

**INDIAN INSTITUTE OF CHEMICAL BIOLOGY
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(COUNCIL OF SCIENTIFIC & INDUSTRIAL RESEARCH NEW DELHI)

**TENDER FOR ESTABLISHMENT OF LOCAL AREA NETWORK
(LAN) AND Wi-Fi SYSTEM FOR NEW CAMPUS OF
INDIAN INSTITUTE OF CHEMICAL BIOLOGY SALT LAKE
KOLKATA**

VOLUME – II

**NOTICE INVITING TENDER
&
GENERAL INSTRUCTION TO BIDDERS**

JULY 2012



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Tender No. – Admn. 26(141) / 2011 /SLP

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ESTABLISHMENT OF LOCAL AREA NETWORK (LAN) & Wi-Fi SYSTEM

FOR NEW CAMPUS OF IICB AT SALT LAKE KOLKATA

VOLUME – II

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**ESTABLISHMENT OF LOCAL AREA NETWORK (LAN) & Wi-Fi SYSTEM
FOR NEW CAMPUS OF IICB AT SALT LAKE KOLKATA**

A. NOTICE INVITING TENDERS

- 1.1 Tenders are hereby invited for the **Local Area Network (LAN) work for New Campus of IICB at Salt Lake, Kolkata from eligible, firms/SI** for which advertisement published in local & all India Newspapers on **23/07/2012**.
- 1.2 Estimated Cost is **Rs.2.08 Crores (Rupees Two Crores Eight Lakhs only)** based on specification as well as current market rate.
- 1.3 Time for carrying out the total work will be **Six Calendar Months** from the date of commencement and the date of commencement shall be reckoned from the tenth day of issue of award letter.
- 1.4 Complete contract documents to be complied with by the tenderer whose tender may be accepted can be seen at the office of the Deputy General Manager – PG III, HSCC (I) Ltd, E6 (A), Block-E, Sector-I, Noida (UP)- 201301.
- 1.5 Tenders should be on the specified form (Non transferable).
- 1.6 Tenders should be submitted with the documents as per NIT along with the Earnest Money in three separate sealed covers superscribed with the name of the work, date and time of opening written on all the four inner and outer envelopes. They will be **received up to 3.00 P.M. on 17/08/2012 & will be opened at 3.30 PM on the same day in the office of the Dy. General Manager – PG III, HSCC (I) Ltd, E6 (A), Block-E, Sector-I, Noida (UP) 201301**. Tender should be dropped in the tender box **at Reception of HSCC** before the closing date and time indicated. In case these are sent by post these should be sent by Registered Post / Speed post addressed to the Dy. General Manager – PG III, HSCC (I) Ltd, E6 (A), Block-E, Sector-I, Noida (UP) 201301. Tenderers are to ensure that they post the tender well in advance so as to reach before the closing time and date indicated.
- 1.7 The Earnest Money amounting to **Rs. 4.16 Lakhs (Rupees Four Lakhs Sixteen Thousand Only)** as per clause 12.0 of General Instructions to Bidders, Volume-II should accompany the tender. Tenders received without earnest money will be invalid.

The earnest money deposit, Prequalification document, Tender documents, Schedule of Quantities shall be placed in three separate sealed envelopes each marked “Prequalification document & Earnest Money” (Envelope-No.1), Tender documents Vol II, III, IV, V, (Envelope No.2) and Schedule of Quantities Vol – VI (Envelope No. 3) respectively. All the envelopes shall be submitted together in another sealed envelope. The envelopes marked

“Envelope No.2 & 3, “of only those tenderers shall be opened, whose earnest money deposit placed in Envelope No.1 is found to be in order and who are pre-qualified.

- 1.8 The **Employer** does not bind himself to accept the lowest or any tender and reserves to himself the right of accepting the whole or any part of the tender and the tenderer shall be bound to perform the same at the rates quoted.
- 1.9 Canvassing in connection with the tenders is prohibited and the tenders submitted by the contractor who resort to canvassing are liable for rejection.
- 1.10 The tenderer shall not be permitted to tender for works in the concerned unit of CSIR and HSCC in which a relative is posted in the level between Controller of Administration or administrative head and Junior Engineer (Both inclusive) or equivalent level. He shall also intimate the names of persons who are working with him in any capacity or subsequently employed by him and whom relatives are as mentioned above.

NOTE: A person shall be deemed to be a relative of another if, and only if, (a) they are members of a Hindu undivided family; or (b) they are husband and wife; or (c) the one is related to the other in the following manner: Father, Mother (including step mother), Son (including step son), Son's wife, Daughter (including step daughter), Father's father, Son's son, Son's son's wife, Son's daughter, Son's daughter's husband, Daughter's husband, Daughter's son, Daughter's son's wife, Daughter's daughter, Daughter's daughter's husband, Brother (including step brother), Brother's wife, Sister (including step sister), Sister's husband.

- 1.11 Tender submitted shall remain valid for 120 days from the date of opening for the purpose of acceptance and award of work, validity beyond 120 days from the date of opening shall be by mutual consent.
- 1.12 The tenderer shall quote rates both in figures and words. He shall also workout the amount for each item of work and writes in both figures and words. On check if there are differences between the rates quoted by the tenderer in words and in figures or in the amount worked out by him, the following procedure shall be followed:
 - (i) When there is a difference between the rates in figures and in words, the rates, which correspond to the amounts worked out by the tenderer, shall be taken as correct.
 - (ii) When the amount of an item is not worked out by the tenderer or it does not correspond with the rate written either in figures or in words, the rate quoted by the tenderer in words shall be taken as correct.
 - (iii) When the rate quoted by the tenderer in figures and in words tallies but the amount is not worked out correctly the rate quoted by the tenderer shall be taken as correct and not the amount.

- 1.13 The tenderer should see drawings and in case of doubt obtain required particulars,

which may in any way influence his tender from the Engineer as no claim whatsoever will be entertained for any alleged ignorance thereof.

- 1.14 Before tendering, the tenderer shall inspect the site to fully acquaint himself about the condition in regard to accessibility of site, nature and extent of ground, working condition of site and locality including stacking of materials, installations of tools and plants (T&P) etc., conditions affecting accommodations and movement of labour etc. required for the satisfactory execution of the work contract. No claim whatsoever on such account shall be entertained by the **Employer** in any circumstances.
- 1.15 Earnest money will be forfeited if the contractor fails to commence the work as per letter of award. If any tenderer withdraws this tender within the validity period or makes any modification in terms and conditions of the tender which are not acceptable to the Department, then CSIR / IICB shall without prejudice to any right or remedy, be a liberty to forfeit 50 % (fifty percent) of the Earnest Money absolutely.
- 1.16 Except writing rates and amount, the tenderer should not write any conditions or make any changes, additions, alterations and modifications in the printed form of tenders. **Tenderers who are desirous to offer rebate the same should be brought out separately in the covering letter and submitted along with the tender.**
- 1.17 Some of the provisions of General Conditions of Contract are given below. Interpretation however shall be as given in the General Conditions of Contract.
- a) **DEFECTS LIABILITY PERIOD: Twelve months from the date of completion as certified by the employer.**
- b) **MINIMUM VALUE OF WORK FOR THE INTERMEDIATE CERTIFICATE : Rs. 10 Lakhs** Intermediate certificate for a lesser amount can be admitted for payment at the discretion of the Engineer.
- c) **SECURITY DEPOSIT:** A sum @ 10 % of the gross amount of the bill shall be deducted from each running bill of the contractor till the sum along with the sum already deposited as earnest money, will amount to security deposit of 5 % of the tendered value of the work. In addition, the contractor shall be requested to deposit an amount equal to 5 % of the tendered value of the contract as Performance Security within the period prescribed for commencement of work in the letter of award issued to him.
- d) **COMPENSATION:** Contractor shall pay as compensation an amount equal to one percent or such smaller amount as the **Employer** (whose decision in writing shall be final) may decide on the

cost of the whole work as shown in the agreement for every week that the work remains uncompleted or unfinished or due quantity of work remains incomplete after the proper dates. Compensation to be paid shall not exceed ten percent of the estimated cost of the work as shown in the agreement.

- 1.18 Clauses No. 28 of conditions of contract i.e. "**ESCALATION**" will not be applicable in this contract since the duration of contract is 03 months.
- 1.19 Purchase preference will be given to Central Public Sector Enterprise (CPSE) for award of works costing between Rs.5 crores to Rs.100 crores as per provisions contained in para 20.10.9 in CPWD Manual 2003 and OM No.DPE/13(12)/2003-Fin Vol.II dated 18.07.05 issued by department of Public Sector Enterprise, Government of India.
- 1.20 Asbestos in any form shall not be used in any work related to the Project.

B. GENERAL INSTRUCTIONS TO BIDDERS

1.1 Description of Works

The site for Development of New Campus for Indian Institute of Chemical Biology, Salt Lake, Kolkata is located in Sector V of Salt Lake City, under the NABADIGANTA Municipality, Salt Lake, Kolkata, West Bengal in a plot measuring about 4 acres. The plot abuts roads on three sides. On the east across the road is National Test House, on the north across the road is Chem Bio-Tech Laboratory, and on the west is the Rotary Shankar Netralaya. The Scope of work include Supply, Installation, Testing and Commissioning of Local Area Network (LAN) & Wi-Fi system .

Establishment of LAN at IICB, Salt Lake campus, Kolkata

Introduction

At its new upcoming campus at Salt Lake, IICB, wishes to setup a State-of-the-Art, high performance, fault-tolerant and highly available IT Networking infrastructure and shall utilize the best of products and latest, open standards based technology, high quality services and workmanship.

There will be two buildings – Building – ‘CF Block’ has G+3 floors while building ‘RL Block’ located approximately 70 meters away has G+3 floors. The network architecture shall be comprises with one Layer-3/4 Core switches deployed in a highly available – Active-Active or Active-Standby mode. The switch shall be deployed at the server room located on the 3rd floor of Building ‘RL Block’ (G+3).

Scope of Work

The scope of work of the successful bidder shall include, but not limited to the following: Design, configure, testing at works, packaging, transportation, supply, handling at site, installation, laying, erection, testing, integration, training, acceptance test, commissioning of communication networks, as applicable along with associated equipment, hardware, software on a turnkey basis, inclusive of warrantee period support services.

