

**Construction of MSME Technology Centre at Jaipur (Rajasthan) under the Scheme
“Establishment of New Technology Centre/Extension Centre” on Engineering Design,
Procurement and Construction (EPC) basis including Maintenance for 2 years during
DLP Period**

(E-Tender No: IRCON/B1100009/MSME/e-Tender/EPC/TC JAIPUR/ET45)



SPECIAL CONDITIONS OF CONTRACT

(Section – V)

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SPECIAL CONDITIONS OF CONTRACT**SECTION – 1****GENERAL****1.1 General**

1.0 These Special Conditions of Contract shall be read in conjunction with General Conditions of Contract (Volume I), Instructions to Tenderers (ITT), Notice Inviting Tenders (NIT), Tender Drawings, and Technical Specifications & Other Tender Documents.

1.1 Where any portion of special conditions of contract is repugnant to or at variance with any provision of the Instructions to Tenderer and General Conditions of contract and/or the other documents forming part of the contract then unless a different intention appears, the provision of the Special Conditions of Contract shall be deemed to override the provisions of the General conditions of contract and / or the other documents forming part of the contract only to the extent such repugnant/ variations in the special conditions of contract as are not possible of being reconciled with the provision with Instructions to Tenderer or General Conditions of contract and/or the other documents forming part of the contract.

1.2 Introduction to the Project

The MoMSME has selected 20 locations nationwide to establish TCs, with Jaipur in Rajasthan being one of them. **Jaipur**, the capital city of Rajasthan, is located approximately 260 kilometers southwest of Delhi. Known as the Pink City, Jaipur holds immense historical and cultural significance, especially for those interested in Rajput heritage and architecture. The city is nestled amidst the rugged Aravalli hills, which surround it on multiple sides, offering a scenic backdrop and natural fortification.

Situated at 26.9° N latitude and 75.8° E longitude, Jaipur experiences a semi-arid climate. Summers can be intensely hot, with temperatures reaching up to 45°C, while winters are relatively mild and pleasant, with temperatures dipping to around 8°C. The city receives moderate rainfall during the monsoon season. Its strategic location along the DMIC further strengthens its industrial and logistic potential.

The city lies in the semi-arid region of Rajasthan and is part of the eastern boundary of the Thar Desert. Jaipur is well-connected by road, rail, and air, with the **Jaipur International Airport** enhancing its accessibility for both domestic and international travelers. Its strategic location and infrastructure make it a key hub for tourism, commerce, and administration in northern India.

Rajasthan is among the top 20 states in terms of MSME Udyam registration in India, with 25.16 lakh MSMEs registered on the Udyam Portal as of May 2025. Out of these, around 4.72 lakh enterprises are registered from Jaipur district. The establishment of the Jaipur TC is expected to be a significant milestone for the socio-economic development of the region, potentially creating employment opportunities for skilled individuals in various technical and non-technical roles within the industries/units operational in the catchment area.

Jaipur, located in the northwestern part of India, is a geographically diverse city known for its rich cultural heritage and is also the capital city of Rajasthan. The city is set to become a significant hub for technological advancement with the establishment of a new TC focusing on General Engineering, ESDM and Foundry.

The new TC in Jaipur will be established in **Plot No.1, JDA, Industrial Scheme, Vill. Dehmi Kalan, tehsil Sanganer, Jaipur, covering 12 acres**. With an estimated cost of ₹207.41 crore, the Centre aims to provide advanced training and employment opportunities for the youth in Rajasthan. This initiative is expected to become a hub for regional progress, driving a technological revolution and significantly boosting the state's economic potential. The tentative area details of the buildings/ blocks are as given below:

S. No.	Name of Work	Total Land Area	Approx. Built up Area
1.	Construction of MSME Technology Centre at Jaipur (Rajasthan) under the Scheme “Establishment of New Technology Centre/Extension Centre” on Engineering Design, Procurement and Construction (EPC) basis including Maintenance for 2 year during DLP Period	12 Acre	16,282 sqm

1.3 The Special Conditions of Contract which include various deviations from General Conditions of Contract and certain other Conditions particular to this Contract shall be read in conjunction with the General Conditions of Contract, Technical Specifications, Conditions particular to various works & specific scope of each work as specified together with Technical Specifications, Drawings etc.

1.4 The Detailed Project Report (DPR), Drawings and technical specification for each function like Civil, Electrical, Plumbing, Fire, STP/WTP, External Development, Street Lighting, Lifts etc. are attached as various volumes to the tender documents. The same also includes specific scope of each work & conditions particular to the work.

