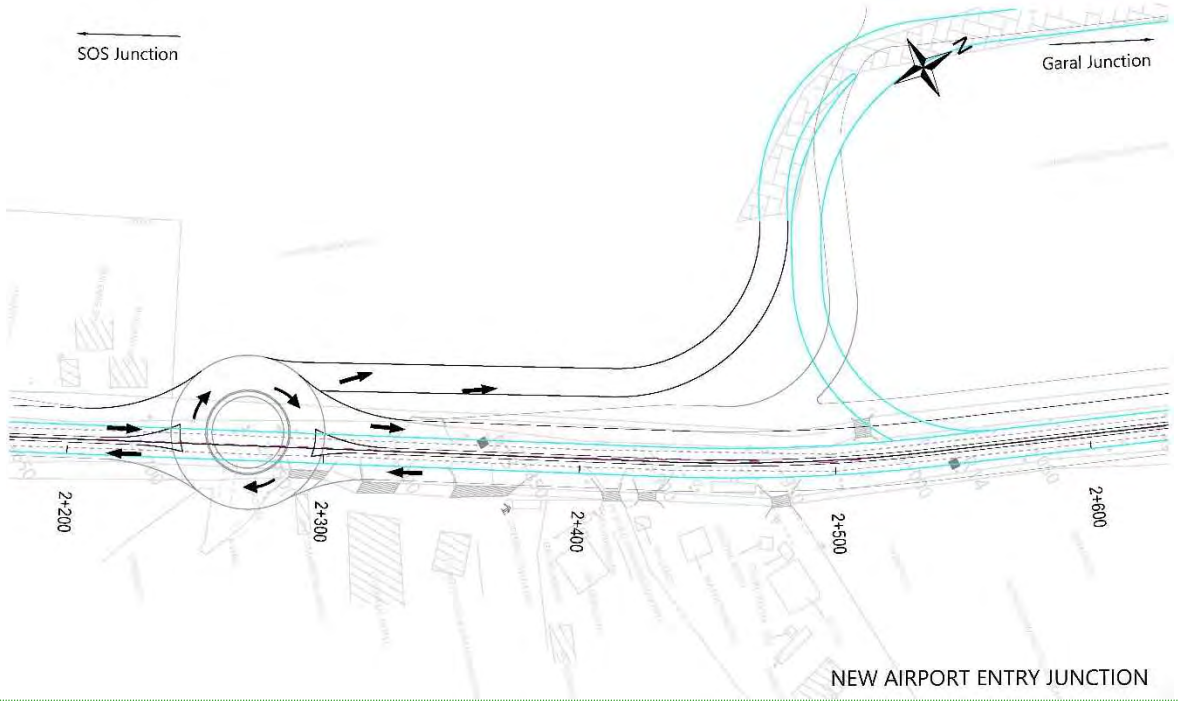
VIP JUNCTION



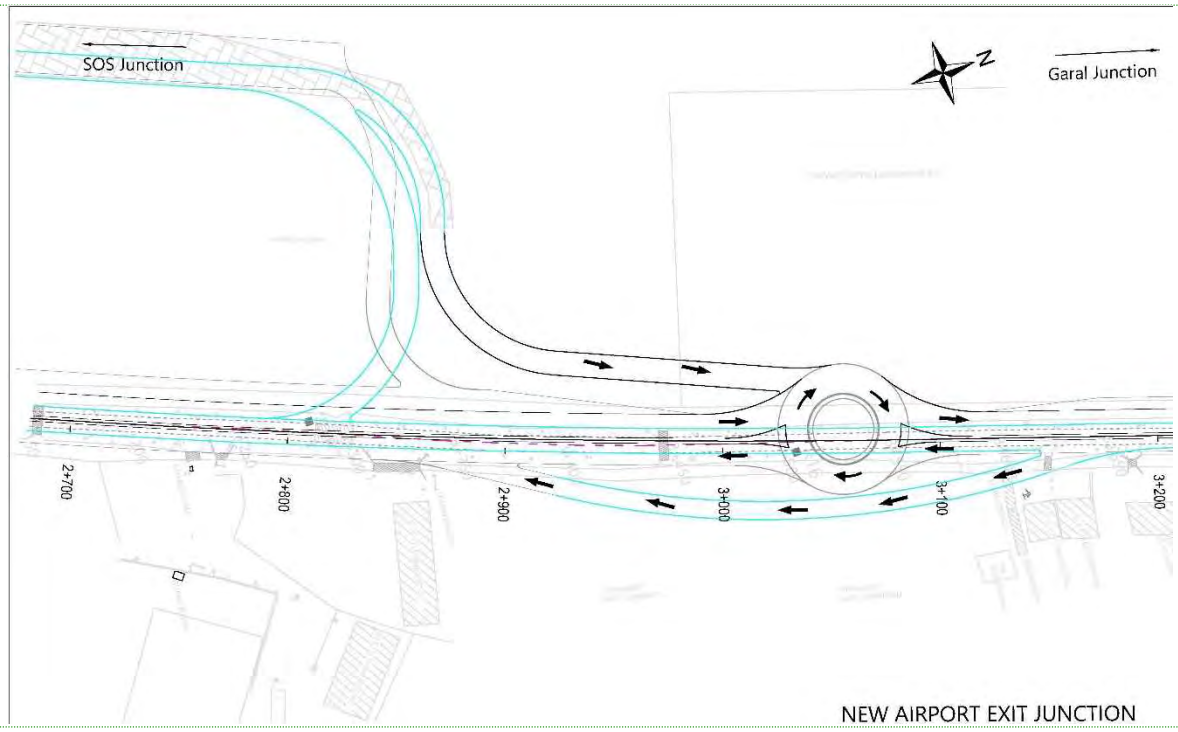
SOS JUNCTION



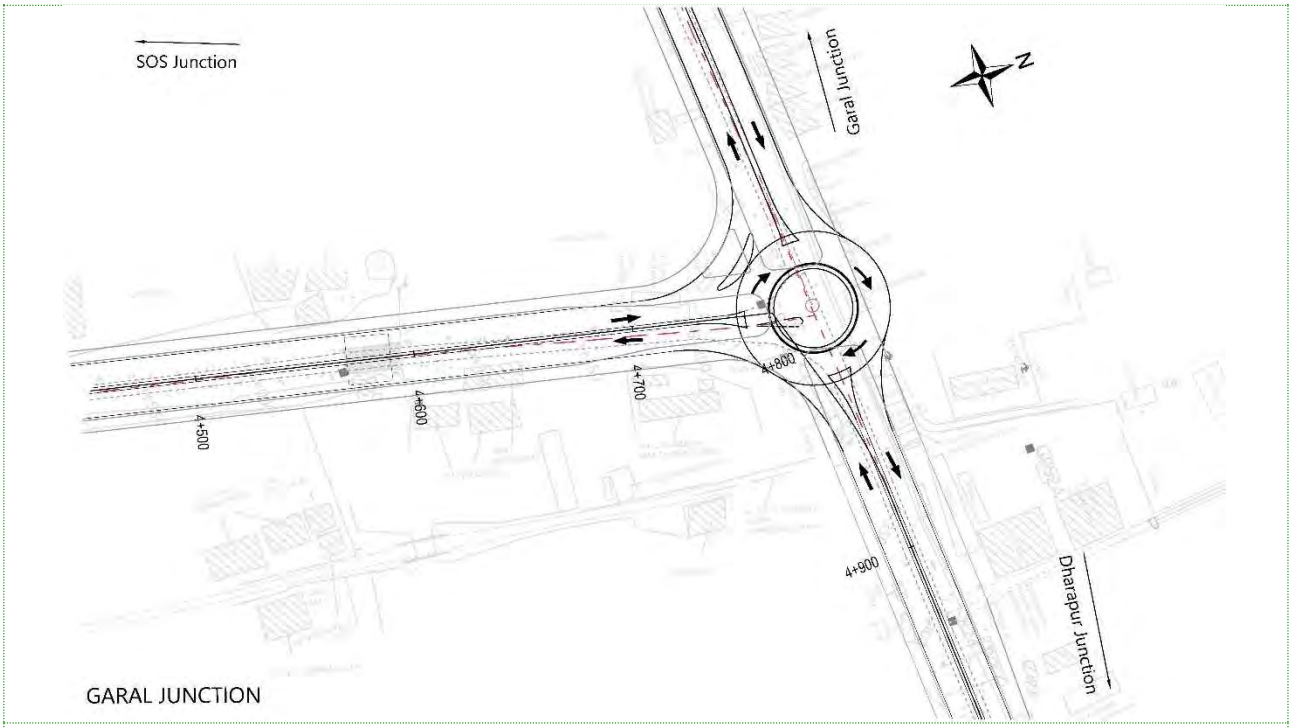
NEW AIRPORT ENTRY AND EXIT JUNCTIONS



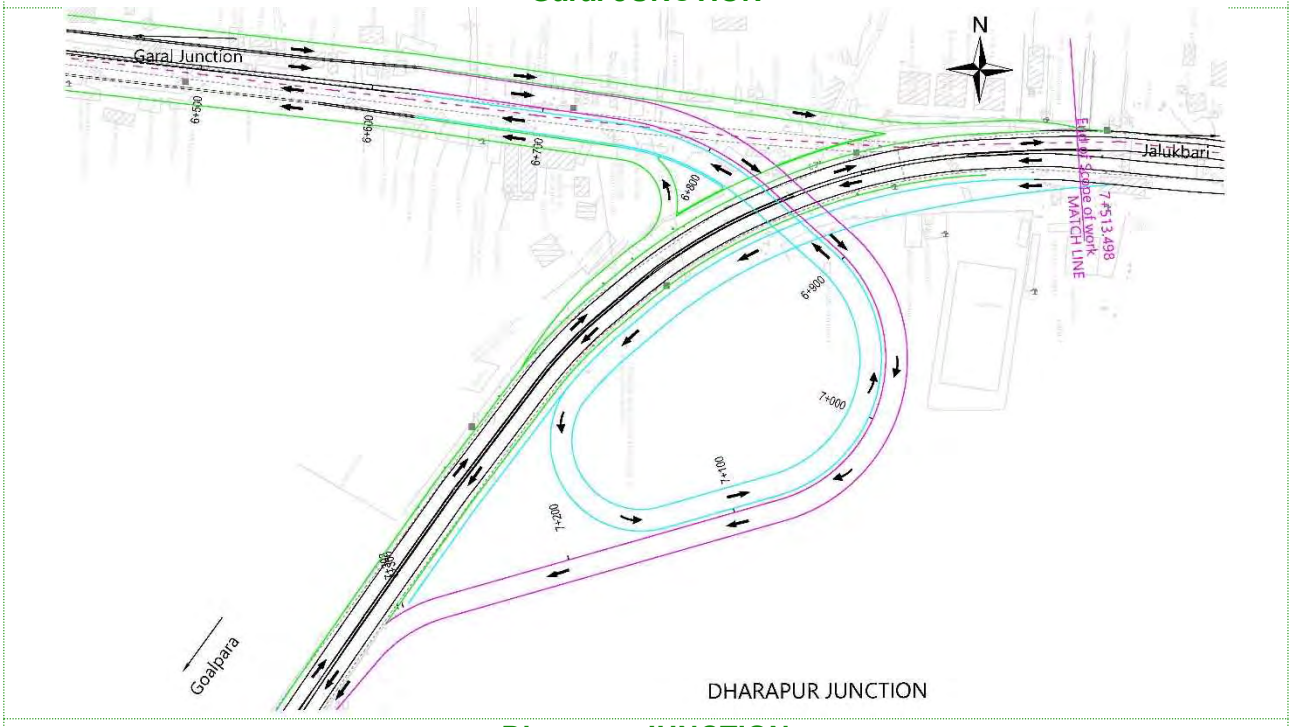
NEW AIRPORT ENTRY JUNCTION



NEW AIRPORT EXIT JUNCTION



Garal JUNCTION



Dharapur JUNCTION

8. Cost Estimate

The Cost Estimate for development to Six Laning with Service Road would essentially require:

(i) 6 Lane Road with Service Road on either side
(ii) Development of Junction as per 6 Lane Road Cross Section
(iii) 6 lane Grade Separator at Dharapur
(iv) 6 laning of Bridges with Service Road
(v) 6 Laning of Culverts with Service Road

The Summary of cost estimate for the above 3 options is presented in table below:

Bill No.	**Description**	**4 Lane with Service Road and 4 Lane Dharapur Grade Separator**	6 Lane with Service Road and 6 Lane Dharapur Grade Separator	6 Lane without Service Road and 6 Lane Dharapur Grade Separator	6 Lane with / without Service Road along with 3 Lane Elevated Road from Garal to SOS and 6 Lane Dharapur Grade Separator
1	Site Clearance	2,12,77,543	2,17,24,016	2,15,94,455	2,14,49,595
2	Earthworks	6,60,72,000	20,51,30,000	16,79,56,500	17,54,08,800
3	Granular Layers, Medians and Roundabouts	39,13,50,100	58,88,68,200	52,01,57,800	44,56,27,800
4	Bituminous Works	15,00,13,500	27,65,93,400	24,54,07,900	22,53,92,900
5	Culverts	8,44,07,966	14,30,00,000	12,15,50,000	11,44,00,000
6	Bridges	17,21,81,238	33,80,00,000	28,73,00,000	17,21,81,238
7	Elevated Structure	93,13,59,415	1,54,00,00,000	1,54,00,00,000	1,54,00,00,000
	3 Lane Elevated Road from Garal to SOS (4000 m)				4,00,00,00,000
8	Drainage and Protective work	82,68,27,398	82,68,27,398	82,68,27,398	82,68,27,398
9	Road Signs, Road Markings and Road Appurtenances	5,11,76,967	5,47,91,967	5,47,91,967	5,47,91,967
10	Miscellaneous Items	5,12,58,000	5,12,58,000	5,12,58,000	5,12,58,000
A	**Subtotal for Civil Works**	**2,74,59,24,127**	**4,04,61,92,981**	**3,83,68,44,020**	**7,62,73,37,698**

Annexure 1-2 : Typical Cross Sections, Lengths and Areas

1. Road Section - VIP to SOS_TCS-1								
Section Length from VIP to SOS (m)	From (m)	To (m)	Total Length (m)					
	80.00	540.00	460.00					
Cross Sectional Element	width (m)		Pavement Layers	Width (m) / Numbers	Area (m2)	Thickness (mm)	Quantity	Unit
Footpath Cum Drain	2.00	LHS	Subgrade	41.00	18,860	500	9,430	m3
Kerb with Channel	0.50		CTSB	41.00	18,860	200	3,772	m3
Service Road	5.50		WMM	36.90	16,974	150	2,546	m3
Kerb & Shyness	0.50		Prime Coat	36.90	16,974		16,974	m2
Separator Cum Utilities	1.25		Tack Coat	35.00	16,100		16,100	m2
Kerb & Shyness	0.50		DBM	35.00	16,100	50	805	m3
Carriageway	10.50		BC	35.00	16,100	30	483	m3
Kerb & Shyness	0.50		Selected Soil	5.00	2,300	230	529	m3
Median	2.50		Kerb without Channel	6.00			2,760	m
Kerb & Shyness	0.50	RHS	Kerb with Channel	2.00			920	m
Carriageway	10.50		Footpath Tiles	4.00	1,840		1,840	m2
Kerb & Shyness	0.50							
Separator Cum Utilities	1.25							
Kerb & Shyness	0.50							
Service Road	5.50							
Kerb with Channel	0.50							
Footpath Cum Drain	2.00							
	45.00							
2. Road Section - SOS to Garal-TCS-2A								
Section Length from SOS to Garal (m)	From (m)	To (m)	Total Length (m)					

	690.00	2205.00	1,515.00					
	3120.00	4010.00	890.00					
		Total	2,405.00					
Cross Sectional Element	width (m)		Pavement Layers	Width (m) / Numbers	Area (m2)	Thickness (mm)	Quantity	Unit
Service Road Cum Drain	5.50	LHS	Subgrade	30.50	73,353	500	36,676	m3
Shyness	0.25		CTSB	30.50	73,353	200	14,671	m3
Footpath	1.75		WMM	25.40	61,087	150	9,163	m3
Kerb & Shyness	0.25		Prime Coat	25.40	61,087		61,087	m2
Carriageway	10.50		Tack Coat	25.75	35,981		35,981	m2
Kerb & Shyness	0.50		DBM	23.75	35,981	50	1,799	m3
Median	2.50		BC	25.75	61,929	30	1,858	m3
Kerb & Shyness	0.50	RHS	Selected Soil	6.00	14,430	230	3,319	m3
Carriageway	10.50		Kerb without Channel	4.00			9,620	m
Kerb & Shyness	0.25		Kerb with Channel	2.00			4,810	m
Footpath	1.75		Footpath Tiles	3.50	8,418		8,418	m2
Shyness	0.25							
Service Road Cum Drain	3.50							
	38.00							
3. Road Section - SOS to Garal-TCS-2B								
Section Length from SOS to Garal (m)	From (m)	To (m)	Total Length (m)					
	2,335.00	2990.00	655.00					
Cross Sectional Element	width (m)		Pavement Layers	Width (m) / Numbers	Area (m2)	Thickness (mm)	Quantity	Unit
Service Road Cum Drain	10.00	LHS	Subgrade	35.00	22,925	500	11,463	m3
Shyness	0.25		CTSB	35.00	22,925	200	4,585	m3
Footpath	1.75		WMM	29.90	19,585	150	2,938	m3
Kerb & Shyness	0.25		Prime Coat	29.90	19,585		19,585	m2

Carriageway	10.50		Tack Coat	36.00	43,178		43,178	m2
Kerb & Shyness	0.50		DBM	28.50	43,178	50	2,159	m3
Median	2.50		BC	36.00	23,580	30	707	m3
Kerb & Shyness	0.50	RHS	Selected Soil	6.00	3,930	230	904	m3
Carriageway	10.50		Kerb without Channel	4.00			2,620	m
Kerb & Shyness	0.25		Kerb with Channel	2.00			1,310	m
Footpath	1.75		Footpath Tiles	3.50	2,293		2,293	m2
Shyness	0.25							
Service Road Cum Drain	3.50							
	42.50							
4. Road Section - SOS to Garal-TCS-2C								
Section Length from SOS to Garal (m)	From (m)	To (m)	Total Length (m)					
	4,010.00	4700.00	690.00					
Cross Sectional Element	width (m)		Pavement Layers	Width (m) / Numbers	Area (m2)	Thickness (mm)	Quantity	Unit
Service Road Cum Drain	5.50	LHS	Subgrade	34.00	23,460	500	11,730	m3
Shyness	0.25		CTSB	34.00	23,460	200	4,692	m3
Footpath	1.75		WMM	28.90	19,941	150	2,991	m3
Kerb & Shyness	0.25		Prime Coat	28.90	19,941		19,941	m2
Carriageway	10.50		Tack Coat	31.50	41,663		41,663	m2
Kerb & Shyness	0.50		DBM	27.50	41,663	50	2,083	m3
Median	2.50		BC	31.50	21,735	30	652	m3
Kerb & Shyness	0.50	RHS	Selected Soil	6.00	4,140	230	952	m3
Carriageway	10.50		Kerb without Channel	4.00			2,760	m
Kerb & Shyness	0.25		Kerb with Channel	2.00			1,380	m
Footpath	1.75		Footpath Tiles	3.50	2,415		2,415	m2
Shyness	0.25							

Service Road Cum Drain	3.50							
	38.00							
5. Road Section - Garal to Dharapur-TCS-3								
Section Length from Garal to Dharapur(m)	From (m)	To (m)	Total Length (m)					
	4,860.00	6300.00	1,440.00					
Cross Sectional Element	width (m)		Pavement Layers	Width (m) / Numbers	Area (m2)	Thickness (mm)	Quantity	Unit
Footpath	1.75		Subgrade	37.50	54,000	500	27,000	m3
Green Belt	0.75		CTSB	37.50	54,000	200	10,800	m3
Service Road	5.50		WMM	36.60	52,704	150	7,906	m3
Kerb with Channel	0.50		Prime Coat	36.60	52,704		52,704	m2
Covered Drain	2.00		Tack Coat	32.50	46,800		46,800	m2
Kerb with Channel	0.50		DBM	32.50	46,800	75	3,510	m3
Carriageway	10.50		BC	32.50	46,800	40	1,872	m3
Kerb & Shyness	0.25		Selected Soil	6.50	9,360	265	2,480	m3
Median	1.50		Kerb without Channel	4.00			5,760	m
Kerb & Shyness	0.25		Kerb with Channel	4.00			5,760	m
Carriageway	10.50		Footpath Tiles	7.50	10,800		10,800	m2
Kerb with Channel	0.50							
Covered Drain	2.00							
Kerb with Channel	0.50							
Service Road	5.50							
Green Belt	0.75							
Footpath	1.75							
	45.00							
6. Road to Existing Terminal								

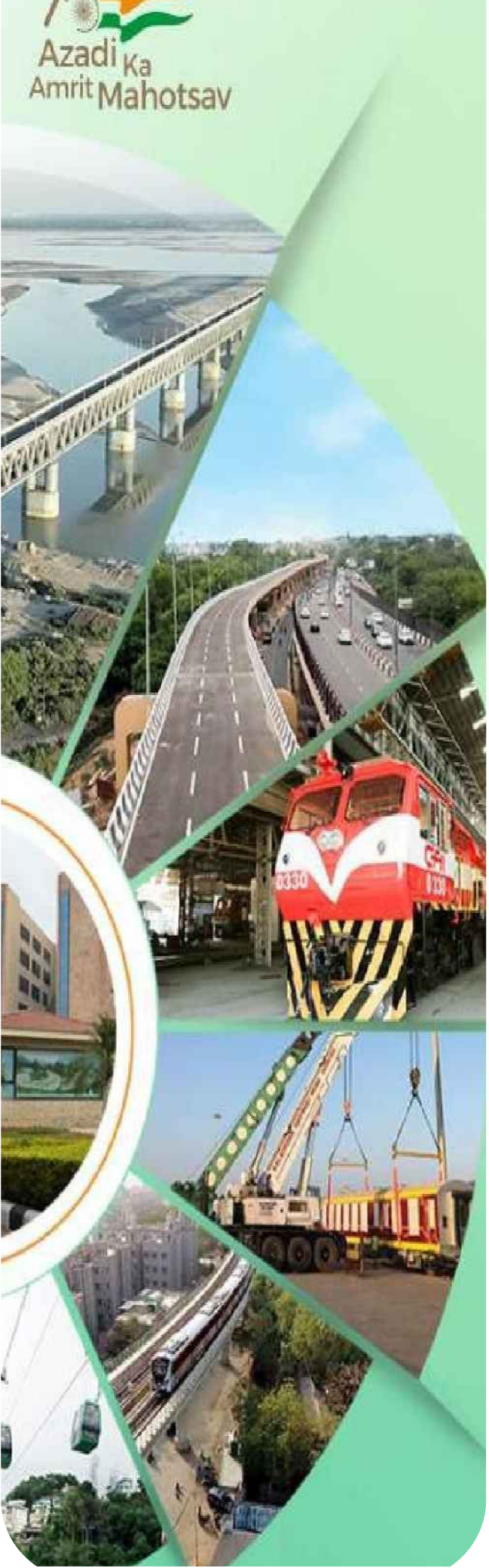
Section Length from SOS to Ex. Terminal (m)	From (m)	To (m)	Total Length (m)					
	60.00	560.00	500.00					
Cross Sectional Element	width (m)		Pavement Layers	Width (m) / Numbers	Area (m2)	Thickness (mm)	Quantity	Unit
Drain	1.50		Subgrade	17.00	8,500	500	4,250	m3
Footpath cum Green Zone	2.75		CTSB	17.00	8,500	200	1,700	m3
Kerb with Shyness	0.50		WMM	11.80	5,900	150	885	m3
Carriageway	10.50		Prime Coat	11.80	5,900		5,900	m2
Kerb with Shyness	0.50		Tack Coat	11.50	5,750		5,750	m2
Footpath cum Green Zone	2.75		DBM	11.50	5,750	50	288	m3
Drain	1.50		BC	11.50	5,750	30	173	m3
	20.00		Selected Soil	5.50	2,750	230	633	m3
			Kerb without Channel	-			-	m
			Kerb with Channel	2.00			1,000	m
			Footpath Tiles	8.50	4,250		4,250	m2
7. Temporary Exit from Existing Terminal								
Section Length from Ex. Terminal to SOS/Garal Section (m)	From (m)	To (m)	Total Length (m)					
	10.00	400.00	390.00					
Cross Sectional Element	width (m)		Pavement Layers	Width (m) / Numbers	Area (m2)	Thickness (mm)	Quantity	Unit
Drain under Service Road	1.50		Subgrade	17.00	6,630	500	3,315	m3
Service Road	3.50		CTSB	17.00	6,630	200	1,326	m3
Footpath cum Green Zone	2.75		WMM	12.10	4,719	150	708	m3
Kerb with Shyness	0.25		Prime Coat	12.10	4,485		4,485	m2
Carriageway	7.00		Tack Coat	11.50	4,485		4,485	m2
Kerb with Shyness	0.25		DBM	11.50	4,485	50	224	m3
Footpath cum Green Zone	2.75		BC	11.50	4,485	30	135	m3

Service Road	3.50		Selected Soil	5.50	2,145	230	493	m3
Drain under Service Road	1.50		Kerb without Channel	4.00		-	1,560	m
	20.00		Kerb with Channel	-		-	-	m
			Footpath Tiles	5.50	2,145		2,145	m2
8. Junction Improvement Areas including the lengths which have been excluded in the road lengths								
Section	**Areas from CAD Drawings**						Dharapur	VIP
	Junction	Junction Arms	Area	Paver Block	GSB	Selected Fill	7423	2187
VIP	5816	2889	8705	2030	2,846	2,920	2262	375
SOS	2592	2812	5404	238	1,260	1,476	4932	474
ENRTY	2592	1734	4326	238	1,260	1,308	2195	273
EXIT	2592	1717	4309	238	1,260	1,308	2334	244
GARAL	2592	3840	6432	238	1,353	1,593	1673	207
Ramp							3417	421
ENTRY to Terminal		3432	3432				3615	96
EXIT from Terminal		3075	3075				27851	803
Dharapur	27851		27851	3048	3,035	4,685		305
				6030	11,014	13,290		113
								318
								5816
	Pavement Area		Kerb without Channel	Kerb with Channel				
VIP	8,705.00		479	260.00				
SOS	5,404.00		197	130.00				
Airport Entry	7,758.00		115	130.00				

Airport Exit	7,384.00		115	130.00				
Garal	6,432.00		244	130.00				
Dharapur (including the RE Portion of Elevated Section)	27,851.00		1210	336.00				
Minor Junctions	18,375.00							
	81,909.00		2360	1,116.00				
			Pavement Layers	**Thickness (mm)**	**Thickness (mm)**		**Quantity**	**Unit**
			Subgrade	500	500		40,955	m3
			CTSB	200	200		16,382	m3
			WMM	150	150		12,286	m3
			Prime Coat				81,909	m2
			Tack Coat				81,909	m2
			DBM	50	75		5,286	m3
			BC	30	40		2,934	m3
			GSB	200			2,203	m3
			Selected Soil	1,000	1,000		13,290	m3
			Kerb without Channel				2,360	m
			Kerb with Channel				1,116	m
Total Pavement Layers Quantities								
Subgrade							1,44,819	m3
CTSB							57,928	m3
WMM							39,423	m3
Prime Coat							2,62,585	m2
Tack Coat							2,75,865	m2
DBM							16,154	m3

BC							8,814	m3
Selected Soil							22,600	m3
Kerb without Channel							27,440	m
Kerb with Channel							16,296	m
Paver Blocks							6,030	m2
GSB (inside roundabouts)							2,203	m3
Footpath Tiles							32,160	m2

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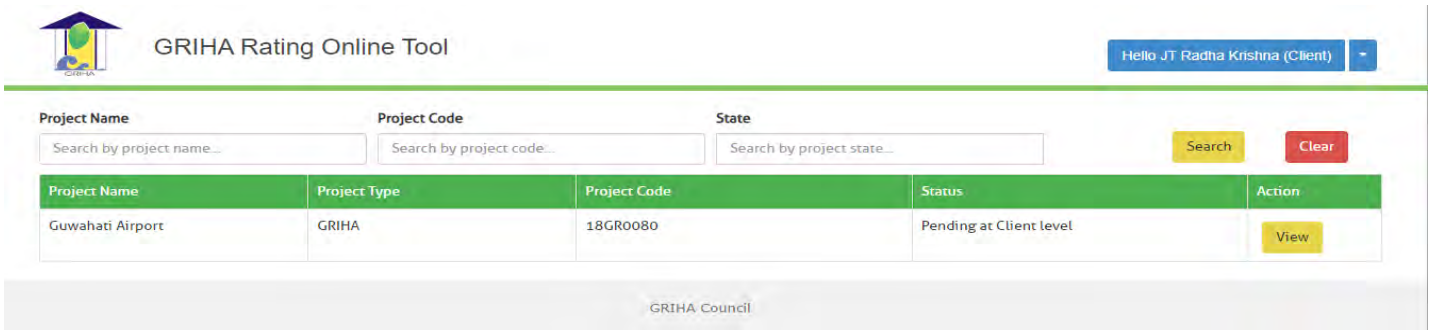
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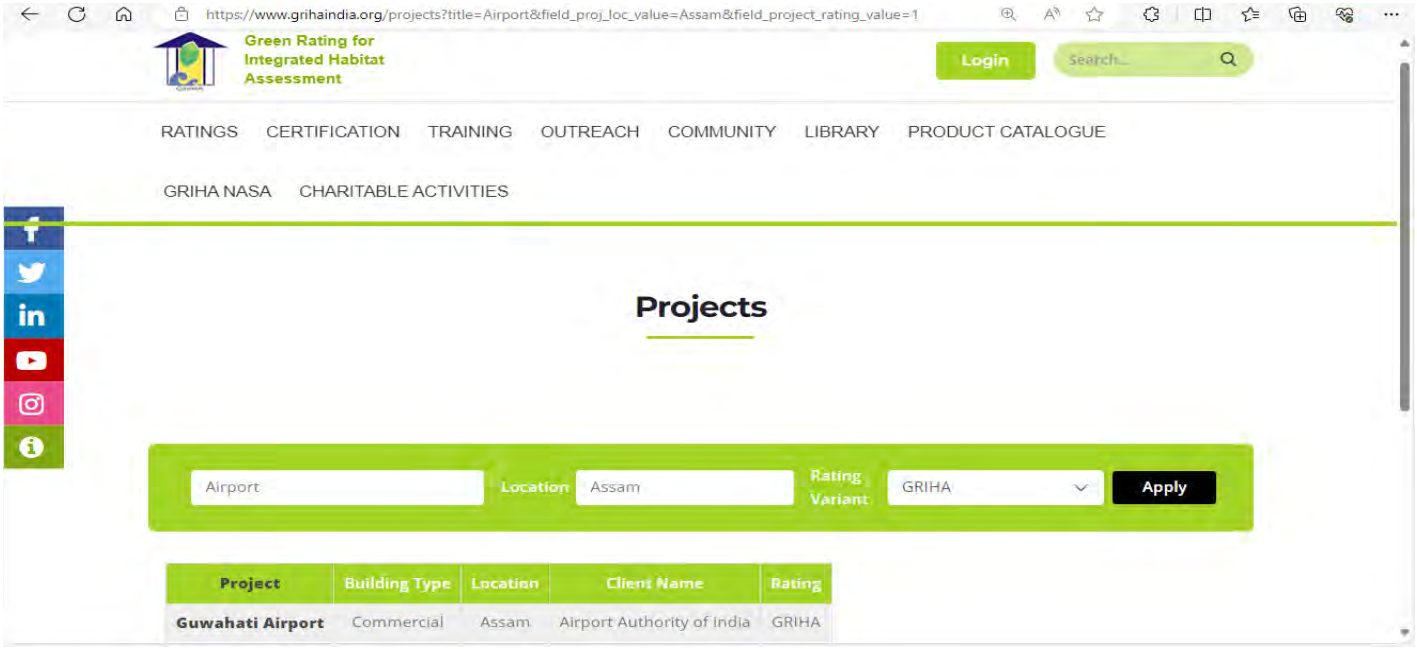
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Lokpriya Gopinath Bordoloi International Airport, Guwahati

AIRPORT EMERGENCY PLAN

AIRPORT EMERGENCY PLAN (AEP)

Doc No.: GIAL/ARFF/Plan/01/AEP

I

Preamble

The Airport Emergency Plan (AEP) of Lokpriya Gopinath Bordoloi International Airport is an integral part of the Emergency Management developed with the prime objective of handling airport emergencies in a more systematic and holistic manner. The AEP, which serves as the Incident Management Plan under the Emergency Management Department deals with all kinds of incidents/accidents that may occur at the airport or in its vicinity.

This document, a prerequisite for licensing and operations of the airport, outline the standard response procedures towards any airport contingency, where lifesaving is paramount. Besides, it is intended to serve as the centralized repository for all kinds of incident/accident management protocols, procedures, and systems at the airport.

The AEP sets forth various procedures for coordinating responses of different Organisations/Agencies/Services at the airport and those in the surrounding communities during disasters. The universal approach of aviation emergency management, viz. unified Command, Control, Coordination and Communication are adequately addressed in this document.

While ample provisions are made to test the Airport Emergency Plan, we are fully aware of the fact and acknowledge that a complete test of any Emergency Plan and its validation occur only during an actual emergency, although such an event never solicited, where the spontaneous response and judicious decision making by each stakeholder put into real-time test.

The Airport Emergency Plan of LGBI Airport is being presented here for its wider application and extensive use by all participating organisations.

Utpal Baruah
Chief Airport Officer
Guwahati International Airport Limited

Date: 29.12.2023
Guwahati

II

Approval of the Accountable Executive

The Airport Emergency Plan (AEP) of Lokpriya Gopinath Bordoloi International Airport is the master document of all crisis management initiatives at the airport. Irrespective of the size and nature of the crisis, any action towards containing such incident/accident shall be aligned with and centered to this document and reported as per procedures mentioned in it.

1. This document shall be read in conjunction with (1) all relevant CAR documents issued by the Director General of Civil Aviation (2) All applicable parts of the ICAO Doc 9137 (3) all applicable statutory requirements of the Govt. of India and Govt. Of Assam.
2. It shall be responsibility of the receiver of the document to maintain confidentiality of the same from unauthorized persons, to comply with the requirements described in it, to disseminate it to all applicable personnel within their organization, to educate all personnel in their respective organization about the roles applicable to them, and to get the updated the version from the Airport operator from time to time.
3. This document shall be considered as an explicit agreement between the Airport Operator and the Airlines Operations/ Aviation Concessionaires/ Retail Concessionaires/ other Emergency Management Stakeholders; all such organizations shall take conscious efforts to align their Emergency Response Plans with this document.
4. In accordance with AEP of the Airport, all Airport Employees shall strictly comply with the requirements mentioned in this document.

Utpal Baruah
Chief Airport Officer
Guwahati International Airport Limited

Date: 29.12.2023
Guwahati

Document Approval

Role	Name and Designation	Signature
Prepared by	Suleman Khan Pathan Asst Manager (ARFF) LGBI Airport, GIAL	
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Approved by	Satyapal Singh ATS In-Charge LGBI Airport, AAI	
	Utpal Baruah Chief Airport Officer LGBI Airport, GIAL	

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Foreword

Under the Aircraft Rules 1937, Part XI, Rule 81 and Civil Aviation Requirements (CAR), Section 4, Series „B", Part I, an aerodrome operator is required to establish an Airport Emergency Plan (AEP) commensurate with the aircraft operations and other activities conducted at the aerodrome. To meet this requirement and other necessary obligations stipulated by Director General Civil Aviation (DGCA), Guwahati International Airport Ltd.(GIAL) who operates Lokpriya Gopinath Bordoloi International Airport, Guwahati has established and promulgated this Airport Emergency Plan (AEP) based on the standards set by DGCA in CAR, Section 4, Series B, Part I and ICAO's guidelines in Airport Service Manual, Doc. 9137, Part 7.

The AEP spells out the types of emergencies anticipated at the Airport, the roles and responsibilities of responding agencies that could be of support and the procedures involved in dealing with the emergencies. It does not include material on how an agency will carry out its particular functions during the course of emergency. The complex nature of airport emergencies however, makes it almost obligatory for each person/department/agency concerned to accomplish the necessary task, which is to be done in response to an emergency in the best possible manner, even though such tasks aren't specifically mentioned in the AEP.

For effective implementation of AEP it is essential to ensure that the procedures and information documented in this manual are up-to-date and adequate. For this purpose, the AEP will be reviewed and updated from time to time. To regularly test the AEP, a Full-Scale Aerodrome Emergency exercise (FSAEE) will be conducted at GIAL at intervals not exceeding two years followed by a partial exercise in the intervening year, and series of modular test as required under CAR, Section 4, Series „B", Part I

The AEP will be continuously improved on the basis of experience gained through exercises and actual emergencies, and on comments and suggestions received from users of this manual. Therefore, users of this manual are invited

to give their views, comments, and suggestions. These should be directed to LGBIA to the following address or email id:

emergency.gau@adani.com

Head ARFF
Guwahati International Airport Ltd.
Lokpriya Gopinath Bordoloi International Airport, Guwahati
Borjhar, Guwahati, Assam 781015.

Introduction

The LGBIA Airport Emergency Plan defines general functions, roles and responsibilities of GIAL operational units and other responding agencies in order to ensure prompt response, rescue and recovery actions in the event of an emergency at the Airport. It speaks about the command, communication, and coordination functions amongst the agencies responsible for providing emergency response to an airport emergency. The document does not detail the way in which agencies or departments responding to an emergency will carry out those actions.

This plan is based on the concept that all concerned responding agencies have appropriate set of procedures and the required capability to respond and deal with the emergencies at the airport and are in synergy with this AEP. Further the plan has been prepared on the belief that the responding agencies are well versed with the concept of human factor principle and shall consider the same while mobilizing their resources and responding to an emergency at the Airport.

For the purpose of this document the accident / incident shall be deemed as stated in Aircraft (Investigation of Accidents and Incidents) Rules, 2017 (Published vide G.S.R. 1011(E) dated 7th August 2017) amended from time to time.

Responsibility

Head-Operations GIAL will have the overall responsibility of ensuring compliance, preparation, updating revision and implementation of AEP.