1. Structured communication network comprising of Fiber Optics (FO) Cable, UTP Cat 6 cables, switches, light interface unit, patch panels, connectors, racks, etc. for communication.
2. Network management system as per specification.
3. Internal Wireless network
4. NAC

5. Firewall
6. Necessary cables including power cable and accessories as may be required for smooth and reliable operation of networking equipment.
7. Configuration for the following:
 - Network Management System
 - Core switch, distribution switch & edge switches
 - Wireless Access point and Controller.
 - NAC
 - Firewall
8. Racks for mounting of network equipment including dressing of cables with proper marking in the rack.
9. All pipes & cable laying including termination, accessories including HDPE pipes, PVC conduits/channels, supporting structures, clamps, identification tags, ferules etc. required for laying of cables.
10. All cable laying including fiber optics cables inside and outside the buildings including excavation work required for laying of cables.
11. Supply of all spares required during erection, testing, commissioning and warrantee maintenance.
12. Vendor shall use his own sets of tools, tackles, etc. required for erection, testing, commissioning and warrantee maintenance of the system.
13. Minor civil works (if required) such as chipping/ cutting of floors for making grooves, making holes/ opening through walls, ceiling or floors, drilling of holes through steel structures and frames, grouting of frames, hooks on walls/ceiling etc. required for execution of work. After erection, surface shall be made good by plastering/painting to their original shape and finish.
14. Training of purchaser's personnel.
15. **Vendor shall be capable to provide comprehensive Warranty services for the complete hardware, software & cabling system of the proposed networking system for a period of three years.**

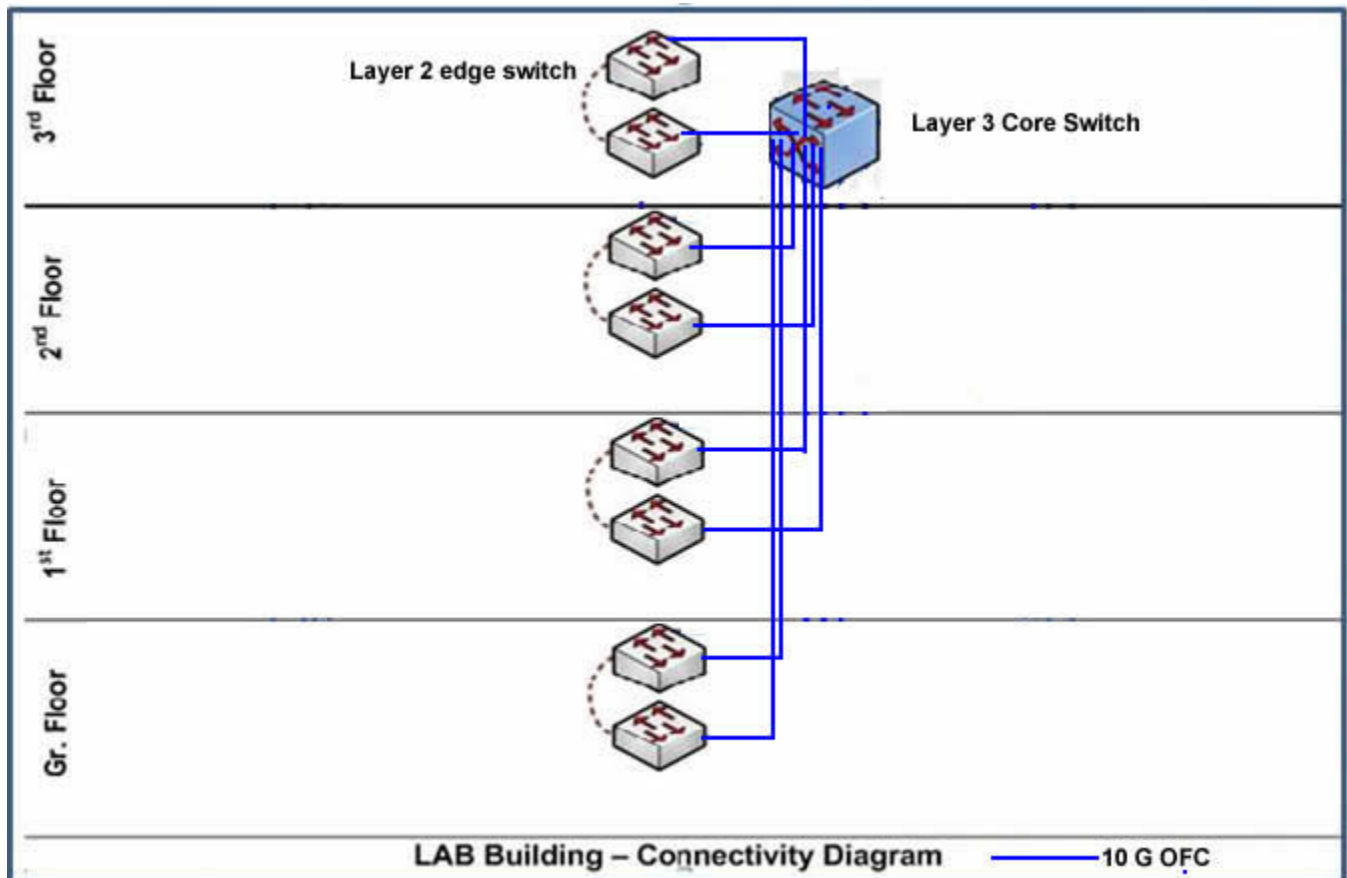
16. The Vendor shall arrange for posting of required technical supervision staffs during erection, testing and commissioning of the system.
17. UPS Power supply arrangement from input source up to the equipment of proposed system shall be done by purchaser.

Others:

1. The Layer3 core switch will be connected with interconnected 4 nos of stackable Layer-2/3 Managed 24 port Gigabit Edge Switch switches located at each floor. The Layer 3 core switch will be placed in the defined server room. The server room should be well equipped with sufficient light, precision cooling system (24X7), humidity control, panel based electric cabling etc. access control, fire detector.
2. The Layer 2 24 10G base edge switches will be interconnected with gigabit port supported Ethernet port. These Edge switches shall be stackable to support future expansion with addition of new users. Each edge switch should be PoE compliant to support connectivity for IEEE 802.3af enabled devices like Wireless Access Points, IP Phones, IP Cameras, etc.
3. Wireless LAN is also being provisioned which should conform to the latest 802.11n standards.
4. One Wireless Access Switch/Controller shall be deployed in Building 'CF Block'.
5. All switching devices and Wireless access points and other active network devices shall comply to network access control (NAC) or end point security solutions which can isolate any server or any user node (PC / workstation / laptop / PDA) which does not conform to the security policies enforced by IICB based on OS patches and/or Anti-Virus updates.
6. There shall be high speed connectivity between IICB's Jadavpur and Salt Lake campus using leased circuit / optical link. Internet and WAN connectivity from the IICB Jadavpur campus shall be routed through this link to the Salt Lake campus. In order to enforce network security at the Salt Lake campus, an appliance based stateful firewall and IPS/IDS shall be deployed at the Salt Lake campus in redundant/failover cluster.
7. For managing and monitoring the wired & wireless network, software or appliance based network management solution shall also be provisioned at the Salt Lake campus.
8. The network infrastructure thus provisioned shall be resilient and scalable to support high availability and future expansions without compromising on performance and requiring forklift upgrades.

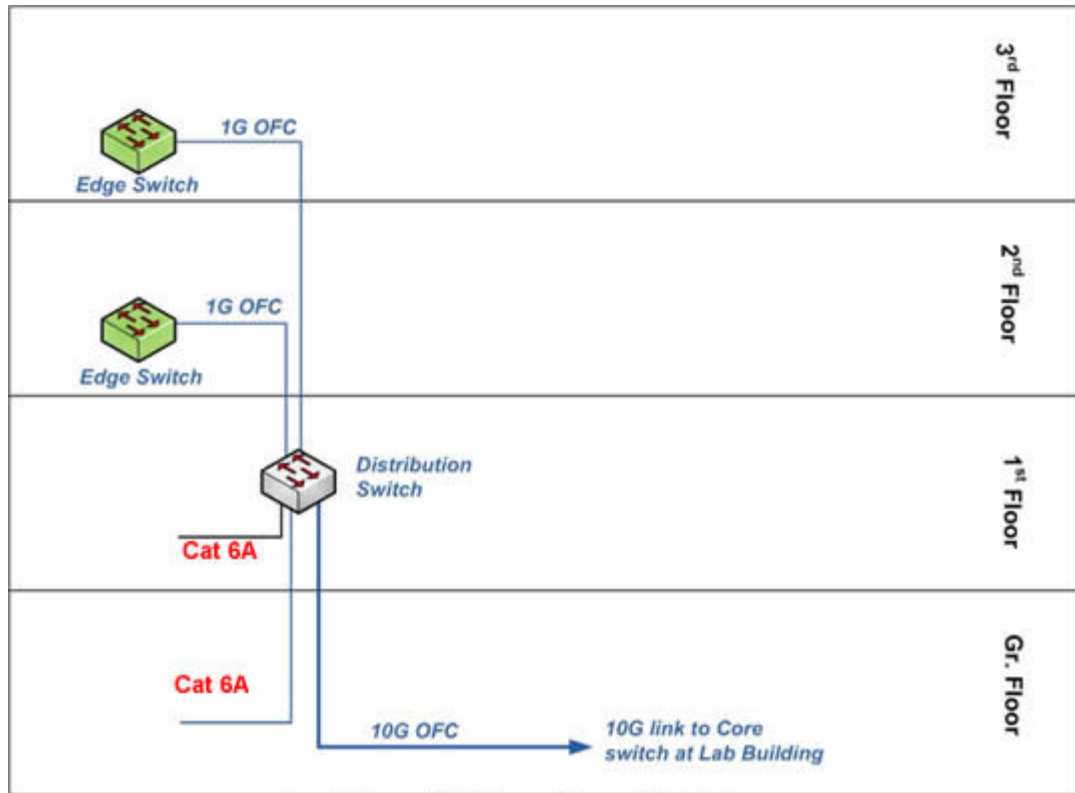
9. The conduit pipe laid already is not a proper laying system for LAN structural cabling. The bending of angle should be more than 90 degree. 90 degree or less than 90 degree bending will cause tearing of fibre channel causes hindrances of communication system. The angle of laying must be 10 times more than radius of OFC to move fibre channel/SFTP cable freely inside the conduit pipe (Fig below)

Project Diagram:



In the second building (Guest House building), the architecture shall be three tiered. The core switch located in the Lab building shall have a 10G MM OFC connectivity with a Distribution switch located in the first floor of the Guest house building. On each floor of the Guest house, one Gigabit Edge switch shall be installed inside 12U wall mounted racks. Each of the edge switches on the Ground floor, 2nd floor and 3rd floor shall have Gigabit MM OFC uplinks to the Distribution switch. The Edge switch located on the same floor as Distribution switch shall have a Gigabit UTP uplink to the Distribution switch.