Requirements of Civil, Electrical, Plumbing, Fire, STP/WTP, all External Development works, Lifts etc. are given in Technical Specification for reference purpose only. The bidders, before quoting the tender are deemed to have ascertained/verified/worked out all the items & quantities etc. from the Detailed Project Report, drawings, technical specifications for complete scope of work. The contractor shall submit the Design Basis Report with detailed items and quantities of each item within 30 days to IRCON from the date of award of work for IRCON's reference & records. No claim on account of any discrepancies, left over items etc. in Indicative items given in the tender, and submitted by the contractor, and as actually executed at site, shall be admissible. The contractor is required to execute all the works/items and quantities as per Scope of work, Design basis reports (DBR), Technical Specifications, Drawings etc. and to quote their amount/financial bid accordingly. In case of contravention of stipulation of this clause from any other clause/provision elsewhere in the tender document, then this clause shall have superseding effect to the extent of contravention and decision of Engineer-in-charge shall be final & binding on the contractor.

- 1.5** The Contractor shall, within 30 days of award of contract shall prepare and submit a comprehensive Design Basis Report (DBR) with reference to the Employer's Technical Specifications and the Detailed Project Report; the approved DBR shall form part of the contract documents without limiting the Contractor's obligations. **Details of Indicative Infrastructure Facilities and Scope of Work, to be referred to for preparation of DBR are attached as Section VIII (Part 1).** These should be followed for preparation of DBR in conjunction with Tender Conditions.
- 1.6** The contractor is required to complete the project on Design & Build basis as specified in the Scope of Work, Technical Specification & Drawings covering the entire site area of the Technology Centre at Jaipur, Rajasthan complete in all respect i.e. including all internal services and the contractor's quoted rates are deemed to include everything from the award of work up to & including handing over of completed project, defect liability period and Maintenance during DLP period. However, the contractor is required to complete works up to First Manhole for all services including further connections up to authority manhole/outlet point like Water Supply, Sewerage, Drainage, Electric Supply, Telephone Lines etc. After connection by external development agency the contractor shall have to arrange his own testing commissioning of complete project/unit wise as necessary. All municipal & mandatory approvals required for occupation and completion of the project shall be obtained by the Contractor.
- 1.6(a)** All the design & drawings will become the property of IRCON. The drawing cannot be issued to any other person, firm or authority or used by the contractor for any other project. No copies of any drawing or document shall be issued to anyone except IRCON and authorized representative of IRCON.

- 1.7** It shall be deemed that the contractor has satisfied himself as to the nature and location of the work, general and local conditions and particularly those pertaining to transport including restriction of movement of traffic/ vehicles etc. handling, availability and storage of materials, availability of labour, weather conditions at site and general ground/sub soil conditions and the contractor has to quote his rates accordingly and nothing extra shall be payable on any reason whatsoever.
- 1.8** IRCON will bear no responsibility for the lack of such knowledge and also the consequences thereof to the contractor. The information and site data shown in the drawings and mentioned in the tender documents are furnished for general information and guidance only. In no case IRCON shall be held responsible for the accuracy thereof or/and deductions, interpretations or conclusions drawn there from by the contractor and no claim shall be entertained whatsoever on this account, including if the site conditions/information is different or otherwise incorrect. It will be presumed that the contractor has satisfied himself for all possible contingencies, situations, bottlenecks and acts of coordination which may be required between the different agencies.
- 1.8 (a)** If any changes in the drawings attached is required due to approvals from the State Government Bodies like State Industrial & Infrastructure Developmental Corporations, Concerned State Fire Department and Ministry of Environment, Forest and Climate Change (MoEF) etc. it shall be incorporated by the EPC Contractor at any stage of work without any extra cost. No claim whatsoever will be entertained in this regard.
- 1.9** The contractor is required to submit all its submittals like Drawings, Documents, Reports, Schedules, invoice copies, etc. (whether original or revised) in 6 (Six) Hard & 6 (six) soft (Pen Drive) copies. This clause applies to every submittal of contractor under this contract.
- 1.10 Site Investigation**
- 1.10.1** Brief tasks to be carried out: -
- a) Collect sub-soil data, undertake detailed survey, wind data, earthquake data & sub-soil investigations.
 - b) Prepare Key map (with scale 1:50,000) showing the location of the buildings investigated and the important structures, in the vicinity. The reference to the position of the benchmark, location of the trial pits or bore-holes giving identification number for each bore connected to the datum and location of all nullahs, buildings.

- c) Prepare Detailed designs and drawings along with a comprehensive Design Basis Report.
- d) Whenever required or necessitated by the site conditions, modify designs as well as suggest solutions to the problems come across during actual execution.
- e) Obtain approval of designs of each component of buildings from the IRCON before execution.

1.10.2 Tenderer may satisfy himself/ themselves by conducting pre-soil tests if he/ they require. However, an indicative soil investigation report is uploaded as for general guidelines of the Bidders, although this will not have Annexure - 5 any bearing on the quoted rates by the bidders. Tenderers will be required to conduct detailed soil investigation including detection of harmful chemicals for the buildings separately at their own cost for carrying out structural design of buildings, through soil consultants and also for advising the type of cement to be used in foundation to take care from the harmful effect of the chemicals encountered in the soil in contact with foundation.