Objective

Airport Emergency Plan (AEP) defines procedures for timely and coordinated response, rescue and recovery operation while handling an airport emergency with the objective of minimizing the effects of emergency particularly in respect of saving lives and maintaining aircraft operations.

Purpose

The purpose of this AEP is to set forth the procedures for coordinating the response of different agencies and services, both on and off the aerodrome, to handle various aircraft related and non-aircraft related emergencies anticipated at LGBI Airport. AEP also spells out the duties and responsibilities of the various personnel/agencies associated with handling airport emergencies.

Scope

The LGBIA AEP details the plans for command, communication and coordination functions amongst the agencies responsible for providing response to emergencies that take place at Lokpriya Gopinath Bordoloi International Airport Guwahati and within vicinity of the airport.

Procedures to deal and manage emergencies at LGBIA are drawn up under Eight (08) Chapters of Part 1 of this AEP are as follow: -

Chapter 1 - Local Standby
Chapter 2 - Full Emergency
Chapter 3 - Aircraft Incident- Accident ON the Airport
Chapter 4 - Aircraft Accident OFF the Airport
Chapter 5 - Dangerous Goods Occurrences
Chapter 6 - In-flight Mass Causalities
Chapter 7 - Fire on Ground (Fire involving Airport Building & Installations, i.e. Non-Aircraft Related Fire)
Chapter 8 - Natural Disasters such as Storms and Earthquakes.

Note: Procedures for dealing with specific Subject are developed under separate plans/Manuals and are classified as detailed below:

- Disabled Aircraft Removal Plan
- Bomb Threat Contingency Plan;
- Planning and Notification in Full Scale exercise (As per Airport service manual 9137 part
- Procedure for Immigration and Customs – dealing with Aircraft

incident/accident involving International Flights.

- Public Health Emergencies Plan, available with APHO, LGBIA.
- Plan for dealing with poor visibility at LGBI Airport is defined in ARFF working Instruction as Procedure for Low Visibility Doc.
- Medical Assistance / First Aid to Passenger/ Staff / Others within the Airport Premises
- Activation process of Survival Reception Area, Meeters and Greeters Area, Reunion Area, and Helpdesk for passengers' relatives and friends Setting up and activation of Survivors Reception Area, (Survivors Reunion Area and Meeters & Greeters Area

Amendment Procedure

AEP is a live document and revision to the AEP arising from changes in procedures, in particular, the changes in contacts details of operational units will be issued as and when required.

A checklist of current pages will be issued with every replacement or update. The holder of each plan shall ensure that the amended pages are properly inserted, the old pages destroyed, and the amendment number logged on in the below mentioned format (Record of Amendments).
Recommendations towards the AEP improvement should be forwarded to:

Head - ARFF
Guwahati International Airport Pvt. Ltd. Lokpriya Gopinath Bordoloi International Airport, Borjhar, Guwahati, Assam 781015
Email: emergency.gau@adani.com

1 Airport Emergency Committee (AEC)

The purpose of Airport Emergency Committee is to ensure that LGBI Airport, as a whole, is equipped to provide efficient and effective response to different types of airport emergencies. The Committee will consider all aspects of emergency planning including the following, which are not in order of priority.

a. Identification of core components of AEP to identify how and when these are to be tested, whether in parts or the entire emergency plan, according to the DGCA/ICAO recommendations or if corrective actions are required.
b. Develop comprehensive contingency plans.
c. Review response capability and issues from external emergency services.
d. Review external emergency services statutory obligation to respond to significant emergencies arising within their geographical area. Discuss and consider plans for external emergency services to become involved with the process of AEP planning and the resultant training requirements.
e. Planning of annual emergency exercise to determine the scope of each exercise and the participants of each exercise.
f. Hold Annual meetings and keep minutes of the meetings on file.

1.1 Committee Composition:

- Chairman & Convener -CAO, GIAL, LGBIA
- Member- Senior Representatives of: -

1.1.1 GIAL Internal

- Head of Operations
- Aerodrome Rescue and Fire Fighting
- Airside Operations
- Safety Investigation Coordinator
- Airport Operations and Control Centre
- Engineering & Maintenance
- Health, Safety & Environment
- Terminal Operations
- Medical Services
- GIAL Security
- Corporate Communication
- IT Department

1.1.2 External Agencies

- DGCA
- Air Traffic Control (ATC) and CNS Department, Airports Authority of

India
- CISF
- Fire and Emergency Services, Assam
- State Police
- Bureau of Civil Aviation Security
- Immigrations
- Customs
- Airport Health Organization (APHO)
- Airlines Representatives
- Ground Handling Agencies
- Dist. Disaster Management Representative
- Civil Defense, Govt. of Assam and other if any.

1.2 Frequency of Meeting:

The Committee would meet once in a year, or additionally, as and when convened by the Chairman/Convener.

Part-1 : Type of Emergencies

Part-1, Chapter-1 - Local Standby

1.1 Definition:

Local Standby: Local Standby is declared when an aircraft approaching the airport is known or is suspected to have developed defects, but the trouble is not such as would normally involve any serious difficulty in effecting a safe landing.

Local Standby Due Weather / Visibility: When weather has deteriorated to such an extent as to render the landing of aircraft more difficult. Bad weather will indicate high speed wind, thunderstorm, heavy rain etc., and while poor visibility will be considered when visibility falls below 2000 meters.

1.2 Declaration of Local Standby

Declared by: ATC

When requested by Pilot In-Command,

or

When they are of opinion that the standby is warranted.

Local Stand by declared for **XYZ Airline**, Flight No **123**, Type of Aircraft **B - 721**, POB **XXX**, FOB **YYY**, Nature of Trouble **NNN**, RWY in use **XX**, ETA **0000** IST. All concerns to take necessary actions.

OR

Local Standby declared due Visibility/Weather (Description of Visibility/Weather)

1.3 Activation

Activated by ATC through a notification via Hot line/ Walkie talkie to ARFF/AOCC Air traffic control will initiate primary response and Secondary response by AOCC through Manual Notification and AEMS.

Notification: After receipt of information of Local Standby, notification shall be carried out by all concerned departments as determined in Appendix 8, for Local

Stand by.

1.4 Critical Information to Be Provided in Notification

In the initial activation, following information must be provided and recorded for onward notification.

Aircraft Operator and Flight number:
Aircraft Call Sign
Type of Aircraft:
Sector: From- _____ To:_____
Nature of trouble:
ETA:
RWY to be used:
Persons on board: CREW:
Fuel on board:
Any dangerous goods on board including quantity and location

1.5 Command and Coordinating Authority

GIAL, ARFF services will be responsible for handling the Local Standby on ground until the Local standby is withdrawn by ATC. The Duty Manager- ARFF will be the Coordinating authority for physical handling of the Local Standby on ground.

1.6 Support Agencies

All internal departments of GIAL, Affected Airline & its nominated Ground Handler.

1.7 Duties and Responsibilities

1.7.1 Air Traffic Control Tower

On declaration of Local Standby, ATC Tower shall pass critical information, as defined in Sr. No.1.4 above, on Hot Line/ walkie-talkie to:

- Fire Watch Tower
- AOCC

1.7.2 Tower Supervisor shall notify: -

- Watch Supervisory Officer; and
- ATS Reporting Office
- MLU (Military Liaison Unit), IAF, if its military aircraft.
- The position of "Affected aircraft" shall be informed and thereafter status of "Affected aircraft" shall be informed to Fire Watch Tower as deemed necessary.
- When "affected aircraft" is on final, inform Fire Watch Tower.
- If Situation deteriorates upgrade the emergency status.

1.7.3 Airport Rescue and Fire Fighting:

1.7.3.1 Fire Watch Tower (FWT) shall:

- Acknowledge activation of Local Standby on receipt of critical information from ATC and note details of Local Standby as per Fire Watch Tower Activity Report. Make announcement on PA system.
- Notify critical information to all concerned as per Notification Chart. Maintain extra vigil and quickly disseminate information (if any) by Walkie-Talky communication to all concerned departments.
- FWT In charge shall obtain information about the sequence on final of the emergency Aircraft and broadcast on PA system the position of the aircraft when it is number one in sequence to land.
- Maintain record of logs with respect to the emergency.

1.7.3.2 Duty Manager-ARFF:

On receiving information of declaration of local stand by, obtain the relevant information pertaining to the emergency and act judiciously to optimize the handling of the situation. The Duty Manager ARFF shall:-

- Ensure that crew is briefed on situation.
- Maintain a listening watch on RT for any requirement pertaining to handling of emergency.
- Ensure that crew mounts their designated fire and rescue appliance.
- When the aircraft is reported on final approach, give instruction that the

entire rescue and fire appliance be started and kept on idle run-up for quick dispatch, should turn out be required.

- Escalate Local Standby to Full Emergency should the situation worsens.

1.7.3.3 All ARFF Personnel's:

- Listen to the critical details of Local Standby announced on PA system by FWT.
- CFT in-charge shall ensure that the vehicles are kept ready and inform to FWT that local standby is being maintained.
- CFT in-charge will ensure that vehicle is started on receiving information from FWT that emergency aircraft is number one to land.
- All other ARFF crew shall maintain alert in their respective vehicles/ deployments.
- Positions till the emergency is withdrawn by ATC.

1.7.4 AOCC

- Activate AECC
- Inform all concerned as per Local Standby message to all concerned.

1.7.5 Airside Operation:

1.7.5.1 Duty Manager-Apron Control

- Note details of Local Standby – As per Apron Control Activity Report.
- In-case it is required to obtain details on the reason that led to
- declaration of Local Standby obtains the same from ATC/ Aircraft Crew.
- Ensure that follow me jeep is ready to assist the affected aircraft and also to carry out runway inspection if needed.

1.7.6 Head – Operations

- On receipt of information on local Standby, keep close Co-ordination with
- Duty Manager – Apron Control
- Remain in a stand-by to respond in case emergency is escalated.
- Ensure reporting of incidents to Authorities.

1.7.7 Affected Airline / Ground Handling Agency (GHA):

- On receipt of information on local Standby activate LERP (Local Emergency Response Plan).
- If notified by Apron Control, respond to the designated area with required equipment's i.e. tow-bar vehicle, step ladder, passenger coaches etc.

1.8 Termination of Local Standby:

- Termination of Local Standby shall be done by ATC Tower once the Pilot in Command confirms that all operations are normal. In case Local standby was declared due weather/visibility, such standby shall be terminated on improvement of weather/visibility. ATC Tower shall notify Termination of Local standby on hotline/ walkie-talkie to Fire Watch Tower, WSO and AOCC.
- All the mentioned units/officials shall inform all those who were informed by them about the Local Standby that the local standby has been Terminated.

Part-1, Chapter-2 : Full Emergency

2.1 Definition:

Full emergency is declared when an aircraft approaching the airport is, or is suspected to be, in a situation that there is a possibility of an accident.

2.2 Declaration of Full Emergency

Declared by: ATC Tower

- When pilot in command request emergency landing or declare emergency, **or**
- When ATC in the opinion that declaration of "Full Emergency" is warranted.

"Full Emergency, Full Emergency, Full Emergency"

Full emergency declared for **XYZ Airline**, Flight No **123**, Type of Aircraft **B - 721**, POB **XXX**, FOB **YYY**, Nature of Trouble **NNN**, RWY in use **XX**, ETA **0000** IST. All concerns to take necessary actions.

2.3 Activation

Activated by ATC through a notification process via hotline/ walkie talkie to AOCC/ ARFF. Further notification shall be raised by AOCC.

2.4 Notification Chart

Notification: On receipt of information of Full Emergency, notification shall be carried out by all concerned departments as determined in Appendix 9 of AEP.

2.5 Critical Information to Be Provided In Notification

In the initial activation following information must be provided and recorded for onward notification.

Aircraft Operator and Flight number:
Aircraft Call Sign

Type of Aircraft:
Sector: From:_____ To:_____
Nature of trouble:
ETA:
RWY to be used:
Persons on board: PAX CREW
Fuel on board:
Any dangerous goods on board including quantity and location

2.6 Command and Coordinating Authority

- The Duty Manager- ARFF services will be the coordinating authority for physical handling of the emergency on ground until the Full Emergency is withdrawn by ATC.
- The Duty Manager, Apron Control will be the coordinating authority at the designated Rendezvous Point to ensure efficient handling of External Support Agencies Reporting at the Airport in response of the emergency.

2.7 Support Agencies

2.7.1 Internal Agencies

- GIAL – ARFF Services
- GIAL –Airside Operations
- GIAL - Medical Service
- GIAL – Terminal Operations
- GIAL -E&M
- GIAL Security
- GIAL – Safety

2.8 Duties and Responsibilities

2.8.1 ATC Tower:

- On declaration of Full Emergency pass critical information to ARFF/ FWT, AOCC, WSO, MLU (If military aircraft is involved)
- The position and status of aircraft in emergency shall be informed to Fire Watch Tower as deemed necessary.
- When "affected aircraft" is on final and number one to land, inform Fire Watch Tower.

- Prepare to adjust air traffic to prioritize emergency landing aircraft.
- If situation deteriorates, upgrade the emergency status.

2.8.2 Aerodrome Rescue & Fire Fighting:

2.8.2.1 Head - ARFF:
On receiving information of declaration of Full Emergency, obtain the relevant information pertaining to the emergency and act judiciously to optimize the handling of the situation.

2.8.2.2 Fire Watch Tower (FWT):

- Acknowledge and activate the Full Emergency procedures on receipt of critical information from ATC.
- Keep note of details of Full Emergency in Fire Watch Tower Activity Report.
- Make announcement on PA system to activate full emergency procedure.
- Notify critical information (Refer Para 2.5) to Head-ARFF, F&ES Assam.
- Maintain extra vigil and quickly disseminate information (if any) by Walkie Talkie communication to Apron Control & Duty Manager - ARFF.
- FWT In charge shall obtain information about the sequence on final of the emergency Aircraft and broadcast on walkie talkie the position of the aircraft when it is number one in sequence to land.
- Positively maintain communication triangle with ATC and Apron Control about status / position of aircraft being informed by ATC.
- On information from ATC that Full Emergency is withdrawn, announce Termination of Full emergency on walkie talkie/hot line for all stations and to acknowledge in turns.
- Maintain record of logs with respect to the emergency.

2.8.2.3 Duty Manager ARFF

- Confirm critical details of Full emergency received from Fire Watch Tower.
- Ensure that ARFF crew is briefed on the situation.
- Maintain a listening watch on RT (118.75 MHz) for any requirement pertaining to handling of emergency.
- Ensure that crew mounts their designated fire and rescue appliance and proceeds to the respective PDP's via established access routes in

coordination with ATC:

When Runway in use RWY 02:

- 1st TURN OUT - Link2
- 2nd TURN OUT - APPROACH ROAD FIRE STATON

ARFF vehicle(s) shall obtain prior clearance from ATC for entering into or crossing runway.

When Runway in use RWY 20:

- 1st TURN OUT - TAXIWAY G
- 2nd TURN OUT - APPROACH ROAD FIRE STATON

ARFF vehicle(s) shall obtain prior clearance from ATC for entering into or crossing runway.

- Stay in contact with ATC and monitor the tower frequency 118.75 MHz for further developments.
- Ensure that RV Point and Casualty centre has been activated.
- Ensure that only after taking permission from ATC, all ARFF Vehicles enters RWY and following the emergency Aircraft up to the designated parking stand.
- Co-ordinate with aircraft ground engineer / pilot in-command for final safety clearance.
- In-case of Aircraft accident on or off the Airport, escalate Full Emergency to Aircraft accident.

2.8.2.4 All ARFF Personnel's:

- Immediately on declaration of Full Emergency turnout on designated ARFF Vehicle as fast as possible.
- Listen to the critical details of Full Emergency announced on PA system by FWT.
- CFT In-charge with crew shall mounts their designated fire and rescue appliance and proceeds to the respective PDP's via established access routes and inform to ATC through walkie talkie.
- CFT In-charge will inform to ATC on walkie talkie. After positioning CFT at Predetermine position of designated RWY.

- On receiving information about termination of full emergency, return to respective Fire Stations.

2.8.3 Airside Operations:

2.8.3.1 Apron Control: Duty Manager Apron Control

- Note details of Full Emergency – As per Apron Control Activity Report.
- Notify critical information to all concerned as per Notification Chart.
- Confirm with Security at Cargo Gate that access to external emergency vehicles have been accorded.
- Ensure the availability of step ladder along with tow-bar and push back vehicle at the end of operational runway, if required.
- Maintain extra vigil and quickly disseminate additional information to appropriate authority.
- After landing of full emergency aircraft, apron control shall inspect runway and handover to ATC.
- Activate Rendezvous Point and execute controlled movement of vehicles and supporting staff reporting at RV point in response to the full emergency.

2.8.4 Head- Operations:

- On receipt of information on Full Emergency, keep close co-ordination with Duty Manager – Apron Control.
- Remain in a stand-by to respond in case emergency is escalated.
- Ensure reporting of incidents to appropriate Authorities.

2.8.5 Terminal Management:

2.8.5.1 Duty Terminal Manager:

- Receive critical information from AOCC and note details of Full Emergency.
- Keep alertness in anticipation and maintain preparedness in case the full emergency is escalated to aircraft accident / incident.
- Inform Duty Medical Officer (Apollo MI Room)

2.8.6 Medical Department: Duty Medical Officer:

- Receive critical information from AOCC/ Terminal Manager and note details of full emergency.
- Medical Staff to proceed for activating Emergency Medical Centre.

- Medical officer will report to RV Point.

2.8.7 CISF - SOCC:

- Receive critical information from Fire Control room and note details of full emergency.
- Notify critical information to all concerned as per Departmental Notification Chart and ensure post notification action.
- Instruct security personal at Cargo Gate (Rendezvous Point) to allow Fire and Emergency Services, Assam vehicles and ambulance access onto airside under escort by follow me.
- Alert Quick Response Teams for immediate response.
- Keep additional manpower on standby for requirement to cordon off site in case the full emergency is escalated to Aircraft accident / incident.

2.8.7.1 CISF – In charge Fire Cargo Gate (Rendezvous Point):

- On arrival allow Fire and Emergency Services, Assam vehicles to access airside in coordination with Follow Me vehicle.

2.8.7.2 CISF – QRT Team:

- QRT personnel should coordinate with Apron Control, which can provide immediate support if full emergency is converted into incident/accident.

2.8.8 AOCC

- Activate AECC
- Inform all concerned as per call tree procedure mentioned in Appendix-9
- Relay termination of Full emergency to all concerned.

2.8.9 Fire and Emergency Service Assam

- Dispatch personnel and equipment to the rendezvous point or expected incident site in accordance with instructions from ARFF Watch Tower.
- Support ARFF as required.
- Send a senior officer to represent Fire and Emergency Service Assam in the AECC, if activated.
- Send a senior officer to the mobile command post who will report to the On-scene commander

2.9 Termination of Full Emergency:

- Termination of Full Emergency shall be done by ATC Tower once the Pilot in Command confirms that all operations are normal. ATC Tower shall notify Termination of Full Emergency on hotline or walkie talkie to Fire Watch Tower, WSO and AOCC.
- All the mentioned units/officials shall inform all those who were informed by them about the Fill Emergency, that the Full Emergency has been Terminated.

2.9.1 AOCC

- AOCC will inform all the concern as per notification chart (Appendix-9) regarding Termination of full emergency
- Make a log enter as per the sequence of incident.

Part-1, Chapter-3 : Aircraft Incident / Accident at the Airport

Introduction:

Aircraft accident / incident is imminent within and on the Airport boundary during the process of business in the airport. This chapter defines the roles and responsibilities of internal and external stakeholders including GIAL in case of aircraft accident / incident occurring within and on the airport boundary.

3.1 Declaration of Emergency

- On witnessing of aircraft incident / accident or on being notified by pilot in- command, ATC will activate the crash bell and siren for at least 60 secs, inform the same on walkie talkie or hotline to Fire Watch Tower mentioning that aircraft has met with an incident / accident at the Airport with exact location.
- Fire Watch Tower on observing the aircraft incident/accident, will activate the crash bell and intimate the same to ATC, Apron Control and AOCC if not already informed.
- ATC shall activate the crash siren when the aircraft accident is imminent.

EXAMPLE:
"Aircraft Accident, Aircraft Accident, Aircraft Accident"
Aircraft Accident at Location **AAA (grid reference)** as well as nearby location such as (RWY beginning/end, TWY name, parking bay/apron etc.), Type of Aircraft **B - 721**, Aircraft Operator - **XYZ Airline**, POB (If known) All concerned to take necessary

3.2 Activation

The plan is activated on receipt of the information of Aircraft accident / incident by ATC / ARFF / AOCC / Apron control, within and on the airport boundary.

3.3 Notification

Notification of an incident / accident shall be made immediately by ATC or ARFF as per para 1, subsequently a triangle of information shall be maintained between ARFF, Apron Control and AOCC.

Notification as appropriate (ref Appendix 10 of AEP) shall be made by the

concern teams.

3.4 Critical Information to Be Provided In Notification

In the initial activation following information must be provided and recorded for onward notification;

Grid Location of accident		
Persons on board:	PAX	CREW
Fuel on board		
Type of Aircraft		
Time of accident		
Aircraft Operator and Flight number		
Sector: From -	To -	
Any Dangerous goods on board, including quantity and location, if known		
Brief details of accident		

3.5 Command and Coordinating Authority

Chief Airport Officer is the Search and Rescue Mission Coordinator (SARMC) and is responsible for deployment of rescue services in and around the vicinity of the Aerodrome.

The ARFF being the first responder to reach the incident / accident site the Duty Manager ARFF shall act as the Officer in Command on site until the arrival of on scene commander. The Head of ARFF shall assume duties as On Scene commander on arrival at site. However, understanding the gravity in case of an incident the on-scene commander shall be present.

Co-coordinators from CISF, police, medical, affected Airline and Fire and Emergency Services, Assam at the accident site will report to the on-scene commander. The designation of the commanders is available in the Appendix 11 in AEP.

Overall command of the accident Management shall be done by Chairman-AECC.

3.6 Support Agencies

3.6.1 Internal Agencies

- GIAL – ARFF Services
- GIAL –Airside Operations
- GIAL - Landside Operations
- GIAL - Medical Service
- GIAL - AOCC
- GIAL – Terminal Operations
- GIAL -E&M
- GIAL - Safety
- GIAL- Corporate Communication
- GIAL – Security
- GIAL – Cargo Operations
- Affected Airline & its nominated Ground Handler
- ATC/CNS
- CISF
- Customs
- Immigration

3.6.2 External Agencies

- Civil Defense
- Fire and Emergency Services, Assam
- Hospital and Ambulance services
- State Police
- GMC – Disaster Management Cell
- State Disaster Management Authority
- NDRF
- NDMA

3.7 Duties and Responsibilities

3.7.1 Air Traffic Control – ATC

- Activate the crash bell and siren if aircraft accident / incident is imminent or occurred. Pinpoint the exact incident/accident location (as far as possible) and provide unobstructed access to ARFF vehicles.
- Pass critical information, as defined in Sr. no. 4 above, on Hot Line /Intercom:
- Fire Watch Tower,

- AOCC

3.7.1.1 Tower Supervisor shall notify:

- Watch Supervisory Officer; and
- ATS Reporting Officer.
- Duty Met Officer at ATC Tower
- MLU (Military Liaison Unit), IAF, if it is military aircraft.

3.7.1.2 Watch Supervisory Officer

- Inform ATS in-Charge
- Inform Co-ordination in Charge (CIC), AAI
- Notify DGCA and other stake holder as per incident reporting procedure.

3.7.2 Aerodrome Rescue & Fire Fighting:

3.7.2.1 Head - ARFF:

- On receiving information about Aircraft incident / Accident, obtain the relevant information and act judiciously to optimize the handling of the situation.
- He shall be the on-scene commander and will take over the charge from officer-in-command (Duty Manager – ARFF) after arriving at site. The following procedure shall be followed for transfer of command and control between them.
    - Handover-Takeover in the logbook available in the MCP shall be done.
    - Briefing pertaining to P1, P2, P3 and P4 shall be exchanged.
    - Exchange any other pertinent briefing and Mobile no of coordinators.
    - Keep informed the AECC chairperson or his representative about the developments and critical information.

3.7.2.2 Fire watch Tower:

- Acknowledge and activate the Aircraft incident / Accident procedures.
- Activate crash bell if not done by ATC and relay information to ATC, Apron control and AOCC.
- Keep note of details of Aircraft incident / accident in Fire Watch Tower Activity Report.

- Provide critical information on walkie-talkie and PA system to ARFF personnel.
- Notify critical information to all concerned as per the Notification Chart at Appendix 10.
- Fire Watch Tower In charge shall brief external agencies about the key terminologies used, while relaying an aircraft related emergency, incident / accident.
- Fire watch tower to be in constant touch with ATC and disseminate information by walkie talkie (if any) to all concerned.

3.7.2.3 Duty Manager - ARFF:

- On sounding of ARFF fire bell, proceed to accident / incident site along with CFT.
- Acknowledge critical details of Aircraft accident / incident from FWT.
- Continuously monitor 118.75 MHz and take clearance from ATC for crossing of RWY/TWYs, if required.
- Ensure that ARFF appliances proceed via the shortest and safest route, preferably RWY or nearest taxiway, if aircraft incident/accident is imminent. Inform the routing of fire vehicles to incident site to ATC at the earliest.
- If aircraft incident is converted into an accident, immediately ensure full turn out of ARFF appliances.
- Ensure at least one CFT is parked in such a position that it is in direct view of the PIC for immediate communication.
- On reaching at accident/ incident site evaluate the situation and activate AEP as per requirement and if required, instruct ARFF crew to immediately commence firefighting and rescue operations.
- If required, contact the Pilot in-command of affected aircraft and ATC. Immediately provide the SITREP, stating if there is any visible sign of Smoke, Fire, Spillage and Engine status.
- The final determination regarding evacuation from the Aircraft shall be made by the PIC with input from the ARFF Duty Manager.
- If pilot in-command make / makes a decision of evacuation at incident / accident site, ensure ARFF team is deployed to assist evacuation.
- If in case, the PIC is incapacitated, or not in a position to initiate the evacuation, the Duty manager ARFF will gain access into the Aircraft by best possible means for initiating the evacuation.

- If required, co-ordinate with Apron Manager and on Duty Medical In-charge as per requirement.
- Duty Manager – ARFF shall ensure that the MCP logbook is maintained current. Normally the logbook shall be written by MCP In charge.

3.7.2.4 ARFF Crew:

- On activation of crash bell proceed to Incident/Accident site (dedicated for aircraft incident/accident CFTs)
- While approaching the scene of incident / accident, exercise extreme caution. Watch for evacuating occupants, wreckage debris, fuel ponding and other hazards.
- Carry out rescue and firefighting operation under the supervision of Officer in Command (Duty Manager – ARFF) as per requirement.

3.7.3 GIAL Airside Operations

3.7.3.1 Duty manager – Apron Control:

- Receive critical information and note details of aircraft accident.
- Notify Critical Information to all concern as per Appendix 10 of AEP.
- Duty Manager Apron Control shall report at aircraft accident / incident site and liaison with Officer- in- Command (Duty Manager- ARFF) for making critical decisions through Mobile Command Post.
- Duty Manager Apron Control shall maintain the MCP logbook current.
- Advice Follow Me vehicle to activate RV point and report at Cargo Gate for escorting of external emergency vehicles.
- The Duty Manager, Apron control will be the coordinating authority (through Follow-Me) at the Rendezvous Point to ensure efficient handling of External Support Agencies Reporting at the Airport in response to the emergency.
- Duty Manager Apron Control shall intimate AOCC to co-ordinate with GHA to provide ADP holders at Cargo Gate to escort external responding agencies to incident / accident site, as and when required.
- Apron control will co-coordinate with all other GHA for additional support for transportation.
- Apron control shall inspect all area affected by accident and inform ATC about limitation/continuation of airport operation.
- Assist CISF QRT team to reach the incident / accident site.
- Until the arrival of Safety Investigation Coordinator (SIC), the initial action

of SIC shall be taken by Duty Manager-Apron Control.

3.7.3.2 Apron Controller on "Follow Me":

- Activate RV Point.
- Apron Controller shall report to ATC Gate and co-ordinate with CISF personnel for immediate entry of emergency vehicles toward airside.
- Provide "Follow Me" service to responding emergency vehicles up to RV Point, if required at incident/accident site.

3.7.4 AOCC

- Acknowledge and activate Aircraft incident / Accident procedures on receipt of critical information (Refer Para 3.4 of this AEP).
- Inform all as per notification chart including Affected Aircraft Operator / Airline (Appendix 10 in AEP).
- Notify critical information to all stakeholders at AOCC including RCC Guwahati through an email in prescribed template.
- AOCC will be the coordinating authority for airport support agencies, including the affected airline.
- After receiving call from Apron Control, AOCC shall intimate the GHA to provide ADP holders to Cargo Gate
- Relay termination of Aircraft incident / Accident to all concerned.

3.7.5 Medical Department: Duty Medical Officer

- Receive critical information from AOCC and note details of Aircraft incident / Accident.
- Medical Staff to proceed for activating Emergency Medical Centre/ casualty centre.
- Medical officer will report to the accident / incident site and provide assistance to Duty Manager – ARFF for making decision for activation of AEP in relation to causality handling.
- Medical team shall carry out triage and medical treatment to the injured passengers / flight crew.
- Shall be responsible for quick dispatching of P1 injured passengers/ flight crew to hospital with intimation to transport officer.
- Shall be responsible for providing medical treatment to P2 injured passengers / flight crew at casualty centre.
- Shall co-ordinate with hospitals, external ambulances and doctors/ panel

doctors for additional medical recourses.

- Conduct medical examination and collection of blood, urine samples etc. of flight crew as per guidelines in Civil Aviation Requirements Section 5 - Air Safety, Series 'F' Part III Issue I, 13th November 2009 & Air Safety Circular 06 of 2010

3.7.6 Terminal Operations

3.7.6.1 Duty Terminal Manager:

- Acknowledge and activate Aircraft incident / Accident procedures on receipt of critical information (Refer Para 3.4 of AEP).
- Establish Help Desk.
- Activate AECC and shall coordinate with MCP, until the arrival of Chairman, AECC.
- Activate M&G area, SRA, Reunion area and AECC.
- Inform all as per notification chart (**Appendix 10** in AEP)
- Co-ordinate with immigration and customs authorities for further clearance procedure.
- Co-ordinate with Air India ASL in case the affected flight is non-schedule /over flying flight (Airline not operating from LGBIA) for passenger facilitation including immigration. In such cases Air India ASL will act as the coordinating airline at site.
- Log entry of aircraft incident / accident accordingly.

3.7.7 Corporate Communication:

- Receive critical information and note details of aircraft accident.
- Notify critical information to all concerned as per Departmental Notification Chart.
- Activate the Media Centre as per department SOP.
- Liaise with affected Airline and concerned govt. agencies for quick and authentic dissemination of information.
- Liaise with AECC, if activated for updated information and necessary instructions.

3.7.8 GIAL -Safety Investigation Coordinator (SIC)

- Ensure that initial action is carried out at the accident site in coordinated manner and the evidences are not destroyed. Initial actions will include video recording of the firefighting operation; rescue operation; wreckage;

steps in removing, opening, or cutting a part components; photograph of damage to any electric pole/cables or other like structure due to aircraft impact before they are restored, etc.

- Initiate immediate actions required to facilitate investigation, till the arrival of Investigator nominated by the DGCA/AAIB
- To ensure immediate sealing of the ATC/RADAR/Video recording devices pertinent to the accident/incident.
- Coordinate with the police authorities and district authorities to ensure compliance of Air Safety Circular 06 of 2010 and guarding of the wreckage, protect property and public from the hazards in the wreckage, prevent disturbance of the wreckage (including bodies and contents of the aircraft), permitting only authorized persons in coordination with the investigator, protect and preserve any ground marks of the aircraft, record the names and addresses of all the eye witnesses, liaise with the local population particularly with regard to locating outlying pieces of wreckage.
- The location of flight crew and the passengers alive or dead should be recorded and the necessary photographs must be taken prior to the removal.
- Any movement of the controls/cutting of wires, cables, component parts etc. must be made note of for submission to the investigator.
- Samples of blood, urine etc. should be taken at the Airport medical centre, when the condition of crew members requires immediate hospitalization, SIC shall ensure that the samples of blood, urine etc. are taken at the nearest hospital and the sample should be suitably preserved and handed over to the Investigator (DGCA / AAIB).
- Until the arrival of SIC, the initial action of SIC shall be taken by Duty Manager-Apron Control.

3.7.9 GIAL Security & Landside Operation

- On receipt of information, Inform all as per notification chart (**Appendix 11** in AEP)
- Crowd Management at Cargo gate of Landside areas shall be taken care by GIAL Security.
- Security (GIAL) will provide TAEP for all external emergency responders at entry Cargo Gate. As per procedure define in AEP Part-2 Chapter No-05,

3.7.10 GIAL Engineering:

- On receipt of information, Engineering Team shall quickly disseminate information to all concerned as per notification chart.
- Shall put on standby all generators for lighting purposes during hours of darkness and to ensure minimum disruption to power supply.
- Mobilize resources on instructions from On-scene commander.

3.7.11 GIAL Cargo-Duty Manager

- On receipt of information about the DGR, same shall quickly disseminate to all concerned as per standard practice.
- If DGR on board, send DGR instructor to the accident/incident site as quickly as possible to provide his expert advice on the physical and chemical characteristics of the dangerous goods and the potential hazards, as well as the necessary precautionary measures to be taken.
- As and when required keep ready the mortuary refer container for keeping dead bodies.

3.7.12 CISF - SOCC:

- Receive critical information from Fire watch tower and note details of Aircraft incident / Accident.
- Notify critical information to all concerned as per Departmental Notification Chart and ensure post notification action.
- Instruct security personal at ATC Gate & Vehicle Gate for allowing quick entry of emergency responding vehicles.
- When emergency evacuation is initiated, provide assistance to passengers / crew members and ensure their safety.
- Deploy security personal at Rendezvous point, reunion area, AECC and Mobile command post for controlling access to unauthorized personnel.
- Alert Quick Response Teams for immediate response and co-ordinate with ARFF Duty – Manager for providing any assistance.
- Inform security personal to open required Crash gate.

3.7.13 CISF – In charge Cargo gate

- On arrival allow emergency responding vehicles to access airside in coordination with Follow Me vehicle.

3.7.13.1 CISF – QRT Team:

- QRT personnel shall coordinate with Apron control and take assistance of Follow Me Vehicles to reach the incident site.
- QRT personnel shall secure the incident / Accident site.
- QRT – In charge will ensure that the access to incident / accident site is provided to responding teams (Fire Brigade, Ambulances, Doctors and GIAL Safety team) and appropriate authorities holding special pass.

3.7.14 Affected Airline / GHA

- Shall be ready with required equipment / manpower and co-ordinate with airside safety for further assistance.
- On receipt of notification from AOCC, GHA shall send their ADP holders to Cargo gate at the earliest, to provide escort to the responding agencies.
- Affected airline /GHA will be responsible for providing transportation to passengers / flight crew from incident/accident site to activated emergency response centers.
- If DGR onboard, Provide Cargo DGR manifest at AECC
- Affected airline / GHA will be responsible for medical examination of flight crew and handling of deceased as per procedure defined in AEP Part-2 Chapter No- 03.

3.7.15 Immigration and Custom

- Immigration and Custom procedures for international flight will be completed at SRA.

3.7.16 Fire and Emergency Services, Assam

- Upon notification, the F&ES will respond with personnel and equipment to the designated rendezvous point(Cargo Gate) from where they will be escorted or directed to the accident site, as required
- Appoint one liaison officer to report to AECC upon his arrival.
- Actions will be as requested by, and under the command of the Duty Manager-ARFF, or the On Scene Commander, and may include;
    - Act as stretcher bearers
    - Assist in directing survivors to safe areas
    - Assist ARFF in fire control/casualty evacuation and help to

replenish the Crash Fire Tenders as and when required

- Search the area for survivors and bodies or body remains in coordination with ARFF, GIAL
- Assist as instructed/required by the On Scene Commander

3.8 Termination

- Termination of the emergency at the accident / incident site shall be declared by AECC in consultation with on scene commander.
- The termination of emergency situation shall be declared terminated by AECC in phases after consultation with Medical, Terminal Operations, Airline, Airside and ARFF.
- Post declaration of phases of termination, the assisting staff and support system shall be withdrawn in phases.
- Final Termination will be declared by the Chairman AECC in consultation with all agencies involved in emergency management.

AOCC will pass notification to all concerned agencies including GIAL officials that aircraft incident / accident emergency terminated".

After the termination of incident /accident emergency AOCC shall co-ordinate with Apron Control and ARFF and provide serviceability report of runway and category of rescue firefighting available at the airport.

Part-1, Chapter-4 : Aircraft Accident off the Airport

Introduction:

The primary responder to an Aircraft accident beyond the boundary of LGBI Airport shall be the District Administration, Kamrup. As per letter No.19014/4/99/AR dated 16/11/1999 from AAI Headquarters it is mandatory for airport ARFF to respond to all aircraft incidents/accidents up to 5 Km distance on approach path and 2.5 Km across the runway with full compliments.

Beyond that the Chief Airport Officer and Head Ops in consultation with Head-ARFF will decide considering the distance of site of Crash/accident reported, in accordance with the category of aircraft involved in crash whether the RFFS will go to attend the Crash or not.

In case of an Aircraft Accident which has occurred outside airport boundary, ARFF will proceed with required equipment's and appliances to the site if it is located within:-

- 2.5 KM across the RWY East/West side.
- 5KM within approach funnels. Hence forth will be known as Airport Vicinity
- Sending of the fire brigade beyond the above specified limit will be decided by Chief Airport Officer on the advice of Head Operations/ Head-ARFF.
- The Fire and Emergency Services, Assam shall be activated by hot line available in fire control tower or through direct phone 101. Airport ARFF cannot be dispatched beyond 5Kms additional fire brigade deployment need to be specified to the Fire and Emergency Services, Assam.

Therefore, the role of Airport ARFF beyond the boundary is to provide the initial response in order to control Fire and save lives as far as practicable. However, the ARFF Officials shall proceed to the site of accident if practicable to assist local authorities in dealing with the accident.