Please note that floor wise LAN Layout plan for LAB Building and Guest House Building are enclosed with this document for laying the CAT6A and Fiber Optics cable and installation and commissioning of Network Switches/Racks.



Guest House Building – Connectivity Diagram

Wireless LAN is also being provisioned which should conform to the latest 802.11n standards. The deployed Wireless components shall also be backward compatible with legacy devices that support 802.11a/b/g standards. There shall be a single Wireless Controller/ access switch that will connect to the Core switch. The Wireless Access Points shall be installed across the various floors of the building and shall be uplinked to the nearest Edge switch.

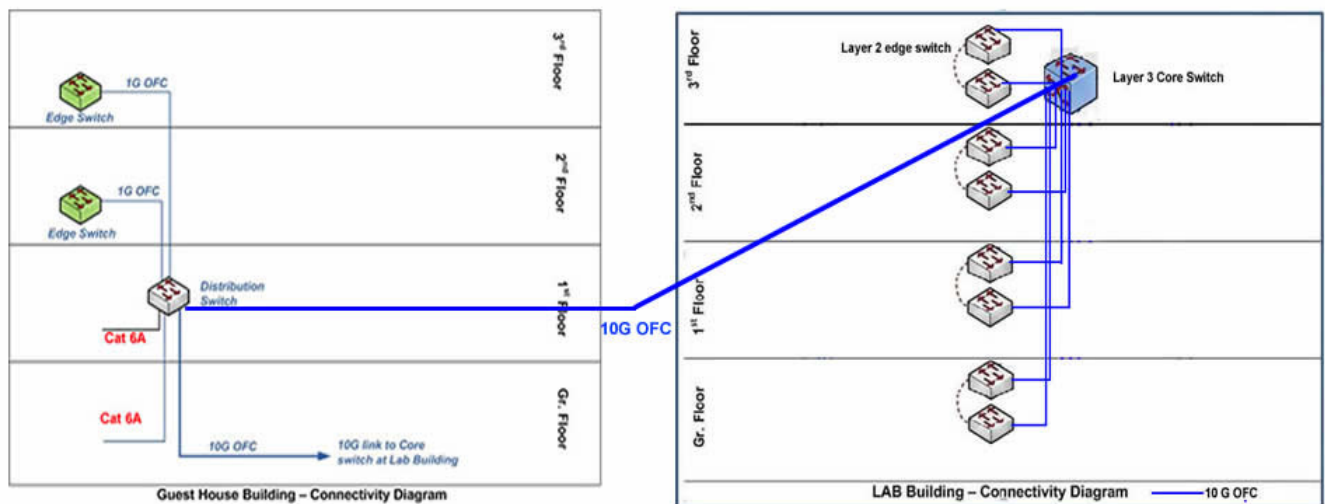
Wireless bridging or point to point backhaul is also being provisioned between the two buildings, namely – Lab building and Guest House Building. This wireless backhaul shall serve as a high speed backup or redundant link between the buildings in case of failure of the OFC link due to any unforeseen situations.

All switching devices and Wireless access points and other active network devices shall comply to network access control (NAC) or end point security solutions which can isolate any server or any user node (PC / workstation / laptop / PDA) which does not conform to the security policies enforced by IICB based on OS patches and/or Anti-Virus updates. One NAC device shall be deployed which will connect to the core switch.

There shall be high speed connectivity between IICB's Jadavpur and Salt Lake campus using leased circuit / optical link. Internet and WAN connectivity from the IICB Jadavpur campus shall be routed through this link to the Salt Lake campus. In order to enforce network security at the Salt Lake campus, an appliance based stateful firewall with IPS/IDS shall be deployed at the Salt Lake campus.

For managing and monitoring the wired & wireless network as well as network security, software or appliance based network and security management solution shall also be provisioned at the Salt Lake campus.

The network infrastructure thus provisioned shall be resilient and scalable to support future expansions without compromising on performance and any need for forklift upgrades. The proposed logical layouts and floor wise diagrams are given below.



1.0 Payment Terms:

80% of supply order value will be paid against delivery of materials and inspection at site. Remaining 20% of supply order value will be paid against project completion and issue of FAT (Final Acceptance Certificate). 100% payment of services will be paid against completion of job and issue of job completion certificate.

2.0 Final Acceptance Test (FAT) :

After successfully commissioning of the system, final acceptance tests shall be undertaken for a period of 15 days for integrated operation of the network with overall uptime efficiency of 98.5%. The Vendor in the presence of the purchaser shall carry out the final acceptance test. All the equipment including networking equipment, hard ware & software shall operate upto 24 hrs. a day for 15 consecutive days at an overall uptime efficiency of 98.5%.

Up-time efficiency is defined as productive and error free use of equipment. Any unutilized time during the test shall also qualify as uptime provided there are no hardware and software malfunctions. Uptime efficiency shall be computed as under:
(Uptime x 100) / (Total available time)

In case the required uptime efficiency is not obtained as mentioned above, the final acceptance test will be repeated for same time period till the passing of successful acceptance test.

3.0 Completeness

Any equipment, materials or supplies which may not be specifically mentioned, but are necessary for carrying out the contract work shall be in the scope of the Vendor and the systems must be complete in all respects.

4.0 Force Majeure

The vendor shall not be liable for forfeiture of its bid security, performance security, liquidated damages or termination for default, if and to the extent that, its delay in performance or other failure to perform its obligations under the contract is the result of an event of Force Majeure. Force Majeure means an event beyond the control of the supplier and not involving the vendor's fault or negligence and not foreseeable. Such events may include, but are not limited to, acts of the vendor either in its sovereign or contractual capacity, wars or revolutions, fires, floods, epidemics, quarantine restrictions and freight embargoes. If a Force Majeure situation arises the Vendor shall forthwith notify IICB in writing of such conditions and cause thereof.

Unless otherwise directed by IICB in writing, the vendor shall continue to perform its obligations under the contract as far as is reasonably practical, and shall seek all alternative means for performance not prevented by the Force Majeure event.

5.0 Warrantee:

Three years warranty shall be included till the passing of successful acceptance test.

6.0 Communication Cable:

6 core Fiber Optics Cable: Tentative cable length as per BOQ

Cat 6 UTP cable: Tentative cable length as per BOQ

Unit price of all type of cables shall be quoted.

7.0 Cable laying - as required for

- Communication cables
- Power Cables - wherever required.

Cable laying method:

UTP cable laying & termination:

- 1) For indoor surface and concealed cable lying, medium duty PVC channel/pipe (ISI) of adequate size shall be used.
- 2) The cable shall be dressed and terminated in accordance with the recommendations made in the relevant TIA/EIA standard document, manufacturer's recommendation and/or best practices.
- 3) Cable shall be neatly bundled and dressed to their respective panels or blocks
- 4) Each cable shall be clearly labeled on the cable jacket behind the patch panel at a location that can be viewed clearly without removing the bundle support ties.
- 5) An axial spacing of 150 mm (minimum) shall be maintained between power and network cable.
- 6) Cables shall not be attached to ceiling grid or lighting support wires.
- 7) Holes in walls, ceiling etc. shall be made and plugged to their original finish after drawing the cable.
- 8) Group cables neatly together in bundles not exceeding 30 cables per bundle. Do not try to arrange cables in bundles in straight lines leave in a random lay, to help eliminate crosstalk between cables and bundles.

- 9) The contractor shall provide complete documentation covering the installation and maintenance of the building cabling system. Including “as built” drawings showing all main cable runs, cable trays and catenaries, outlets, consolidation points. Complete with outlet numbering.

Fiber optic cable laying & termination

- 1) FO cable shall be laid in HDPE conduit for both over ground & under ground laying.
- 2) Underground cable shall be laid generally about 1.0 meter below the finished ground level and shall be provided with at least 75 mm sand cushioning both at top and bottom with brick top cover and sand filling for mechanical protection. Where power and network cables run side by side, the axial spacing shall not be less than 300 mm. Inspection pit at appropriate distances shall be provided for under ground cables if required.
- 3) Exposed pipes shall run parallel or perpendicular to column/building lines to match the existing architectural arrangement, wherever required.
- 4) The fiber stack shall be neatly coiled within the fiber termination panel. No slack loops shall be allowed external to the fiber panels.
- 5) Each cable shall be individually attached to the respective termination panel by mechanical means.
- 6) Each fiber cable shall be stripped upon entering the termination panel and individual fiber routed in the termination panel.
- 7) Each cable shall be clearly labeled at the entrance to the termination point. Cables labeled within the bundled shall not be acceptable.
- 8) Dust caps shall be provided on the connectors and couplings.
- 9) The excavation of trenches shall be done straight as far as possible. Width of the trench shall be in accordance with the number of cables to be laid but in any case shall not be less than 300 mm.
- 10) Vendor shall provide a 20 years industry standards compliance warrantee from the date of successful implementation, testing and commissioning of the cabling system.

11) The contractor shall provide complete documentation covering the installation and maintenance of the building cabling system. Including “as built” drawings showing all main cable runs, cable trays and catenaries, outlets, consolidation points. Complete with outlet numbering.

8.0 Tools and tackles

The Vendor shall bring all special installation/maintenance tools, tackles and testing equipment required to install, commission and maintain the system. In addition to above, the Vendor shall supply two number of line testers for UTP cable.

9.0 Drawings & documentation for networking equipments

All documents, instruction manuals etc. shall be in English language.

10.0 The successful Vendor shall submit the following documents.

- Bill of Material and item wise compliance
- Equipment specification supported with manufacture’s catalogue
- Schematic drawings and detailed plan of execution within two weeks from placement of order

10.1 The following networking, hardware and software manuals shall be furnished both in CD and hardcopies by successful Vendor.