The contractor will be required to carry out Geotechnical Investigations and Sub-Soil Exploration at each proposed building location, and conduct all relevant laboratory and field tests on soil and rock samples. Soil bore particulars duly indicating the classification of soils within a bore log chart and soil test reports conducted in IRCON approved soil testing laboratory on undisturbed and disturbed samples for all the geo-technical parameters like C, ϕ , Atterberg limits, DFS, SPT and silt factor worked out from the mean diameter of the particle size to the maximum scour level, safe bearing capacity of soils or rocks, core recovery (RQD) for rock, erodibility test for rocks, consolidation settlement parameters, CBR, earth resistivity tests etc.

The contractor will get the detailed soil investigation done as per relevant IS code, Latest NBC etc. as applicable through the soil consultant having professional experience of 15 years & one set of test reports shall be deposited with IRCON.

1.10.3 After award of work, the Contractor shall carryout detail survey and soil investigation for preparation of detail designs as per the scope of work, DBR's, technical specification and drawings. The Contractor (Bidder) shall be deemed to have inspected and examined the Site, its surroundings, collected the data and all other information, and to have been satisfied before submitting the Tender as to all relevant matters, including (without limitation):-

- a) the form and nature of the Site, including sub-surface conditions.
- b) the climatic conditions,

- c) the extent and nature of the work and Goods necessary for the execution and completion of the Works and the remedying of any defects,
- d) the Laws, procedures and labour practices of the Country, and
- e) the Contractor's requirements for access, accommodation, facilities, personnel, power, transport, water and other services.
- f) availability of required materials

1.10.4 The contractor shall prepare a Topographical Survey Report at his own cost to ascertain the contour levels, location of proposed boundaries, any other site feature present at site. The contractor shall be held fully accountable for accuracy of levels/design, positions of buildings/ facilities etc. on account of details obtained from Topographical survey.

1.11 Compliance with Statutes, Regulations and Laws

The Contractor shall familiarize themselves and conform in all aspects with:-

- a) the provisions, their legal interpretation in respect of any enactment and relevant judicial/administrative/quasi-judicial orders in India, as is and/or may become, applicable from time to time, related to or having impact on any aspect affecting the works
- b) the regulations or byelaws of any local body and utilities.
- c) the Contractor shall be bound to give all notices required by statute, regulations or by-laws, as aforesaid and to pay all fees and bills payable in respect thereof. The Contractor will arrange necessary clearances and approvals before the Work is taken up.
- d) Ignorance of Rules, Regulations and Bylaws shall not constitute a basis for any claim at any stage of work.
- e) The Contractor shall indemnify the Employer against all penalties and liabilities of every kind of breach of any such enactment, laws, regulations, byelaws or rules.

1.12 Joint and Several Liability

If the Contractor (under applicable laws) is a joint venture (not applicable for this tender), Consortium or other incorporated grouping of two or more persons: -

- a) These people shall be deemed to be jointly and severally liable to the Authority for the performance of the Contract; and
- b) The Contractor shall not alter its composition or legal status without the prior consent of the Authority.
- c) These persons shall notify the Employer of their leader who shall have authority to bind the contractor and each of the persons.

1.13 Completion and Taking Over Certificate:

- a) Work shall not be taken over by Engineer/Employer unless complete work or section(s) as applicable are completed in all respect and all defects pointed out by Engineer are attended by the contractor to the satisfaction of Engineer and site is cleared of all materials, plants and machinery not required after completion of work, all rubbish, labour huts & all other temporary structures constructed by contractor for his use are removed from construction site.
- b) The Works shall be taken over by the Employer when they have been completed in accordance with the Contract, have passed the Tests on Completion, including Integrated Testing and Commissioning where ever applicable as per the contract, and a Taking Over Certificate shall be issued. If the Works are divided into Sections, the Contractor shall be entitled to apply for a Taking over Certificate for each Section. The Engineer will: -
 - issue the Taking Over Certificate to the Contractor, stating the date on which the Works or Section were completed, including the Tests on Completion and Integrated Testing and Commissioning where ever applicable as per the contract: or
 - Reject the application, giving his reasons and specifying the work required to be done by the Contractor to enable the Taking over Certificate to be issued. The Contractor shall then complete such work before issuing a further notice under this Sub-Clause.
 - Defect Liability period shall be reckoned from the date of Taking over Certificate issued by the Engineer to the Contractor for entire work completed in accordance with the Contract.
- c) As-Built Drawings and Documents

Prior to issue of any taking over certificate, the Contractor shall furnish to the Engineer a complete set of as-built Drawings, in 6 (six) hard copies and in

micro film form or in such other medium as may be acceptable to the Engineer, reflecting the Project as actually designed, engineered and constructed, including an as-built survey illustrating the layout of the Project and setback lines, if any, of the buildings and structures forming part of Project Facilities. The work shall not be considered to be completed for the purpose of taking over until such documents have been submitted to the Engineer.