4.1 Notification of Aircraft Accident beyond the Airport boundary:

The notification of Aircraft Accident beyond boundary of LGBIA will normally be made by ATC, subsequently a triangle of information shall be maintained between ATC, ARFF and AOCC.

In case of any information of accident outside the boundary of LGBIA is received by GIAL from any source, the same shall be intimated immediately to ATC (Aerodrome operator shall be acting as an Alerting Post to RCC). The ATC shall confirm the authenticity of the information based on available flight data and notify accordingly. The telephone nos. of RSC Guwahati is available in Appendix 4 of AEP.

The standard text and format used for the Aircraft Accident is as follows: -

"Aircraft Accident outside Airport"

Aircraft Accident at Location : **approximate location**, Aircraft Operator - **XYZ Airline,** Flight No **123,** Type of Aircraft **B – 721,** POB **XXX**, FOB **YYY**, any Dangerous Goods On Board, including quantity & location, if known, Time of Accident **0000 hrs**, All concerns to take necessary actions.

4.2 Command and Coordinating Authority

4.2.1 Aircraft Accident in the vicinity of Aerodrome on Land:

Chief Airport Officer is the Search and Rescue Mission Coordinator (SARMC) and is responsible for deployment of rescue services in and around the vicinity of the Aerodrome. Guwahati Disaster Management Authority is the Command and Coordinating authority for accidents beyond vicinity of the LGBIA and within Guwahati Metropolitan Development Authority (GMDA) area limits. Rescue Operation shall be in accordance with the procedure of Guwahati Metropolitan Development Authority. However, if location of accident is beyond limits of GMDA, RSC Guwahati shall be the coordinating authority.

4.2.2 Search and Rescue

Rescue Sub Centre (RSC) may play a significant role when aircraft accidents occur in the vicinity of airport but the accident site is not known or rescue facilities additional to those available at or near the airport are required to be brought into action. Rescue Sub Centre (RSC) have means of immediate communication with all rescue units within their areas of responsibilities including units providing aircraft, helicopters and special rescue teams, coastal radio stations capable of alerting and communicating with surface vessels. Assistance from some of these units can be essential in responding to an

accident in the vicinity of the airport. In the event of an aircraft accident requiring such assistance from Rescue Sub Centre (RSC), Guwahati, Chief Airport Officer (LGBI Airport)- SARMC Shall inform Watch Supervisory Officer (WSO) by the quickest possible means about an aircraft in need of search and rescue in the vicinity of the aircraft.

4.3 Support Agencies

- State Police
- Affected Airline
- ATC
- Indian Air Force
- AAIB
- Customs
- Immigration
- Assam State Disaster Management Authority (ASDMA)
- National Disaster Management Authority (NDMA)
- National Disaster Response Force (NDRF)
- Doctor/Hospital/Ambulance
- GIAL depts. such as ARFF, AOCC etc.
- Fire and Emergency Services, Assam
- State Disaster Management Authority
- Civil defense

4.4 Activation and Action:

- In case of receipt of confirmed information of an accident beyond the boundary of LGBIA within the jurisdiction of Guwahati Metropolitan Development Authority, ARFF (Duty Manager) shall inform ASDMA giving all available details. Also, in case of an unconfirmed report the same shall be relayed to disaster management control room for confirmation.
- On receipt of the information AOCC shall inform the concerned operator even if the flight was a departure from Guwahati or an arrival to Guwahati wherever the crash site may be.
- The activation of SRA and AECC will depend on the location of accident site, for example an accident just outside the boundary wall may require activation of SRA. The Fire and Emergency Services, Assam being the

primary responder outside airport all such acts may be informed to Fire and Emergency Services, Assam in turn Fire and Emergency Services, Assam to disaster management control room until ASDMA takes over command and control at the site.

4.5 Duties And Responsibilities:

4.5.1 Air Traffic Services – AAI

- Ascertain the following information and relay to ARFF and AOCC.
  - Accident Location.
  - Type of aircraft and nature of accident. (Accident, Fire, Explosion etc.)
  - Number of Persons On Board (POB).
  - Time of Accident(if known).
  - Arriving or departing aircraft.
  - Airline flight number and aircraft registration.
  - Dangerous goods onboard (if known).
  - Fuel Load (Estimate if possible).
- Direct ARFF to the accident site (if required).
- Issue NOTAM in coordination with Airside Operations and Duty Manager ARFF pertaining to the reduction in the level of protection.
- Advices inbound aircraft of potential diversions due to emergency situations in the vicinity of the airport.
- Coordinate resumption of operations/cancellation of NOTAM in coordination with Airside Operations and Duty manager ARFF.
- Secure all ATC Tapes / Logs / Data / Imaging related to the accident.
- Send a senior representative of the Air traffic Control to the AECC if activated.
- RSC shall provide the available information about the accident to AOCC ATC whenever information on such accidents is requested by ATCAOCC.
- Notify RCC.

4.5.2 Aerodrome Rescue & Firefighting:

4.5.2.1 Fire Watch Tower In charge:

- Keep a log of details of Aircraft accident received by Fire Watch Tower in-

charge from time to time from any source in Fire Watch Tower Logbook.

- Provide critical information on walkie talkie and PA system to ARFF personnel in case the accident has occurred within the vicinity of the airport.
- Fire watch tower to be in constant touch with ATC and disseminate information by RT (if required) to all concerned.
- Inform SOCC about the aircraft accident within the vicinity of LGBI Airport. Instruct SOCC for opening of required crash gate when decision is taken by Duty Manager-ARFF to dispatch ARFF team to the site in the vicinity of LGBI Airport.
- Obtain the name and contact number of the Assam State Disaster Management Authority (ASDMA) site coordinator (this name/number should be disclosed only to Head ARFF and SIC)
- Keep in constant touch with disaster management control room on hotline for relevant information.
- Note: Concerned personnel in (Fire and Emergency Services, Assam) / Disaster Management shall be briefed about the key terminologies used while passing an aircraft related emergency.

4.5.2.2 Duty Manager – ARFF:

- Assess the situation and if required, without compromising with airport category, dispatch designated fire crew along with a CFT to the accident location for assistance.
- Inform and update ATC about the level of protection (Airport Category) maintaining.
- Seek Head Operations permission if deployment of additional ARFF vehicles is needed subsequently.
- Call out ARFF off-duty crew to report for duty if required.
- Provide ARFF Fire Fighting category status to ATC.
- Assist Fire and Emergency Services, Assam in rescue and firefighting operations at the crash site.
- Inform AOCC, for activation of AECC, if required.
- Update AECC on aircraft accident status, if activated.
- Support Fire and Emergency Services, Assam to mitigate the situation
- Co-ordinate with AECC / CISF / Terminal Operation and GIAL-Security for making provision of SRA for uninjured passengers and entry from appropriate entry gate.

4.5.2.3 Head ARFF

- On receipt of information of an aircraft accident in near vicinity, shall report at the accident site at the earliest for necessary actions.
- Extend support to Fire and Emergency Services, Assam in managing the accident site.
- Assess the situation and if felt necessary, obtain permission from Head Operation for deployment of additional ARFF resources at the accident site.
- Brief Head Operations about the accident.
- Be in constant touch with AECC (if activated) to provide necessary updates.

4.5.3 Assam State Disaster Management Authority (ASDMA)

- The ASDMA shall be a single point of command, control and communication as defined in the Natural Disaster Plan mentioned in the AEP.

4.5.4 CISF- SOCC :

- On receipt of information about aircraft accident shall notify CISF Senior Officer.
- CISF shall mobilize its personnel for crowd control at City side Terminal Building in anticipation of large groups of friends and relatives swarming to the airport.
- Inform to security personal to open Crash gate, if message received from AOCC or ARFF Fire Watch Tower.

4.5.5 AOCC

- Acknowledge aircraft accident notification outside the airport boundary on receipt of information from ATC and Note details of accident in AOCC Logbook.
- Notify information about the accident to Airport Contact Centre and all concerned as per Notification Chart (Appendix 10 in AEP or as appropriate).
- If the aircraft is in distress or has met with accident and has departed from LGBIA or is scheduled to land at LGBIA, inform to affect Airline to activate Help Desks at Airport.

4.5.6 Terminal Management: Duty Terminal Manager:

- Acknowledge aircraft accident notification outside the airport boundary on receipt of critical information from AOCC and Note details of accident.
- Establish Information desk outside the affected terminal for provision of information.
- Assess the situation, and determine the necessity to establish SRA, M&G area, in consultation with affected airlines.
- Activate Media Center.

4.5.7 Corporate Communication:

- Receive critical information and note details of aircraft accident.
- Notify critical information to all concerned as per Departmental Notification Chart.
- Activate the Media Centre as per department SOP.
- Liaise with affected Airline and concerned govt. agencies for quick and authentic dissemination of information.
- Liaise with AECC, if activated for updated information and necessary instructions.

4.5.8 GIAL Security:

- Liaise with CISF and State Police for necessary assistance.

4.5.9 GIAL Safety Investigation Coordinator (SIC):

- Receive critical information from AOCC, note details of aircraft accident.
- Inform AAIB / DGCA as per the requirements of the Aircraft (Investigation of Accidents and Incidents) Rules, 2017.
- Coordinate with the ASDMA to ensure compliance of Air Safety Circular 06 of 2010.

4.5.10 Affected Airlines:

- Send airline representatives to the GIAL information counter, and M&G area if activated to assist with the coordination and facilitation of the next- of-kin needs.
- Send airline representatives to AECC if activated.
- Send Engineer to the Accident Site/Command Center to Co-ordinate City Fire personal for extrication of CVR/DFDR.

- In Coordination with RCC, track casualties evacuated to various hospitals and obtain information from the hospitals.
- Provide staff to take care / pacify the surviving passengers in SRA/ ASDMA Shelter.
- Provide staff for reconciliation of surviving passengers.
- Refreshments to be provided to the passengers.
- Provide staff at various hospitals so that tracking of passengers coming to the respective hospitals can be done.
- Provide passenger manifest to AECC, if activated.
- If required, liaise with GHA and AOCC for provision of manpower, mobilization of ground services equipment's such as steps, coaches, etc.
- Liaise with the Immigration and Customs if an international flight is involved for expeditious clearance of its passengers and crew members as well as their baggage.

4.5.11 Airport Emergency Control Centre:

- Duty Manager, ARFF shall assess the situation and determine the need to activate AECC and inform the AOCC accordingly. AECC will be activated to provide the necessary support and assistance to help in mitigating the effects of the accident.
- All GIAL and external members of AECC shall report to AECC on receipt of aircraft accident notification.
- Security Department shall depute a Security staff to handle access control at AECC.
- Agency representatives will arrive and take-charge of all coordinating functions as per the individual SOP"s and functional check lists.
- AECC shall maintain constant coordination with RCC.
- Maintain constant RT and hotline communication with GIAL response Team and On-Scene Commander.
- Arrange and mobilize ground service resources, if required.
- Provide technical support needed at the crash site.

4.5.12 Fire and Emergency Services, Assam

On being alerted by the ARFF or from their own sources of an aircraft accident off Airport, the following actions shall be taken:

- Proceed to the incident location as quickly as possible.

- Notify ARFF, if they become aware of any aircraft accident occurring within the vicinity of the airport.
- Take appropriate action as per the type of hazard in case of responding to an incident involving hazardous material.
- While enroute to the site, determine the location and magnitude of the accident as accurately and quickly as possible for the purpose of dispatching appropriate manpower and equipment.
- Ascertain the following information: -
    - Accident Location.
    - Type of aircraft and nature of accident. (Accident, Fire, Explosion etc.)
    - Number of Persons On Board (POB).
    - Time of Accident (if known).
    - Airline, flight number and aircraft registration.
    - Dangerous goods onboard (if known).
- Stabilize the accident scene by preventing, suppressing, and controlling fire, locating, and containing any dangerous goods. Both victims and rescue workers must be protected from toxic products of combustion found in smoke and fire gases.
- Assume command of the aircraft firefighting and rescue operations at the Accident site.
- Coordinate with the Senior Medical Officer at the scene to establish a safe area for collection and triage of survivors
- Assist flight crew in the evacuation of aircraft occupants if possible.
- Gain entry into the aircraft by normal, emergency or forcible means.
- Locate, assess, stabilize, free, and remove trapped survivors from the wreckage.
- Assist in the direction and movement of uninjured victims away from the accident scene to a safe location.
- Assist in the location, disentanglement, removal and recovery of both victims and rescue workers during the emergency phase of the operation.
- Liaise with other agencies as necessary
- Head Count as per POB as well as nearby locality
- Agree with the ARFF for the release of ARFF appliances (if responded to the site) as soon as possible to enable the restoration of Airport Fire Category.

4.6 Termination

- Chairman AECC will terminate emergency in consultation with Indian Air Force/ Assam State Disaster Management/ RSC Guwahati.
- AOCC will pass notification to all concerned agencies that "aircraft accident emergency terminated".

Part-1, Chapter-5 : Dangerous Goods Occurrences

5.1 Definition:

Dangerous goods are articles or substances which are capable of posing a risk to health, safety, property or the environment and which are listed as such and are classified according to the ICAO Doc. 9284-AN/905, Technical Instructions for Safe Transport of Dangerous Goods by Air and subsequent Aircraft (Carriage of Dangerous Goods) Rules 2003 framed by DGCA. Since Dangerous Goods are Chemical, Biological, Radiological and Nuclear in nature, its occurrences can be referred to as **CBRN Incident**.

A **Dangerous goods incident or CBRN incident** is defined as an incident, other than a dangerous goods accident, associated with and related to the transport of dangerous goods by air, not necessarily occurring on board an aircraft incident where dangerous goods are found in passengers checked baggage after check in, or in carry-on baggage following the security screening process, are also classed as dangerous goods incidents.

Dangerous goods or CBRN incidents include but are not limited to:

- Spillage or leakage of the dangerous goods contents from a package or baggage.
- Escape of fumes or gases or emission of smoke from a package or baggage.
- Breakage or failure of inner or outer receptacles.
- Radiation leakage.
- Corrosion, contamination or combustion.
- Damage to property or equipment caused by contents.
- Injury to person caused by contents.
- Failure of the shipper or passenger to declare or correctly identify dangerous goods.
- Stowage of dangerous goods on an aircraft, contrary to the regulations.
- Dangerous goods carried as surplus freight on an aircraft and not notified to the commander.
- Fire, breakage, spillage, leakage of a fluid or gas or other evidence that the integrity of the package has not been maintained.
- Any occurrence relating to the transport of dangerous goods that

seriously jeopardizes an aircraft or its occupants is also deemed to be a dangerous goods incident.

Dangerous goods incidents or CBRN incidents are incident associated with the transport of dangerous goods, which result in a fatal or serious injury to a person or major damage to property.

Dangerous goods or CBRN accidents may occur:

- During an "Aircraft Crash" in which the aircraft concerned is carrying dangerous goods;
- During an "Full Emergency" in which the aircraft concerned is carrying dangerous goods;
- During "Fires on the Ground" in which the aircraft is carrying or in the process of loading/unloading dangerous goods; or
- When consignments of dangerous goods are damaged during loading or unloading from the aircraft or during delivery or collection from cargo terminals/warehouses within the airport.
- When an incident involving dangerous goods occurs **on the ground**, be it inside an aircraft cargo hold, on the apron, or in a cargo warehouse, it is the responsibility of the ground handling Agency or cargo operator concerned to immediately notify about the incident to **ARFF.**

5.2 Declaration of Dangerous Goods incident.

- The Pilot In-Command by requesting declaration through ATC, when in-flight. ATC shall in turn inform ARFF of such incident.
- Duty Manager, ARFF after proper evaluation of the situation, declare dangerous good incident to ATC / ARFF / AOCC/ Apron control / Cargo department.

5.3 Activation

- The plan is activated on receipt of the information of Dangerous Goods incident by ATC / ARFF / AOCC/ Apron control / Cargo department within LGBIA premises.

5.4 Notification Chart

- Notification of Dangerous Goods incident shall be made immediately by ATC/ ARFF/Apron Control/AOCC/ Cargo Department as per para 1, subsequently a triangle of information shall be maintained between ATC, ARFF, and AOCC.
- Notification as appropriate (ref Appendix 10 of AEP) shall be made by the concern teams.

5.5 Critical Information to Be Provided In Notification

In the initial activation following information wherever possible must be provided and recorded for onward notification;

1	The Proper Shipping name
2	UN or ID number
3	Class or Division
4	Subsidiary risks
5	Quantity of each item
6	Location of these items
7	ERG CODE

5.6 Command And Coordinating Authority

- The ARFF being the first responder to reach the incident site the Duty Manager ARFF shall act as the Officer in Command on site until the arrival of on scene commander. The Head of ARFF shall assume duties as On Scene commander on arrival at site.
- After due assessment and understanding the gravity of an incident the on scene commander shall call NDRF/BARC.
- On arrival of NDRF, the officer in-charge NDRF shall be the command, control and coordinating authority.

5.7 Support Agencies

5.7.1 Internal Agencies

- GIAL – ARFF Services
- GIAL –Airside Operations
- GIAL - Landside Operations
- GIAL - Medical Service
- GIAL - AOCC

- GIAL – Terminal Operations
- GIAL -E&M
- GIAL - Safety
- GIAL- Corporate Communication
- GIAL – Security
- GIAL – Cargo Operations
- GIAL-Environment Department
- Affected Airline & its nominated Ground Handler
- ATC
- CISF
- Customs
- APHO

5.7.2 External Agencies:

- CMG DAE
- NDRF
- AERB
- Fire and Emergency Services, Assam
- Hospital and Ambulance services
- State Police
- Disaster Management Cell
- Civil Defense

5.8 Assembly Areas

- All external responding agencies shall report to the Cargo and further they will be escorted by Follow Me jeep to the designated Rendezvous point. As per requirement received from on scene commander, they will be further escorted to incident site by "Follow Me" service. If incase the incident takes place at Cargo terminal, the external responding agencies shall be communicated to report to main gate of Cargo Terminal. They will be further escorted to incident site by Cargo security department.

5.9 Duties and Responsibilities

5.9.1 Air Traffic Control:

When the ATC is notified by the arrival aircraft pilot that the dangerous goods are onboard, then pass the critical information, as define in sr. no.4 above on

hotline to ARFF fire watch tower.

5.9.1.1 Tower Supervisor shall notify:

- Watch Supervisory Officer; and
- ATS Reporting Officer.
- MLU (Military Liaison Unit), IAF, if it's military aircraft.

5.9.2 Airport Operations Control Centre:

- Acknowledge and activate Dangerous Goods incident procedures on receipt of critical information (Refer Para 4 above).
- Inform all the concern including affected Airline as per notification chart (**Appendix 10** in AEP).
- Notify critical information to all stakeholders at AOCC through an email in prescribed template.
- Relay termination of Dangerous Goods incident to all concerned.

5.9.3 Aerodrome Rescue & Firefighting:

5.9.3.1 Fire Watch Tower:

- Acknowledge and activate of Dangerous Goods incident procedures.
- Keep note of details of Dangerous Goods incident in Fire Watch Tower Activity Report.
- Provide critical information on walkie-talkie, and PA system to ARFF personnel.
- Notify critical information to all concerned (to inform appropriate authorities in case of DGR) as per the Notification Chart at (**Appendix 10** in AEP).

5.9.3.2 Duty manager – ARFF:

- On receipt of initial information, ensure that Duty Manager along with one CFT and HAZMAT equipment responds to the site for the initial turnout. Evaluate the situation and depending on the severity and impact take a call to declare a "Dangerous Goods incident"
- On declaration of incident, quickly disseminate information to all concerned as per notification chart.
- If situation demands, instruct activation of AECC and establishment of MCP.

- In case dangerous goods packages observed signs of leakage, fumes or other evidence of damage, following precautions should be taken:
- Damaged packages should be isolated.
- No attempt should be made to open the damaged package.
- Contents of packages should be identified by marking/labeling on the packages and/or referring appropriate documents.
- **Emergency Response Guide** should be referred for appropriate actions based on the type of contents involved.
- After due assessment and understanding the gravity of an incident the on- scene commander shall call NDRF and if radioactive material involved call BARC Crisis Management Group (CMG), Department of Atomic Energy (DAE),
- ARFF personnel shall quickly control and contain the incident until the arrival of NDRF/BARC Team.
- ARFF will handed over the charge to NDRF/BARC (DAE) and assist them in mitigating the incident.

5.9.3.3 Head ARFF

- On receipt of information of Dangerous Goods incident, shall report at the incident site at the earliest for necessary actions.
- Extend support to NDRF/BARC DAE/Fire and Emergency Services, Assam in managing the incident site.
- Inform Head Operations and brief about accident
- Be in constant touch with AECC (if activated) to provide necessary updates.

5.9.4 NDRF

- Shall respond with the necessary resources needed for mitigating the CBRN incident.
- Upon arrival, the senior Officer from the NDRF shall take over the mitigating role and be over all command, Control and coordinating authority of the CBRN incident.
- Take necessary briefing from ARFF On Scene commander.

5.9.5 Fire and Emergency Services, Assam:

- Shall respond with the necessary resources needed for mitigating the

dangerous goods incident.

- Upon arrival, the senior Fire Officer from the Fire and Emergency Services, Assam shall take over the mitigating role and support GIAL ARFF/NDRF
- in carrying out their responsibilities.

5.9.6 GIAL Airside Operations:

5.9.6.1 Duty manager – Apron Control:

- The Duty Manager, Airside Operations will be the coordinating authority at the Rendezvous Point to ensure efficient handling of External Support Agencies Reporting at the Airport in response to the emergency.
- Receive critical information and note details of Dangerous Goods incident.
- Notify Critical Information to all concern as per Appendix 10 of AEP.
- Advice Follow Me to activate RV point and report at Cargo gate for escorting of external emergency vehicles.
- Airside Safety senior official shall report at Dangerous Goods incident and liaison with Officer in Command (Duty Manager- ARFF) for making critical decisions.
- Apron control shall intimate AOCC to co-ordinate with GHA to provide ADP holders at Cargo gate to escort external responding agencies to incident site, as and when required.
- Apron control will co-coordinate with all other GHA for additional support for transportation.
- Assist CISF QRT team to reach the incident / accident site.

5.9.6.2 Apron Controllers on "Follow Me":

- Activate RV Point.
- Apron Controller shall report to Cargo Gate and co-ordinate with CISF personnel for immediate entry of emergency vehicles toward airside.
- Provide "Follow Me" service to responding emergency vehicles up to RV Point, if required at incident/accident site.

5.9.7 CISF-SOCC:

- Receive critical information from Fire watch tower and note details of Dangerous Goods incident.

- Notify critical information to all concerned as per Departmental Notification Chart and ensure post notification action.
- Instruct security personal at Cargo gate for allowing quick entry of emergency responding vehicles.
- Alert Quick Response Teams for immediate response and co-ordinate with ARFF Duty – Manager for providing any assistance.
- Inform to security personal to open required Crash gate
- Cordon off site and carry out access control. NOT TO ALLOW anybody without authorized access.

5.9.8 GIAL Security and Landside Operation:

- Facilitate issuance of TAEP for access of external resources into the airside through pre-designated gate with proper identification by concerned department.
- Liaise with CISF and State Police for necessary assistance at the occurrence site.

5.9.9 GIAL Medical Team:

- Dispatch Medical Officer to the incident site for immediate medical assistance.
- Activation of Casualty Centre.
- Coordinate with Panel doctors and ambulances, if situation demands.
- Supplement the medical aid requirements at the incident site.
- Advice concern hospital to activate Internal SOP"s for receiving casualties.

5.9.10 APHO, Guwahati:

- Will assist in provision of Medical Response teams and ambulances for immediate and effective evacuation of victims to appropriate hospitals.
- On arrival at the site, report to the On-scene commander with details of resources in place.

5.9.11 GIAL Cargo

- Duty Cargo Manager shall notify Dangerous Goods Specialist, Head Cargo GIAL , DRP, BARC, immediately if radioactive material is involved as per requirement under Air Safety Circular No. 2 of 1989.

- The disposal of damaged package/consignment will be at the sole discretion of Head, DRP, and BARC.
- When a major accident involving any hazardous substance such as explosive, flammable, toxic, corrosive and radioactive materials occurs, the concerned authority shall be notified.

5.9.12 Dangerous Goods Specialist shall:

- Proceed to the accident/incident site as quickly as possible.
- Help identify the type of dangerous goods involved and provide his expert advice on the physical and chemical characteristics of the dangerous goods and the potential hazards, as well as the necessary precautionary measures to be taken.

5.9.13 Terminal Management:

5.9.13.1 Duty Terminal Manager:

- On receipt of information in case DG incident involves in passenger Aircraft quickly disseminate information as per notification chart.
- Liaise with affected airline/GHA operating through concerned terminal.
- If situation demands, in co-ordination with GIAL security, make necessary arrangements for entry passes and transportation of emergency responders and external support agencies.
- Send emergency responders to required areas in consultation with On-scene commander.
- If instructed by On-scene Commander, activate Meeters and Greeters Area, Reunion area and Survivor reception area as per SOP.
- Make arrangements for food, water.

5.9.14 Landside Management:

- On receipt of information, notify the information to all concerned as per notification chart.
- Ensure traffic and crowd management at landside.

5.9.15 GIAL Engineering:

- On receipt of information, Engineering Team shall quickly disseminate information to all concerned as per notification chart.
- Shall put on standby all generators for lighting purposes during hours of

darkness and to ensure minimum disruption to power supply.

- Mobilize resources on instructions from On-scene commander.

5.9.16 GIAL Corporate Communication:

- On receipt of information, Corporate Communication shall note-down all relevant details of the occurrence.
- If situation demands, activate the Media Centre as per dept. SOP.
- Liaise with affected airlines and concerned govt. agencies for quick and authentic dissemination of information.
- Liaise with AECC if activated for updated information and necessary instructions.

5.9.17 GIAL Environment Department:

- Head Environment department shall inform the authority concerned.
- Inform the concern authority as pert the requirement under the Environment (Protection) rules 1986, for all accidents/incidents involving hazardous materials.

5.9.18 Affected Airline & Ground handling agency:

- When damaged consignments of dangerous goods are discovered during loading/unloading from an aircraft, the Airline or the Ground Handling Agency shall notify the ARFF, stating the parking bay number, type of aircraft and airline, and type of dangerous goods (if known).
- If dangerous goods consignments are damaged in a cargo warehouse, the Ground Handling Agency or the Cargo operator, shall notify the ARFF, stating the location, any landmark and type of dangerous goods (if known) and the extent of damage.
- Provide sufficient staff to manage the contingency, if required.
- Will ensure that the area is clear of any equipment in use by ground Handlers.
- The Airline or Ground Handling Agency concerned shall initiate other precautionary measures such as isolate the affected area, keep people and vehicles away from the hazard until the arrival of the ARFF.
- Once the incident has been contained by the ARFF, the Airline or Ground Handling Agency shall arrange for the removal of hazardous materials from the site.
- If an aircraft met an accident is carrying dangerous goods, the aircraft operator or ground handling Agency concerned shall notify the ATC in

detail that the aircraft carry the dangerous goods.

5.9.19 Termination of Dangerous Goods Occurrence:

- Duty Manager, ARFF will declare Dangerous Goods Incident Termination to AOCC, Fire Watch Tower and Apron Control and ATC, in consultation with Fire and Emergency Services, Assam/NDRF when involved.
- AOCC will pass notification to all concerned agencies that "aircraft incident / accident emergency terminated".
- AOCC shall co-ordinate with Apron Control and ARFF for Runway fitness report and category of Rescue and Firefighting and inform ATC.

Part-1, Chapter-6 In-Flight Mass Casualty Incident

6.1 Definition:

- In a mass casualty incident (MCI) rapid assessment and treatment of patients is a critical factor. Mass casualties onboard will usually result from incidents such as when an aircraft encounters severe air turbulence during flight and during mass food poisoning.
- In an MCI where there are 15 injured/sick passengers or less, the resources within the airport at LGBIA are adequate to handle the incident. If there are more than 15 injured/sick passengers, the external medical resources such as ambulances, hospitals and doctors will have to be notified for immediate assistance.

6.2 Declaration of In-Flight Mass Casualty: Declared By:

- The Pilot In-Command by requesting declaration through ATC, or
- GIAL Duty Medical Officer when after evaluating the incident they are of opinion that the medical emergency is warranted.
- The standard message format used for declaring "In-flight Mass casualty incident "shall be as provided in the example below: -

"Mass casualty Incident" "Mass casualty Incident" "Mass casualty Incident"

Mass Casualty incident has taken place at XYZ. **All concerns to initiate In-flight Mass Casualty Incident actions.**

(In addition, all information as detailed in point 4 shall be provided when available during declaring emergency)

6.3 Activation:

The plan is activated on receipt of the information of Mass Casualty incident indent / incident by ATC / ARFF / AOCC/ Apron control/ Duty Medical officer/In-Charge Medical Services a notification process that needs to be initiated as fast as possible.

6.4 Notification Chart:

Notification shall be made by ATC or only be carried out once the incident has

been evaluated as MCI by Duty "medical officer" or "Head – Medical Department" on his arrival. Notification as appropriate (ref Appendix 12 of AEP) shall be made by the concern teams. Subsequently a triangle of information shall be maintained between ATC, ARFF and AOCC.

6.4.1 Critical Information To Be Provided In Notification

In the initial activation following information must be provided and recorded for onward notification;

1	Aircraft Operator and Flight number
2	Type of Aircraft
3	Persons on board: PAXCREW
4	Sector: From - To -
5	Parking Bay Allocated
6	ETA:

6.5 Command and Coordinating Authority:

- On Duty Medical Officer being the first responder to reach the Mass Casualty incident site shall act as the Officer in Command on site until the arrival of GIAL Head-Medical Services. However, understanding the gravity of Mass Casualty, he will declared Mass Casualty incident and coordinate with AOCC for necessary support and advice AOCC to activate appropriate notification.

6.6 Support Agencies:

6.6.1 Internal Agencies

- GIAL – ARFF Services
- GIAL –Airside Operations
- GIAL - Landside Operations
- GIAL - Medical Service
- GIAL - AOCC
- GIAL – Terminal Operations
- GIAL -E&M
- GIAL - Safety
- GIAL- Corporate Communication
- GIAL – Security
- Affected Airline & its nominated Ground Handler

- ATC
- CISF
- Customs
- Immigration

6.6.2 External Agencies

- Hospital and Ambulance services
- State Police
- APHO

6.7 Duties and Responsibilities:

6.7.1 Air traffic Control:

- When the ATC is notified by the pilot of an incident wherein passengers onboard have suffered injuries or fallen sick during the flight, the ATC shall try to obtain from the pilot the number of injured/sick casualties onboard and immediately notify to ARFF and AOCC.

6.7.2 AOCC

- On receipt of notification from ATC, AOCC Duty manager shall confirm the parking bay to be assigned to the emergency aircraft and quickly disseminate information to Duty Medical Officer and all concerned as per notification chart.
- Inform all as per notification chart (**Appendix 10** in AEP).
- Activate AECC if required.

6.7.3 ARFF:

- On receipt of information, ARFF shall quickly disseminate information to all concerned as per notification chart.
- Duty Manager ARFF to proceed along with MCP to the incident site/allocated bay and immediately activate the MCP.
- Dispatch Ambulances to the incident site/allocated parking bay for immediate assistance.
- Evaluate the situation and determine and notify the requirement of activation of AECC to Terminal Operations.
- Assist Medical Team in evacuation of the injured and triage activities.

6.7.4 GIAL Airside Operations

6.7.4.1 Duty manager – Apron Control:

- The Duty Manager, Airside Safety will be the coordinating authority at the Rendezvous Point to ensure efficient handling of External Support Agencies Reporting at the Airport in response to the emergency.
- Advice Follow Me to activate RV point and report at Cargo Gate escorting of external emergency vehicles.
- Apron control shall intimate AOCC to co-ordinate with GHA to provide ADP holders at Cargo gate to escort external responding agencies to incident site, as and when required.
- Apron control will co-coordinate with all other GHA for additional support for transportation.
- Provide transportation to responding on duty doctor's in case if they require transportation.

6.7.4.2 Apron Controller on "Follow Me":

- Activate RV Point.
- Apron Controller shall report to Cargo gate and co-ordinate with CISF personnel for immediate entry of emergency vehicles toward airside.
- Provide "Follow Me" service to responding emergency vehicles up to RV Point, if required at incident site.

6.7.5 Medical Department: Duty Medical Officer

- Dispatch Medical Officer to the incident site or assigned bay for immediate medical assistance.
- Evaluate the situation and take a call to declare it as Mass Casualty Emergency.
- Activate the Casualty Centre if required.
- Shall co-ordinate with hospitals, external ambulances and doctors/ panel doctors for additional medical recourses.
- Medical team (GIAL) shall carry out triage and medical treatment to the injured passengers / flight crew.
- Shall be responsible for quick dispatching of P1 injured passengers/ flight crew to hospital with intimation to transport officer.
- Shall be responsible for providing medical treatment to P2 injured passengers / flight crew at casualty center.

- Supplement the medical aid requirements at the incident site.
- Maintain records of action taken at the incident site.
- Determine the termination of Mass Casualty Emergency.

6.7.6 APHO, Guwahati:

- Assist in provision of Medical Response teams and ambulances for immediate and effective dispatch of victims to appropriate hospitals.
- On arrival at the site, report to the GIAL Head-Medical services with details of resources in place.

6.7.7 Terminal Management:

6.7.7.1 Duty Terminal Manager:

- On receipt of information, quickly disseminate information to designated hospitals, Panel Doctors & Ambulance services as per notification chart (Appendix 5 and APHO in AEP)
- Liaise with affected airline operating through concerned terminal.
- Set up a help desk outside the terminal to guide the relatives of the passengers to Meeters and Greeters area.
- In co-ordination with GIAL security make necessary arrangements for entry passes and transportation of emergency responders and external support agencies. Send emergency responders to required areas in consultation with Head-Medical Services.
- Activate Meeters and Greeters Area, Reunion area and Survivor reception area if required.
- Provide assistance to the airline staff in handling emergency.
- Coordinate with customs and immigration for facilitating the passengers

Part-1, Chapter-7 : Fire on the Ground (Fires Involving Airport Terminals and Other Installations i.e., Non-Aircraft Related Fires)

7.1 Definition:

Fire may occur at any of the airport installations or buildings. If out of control, such a fire may hamper the key airport facilities and disrupt the normal airport operations. This chapter outlines the general procedures to be followed by the parties concerned during such a fire occurrence.

7.2 Declaration of Emergency:

- On witnessing of Smoke or fire, immediately initiate one of the below actions with exact location: -
- Raise the fire alarm via the nearest manual call point. If, no manual call point is available, raise the alarm by other available means.
- Inform the Fire Control Room/Central Alarm Control Facility of respective Terminals.
- Inform Fire Watch Tower/MFS/ SFS/Customer Help Desk/AOCC immediately.

The standard message format used for declaring "Fire Emergency "shall be as provided in the example below: -

"Fire, Fire, Fire"
Fire at Terminal/ Cargo Complex /other installations. Location __(Specify location), Near/ Beside_(landmark, if any)

7.3 Activation:

The plan is activated on receipt of the information of Fire by ATC / ARFF / AOCC/ Apron control or any other reliable source within LGBI Airport.

7.3.1 Notification Chart:

Notification of fire shall be made immediately by ATC / ARFF / AOCC/ Apron control/ Terminal Operations or any other reliable source, subsequently a triangle of information shall be maintained between ARFF, Apron Control and

AOCC.

The process of notification for "Fire in Terminal/Cargo Complex/Other Installations" as appropriate (ref Appendix 9 of AEP) shall be made by the concerned teams.

7.3.2 Critical Information to Be Provided In Notification:

In the initial activation following information must be provided and recorded for onward notification;

1	Location of fire
2	Any Landmark
3	Type of fire (general description)
4	Name of the informer
5	Contact No. of the informer

7.4 Command and Coordinating Authority:

- The ARFF being the first responder to reach the incident site the Duty Manager ARFF shall act as the Officer in Command on site until the arrival of Head of ARFF and he will be the coordinating authority for facilitating the requirements of the responding agencies.
- Understanding the gravity of an incident the Fire and Emergency Services, Assam will be called.
- ARFF will handed over the command to Fire and Emergency Services, Assam and assist them in mitigating the incident.
- After taking over the charge by Fire and Emergency Services, Assam, the senior most officer will be the command and coordinating authority of the incident.

7.5 Support Agencies:

7.5.1 Internal Agencies

- GIAL – ARFF Services
- GIAL –Airside Operations
- GIAL - Landside Operations
- GIAL - Medical Service
- GIAL - AOCC
- GIAL – Terminal Operations
- GIAL -E&M
- GIAL - Safety

- GIAL- Corporate Communication
- GIAL – Security
- GIAL – Cargo Operations
- Affected Airline & its nominated Ground Handler
- ATC
- CISF
- Customs
- Immigration

7.6 External Agencies

- Fire and Emergency Services, Assam
- Hospital and Ambulance services
- State Police
- ASDMC – Disaster Management Cell
- NDRF

7.7 Duties and Responsibilities:

7.7.1 Air traffic Control:

- Notify ARFF and AOCC with exact location of fire if known.
- ATC in consultation with AOCC and Apron Control shall take action to close the aircraft movement areas if the fire is affecting or there is a likelihood of fire spreading in this area.

7.7.2 ARFF:

7.7.2.1 Fire Watch Tower:

- On receipt of message, note down the details and immediately make an announcement on P.A. System with exact location of fire.
- Immediately dispatch a Fire Tender from the nearest Fire Station to reported fire location.
- Notify all concerns as appropriate (ref Appendix 9 of AEP) determined in notification chart.

7.7.2.2 Duty Manager- ARFF:

- On receipt of message, Dispatch Assistant Duty Manager- ARFF to take

charge of the situation.

- Ensure ARFF CAT-7 is not affected due to the incident.
- Maintain constant communication with ARFF team at the site for update.
- Ensure Fire tender proceeds to the reported fire location by the most expeditious and safest route.
- Carry out firefighting and rescue operation.
- If situation demand start (Partial/Full) evacuation.
- Assess the situation, determine the severity of fire and inform Fire Watch Tower for Fire and Emergency Services, Assam help.
- Assist and guide Fire and Emergency Services, Assam about the layout.
- Brief the relevant information pertaining to fire incident to Fire and Emergency Services, Assam
- Make proper log of event in occurrence book

7.7.3 Fire and Emergency Services, Assam:

- On receipt of information, report to the incident site with required resources.
- Take all situational report from GIAL Duty Manage-ARFF.
- Senior Officer from F&ES, Assam shall takeover the command of the incident
- Carry out/continue rescue and firefighting activities.
- Provide the incident report to GIAL- ARFF.
- Conduct post fire investigation in coordination with ARFF and police

7.7.4 Terminal Management:

7.7.4.1 Duty Terminal Manager:

- On receipt of notification Duty Manager shall quickly disseminate information to concern.
- If situation demands, carry out evacuation process in consultation with ARFF Asst. Duty manager.