- Hardware and networking installation manuals for individual equipment.
- Reference manuals for individual equipment.
- User & reference manuals for Network Management software.
- Logical screen shots for hardware/software configuration
- Training documents
- Licenses

10.2 As built drawings in three copies.

11.0 Information /data /drawings to be furnished by the Vendor along with the tender

11.1 Details of system network and hardware offered (supported by trade catalogues)

11.2 Clause wise compliance of all the clauses.

11.3 List of deviations from the Technical Specification, if any, with reasons thereof.

Additional specific terms of the contract for establishment of Local Area Network (LAN) at IICB, Salt Lake campus, Kolkata.

- a) The OEM's and/or their authorized representatives/partners/integrators should provide complete technical compliances for each of the products mentioned below. Deviations of technical features and specification mentioned in this tender document should not be considered and if considered, IICB computer division is not liable for any technical problems may arise during installation, implementation, execution of the system at IICB salt lake campus.
- b) All bidders should provide tender specific authorisations from their respective OEM's. The OEM's shall also undertake to provide support commitments during the warranty period and also take all warranty related responsibilities in the event
- c) All Switches and Wireless devices, Network Management (From Sr. no. 1.0 to 8.0 except firewall in the BOQ) proposed herein shall be from **CISCO/Juniper/Brocade/HP**.
- d) Firewall (Sr. no. 6 in the BOQ) from **CISCO/Juniper/Checkpoint/HP/Fortinet**.
- e) All the passive devices from **Molex/Systimax/R&M/AMP/Panduit**
- f) **All products shall be offered with Three (3) years comprehensive warranty.**
- g) System Integrator / Service Provider should have registered office at Kolkata for the last 5 years and they should have minimum 4 qualified engineers for service and support.
- h) Licensing – All the licenses of the software will be provided in the name of the client (IICB, Kolkata)
- i) Service provider/Integrator sole responsible for all the maintenance support of all the items supplied and installed for the period of three years from the date of commissioning and handing over of all the items.
- j) Price shall be inclusive of all statutory taxes, duties, levies and charges up to supply, inspection and installation. Prices shall be firm. No escalation on any account whatsoever shall be payable.

The bidder/service provider/integrator will be entirely responsible for all taxes, duties, licenses, fees, octroi, road permit fee etc in connection with delivery of the items at site including taxes and levies to be charged in connection with local transportation and incidental services and commissioning.
- k) After award of work, in case the quoted model(s) are outdated and new upgraded model introduce in the market then service provider shall supply the latest upgraded model without any extra charges.
- l) If any promotional scheme is launched by the manufacturer at the time of supply of the item, all the benefits of the scheme will be given to the client/consignee.

- m) Service provider/System Integrator has to provide the plan, design and site preparation as per requirement and as directed to the satisfaction of engineer and as per terms of the technical specifications.
- n) A detailed shop drawings indicating line diagram, route diagram showing details of laying underground, overhead or under wall cables showing details of cable, switches, joint etc. complete in all respect to be submitted to engineer for approval before ordering any items & start of execution work within 15 days of award of work. The design if required will be revised as per direction of engineer before approval.
- o) The Service provider/System Integrator is responsible for all unpacking, assembling, wiring, installation, cabling between equipment and components and connection to power supplies. The supplier will test all Systems operations and perform all the necessary setup, configuration and customization for successful operation of the Network at IICB campus.
- p) The Local Area Network (LAN) will be accepted only when authorized person from the IICB, Kolkata has given satisfactory performance report of the installation.
- q) A technically qualified & experienced engineer (having good knowledge of Networking) will have to be posted at site after completion of the project (Commissioning and handing over) for the minimum period of one year. Deputed engineer should have an experience of at least two years in the Networking and should have technical qualification in the relevant field. Your site engineer will co-ordinate with the authorized person of the IICB at site for all works including installation, commissioning and maintenance. The cost of this will be deemed to be including in price quoted.

The site engineer deputed from the service provider for maintenance support should attain the breakdown call and make all efforts to rectify faults related to failure of hardware/software/network at the IICB with minimum possible time and maximum up to 24 hours from the time of reporting of fault.

Network up time should be continuous throughout the warranty period covering 24x7 without fail as decided by the IICB and as per their requirements.

- r) Inspection – The inspection shall be carried out by authorized representative.

Client/Purchaser have the right to inspect and/or to test the material to confirm their conformity with the contract and in case any inspected/tested goods fail to perform to the specifications, the client may reject them and the supplier shall either replace the rejected goods or make alteration necessary to meet the specifications free of cost to the Client/purchaser.

All the terms and conditions, undertakings of PQ documents (Volume –I) submitted along with tender and under which the agency has been pre qualified for this work will have to be strictly followed. Same shall be treated as part of this tender documents in addition to other terms and conditions of the tender documents.

- s) The bidder should provide the standard technical literature (not photocopies) on the subject offered

with dealership certificate of the offered product(s). The offers which do not meet the NIT required technical specifications will be summarily rejected, from any further consideration. The bidder has to provide the details Bill of Materials (BOM)

1.2 Employer

Employer shall mean the **Director-General, Council of Scientific & Industrial Research, New Delhi** or any office authorized by Director General for the purpose.

1.3 Engineer

Engineer shall mean the engineer designated by the employer to superintend and perform other duties as indicated in the contract. Employer has designated HSCC (India) Ltd. as engineer to superintend and perform other duties as indicated in the contract.

1.4 Time for Completion

The successful Bidder shall complete whole Works within **06 (Six) Calendar months** from Engineer's order to commence the Work..

2.0 Information to be submitted

2.1 Tenders submitted shall include the following information:

- (a) Copies of original documents defining the constitution, legal status, place of registration and principal place of business of the company or firm
- (b) A work plan clearly bringing out how the tenderer proposes to carry out the work to achieve the quality and the time schedule

The work plan shall clearly spell out with specific details the following:

- i. Detailed programme in the form of a PERT/CPM network clearly bringing out details of start & completion of all important activities and also programme showing material & labour resources related to the above PERT/CPM network.
- ii. List of equipment along with details proposed to be used on the Works.
- iii. List and bio-data of Engineers and other important staff members proposed to be employed on the Works.
- iv. Details of new and used shuttering proposed to be employed on the Works.

3.0 Cost of Tendering

- 3.1 The tenderer shall bear all costs associated with the preparation and submission of his Bids and "The Employer" will in no case be responsible or liable for those costs, regardless of the conduct or outcome of the Bidding process.

4.0 Site Visit

- 4.1 The tenderer is advised to acquaint himself with the job involved, visit the site and examine soil conditions, climatic conditions, labour, power, water, material availability, transport and communication facilities, environmental, regulations, laws and bye-laws of statutory bodies of Kolkata/ Government of West Bengal and the Government of India and collect all information that will be necessary for preparing the tenders and entering into a Contract.

The cost of visiting the Site and collecting information for the purpose of submission of the tender shall be to the tenderer's account.

- 4.2 The tenderer and any of his personnel or agents will be granted permission by the Employer to enter upon the site for the purpose of such inspection, but only upon the express condition that the tenderer, his personnel or agents will release and indemnify the Employer and Employer's Personnel and agents from and against all liability in respect thereof and will be responsible for personnel injury (Whether fatal or otherwise), loss of or damage to property and any other loss, damage, costs and expense however caused, which, but for the exercise of such permission would not have arisen.

Tender Documents

5.0 Content of Tender Documents

- 5.1 The Tender Documents comprise the following:

VOLUME – I	PREQUALIFICATION DOCUMENT
VOLUME – II	A. NOTICE INVITING TENDER B. GENERAL INSTRUCTION TO BIDDERS
VOLUME – III	A. ARTICLES OF AGREEMENT B. GENERAL CONDITIONS OF CONTRACT
VOLUME – IV	A. ADDITIONAL CONDITIONS
VOLUME –V	TECHNICAL SPECIFICATION

VOLUME – VI SCHEDULE OF QUANTITIES

- 5.2 The tenderer is expected to examine carefully all instructions, conditions, forms, terms, technical specifications and tender drawings in the tender documents. Failure to comply with the requirements of the tender documents will be at the tenderer's own risk.

Tenders, which are not substantially responsive to the requirements of the tender documents, will be rejected. Tenderers are requested to clear their queries before submission of tenders and submit tenders without conditions.

6.0 Clarification on Tender Documents

- 6.1 A prospective tenderer requiring any clarifications on the tender documents may notify the Engineer in writing or by telex or cable at the Engineer's mailing address indicated in the tender documents. Written copies of the Engineer's response (including an explanation of the query but without identifying the source of the inquiry) will be sent to all prospective Bidders who have received the Tender documents.

7.0 Amendment of Tender Documents

- 7.1 At any time prior to the dead line for submission of tender, the Engineer may for any reason, whether at his own initiative or in response to a clarification requested by the prospective tenderers, modify the Tender documents by amendment.
- 7.2 The amendment will be sent to all prospective tenderers who have received the tender documents, to arrive not later than 2 days prior to the original or extended deadline for submission of Bids, in writing or by telex or cable and will be binding upon them. Prospective Bidders should promptly acknowledge receipt thereof by telex or cable to the Engineer.
- 7.3 In order to afford prospective Bidders reasonable time in which to take an amendment into account in preparing their Bids, the Engineer may, at his discretion, extend the deadline for the submission of Bids.

Preparation of Tenders

8.0 Language of Tender

- 8.1 The Tender prepared by the Tenderers and all correspondence and documents relating to the Tender exchanged by the Tenderer and the Engineer shall be written in the English Language.

9.0 Documents comprising the Tender

9.1 The tender to be prepared by the tenderer shall comprise of the following: the Tender, the Earnest Money , the Schedule of Quantities; the Schedules of Supplementary information, and any other materials required to be completed and submitted in accordance with the instructions to Tenderers embodied in these Tender documents. The Forms, Schedule of Quantities and Schedules provided in these Tender documents shall be used without exception.

9.2 All documents issued for the purpose of Tendering as described in Clause 5.1 and amendments issued in accordance with Clause 7, shall be deemed incorporated in the Tender. Tender Documents prepared and submitted in accordance with Clause 14 and 15 shall be returned by Bidders to the Employer along with the submission of the Bid.

10.0 Tender Rates

10.1 **The tenderer shall fill the rates against each item of Schedule of Quantities both in words and figures in the blank spaces provided in the respective columns. Item for which no rate or price is entered by the bidder will not be paid for by the employer when executed and shall be deemed covered by the others rates and prices in the bill of quantities. Correction, if any, shall be made by crossing out, initialling, dating, stamping and rewriting.**

Please note that Rate and Amount shall be quoted in Indian Rupees only in the Schedule of Quantity.