1.14 Confidentiality

Both Parties shall treat the details of the Contract as private and confidential, except to the extent necessary to carry out obligations under it or to comply with applicable Laws. The Contractor shall not publish, permit to be published, or disclose any particulars of the Works in any trade or technical paper or elsewhere without the previous agreement of IRCON.

1.15 Compliance of Laws

The contractor shall keep himself fully informed of all acts and laws of the Central & state govt. (i.e. Govt. of Rajasthan) all local bye laws, ordinances, rules and regulations and all orders and decree of bodies or, tribunals having any jurisdiction or authority which in any manner affect those engaged or employed on the work or which in any way affect the conduct of the works. The contractor shall at all times, observe and comply with all such laws, ordinances, rules, regulations, orders and decrees, and shall give all notices and pay out of his own money any fees or charges to which he may be liable. He shall protect and indemnify IRCON and its officers and employees against any claim or liability arising out of violations of any such law, ordinances, legislation, order or decree, whether by himself or by his employees & authorized representatives.

The contractor shall keep himself fully informed of all acts and laws of the State/Central Govts., Track all local bye laws, ordinances, rules and regulations and all orders and decree of bodies including.

1.16 Disclaimer

The Contractor acknowledges that prior to the execution of this Agreement, the Contractor has, after a complete and careful examination, made an independent evaluation of the Technical Bid, Financial Bid, Scope of the Project, Specifications and Standards of design, construction and maintenance, Site, local conditions, physical qualities of ground, subsoil and geology, traffic volume & restrictions, suitability and availability of access routes to the Site and all information provided by the Employer or obtained procured or gathered otherwise, and has determined to its satisfaction the accuracy or otherwise thereof and the nature and extent of difficulties, risks and hazards as are likely to arise or may be faced by it in the course

of performance of its obligations hereunder. The Contractor confirms that it shall have no claim whatsoever against the Employer in regard the accuracy, adequacy, correctness, reliability and/or completeness of any assessment, assumptions, statement or information provided by it.

- 1.16.1 The Contractor acknowledges and hereby accepts to have satisfied itself as to the correctness and sufficiency of the Contract Price.
- 1.16.2 The Contractor acknowledges and hereby accepts the risk of inadequacy, mistake or error in or relating to any of the matters set forth elsewhere in the tender document and hereby acknowledges and agrees that the Employer shall not be liable for the same in any manner whatsoever to the Contractor, or any person claiming through or under any of them.
- 1.16.3 The Parties agree that any mistake or error in or relating to any of the matters set forth elsewhere in tender document shall not vitiate this Agreement or render it voidable.
- 1.16.4 In the event that either Party becomes aware of any mistake or error relating to any of the matters set forth elsewhere in tender document, that Party shall immediately notify the other Party, specifying the mistake or error.
- 1.16.5 Except as otherwise provided in this Agreement, all risks relating to the Project shall be borne by the Contractor; and the Employer shall not be liable in any manner for such risks or the consequences thereof.

1.17 Service of Notice

- 1.17.1 Any Notice or document or order to be given by one Party to other Party shall be deemed to be served:
- a) By the Employer/Engineer
- Delivering it by hand to the Contractor or contractor's person as designated by notice to Employer; or
 - Leaving it at, or sending by e-mail at mail ID last known or by sending it by registered post/ speed post to, the address of the place of residence or business of the Contractor last known;
 - On a body corporate by leaving it at, or sending by e-mail at mail ID last known or sending it by registered post/ speed post to, the registered office of the corporate.

- b) By the Contractor
 - Delivering it by hand to the Employer/ Engineer or other person of Employer as designated by notice to Contractor; or
 - Leaving it at, or sending by e-mail at mail ID last known or by sending it by registered post/ speed post to, the address of the place of residence or business of the Contractor last known;
- c) Provided that in the case of e-mail, it shall be deemed to have been delivered on the working day following the date of its delivery.

SECTION – 2

SCOPE OF WORK

2.1 Brief Scope

Ministry of Micro Small and Medium Enterprises has entrusted the work of establishment of the Technology Centre at Jaipur (Rajasthan) under the Technology Centre Extension Centre (TCEC) scheme to IRCON as Project Implementation Agency, The scope of work of this EPC comprises Design, Detailed Engineering, Surveys (Pre- Engineering, Pre-Construction and Post-Construction), Procurement, Fabrication, Transportation, Construction (Civil, Structural, Mechanical, Electrical, HVAC, Fire Fighting, Plumbing services, Electrical services, Building Management System, Solar Panels, Lifts/ Escalators, Site Development, STP/WTP, Low Voltage Services; Computer / LAN Networking; Wi-Fi Points; EPABX System; Access Control System, Outdoor & Landscape Lighting, and other Miscellaneous & related services) and Installation, Testing, Pre - commissioning, Commissioning and handing over as per the terms of the EPC Contract.