7.7.5 AOCC

- On receipt of notification AOCC Duty manager shall quickly disseminate information to all concerned as per notification chart (ref Appendix 9 of AEP).
- In consultation with Airside safety, determine the areas or parking bays,

if any to be closed or unavailable for normal aircraft operations due to the fire and notify ATC accordingly.

- After receiving call from Apron Control, shall intimate the GHA to provide ADP holders to Vehicle at Cargo gate
- Activate AECC in consultation with Asst. Duty manager-ARFF.

7.7.6 GIAL Airside Operations

7.7.6.1 Duty manager – Apron Control:

- The Duty Manager, Airside Safety will be the coordinating authority at the Rendezvous Point to ensure efficient handling of External Support Agencies Reporting at the Airport in response to the emergency.
- Advice Follow Me to activate RV point and report at Cargo Gate for escorting of external emergency vehicles.
- Inform Air Traffic Control and AOCC of the areas or parking bays, if any to be closed or unavailable for normal aircraft operations due to the fire
- Apron control shall intimate AOCC to co-ordinate with GHA to provide ADP holders at Cargo Gate to escort external responding agencies to incident site, as and when required.
- Apron control will co-coordinate with all other GHA for additional support for transportation.
- Assist CISF QRT team to reach the incident site.

7.7.6.2 Apron Controllers on "Follow Me":

- Activate RV Point.
- Apron Controller shall report to Cargo gate and co-ordinate with CISF personnel for immediate entry of emergency vehicles toward airside.
- Provide "Follow Me" service to responding emergency vehicles up to RV Point, if required at incident/accident site.

7.7.7 Medical Department: Duty Medical Officer

- Dispatch Medical Officer to the incident site for immediate medical assistance.
- Supplement the medical aid requirements at the incident site.
- Coordinate with Panel doctors and ambulances if situation demands.
- Activate the Casualty Centre if required.
- Set up and activate Triage area if required.

7.7.8 CISF-SOCC:

- On receipt of information, notify the information to all concerned as per Departmental notification chart/procedure.
- Instruct Security at Cargo Gate /Terminal (as the case may be) to allow external emergency responding vehicles/officials access onto airside after identification by concerned department.
- Cordon off site and carry out access control. NOT TO ALLOW anybody without authorized access.
- Facilitate evacuating of passengers and Staff.

7.7.9 GIAL Security & Landside Operation:

- On receipt of information, Inform all as per notification chart (**Appendix 11** in AEP)
- Crowd Management at Cargo Gate and crash gates of Landside areas shall be taken care by Duty Manager - Landside.
- Security (GIAL) will provide TAEP for all external emergency responders at entry Cargo Gate. As per procedure define in AEP Part-2 Chapter No-05.

7.7.10 Termination of Emergency:

- The termination of emergency situation shall be declared by respective Terminal/Cargo Complex/Other Installation Duty Manager in consultation with ARFF Asst. Duty Manager.
- If AECC activated, Final Termination will be declared by the Chairman AECC in consultation with all agencies involved in emergency management.
- AOCC will pass notification to all concerned agencies that "Fire Emergency incident terminated"
- Make necessary arrangements for food and water.

Part-1, Chapter-8 : Natural Disaster

8.1 Definition:

Natural Disasters are often sudden & intense and results in considerable destruction, injuries& death disrupting normal life as well as the process of development. The natural disasters to which airport are likely to be subjected to are:

- Earthquake
- Flood
- Storm/ Cyclone
- Cloud burst/ lightning/ extreme weather conditions.

As per the guidelines provided by Ministry of Civil Aviation, Government of India, the Earthquake vulnerability factor for LGBIA, Guwahati is as detailed below:
A "Local Scale Disaster" is one that can be controlled and managed within the capability of the airport and local communities.
A "Large Scale Disaster" is one that exceeds the capability of the airport and local communities and requires state involvement.
Depending on the intensity, such acts of nature may cause severe destruction to the aircraft, airport buildings and installations, and even loss of life. While very less can be done to avert them, timely actions by identified agencies can minimize the impact and expedite restoration of airport operations during emergency.
This section explains the airport's overall approach to the emergency situation, i.e. what should happen, and at whose direction. The flow of accurate and timely information is critical to the protection of lives and property following a natural disaster.

We can't prevent an earthquake. But we can:

- Be prepared to avoid injury.
- Be prepared to minimize damage.
- Be prepared to manage survival afterwards for at least 72 hours without help.

- Because of the unique nature of this type of emergencies and its potential for involving a wide geographic area and potentially limiting the availability of resources, there may be a need for adjusting and coordinating the resources management and mutual aid.
- It is essential that emergency personnel take immediate action based upon information received, particularly in the area of decision making.
- Every effort has been put in to ensure that the activities mentioned herein are in synergy with local community emergency management plan and at the same time it dovetails with the ASDMA, Disaster Management Plan.
- The State Disaster Management Plan, Assam State and National Disaster Management Plan developed by Government of India, Ministry of Home Affairs.
- ASDMA, Disaster Management Plan Prepare some guideline for Community for Surviving Earthquake in Urban Areas (extract is enclosed for ready reference).

8.2 Before the Earthquake

- It is essential that we are prepared for an earthquake. Seismic experts do not rule out the possibility of an earthquake anywhere in Assam including Guwahati. We don't know when this will happen.
- When an earthquake occurs, your first warning may be a shaking sensation if you are in a building. It may also be followed with a sudden noise or roar. You may find yourself completely topsy-turvy. It may be a scary situation! It may last a few seconds or go on for a few minutes. Breaking glass and things falling around could hurt you. Be prepared for aftershocks.
- Your preparedness for such a situation is a must. You must prepare and practice what to do during and after an earthquake.
- Plan your needs in such a situation. Write down and exercise your safety plan.
- Known the safe and dangerous places in your office.

Safe: -Under heavy tables or desks, inside corridor, corners of rooms or archways.

Dangerous: - Near window or mirrors, under any objects that can fall, the kitchen-where the stove, refrigerator or contents of cupboards may move

violently, doorways, because the shaking may slam the door on you. Practice taking cover.

- Train members of your department to use fire extinguisher.
- Plan and practice evacuation.
- Talk to your colleagues about the earthquake: what to do if they are at home, at school, if the quake separates your family.
- Arrange an alternative place if your present area is out of bound. Each member should carry the contact phone number and address.
- Remind your members to relay on emergency authorities for guidance. Broadcast reports on radio and television will have instructions.
- Make sure each member of your department knows how to shut off the
- utilities-gas, electricity and water. (Don't shut off the gas unless there is a leak or a fire. If the gas is turned off, don't turn it on again-that must be done by a qualified technician.)
- Your plan should include a list of where emergency supplies and equipment are stored.
- Share your emergency plan with rescue departments.

8.2.1 During the Earthquake

Preparations for an earthquake include knowing what to do while it is happening. By learning and practicing what you should try to do, you will be more able to remain calm enough to protect yourself and help others. Know what to do, wherever you are. In summary, you should take cover and stay there.

- If you're inside your office, stay there. Get to a safer place such as inside a hall, in corners, in archways. Take cover under a heavy table, desk or any solid furniture that you can get under and hold onto. Protect your head and face. Doors may slam on you figures if you are in a doorway. Avoid areas near windows.
- If you are in a yard outside your office, stay there and get clear of buildings and wires that could fall on you.
- Don't go outside where you may be hit by falling debris - pavements next to tall buildings are particularly dangerous.
- Avoid lifts - if you are in a lift when an earthquake happens, press all floors buttons and get out when you can. High - rise residents will hear fire alarms go off and electricity may fail.
- If you are in a vehicle, pull over to the sight (leave the road clear) away

from bridges, over bridges and buildings. Stay in your vehicle.

- If you are in a crowed public place, take cover and watch that you don't get trampled. In shopping centers, take cover in the nearest store and keep away from windows, neon signs and display shelves of heavy objects.
- Remain in protected place until the shacking stops. Anticipate aftershocks - they may occur after the first quake.
- Try to remain calm and help others.

8.2.2 After the earthquake

Preparation of an earthquake also include knowing what to do and what not to do, after the shaking stops-when there is a danger from aftershocks, fire, falling building materials, debris, etc. Remain calm. You may have to take charge of others. Take care of life threatening situations first. Remember, you may be on your own for 72 hours or more.

- Check your office for structural damage and other hazards.
- Check yourself and others nearby for injuries-administer first aid quickly and carefully.
- If you are evacuating, locate and take your pack of emergency supplies with you.
- Use a torch to check utilities and not shut them off unless damaged. Leaking gas will smell. Don't light matches or turn on light switches-until you are sure there are no gas leaks or flammable liquids.
- Wear sturdy shoes, if there's debris, particularly broken glass.
- Carefully cleanup any spilled hazardous material.
- Secure your office against intruders.
- Turn on your battery-power radio (or car radio) and listen for broadcast emergency instructions.
- Don't use your telephone, expect it an extreme emergency.
- Don't use your vehicle, expect in an extreme emergency.
- Stay at least ten meters from downed power lines.

8.3 Declaration Of Natural Disaster:

- AOCC in consultation with IMD, in case of local scale disaster.
- SDMA in case of Large-Scale Disaster.

8.4 Activation:

- Activated through a notification process that needs to be initiated and confirmed as fast as possible.

8.5 Notification:

- Notification of Natural Disaster by AOCC or SDMA as per para 1, subsequently a triangle of information shall be maintained between ARFF, Apron Control and AOCC.
- AOCC shall also inform ATC about Natural Disaster.
- Notification as appropriate shall be made by the AOCC to all concern as per scale of disaster (Natural disaster - As determined in Appendix 13)

8.5.1 Critical Information to Be Provided In Notification:

- All detailed information available must be provided and recorded for onward notification;

"Disaster, Disaster, Disaster"
Disaster at Terminal/ Cargo Complex /other installations. Location __(Specify location), Near/ Beside_(landmark, if any)

8.6 Command and Coordinating Authority:

- The ARFF being the first responder to reach the incident site the Duty Manager ARFF shall act as the Officer in Command on site until the arrival of Head of ARFF and he will be the coordinating authority for facilitating the requirements of the responding agencies.
- Understanding the gravity of an incident the Fire and Emergency Services, Assam will be call and handed over the charge to Fire and Emergency Services, Assam and assist them in mitigating the incident.
- After taking over the charge by Fire and Emergency Services, Assam, the senior most officer will be the command and coordinating authority.
- The large-scale disaster ASDMA, Disaster Management to be call and ASDMA Disaster Management Department is the Command and Coordinating authority. Operation shall be in accordance with the local

authority procedure.

8.7 Support Agencies:

8.7.1 Internal Agencies:

- GIAL – ARFF Services
- GIAL –Airside Operations
- GIAL - Landside Operations
- GIAL - Medical Service
- GIAL - AOCC
- GIAL – Terminal Operations
- GIAL -E&M
- GIAL - Safety
- GIAL- Corporate Communication
- GIAL – Security
- GIAL – Cargo Operations
- Affected Airline & its nominated Ground Handler
- ATC
- CISF
- Customs
- Immigration

8.7.2 External Agencies

- Civil Defense
- Fire and Emergency Services, Assam
- Hospital and Ambulance services
- State Police
- Disaster Management Cell
- State Disaster Management Authority
- NDRF
- NDMA

8.8 Duties and Responsibilities:

8.8.1 Air traffic Control:

- Air Traffic Controller shall as soon as the warning is received from IMD, inform Fire Watch Tower and AOCC

- Advise aircraft in flight to divert to an alternate destination, if needed.
- Initiate the **NOTAM** actions, with inputs from AOCC if any, to inform all incoming aircraft pilots to the airport, of the warning.

8.8.2 AOCC

- On receipt of notification, AOCC shall quickly disseminate information to all concerned as per notification chart (Appendix 13 in AEP).
- Liaise with airline's operating at LGBIA and disseminate all necessary information.

8.8.3 Aerodrome Rescue and Fire Fighting:

- On receipt of information, ARFF shall quickly disseminate information to all concerned as per notification chart (Appendix 13 in AEP).
- FWT shall keep surveillance of the aircraft movement areas and report to ATC and AOCC immediately of any FOD.
- If a storm warning is received, the Duty manager shall instruct their crew to inspect all the rescue and fire fighting vehicles at the fire stations to ensure:
- That all the equipment carried on the vehicles, especially the loose items are firmly secured in the vehicle lockers.
- That there is no loose equipment or objects on the vehicle roof top.
- That the roof monitor is properly locked into its original position.
- Airport Rescue and Fire Fighting team shall: -
- Conduct fire suppression and rescue operations as needed.
- Check for potential hazardous materials.
- Assist in providing emergency medical assistance, as needed.
- Determine integrity of the building.
- Assist in support operations, to include search operations, inspections, personnel accountability and protective action implementation.
- Coordinate activities with local community emergency response agencies, if necessary.

8.8.4 Airside Operations:

- On receipt of information, Apron Control shall quickly disseminate information to all concerned as per notification chart (Appendix 13 in AEP).

- Activate Rendezvous Point to facilitate responding vehicles and crew.
- Confirm with Security at Cargo gate that access to external emergency vehicles has been accorded.
- Arrange for runway/taxiway inspections at frequent intervals to ensure the surface condition is optimum and free of FOD.
- Apron Control shall keep surveillance of the aircraft movement areas and report to ATC and AOCC immediately of any FOD.
- Ensure that aerobridges are retracted and secured during the storm.

8.8.5 GIAL Medical Team:

- On receipt of information, Medical Team shall quickly disseminate information to all concerned as per notification chart.
- Evaluate the situation and keep the external medical team on standby.
- Activate the Emergency Medical Centre if required.
- Supplement the medical aid requirements.

8.8.6 Terminal Management:

8.8.6.1 Duty Terminal Manager:

- On receipt of information, quickly disseminate information to designated hospitals & Ambulance services to keep them in stand by and follow notification chart (Appendix 5 & 6 in AEP).
- In case of an Earthquake, evaluate the situation, and accordingly implement terminal evacuation plan.
- Liaise with airline operating at LGBIA and disseminate all necessary information.
- Issue passes and coordinate transportation of emergency responders and external support
- agencies if required.
- Make necessary arrangements for food, water.

8.8.7 GIAL Engineering:

- On receipt of information, Engineering Team shall quickly disseminate information to all concerned as per notification chart.
- Ensure that all aerobridges are retracted and secured during the warning period.
- Shall put on standby all generators for lighting purposes during hours of darkness and to ensure minimum disruption to power supply.

- Respond to address any engineering related emergency issues.

8.8.8 GIAL Security:

- On receipt of information, Inform all as per notification chart (Appendix 11 in AEP)
- Crowd Management at Cargo Gate of Landside areas shall be taken care by GIAL Security.
- Security (GIAL) will provide TAEP for all external emergency responders at entry on Cargo Gate. As per procedure define in AEP Part-2 Chapter No- 05.
- Liaise with CISF and State Police for necessary assistance at the occurrence site.

8.8.9 CISF SOCC:

- On receipt of information, notify the information to all concerned as per Departmental notification chart/procedure.
- Instruct Security at Cargo Gate (as the case may be) to allow external emergency responding vehicles/officials access onto airside after identification by concerned department.
- Ensure that all Senior CISF Officers are informed of Natural Disaster Emergency.
- Ensure that Quick Response Teams are on alert to respond any untoward incidents.

8.8.10 Airline & Ground handling agency:

All Airlines and/or Ground Handling agencies concerned shall on receipt of the natural disaster emergency warning take the necessary action to ensure: -

- All the propeller driven aircraft blades are properly secured.
- All the helicopters are be moored from all sides.
- All the jet engine aircraft; all the turbine blades are secured.
- No loose chokes should be left on the apron.
- In co-ordination with GIAL security, make necessary arrangements for entry.
- All the containers and ULDs are fully fastened to prevent them from flying around and damaging the aircraft and ground installations.
- All mobile ground equipment are parked at their designated points when not in use and hydraulic/manual jacks should be applied to them to

prevent them from rolling.

- All the ground equipment including dolly-trolleys, trestles, and step ladders are checked for serviceability and proper braking.
- All chokes are positioned on both sides of all the wheels so as to arrest sideway/forward movements.
- Temperature permitting parking brakes be kept "ON" during the warning period;
- High-rise vehicles be parked and moved in low-down position, and
- Immediately after use are removed away from the aircraft.
- No equipment left unattended at the airside. The equipment should be positioned at the aircraft parking stand only on the need basis, and during other periods it should be removed to the designated equipment staging area and should be properly secured;
- No loose pieces of cargo should be left on apron or out in the open.
- In case any damage to the aircraft, installations and equipment is observed, report it immediately to the Apron control.

8.8.11 Termination of Natural Disaster:

- The termination of emergency situation shall be declared terminated by AOCC in consultation with IMD in case of Local Scale Disaster.
- If AECC activated, Final Termination will be declared by the Chairman AECC in consultation with all agencies involved in emergency management.
- AOCC will pass notification to all concerned agencies that "Natural Disaster Emergency Terminated"

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Part-2

Aircraft Emergency Handling Procedures, Role And Responsibility Of Emergency Responding Agencies

Part-2, Chapter-1 : Key Functions of GIAL and Other Supporting Organizations/Agencies/Services in Mitigation of Airport Emergencies

GIAL and other internal & external supporting organizations/agencies will be called to mitigate an airport crisis depending on the nature of emergency. The general key functions of GIAL and other internal & external supporting organizations/agencies are as follows:

GIAL Departments

1.1.1 GIAL : Head -Operations

- Shall be responsible for overall management of the emergency.
- Shall respond to and manage the activities of AECC to establish the main point of co-ordination between events that are unfolding at the Combat Zone and other areas involved with the handling of the Incident/accident.
- Initiate the recovery and restoration Process.

1.1.2 GIAL: Aerodrome Rescue and Fire Fighting

- Notify critical information to all concerned as per Notification Chart.
- Command and control of accident site
- Support Triage activities
- Provision and establishment of MCP.
- Rescue Stair in-charge will act as transportation officer and assist medical officer in transporting injured passengers to hospital/ causality center/SRA.
- Support structural firefighting and evacuation
- Mitigation of Dangerous Goods occurrences
- Post-accident Management
- Assist external agencies in mitigating the emergency.

1.1.2.1 Direct and coordinate Members reporting to MCP:

- Identifying MCP with identification flag/beacon – ARFF Support Team
- Setting up Triage Area – ARFF support team
- Triage Area establishment - Medical Doctor

- Establish accident Site cordon – CISF
- Vehicle routing to and from accident site. – CISF.
- Support vehicle staging area – CISF
- Helicopter Landing Site – Airside Operations
- Start video recording -Safety Manager
- Coordinate with stakeholders such as Affected Airline, Civil Defence, and Police.

1.1.2.2 Maintain Constant communication with:

- Rendezvous point to obtain status of reported external agencies and brief accident site details to them.
- Update AECC about the accident site Management and requirement of logistic help if any.
- Firefighting and rescue operation.
- AAIB official for handover of the cockpit voice recorder (CVR) and flight data recorder (FDR) once found.
- Ensure that all survivors and deceased passenger and crews are shifted to safe place from accident site.
- Record all actions on MCP activity report.
- Declare in Phased manner or Full Termination of Aircraft Accident Emergency based on the accident site condition and after consulting ATC, AOCC and AECC Chairman.
- Ensure that maneuvering area is re-commissioned on termination of emergency in consultation with Airside Safety.
- Complete and sign MCP Activity Report and forward copy to Chairman AECC for onward forwarding to DGCA aircraft accident investigation team.

1.1.3 GIAL: AOCC

- Provide necessary communication network and do the initial emergency notification.
- Co-ordinate with Terminal management and stakeholders and provide transportation at accident site.
- Coordinate with stakeholders for effective handling of emergency and maintaining business continuity.

1.1.4 GIAL: Airside operations

- Activation of Rendezvous point and coordinate with responding agencies.
- Escorting external emergency responding vehicles to and from Rendezvous Point to staging area/accident site.
- Provide inputs to Air Traffic Control in regard to runway and/or taxiway closure.
- Co-ordination with all GHA for provision of transportation for survival passengers and flight crew members at airside (crash site to SRA and Emergency medical center)
- Escort of pilot and co-pilot for medical examination from crash site to Emergence medical center.
- Provide ground services support.
- Co-ordinate with Stakeholders/External Agencies for smooth & effective handling of emergency and restoration of operations.
- Ensure completion of necessary airport inspections upon emergency termination.
- Initiation of NOTAM action in consultation with AECC chairman.
- Activate Disabled Aircraft Removal Plan.
- Assist SIC in Investigation and preservation of Evidence.

1.1.5 GIAL: Terminal Management

- Activate AECC.
- Activate the Meeters and Greeters Area as well as Survivor's Reception area and Re-union areas.
- Activation of help desk for passenger's relatives and friends at affected terminal arrival city side.
- Provision of transportation from terminal to meters and greeters area for passenger's relatives and friends.
- Provision of transportation at the accident site in coordination with stakeholders.
- In support of the affected airline staff, render assistance to Meeters and Greeters as well as passengers of an accident.
- Reception and care of uninjured passengers.
- Public information announcements.
- Passenger facilitation and business recovery at terminal buildings.
- Support terminal building evacuation.
- Coordination of operations with AOCC.

1.1.6 GIAL: Medical Services

- Establishment of casualty center.
- Establishment of Triage Area.
- Provide medical assistance to manage and operate Triage Area at the incident Site.
- Make hospital care accessible to all required injured person.
- Aisle with doctors, Ambulance providers & Hospitals to determine the level of response required to satisfactorily manage all the injured.
- Provide AECC with the destination of the injured persons.
- Provide medical assistance in SRA area, Meeters & Greeters area.
- The GIAL Medical officer shall obtain pathological sample (blood and urine) of flight crew, in the presence of SIC/CISF / police personnel.

1.1.7 GIAL: Landside

- Liaise with Govt. agencies, Trade Unions, Taxi Unions, etc. for smooth passenger movement at the landside.
- Ensure crowd control and smooth flow of vehicular traffic at the landside and in the car parking areas.
- Provide facilitation services, as required, including entry passes, to different emergency response agencies/individuals in co-ordination with GIAL security.
- Facilitate prompt entry of external responding agencies to the airside.

1.1.8 GIAL: Safety

- The nominated Safety Investigation Coordinator (SIC) from Safety Department shall act as a single point of contact (SPOC) in case of any aircraft accident/incident.
- The SIC shall ensure that initial actions are carried out at the accident site in coordinated manner and the evidences are not destroyed.
- The SIC shall initiate immediate actions required to facilitate investigation, till the arrival of Investigator nominated by the DGCA/AAIB, while the search and rescue operations are still under-way.

1.1.9 GIAL: Security

- Send representatives at respective gates to facilitate the entry of external responding agencies to the airside.

- Assist Guwahati Police and CISF wherever necessary as requested by these agencies.

1.1.10 GIAL: Engineering

- Provide lightings, technical support and assistance.
- Provided technical assistance as required.
- Support recovery efforts.

1.1.11 GIAL: IT Department

- Provision of necessary communication links between the various emergency centers.
- Ensure redundant communication capacity.

1.1.12 GIAL: Corporate Communications

- Activation of Media Centre.
- Closely liaise with airline authorities and Chairman AECC, GIAL for information to be shared in media releases and briefing.
- Conduct Media briefing and provide NEWS releases in consultation with affected Airline representative.

1.1.13 GIAL : Cargo Department

- Provide Dangerous Goods expertise during dangerous goods occurrences.
- Facilitate Temporary Morgue, if required.

Other Supporting Organizations/Agencies/Services

1.1.14 AAI: ATC

- Act as a warning & notification agency for an aircraft and non-aircraft related accident, incident or emergency.
- Manage air traffic in the area of the accident, incident or emergency including issuance of NOTAM

1.1.15 Affected Airlines/Nominated Handling Agent

The affected airline and its nominated handling agent shall implement their emergency procedures which shall include the following:

- Respond to each of the areas, with a representative for liaison, at the

MCP, AECC, Casualty Centre, Survivors Reception Area, Reunion Area, Meeters and Greeters Area and Hospitals.

- Immediately provide assistance in the Survivors Reception Area, Reunion Area and Meeters and Greeters area for welfare, care and reuniting passengers and relatives in coordination with GIAL, Duty Terminal Manager and CISF.
- Immediately affected airline representative shall available with full and comprehensive passenger and cargo manifest along with details of any dangerous goods at AECC, MCP, Casualty Centre, Meeters and greeters area and Survivors Reception Area.
- Provide technical and engineering support to the MCP for safety advice and salvage of the aircraft.
- Dispatch coaches to the Accident site to transport passengers from accident site to required location. Uninjured passengers will be transported only after being assessed by an attending Doctor.
- Airline shall ensure that all uninjured/ minor injured passengers transferred in SRA will be assessed by the attending doctor before dispatching in reunion area.
- Make a list of uninjured passengers including addresses, contact numbers for accountability, care and counseling and forward the same to AECC.
- Ensure that flight crew is escorted to the Casualty Centre, for pathological samples, in presence of DGCA/CISF / Police.
- Provide a Public Relations Liaison Officer and Media Coordinator to work in coordination with the GIAL Authorities.
- Coordinate with immigration and customs to minimize delays in the clearance of passengers and crew.
- Coordinate for collection of all baggage's from the Customs and Police after obtaining clearance from the AAIB.
- Provide necessary requirements for onward passenger's i.e. hotel accommodations, air transportation or other mode of transportation etc.
- Provide wooden coffins and transportation for the deceased in coordination with police.
- Quarantine and seal all documents pertaining to the flight crew and aircraft.
- Co-ordinate with the Police to provide necessary support to next of kin of the passengers.
- Provide representatives with valid AEP at Cargo Gate for provision of

Temporary Airport entry passes for airline external responders.

1.1.16 All Ground Handling Agent of LGBIA :

- On receipt of information regarding an emergency the GHA shall:
- Provide staff with valid airside driving permit at ATC and Vehicle Gate for escorting external responders up to accident site.
- Provide coaches at accident site, SRA, Casualty Center for transportation of passengers.
- Provide required equipment's, manpower as per notification of Apron Control.

1.1.17 Central Industrial Security Force (CISF):

On receipt of information regarding an emergency the CISF shall:

- Mobilize the forces and ensure dispatch to site. Immediately provide minimum 50 trained staff to assist rescue work at the accident site.
- Ensure that the operations of the Aerodrome Rescue and Fire Fighting services are facilitated and not interfered with, hindered or obstructed in any way.
- Depute senior representative to attend the AECC when established.
- Issue appropriate instructions to Vehicle Gate and ATC Gate to ensure the responding agencies (Fire and Emergency Services, Assam, Ambulances, doctors etc.) are allowed to enter the operational area immediately under the guidance of the "Follow Me" service or escort provided by the Apron Control.
- External responding ambulances, doctors and paramedical staff are allowed to enter the operational area immediately under the guidance of the "Escort Team of GHA" with valid Temporary Airport Emergency Passes (TAEP) issued by GIAL security.
- Issue appropriate instructions for opening of Crash Gate immediately in case ambulance required exit along with injured passengers.
- Set up approx. 100 meters cordon around the accident site including any wreckage trail and ensure that only persons authorized by the On-Scene Commander enter the site until the area is declared "SAFE" by the On-Scene Commander under the guidance of DGCA/AAIB.
- Support ARFF in rescue operation.
- Restrict access to essential services/personnel only in the entire and ensure ground marks associated with the accident are not obliterated.

- The officer in charge of cordon area in consultation with on scene commander will allow volunteers responding to the accident site to different areas as per requirement.
- Ensure that there is no interference or disturbance to wreckage other than is required by the ARFF in the course of firefighting and rescue operation.
- When the area has been declared safe ensure that only authorized officials are permitted to enter the cordoned off area until such time that clearance is given by AAIB/DGCA.
- Isolate the crew from the passengers and have them medically assessed at the triage area/ Emergency medical Centre.

1.1.18 Bureau of Civil Aviation Security (BCAS):

- BCAS is the state organization, responsible for regulating and overseeing aviation security in India. The BCAS is the regulatory authority and will provide the Aerodrome Entry Permits to the approved Emergency Responding Agency, Representatives; such as Police, Civil Defense, Customs, Immigration, Fire and Emergency Services, Assam, Defense Forces (Army, Navy and Air Force), State Disaster Management Authority, MCGM Disaster Management Cell, and Hospitals during an / aircraft/airport emergency/accident/incident. The responsibility of BCAS for issuance of AEP"s is delegated to GIAL Security AEP Section during an aircraft/airport emergency/accident/incident.
- In-case of aircraft/airport accident, where emergency responding agencies are from other nations, the BCAS/GIAL Security shall provide Aerodrome Entry Permits depending on case to case basis.

1.1.19 Fire and Emergency Services, Assam:

On receipt of information regarding an emergency the Fire and Emergency Services, Assam Shall:

- Respond to the designated Rendezvous point at Fire Gate or ATC Gate and wait for an escort by the "Follow Me" vehicle to the rendezvous point or incident site.
- The Senior Fire and Emergency Services, Assam Officer on-site will liaise with the ARFF Senior Officer on-site at the Forward Command Post to assist emergency operations.
- Provide mutual aid resources to the ARFF when required in an airport

emergency. They should provide sufficient no. of Fire Fighters, Appliances and equipment as per their standard operating procedure.

- Provide a full response to dangerous goods occurrence on the airport. If a HAZMAT incident involves an aircraft the Fire and Emergency Services, Assam is required to consult ARFF/GIAL Dangerous Goods expert and the affected airline before intervention.
- When a non-aviation incident is beyond the resources of the ARFF and may affect the category of the Airport, then ARFF On-Scene Commander may request Fire and Emergency Services, Assam to take control of the operation.
- Assist in any other response or recovery operations for which Fire and Emergency Services, Assam equipment is suitable.
- Take command and control, if aircraft accident take place at difficult terrain and outside airport boundary

1.1.20 Police

- Depute a Senior Officer to attend the Mobile Command Post to liaise and coordinate the emergency response operation.
- Liaise with CISF.
- Take appropriate steps to maintain law and order on the landside of the terminals and Airport boundary.
- Coordinate with the traffic police and develop a "Traffic Plan" to ensure access and egress to and from the airport for emergency service vehicles.
- Remain in touch with the Terminal Manager of the affected terminal or the AECC for any assistance or requirements.
- Ensure a representative is available at all concerned hospitals.
- Provide necessary support to the concerned staff of airlines & GIAL for the deceased passenger handling.
- To assist the airline staff in informing the next to kin about the information of deceased of concerned passenger.
- To carry out "Panch-Nama" and to assist post-mortem of the deceased accident victims.
- To cooperate in Post-Accident Management.

1.1.21 DGCA and AAIB:

- Set standards and directions for dealing with all aviation related

emergencies

- Aircraft accident/incident investigation
- Authorize removal of crash/disabled aircraft
- In case of any aircraft accident / incident, the DGCA / AAIB will carry out functions as mentioned in the Aircraft (Investigation of Accidents and Incidents) Rules, 2012.

1.1.22 Bureau of Immigrations, LGBIA:

In the event of an emergency involving an international aircraft:

- If requested provide a mobile clearance team.
- Provide immigration control and clearance facilitation.
- Ensure responsibilities are fulfilled as detailed in Procedure for Immigration and Customs - dealing with Aircraft incident/accident involving International.

1.1.23 Customs, LGBIA:

In the event of an emergency involving an international aircraft;

- If requested provide mobile clearance team.
- Provide Custom control and clearance facilitation.
- Liaise with the Incident Management Team in relation to processing baggage and cargo.
- Ensure responsibilities are fulfilled as detailed in Procedure for Immigration and Customs - dealing with Aircraft incident/accident involving International Flights.

1.1.24 Duty APHO Doctors:

- Provision of Medical Response teams and ambulances for immediate and effective evacuation of victims to appropriate hospitals.
- On arrival at the crash site, report to the Head – Medical, LGBI.
- Activate Internal SOP's at the Hospitals for receiving casualties.
- Advise the AECC on the availability of Facilities such as beds, operating theatres & intensive care beds.
- Inform the AECC about casualties received at the Hospitals.
- Provide information to passengers in relation to quarantine matters.

1.1.25 National Disaster Response Force (NDRF):

On receipt of information regarding an emergency at the airport which requires

NDRF assistance, the NDRF Emergency Operation Centre In-charge shall:

- Immediately depute the nearest Quick Response Team (QRT) to respond to the accident such as **Nuclear, Biological, Radiological, Chemical accident etc.**
- Inform to concerned NDRF Sr. official to report to LGBIA Airport AECC for coordination.
- Remain in contact touch with the AECC or concerned officials for any assistance or requirements.

1.1.26 Crisis Management Group (CMG), DAE- Department of Atomic Energy (For Radiological emergency)

On receipt of information regarding an emergency at the airport, CMG, DAE will:

- Immediately dispatch the Quick Response Team to an airport emergency.
- Depute the concerned functional expert to report to LGBI Airport AECC for expert advice.
- Remain in contact touch with AECC, or concerned officials for any assistance or requirements.

1.1.27 State Disaster Management Cell:

On receipt of information regarding an emergency at the airport, the SDMA (EOC) Emergency Operation Centre In-charge shall:

- Immediately inform the concerned response agencies such as NDMA, NDRF, Collector's Office and other State and National Government Emergency Responding Agencies to respond to the accident.
- Immediately inform to the ASDMA (EOC) for necessary action and co-ordination.
- Depute a senior official as its representative to report to AECC for coordination.
- Remain in contact touch with the AECC or concerned officials for any assistance or requirements.

1.1.28 ASDMA Disaster Management Cell:

On receipt of information regarding an emergency at the airport, the ASDMA Emergency Operation Centre (EOC) In-charge shall;

- Immediately inform the concerned response agencies such as Fire, Police, NDRF, Doctors and Ambulances to respond to the accident site.

- Immediately inform respective ward level EOC for necessary action and co- ordination.
- Intimate the concerned ASDMA representative to report to AECC for coordination.
- Remain in contact with the AECC or concerned officials for any assistance or requirements.

1.1.29 Civil Defense:

- If requested provide manpower, logistic and resources to the agency combating the emergency for carrying out emergency response and recovery operation.
- Provide a liaison officer to attend the AECC, when established.

1.1.30 Chaplaincy/Clergy/Priests and Counselor:

- In the event of an emergency provide Counseling, pastoral care & chaplaincy services to the airport community and victims of a disaster.

2 Part2 Chapter 2: Emergency Operation / Coordination Centre Established For Mitigation of Airport Emergencies

Primary Co-Ordination Departments/ Centers For Activation Of AEP

2.1.1 Air Traffic Control- (ATC)

ATC is to provide air traffic services to all aircraft on the maneuvering area of the aerodrome and all aircraft flying in the vicinity of the Aerodrome.

During Emergency - Responsible for alerting appropriate organization regarding aircraft in need of search and rescue aid and assist such organizations as required.
ATC has a hot line with Fire Watch Tower and crash bell, which alerts Fire Station crew. It has a Siren, which can be operated for Mass notification of a Major Disaster to the entire airport.

2.1.2 Fire Watch Tower - (FWT - ARFF)

Fire Watch Tower is provided to keep a vigil on all the landing and departing aircrafts for any abnormality during this period immediate action to be initiated and also to keeps a vigil on entire airfield for any eventuality happening.

During Emergency:

- FWT will coordinate with ATC, ARFF, AOCC, Apron Control, SOCC and Fire and Emergency Services, Assam for instant response to deal with any type of incident / accident at LGBI Airport.
- ARFF crew will respond to the accident/incident site and maintain survival condition through firefighting and rescue operation.
- Activation of triage setup and assist medical team.
- Fire Control Room will activate Classroom for flight crew holding area.

2.1.3 Airport Operations Control Center– (AOCC):

AOCC is the Joint Operations Control Centre which is a coordination conduit for successful conduct of operations at the airport. AOCC is established by GIAL and with Airlines apart from other concerned GIAL Departments to ensure control, coordination and communication for Airport Operations.

During Emergency – will initiate secondary alarm; notify concern agencies as per call out procedure, initiate NOTAM as per requirement received.

2.1.4 Apron Control:

Apron Control is situated on the airside next to BMA is responsible for looking after the airside safety in relation to aircraft operation, vehicle operations, and other activities carried out at airside.

During Emergency

- Co-ordinate with GHA and affected airline.
- Activation of Rendezvous (RV) Point
- Provide Follow-me services at Cargo Gate for external emergency responders.
- Assist DGCA / AAIB and safety officials.
- Arrange photography/Video shooting of the aircraft.
- Escort flight crew for medical examination.
- Ensure Airport business continuity plan to be implemented.

2.1.5 Security Operation Control Center- (SOCC - CISF):

SOCC is situated in terminal building and their primary responsibility is taking care of overall security of LGBI Airport, and co-ordination between security staff.

During Emergency –

- Co-ordinate with Cargo Gate staff for expedite entry of external emergency responders.
- Co-ordination with CISF – QRT team for deployment of manpower at incident/accident site and at emergency co-ordination centers.

2.1.6 Terminal Operation:

Terminal operation is responsible for smooth and safe operations of terminal buildings.

During Emergency –

- Activation of AECC, SRA, Helpdesk at terminal, Meters and Greeters area, Reunion Area and Media center
- Provide transportation provision from terminal to meeters and greeter's

area for passenger's relatives and friends.

- Provide logistic support, food and beverages.

Activation of Co-ordination centers for mitigation of emergency situation during aircraft incident/accident.