10.2 All duties, taxes, service tax, including works contract tax and other levies payable by the Contractor under the Contract including Contractors profit and over heads etc. or for any other cost shall be included in the rates and prices and the total amount of tender submitted by the tenderer. The evaluation and comparison of tenders by the Engineer shall be made accordingly.

10.3 The rates and prices quoted by the tenderer shall be fixed for items complete in all respect for the duration of the Contract and not subject to adjustment on any account except as otherwise provided in the conditions of Contract.

10.4 The tenderer shall fill his most competitive rates in the first instance, as no negotiations shall be made after opening of the Tenders except if required with the lowest Bidder.

11.0 Tender Validity

11.1 The tender shall remain valid and open for acceptance for a period of **120 days** from the last date fixed for receiving the same.

11.2 In exceptional circumstances prior to expiry of the original tender validity period, the Engineer may request the tenderer for a specified extension in the period of validity. The request and the responses thereto shall be made in writing or by cable or telex. A Bidder may refuse the request without forfeiting his Bid Security. A Bidder agreeing to the

request will neither be required nor permitted to modify his tender, but will be required to extend the validity of his tender Security correspondingly.

12.0 Earnest Money Deposit

12.1 The tenderer shall furnish, as part of his tender, an Earnest Money of the amount of **Rs.4.16 Lakhs/- (Rupees Four Lakhs Sixteen Thousand Only) having validity period of 120 days from the last date fixed for receiving of bid.** No deviation shall be permitted from this.

12.2 The earnest money have to be deposited in shape of Banker's cheque /Demand draft of **Rs.4.16 Lakhs/- (Rupees Four Lakhs Sixteen Thousand Only)** in favour of the **The Director, Indian Institute of Chemical Biology, Kolkata from any Nationalised bank/Scheduled bank.**

12.3 Deleted

12.4 Any tender not accompanied by an acceptable Earnest Money Deposit will be straightaway Rejected.

12.5 The Earnest Money Deposit of unsuccessful tenderers will be returned as promptly as possible but not later than 30 days after the expiration of the period of tender validity prescribed by the Employer.

12.6 The Earnest Money Deposit may be forfeited

- a) If a tenderer withdraws his tender during the period of tender validity.
- b) In the case of successful tenderer, if he does not :
 - i) enter into the Contract, or
 - ii) furnish the necessary Performance Security
 - iii) agree to arithmetic corrections made as per terms of tender documents.
 - iv) Submitted any misleading information during prequalification and or tendering process.

12.7 No interest will be payable by the Engineer on the Earnest Money Deposit amount cited above.

13.0 Format and Signing of Tender

- 13.1 The Tender shall be filled & signed only by the Firm/ Corporation in whose name the Tenders have been issued. The tender shall be typed or written in indelible ink and duly signed by a person or persons duly authorised to sign the tender. Proof of authorization shall be furnished in the form of written Power of Attorney, which shall accompany the tender.
- 13.2 All pages of tender shall be initialled and stamped by the person signing the tenderer where entries or amendments have been made.
- 13.3 The complete tender shall be without alterations interlining and erasures except those to accord with instruction issued by the Engineer or as necessary to correct errors made by the tenderer in which case such correction shall be initialled by person signing the tender.

Submission of Tender

14.0 Sealing, Marking & Submission

- 14.1 The tender shall be submitted in accordance with the procedure detailed herein. Specified documents shall be enclosed in envelope of appropriate size each of which shall be sealed.
- (i) Envelope No. 1: Shall contain Prequalification document (Volume-I) and Earnest Money Deposit as indicated in Clause 12 of these Instructions to tenderers.
 - (ii) Envelope No. 2 : Shall contain covering letter and the other tender documents (Vol –II, III, IV, V) duly signed including the following :
 - (a) Power of attorney of person authorised to sign the tender.
 - (b) Original tender documents (all pages) (Vol –II, III, IV, V) duly signed and stamped.
 - (c) Documents regarding constitution of tenderer as indicated in Clause 2.1 of these Instructions to Bidders.
 - (d) Certificate of Registration.
 - (e) All the information as stipulated in clause 2.0 under information to be submitted
 - (e) Construction Schedule and Schedule for manpower to be deployed at Site.

- (iii) Envelope No. 3: Shall contain only the Schedule of Quantities (Vol – VI) and rates/prices duly filled in and signed and stamped without any conditions whatsoever. Bids containing any conditions in Envelope No. 3 are liable to be summarily rejected.

The Contractor must fill up price against each item of Schedule of Quantities both in words and figures in the blank spaces provided in the respective columns.

Please note that the price should not be indicated in any of the documents enclosed in Envelope no. 1& 2. Non-compliance shall entail rejection of the tender.

14.2 The tenderer shall seal the tender.

14.3 All the above three envelopes shall be sealed in a fourth envelope and addressed to

The Dy. General Manager -PG-III,
HSCC (India) Ltd.,
Plot No. 6 (A), Block - E, Sector - I,
Noida (UP) - 201 301.

14.4 All the above envelope shall bear the following identification:

Name of work: **Establishment of Local Area Network (LAN) and Wi-Fi system for New Campus of Indian Institute of Chemical Biology at Salt Lake, Kolkata. Tender number, due date and Time of Submission.**

14.5 All the envelopes shall indicate the name and address of the tenders to enable the tender to be returned unopened, if required.

14.6 All recipients for the purpose of submitting a tender shall treat the contents of the documents as private and confidential.

15.0 Deadline for Submission of Tenders

15.1 Tenders must be submitted to The Dy. General Manager- PG-III, HSCC (India) Ltd., not later than **3.00 PM of the designated date.**

15.2 The Engineer may, at his discretion, extend the deadline for submission of Bids through the issuance of an amendment in accordance with Clause 7 in which case all rights and obligations of the Employer and the tenderers previously subject to the deadlines shall thereafter be subject to the new deadline as extended.

16.0 Late Tenders

16.1 Any tender received by the Employer/Engineer after the prescribed deadline for submission will liable to be rejected and will be returned unopened to the tenderer.

17.0 Modification and Withdrawal of Tender

17.1 The tenderer may modify or withdraw his tender after tender submission, provided that modification or notice of withdrawal is received in writing by the Engineer prior to the prescribed deadline for submission of tenders.

17.2 The tenderer's modification or notice of withdrawal shall be prepared, sealed, marked and despatched in accordance with the provisions for the submission of tenders. Notice of withdrawal may also be sent by telex or cable but shall be followed by a signed confirmation copy, postmarked not later than the deadline for submission of tenders.

17.3 No tender may be modified subsequent to the dead line for submission of tenders.

17.4 No tender may be withdrawn in the interval between the deadline for submission of tenders and the expiration of the period of validity of the tender specified. Withdrawal of a Bid during this interval may result in the forfeiture of the Earnest Money Deposit.

17.5 Subsequent to the expiration of the period of validity of tenders prescribed in the tender documents, a successful tenderer who has not been notified by the Engineer of the Award of the Contract may withdraw his tender without penalty.

Tender Opening and Evaluation

18.0 Tender Opening

18.1 Tender shall then be opened in the office of HSCC (I) Ltd., at Plot - 6 (A), Block - E, Sector - I, Noida, Uttar Pradesh - 201 301, half an hour after the prescribed time for tender submission in presence of the tenderer's representatives who may wish to be present.

Envelope No. 1: Shall be opened first. If the Earnest Money Deposit is not found as prescribed, the tender shall be summarily rejected.

The Bidders who are not pre-qualified, their tenders shall not be opened further

Envelope No. 2: Shall be opened of those tenderers who are pre-qualified at a subsequent date to be intimated in advance to such tenderers.

Tenders of parties who do not accept the conditions laid above in the tender documents are also liable to be rejected.

- 18.2. The Engineer will examine the tenders to determine whether they are complete, whether the requisite bid securities have been furnished, whether the tenders have been properly signed and stamped and whether the tenders are generally in order.
- 18.3 Telegraphic/ Fax offer will be treated as defective, invalid and rejected. Only detailed complete tenders received prior to the closing time and date of the tenders will be taken as valid.
- 18.4 The tenderer's names, general technical details, the presence of the requisite Earnest Money Deposit and such other details as the Engineer, at his discretion may consider appropriate will be announced at the tender opening.
- Envelope No. 3 : Shall contain the sealed price Bid. Whose tender is found to be generally in order and substantially responsive shall be opened either at the tender opening or at a subsequent date to be intimated in advance to such eligible tenderers.
- 18.5 Only summary of rates quoted by the tenderers will be read out.
- 18.6 The tender of any tenderer who has not complied with any of the instructions contained herein may not be considered.

19.0 **Process to be Confidential**

- 19.1 After the public opening of tenders, information relating to the examination, clarification, evaluation and comparisons of tenders and recommendations concerning the Award of Contract shall not be disclosed to tenderers or other persons not officially concerned with such process.
- 19.2 Any effort by the tenderer to influence the Employer/ Engineer in the process of examination, clarification, evaluation and comparison of Bids and decision concerning Award of Contract may result in the rejection of the tender.

20.0 **Clarification of Tenders**

- 20.1 To assist in the examination, evaluation and comparison of tenders, the Engineer may ask tenderers individually for clarification of their tenders, including breakdowns of unit prices. The request for clarification and the response shall be in writing or cable or telex, but no change in the quoted rates or substance of the tender shall be sought, offered or permitted except as required to confirm the correction or arithmetical errors discovered by the Engineer during the evaluation of the tenders in accordance with Clause 23 hereof.

21.0 **Determination of Eligibility & Responsiveness**

21.1 The Engineer will determine whether the tender is substantially responsive to the requirements of the tender documents.

For the purpose of this Clause, a substantially responsive tender is one which conforms to all the terms, conditions and specifications of the tender documents without any deviation or reservation.

21.2 A tender, which in relation to the cost estimates of the Engineer is unrealistically priced and which cannot be substantiated satisfactorily by the tenderer may be rejected as non responsive.

22.0 Correction of Errors

22.1 Tenders, determined to be substantially responsive will be checked by the Engineer for any arithmetical errors in computation and summation. Errors will be dealt by the Engineer as per following:

a) When there is a difference between the rates in figures and in words, the rates, which correspond to the amounts worked out by the tenderer, shall be taken as correct.

b) When the amount of an item is not worked out by the tenderer or it does not correspond with the rate written either in figures or in words, the rate quoted by the tenderer in words shall be taken as correct.

c) When the rate quoted by the tenderer in figures and in words tallies but the amount is not worked out correctly the rate quoted by the tenderer shall be taken as correct and not the amount.