2.1.1 Infrastructure & Facilities at Technology Centre

The infrastructure of the proposed TC at Jaipur (Rajasthan) has been developed based on the requirements, recommended norms, capacity data of the existing TCs capacity, discussions with key stakeholders and the experience of the team in providing professional advice on similar projects. The team has studied the applicable AICTE/ NCVT norms for development of infrastructure facilities for engineering and technology institutes and detailing out the infrastructure provisions for the proposed TC. The TC will be built on area of around 12 acres, and the layout will have following blocks with required indicative infrastructure.

1. **Production Block:** The highest priority has been given to the allocation of space for the installation of machines for production activities. Depending on the space required by the machines, the area for production should be demarcated which would also include other facilities like toilets, washrooms and change rooms, adequate space for mobility, clean drinking water in their vicinity etc. This block will also have a metrology section and rapid prototyping centre which can be accessed by industry directly.
2. **Training Block:** This area will have classrooms, labs, conference hall, faculty rooms, technical information Centre and facilities for training / seminars/ workshops etc. Welding Workshop Text Predictions: On Accessibility: Investigate
3. **Administrative Block:** This block will have GM and DGMS Office and secretariat. It will also house office and desk space of all management,

professional staff, administrative and support staff, library and other amenities such as conference room with video conferencing facility, meeting rooms etc.

4. **Utilities Block:** The utilities block comprises of areas that will house main electrical meter, VCBS, HT panel, distribution panel and power back up DG plant. The utilities block will also house water pumps, purification plant and chilling plant, water treatment plant etc. The open areas around the building will also have some utilities provision such as rainwater harvesting pits and panels for the operation of external lighting. Utility will also include sewage treatment plant at an appropriate location.
5. **Hostel and staff accommodation:** The hostel blocks will comprise of accommodation for the students (separate for males and females). A few staff quarters (for driver, security officer, wardens - boys' and girls' hostel, Maintenance staff etc..) will also be constructed to house some of the emergency staff or on need basis.
6. **Green Areas:** Approximately 35% area left out for the green space.
7. The open areas comprise of driveway, rainwater harvesting pit and landscaped areas including the facade and main entry of the TC. The size of the open area will depend on the design strategy adopted by the CMC.
8. **Others:** This will include canteen, parking, security room etc.
9. **Basic amenities:** Apart from the above facilities the campus will have basic amenities with provision for.
 - Drinking water
 - Toilets
 - Dining room as a hygienic area and place away from the work environment for rest breaks and the consumption of food
 - Change rooms to enable employees to change (e.g. uniforms or dirty work clothing) with privacy and security. Such facility helps to reduces employee exposure to and potential spread of contaminating substances used in work processes.
 - Personal storage for the secure and clean storage of personal belongings or clothing, lockable where necessary
 - Fire safety with smoke alarms to protect people against death and injury from fires. Providing fire safety awareness to employees and conduct fire drill from time-to-time Fire assembly area in case of fire or natural calamity.
 - Dustbins with proper color coding in green for organic, yellow for glass, white for paper, grey for metal, blue for plastic, red for hazardous products

2.1.2 Details of the indicative infrastructure facility

Production Block			
S.No	Details	Nos	Area in Sqmt
1	Machine Area	1	2000
2	Design Office + Toilet	1	191
3	Trial Room	1	225
4	Tool Room	1	330
5	Raw Material	1	72
6	Store	1	72
7	Production staff + Meeting Room	1	325
8	Toilet + greenroom	1	76
9	Toilet	1	22
10	Pantry	1	36
11	Reception area	1	100
12	Rapid Prototyping Centre	1	150
13	Inspection Area	1	100
14	Heat Treatment area	1	150
15	Circulation area	1	651
	Total Area		4500

Training Centre			
S.No	Details	Nos	Area in Sqmt
1	Class room 1- to 10	10	740
2	Lab 1 - 14	14	975
3	Office Ground floor	1	64
4	Faculty room ground floor	1	88
5	Photo state & Telecom IT Room	1	50
6	Work shop	1	506
7	Toilet block Ground floor	1	285
8	Reception / Waiting area	1	152
9	Electric room & AHU Room	1	165
10	Passage Ground floor	1	205
11	Passage First floor	1	240
12	Passage Second floor	1	239
13	Conference room	1	218
14	Faculty room First floor	1	168
15	Multipurpose hall first floor	1	230
16	Office First floor	1	98
17	Store room First floor	1	36
18	Technical information center	1	350
19	Incubation center	1	350
	TOTAL		5159

BUILT UP AREA - RCC BUILDING		
S.NO.	Block	Area in sqm
1	Training Block	5,159
2	Production Block	4,500
3	Admin Building	700
4	Dining Block	1,000
5	Staff Accommodation	1,071

6	Girls Hostel	1,200
7	Boys Hostel	1,200
8	Executive Hostel	600
9	Guard Room	179
10	Utility Block	373
11	Convocation Hall	300
	Total	16,282