2.1.7 Mobile Command Post (MCP)

Circumscribed	The Mobile Command Post is a Vehicle which is parked at accident site, where Sr. officials of emergency response agencies assemble to receive and disseminate information and make decisions pertinent to co-ordinate emergency response.
Purpose	The Mobile Command Post serves as Command, Co-ordination and Communication Centre at the Combat Zone in case of an airport emergency.
Responsible for	The assigned ARFF crew shall be responsible for positioning the Mobile Command Post near the incident/ accident site. The Mobile Command Post is required to be correctly located at a safe distance from the site keeping in view wind and terrain conditions. Manning of Command Post: ARFF Duty Manager shall act as On-Scene Commander till arrival of Head-ARFF, he shall hand over the command with briefing, who will then be On-Scene Commander. The representative of affected airline and all agencies shall report to the MCP and will receive direction from On-Scene Commander about further course of action. Command and control of incident/accident site through incident commander for smooth transaction of handling emergency situation, compliance with all regulatory norms, co- ordination and liaison with other agencies for additional recourses to mitigate the emergency situation. Establish communication between emergency co- ordination centers for

	handling of emergency situation. i.e. AECC, SRA, Casualty Center, CMO, Transportation Officer, rendezvous point,
Control	Head- ARFF through Duty Manager shall be responsible for the control of all responsibilities to ensure proper functioning of Mobile command post
Facilities	Air conditioning cabin, drinking water, conference table, DishTV, display presentation facility, live coverage and recording of incident site, Video conference, Binocular
Communication	The Mobile Command Post will use following communication media. Walkie Talky (GIAL), two-way VHF communication facilities as follows: 118.75MHz, 121.9 MHz, WLL landline System and Loud Hailer, Fax and printer
Location	**Fire Station**

2.1.8 Airport Emergency Control Centre (AECC)

Circumscribed	The AECC shall perform overall control, command, communication and coordination functions amongst the agencies responsible for providing emergency response and restoration of normal operation.
Purpose	AECC is activated to provide necessary logistics support to the On-Scene Commander and to coordinate with various government and non-government agencies during an airport emergency. It is the highest emergency managing authority at the airport.
Responsible for	Activation of AECC: In the event of any airport emergency, AECC will be activated by the Duty Terminal Manager. Initial Manning of AECC will be by Duty Terminal Manager, until arrival of Head-Operations GIAL designated as Chairman of the

	AECC. The Responsibility shall be handed over to him with briefing, who then takes over as Chairman of AECC. Manning of AECC: The AECC shall be manned by representatives of all the agencies / GIAL Departments responsible to ensure the smooth handling of the emergency and recovery back to normal operations.
Control	GIAL. Head – operations, Chairman of AECC, shall be responsible for ensuring proper function of AECC through Emergency Planner-ARFF.
Facilities	Air conditioning Room, Drinking water, Washroom facility, Seating arrangement for all AECC members, display Boards, FIDS, live coverage of incident site
Communication	Facility is equipped with: Landline for communication and Walkie Talkie for contacting Fire water tower/MCP/ATC
Location	RTC opp. To ATC or as decided by the authority

2.1.9 Emergency Medical Centre:

Circumscribed	It a dedicated medical center established at next to fire station with Examination room, 8 Bed, 50 Stretcher, Dedicated Ambulance parking, Toilet facility and required medicines and medical equipment's.
Purpose	Causality Center is activated by Duty Medical Officer, terminal and provide first aid to injured passengers and crew member, collection and preserved of urine & blood sample of flight crew.

Responsible for	Shall be responsible for providing medical treatment to P2 injured passengers / flight crew and if P2 injured passengers / flight crew became p1 then send to hospital immediately. Collecting blood and urine sample of flight crew and same to be preserve and handed over to DGCA/AAIB official.
Control	The control of all operations at the Emergency Medical Centre and those associated with Medical Services shall vest with the GIAL Head-Medical services
Facilities	Patient examination room, beds, stretchers, blankets, pillows, Medicines, medical equipment's, washroom facility, drinking water facility.
Communication	Facility is equipped with Internet, Extention – 203 (intercom)
Location	Next to Fire Station

2.1.10 Survival Reception Area:

Circumscribed	A dedicated area in the International Arrival Terminal is use as survival reception area for passengers during an airport emergency involving an aircraft accident. Non-hospitalized passengers to be relocated to this area to have all required administrative procedures completed.
Purpose	The creation of a separate area within the terminal where passengers can be received in order to carryout reconciliation and finalize processes prior to unification with their friends and relatives.

Responsible for	In the event of any airport emergency involving an aircraft accident the Survivor Reception Area will be prepared by the Terminal Management team & CISF of the Terminal. Uninjured passengers were brought to SRA, where the passenger's reconciliation process will be carried out by the affected airlines/GHA and further unification with their friends and relatives. CISF is to ensure that, Gates leading towards SHA area to be manned and blocked.
Control	Head-Terminal management through Duty Manager – Terminal shall be responsible for control of all responsibilities with regard to providing the infrastructure assist affected Airline representative and arrangement refreshment for passengers.
Facilities	50 chairs+ additional 100 plastic chairs, Announcement system, Washroom Facility, Refreshment, basis Clothing (Mattress, Blankets,), Facilitation for immigrations, customs Immigration – as per requirement, Customs – as per requirement.
Communication	Telephone for communication is to be established
Location	Terminal : Arrival

2.1.11 Reunion Area:

Circumscribed	A dedicated area near the Airport, in domestic arrival area use as reunion area during an Airport Emergency involving an aircraft accident.
Purpose	The creation of a separate area of Terminal arrival area where passengers can be reunited with their loved ones.

Responsible For	In the event of any Airport Emergency involving an aircraft accident the Re-union Area will be prepared by the Duty Terminal Manager- staff and assist affected airlines/GHA staff in unification process.
Control	Head-Terminal management through Duty Manager – Terminal shall be responsible for control of all responsibilities with regard to providing the infrastructure assist affected Airline representative and arrangement refreshment for passengers
Facilities	Air condition room with Seating arrangement, Washroom Facility, Refreshment
Communication	Telephone with STD/ISD facility and internet facility, Announcement system
Location	Terminal arrival area.

2.1.12 Meters and Greeters Area:

Circumscribed	A dedicated area near the Airport Arrival Terminal to be used as Meeters and Greeters Area for loved ones of passenger of aircraft involved in accident.
Purpose	The creation of a separate area at Airport Arrival Terminal loved ones of passenger and crew were gather for necessary information and further unification process.
Responsible For	In the event of any airport emergency involving an aircraft accident the Meeters and Greeters Area will be prepared by the Duty Terminal Manager of the affected Terminal. The help desk will be set up and same is maintain by affected Airline representative to identify the loved ones of passengers and flight crew.

Control	Head-Terminal management through Duty Manager – Terminal shall be responsible for control of all responsibilities with regard to providing the infrastructure assist affected Airline representative and arrangement refreshment for passengers.

2.1.13 Media Centre:

Circumscribed	Media Centre (MC) is activated after an accident/incident to disseminate information to the media.
Purpose	For continuous flow of authentic information to the media, so that the information is further disseminated to the general public on the status of the accident/incident.
Responsible for	In the event of any airport emergency involving an aircraft accident the Media center will be activated by Duty Manager Terminal, assist Media Management team and further assisted by Corporate Affairs/Corporate Communication.
Control	Head-Corporate communication will control the responsibilities in consultation with affected Airline representative.
Facilities	Seating arrangement, Drinking water, Washroom facility, refreshment.
Communication	PA system,
Location	GIAL Staff Office

2.1.14 Casualty Collecting Area:

Circumscribed	Casualty Collecting area (CCA) is established strategically at the accident site for initial classification of casualties.

Purpose	Before sending the casualties to triage area, initial classification of casualties is carried out at CCA to determine the order of priority and the mode of transportation required. If required, the casualties can be directly sent to transportation area to avoid delay.
Responsible for	Activation of CCA – In event of an accident/incident, the CCA will be activated by ARFF Team. It will be manned and established by Medical Team.
Control	The control of all operations at Casualty Collection Area and those associated with Medical Services shall vest with the GIAL Head-Medical services
Facilities	Stretchers, blankets, pillows, Medicines, medical equipment's, triage equipment's
Communication	Walkie talky, mobile phone
Location	Accident Site (Safe distance from the accident site).

2.1.15 Transportation Area:

Circumscribed	Transportation area is established strategically at the accident site for flow less transportation of vehicle's to/from the accident site.
Purpose	As per requirement on the accident site, vehicles from the rendezvous point are called at the transportation area and dispatched as per need of the situation. The purpose is to avoid traffic congestion and manage smooth flow of vehicles to/from the accident site.
Responsible for	In event of an accident/incident, the Transportation area will be activated by ARFF Team. It will be manned and established by Transportation Officer from Rescue Stair in-charge.

Control	Head – ARFF will control the responsibilities mentioned in clause 14.3, through the FWT official deputed.
Facilities	Ambulances, display boards
Communication	Walkie talky / mobile number
Location	Accident Site (Safe distance from the accident site).

2.1.16 Rendezvous Point:

Circumscribed	A predetermined area where the responding agencies and personnel assemble.
Purpose	A predetermined area where the responding agencies and personnel assemble prior to being directed to the required area. The purpose is to avoid unnecessary congestion at the accident site by allowing only the resources demanded by the incident commander.
Responsible for	Airside Operations department shall be responsible for activating the rendezvous point in case of an aircraft accident/incident.
Control	Head- Operations will control the responsibilities through Duty Manager-Apron in maintaining the RV point
Facilities	Air-conditioning porta cabin with seating arrangement, drinking water
Communication	Walkie talky,
Location	Cargo Gate

2.1.17 Temporary Morgues:

Circumscribed	A location where deceased passengers and crew members are kept temporarily.

Purpose	A location where deceased passengers and crew members are kept temporarily before been transferred to hospital for postmortem examination.
Responsible for	Head-Cargo Terminal will control the responsibility through Duty Manager Cargo for maintaining and activation Temporary Morgue in case of an aircraft accident/incident.
Control	Head Cargo will control the responsibilities through Duty Manager Cargo
Facilities	20X 40 Feet two refer container maintaining with - 4° temperature and lighting facility
Communication	Mobile phone
Location	**Cargo Terminal**

2.1.18 Help Desk at Terminal:

Circumscribed	A location at affected Terminal landside where provision of facilitation for passengers and crew members relatives.
Purpose	A location where identifies the passengers and crew members relatives and kept temporarily before been transferred to meters and greeters area at Arrival Terminal
Responsible for	Head- Terminal Management is responsible through Duty Manager terminal to maintain and activate help desk in case of an aircraft accident/incident.

Control	Head- Terminal Management will control the responsibilities through Duty Terminal Manager and will make an arrangement of transportation for relatives from help desk to meters and greeters area affected airline representative will identify the passenger's relatives at help desk and escort them to meters and greeters' area.
Facilities	Help desk, loudhailer
Communication	Mobile phone :7099090136
Location	Terminal Arrival

3 Part-2, Chapter-3: Medical Examination of Flight Crew members

Reference: - Office of The Director General Of Civil Aviation (Air Safety Directorate) Circular NO.6 OF 2010, (FILE NO. AV- 15011/2/2010 -AS)

This chapter deals with the humanitarian side of an Incident / Accident. It sets out the procedures to be followed in order to minimize suffering of victims but at the same time to meet the requirements of official investigation and the basic right to information. However, the injured crew and passengers who need immediate hospitalization must not be delayed for any formalities with regard to the medical examinations as stated below.

Rescue of Passengers, Crew and Others:

- Any aircraft incident/accident on airport ARFF, Medical services, CISF shall responsible for removal of the person dead or alive from the wreckage.
- If any aircraft incident/accident take place at off airport, Fire and Emergency Services, Assam, NDRF and police shall responsible for removal of the person dead or alive from the wreckage.
    - Extricate persons from the aircraft.
    - Arrange for immediate First Aid and medical attention and hospitalization.
    - Extinguish fire

Preservations of Evidence during Rescue of Passengers, Crew and Others:

- Whilst rescuing the injured flight crew members, their identification and location in or around the aircraft must be carefully observed and recorded.
- In the event of flight crew members being found dead, the necessary photographs must be taken in situ prior to the removal. The removal action should be such as to cause minimum of disturbance to the aircraft wreckage/parts and any such disturbance should be fully recorded.

- The location of the passengers alive or dead should be recorded immediately during rescue/removal operation. However, removal of the injured to the nearest hospital must not be delayed for want of formalities with regard to the recording as stated above.
- Removal of the person dead or alive from the wreckage is the responsibility of Fire Fighting Services as in any other accident.

On Airport Aircraft Accident Procedures for Flight and Cabin Crew:

3.1.1 Priority -1 - injured (immediate hospitalization required):

- All injured flight and cabin crew shall immediately transfer to nearest hospital for further treatment as directed by medical officer.
- Hospitals shall responsible for collection of blood, urine samples of flight crew members for checking the consumption of alcohol, without any loss of time.
- Hospital shall responsible for preservation of medical examination samples and hand over to the DGCA/AAIB for detailed laboratory examination.
- Hospitals shall register every received patient as Medical Legal Case (MLC) as per defined procedure and will inform to area police station.
- The Police authorities and affected airline shall ensure that the samples of blood, urine etc. are taken at the hospital without fail and handed over to DGCA/AAIB.
- All crew shall be released from hospital after clearance from police and DGCA.

3.1.2 Priority -2 – injured (delayed care, may require hospitalization or treatment in casualty center):

- If hospitalization recommended, all process shall be followed as specify for priority-1 crew.
- All flight and cabin crew shall immediately transfer to Emergency Medical center for further treatment as directed by medical officer.
- Medical team of Emergency medical center shall collect the urine and

blood samples of flight crew members for checking the consumption of alcohol, in presence of CISF/Police and affected airline representative.

- The sample should be suitably preserved and handed over to DGCA/AAIB with detailed laboratory examination report.
- All crew shall be released after clearance from police and DGCA.

3.1.3 Priority -3 uninjured and minor injured (only first aid required):

- All cabin crew shall immediately transfer to crew holding area for further procedure and first aid treatment.
- Flight crew members shall immediately transfer under the escort of CISF at Emergency medical center for collection of urine and blood samples for laboratory test.
- Medical team of Emergency medical center shall collect the urine and blood samples of flight crew members for checking the consumption of alcohol, in presence of CISF/Police and affected airline representative.
- The sample should be suitably preserved and handed over to the DGCA/AAIB with detailed laboratory examination report.
- All crew shall be released after clearance from police and DGCA.

3.1.4 Priority -4 Deceased Flight and cabin Crew Members:

- In the event of death of the crew members, the Police authorities shall ensure that the bodies are subjected to detailed postmortem examination immediately to ascertain the precise cause of death including the presence of extent of alcohol, drugs, carbon monoxide etc. in the system.
- The blood, urine and the viscera of the dead should be properly preserved by the doctor carrying out the postmortem examination for further detailed chemical analysis.
- No bodies of the dead crew members especially of flight crew members are to be released even after the postmortem examination has been completed, by the Police authorities or any other authority.
- The DGCA/AAIB investigator In charge/the Civil Aviation Department Headquarters (Director Air Safety) is the only authorized Officer(s) to issue instructions for the release of dead bodies of crew.

On Airport Aircraft Accident Procedures for Passengers

3.1.5 Priority -1 - injured (immediate hospitalization required):

- All Injured passengers shall immediately transfer to nearest hospital for further treatment as directed by medical officer.
- Hospitals shall register every received patient as Medical Legal Case (MLC) as per defined procedure and will inform to area police station.
- All passengers shall be released from hospital after clearance from police and DGCA.

3.1.6 Priority -2 – injured (delayed care, may be hospitalization required or treatment in casualty center):

- If hospitalization recommended, all process shall be followed as specify for priority-1 passengers.
- All passengers shall immediately transfer to Emergency medical center for further treatment as directed by medical officer.
- If possible, passengers shall be transferred to SRA for further procedure.
- All passengers shall be released after general clearance from police and DGCA and completion of immigration and custom procedure.

3.1.7 Priority -3 uninjured/minor injured (requiring first aid only):

- All passengers shall immediately transfer to SRA for further procedure and first aid treatment if any.
- All passengers shall be released after general clearance from police and DGCA and completion of immigration and custom procedure.

3.1.8 Priority -4 Deceased passengers:

- All passengers on board the aircraft who received fatal injury would be subjected to post-mortem examination indicating the nature and extent of injury as well as cause of death with special reference to carbon mono-oxide.
- However, this requirement may be waived off by Inspector of Accident/Investigator, DGCA, AAIB, In-charge of Civil Aviation Department Headquarters (Director of Air Safety) if the nature of accident so warrants.
- After the requirements of DGCA have been complied with, the Police authorities may dispose of the dead bodies of passengers in accordance with their procedures and in consultation with Airlines/operator/owner

(of the aircraft) concerned.

Off Airport Aircraft Accident Procedures for Passengers and Crew:

- ASDMA-Disaster Management Department, Fire and Emergency Services, Assam and Guwahati police shall responsible for initiate rescue work, first aid treatment and hospitalization of survivals.
- Both the agencies shall follow the circular of - OFFICE OF THE DIRECTOR GENERAL OF CIVIL AVIATION (AIR SAFETY DIRECTORATE) CIRCULAR NO.6 OF 2010, (FILE NO. AV-15011/2/2010 -AS) to carry out the process at accident site.

4 Part-2, Chapter-4: Media Management and Photography at Accident Site

Media Management:

- The GIAL Corporate Communications Department has a well-defined Media Handling Plan in place. The Media Handling Plan is automatically activated when the following emergency responses are activated or as felt necessary by Head Corporate Communication:

Activation of Media Plan:

- Accident on Airport
- Accident off airport where LGBIA is Airport of origin or where the destination was LGBIA.
- Unlawful Seizure
- Bomb Explosion
- Major Fire at Airport
- Dangerous Goods Accident leading to mass destruction at LGBIA.
- Natural Disaster leading to mass destruction at LGBIA.

Press or Media Centre:

- A Media Centre will be established to provide up to date information on the incident. The Head Operations/CAO together with the Head Corporate Communications are the authorized spokespersons, who will provide press releases and conduct press briefings in conjunction with the affected airline and other regulatory bodies functioning at the airport.

Photography- Video shooting of accident site:

- Photography and video recording of accident sites should be done in accordance with Rule 7 (2) (a) of the Aircraft (Investigation of Accidents and Incidents) Rules, 2012 and Para 3.2 of the DGCA Air Safety Circular 4 of 2013. The official photographer of GIAL or any photographer authorized by GIAL, shall only be permitted to undertake photography / videography of the accident site.
- The photographer shall also give an undertaking to maintain the secrecy of the film. All charges relating to photography and videography shall be

borne by the affected airline.

Termination/Stand down

- Media Centre is deactivated / terminated by the Chairman AECC in consultation with the State Police and the affected airline following an assessment of the media interest in recovery operations.

Note: The media plan may be activated as and when necessary.

5 Part-2, Chapter-5: Temporary Airport Entry Permit for Emergency Responders.

Purpose

The purpose of this chapter is to define the procedures to be followed by GIAL & CISF staff for enabling expeditious entry of External Emergency Responders to the airside at times of emergency.

Scope

The scope of the chapter applies to the Aircraft incident/accident taking place at LGBI Airport. These procedures will be applicable to GIAL, CISF and the external responding agencies reporting at LGBIA during aircraft incident/accident for assisting GIAL in mitigating the effects of aircraft incident/accident.

Objective

The objective of this chapter is to ensure expeditious entry of external emergency responders to the airside to support GIAL in responding to aircraft incidents/accidents.

Issuances Of "Temporary Airport Entry Permit" During Emergency

GIAL Security (pass section) will issue "**Temporary** Airport Entry Permit" as per BCAS guidelines at airport entry at Cargo Gate only.

Temporary Airport Entry Permit shall have access to all the areas activated during emergency.

Contact details for GIAL AEP Section for issuance of "Temporary Airport Entry Permit" during emergency only.

- Cargo Gate: Intercom No.731
- AEP Section : +91 9540327888 (GIAL CSO for emergency)

Process for issuance of Temporary Airport Entry Permit in case of an emergency–

5.1.1 Fire and Emergency Services, Assam:

On receipt of information regarding any incident/accident, CISF at cargo gate allow direct entry to Fire and Emergency Services, Assam vehicles under the escort of Follow Me vehicle.

5.1.2 Panel Hospitals, Ambulance Services and Doctors as per AEP:

GIAL security will issue Temporary Airport Entry Permit at Cargo gate all medical responders shall be issued TAEP on exchange of valid Govt. ID i.e. Aadhar Card /PAN Card /Voter ID/Driving License.

5.1.3 Affected Airline Responders –

9.8.1.1 **Indian Nationality**

GIAL security will issue Temporary Airport Entry Permit at pass office for airline emergency responders after authentication by representative of affected Airline holding valid AEP.

9.8.1.2 **Foreign Nationality**

GIAL security will issue Temporary Airport Entry Permit at pass section for airline emergency responders after authentication by representative of affected Airline holding valid AEP. (Original valid passport will be kept with GIAL- security until TAEP handed over to pass section)

5.1.4 Other Emergency Responders –

GIAL security will issue Temporary Airport Entry Permit at pass section for any other emergency responders after authentication/ telephonic permission from Chairman – AECC or his representative.

Responsibility

- GIAL Head-Security shall have the overall responsibility of ensuring compliance with the procedures laid down in this chapter for expeditious entry of emergency responders during incidents/accidents at LGBI Airport.

- He shall be responsible for issuance of Temporary Airport Entry Permit to the emergency responders to ensure their expeditious entry to the airside during incident/accident at LGBIA through GIAL Security pass section Personnel.

- GIAL Head-Operations shall be responsible for co-ordination of activities amongst external emergency responders responding to the emergency at the airside.

- Head – ARFF shall be responsible for prompt notification of Aircraft incident/accident at LGBI Airport to all concerned agencies as determined in AEP including SOCC through FWT.

- Head – AOCC shall be responsible for prompt notification of Aircraft incident/accident at LGBI Airport to GIAL Security and landside department.

- Head – Landside shall be responsible to ensure smooth flow of vehicular traffic at the landside and to ensure that landside areas in front of the entry gates (Cargo Gate) are free of obstructions.

- Head – CISF will have the overall responsibility to facilitate the expeditious entry of external emergency responders to the airside during Aircraft incident/accident at LGBIA.

- Head – Medical Services shall be responsible to provide updated/ revised list of panel Hospitals, Ambulance Services and Doctors to GIAL Security & Chairman -AECC.

Procedure

- In case of an aircraft incident/accident at LGBI Airport, GIAL through ARFF, Apron Control & AOCC shall inform all concern agencies determined as per notification chart.

- On receipt of incident/ accident information, SOCC will ensure that all

CISF check posts including ATC Gate & Vehicle Gate are intimated about the Aircraft incident/accident.

- On receipt of incident/ accident, Cargo Gate CISF in-charge allow direct entry for Fire and Emergency Services, Assam vehicles, along with conformation of escorting with follow-me jeep at airside.
- GIAL security shall send representatives at Cargo Gate for issuance of Temporary Airport Entry Permits to external emergency responders.

- Temporary Airport Entry Permits will be issued to External Emergency Responders according to defined process.

- While issuance of Temporary Airport Entry Permits, GIAL Security shall brief the external emergency responders to return the permits during their exit to the CISF personnel posted at respective Airport gate. However, returning of such TAEP will be the responsibility of concern agencies.

- CISF shall ensure that the emergency responding vehicles/personnel other than Fire and Emergency Services, Assam are permitted entry to the airside through Cargo gate released on the Temporary Airport Entry Permits issued to them by GIAL security department.

- GIAL Airside safety department shall depute Follow-me vehicle each at Cargo Gate. The Follow Me vehicle deputed at ATC Gate shall activate the rendezvous point.

- GIAL Airside safety (Follow Me vehicle) shall intimate the CISF personnel manning the respective gates that follow-me vehicle is available at airside for escorting Fire and Emergency Services, Assam and other emergency responding vehicles.

- Follow Me vehicle shall escort all Fire and Emergency Services, Assam vehicles up to Rendezvous point or the incident/accident site, depending

upon the situation.

- Follow Me vehicle of respective gate shall co-ordinate with GHA for provision of escorting for other emergency responding vehicle.

- On receipt of information about the Aircraft incident/accident the identified Ground handling Agencies, as agreed, shall depute sufficient staff with valid ADP at Cargo Gate for providing necessary escort to the external emergency responders. These staff shall board the external emergency responder vehicle, ambulance and guide these vehicles to reach the directed site, which could be Rendezvous point or the incident/accident site, depending upon the situation. On receipt of Temporary Airport Entry Permits the external emergency responders shall be escorted to rendezvous/incident/accident site by Ground handling Agencies deputed at Cargo gate respectively. GIAL Landside Operations shall liaise with Guwahati Traffic police for smooth flow of vehicular traffic at the landside with special attention on the Rendezvous area, Cargo Gate.
- On receipt of information the external emergency responders, taking into consideration their response time, shall report to gate No. 1 or Gate no. 5. CISF staff at respective gates shall direct emergency responders without passes to GIAL- Security desk at gates for obtaining their TAEP

6 Part-2, Chapter-6 Emergency Exercises

Periodic emergency exercises and Modular tests shall be conducted at LGBIA in order to ensure the adequacy and the effectiveness of the AEP and the action by individual participating agencies/organizations. The exercises/tests shall be conducted in accordance to the requirements laid down in DGCA, CAR, Section 4, series B, Part 1.

The Exercises shall be conducted on the following schedule:

- **Full-Scale Exercise** -At least once every two years.
- **Partial Exercise -** At least once every year that a full-scale exercise is not held or as required to maintain proficiency.
- **Modular Tests** – As detailed below:

Sr No	
Modular test	
Test parameters	
Objective	
Responsible department	
Schedule	

Modular Test Schedule

Sr. No	Modular Test	Test Parameters	Objective	Responsible Department	Schedule
1.	ARFF Response to aircraft incident / accident	PPE & TOG donning time by ARFF crew. Station Turn out time. CFT acceleration check. Familiarization of ARFF crew with the topography of movement area.	The objective of this test is to ensure that ARFF team meets its stipulated response time.	ARFF	7 months before conduct of Full-scale Exercise.
2	Triage Area set up & establishment of MCP	1. Familiarization of ARFF crew with the procedure involved in inflation of Tents. Time taken in inflating the tent. Time taken to activate all components of MCP.	The objective of this test is to ensure that ARFF team is familiar with the procedure involved in timely setting up of triage and establishment of MCP	ARFF	6 months before conduct of Full-scale Exercise.
3	Strategic planning for Rescue & firefightin g	Evaluation of the situation. Positioning of CFT"s. Protection of egress route to	The objective of this test is to ensure that ARFF crew are well versed with: The hazards associated with	ARFF	5 months before conduct of Full-scale Exercise.

	operation.	facilitate self-evacuation. Fire Fighting operation using monitor and side lines.	specific incident/ accident. Skills required in initiating Rescue & firefighting operations.		
4	Utilization of Rescue equipment .	Provision, pitching and rescue using rescue ladder Operation of Power operated rescue tools.	The objective of this test is to ensure that ARFF crew is well versed with the operation of rescue tools.	ARFF	4 months before conduct of Full-scale Exercise.
5.	Tabletop Exercise	Familiarization of all concerned departments /agencies with their roles as defined in AEP. Effectiveness of Communication	The objective of this test is to ensure that of all concerned departments/agencies are familiar with their roles as defined in AEP.	All concerned agencies as determined in series of meeting conducted during FSE.	1 month before conduct of Full-scale Exercise.

- The emergency exercises must be coordinated by GIAL ARFF and involve all the operational units of GIAL, Fire & Emergency Services, Assam/Airline/ Ground Handlers,
- AAI, CISF, DGCA, BCAS, Police, Customs, Immigrations, Medical Services, Municipal Corporation units and other supporting agencies.

- Review of the emergency exercises must be conducted after each exercise so as to identify deficiencies/ weakness and to ascertain improvement measures

7 Part-2, Chapter-7: Human Factors Principles for Airport Emergency Plan

The Para 9.1.6 of Civil Aviation Requirement Section 4, Series B, Part I mandates the aerodrome operators to observe the human factors principles for Airport Emergency Plan at an aerodrome in India. With Reference to the CAR and subsequently issued Aerodrome Advisory Circular No. 1 of 2017 by Government of India, Office of Director General of Civil Aviation, this chapter determines the human factor principles applied during preparation of this plan and implementation thereto in order to ensure that concerned personnel are conversant with the application of human factors.

Human Factors

The subject of human factors is about people. It is about people in their working and living environments. It is about their relationship with equipment, procedures and the environment. Just as importantly, it is about their relationships with other people. Human Factors involve the overall performance of human beings within the aviation system; it seeks to optimize people's performance through the systematic application of the human factors. Its twin objectives can be seen as safety & efficiency and well-being of operational personnel.

Human Factors is essentially a multidisciplinary field, including but not limited to; psychology; engineering; physiology; sociology; and anthropometry. Indeed, it is this multidisciplinary nature and the overlapping of the constituent disciplines that make a comprehensive definition of Human Factors challenging.

The SHEL Model

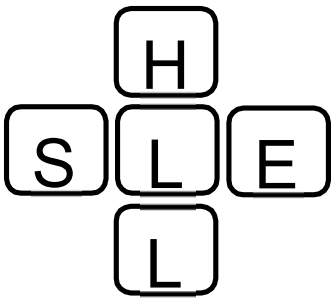
The SHEL model provides a conceptual framework to help understand Human Factors. It illustrates the various constituents and the interfaces - or points of interaction - which comprise the subject. Human Factors elements can be divided into four basic conceptual categories:

- **Software**: plans, procedures, documentation etc.
- **Hard ware**: machine, equipment, etc.

- **Environment**: internal (e.g. workplace), external (e.g. surroundings) etc.
- **Live ware**: the human factor

Interactions between people and the other elements of the SHEL model are at the heart of Human Factors, which involves the interfaces between:

- **People and machines** - "Live ware vs. Hardware"
- **People and procedures** - "Live ware vs. Software"
- **People and colleagues** - "Live ware vs. Live ware"
- **People and workplace** - "Live ware vs. Environment



S = Software (Plans, Procedures)
H = Hardware (Machines, equipment's)
E = Environment
L=Liveware

The SHEL Model as modified by Hawkins

The Need For Human Factors In Airport Emergency Planning

The overall safety and efficiency of the civil aviation system depends on human operators as the ultimate integrators of the numerous system-elements. This dependence is unlikely to decrease, and may even increase in unanticipated ways, as additional advanced technology is implemented. To a greater extent, understanding and accounting for the role of humans, including their positive and negative contributions, will be important in maintaining and improving safety while improving efficiency.

The human sciences study the structure and nature of human beings, their capabilities and limitations, and their behaviors both singly and in groups. Human Factors uses this information based on its relevance to practical problems.

Emergency planning being the process of preparing the aerodrome to cope with an emergency with the objective of minimizing its effect particularly in respect

of saving lives and maintaining aircraft operation, implementation of human factors principles becomes an integral part of it.

Application of Human Factors Principles:

The Human Factors Principles that are taken into account while developing procedure and guide lines for Airport Emergency Plan can be classified into two broad pillars as follows:

a. Operational effectiveness and standards of ARFF services.

b. Safety and well-being of ARFF services personnel.

Operational effectiveness and standards of ARFF services:

Following measures have been adopted to achieve desired operational effectiveness and standards of ARFF services:

- As the success of any ARFF services rely very much on teamwork, the importance of building mutual trust and team coordination amongst staff during training cannot be overstressed **(Live ware vs. Live ware)**.
- In order to achieve this objective, the ARFF training module has been designed in such a way that it incorporates activities that require team co- ordination to achieve its goals. Drills such as tactical and strategic planning require ARFF crew to demonstrate good teamwork to achieve their objective.

- In order for ARFF training to be as realistic as possible, live fire training is crucial in helping ARFF personnel acclimatize to a heat and smoke filled environment **(Live ware vs. Environment)**, so that in the event of an actual emergency, ARFF personnel will be able to execute their tasks more confidently and effectively.
- Hot fire drills on monthly basis and smoke Chamber drill at regular intervals are conducted to check the efficiency and efficacy of ARFF crew and to accustom them to a heat and smoke-filled environment respectively.

- ARFF operations require firefighting personnel to be proficient in the operation of fire vehicles and other rescue equipment **(Live ware vs.**

Hardware). This is crucial as it would enable the ARFF service to control any aircraft fires swiftly and effectively and facilitate the evacuation and rescue of survivors.

- The Crash Fire tenders (CFT) available with ARFF services has been designed taking into account the human instinct and intuition of the vehicle operator. In order to optimize human performance during training and operations, sufficient emphasis has been laid on the design ergonomics of CFT‟s during the pre-fabrication stage.
- In addition, a CFT Driving Certification program has been designed which requires an ARFF official to undergo specific hours of training on CFT to be eligible for driving Certification. Important parameters such as technical knowledge, Operational familiarization and driving skills are considered during certification process which plays an important role in inducing confidence of the ARFF crew while driving CFT‟s.

- The design of fire stations is another important factor that could affect the human performance of ARFF personnel when responding to aircraft accidents or incidents **(Live ware vs. Environment)**.
- The fire station available at LGBIA, is designed in such a manner so as to reduce the travel distance required to reach the accident/ incident site, and subsequently adhere to the stipulated response time in the event of an aircraft emergency.

- Communication is possibly the most important human factor in ARFF operations **(Live ware vs. Hardware and Live ware vs. Live ware)**. Operational readiness and safety standards will be compromised without effective communication amongst ARFF personnel, air traffic control and pilots.

- In order to ensure seamless communication amongst ARFF personnel, with air traffic control, pilots and other relevant departments, ARFF services have been provided with three channels of VHF Radio Telephony facilities. TMRS communication facilities facilitate intra department as well as inter department communication. In order to avoid delay in communication, the ARFF service has a direct hotline with ATC and a crash bell to alert the services immediately. As a local mode of

communication, the MFS is provided with a Public Announcement system to alert the crew and pass on important information's.

- In addition, the ARFF training programs, which are conducted at regular intervals, incorporate necessary components to ensure the ARFF crew are well versed with the utilization of the communication facilities and are appropriately trained in accurate and timely transmission of information.

- It is important for ARFF personnel to be well acquainted with the different configurations of various aircraft types operating at the particular aerodrome (Live ware vs. Hardware). Boosting the knowledge of ARFF personnel in these areas would indirectly enhance human performance during a response to any aircraft emergency.

- In this view ARFF training program includes familiarization of Aircraft at regular intervals with special emphasis on type of Aircrafts that are new at the Airport.

- The ARFF industry is a highly specialized one which compels the management and leadership team of ARFF services to promulgate a system of self-evaluation.

- At LGBIA, the evaluation process of ARFF involves individual performance as well as performance of the overall team. Various individual drills are carried out to check the performance of an individual and a tactical drill is conducted wherein coordinated efforts of team is essential to achieve better results. Physical efficiency of an individual is evaluated under the guidance of a professional and results are utilized to bring in positive changes. Such drills/tests not only include the ratings and revalidation of individual standards but place heavy emphasis on the collective performance of an ARFF as a team **(Live ware vs. Live ware).**
- Strategic planning drills are conducted wherein unforeseen situations are injected to highlight human reactions to such circumstances which are further used to modify and improve training programs in order to enhance human performance during ARFF operations.

Safety and well-being of ARFF services personnel.

- In the aftermath of an aircraft accident, it is often necessary to provide psychological treatment for the survivors. However, airport operators and ARFF services must also not neglect the mental and psychological well-being of emergency responders such as ARFF personnel who may suffer from post- traumatic stress disorders. Appropriate counseling of psychological therapy may need to be provided to ARFF personnel who responded to such emergencies and who subsequently not able to cope with the stress they face thereafter. Such situations may arise from the gruesome sight of a crash scene that made them not being able to carry on with their normal lives.

- It will therefore be essential to also provide psychological treatment for ARFF personnel after a major crisis **(Live ware vs. Live ware)** both from a welfare perspective and also from a business continuity stand point. Taking into consideration the post-traumatic stress disorders that the emergency responders may suffer, and to ensure their mental and psychological well-being, GIAL has entered into memorandum of understanding with hospitals in near vicinity of Airport, to provide Psychiatric, doctors and other required medical resources in a timely manner. The arrangement also takes care of the medical resources required to handle the overall operations.

- The job nature of ARFF personnel poses numerous potential hazards (**Live ware vs. Environment**). The risk of inhalation of carbon or smoke particles when extinguishing a fire, either during an incident or during training, is very high. In order to ensure personal safety, all ARFF officials have been provided with individual personal protective equipment (PPE) which includes overall suit, helmet, hand gloves and safety boots. Sufficient number of self- containing breathing apparatus (SCBA) have been made available in CFT‟s to meet any situational demand. In addition to it, the uniform worn by ARFF personnel has been designed to suit the local climatic conditions.

- To ensure that ARFF personnel are able to perform their roles effectively

thought needs to be put into designing an appropriate physical fitness program to condition them for the physical rigorous of the job **(Live ware vs. Environment).**

- In the process of designing an annual based Endurance test program for ARFF crew at GIAL, due considerations have been given to individual human limitations. Considering the fact that not all personnel can perform at the same level, the endurance test program replicates minimum physical fitness requirements of a fire fighter.
- In addition to these recreational programs are organized at regular intervals which include sports and cultural activities to take care of the physical as well as the mental stress.
- Noise is an important human factor (**Live ware vs. Environment**) that is omnipresent in an airport environment and cannot be ignored. Most fire stations are located within close proximity of the runway and aircraft movement areas, thus exposing ARFF personnel to constant loud noises. To address this issue, all officials of ARFF services have been issued with suitable hearing protection devices with a mandate to use the same. In addition, ARFF personnel are required to undergo Medical examinations which include noise induced deafness (NID) hearing tests.

- Fatigue is one important factor that directly affects human performance and is greatly influenced by the shift system of ARFF services (Live ware vs. Software). In compliance to the Local Labor rules and despite the need to be on 24- hour operational readiness, the duty pattern of ARFF officials has been designed in such a manner that it allows sufficient rest period to the official between two shifts. In addition, if rest becomes inevitable during working hours, rest rooms with adequate facilities have been provided to ARFF services.

- A leader is an individual whose ideas and actions influence the thought and behavior of others (**Live ware vs. Live ware**). Through the use of motivation and persuasion, and an understanding of the goals and desires of the team, the leader becomes an agent of change and influence. Considering the fact that skilled leadership may be needed to understand and handle various operational, training and administrative aspects, the

ARFF Training Module includes various advanced courses that are conducted externally at DGCA recognized Training institutes and which are mandatory for the ARFF officials to clear in order to attend higher position in the department.