22.2 If a tenderer does not accept the correction of errors as outlined above, his tender will be rejected.

23.0 Evaluation and Comparison of Tenders

23.1 Only such of the tenders as have been determined to be substantially responsive to the requirements of the tender documents, in accordance with Clause 22 will be evaluated. Other non-responsive tenders will be rejected.

23.2 Tenderers shall note that no preference of any nature will be given to any tenderer notwithstanding any custom, usage or instructions to the contrary.

23.3 Evaluation of the tenders will take into account, in addition to the tender amounts, the following factors:

a) Arithmetical errors corrected in accordance with Clause 22.

b) Such other factors as the Engineer considers may have a potentially significant impact on Contract execution price and payments.

23.4 Offers, deviations and other factors, which are in excess of the requirements of the tender documents or otherwise result in the accrual of unsolicited benefits to the Employer shall not be taken into account in tender evaluation.

23.5 Price adjustment provisions applying to the period of execution of the Contract shall not be taken into account in tender evaluation except to the extent specifically stated in the Contract.

Award of Contract

24.0 Award Criteria

24.1 Subject to Clause 25, With Engineer will Award the Contract, after prior approval by the Employer to the Bidder whose tender has been determined to be eligible and to be substantially responsive to the tender documents and who has offered the lowest evaluated tender of the Schedule of Quantities, provided further that the tenderer has the capability and resources effectively to carry out the Contract Works.

25.0 Engineer's Right to Accept any Tender, to Reject any or all Tenders

25.1 Notwithstanding Clause 24, the Employer reserves the right to accept or reject any tender including the lowest and to annul the tendering process and reject all tenders, at any time prior to Award of Contract, without thereby incurring any liability to the affected tenderer or tenderers or any obligations to inform the affected tenderer or tenderers of the grounds for the Employer's action.

26.0 Letter of Award

26.1 On receipt of recommendation from engineer, the employer will approve the proposal for award of work. On approval of proposal for award of work, employer/ Engineer will issue letter of award/acceptance to the successful bidder.

26.2 The letter of award will constitute the formation of the Contract.

27.0 Signing of Agreement

27.1 The Contract Agreement shall be executed between the Employer and the Contractor with a provision that payment shall be made by employer on receipt of duly pre-audited and certified bill from engineer.

27.2 The contract agreement shall be signed by Engineer (HSCC) and Finance & Accounts officer of Indian Institute of Chemical Biology, Kolkata on behalf of employer. After

signing of Contract Agreement (in two originals) between contractor and employer, the Engineer shall compile four (4) photo copies of the contract agreement which shall be distributed as under:

Employer – Original + One

Engineer – Three Copies

Contractor – Original

27.3 Upon the receipt of the letter of Award by the successful tenderer, the successful tenderer shall fill the Agreement in accordance with form of Agreement included in the tender documents and submit the same to the Engineer within two weeks of the date of receipt of letter of Award. The Engineer shall return the draft duly approved within one day from the date of receipt of the draft and the successful tenderer shall get the same engrossed, have the correct amount to stamp duly adjudicated by Superintendent of Stamps and thereafter return the same duly signed and executed on behalf of the successful tenderer, all at his own cost within 3 days from the receipt of the approved draft.

28.0 Performance Security

28.1 Within the period prescribed for commencement of work after receipt of letter of Award from the Engineer, the successful tenderer shall furnish to the Engineer a Security in the form of a Bank Guarantee from Nationalised/Scheduled bank for an amount of 5% (Five percent) of the Contract sum. The validity of the Performance Security shall be up to the end of the Defect Liability Period.

PROFORMA FOR EMD BANK GUARANTEE

(To cover payment of Bid Security and Conditions of Contract)

(On a stamp paper of appropriate value from any Nationalised Bank or Scheduled Bank)

To

The Director
Indian Institute of Chemical Biology
Council of Scientific & Industrial Research,
Jadavpur, Kolkata,

Dear Sir,

In consideration of your agreeing to accept Bank Guarantee for Rs.
(Rupees) in lieu of payment from M/s
..... having its /their registered office at
.....(hereinafter called the Bidder) towards earnest money
deposit in respect of your Tender no. calling for Tender for
.....
at and for due fulfilment of the terms and conditions of the said
Tender, we hereby undertake and agree to indemnify and keep you indemnified to the extent of Rs
..... (Rupees).

In the event of any loss or damages, costs, charges or expenses caused to or suffered by you by reason of
any breach or non observance on the part of the Bidder of any terms and conditions of the said Tender,
we shall on demand and without cavil or argument, and without reference to the Bidder, irrevocably and
unconditionally pay you in full satisfaction of your demand the amounts claimed by you, provided that
our liability under this guarantee shall not at any time exceed Rs(Rupees
.....).

This guarantee herein contained shall remain in full force and till you finalise the Tender and select the
Tender as per your choice and it shall in the event of the said Bidder being selected and entrusted with
the said work, continue to be enforceable till the said Bidder executes the Agreement with you and
commences the work as stipulated under the terms and conditions of the said Tender have been fully and
properly carried out by the said Bidder and accordingly discharges the guarantee.

We also agree that your decision as to whether the Bidder has committed any breach or non observance
of the terms and conditions of the said Tender shall be final and binding on us.

We under take to pay the Consultant any money so demanded by the Consultant notwithstanding any dispute or disputes raised by the Contractor(s) in any suit or proceedings pending before any Court or Tribunal relating thereto, our liability under this present being absolute and unequivocal.

The payment so made by us under this bond shall be a valid discharge of our liability for payment there under and the Contractor(s) shall have no claim against us for making such a payment.

This guarantee shall continue to be in full force and effect for a period of 120 days from the date of submission of Bid. Notwithstanding the above limitations, we shall honour and discharge the claims preferred by you within thirty days of expiry of this guarantee.

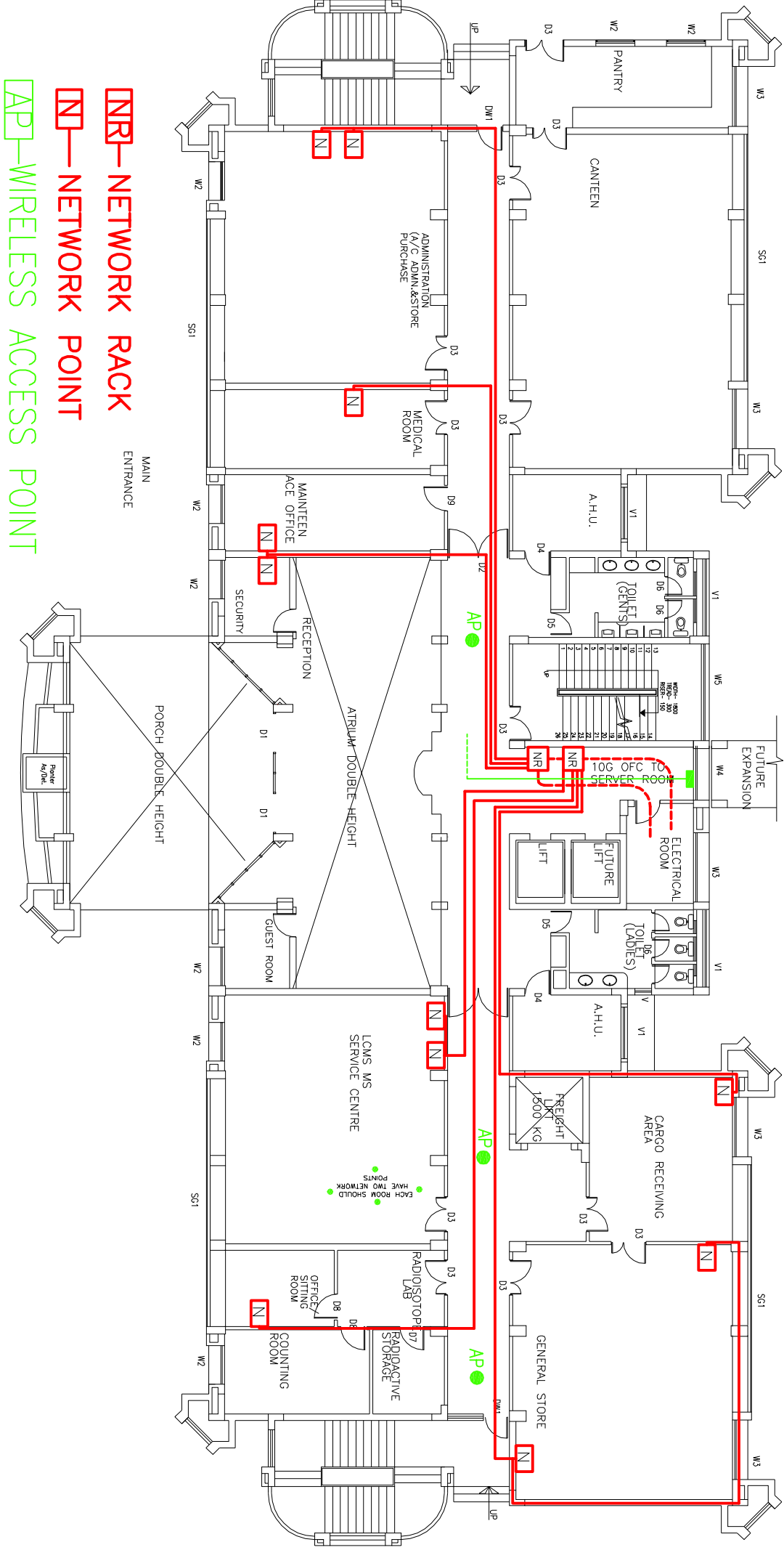
We shall not revoke this guarantee during its currency except with your previous consent in writing. This guarantee shall not be affected by any change in Constitution of our bank or of the Bidder firm. Your neglect or forbearance in the enforcement of the payment of any money, the payment whereof is intended to be hereby secured or the giving of time for the payment hereto shall in no way relieve us our liability under this guarantee.