2.1.3 Civil Infrastructure

S. No.	Particulars	Building/type	Unit	Quantity
1	Built up area			
(a)	RCC Building	RCC	sqm	16282
	Total cost			
2	Basic Enabling Infrastructure			
(a)	Levelling	earthwork	LS	1
(b)	Boundary wall with 1500mm high wall and 600 mm high MS grill with brickwork structure and RCC band at ground level and coping	RCC / masonry with intermittent column	RM	0
(c)	Gate, Security cabin, signboard etc		LS	2
(d)	Internal Road - cement concrete pavement with vacuum dewatered concrete	cement concrete pavement	sqm	4350
(e)	Parking area-cement concrete pavement with vacuum dewatered concrete	cement concrete pavement	sqm	1500
(f)	Paved area with PCC base, 60mm thick paver block and kerb stone edging on one side	concrete paver blocks	sqm	2000
(g)	Horticulture works - Horticulture operations including 300mm earth filling, grassing, tree plantations/shrubs and potted plant etc		sqm	12701
	Total cost			
3	Electrical & HVAC works			
A	Sub station equipments			

	Supplying, installation, testing and commissioning of 33kV/0.433kV or 11kV/0.433 kV substation equipments comprising HT Panel, Dry type Transformers, HT cable, Bus trunking from Transformer to LT Panel, LT Panel, Automatic Power factor correction panel, Active Harmonic Filters, TVSS (Transient Voltage suppression system), SPD (Surge protection system), Essential panel, Earthing, required inter-connections, substation safety equipments including LT cabling from sub station to the buildings fed by the sub station.		KVA	630
B	DG Set			
(a)	Supplying, installation, testing and commissioning of Silent Type DG Sets, AMF Panel, Bus Ducting/ Cables from DG Sets to Essential Panel, Synchronizing Panel where required, DG Set enclosure room sound insulation/ventilation/smoke exhaust as required, Earthing of DG Set system, control cabling, Fuel tank/piping, DG set Exhaust piping/ Exhaust Chimney as per CPCB norms, Civil works connected with DG Sets including Foundation as required. 250 KVA (2 Nos.) + 20 KVA (1 Nos.)		KVA	520
(b)	Extra for synchronizing panels wherever required		KVA	520
(c)	Supplying, installation, testing and commissioning of online 3 phase UPS system with 30 minutes backup including batteries, interconnecting cables, battery racks		KVA	50
(d)	Green energy provision		KWP	200
C	External lighting			
(a)	Supplying, installation, testing and commissioning of LED Street/ Compound/ High mast/ Pathway/ Landscape Lighting for the entire Campus		sqm	8333
D	HVAC works			

(a)	Supplying, installation, testing and commissioning of energy efficient central AC plant including low side works		HP	200
E	CCTV			
(a)	Supplying, installation, testing and commissioning of IP Based CCTV system for building security comprising of PTZ Fixed camera, cabling, recording , display system and hard ware software support		sqm	16282
(b)	For external surveillance		sqm	8333
	Total cost			
4	Miscellaneous			
(a)	Door frame metal detector		set	2
(b)	Boom barrier		set	4
(c)	Motorised steel gate upto 6 mtr hieght		nos	2
(d)	Passenger lift -8 passengers - levels as per the requirment		nos	2
(e)	Integrated building management system		sqm	5159
(f)	Access control system		sqm	5000
(h)	Lighting automation and occupancy sensor		nos	16282
	Total cost			
5	Tele-communication and IT system		LS	1
	Total cost			
6	Water Supply, Drainage, WTP, STP			
(a)	Supplying, installation, testing and commissioning of STP/ETP of appropriate technology including Civil Works (except plant room), Tertiary Treatment etc. for the Building/ campus :Plant size below 50 KLD		per 1000 ltr	25
(b)	WTP with pumps complete		L.S	1

(c)	Storm water drain	RCC	RM	800
(d)	External sewerage		RM	800
(e)	Filtered water supply			
	Distribution lines upto 100mm dia		RM	800
(f)	Unfiltered Water Supply		RM	750
(g)	Manholes		nos	40
(h)	Bore wells with pumps		RM	240
(i)	Trenches for services		RM	250
(j)	Rain water Harvesting		RM	250
(k)	Fire Fighting equipments (external hydrants and pumps)		LS	1
(l)	Underground sump		Ltr	355000
(m)	Overhead tank with staging height upto 20 mtr		Ltr	50000

Above all, the development of campus infrastructure will be done keeping the following guidelines in mind.