Part 3

Part-3, Chapter-1: Abbreviations

Abbreviations

AAI	Airports Authority of India
AAIB	Aircraft Accident Investigation Bureau
AEC	Airport Emergency Committee
AECC	Airport Emergency Control Centre
AEP	Aerodrome Entry Permit
AERA	Airport Economic Regulatory Authority
AEP	Airport Emergency Plan
AFAS	Airport Flight Announcement System
AME	Aircraft Maintenance Engineer
AOCC	Airport Operations Control Centre
ARFF	Aerodrome Rescue and Fire Fighting
ARO	ATS Reporting Office / Officer
APHO	Airport Health Officer
ASG	Aviation Security Group
ATA	Actual Time of Arrival
ATC	Air Traffic Control
ATS	Air Traffic Services
ATIS	Automatic Terminal Information Service
BARC	Bhabha Atomic Research Centre
BCAS	Bureau of Civil Aviation Security
CAR	Civil Aviation Requirements
CBR	Chemical, Biological, Radiological
CC	Casualty Centre
CCC	Crisis Control Centre
CMG	Crisis Management Group
CMO	Chief Medical Officer
CNS	Communication Navigation Surveillance
LGBIA	Lokpriya Gopinath Bordoloi International Airport
CISF	Central Industrial Security Force
F&ES	Fire and Emergency Services, Assam
TWY	Taxiway

VoIP	Voice over Internet Protocol
WSO	Watch Supervisory Officer
DAE	Department of Atomic Energy
DG	Dangerous Goods
DMO	Duty Medical Officer
DGCA	Director General of Civil Aviation
DVI	Disaster Victim Identification
DVR	Disaster Victim Registration
ES	Emergency Services
MCP	Mobile Command Post
FWT	Fire Watch Tower
IATA	International Air Transport Association
ICAO	International Civil Aviation Organization
IVRS	Interactive Voice Response System
JCC	Joint Control Center
GIAL	Guwahati International Airport Pvt. Ltd.
MFS	Main Fire Station
MRCC	Maritime Rescue coordination Centre
NDMA	National Disaster Management Authority
PAX	Passengers
PIC	Pilot In-Command
POB	Persons on Board (includes crew)
RCC	Rescue Coordination Centre
RA	Reunion Area
RWY	Runway
ROIP	Radio over Internet Protocol
SDMA	State Disaster Management Authority
SIC	Safety Investigation Coordinator
SRA	Survivors Reception Area
TMRS	Trunk Mobile Radio System

Part-3, Chapter-2: Glossary of Terms

Terms used in this Airport Emergency Plan (AEP), shall be interpreted as follows:

1. Activation

The process followed to initiate a specific Airport Emergency Response.

2. Aircraft Accident

- Aircraft accident shall mean an occurrence associated with the operation of an aircraft which
- In the case of a mannedaircraft, takes place between the time any person boards the aircraft with the intention of flight until such time as all such Persons have disembarked; or

- In the case of an unmanned aircraft, takes place between the time the Air craft is ready to move with the purpose of flight until such time as it come s to rest at the end of the flight and the primary propulsion System is shut down, in which –

a. person is fatally or seriously injured as a result of –
   - Being in the aircraft, or
   - Direct contact with any part of the aircraft, including parts which have become detached from the aircraft, or
   - Direct exposure to jet blast, except when the injuries are from natural causes, self- inflicted or inflicted by other persons, or when the injuries are to stowaways hiding outside the areas normally available to the passengers and crew; or

b. The aircraft sustains damage or structural failure which

   - Adversely affects the structural strength, performance or flight
   - Characteristics of the aircraft, and would normally require major repair or replacement of the affected Component, except for failure of engine or damage, when the damage is limited to a single Engine, (including its

cowlings or accessories),to propellers, wing tips, antenna probes, vanes, tires, brakes, wheels, fairings, panels, landing gear doors, windscreens, the aircraft skin (such as small dents or puncture holes), or for minor damages to main rotor blades, tail rotor blades, landing gear, and those Resulting from hail or bird strike (including holes in the radome); or

c. The aircraft is missing or is completely inaccessible.

Source: Annexure 13, Aircraft Accident and Incident Investigation.

3. **Aircraft Incident**
   An occurrence, other than an accident, associated with the operation of an aircraft, which affects or could affect continued safe operation if not corrected. An incident does not result in serious injury to persons or substantial damage to aircraft.
   Source: Annexure 13, Aircraft Accident and Incident Investigation.

4. **Aircraft operator**
   A person, an organization or an enterprise engaged in or offering to engage in aircraft operations.

5. **Airport / Aerodrome**
   A defined area on land or water (including any buildings, installations and equipment) intended to be used either wholly or in part for the arrival, departure and surface movement of aircraft.

6. **Airport Agency**
   Those agencies associated with LGBIA and identified in this AEP as having responsibility for responding to an Airport Emergency.

7. **Airport Emergency**
   An airport related incident or accident, natural or man-made, which warrants action in order to save lives, protect property, maintaining aircraft operations and public health.

8. Aircraft

Any machine that can derive support in the atmosphere from the reactions of the air, other than the reactions of the air against the earth's surface.

9. Airport Emergency Control Centre (AECC)

The AECC/CCC is established by GIAL as a control, coordination and communications center used during an Airport Emergency to be staffed by senior representatives of those organizations who are members of the AEC and the affected airline.

Note: The AECC/CCC will be chaired by the Senior GIAL representative who is authorized to expend such funds on behalf of GIAL as are required for the successful conduct of relief and recovery operations in relation to the incident.

10. Airport Emergency Plan

The laid down procedures for Aerodrome emergency response which includes-coordinating the response of airport services with other agencies in the surrounding community, which could assist in responding to an emergency occurring on or in the vicinity of the airport.

11. Airside

The movement area of the airport, adjacent terrain and buildings or portions, thereof access to which is controlled.

12. Apron

A defined area, on a land aerodrome, intended to accommodate aircraft for the purpose of loading or unloading passengers, mail or cargo, fueling, parking or maintenance.

13. ARFF Turnout Area

The area one kms in the approach path and one kms around the boundary of the Airport.

14. Bomb Threat

A communicated threat, anonymous or otherwise, which suggests, or infers,

whether true or false that the safety of an aircraft in flight or on the ground, or any airport or civil aviation facility or any person may be in danger from an explosive or other item or device.

15. Bureau of Civil Aviation Security (BCAS)

The State organization, responsible for regulating and overseeing aviation security in India.

16. Emergency Medical Centre

A medical care centre located on the airside to which casualties may be relocated from the incident site.

17. Combat Agency

The agency nominated in this plan as having primary responsibility for controlling the response to a particular emergency and who will provide the On-Scene Commander.

18. Combat Zone

The area around the site of the incident that is nominated by the On- Scene Commander to be a restricted area with access only to those who are approved by the On-Scene Commander for the purpose of rescue and firefighting operations. This area will normally be a circle with radius of 100 meters around the site and will be strictly enforced by CISF.

19. Command

Command is the direction of members and resources of an organization in the performance of the organizations role and tasks. Authority to command is established by individual organizations and operates vertically within organizations.

20. Control

Control means the overall direction of the activities, agencies or individuals concerned in an incident. Authority for control is established in this emergency plan and carries the responsibility for tasking, and coordinating other agencies in accordance with the needs of the situation. In this context, tasking means telling people what to do but not how to do it as this is the

province of each organization involved in the incident.

21. Coordination

Coordination means the bringing together of organizations and elements to ensure the effective counter-emergency response and is primarily concerned with the systematic acquisition and application of resources (organization, manpower and equipment) in accordance with the requirements imposed by the threat or impact of an emergency.

22. Dangerous goods

Articles or substances which are capable of posing a risk to health, safety, property or the environment and which are listed as such are in Technical Instructions or which are classified according to the Technical Instructions.

23. Dangerous goods accident

An occurrence associated with and related to the transport of dangerous goods by air which results in fatal or serious injury to a person or major.

Note: The On-Scene Commander will establish communications and provide regular situation reports to the ATC and AECC/CCC as required.

24. Emergency

Emergency means any actual or imminent occasion or incident due to an occurrence such as fire, flood, storm, earthquake, terrorist act, accident, epidemic, or warlike action which:

- Endangers, or threatens to endanger, the safety or health of person/s or animal/s.

- Destroys or damages, or threatens to destroy or damage, property or being an emergency, which requires a significant and coordinated response.

25. Emergency Panel

Supporting medical, hospital and ambulance services that are available to provide emergency response and care to the injured in the event of an incident at the airport.

26. Environment

The components of earth, including.

- Land, air and water: and
- Any layer of the atmosphere; and
- Any organic or inorganic matter or living organism; and Human made or modified structures and areas and includes Interacting natural ecosystems.

27. External Support Agencies

Any support agency with its normal operation located outside the boundaries of the airport.

28. Mobile Command Post (MCP)

The location at the scene of an emergency where the On-Scene Commander is located and where command, coordination, control, and communications are centralized.

To enable the On-Scene Commander to adequately manage an incident it is imperative that a MCP management team be established. The MCP management team should consist of representatives from organizations involved in the response to the incident. The GIAL MCP management team shall consist of the following:

- Head ARFF/Duty Manager - ARFF.
- CISF Representative.
- Civil Defense Coordinator.
- Airline Representative.
- Duty Manager Apron Control till the arrival of Head Operations.
- Safety Investigation Coordinator, GIAL.
- AAIB /DGCA (Optional)
- Guwahati Police Representative

29. Full Emergency

A condition declared when an aircraft approaching or departing from the airport is known or suspected to be in such trouble that there is danger of an accident and notification to more than the airport based responding agencies is advisable.

30. Hijacking

Any person who on board an aircraft in flight:

- Unlawfully, by force or threat thereof, or by any other form of intimidation, seizes, or exercises control of that aircraft, or attempts to perform any such act, or
- Is an accomplice of a person who performs or attempts to perform any such act, commits the offence of hijacking that aircraft.

31. Incident

An incident is a localized event, either accidental or deliberate, which may result in death or injury or damage to property which requires response from an agency, or agencies.

32. Incident Site

The physical location where an incident took place, the area will be included in the Combat Zone.

33. Internal Support Agencies

Any support agency with its normal operation located inside the boundaries of the Airport.

34. Airport Operations Control Centre (AOCC)

The AOCC is the Joint Operations Control center which is a coordination conduit for successful conduct of operations at the airport. The AOCC is established by GIAL and partnered by stakeholders like, Airlines and other concerned GIAL Dept ensures control, co- ordination and communication for Airport Operations.

35. Cityside

The portion of the airport not designated airside and to which the general public normally has free access.

36. Local Standby

A condition declared when an aircraft approaching the airport is known or is suspected to have developed some defect but the trouble is not such that it

would normally involve a serious difficulty in effecting the safe landing and thus does not require a response from external support agencies.

37. Maneuvering Area

That part of an aerodrome used for takeoff, landing and taxiing of aircraft, excluding aprons.

38. Meeters and Greeters Area:

A pre-defined area within a terminal where people, who have relatives or friends on an aircraft involved in an incident or accident, can report for information and assistance.

39. Movement Area

That part of an aerodrome to be used for takeoff, landing and taxiing of aircraft, consisting of the maneuvering area and the apron(s).

40. On-Scene Commander

Person designated to take charge of the over-all emergency operation.

41. Pre-Determined Position (PDP)-ARFF Standby Positions

The predetermined location to where the Airport Fire Vehicles will respond to standby during a Local Standby or Full Emergency. The Shift-In-Charge will retain the prerogative to alter stand-by positions for operational reasons. Any change of location will be notified and coordinated through to ATC.

42. Rescue Coordination Centre (RCC):

A unit responsible for promoting efficient organization of search and rescue services and for coordinating the conduct of search and rescue operations within a search rescue region.

43. Reception Area

An assembly area located on the airport for non-hospitalized passengers and crew to assemble prior to Reunification with relatives or friends.

44. Recovery

Recovery in relation to an airport emergency covers the processes of

returning LGBIA to its normal operational status after an emergency.

45. Rendezvous Point

A pre-arranged reference point, i.e. road junction, cross-road or other specified place to which personnel / vehicles responding to an emergency situation initially proceed to receive directions to staging area and / or the accident / incident site.

46. Response

Response in relation to an airport emergency includes the process of reporting to, combating and of providing immediate relief for people affected by the emergency.

47.Sabotage

An act or omission, intended to cause malicious or wanton destruction of property, endangering or resulting in unlawful interference with international civil aviation and its facilities.

48. Staging Area

A prearranged, strategically placed area where support response personnel, vehicles and other equipment can be held in readiness for use during an emergency.

49. Sub Plan

An action plan required for a specific hazard, critical task or special event. It is prepared when the management arrangements necessary to deal with the effects of the hazard, or critical tasks or special event differ from the general coordination arrangements set out in the main plan for the airport.

50. Support Agency

Agencies or organizations both internal and external to the Airport which can provide assistance to the airport in event of an incident that is beyond the resources of the airport. Support Agencies will operate in accordance with their Standard Operating Procedures under the auspices of the Combat Authority nominated in this plan.

51. Suspect Item

An object considered out of place, unattended or unusual for which an explanation cannot be readily determined, and which may constitute a threat.

52. Table-top Exercise

Tabletop exercises are table-based activities typically held in an informal setting and presented by the Facilitator. There is no hands-on practice or field work. Tabletop Exercises are conducted to evaluate the capability to execute one or more portions of an Emergency Management Plan

53. Triage

The sorting of casualties at an emergency according to the nature and severity of their injuries.

54. Triage Area

Location where triage operations are performed.

55. Vehicle Assembly Point

An area at the scene of an accident where all vehicles report prior to being called into active duty.

56. "Vicinity of the Airport" for ARFF for aircraft related incidents

The vicinity of the airport for response purposes for the ARFF is an area up to one Km in the approach path and other areas up to one Km around the airport boundary.

57. Visibility Stand-by

Declared by ATC Tower when visibility reduces to 2000 meters or below &/or cloud base is 450 meters with more than 4/8.

58. Warning Agency

A Warning Agency is the agency that has information on an emergency or potential emergency and responsibility to advise other agencies.

59. Watch Supervisory Officer (WSO)

The most senior officer on shift with AAI-ATC.

Note: The On-Scene Commander will establish communications and provide regular situation reports to the ATC and AECC/CCC as required.

60. Emergency

Emergency means any actual or imminent occasion or incident due to an occurrence such as fire, flood, storm, earthquake, terrorist act, accident, epidemic, or warlike action which:

- Endangers, or threatens to endanger, the safety or health of person/s or animal/s.

- Destroys or damages, or threatens to destroy or damage, property or being an emergency, which requires a significant and coordinated response.

61. Emergency Panel

Supporting medical, hospital and ambulance services that are available to provide emergency response and care to the injured in the event of an incident at the airport.

62. Environment

The components of earth, including;

- Land, air and water: and
- Any layer of the atmosphere; and
- Any organic or inorganic matter or living organism; and Human made or modified structures and areas and includes Interacting natural ecosystems.

63. External Support Agencies

Any support agency with its normal operation located outside the boundaries of the airport.

64. Mobile Command Post (MCP)

The location at the scene of an emergency where the On-Scene Commander is located and where command, coordination, control, and communications are centralized.

To enable the On-Scene Commander to adequately manage an incident it is imperative that a MCP management team be established. The MCP management team should consist of representatives from organizations involved in the response to the incident. The GIAL MCP management team shall consist of the following:

- Head ARFF/Duty Manager - ARFF.
- CISF Representative.
- Civil Defense Coordinator.
- Airline Representative.
- Duty Manager Apron Control till the arrival of Head of Operations.
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- Is an accomplice of a person who performs or attempts to perform any such act, commits the offence of hijacking that aircraft.

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Any support agency with its normal operation located inside the boundaries of the Airport.

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The AOCC is the Joint Operations Control centre which is a coordination conduit for successful conduct of operations at the airport. The AOCC is established by GIAL and partnered by stakeholders like Ground Handling Agents, Airlines, CISF and other concerned GIAL Dept ensures control, co-ordination and communication for Airport Operations.

71. Landside

The portion of the airport not designated airside and to which the general public normally has free access.

72. Local Standby

A condition declared when an aircraft approaching the airport is known or is suspected to have developed some defect but the trouble is not such that it would normally involve a serious difficulty in effecting the safe landing and thus does not require a response from external support agencies.

73. Maneuvering Area

That part of an aerodrome used for takeoff, landing and taxiing of aircraft, excluding aprons.

74. **Meeters and Greeters Area**:

A pre-defined area within a terminal where people, who have relatives or friends on an aircraft involved in an incident or accident, can report for information and assistance.

75. Movement Area

That part of an aerodrome to be used for takeoff, landing and taxiing of

aircraft, consisting of the maneuvering area and the apron(s).

76. On-Scene Commander

Person designated to take charge of the over-all emergency operation.

77. Pre-Determined Position (PDP)-ARFF Standby Positions

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A unit responsible for promoting efficient organization of search and rescue services and for coordinating the conduct of search and rescue operations within a search rescue region.

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An assembly area located on the airport for non-hospitalized passengers and crew to assemble prior to Reunification with relatives or friends.

80. Recovery

Recovery in relation to an airport emergency covers the processes of returning LGBIA to its normal operational status after an emergency.

81. Rendezvous Point

A pre-arranged reference point, i.e. road junction, cross-road or other specified place to which personnel / vehicles responding to an emergency situation initially proceed to receive directions to staging area and / or the accident / incident site.

82. Response

Response in relation to an airport emergency includes the process of reporting to, combating and of providing immediate relief for people affected by the emergency.

83. Sabotage

An act or omission, intended to cause malicious or wanton destruction of property, endangering or resulting in unlawful interference with international civil aviation and its facilities.

84. Staging Area

A prearranged, strategically placed area where support response personnel, vehicles and other equipment can be held in readiness for use during an emergency.

85. Sub Plan

An action plan required for a specific hazard, critical task or special event. It is prepared when the management arrangements necessary to deal with the effects of the hazard, or critical tasks or special event differ from the general coordination arrangements set out in the main plan for the airport.

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The sorting of casualties at an emergency according to the nature and

severity of their injuries.

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Location where triage operations are performed.

91. Vehicle Assembly Point

An area at the scene of an accident where all vehicles report prior to being called into active duty.

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The vicinity of the airport for response purposes for the ARFF is an area up to one Km in the approach path and other areas up to one Km around the airport boundary.

93. Visibility Stand-by

Declared by ATC Tower when visibility reduces to 2000 meters or below &/or cloud base is 450 meters with more than 4/8.

94. Warning Agency

A Warning Agency is the agency that has information on an emergency or potential emergency and responsibility to advise other agencies.

95. Watch Supervisory Officer (WSO)

WSO shall be overall in-charge of all ATS units during his period of duty and provide a management function to an ATC watch and shall be responsible for the tactical management of an ATC watch.

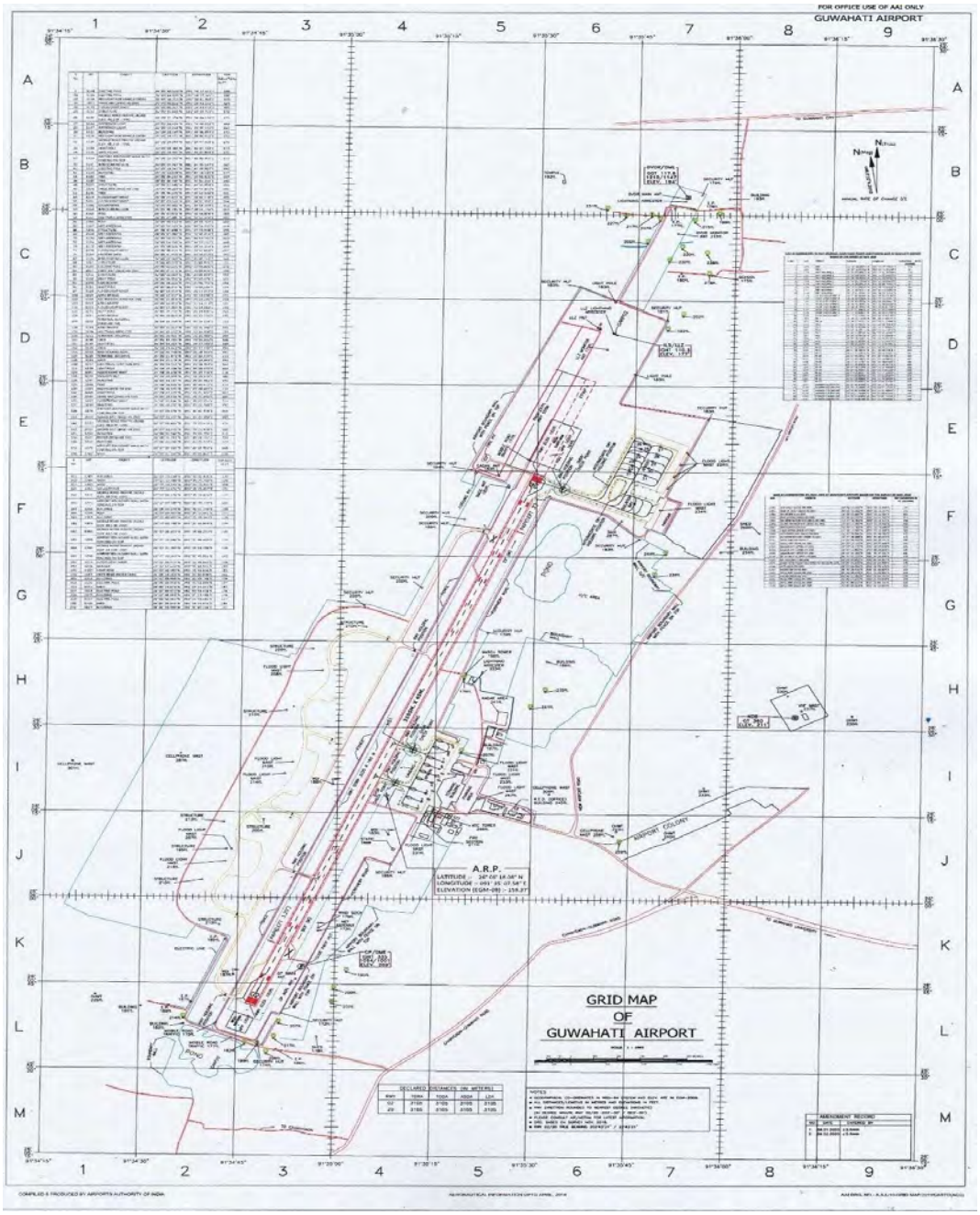
Part-3, Chapter-3: RT Call Signs

Sl. No	DESIGNATION	CALL SIGN
1	CAO	ALFA DELTA
2	HEAD OPERATIONS	ALFA VICTOR
3	AECC	ECHO CHARLIE
4	APRON CONTROL	ALPHA CHARLIE
5	APRON CONTROLLER	SIERRA OSCAR
6	FOLLOW ME JEEP 1	FOLLOW ME -1
7	FOLLOW ME JEEP 2	FOLLOW ME-2
8	WILDLIFE VEHICLE	WHISKY LIMA
9	AIRSIDE MAINTENANCE SUPERVISOR	MIKE CHARLIE
10	HEAD, ARFF	FOXTROT GOLF
11	MANAGER, ARFF	FOXTROT SIERRA
12	DUTY MANAGER, ARFF	FOXTROT MIKE
13	FIRE WATCH TOWER	FOXTROT WHISKY
14	MOBILE COMMAND POST	MIKE CHARLIE PAPA
15	FIRE JEEP	FOXTROT BRAVO
16	AMBULANCE	ALFA BRAVO 1,2
17	AOCC	OSCAR CHARLIE
18	MEDICAL OFFICER	MIKE OSCAR
19	SHIFT ENGINEER	CHARLIE CHARLIE
20	CCR 1	CHARLIE CHARLIE ONE
21	HEAD TERMINAL OPERATIONS	TANGO VICTOR
22	DUTY TERMINAL MANAGER	TANGO MIKE
23	MANAGER CITYSIDE OPERATIONS	LIMA MIKE

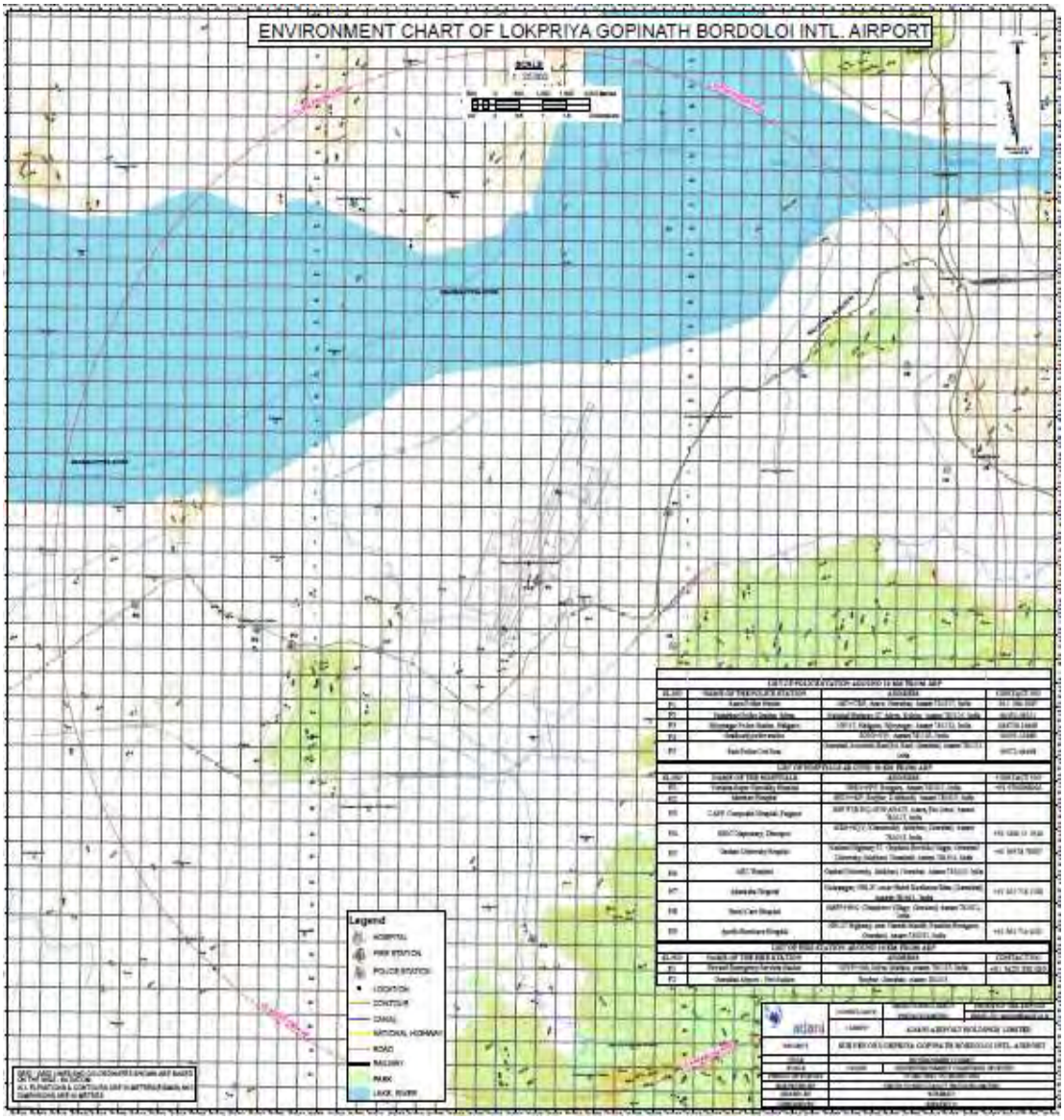
Part 4: Appendices

Appendix-1 : LGBIA Airport - Grid Map

1. LGBI Airport - On Airport Grid Map



2. LGBI Airport – Off Airport Grid Map


ENVIRONMENT CHART OF LOKPRIYA GOPINATH BORDOLOI INTL. AIRPORT
Legend
HOSPITAL
FIRE STATION
POLICE STATION
LOCATION
CONTOUR
CANAL
NATIONAL HIGHWAY
ROAD
RAILWAY
PARK
LAKE, RIVER

Appendix-2 : Accountability Matrix For Activation Of Emergency Co-Ordination Centers And Response Of Designated Authorities

Particular	Minimum Activation/ Response Time	Responsible	Contact No.	Location
ARFF				
Mobile Command Post	10 minutes	ARFF		Accident site
Triage Setup	20 minutes	ARFF		Accident site
Designated Transportation Officer	30 minutes	ARFF		Accident site
Designated on Scene Commander	45 minutes	Head – ARFF		N/A
Medical				
Medical Team at Accident Site (Apollo Clinic)	10 minutes	Medical		Accident site
Casualty Center	15 minutes	Medical		Below Fire Station
Apron Control				
Rendezvous Point	10 minutes	Apron Control		Cargo Gate
Escorts at Cargo Gate	10 minutes	Apron Control		Cargo Gate

Terminal Operations				
AECC	20 minutes	Terminal		RTC Hall
Helpdesk for passengers friends and relatives at Arrival	30 minutes	Terminal		Arrival
Meeters and Greeters Area	45 minutes	Terminal		Arrival after the baggage claim
Reunion Area	45 minutes	Terminal		Arrival near May I Help you reception
Immigration Counters at SRA	60 minutes	Terminal		
Designated Passenger and Family Co- coordinator	45 minutes	Terminal		
Designated AECC Chairman	45 minutes	Head Operations		
Corporate communications				
Media Center	90 minutes	Corporate Communications		
Cargo Operations				
Cargo Office	45 minutes	Cargo Operations		N/A
Safety Team				
Safety coordinator	45 minutes	Safety Department		N/A

Security – GIAL				
TAEP Passes issuance	15 minutes	Security – GIAL	9864049781	N/A
CISF				
CISF Control Room	10 minutes	CISF	03612840013	Accident site

Appendix-3: Contact Numbers of GIAL Responding Agencies

Adani Staff Contact Details

Designation	Contact No
CAO	9958895708
Head - Operation	7510661402
Head - Quality	9864096247
Airside Duty Manager	7099090204
Head-Security	9540327888
Head-ARFF	9869331996
In-Charge Airside Operations	8978245340
Lead Safety	9538882248
Head-Engineering & Maintenance	9717009851
Lead Commercial	9811660603
Lead Terminal	9599036275

AAI GUWAHATI OFFICE RES

Sl. No	Designation	Contact No.	Alternate Contact No.
01.	RED, AAI, RHQ-NER	2840223	2840048/9435732402(M)
02.	CIC/APD	2840213	9395580026(M)
03.	GM (ATM), AAI, RHQ-NER	2842637	2842626 /9811548353(M)
04.	ATS In-charge	2840213	9678845516(M)
05.	ATC, TRAINING In-charge	2840267	9435733234(M)
06.	Sr. Manager (ELECTRICAL)	9446157718	9446157718
07.	SM (CIVIL)	2843542	7099295595
08.	Terminal Manager	2840068	
09.	ATS-BFG	2840257	
10.	COM-BFG	2841746	
11.	MET-BFG	2840225	
12.	FIC	2840256	
13.	TOWER	2843438/ 7637002215	
14.	SAR	2840111/ 2840000	
15.	AAI Exchange: -	2840351 to 2840360	
16.	Cargo (& DGR Specialist)	9123966812	

Appendix-4: Contact Numbers of Emergency Responding Agencies

ATC Tower	0361-2843438
ATC WSO	0361-2841146, 9435049601
Fire Control Room (for ARFF)	0361-2840351Extn 1002 / 2840070/ 0361-2800962
Central Industrial Security Force (CISF)	
Control Room	0361-2840013/ 7099091163
Cargo Gate (City side)	0361-2840351/ Intercom 7312
Customs/Immigration	
Immigration	0361-2841466
Customs	9678853633
Police Station	
Airport Police Station	2840287/ 6026900610
Police inspector	2842777
DCP Azara	6026900537
DGCA	
DGCA Exchange	011-24622495
Air Safety	011- 24620272
Air Safety Kolkata	033-25119507
SASO, Kolkata	033-25119415
TERMINAL GAU	
Terminal	7099090136
GROUND HANDLING AGENCY	
Air India ALS	0361-2840221/ 9903566722
Indo Thai	9957568158
CARGO (& DGR SPECIALIST	9123966812

Cargo (& DGR Specialist)	9123966812

TELEPHONE NO. OF LOCAL ADMINISTRATION/POLICE

01	CHIEF SECRETARY	2261120/2261585
02	HOME SECRETARY	2261597/9954704800
03	DGP	2450555/2601571®
04	EMERGENCY	100
05	POLICE COTROL ROOM(CITY)	2464557 / 2461556
06	POLICE CONTROL ROOM (EPABX)	542640, 542641, 542642,
07	SIB CONTROL ROOM	2381511/2380620
08	DGP CONTROL ROOM	2521242
09	Commissioner of Police	2540278 /
10	CONTROL ROOM(KAMRUP)	2684402
11	AZARA POLICE STATION	2840287
12	AZARA OUTPOST (KAHIKUCHI)	2842777
13	CISF CONTROL ROOM	2840013

FIRE SERVICES:

01	AIRPORT FIRE STATION (ARFF)	0361-2800962/ 2840351 EXTN.1001
02	AIRFORCE FIRE STATION	9387469591 0361-2849154
03	PANBAZAR FIRE CONTROL (HEAD QUARTERS)	0361-2734191 0361-2737680 0361-2735933 0361-2735935 101
04	MIRZA (NEAREST)	03623-230089
05	PANDU FIRE STATION	2674817
06	RAILWAY FIRE STATION	2540117

07	LAKHRA FIRE STATION	2279907
08	DISPUR FIRE STATION	2260221
09	CHANDMARI FIRE STATION	2637690/2665000
10	DIRECTOR FIRE SERVICE	2511329

Appendix: 5

Appendix-5 : LIST OF HOSPITALS/DISPENSERIES TO BE ALERTED IN CASE OF EMERGENCY/ACCIDENT

01	GUWAHATI MEDICAL COLLEGE	2259561(EPABX)/ 2529457
02	AZARA HOSPITAL	9435045114
03	APOLLO HOSPITAL	03617135005
04	APOLLO EXCELCARE HOSPITAL	03617140101
05	NARAYANA SUPERSPECIALITY HOSPITAL	18003090309
06	HAYAT HOSPITAL	08011003110
07	M. M. CHOUDHURY HOSPITAL, PANBAZAR	2543998
08	RAILWAY HOSPITAL, MALIGAON	2570492
09	GNRC, Ltd., GUWAHATI	2227700 /01/ 02/03/04/ 18003450022(Toll Free)/0011(Ambulance)
10	DOWN-TOWN HOSPITAL Ltd. DISPUR, GUWAHATI	2332741, 2331003, 9864101111
11	INTERNATIONAL HOSPITAL, G.S.ROAD,DISPUR,GUWAHATI	2347700 /01/02/03/04/05/06/07/ 1600(Ambulance)
12	SWAGAT ENDOLAPAROSCOPIC, SURGICAL RESEARCH INSTITUTE, SANTIPUR, GUWAHATI	2131726 / 2637899/2674000
13	ARYA HOSPITAL, CHRISTAIN BASTI, PALTAN	2606665/ 2608263/ 2730717

	BAZAR, GUWAHATI	
14	AGILE HOSPITAL, BELTOLA, GUWAHATI	98640-70675, 2235555
15	SANJIVANI HOSPITAL, A.T. ROAD, MALIGAON	2674892 / 93/98640-23487(PRO)/ 8811091296
16	SRI SANKARDEVA NETRALAYA, BELTOLA,GUWAHATI	2233444 / 2228879/ 9864367777
17	PRATIKSHA HOSPITAL, VIP ROAD, GUWAHATI	99540-93556/ 2337183 / 2337184 / 2337260/ 2334938
18	MARWARI HOSPITAL	2541201/2541202/
19	DISPUR POLY CLINIC & NURSING HOME	2260864/2234802/7670007615

Appendix-6: List of Emergency Panel Doctor (APHO)

Name	**Telephone No.**
APHO	9436102709
Dr Smitha	9854364660
Dr Somorendra Singh	9436102709
MI Room Apollo	7099030927

Appendix-7 : AIRLINES AND OTHER DEPARTMENTS:

DEPT.	NAME & DESIGNATION	PHONE	CELL
DGCA	Mr. S Valte Dy.Director(Airworthiness) Mr. S. Chaudhary Airworthiness officer	2840207	09432363742 8471835091
I.O.C.	ABHINASH RANJAN	2840208	9903233421
BPCL	Mr. Shailesh Kumar Yadav	2842824	7044076506
RELIANCE AVIATION	Mr. Malay Kr Bhuyan,	2843577	9934361672
AIR INDIA	Mr. Parama Dutta	2840368	9864028254
FLY BIG	Ms. SALAKA	-	9821466936
ALLIANCE AIR	MR. PRAG	-	9707650407
INDIGO	Mr. Joydeep Sarkar, SM	2843457	9836870167
SPICEJET	Mr. Bhaskar Borghain		9508144837
AIR ASIA	Mr.PrafullaHira, Station Manager	2840098	9435341604
			9401557832 7086158500
GO AIR	Mr.Debojit Deb Roy, APM	2842565	9957577130
VISTARA	Mr.PriyankuBarthakur	2840794	9508726971
	Mr.LitamMajumdar,CSO	2840793	9612889775
BLUE DART	M/S BLUE DART	-	9954811072
ARYAN AVIATION	Mr. ASHUTOSH	-	8822630212
MEGHALAYA HELICOPTER	Mr. B.C. Das, Apt. In-Charge	-	9435145033