Dated this day of

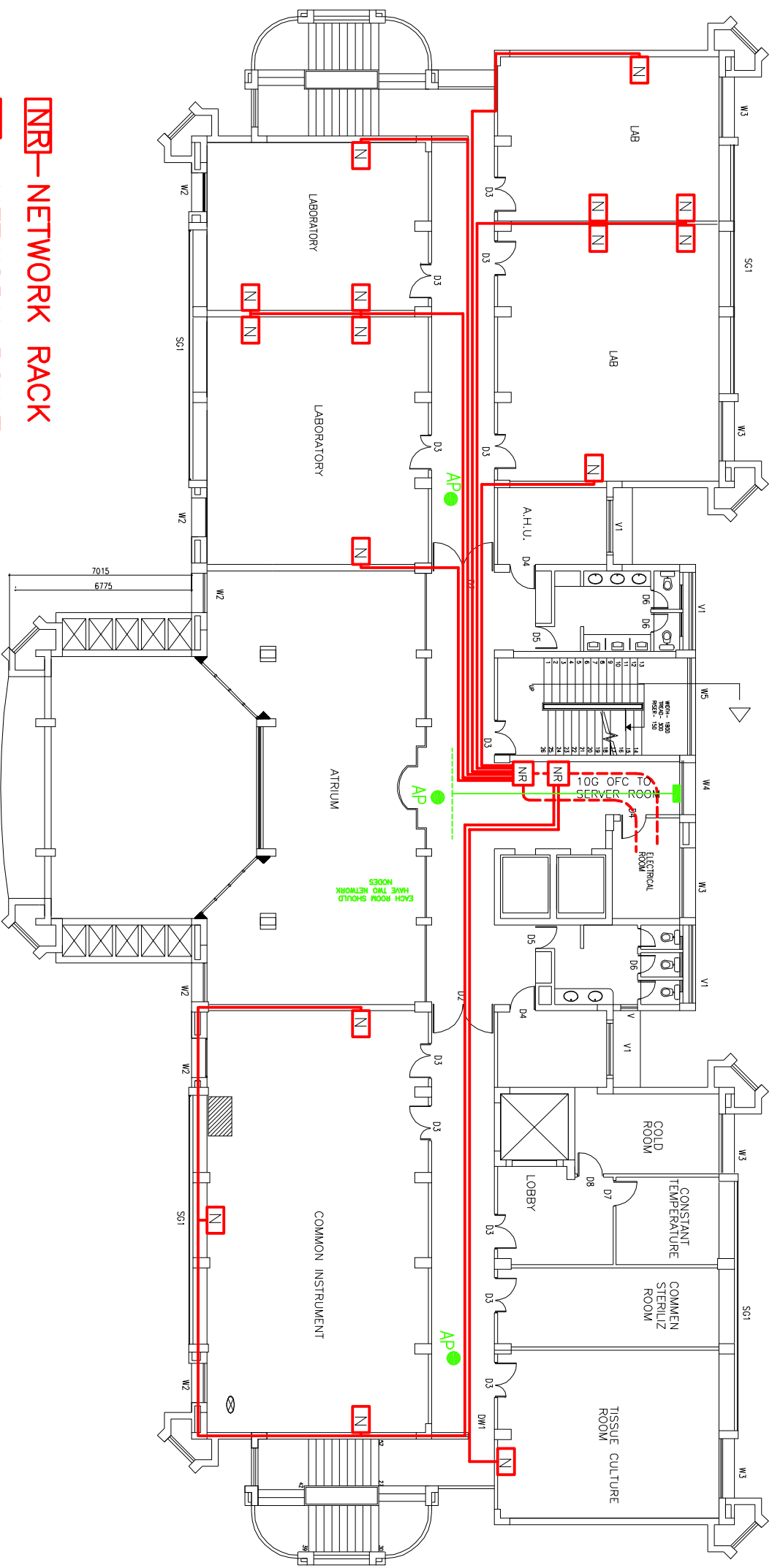
Yours faithfully,

For

Signature & seal of the Bank (Authorised Signatory)