- **Campus Layout/ Plan:** Campus layout is crucial for successful performance of TC. At least 35% of green area will be maintained, and landscaping will be done to improve aesthetics of the surrounding while maintaining habitats conducive to natural fauna. Also, efforts will be made to conserve existing vegetation and other rich biodiversity in the premises as well as vicinity. Apart from this, there will be the following considerations while planning the campus layout:
- **Site drainage:** Existing drainage pattern of the available site will be studied, and the drainage system required for the TC will be constructed in line with the drainage pattern. Storm water drains will be constructed separately so as avoid mixing of the fresh and the wastewater.
- **Heat island effect:** Site will be planned properly to mitigate the heat island effect (Thermal gradient difference between developed and undeveloped areas) by following measures:
- Pavements and walkways should be painted in light color (solar reflectance index > 0.5)
- **Boundary:** The campus will be provided with boundary wall in all the directions to avoid encroachment, theft and safety.
- Trees will be planted in large numbers to provide natural shade in the open areas. This helps to reduce the temperature on campus in comparison to the vicinity.
- Efforts will be made to utilize natural light to the maximum possible extent and provision should be made for natural ventilation.
- Green building codes may be adopted while designing the building layout so as to ensure following environmental safeguards.
- Renewable energy in terms of solar water heater, solar panels, solar streetlight may be used
- LED/CFL lights will be used within the premises to reduce the energy consumption
- Provisioning of water treatment and recycling facility to reduce water consumption

Water harvesting arrangement to recharge the ground water and/or reduce dependency on ground water

- Provisioning of waste management including practices to minimize waste generation,
- Criteria mentioned in the National building code will be followed so as to ensure that all the safety precaution like escape routes/emergency exits, setting of machinery providing appropriate working space, etc. is maintained.
- Hazardous material like asbestos sheets should be avoided in any part of the structure. Substitutes to natural resources will be encouraged in appropriate ratio so as to decrease natural resource consumption while maintaining the required strength (example: Fly ash may be used in small percentage instead of cement for construction, composite material may be used construction of doors instead of wood, etc.)
- Provision of toilets for both men and women will be made in appropriate number so as to ensure comfortable and hygienic working conditions.
- Energy efficient products like 5 star rated air conditioner, refrigerator, energy efficient.
- Detailed building plan preparation: The building design is crucial for sustainable performance of the TC. Several factors including energy efficiency, materials of construction, natural light and ventilation, insulating, etc. must be kept in mind in order to maintain eco-friendly operations. Also, adherence to aspects related to safety, resistant to earthquakes, proper evacuations, etc. will ensure successful operations of the TC. The detailed design and drawing for the infrastructure would be carried out by the Contractor. Contractor would take approval on the same from the Authority.

2.1.4 The bidder shall be provided with a Master Plan of the complex, Concept Plans of the proposed buildings in the complex, technical specifications and other details forming the part of bid documents. The Bidders shall prepare their detailed designs based on these drawings and documents and in conformity with the local Byelaws. Any modification in the master plan and concept plan, required to meet the conformance to the local bye laws, shall be done with the approval of IRCON.

2.1.5 The work is to be executed on Design, Engineering, Procurement & Construction (EPC) basis including Maintenance of services after completion and handing over up to the expiry of the defect liability period which shall include all activities for designing, supply, execution, testing & commissioning including obtaining all required statutory approvals during different stages with respect to all the buildings, services and utilities complete as per requirements and directions of Engineer-In Charge. It shall include but not limited to the following:

- (i) Conducting site surveys and soil investigations as per requirements.
- (ii) Preparation of Architectural & Structural Designs, Detailed Designs of Services, external development, roads and pavements, landscaping, horticulture, Signage's, etc. complete as per requirements in line with the Master Plan & Concept Designs as well as the Detailed Project Report (DPR) made available in the bid document. The modifications, if any, required in the Master Plan and Concept Plans to meet the conformance to the local bye laws and the same, shall be done with the approval of IRCON.
- (iii) Design of all MEP services other Services their integration and installation and commissioning.
- (iv) Obtaining mandatory approvals from local bodies/ statutory authorities, as

required for commencement of construction of work.

- (v) Obtaining proof checking of structural designs from IIT / NIT /Govt. Institute as approved by IRCON.
- (vi) Execution of work with construction of various buildings and services. This shall include supply of all required materials, construction, installation, testing and commissioning for operationalization of all buildings and services in phases. This shall also include shifting of all existing trees, services and utilities including removal of debris and foundations of the existing building
- (vii) Structures.
- (viii) Making necessary arrangement for water supply (incl. bore holes etc. if required) and sewage disposal along with obtaining required permits/approvals from concerned local authorities.
- (ix) Supervision of works with required quality assurance
- (x) Obtaining all required statutory approvals during different stages/ phases and after completion of the project.
- (xi) Obtaining Green Building Rating as per GRIHA 4 Star Certification.
- (xii) Maintenance of Services after completion and handing over in up to the expiry of the defect liability period.
- (xiii) Any other services and utilities as per requirements and direction of Engineer-In-Charge for completion of the project.