ARUNACHAL HELICOPTER	Mr. P. Sarma	-	9864122624
			9085738939

Organisation	Name	Office	Mobile
DGCA			
DGCA	Mr. S Valte Dy. Director (Airworthiness)	2840207	09432363742
	Mr. S. Chaudhary Airworthiness officer		8471835091
Airlines			
Air Asia	Mr.Prafulla Hira	2840098	9435341604 9401557832 7086158500
Air Asia	Mr Kaushik Sarma		8638165879
Air India	Mr. Kaushad Khan	2840368	9864777111
Air India	Dibakar Bordoloi		9957721990
Akasa	Ranjan Borah	8655896647	9767522880
Akasa	Tourem Prasenjit Singha	8655808940	8471857293 9531469844
Alliance Air	Parag Jyoti Deka	-	9707650407
Alliance Air	Dibakar Bordoloi		9957721990
Aryan Aviation	Mr. Ashutosh	-	8822630212
Arunachal Helicopter	Mr. P. Sarma	-	9864122624 9085738939
Blue Dart		-	9954811072
Druk Air	Kaushal Das		9707193390
Druk Air	Ashanul Hoque		9864352929
Fly Big	Savio Augustine		8837272432
Fly Big	Sandeep Kulsreshtha		9573555922
Go Air	Mr.Debojit Deb Roy, APM	2842565	9957577130 8486879419
Go Air	Shankar Sharma		9954341393
Indigo	Mr. Joydeep Sarkar, SM	2843457	9836870167
Indigo	Ranjeet Patel	-	8084473322
Meghalaya Helicopter	Mr. B.C. Das,	-	9435145033
SpiceJet	Monica Sarma	-	9129424643

SpiceJet	Kakoli Das		7896545426
Vistara	Pronoy Roy	2840794	8777831054
Vistara	Heemadri Hati Boruah		9678017520
Vistara	Mr.LitamMajumdar	2840793	9612889775
Fueling Company			
BPCL	Sabareesh VV	2842824	9961989343 7044076506
HPCL	Pranab Jyoti Hazarika Anil Kumar Rajan		9435011531 9910005311
IOCL	Avinash Ranjan	2840208	9903231356
Reliance Aviation	Malay Kr Bhuyan	2843577	9934361672
Flight Catering			
AIRCHEFF	Bipul Nath		8472041261
DOORCHESTER	Prasenjit Das		9706588189
Ground Handling			
Indo-Thai	Rajib Baruah		9957568158
AIASL	Vishal Kumar		9903566722
Cargo			
AAICLAS	Rahul Ranjan		9123966812

Appendix-8: Notification on Declaration of Local Standby

SL.No	Agency	Tel. No.
Notification by Air Traffic Control		
01	Fire Watch Tower (FWT)	2840351 Extn 1002
02	AOCC	7099090183
Notification by Fire Watch Tower		
01	Duty Manager ARFF	2840351 Extn 1001
02	CISF	22853165
03	Head- ARFF	9869331996
04	Head Operations	7099091160
05	Fire and Emergency Services, Assam	101
Notification by AOCC		
01	CAO	9958895708
02	Apron Control	7099090204
03	Duty Medical Officer	7002180547/ 7099030927
04	Terminal Manager	7099090136
05	Concerned Airline	(In case no designated GHA is available, in such case Air India GHA to be notified)
06	Concerned GHA	
07	Head Operations	7099091160
08	Safety Manager	9538882248
09	GIAL Security Head	95403277888
10	ATS In Charge	9678845516
11	CISF-SOCC	22853165
12	Head E&M	9717009851
NOTE – Notification shall be maintained between ATC, FWT, AOCC and APRON CONTROL		

Appendix-9: Notification on Declaration of Full Emergency

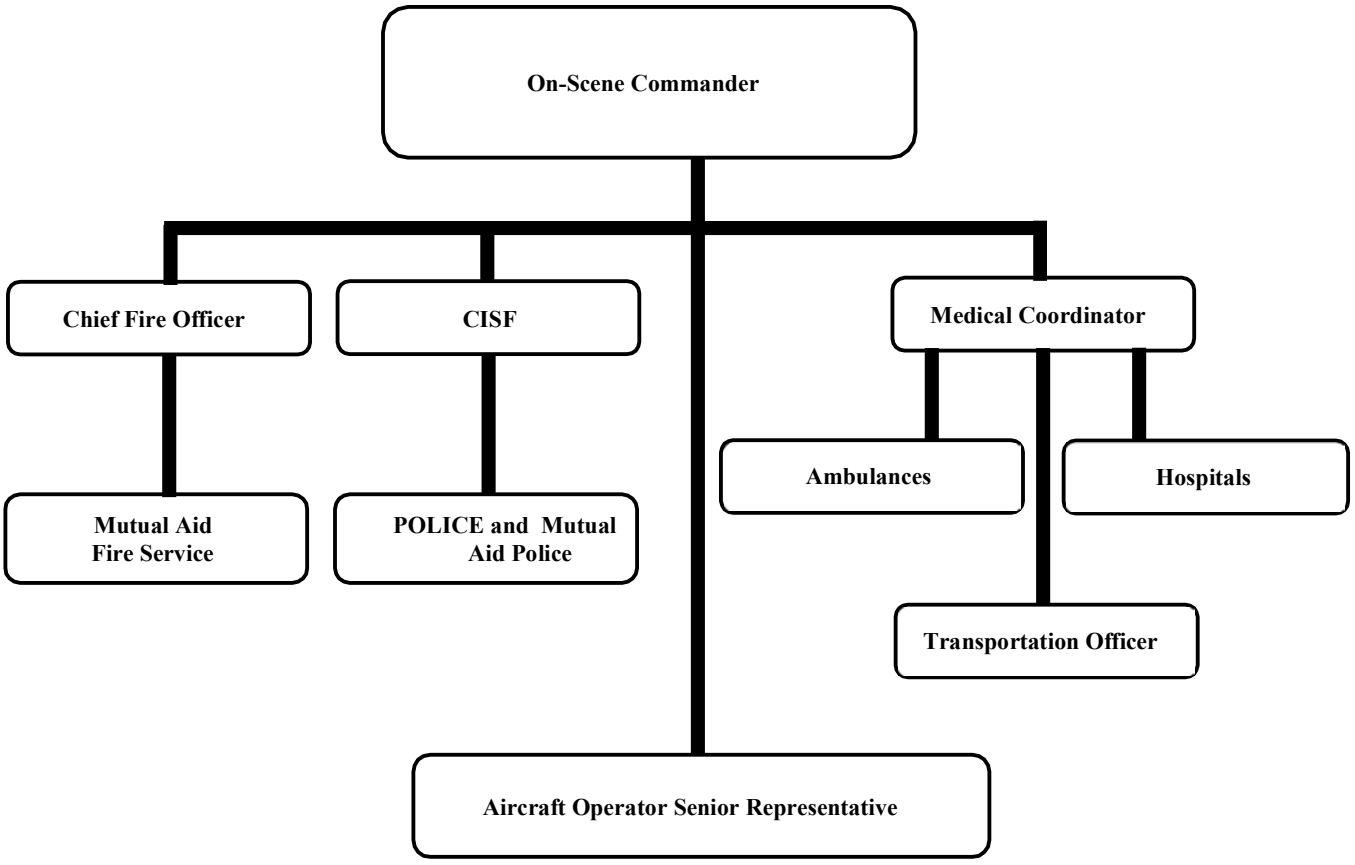
SL.No	Agency	Tel. No.
Notification by Air Traffic Control		
01	Fire Watch Tower (FWT)	2840351 Extn 1002
02	AOCC	7099090183
Notification by Fire Watch Tower		
01	Duty Manager ARFF	2840351 Extn 1001
02	CISF-SOCC	22853165
03	Head- ARFF	9869331996
04	Head Operations	7099091160
05	Fire and Emergency Services, Assam	101
Notification by AOCC		
01	CAO	9958895708
02	Apron Control	7099090204
03	Duty Medical Officer	7002180547/ 7099030927
04	Terminal Manager	7099090136
05	Concerned Airline	(In case no designated GHA is available, in such case Air India GHA to be notified)
06	Concerned GHA	
07	Head Operations	7099091160
08	Safety Manager	9538882248
09	GIAL Security Head	9540327888
10	ATS In Charge	9678845516

NOTE – Notification shall be maintained between ATC, FWT, AOCC and APRON CONTROL

Appendix-10: Notification on Activation of Aircraft Incident/ Accident

SL.No	Agency	Tel. No.
Notification by Air Traffic Control		
01	Fire Watch Tower (FWT)	2840351 Extn 1002
02	AOCC	7099090183
Notification by Fire Watch Tower		
01	Duty Manager ARFF	2840351 Extn 1001
02	CISF	22853165
03	Head- ARFF	9869331996
04	Head Operations	7099091160
05	Fire and Emergency Services, Assam	101
Notification by AOCC		
01	CAO	9958895708
02	Apron Control	7099090204
03	Duty Medical Officer	7002180547 / 7099030927
04	Terminal Manager	7099090136
05	Concerned Airline	(In case no designated GHA is available, in such case Air India GHA to be notified)
06	Concerned GHA	
07	Head Operations	7099091160
08	Safety Manager	9538882248
09	GIAL Security Head	9540327888
10	ATS In Charge	9678845516
11	CISF-SOCC	22853165
12	Head E&M	9717009851
12	Cargo (DGR Assistance also)	8123966812
14	Airport Police Station	2840287 (Azara)
15	Immigration	2841466

Appendix-11: Command and coordination Chart



Appendix-12: Notification on Mass Casualty Incident

SL.No	Agency	Tel. No.
Notification by Air Traffic Control		
01	Fire Watch Tower (FWT)	2840351 Extn 1002
02	AOCC	7099090183
Notification by Fire Watch Tower		
01	Duty Manager ARFF	2840351 Extn 1001
02	CISF-SOCC	22853165
03	Head- ARFF	9869331996
04	Head Operations	7099091160
05	Fire and Emergency Services, Assam	101
Notification by AOCC		
01	CAO	9958895708
02	Apron Control	7099090204
03	Duty Medical Officer	7002180547 / 7099030927
04	Terminal Manager	7099090136
05	Concerned Airline	(In case no designated GHA is available, in such case Air India GHA to be notified)
06	Concerned GHA	
07	Head Operations	7099091160
08	Safety Manager	9538882248
09	GIAL Security Head	9540327888
10	ATS In Charge	9678845516
11	CISF-SOCC	22853165
12	Head E&M	9717009851

Appendix-13: Notification on Natural Disaster

SL.No	Agency	Tel. No.
Notification by Air Traffic Control		
01	Fire Watch Tower (FWT)	2840351 Extn 1002
02	AOCC	7099090183
Notification by Fire Watch Tower		
01	Duty Manager ARFF	2840351 Extn 1001
02	CISF-SOCC	22853165
03	Head- ARFF	9869331996
04	Head Operations	7099091160
05	Fire and Emergency Services, Assam	101
Notification by AOCC		
01	CAO	9958895708
02	Apron Control	7099090204
03	Duty Medical Officer	7002180547 /7099030927
04	Terminal Manager	7099090136
05	Concerned Airline	(In case no designated GHA is available, in such case Air India GHA to be notified)
06	Concerned GHA	
07	Head Operations	7099091160
08	Safety Manager	9538882248
09	GIAL Security Head	9540327888
10	ATS In Charge	9678845516
11	CISF-SOCC	22853165
12	Head E&M	9717009851

Appendix-14: Facility & Equipment's for Post Incident/ Accident Management

1. Facility & Equipment at Crash site

1.1 Medical Services.

1.1.1 Three Cardiac ambulances with necessary medical equipment & medicines.
1.1.2Emergencymedical bags along with AED & portable oxygen cylinders with medical team.
1.1.3Triage medical container(trunk) in Command post having following items.
1.1.4Basic ambulance with ARFF contains oxygen cylinder and big First Aid box.

1.2 Facility & Equipment's with ARFF

- 03 nos. Crash Fire Tender -
- 03 nos. of crash ambulances
- 03 nos. of triage tent
- 30 nos. of stretchers at Main Fire Station
- 100 nos. blankets at Main Fire Station
- 150 nos. bed sheets at Main Fire Station

1.3 Facility & Equipment's at Emergency Medical Center

- 18 beds are available meant for minor operation facility.
- 45 stretchers
- 5 AED machines
- 2 Examination table
- 2 trunks with splints of all sizes
- Washroom facility
- Extra Medicine stock
- One Cardiac monitor
- One Nebulizer
- Oxygen cylinders

- One Oxygen Concentrator
- 2 Emergency light lamp
- Refrigerator
- Body bags for dead bodies

1.4 Facility & Equipment's at Survival Reception Area(SRA)

Seating capacity – (50 additional 100 plastic chairs will be placed) and Mattress

- Facilitation for immigrations, customs- Immigration - 5 desk, Customs – one desk
- Provision of refreshment – water/tea
- Packaged water bottles (stock kept at SRA)
- Telephones facilities for passengers and affected airline - Domestic/international call.

Part 5: Distribution List

AEP is to be distributed to all operational units of GIAL, DGCA, Government Departments, Airline/ground Handlers, Supporting Agencies and Other Airport Organizations which are engaged in the operational functions of LGBIA.

Distribution List A

GIAL Internal Distribution List

SL.NO.	Designation/Office	Copy No.
1	Chief Airport officer	02
3	Head –Operations	Master copy
4	Head (Engineering & Maintenance)	Soft copy
6	Head – IT	Soft copy
7	Head – Legal	Soft copy
8	Head (Terminal Operations and Customer Services)	Soft copy
9	Head (Material Management)	Soft copy
10	Head (HR)	Soft copy
11	Senior Manager Safety	03
12	Head (Corporate Communication)	Soft copy
13	Head (Security)	04
14	Head - Medical Services	N/A
15	Head- ARFF	05
16	DTM Terminal	06
17	AECC	
18	AOCC	07
19	Apron Control	08
20	Fire Watch Tower	09
21	Airport Contact Centre	N/A

Distribution List B

International/Domestic Airlines

Sl.No.	Designation/Office	Copy No.
1	Air Asia	Soft Copy
2	Air India	Soft Copy
3	Akasa	Soft Copy
4	Alliance Air	Soft Copy
5	Aryan Aviation	Soft Copy
6	Arunachal Helicopter	Soft Copy
7	Blue Dart	Soft Copy
8	Druk Air	Soft Copy
9	Fly Big	Soft Copy
10	Go Air	Soft Copy
11	Indigo	Soft Copy
12	Meghalaya Helicopter	Soft Copy
13	SpiceJet	Soft Copy

Distribution List C

Other Organizations/ Agencies/ Services

SL.NO	Designation/Office	Copy No.
1	ATS In Charge, Airports Authority of India, Guwahati	01
2	RSC Guwahati	10
3	Airlines , Guwahati	Soft copy
4	MLU, Indian Air Force	11
5	Commandant, CISF	12
6	RDCOS, BCAS	13

7	Police Station Borjhar	14
8	ASDMA Disaster Management Cell	15
9	Fire and Emergency Services, Assam	16
10	State Disaster Management Authority	17
11	DGCA	18
12	Customs	19
13	Bureau of Immigration	20
14	APHO	21
15	AIASL	Soft copy
16	Indo Thai	Soft copy
17	ATC Tower	22
18	Area Control Center	23

Note: It is the responsibility of the individuals / agencies to refer the current version of the documents / charts etc. and share the same with team members and to obsolete the old versions.

Part-6: Record of Amendments

Date	Rev. No.	Page No.	Revision Description
17 Oct 2022	Version-03	All Pages	Duties and responsibilities of F&ES reviewed
15 Nov 2023	Version-04	All Pages	Format changed, Contact numbers revised

ANNEXURE-1

THE PRE-DETERMINED POSITIONS FOR CFT'S DURING VARIOUS EMERGENCY/CONTINGENCY REVISED AS FOLLOWS:

1. VISIBILITY STANDBY:

1.1 When runway in use is RWY 02
One CFT will be positioned at APPROACH ROAD FIRE STATON and other CFT will remain in the Fire Stations.

1.2 When runway in use is RWY20
One CFT will be positioned at APPROACH ROAD FIRE STATON and other CFT will remain in the Fire Stations.

2. FULL EMERGENCY

1.1 When Runway in use RWY 02:
1st TURN OUT - Link2
2nd TURN OUT - APPROACH ROAD FIRE STATON

All Runway crossing must be coordinated with Tower on R/T.

1.2 When Runway in use RWY 20:
1st TURN OUT - TAXIWAY G
2nd TURN OUT - APPROACH ROAD FIRE STATON

All Runway crossing must be coordinated with Tower on R/T.

2. LOCAL STANDBY
All safety Services will remain in the Fire Station itself in fully prepared state or otherwise as instructed by ATC.

3. LOCAL STANDBY FOR ISOLATED PARKING
When an aircraft is parked at isolated parking stand due to bomb threat or unlawful interference, CFT will be parked as per prescribed fire drill.

ANNEXURE-II

AIRCRAFT ACCIDENT IN WATER BODIES AND SWAMPY AREA.

1. Introduction:

LGBI Airport has few water bodies and swampy area located on airport and in its vicinity. Some of which are seasonal in nature. The water bodies pose special hazard and requires different procedure to carry out rescue and firefighting in case of aircraft accident in those areas. This plan contains provisions, to the extent practicable, for the rescue of aircraft accident victims from significant bodies of water on or adjacent to the LGBI Airport within vicinity of the airport as mentioned in Airport Emergency Plan.

2. Purpose:

To promptly deploy water rescue equipment and crews in support of an aircraft accident or mutual aid assistance in or near bodies of water.
This document should be read in conjunction with other sections of the airport emergency plan and shall be activated as per the onsite situation.

3. DEFINITION

3.1.1. **Off-loading/Landing Point.**

The Off-loading/Landing Point(s) serves as a staging area where emergency support personnel, vehicles and equipment can be held, in preparation for the off-loading/ landing-off aircraft accident victims involved in an emergency in water bodies.
An 'off-loading/landing point(s)' shall be designated by the on-scene commander, as per the Size-up done, in coordination with other relevant emergency services commander.

3.1.2. Aircraft accident in water body/ swampy area.

An aircraft incident/ accident has occurred in water body/ swampy area within the vicinity of the airport in area as mentioned in LGBI Airport AEP Part 1-Chapter 3 and Chapter 4.

4. Notification of the Aircraft Accident/ Incident in water bodies/ swampy area:

The information regarding aircraft accident in water bodies/ swampy area will be made by ATC, if the ATCO known or suspected about the same.

Subsequently the triangle of information shall be maintained between ATC, ARFF and AOCC.
On arrival of the incident commander, he shall carry out the size up of the incident site and provide updates on the accident.

Further, based on the size-up done by the incident commander If the incident requires water or swampy area rescue operations the information shall go from incident commander to AECC/AOCC and ARFF watch tower. Further the information regarding requirement of water rescue equipment shall be disseminated to: -

- ATC (for Rescue Coordination Centre)
- SDMA/NDRF,
- Indian Airforce
- Fire and Emergency Service Assam
- Brahmaputra River Police,

5. Area of responsibility

The responsibility of various agencies required for water rescue shall be as per LGBI Airport AEP Part 1-Chapter 3 and Chapter 4.

6. Command and Coordinating Authority

6.1.1. **Aircraft Accident in water body or swampy area:** The command and coordinating authority for aircraft accident in water body or swampy shall be with the Incident commander as mentioned in AEP-Part-1. Other responding agencies shall assist him for the same.

6.1.2. **Support Agencies :**

- State Police
- Affected Airline
- ATC
- Indian Air Force
- Assam State Disaster Management Authority (ASDMA)
- National Disaster Management Authority (NDMA)
- National Disaster Response Force (NDRF)
- Doctor/Hospital/Ambulance
- GIAL depts. such as ARFF, AOCC etc.
- Fire and Emergency Services, Assam
- Civil defense

6.1.3. **Aerodrome Rescue & Firefighting:**

6.1.3.1. Fire Watch Tower In charge:

- Provide critical information on walkie talkie and PA system to ARFF personnel in case the accident has occurred within the vicinity of the airport.
- Inform Assam State Disaster Management Authority (ASDMA) regarding aircraft accident in water bodies and the requirement of water rescue equipment.
- Keep in constant touch with disaster management control room on hotline for relevant information.'

6.1.3.2. Duty Manager – ARFF :

- Assess the situation and dispatch water rescue equipment available in ARFF to the accident location.
- Initiate/ support in rescue and firefighting operations in water bodies (there may be burning fuel and oil on the surface of the water.
- Mark and set-up on-land triage area in conjunction with CISF/Police/ IAF.
- Establish the Off-Loading/ Landing Point.
- Call out ARFF off-duty crew to report for duty if required.
- Assist ASDMA, Fire and Emergency Services, Assam in water rescue operations.
- Update AECC on aircraft accident status.

6.1.3.3. AOCC

- Inform ASDMA, F&ES(Assam), IAF and medical services regarding aircraft accident in water body/ swampy area.

6.1.3.4. Assam State Disaster Management Authority (ASDMA).

- Establish the Off-Loading Point/ Landing Point
- Activate and deploy the available resources for rescue operations from water bodies/ swampy area.
- Monitor and support rescue and firefighting operations in water bodies.

6.1.3.5. Fire and Emergency Services, Assam

- Proceed to the incident location as quickly as possible.
- Take appropriate action for rescue and firefighting in water body/swampy area.

6.2. Termination

- Chairman AECC will terminate emergency as mentioned in AEP.
- AOCC will pass notification to all concerned agencies that "aircraft accident emergency terminated".

SAMK & CO.
CHARTERED ACCOUNTANTS
Kolkata | Guwahati | Bhagalpur

68A, Bongoan, Beltola
Guwahati -781028.
Phone: 7596849552

Independent Certificate on utilisation of Funds for the purposes of discharging Corporate Environment Responsibility requirement of Guwahati International Airport Limited (GIAL) :

1. This certificate is issued in accordance with terms of our engagement.

2. The accompanying Statement contains the details of utilisation of funds by Guwahati International Airport Limited (GIAL) under various Projects having its office at Lokpriya Gopinath Bordoloi International Airport, Borjhar, Guwahati, Kamrup, Kamrup Metropolitan, Assam, 781015 for Corporate Environment Responsibility (CER) Activities.

Management's Responsibility

3. The management of the entity is responsible for preparation of the accompanying Statement including the preparation and maintenance of all accounting and relevant supporting records and documents. This responsibility includes designing implementing and maintaining internal control relevant to the preparation and presentation of the statement, and applying an appropriate basis of preparation; and making estimates that are reasonable in the circumstances.

Our Responsibility

4. We conducted our examination of the Statement in accordance with the Guidance Note on Reports or Certificates for Special Purposes issued by the Institute of Chartered Accountants of India. The Guidance Note requires that we comply with the ethical requirements of the Code of Ethics issued by the Institute of Chartered Accountants of India.

5. We have complied with the relevant applicable requirements of the Standard on Quality Control (SQC) 1, Quality Control for Firms that Perform Audits and Reviews of Historical Financial Information, and Other Assurance and Related services engagements.

Opinion

6. Based on our examination, and the information and explanation given to us, we are of the opinion that the amounts stated have been accurately examined and extracted from the data provided to us as on 10th March, 2024.

For SAMK & CO.
Chartered Accountants
Firm Registration No.: 032632C

Sanyam Agarwal

SAMK & CO. GUWAHATI

CA Sanyam Agarwal
Partner
Membership No: 317429
Dated : The 13th day of March, 2024
UDIN : 24317429BKHFYZ4527

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SAMK & CO.
CHARTERED ACCOUNTANTS
Kolkata | Guwahati | Bhagalpur

68A, Bongoan, Beltola
Guwahati -781028.
Phone: 7596849552

CERTIFICATE FROM THE CHARTERED ACCOUNTANT

This is to certify that to the best of our information and according to the explanations given to us, the details of utilisation of funds for Corporate Environment Responsibility of GIAL having address at Lokpriya Gopinath Bordoloi International Airport, Borjhar, Guwahati, Kamrup, Kamrup Metropolitan, Assam, 781015 for preceding three financial years is given below :

			Year Wise breakup		
Sl No.	Various Projects for Corporate Environment Responsibility	Amount (In lacs)	FY 21-22	FY 22-23	FY 23-24
1	12000 tree plantations under the Assam Forest Development	15.00			15.00
2	Creating STEAM (Science, Technology, Engineering Arts Mathematics) Lab for SOS Childrens Village Guwahati.	2.90			2.90
3	Financial Support to Jarugaon School Chaygaon	12.71	12.71		
4	Expansion and Development of classrooms at Guwahati Airport School	45.00		45.00	
5	Payment towards 1st instt. for construction of school building at Garal ME School	41.70		41.70	
6	Relief Fund to Flood victim	208.71		208.71	
7	Medical Wellness Camp	4.72			4.72
	Total	**330.74**	**12.71**	**295.41**	**22.62**

The above statement is based on information and data provided to us, and the above certificate is issued only for the purpose so as to be submitted for GIAL.

For SAMK & CO.
Chartered Accountants
Firm Registration No.: 032632C

SAMK & CO. GUWAHATI

CA Sanyam Agarwal
Partner
Membership No: 317429
Dated : The 13th day of March, 2024
UDIN : 24317429BKHFYZ4527

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			Annexure 23 Year Wise Expenditure									
Activity			**Year (2024-2025) (Amount in Lacs)**									
	April	**May**	**June**	**July**	**August**	**September**	**October**	**November**	**December**	**January**	**February**	**March**
Air & Noise Quality Management	4					4			8.9			8.9
Wastewater Management						15						
Waste Management	14.4		14.4		14.4		14.4		14.4		14.4	
Energy Conservation	3.2			96		3.2		3.2				3.2
Environment Awareness	1.14			1.14				1.14				1.14
Green Area		55		55		55		55		55		55

adani

Date – 14th March 2024

To
The President
Kahikuchi Gram Panchayat.
Guwahati, Assam.

Sub: Submission of EC (Environment Clearance) Copy of LGBIA to the President Gram Panchayat for Master plan reference and conditions.

Sir.

Lokpriya Gopinath Bordoloi International Airport (LGBIA) is situated about 21 Km from Dispur, the capital city of Assam and 12 Km from Guwahati city and was established in the year 1958.

A Concession Agreement for Operation, Maintenance, Management & Development of LGBIA was signed between Airports Authority of India (AAI) and Guwahati International Airport Limited (GIAL) (earlier known as Adani Guwahati International Airport Limited) on **19th January 2021.**

As per the Concession Agreement, GIAL has been entrusted with the responsibility to operate and manage the existing airport assets and will be responsible for designing, engineering, financing, construction, upgradation, and development of future airside, terminal, city side and landside infrastructure for the airport in phases, and its subsequent operation and management for a 50 year concession period from the commercial date of operation (COD) **8th October 2021.**

Transfer of Environment Clearance from "Airports Authority of India" (AAI) to "Guwahati International Airport Ltd" (GIAL)" has been obtained vide dated **1st November 2022.**

Environmental Clearance for "Construction of 'New Integrated Terminal Building at LGBI Airport', Guwahati by M/s Airports Authority of India Guwahati" was obtained vide F.No. 10-58/2016-IA-III, dated **16th April 2018 is attached for your reference.**

Yours Sincerely

Siddartha Phukan
Head – Environment .

GUWAHATI INTERNATIONAL AIRPORT LIMITED ★ GIAL ★ Guwahati-781015

Received
14/3/24
Tax Collector Cum R.I.
36 No. Kahikuchi G.P

Guwahati International Airport Limited
Lokpriya Gopinath Bordoloi International Airport
Borjhar, Guwahati
Kamrup, Assam 781 015

Ph: +91 361 284 0009
www.adani.com/lgbia-guwahati-airport

ABNS SCIENTIFIC SERVICES

এবিএনএচ চাইন্টিফিক চার্ভিচেচ

এবীএনএস সাইংটীফীক সর্বীসেজ

H-152, Keteki Path, near Radisson Blu, NH 27, Guwahati 781033, Assam

কেতেকী পথ, রৈডিসন ব্লু কে পাস, এন এইচ ২৭, গুবাহাটী ৭৮১০৩২, অসম

Email: info@abnsscientific.com, abnsscientific@gmail.com Phone: 98640 68513, 98640 89951

TEST REPORT

Report No.: ABNS/EM/010925/27	**Date : 09/01/2025**
Name & Address of the Customer : **M/S ADANI GUWAHATI INTERNATIONAL AIRPORT LIMITED.** Lokpriya Gopinath Bordoloi Internation Airport, Borjhar, Guwahati, Kamrup (M), Assam-781015.	
Ref.: SO:5700336280, Dated:02/01/2024 **Sample Description: AMBIENT AIR** **Location:** NITB **(latitude:** 26.119055N, **longitude:** 91.599128E) Weather: Clear *Sample Id: ABNS/GHY/061924/AAQ03*	Date of sampling: 11/12/2024 Sampling done by: Mr. Chinmay Kalita (Sampler) Sampling Protocol: IS 5182 (Part 5): 2020 Analysis Start Date: 12/12/2024 Analysis End Date: 14/12/2024
Environmental Condition: *Temperature 19.5^{0}C, Relative Humidity: 70%*	

ANALYSIS RESULT

Sl No	Parameters	Unit	RESULT	LIMIT	TEST METHOD
1.	Particulate Matter (<10um)	µg/m^3	**92**	100	IS 5182: Part 23:2006 (Reaff. 2012)
2.	Particulate Matter (<2.5um)	µg/m^3	**54**	60	Lab SOP.Doc.NO. TPM/ABNS/E/5/D
3.	Sulphur Dioxide (SO_2)	µg/m^3	**8.3**	80	IS 5182 : Part 2 :2001 (Reaff.2012)
4.	Nitrogen Dioxide (NO_2)	µg/m^3	**16.8**	80	IS 5182 : Part 6 :2006 (Reaff.2012)
5.	Carbon Monoxide (CO)	mg/m^3	**0.07**	2	IS 5182 : Part 10 :1999 (Reaff.2014) (NDIR)
6.	Ozone (O_3)	µg/m^3	**30.0**	180	IS 5182 : Part 9 :1974 (Reaff.2019)
7.	Ammonia (NH_3)	µg/m^3	**45.0**	400	IS 5182 : Part 25 :2018
8.	Lead (Pb)	µg/m^3	**BDL**	1	IS 5182 : Part 22 :2004 (Reaff.2019)
9.	Nickel (Ni)	ng/m^3	**BDL**	20	USEPA-IO3.4
10.	Arsenic (As)	ng/m^3	**BDL**	6	USEPA-IO3.4
11.	Benzene (C_6H_6)	µg/m^3	**BDL**	5	IS:5182(Part-11):2006 Reaff : 2012
12.	Benzo(a)Pyrene (BaP)	ng/m^3	**BDL**	1	IS:5182(Part-12):2004 Reaff,: 2014

Note*: The results relate to the parameter tested only.* BDL: Below Detection Limit.*

----------*End of Report*----------

For ABNS Scientific Services,

Report reviewed By: Dr. Bidyut J Sarmah (TM)

09/01/2025

Authorized Signatory

(Dr. Mayur Jyoti Mahanta)

ABNS SCIENTIFIC SERVICES

এবিএনএচ চাইন্টিফিক চার্ভিচেচ

এবীএনএস সাইংটীফীক সর্বীসেজ

H-152, Keteki Path, near Radisson Blu, NH 27, Guwahati 781033, Assam

কেতেকী পথ, রৈডিসন ব্লু কে পাস, এন এইচ ২৭, গুবাহাটী ৭৮১০৩২, অসম

Email: info@abnsscientific.com, abnsscientific@gmail.com Phone: 98640 68513, 98640 89951

TEST REPORT

Report No.: ABNS/EM/010925/26	**Date : 09/01/2025**

Name & Address of the Customer :

M/S ADANI GUWAHATI INTERNATIONAL AIRPORT LIMITED.

Lokpriya Gopinath Bordoloi Internation Airport,

Borjhar, Guwahati, Kamrup (M), Assam-781015.

Ref.: SO:5700336280, Dated:02/01/2024 **Sample Description: AMBIENT AIR** **Location:** Power House **(latitude:** 26.104137N, **longitude:** 91.58801E) Weather: Clear *Sample Id: ABNS/GHY/061924/AAQ02*	Date of sampling: 11/12/2024 Sampling done by: Mr. Chinmay Kalita (Sampler) Sampling Protocol: IS 5182 (Part 5): 2020 Analysis Start Date: 12/12/2024 Analysis End Date: 14/12/2024

Environmental Condition: *Temperature19.5^{0}C, Relative Humidity: 70%*

ANALYSIS RESULT

Sl No	Parameters	Unit	RESULT	LIMIT	TEST METHOD
1.	Particulate Matter (<10um)	µg/m^3	**76**	100	IS 5182: Part 23:2006 (Reaff. 2012)
2.	Particulate Matter (<2.5um)	µg/m^3	**39**	60	Lab SOP.Doc.NO. TPM/ABNS/E/5/D
3.	Sulphur Dioxide (SO_2)	µg/m^3	**6.9**	80	IS 5182 : Part 2 :2001 (Reaff.2012)
4.	Nitrogen Dioxide (NO_2)	µg/m^3	**17.3**	80	IS 5182 : Part 6 :2006 (Reaff.2012)
5.	Carbon Monoxide (CO)	mg/m^3	**0.17**	2	IS 5182 : Part 10 :1999 (Reaff.2014) (NDIR)
6.	Ozone (O_3)	µg/m^3	**39.0**	180	IS 5182 : Part 9 :1974 (Reaff.2019)
7.	Ammonia (NH_3)	µg/m^3	**32.0**	400	IS 5182 : Part 25 :2018
8.	Lead (Pb)	µg/m^3	**BDL**	1	IS 5182 : Part 22 :2004 (Reaff.2019)
9.	Nickel (Ni)	ng/m^3	**BDL**	20	USEPA-IO3.4
10.	Arsenic (As)	ng/m^3	**BDL**	6	USEPA-IO3.4
11.	Benzene (C_6H_6)	µg/m^3	**BDL**	5	IS:5182(Part-11):2006 Reaff : 2012
12.	Benzo(a)Pyrene (BaP)	ng/m^3	**BDL**	1	IS:5182(Part-12):2004 Reaff,: 2014

Note*: The results relate to the parameter tested only.* BDL: Below Detection Limit.*

----------*End of Report*----------

For ABNS Scientific Services,

Report reviewed By: Dr. Bidyut J Sarmah (TM)

09/01/2025

Authorized Signatory

(Dr. Mayur Jyoti Mahanta)

ABNS SCIENTIFIC SERVICES

এবিএনএচ চাইন্টিফিক চার্ভিচেচ

এবীএনএস সাইংটীফীক সর্বীসেজ

H-152, Keteki Path, near Radisson Blu, NH 27, Guwahati 781033, Assam

केतेकी पथ, रैडिसन ब्लू के पास, एन एइच २७, गुवाहाटी ७८१०३३, असम

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TEST REPORT

Report No.: ABNS/EM/010925/25	**Date : 09/01/2025**

Name & Address of the Customer :

M/S ADANI GUWAHATI INTERNATIONAL AIRPORT LIMITED.

Lokpriya Gopinath Bordoloi Internation Airport,

Borjhar, Guwahati, Kamrup (M), Assam-781015.

Ref.: SO:5700336280, Dated:02/01/2024 **Sample Description: AMBIENT AIR** **Location:** KFC **(latitude:** 26.104455N, **longitude:** 91.590032E) Weather: Clear *Sample Id: ABNS/GHY/061924/AAQ01*	Date of sampling: 11/12/2024 Sampling done by: Mr. Chinmay Kalita (Sampler) Sampling Protocol: IS 5182 (Part 5): 2020 Analysis Start Date: 12/12/2024 Analysis End Date: 14/12/2024

Environmental Condition: *Temperature 19.5^{0}C, Relative Humidity: 70%*

ANALYSIS RESULT

Sl No	Parameters	Unit	RESULT	LIMIT	TEST METHOD
1.	Particulate Matter (<10um)	µg/m^3	**76**	100	IS 5182: Part 23:2006 (Reaff. 2012)
2.	Particulate Matter (<2.5um)	µg/m^3	**44**	60	Lab SOP.Doc.NO. TPM/ABNS/E/5/D
3.	Sulphur Dioxide (SO_2)	µg/m^3	**6.8**	80	IS 5182 : Part 2 :2001 (Reaff.2012)
4.	Nitrogen Dioxide (NO_2)	µg/m^3	**17.4**	80	IS 5182 : Part 6 :2006 (Reaff.2012)
5.	Carbon Monoxide (CO)	mg/m^3	**0.08**	2	IS 5182 : Part 10 :1999 (Reaff.2014) (NDIR)
6.	Ozone (O_3)	µg/m^3	**31.0**	180	IS 5182 : Part 9 :1974 (Reaff.2019)
7.	Ammonia (NH_3)	µg/m^3	**58.0**	400	IS 5182 : Part 25 :2018
8.	Lead (Pb)	µg/m^3	**BDL**	1	IS 5182 : Part 22 :2004 (Reaff.2019)
9.	Nickel (Ni)	ng/m^3	**BDL**	20	USEPA-IO3.4
10.	Arsenic (As)	ng/m^3	**BDL**	6	USEPA-IO3.4
11.	Benzene (C_6H_6)	µg/m^3	**BDL**	5	IS:5182(Part-11):2006 Reaff : 2012
12.	Benzo(a)Pyrene (BaP)	ng/m^3	**BDL**	1	IS:5182(Part-12):2004 Reaff,: 2014

Note*: The results relate to the parameter tested only.* BDL: Below Detection Limit.*

----------*End of Report*----------

For ABNS Scientific Services,

Report reviewed By: Dr. Bidyut J Sarmah (TM)

09/01/2025

Authorized Signatory

(Dr. Mayur Jyoti Mahanta)

ABNS SCIENTIFIC SERVICES

এবিএনএচ চাইন্টিফিক চার্ভিচেচ

এবীএনএস সাইংটীফীক সর্বীসেজ

H-152, Keteki Path, near Radisson Blu, NH 27, Guwahati 781033, Assam

केतेकी पथ, रैडिसन ब्लू के पास, एन एइच २७, गुवाहाटी ७८१०३३, असम

Email: info@abnsscientific.com, abnsscientific@gmail.com Phone: 98640 68513, 98640 89951

TEST REPORT

Report No.: ABNS/EM/010925/03 **Date : 09/01/2025**

Name & Address of the Customer :

M/S ADANI GUWAHATI INTERNATIONAL AIRPORT LIMITED.

Lokpriya Gopinath Bordoloi Internation Airport,

Borjhar, Guwahati, Kamrup (M), Assam-781015.