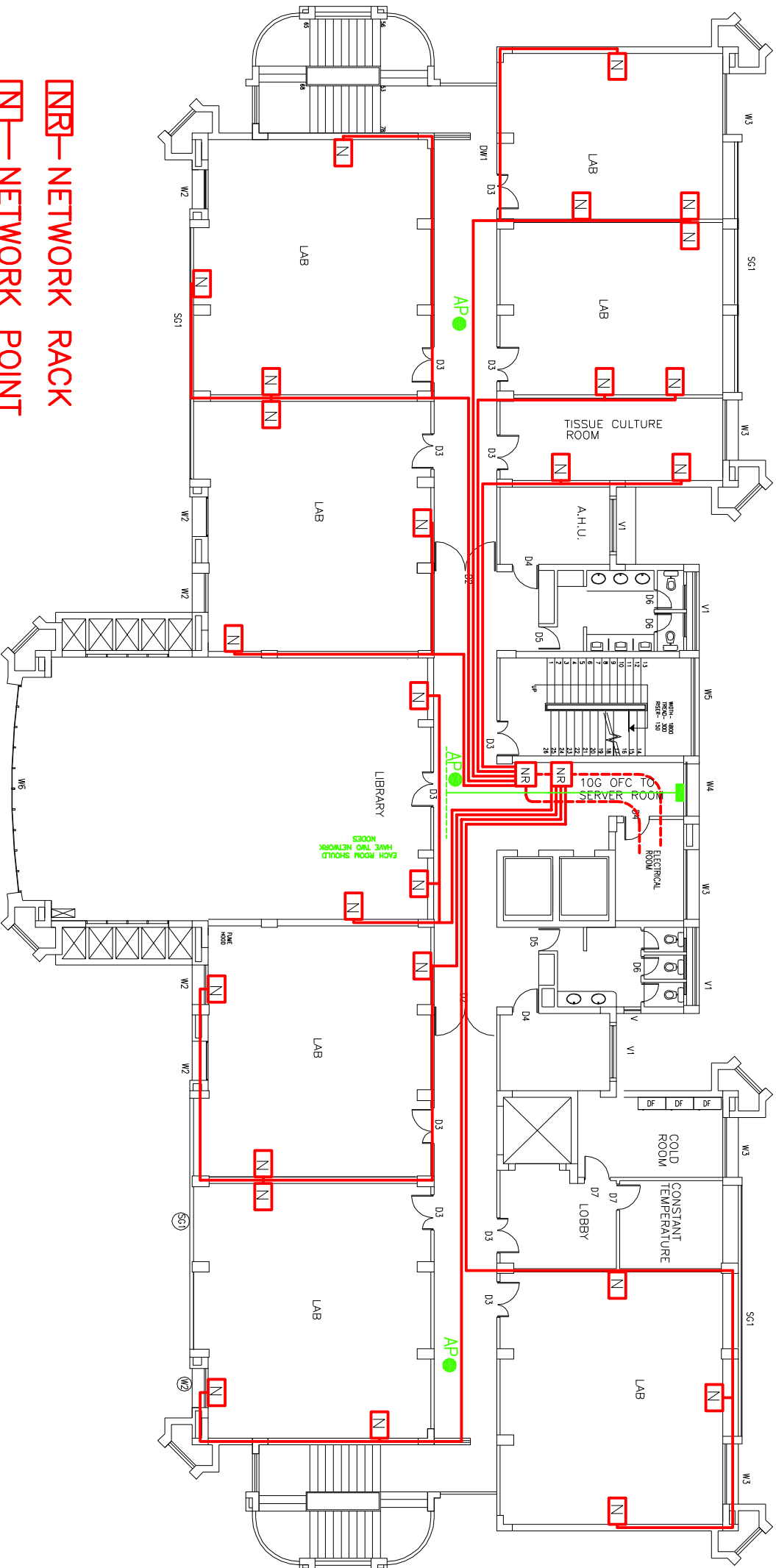


LAN LAYOUT PLAN OF LAB BUILDING—GROUND FLOOR



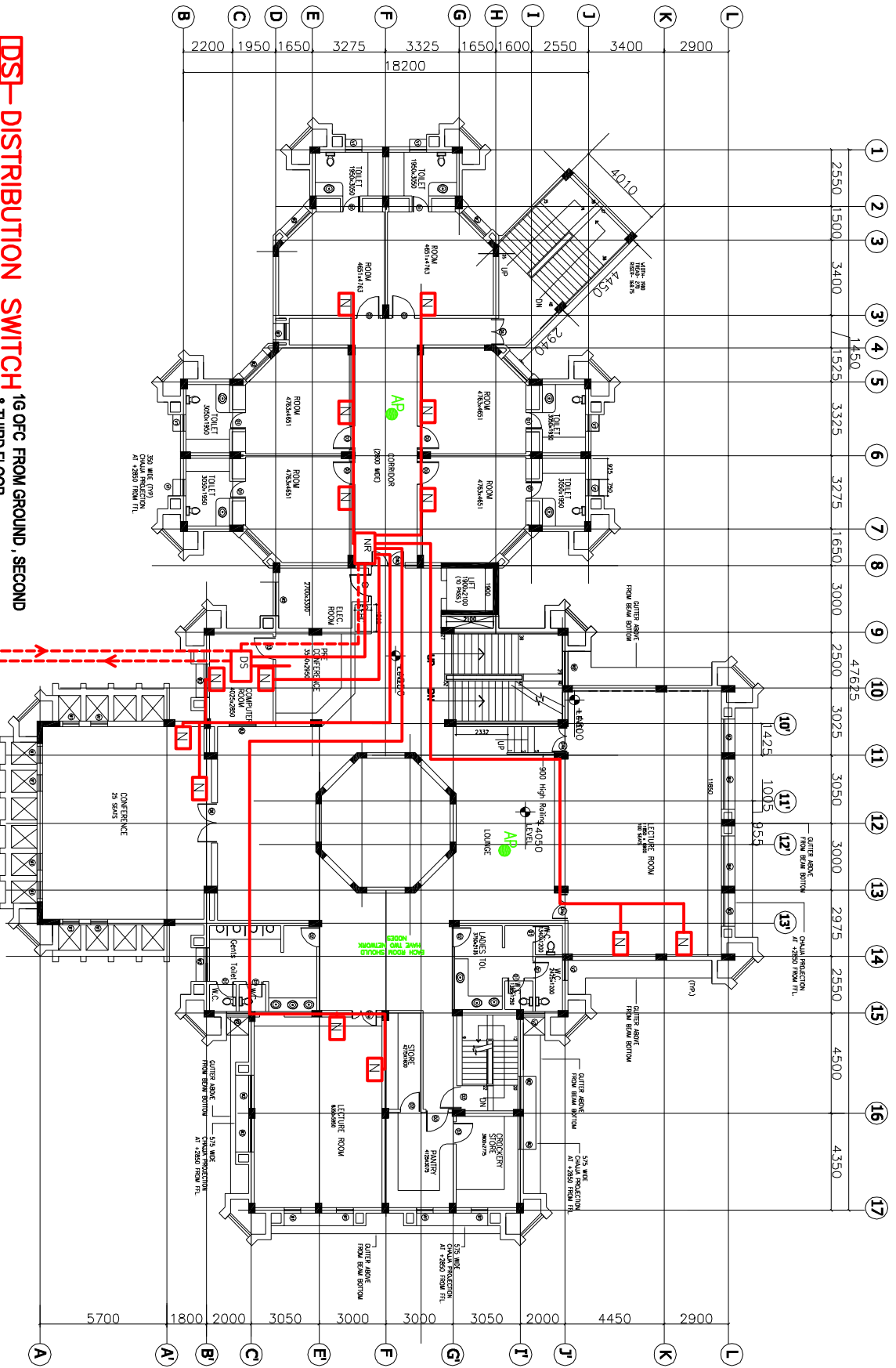
- [NR]—NETWORK RACK
- [N]—NETWORK POINT
- [AP]—WIRELESS ACCESS POINT

LAN LAYOUT PLAN OF LAB BUILDING—FIRST FLOOR



- NR—NETWORK RACK
- N—NETWORK POINT
- AP—WIRELESS ACCESS POINT

LAN LAYOUT PLAN OF LAB BUILDING—SECOND FLOOR



DS— DISTRIBUTION SWITCH 1G OFC FROM GROUND, SECOND & THIRD FLOOR

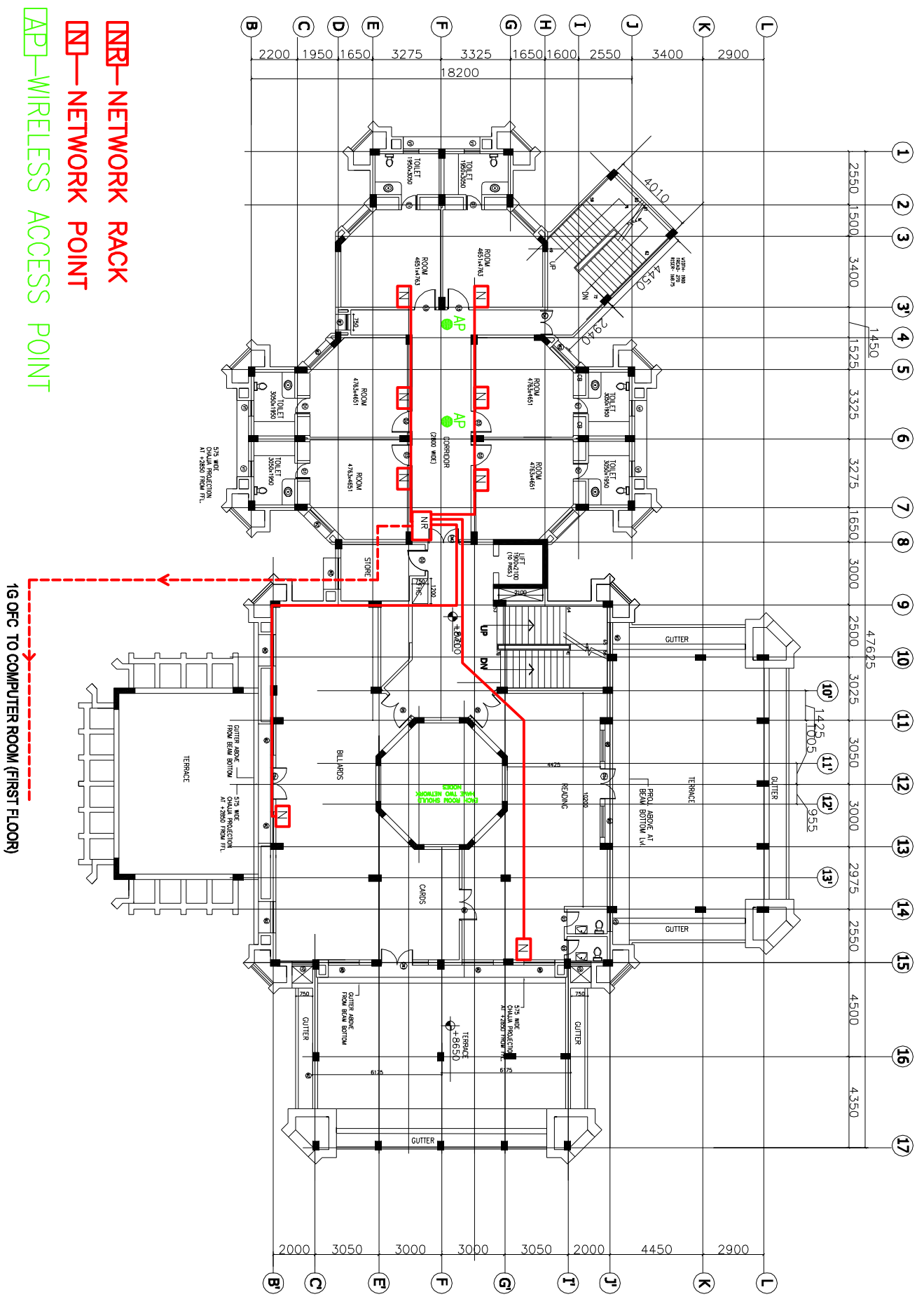
NR— NETWORK RACK

NP— NETWORK POINT

AP— WIRELESS ACCESS POINT

10 G LINK TO CORE SWITCH AT LAB BUILDING

LAN LAYOUT PLAN OF GUEST HOUSE BUILDING—FIRST FLOOR



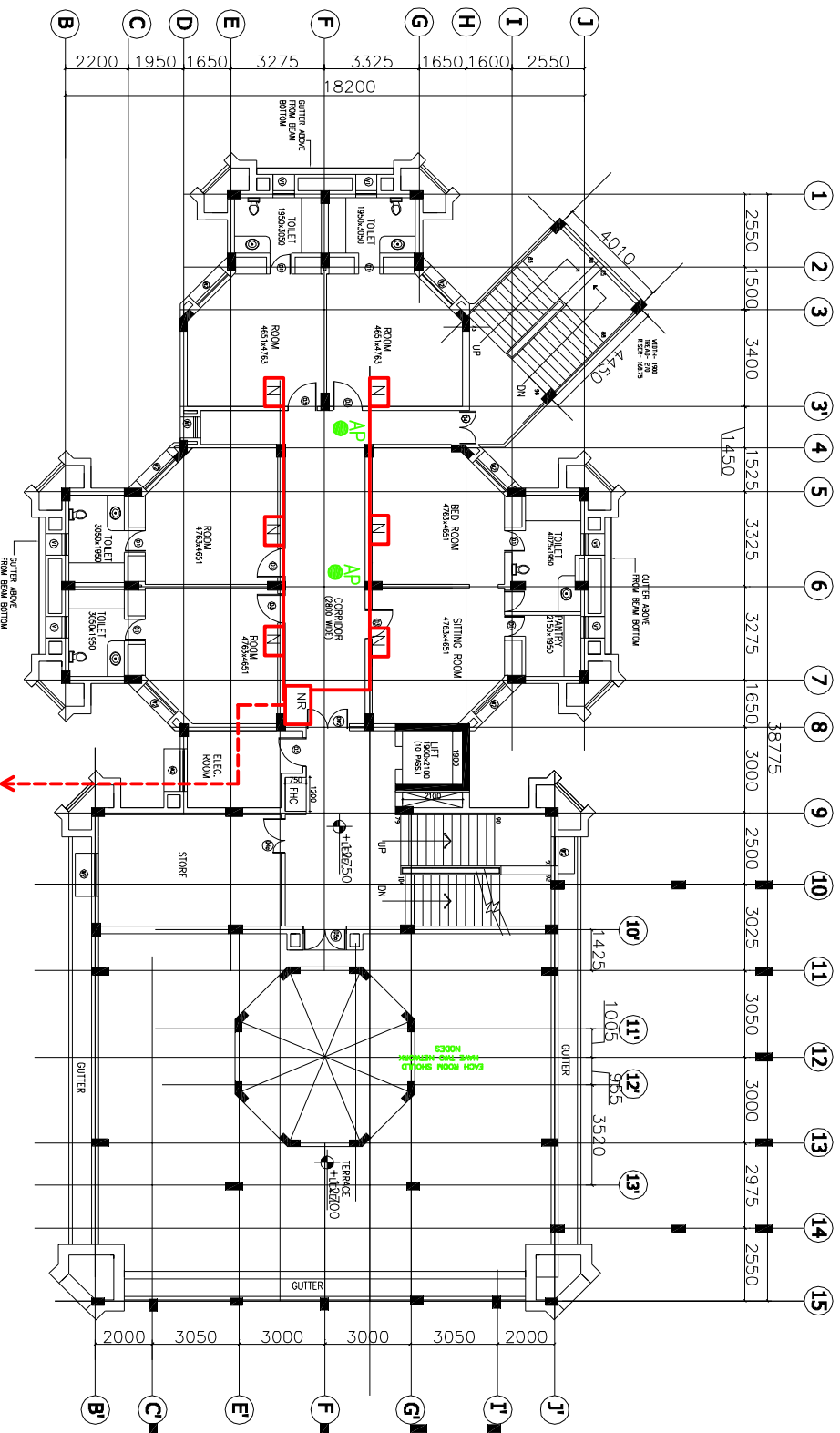
NR - NETWORK RACK

N - NETWORK POINT

AP - WIRELESS ACCESS POINT

1G OFC TO COMPUTER ROOM (FIRST FLOOR)

LAN LAYOUT PLAN OF GUEST HOUSE BUILDING-SECOND FLOOR



(THIRD FLOOR PLAN)

NR— NETWORK RACK

NP— NETWORK POINT

AP— WIRELESS ACCESS POINT

1G OFC TO COMPUTER ROOM(FIRST FLOOR)

LAN LAYOUT PLAN OF GUEST HOUSE BUILDING—THIRD FLOOR