Ref.: SO:5700336280, Dated:02/01/2024

Sample Description: AMBIENT AIR

Location: NITB

(latitude: 26.119055N, **longitude:** 91.599128E)

Sampling done by: Mr. Chinmay Kalita (Sampler)

Sampling Protocol: IS 5182 (Part 5): 2020

Environmental Condition: *Temperature 19.5°C, Relative Humidity:70%*

Sl. No	Date of Monitoring	Analysis End Date	Parameters			
			PM 10 (µg/m³)	PM 2.5 (µg/m³)	SO_2 (µg/m³)	NO_x (µg/m³)
			Test Method			
			IS 5182: Part 23:2006 (Reaff. 2022)	Lab SOP.Doc.NO. TPM/ABNS/E/5/D	IS 5182 : Part 2 :2001 (Reaff.2022)	IS 5182 : Part 6 :2006 (Reaff.2022)
			ANALYSIS RESULT			
1	02/12/2024	05/12/2024	91	53	8.5	17.8
2	05/12/2024	07/12/2024	89	57	8.2	18.5
3	09/12/2024	12/12/2024	85	49	7.9	19.2
4	11/12/2024	14/12/2024	92	54	8.3	16.8
5	14/12/2024	17/12/2024	87	52	8.7	17.4
6	26/12/2024	28/12/2024	92	48	7.6	18.1
7	28/12/2024	31/12/2024	94	46	7.9	17.4
8	30/12/2024	02/01/2025	86	52	8.5	18.3
Limits *(As per NAAQS, 2009)*			100 (µg/m³)	60 (µg/m³)	80 (µg/m³)	80 (µg/m³)

Note*: The results relate to the parameter tested only.*

----------*End of Report*----------

For ABNS Scientific Services,

Report reviewed By: Dr. Bidyut Jyoti Sarmah (TM)

09/01/2025

Authorized Signatory

(Dr. Mayur Jyoti Mahanta)

ABNS SCIENTIFIC SERVICES

এবিএনএচ চাইন্টিফিক চার্ভিচেচ

এবীএনএস সাইংটীফীক সর্বীসেজ

H-152, Keteki Path, near Radisson Blu, NH 27, Guwahati 781033, Assam

केतेकी पथ, रैडिसन ब्लू के पास, एन एइच २७, गुवाहाटी ७८१०३३, असम

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TEST REPORT

Report No.: ABNS/EM/010925/02 **Date : 09/01/2025**

Name & Address of the Customer :

M/S ADANI GUWAHATI INTERNATIONAL AIRPORT LIMITED.

Lokpriya Gopinath Bordoloi Internation Airport,

Borjhar, Guwahati, Kamrup (M), Assam-781015.

Ref.: SO:5700336280, Dated:02/01/2024

Sample Description: AMBIENT AIR

Location: Power House

(latitude: 26.104137N, **longitude:** 91.58801E)

Sampling done by: Mr. Chinmay Kalita (Sampler)

Sampling Protocol: IS 5182 (Part 5): 2020

Environmental Condition: *Temperature 19.5°C, Relative Humidity:70%*

Sl. No	Date of Monitoring	Analysis End Date	Parameters			
			PM 10 (µg/m³)	PM 2.5 (µg/m³)	SO_2 (µg/m³)	NO_X (µg/m³)
			Test Method			
			IS 5182: Part 23:2006 (Reaff. 2022)	Lab SOP.Doc.NO. TPM/ABNS/E/5/D	IS 5182 : Part 2 :2001 (Reaff.2022)	IS 5182 : Part 6 :2006 (Reaff.2022)
			ANALYSIS RESULT			
1	02/12/2024	05/12/2024	79	41	5.8	16.9
2	05/12/2024	07/12/2024	75	46	6.7	17.5
3	09/12/2024	12/12/2024	72	43	7.3	16.4
4	11/12/2024	14/12/2024	76	39	6.9	17.3
5	14/12/2024	17/12/2024	82	44	7.4	18.1
6	18/12/2024	21/12/2024	75	47	6.8	17.6
7	20/12/2024	24/12/2024	79	46	5.9	18.2
8	26/12/2024	28/12/2024	80	42	6.2	16.3
Limits *(As per NAAQS, 2009)*			100 (µg/m³)	60 (µg/m³)	80 (µg/m³)	80 (µg/m³)

Note*: The results relate to the parameter tested only.*

----------*End of Report*----------

For ABNS Scientific Services,

Report reviewed By: Dr. Bidyut Jyoti Sarmah (TM)

09/01/2025

Authorized Signatory

(Dr. Mayur Jyoti Mahanta)

ABNS SCIENTIFIC SERVICES

এবিএনএচ চাইন্টিফিক চার্ভিচেচ

এবীএনএস সাইংটীফীক সর্বীসেজ

H-152, Keteki Path, near Radisson Blu, NH 27, Guwahati 781033, Assam

केतेकी पथ, रैडिसन ब्लू के पास, एन एइच २७, गुवाहाटी ७८१०३३, असम

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TEST REPORT

Report No.: ABNS/EM/010925/01 **Date : 09/01/2025**

Name & Address of the Customer :

M/S ADANI GUWAHATI INTERNATIONAL AIRPORT LIMITED.

Lokpriya Gopinath Bordoloi Internation Airport,

Borjhar, Guwahati, Kamrup (M), Assam-781015.

Ref.: SO:5700336280, Dated:02/01/2024

Sample Description: AMBIENT AIR

Location: KFC

(latitude: 26.104455N, **longitude:** 91.590032E)

Sampling done by: Mr. Chinmay Kalita (Sampler)

Sampling Protocol: IS 5182 (Part 5): 2020

Environmental Condition: *Temperature 19.5°C, Relative Humidity:70%*

Sl. No	Date of Monitoring	Analysis End Date	Parameters			
			PM 10 (µg/m³)	PM 2.5 (µg/m³)	SO_2 (µg/m³)	NO_X (µg/m³)
			Test Method			
			IS 5182: Part 23:2006 (Reaff. 2022)	Lab SOP.Doc.NO. TPM/ABNS/E/5/D	IS 5182 : Part 2 :2001 (Reaff.2022)	IS 5182 : Part 6 :2006 (Reaff.2022)
			ANALYSIS RESULT			
1	02/12/2024	05/12/2024	86	45	8.2	17.5
2	05/12/2024	07/12/2024	81	51	7.6	18.3
3	09/12/2024	12/12/2024	79	48	7.4	16.8
4	11/12/2024	14/12/2024	76	44	6.8	17.4
5	14/12/2024	17/12/2024	82	46	7.2	18.9
6	18/12/2024	21/12/2024	78	52	7.9	16.7
7	20/12/2024	24/12/2024	80	49	8.3	17.6
8	26/12/2024	28/12/2024	87	50	8.5	18.4
Limits (As per NAAQS, 2009)			100 (µg/m³)	60 (µg/m³)	80 (µg/m³)	80 (µg/m³)

Note*: The results relate to the parameter tested only.*

----------*End of Report*----------

For ABNS Scientific Services,

Report reviewed By: Dr. Bidyut Jyoti Sarmah (TM)

09/01/2025

Authorized Signatory

(Dr. Mayur Jyoti Mahanta)

ABNS SCIENTIFIC SERVICES

এবিএনএচ চাইন্টিফিক চার্ভিচেচ

এবীএনএস সাইংটীফীক সর্বীসেজ

H-152, Keteki Path, near Radisson Blu, NH 27, Guwahati 781033, Assam

কেতেকী পথ, রৈডিসন ব্লু কে পাস, এন এইচ ২৭, গুবাহাটী ৭৮১০৩৩, অসম

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TEST REPORT

Report No.: ABNS/EM/020725/01	**Date : 07/02/2025**
Name & Address of the Customer : **M/S ADANI GUWAHATI INTERNATIONAL AIRPORT LIMITED.** Lokpriya Gopinath Bordoloi Internation Airport, Borjhar, Guwahati, Kamrup (M), Assam-781015.	
Ref.: SO:5700336280, Dated:02/01/2024 **Sample Description: AMBIENT AIR** **Location:** NITB **(latitude:** 26.119921N, **longitude:** 91.598211E)	Sampling done by: Mr. Chinmay Kalita (Sampler) Sampling Protocol: IS 5182 (Part 5): 2020
Environmental Condition: *Temperature 24.2^{0}C, Relative Humidity: 65%*	

Sl. No	Date of Monitoring	Analysis End Date	Parameters			
			PM 10 (µg/m^3)	PM 2.5 (µg/m^3)	SO_2 (µg/m^3)	NO_X (µg/m^3)
			Test Method			
			IS 5182: Part 23:2006 (Reaff. 2012)	Lab SOP.Doc.NO. TPM/ABNS/E/5/D	IS 5182 : Part 2 :2001 (Reaff.2012)	IS 5182 : Part 6 :2006 (Reaff.2012)
			ANALYSIS RESULT			
1	02/01/2025	09/01/2025	158	84	8.2	20.2
2	06/01/2025	11/01/2025	202	68	8.4	22.4
3	09/01/2025	15/01/2025	118	63	7.8	21.4
4	13/01/2025	18/01/2025	98	57	7.8	18.3
5	16/01/2025	22/01/2025	123	64	8.2	19.4
6	20/01/2025	25/01/2025	208	88	7.8	16.6
7	23/01/2025	29/01/2025	234	105	10.8	19.4
8	27/01/2025	01/02/2025	264	92	8.6	18.8
9	30/01/2025	05/02/2025	190	84	6.8	16.9
Limits *(As per NAAQS, 2009)*			100 (µg/m^3)	60 (µg/m^3)	80 (µg/m^3)	80 (µg/m^3)

Note*: The results relate to the parameter tested only.*

----------*End of Report*----------

For **ABNS Scientific Services,**

Report reviewed By: Dr. Bidyut J Sarmah (TM)

07/02/2025

Authorized Signatory

ABNS SCIENTIFIC SERVICES

এবিএনএচ চাইন্টিফিক চার্ভিচেচ

এবীএনএস সাইংটীফীক সর্বীসেজ

H-152, Keteki Path, near Radisson Blu, NH 27, Guwahati 781033, Assam

কেতেকী পথ, রৈডিসন ব্লু কে পাস, এন এইচ ২৭, গুবাহাটী ৭৮১০৩৩, অসম

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TEST REPORT

Report No.: ABNS/EM/020725/02	**Date : 07/02/2025**
Name & Address of the Customer : **M/S ADANI GUWAHATI INTERNATIONAL AIRPORT LIMITED.** Lokpriya Gopinath Bordoloi Internation Airport, Borjhar, Guwahati, Kamrup (M), Assam-781015.	
Ref.: SO:5700336280, Dated:02/01/2024 **Sample Description: AMBIENT AIR** **Location:** Power House **(latitude:** 26.104137N, **longitude:** 91.58801E)	Sampling done by: Mr. Chinmay Kalita (Sampler) Sampling Protocol: IS 5182 (Part 5): 2020
Environmental Condition: *Temperature 24.2°C, Relative Humidity: 65%*	

Sl. No	Date of Monitoring	Analysis End Date	Parameters			
			PM 10 (µg/m³)	PM 2.5 (µg/m³)	SO_2 (µg/m³)	NO_X (µg/m³)
			Test Method			
			IS 5182: Part 23:2006 (Reaff. 2012)	Lab SOP.Doc.NO. TPM/ABNS/E/5/D	IS 5182 : Part 2 :2001 (Reaff.2012)	IS 5182 : Part 6 :2006 (Reaff.2012)
			ANALYSIS RESULT			
1	02/01/2025	09/01/2025	102	59	6.4	14,4
2	06/01/2025	11/01/2025	99	61	7.2	18.2
3	09/01/2025	15/01/2025	105	60	8.4	22.4
4	13/01/2025	18/01/2025	99	58	12.6	16.2
5	16/01/2025	22/01/2025	99	59	9.4	19.6
6	20/01/2025	25/01/2025	103	61	8.8	19.4
7	23/01/2025	29/01/2025	118	65	8.6	20.8
8	27/01/2025	01/02/2025	110	68	6.8	18.4
9	30/01/2025	05/02/2025	99	59	7.6	18.7
Limits (As per NAAQS, 2009)			100 (µg/m³)	60 (µg/m³)	80 (µg/m³)	80 (µg/m³)

***Note**: The results relate to the parameter tested only.*

----------*End of Report*----------

For **ABNS Scientific Services,**

ABNS Scientific Services Guwahati

07/02/2025

Authorized Signatory

Report reviewed By: Dr. Bidyut J Sarmah (TM)

ABNS SCIENTIFIC SERVICES

এবিএনএচ চাইন্টিফিক চার্ভিচেচ

এবীএনএস সাইংটীফীক সর্বীসেজ

H-152, Keteki Path, near Radisson Blu, NH 27, Guwahati 781033, Assam

কেতেকী পথ, রৈডিসন ব্লূ কে পাস, এন এইচ ২৭, গুবাহাটী ৭৮১০৩৩, অসম

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TEST REPORT

Report No.: ABNS/EM/020725/03	**Date : 07/02/2025**
Name & Address of the Customer : **M/S ADANI GUWAHATI INTERNATIONAL AIRPORT LIMITED.** Lokpriya Gopinath Bordoloi Internation Airport, Borjhar, Guwahati, Kamrup (M), Assam-781015.	
Ref.: SO:5700336280, Dated:02/01/2024 **Sample Description: AMBIENT AIR** **Location:** KFC **(latitude:** 26.104455N, **longitude:** 91.590032E)	Sampling done by: Mr. Chinmay Kalita (Sampler) Sampling Protocol: IS 5182 (Part 5): 2020
Environmental Condition: *Temperature 24.2°C, Relative Humidity: 65%*	

Sl. No	Date of Monitoring	Analysis End Date	Parameters			
			PM 10 (µg/m³)	PM 2.5 (µg/m³)	SO_2 (µg/m³)	NO_X (µg/m³)
			Test Method			
			IS 5182: Part 23:2006 (Reaff. 2012)	Lab SOP.Doc.NO. TPM/ABNS/E/5/D	IS 5182 : Part 2 :2001 (Reaff.2012)	IS 5182 : Part 6 :2006 (Reaff.2012)
			ANALYSIS RESULT			
1	02/01/2025	09/01/2025	104	62	5.8	18.4
2	06/01/2025	11/01/2025	99	59	6.4	19.5
3	09/01/2025	15/01/2025	98	60	6.6	14.4
4	13/01/2025	18/01/2025	106	63	6.9	17.6
5	16/01/2025	22/01/2025	108	63	7.2	18.3
6	20/01/2025	25/01/2025	99	59	6.2	19.6
7	23/01/2025	29/01/2025	120	64	6.8	18.8
8	27/01/2025	01/02/2025	108	58	7.2	17.4
9	30/01/2025	05/02/2025	106	65	6.8	17.3
Limits *(As per NAAQS, 2009)*			100 (µg/m³)	60 (µg/m³)	80 (µg/m³)	80 (µg/m³)

***Note**: The results relate to the parameter tested only.*

----------*End of Report*----------

For **ABNS Scientific Services,**

Report reviewed By: Dr. Bidyut J Sarmah (TM)

Authorized Signatory

ABNS SCIENTIFIC SERVICES

এবিএনএচ চাইন্টিফিক চার্ভিচেচ

এবীএনএস সাইংটীফীক সর্বীসেজ

H-152, Keteki Path, near Radisson Blu, NH 27, Guwahati 781033, Assam

কেতেকী পথ, রৈডিসন ব্লু কে পাস, এন এইচ ২৭, গুবাহাটী ৭৮১০৩৩, অসম

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TEST REPORT

Report No.: ABNS/EM/030825/01	**Date : 08/03/2025**
Name & Address of the Customer : **M/S ADANI GUWAHATI INTERNATIONAL AIRPORT LIMITED.** Lokpriya Gopinath Bordoloi Internation Airport, Borjhar, Guwahati, Kamrup (M), Assam-781015.	
Ref.: SO:5700363902, Dated:04/02/2025 **Sample Description: AMBIENT AIR** **Location:** KFC **(latitude:** 26.104455N, **longitude:** 91.590032E)	Sampling done by: Mr. Chinmay Kalita (Sampler) Sampling Protocol: IS 5182 (Part 5): 2020
Environmental Condition: *Temperature 23.5°C, Relative Humidity: 67%*	

Sl. No	Date of Monitoring	Analysis End Date	Parameters			
			PM 10 (µg/m³)	PM 2.5 (µg/m³)	SO_2 (µg/m³)	NO_X (µg/m³)
			Test Method			
			IS 5182: Part 23:2006 (Reaff. 2012)	Lab SOP.Doc.NO. TPM/ABNS/E/5/D	IS 5182 : Part 2 :2001 (Reaff.2012)	IS 5182 : Part 6 :2006 (Reaff.2012)
			ANALYSIS RESULT			
1	01/02/2025	06/02/2025	102	58	5.6	17.4
2	03/02/2025	08/02/2025	98	58	6.8	18.5
3	06/02/2025	11/02/2025	97	62	6.6	12.4
4	09/02/2025	14/02/2025	112	64	6.2	15.6
5	12/02/2025	17/02/2025	105	59	7.8	17.3
6	17/02/2025	22/02/2025	98	70	9.4	18.6
7	20/02/2025	25/02/2025	104	63	5.2	15.8
8	23/02/2025	28/02/2025	96	59	7.8	16.4
9	26/02/2025	03/03/2025	104	63	6.2	15.3
Limits *(As per NAAQS, 2009)*			100 (µg/m³)	60 (µg/m³)	80 (µg/m³)	80 (µg/m³)

Note*: The results relate to the parameter tested only.*

----------*End of Report*----------

For ABNS Scientific Services,

Report reviewed By: Dr. Bidyut Jyoti Sarmah (TM)

08/03/2025

Authorized Signatory

ABNS SCIENTIFIC SERVICES

এবিএনএচ চাইন্টিফিক চার্ভিচেচ

এবীএনএস সাইংটীফীক সর্বীসেজ

H-152, Keteki Path, near Radisson Blu, NH 27, Guwahati 781033, Assam

কেতেকী পথ, রৈডিসন ব্লু কে পাস, এন এইচ ২৭, গুবাহাটী ৭৮১০৩৩, অসম

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TEST REPORT

Report No.: ABNS/EM/030825/02	**Date : 08/03/2025**
Name & Address of the Customer : **M/S ADANI GUWAHATI INTERNATIONAL AIRPORT LIMITED.** Lokpriya Gopinath Bordoloi Internation Airport, Borjhar, Guwahati, Kamrup (M), Assam-781015.	
Ref.: SO:5700363902, Dated:04/02/2025 **Sample Description: AMBIENT AIR** **Location:** Power House **(latitude:** 26.104137N, **longitude:** 91.58801E)	Sampling done by: Mr. Chinmay Kalita (Sampler) Sampling Protocol: IS 5182 (Part 5): 2020
Environmental Condition: *Temperature 23.5^{0}C, Relative Humidity: 67%*	

Sl. No	Date of Monitoring	Analysis End Date	Parameters			
			PM 10 (µg/m^3)	PM 2.5 (µg/m^3)	SO_2 (µg/m^3)	NO_x (µg/m^3)
			Test Method			
			IS 5182: Part 23:2006 (Reaff. 2012)	Lab SOP.Doc.NO. TPM/ABNS/E/5/D	IS 5182 : Part 2 :2001 (Reaff.2012)	IS 5182 : Part 6 :2006 (Reaff.2012)
			ANALYSIS RESULT			
1	01/02/2025	06/02/2025	104	61	6.6	12.8
2	03/02/2025	08/02/2025	98	59	6.8	16.4
3	06/02/2025	11/02/2025	103	58	8.2	20.4
4	09/02/2025	14/02/2025	110	59	15.8	16.8
5	12/02/2025	17/02/2025	102	58	9.4	19.2
6	17/02/2025	22/02/2025	110	63	18.4	29.4
7	20/02/2025	25/02/2025	106	64	10.0	20.8
8	23/02/2025	28/02/2025	108	61	6.4	18.3
9	26/02/2025	03/03/2025	98	56	7.2	18.7
Limits *(As per NAAQS, 2009)*			100 (µg/m^3)	60 (µg/m^3)	80 (µg/m^3)	80 (µg/m^3)

Note: *The results relate to the parameter tested only.*

----------*End of Report*----------

For ABNS Scientific Services,

Report reviewed By: Dr. Bidyut Jyoti Sarmah (TM)

05/03/2025

Authorized Signatory

ABNS SCIENTIFIC SERVICES

এবিএনএচ চাইন্টিফিক চার্ভিচেচ

এবীএনএস সাইংটীফীক সর্বীসেজ

H-152, Keteki Path, near Radisson Blu, NH 27, Guwahati 781033, Assam

কেতেকী পথ, রৈডিসন ব্লূ কে পাস, এন এইচ ২৭, গুবাহাটী ৭৮১০৩৩, অসম

Email: info@abnsscientific.com, abnsscientific@gmail.com Phone: 98640 68513, 98640 89951

TEST REPORT

Report No.: ABNS/EM/030825/03	**Date : 08/03/2025**
Name & Address of the Customer : **M/S ADANI GUWAHATI INTERNATIONAL AIRPORT LIMITED.** Lokpriya Gopinath Bordoloi Internation Airport, Borjhar, Guwahati, Kamrup (M), Assam-781015.	
Ref.: SO:5700363902, Dated:04/02/2025 **Sample Description: AMBIENT AIR** **Location:** NITB **(latitude:** 26.118834N, **longitude:** 91.598273E)	Sampling done by: Mr. Chinmay Kalita (Sampler) Sampling Protocol: IS 5182 (Part 5): 2020
Environmental Condition: *Temperature 23.5°C, Relative Humidity: 67%*	

Sl. No	Date of Monitoring	Analysis End Date	Parameters			
			PM 10 (µg/m³)	PM 2.5 (µg/m³)	SO_2 (µg/m³)	NO_X (µg/m³)
			Test Method			
			IS 5182: Part 23:2006 (Reaff. 2012)	Lab SOP.Doc.NO. TPM/ABNS/E/5/D	IS 5182 : Part 2 :2001 (Reaff.2012)	IS 5182 : Part 6 :2006 (Reaff.2012)
			ANALYSIS RESULT			
1	01/02/2025	06/02/2025	103	62	8.2	20.2
2	03/02/2025	08/02/2025	134	58	8.4	22.4
3	06/02/2025	11/02/2025	112	60	7.8	21.4
4	09/02/2025	14/02/2025	120	70	7.8	18.3
5	12/02/2025	17/02/2025	120	64	8.2	19.4
6	17/02/2025	22/02/2025	112	72	7.8	16.6
7	20/02/2025	25/02/2025	108	62	8.1	19.4
8	23/02/2025	28/02/2025	102	58	8.6	18.8
9	26/02/2025	03/03/2025	118	62	6.8	16.9
Limits *(As per NAAQS, 2009)*			100 (µg/m³)	60 (µg/m³)	80 (µg/m³)	80 (µg/m³)

Note: *The results relate to the parameter tested only.*

----------*End of Report*----------

For ABNS Scientific Services,

Report reviewed By: Dr. Bidyut Jyoti Sarmah (TM)

08/03/2025

Authorized Signatory

ABNS SCIENTIFIC SERVICES

এবিএনএচ চাইন্টিফিক চার্ভিচেচ

এবীএনএস সাইংটীফীক সর্বীসেজ

H-152, Keteki Path, near Radisson Blu, NH 27, Guwahati 781033, Assam

केतेकी पथ, रैडिसन ब्लू के पास, एन एइच २७, गुवाहाटी ७८१०३३, असम

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TEST REPORT

Report No.: ABNS/EM/120524/01 **Date : 05/12/2024**

Name & Address of the Customer :

M/S ADANI GUWAHATI INTERNATIONAL AIRPORT LIMITED.

Lokpriya Gopinath Bordoloi Internation Airport,

Borjhar, Guwahati, Kamrup (M), Assam-781015.

Ref.: SO:5700336280, Dated:02/01/2024

Sample Description: AMBIENT AIR

Location: KFC

(latitude: 26.104455N, **longitude:** 91.590032E)

Sampling done by: Mr. Chinmay Kalita (Sampler)

Sampling Protocol: IS 5182 (Part 5): 2020

Environmental Condition: *Temperature 22.9°C, Relative Humidity: 67%*

Sl. No	Date of Monitoring	Analysis End Date	Parameters			
			PM 10 (µg/m³)	PM 2.5 (µg/m³)	SO_2 (µg/m³)	NO_X (µg/m³)
			Test Method			
			IS 5182: Part 23:2006 (Reaff. 2022)	Lab SOP.Doc.NO. TPM/ABNS/E/5/D	IS 5182 : Part 2 :2001 (Reaff.2022)	IS 5182 : Part 6 :2006 (Reaff.2022)
			ANALYSIS RESULT			
1	01/11/2024	06/11/2024	79	41	7.2	14.6
2	05/11/2024	08/11/2024	72	43	6.5	15.2
3	08/11/2024	12/11/2024	74	50	6.3	13.9
4	11/11/2024	15/11/2024	78	49	5.9	14.7
5	15/11/2024	20/11/2024	82	43	6.4	15.3
6	19/11/2024	23/11/2024	81	48	7.2	16.4
7	22/11/2024	26/11/2024	76	40	7.6	15.8
8	26/11/2024	30/11/2024	82	47	6.8	16.5
Limits *(As per NAAQS, 2009)*			100 (µg/m³)	60 (µg/m³)	80 (µg/m³)	80 (µg/m³)

Note*: The results relate to the parameter tested only.*

----------*End of Report*----------

For ABNS Scientific Services,

Report reviewed By: Dr. Bidyut Jyoti Sarmah (TM)

05/12/2024

Authorized Signatory

(Dr. Mayur Jyoti Mahanta)

ABNS SCIENTIFIC SERVICES

এবিএনএচ চাইন্টিফিক চার্ভিচেচ

এবীএনএস সাইंटीफीक सर्वीसेज

H-152, Keteki Path, near Radisson Blu, NH 27, Guwahati 781033, Assam

केतेकी पथ, रैडिसन ब्लू के पास, एन एइच २७, गुवाहाटी ७८१०३३, असम

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TEST REPORT

Report No.: ABNS/EM/120524/02 **Date : 05/12/2024**

Name & Address of the Customer :

M/S ADANI GUWAHATI INTERNATIONAL AIRPORT LIMITED.

Lokpriya Gopinath Bordoloi Internation Airport,

Borjhar, Guwahati, Kamrup (M), Assam-781015.

Ref.: SO:5700336280, Dated:02/01/2024

Sample Description: AMBIENT AIR

Location: Power House

(latitude: 26.104137N, **longitude:** 91.58801E)

Sampling done by: Mr. Chinmay Kalita (Sampler)

Sampling Protocol: IS 5182 (Part 5): 2020

Environmental Condition: *Temperature 22.9°C, Relative Humidity: 67%*

Sl. No	Date of Monitoring	Analysis End Date	Parameters			
			PM 10 (µg/m³)	PM 2.5 (µg/m³)	SO_2 (µg/m³)	NO_X (µg/m³)
			Test Method			
			IS 5182: Part 23:2006 (Reaff. 2022)	Lab SOP.Doc.NO. TPM/ABNS/E/5/D	IS 5182 : Part 2 :2001 (Reaff.2022)	IS 5182 : Part 6 :2006 (Reaff.2022)
			ANALYSIS RESULT			
1	01/11/2024	06/11/2024	74	42	6.8	17.2
2	05/11/2024	08/11/2024	78	39	6.3	16.5
3	08/11/2024	12/11/2024	73	44	5.9	15.3
4	11/11/2024	15/11/2024	70	41	5.4	16.9
5	15/11/2024	20/11/2024	69	38	5.9	15.8
6	19/11/2024	23/11/2024	75	42	6.2	15.7
7	22/11/2024	26/11/2024	74	47	5.7	14.9
8	26/11/2024	30/11/2024	76	40	6.5	15.2
Limits *(As per NAAQS, 2009)*			100 (µg/m³)	60 (µg/m³)	80 (µg/m³)	80 (µg/m³)

Note*: The results relate to the parameter tested only.*

----------*End of Report*----------

For ABNS Scientific Services,

Report reviewed By: Dr. Bidyut Jyoti Sarmah (TM)

05/12/2024

Authorized Signatory

(Dr. Mayur Jyoti Mahanta)

ABNS SCIENTIFIC SERVICES

এবিএনএচ চাইন্টিফিক চার্ভিচেচ

এবীএনএস साइंटीफीक सर्वीसेज

H-152, Keteki Path, near Radisson Blu, NH 27, Guwahati 781033, Assam

केतेकी पथ, रैडिसन ब्लू के पास, एन एइच २७, गुवाहाटी ७८१०३३, असम

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TEST REPORT

Report No.: ABNS/EM/120524/03 **Date : 05/12/2024**

Name & Address of the Customer :

M/S ADANI GUWAHATI INTERNATIONAL AIRPORT LIMITED.

Lokpriya Gopinath Bordoloi Internation Airport,

Borjhar, Guwahati, Kamrup (M), Assam-781015.

Ref.: SO:5700336280, Dated:02/01/2024

Sample Description: AMBIENT AIR

Location: NITB

(latitude: 26.119055N, **longitude:** 91.599128E)

Sampling done by: Mr. Chinmay Kalita (Sampler)

Sampling Protocol: IS 5182 (Part 5): 2020

Environmental Condition: *Temperature 22.9°C, Relative Humidity: 67%*

Sl. No	Date of Monitoring	Analysis End Date	Parameters			
			PM 10 (µg/m³)	PM 2.5 (µg/m³)	SO_2 (µg/m³)	NO_x (µg/m³)
			Test Method			
			IS 5182: Part 23:2006 (Reaff. 2022)	Lab SOP.Doc.NO. TPM/ABNS/E/5/D	IS 5182 : Part 2 :2001 (Reaff.2022)	IS 5182 : Part 6 :2006 (Reaff.2022)
			ANALYSIS RESULT			
1	01/11/2024	06/11/2024	84	54	7.5	19.3
2	05/11/2024	08/11/2024	88	51	7.8	18.5
3	08/11/2024	12/11/2024	79	50	8.1	17.4
4	11/11/2024	15/11/2024	85	49	7.9	18.3
5	15/11/2024	20/11/2024	92	53	8.3	17.9
6	19/11/2024	23/11/2024	86	46	7.8	18.4
7	22/11/2024	26/11/2024	83	42	8.2	19.3
8	26/11/2024	30/11/2024	80	47	7.4	18.6
Limits *(As per NAAQS, 2009)*			100 (µg/m³)	60 (µg/m³)	80 (µg/m³)	80 (µg/m³)

Note*: The results relate to the parameter tested only.*

----------*End of Report*----------

For ABNS Scientific Services,

Report reviewed By: Dr. Bidyut Jyoti Sarmah (TM)

05/12/2024

Authorized Signatory

(Dr. Mayur Jyoti Mahanta)

ABNS SCIENTIFIC SERVICES

এবিএনএচ চাইন্টিফিক চার্ভিচেচ

এবীএনএস সাইংটীফীক সর্বীসেজ

H-152, Keteki Path, near Radisson Blu, NH 27, Guwahati 781033, Assam

কেতেকী পথ, রৈডিসন ব্লূ কে পাস, এন এইচ ২৭, গুবাহাটী ৭৮১০৩৩, অসম

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TEST REPORT

Report No.: ABNS/EM/111124/03 **Date : 11/11/2024**

Name & Address of the Customer :

M/S ADANI GUWAHATI INTERNATIONAL AIRPORT LIMITED.

Lokpriya Gopinath Bordoloi Internation Airport,

Borjhar, Guwahati, Kamrup (M), Assam-781015.

Ref.: SO:5700336280, Dated:02/01/2024

Sample Description: AMBIENT AIR

Location: NITB

(latitude: 26.119055N, **longitude:** 91.599128E)

Sampling done by: Mr. Chinmay Kalita (Sampler)

Sampling Protocol: IS 5182 (Part 5): 2020

Environmental Condition: *Temperature 23.1°C, Relative Humidity: 68%*

Sl. No	Date of Monitoring	Analysis End Date	Parameters			
			PM 10 (µg/m³)	PM 2.5 (µg/m³)	SO_2 (µg/m³)	NO_X (µg/m³)
			Test Method			
			IS 5182: Part 23:2006 (Reaff. 2022)	Lab SOP.Doc.NO. TPM/ABNS/E/5/D	IS 5182 : Part 2 :2001 (Reaff.2022)	IS 5182 : Part 6 :2006 (Reaff.2022)
			ANALYSIS RESULT			
1	03/10/2024	07/10/2024	82	41	6.9	18.2
2	07/10/2024	09/10/2024	85	43	7.5	17.9
3	14/10/2024	19/10/2024	80	40	7.2	19.6
4	18/10/2024	22/10/2024	77	39	8.4	18.5
5	21/10/2024	24/10/2024	79	43	7.6	19.4
6	24/10/2024	28/10/2024	80	41	8.3	18.3
7	26/10/2024	30/10/2024	76	40	7.8	18.7
8	29/10/2024	05/11/2024	78	45	7.2	19.6
Limits *(As per NAAQS, 2009)*			100 (µg/m³)	60 (µg/m³)	80 (µg/m³)	80 (µg/m³)

Note*: The results relate to the parameter tested only.*

----------*End of Report*----------

For ABNS Scientific Services,

Report reviewed By: Dr. Bidyut Jyoti Sarmah (TM)

11/11/2024

Authorized Signatory

(Dr. Mayur Jyoti Mahanta)

ABNS SCIENTIFIC SERVICES

এবিএনএচ চাইন্টিফিক চার্ভিচেচ

এবীএনএস সাইংটীফীক সর্বীসেজ

H-152, Keteki Path, near Radisson Blu, NH 27, Guwahati 781033, Assam

केतेकी पथ, रैडिसन ब्लू के पास, एन एइच २७, गुवाहाटी ७८१०३३, असम

Email: info@abnsscientific.com, abnsscientific@gmail.com Phone: 98640 68513, 98640 89951

TEST REPORT

Report No.: ABNS/EM/111124/02 **Date : 11/11/2024**

Name & Address of the Customer :

M/S ADANI GUWAHATI INTERNATIONAL AIRPORT LIMITED.

Lokpriya Gopinath Bordoloi Internation Airport,

Borjhar, Guwahati, Kamrup (M), Assam-781015.

Ref.: SO:5700336280, Dated:02/01/2024

Sample Description: AMBIENT AIR

Location: Power House

(latitude: 26.104137N, **longitude:** 91.58801E)

Sampling done by: Mr. Chinmay Kalita (Sampler)

Sampling Protocol: IS 5182 (Part 5): 2020

Environmental Condition: *Temperature 23.1°C, Relative Humidity: 68%*

Sl. No	Date of Monitoring	Analysis End Date	Parameters			
			PM 10 (µg/m³)	PM 2.5 (µg/m³)	SO_2 (µg/m³)	NO_X (µg/m³)
			Test Method			
			IS 5182: Part 23:2006 (Reaff. 2022)	Lab SOP.Doc.NO. TPM/ABNS/E/5/D	IS 5182 : Part 2 :2001 (Reaff.2022)	IS 5182 : Part 6 :2006 (Reaff.2022)
			ANALYSIS RESULT			
1	03/10/2024	07/10/2024	67	36	5.3	14.3
2	07/10/2024	09/10/2024	64	34	5.2	15.6
3	14/10/2024	19/10/2024	71	39	5.6	15.9
4	18/10/2024	22/10/2024	69	40	5.1	16.4
5	21/10/2024	24/10/2024	72	41	5.4	14.7
6	24/10/2024	28/10/2024	74	36	5.4	13.9
7	26/10/2024	30/10/2024	65	42	5.9	14.2
8	29/10/2024	05/11/2024	68	37	5.7	15.7
Limits *(As per NAAQS, 2009)*			100 (µg/m³)	60 (µg/m³)	80 (µg/m³)	80 (µg/m³)

Note*: The results relate to the parameter tested only.*

----------*End of Report*----------

For ABNS Scientific Services,

Report reviewed By: Dr. Bidyut Jyoti Sarmah (TM)

11/11/2024

Authorized Signatory

(Dr. Mayur Jyoti Mahanta)

ABNS SCIENTIFIC SERVICES

এবিএনএচ চাইন্টিফিক চার্ভিচেচ

এবীএনএস সাইংটীফীক সর্বীসেজ

H-152, Keteki Path, near Radisson Blu, NH 27, Guwahati 781033, Assam

केतेकी पथ, रैडिसन ब्लू के पास, एन एइच २७, गुवाहाटी ७८१०३३, असम

Email: info@abnsscientific.com, abnsscientific@gmail.com Phone: 98640 68513, 98640 89951

TEST REPORT

Report No.: ABNS/EM/111124/01 **Date : 11/11/2024**

Name & Address of the Customer :

M/S ADANI GUWAHATI INTERNATIONAL AIRPORT LIMITED.

Lokpriya Gopinath Bordoloi Internation Airport,

Borjhar, Guwahati, Kamrup (M), Assam-781015.

Ref.: SO:5700336280, Dated:02/01/2024

Sample Description: AMBIENT AIR

Location: KFC

(latitude: 26.104455N, **longitude:** 91.590032E)

Sampling done by: Mr. Chinmay Kalita (Sampler)

Sampling Protocol: IS 5182 (Part 5): 2020

Environmental Condition: *Temperature 23.1°C, Relative Humidity: 68%*

Sl. No	Date of Monitoring	Analysis End Date	Parameters			
			PM 10 (µg/m³)	PM 2.5 (µg/m³)	SO_2 (µg/m³)	NO_X (µg/m³)
			Test Method			
			IS 5182: Part 23:2006 (Reaff. 2022)	Lab SOP.Doc.NO. TPM/ABNS/E/5/D	IS 5182 : Part 2 :2001 (Reaff.2022)	IS 5182 : Part 6 :2006 (Reaff.2022)
			ANALYSIS RESULT			
1	03/10/2024	07/10/2024	73	38	6.3	13.9
2	07/10/2024	09/10/2024	68	36	5.7	14.5
3	14/10/2024	19/10/2024	70	43	5.2	16.8
4	18/10/2024	22/10/2024	72	40	6.0	17.3
5	21/10/2024	24/10/2024	69	39	5.9	16.7
6	24/10/2024	28/10/2024	75	42	6.5	15.8
7	26/10/2024	30/10/2024	79	40	6.3	16.4
8	29/10/2024	05/11/2024	81	37	5.9	15.4
Limits (As per NAAQS, 2009)			100 (µg/m³)	60 (µg/m³)	80 (µg/m³)	80 (µg/m³)

Note*: The results relate to the parameter tested only.*

----------*End of Report*----------

For ABNS Scientific Services,

Report reviewed By: Dr. Bidyut Jyoti Sarmah (TM)

11/11/2024

Authorized Signatory

(Dr. Mayur Jyoti Mahanta)