2.1.6 Statutory Approvals:

The Contractor shall obtain all required statutory approvals including pre- construction from Municipal and other local bodies of Rajasthan State, Water supply agencies concerned, Electric Supply and Inspectorate Agencies concerned, Police and Security Agencies, Chief Controller of Explosives, Fire Department, Civil Aviation Department, in accordance to prevailing rules, Building Bye-Laws, Tree re-plantation etc., as the case may be with related to/ required for Construction/ Completion. The contractors shall liaison & follow up for obtaining EIA approval as per requirement. All expenditure on this account will be borne by the contractor. These approvals shall include: -

- i. Obtaining approval of all the competent authorities and other statutory bodies like Ministry of Environment and forests, State Pollution Control Board, Air Force, civil aviation and local development bodies etc. as applicable necessary according to the local Acts, Laws, Regulations, etc. and make any changes desired by such authorities at no extra cost.
- ii. The Environment impact assessment and as such its clearance from Ministry of Environment and forest Department, CPCB & State PCB as applicable is the responsibility of the contractor. The request for obtaining EIA approval has already been submitted. The contractor shall follow up & liaison with the respective department for obtaining the EIA approval.
- iii. Obtaining approval of the Architectural drawings from relevant local statutory body & obtain Commencement Certificate from local bodies leading to commencement of construction of the project.
- iv. Obtaining NOCs (No Objection Certificates) from Fire Department, Lift Inspector,

Storm water drainage & sewerage department, Municipal Corporation / Local Bodies, Civil Aviation, EIA completion and / or occupancy certificates etc.

- v. Obtaining approval of electrical drawings from Central / State Electrical Inspectorate, as applicable.
- vi. Any other approval required from the appropriate Statutory Authorities/ Local Bodies.

The original documents of approval/certificates etc. shall be submitted to the IRCON.

Note: The fee paid by the contractor for obtaining various statutory approvals shall be reimbursed to him after submission of payment receipts and other relevant documents by the EPC Contractor.

2.1.7 Green Building Rating approvals as per GRIHA

The scope of work shall also include the cost of all such activities. IRCON aims at getting GRIHA rating of 4 Star for Technology Centre.

The contractor shall register and obtain the required GRIHA certification from the designated authority and shall be required to provide all relevant documents, other inputs and take the appropriate measures etc. during execution of work and thereafter obtain required GRIHA 4 Star rating, to enable CLIENT/IRCON in achieving this objective.

2.1.8 Special care for existing services:

The scope of work includes dismantling, if any, of the required services and utilities falling in the project area and supporting/shifting & making functional existing services/sewerage and water supply lines etc. The contractor shall properly take care & safe guard the all the existing services in the area affected by the construction of proposed Technology Centre complex.

2.2 Detailed Scope of Work

2.2.1 Structural Design & Construction

2.2.1.1(a) RCC framed structural construction with laminated shuttering ply and Production Block covering in structural steel with roof covering consisting of insulated profiled sheets as per specifications including retaining structures as required, excavation / back filling of earth work for structures as required, retaining wall, Basement (if applicable) / building foundations and removal/dismantling of existing/old underground services as required.

2.2.1.1(b) The structure is required to be designed with additional vertical expansion of 2 floors i.e. G would be designed as G+2, G+1 as G+3 etc. **Where lifts are not initially required, adequate structural and spatial provisions shall be incorporated in the design and construction to allow for future installation of lifts without major alterations.**

2.2.1.2 a) Design Work shall include: -

- i. Detail design & preparation of drawings based on DBR;

- ii. Shop drawings and its approval from IRCON & from Proof Checking Agency.
- iii. Supply, fabrication, Construction, Installation and Commissioning.
- iv. Obtaining all interim and completion Approvals from Authorities.

b) Further details (in Brief) are as under: -

- i. The detailed Civil/Structural Design/preparation of Drawings for above mentioned buildings /spaces are within the Scope of the Contractor.
- ii. The concept design (Architectural), Structural Design Philosophy of above buildings/spaces, structural framing is provided in tender documents based on which the contractor has to prepare detailed Civil/Structural drawings of each and every aspect of the project required for construction of buildings in all respect. The Structural Design & Drawings shall be got vetted from the IRCON approved by IRCON. Thereafter the contractor shall get the Structural Design & Drawings proof checked from the third party, a Govt. Agency like IIT/NIT, or any other body as approved by Engineer-in-charge in writing. The fee payable for proof checking shall be borne by the Contractor.
- iii. The contractor shall not be absolved of their responsibility of structural stability and correctness of structural design. The contractor shall bear all the losses if arises out of the failure of any part of the project.
- iv. Based on the DBR & the architectural drawings, the Contractor shall submit the structural design and drawings based on the Design Philosophy given in the DBR/Technical Specification, within the time as stipulated in Table of Milestone which will be provided after the finalization of detailed design and drawings. Every Civil/Structural drawing /detail shall be prepared conforming to detailed Technical specification, CPWD specifications and relevant IS code. All dimensions of various structural members / slabs / columns / elements shall be gotten approved by IRCON.
- v. The Civil/Structural Design & Drawings (whether RCC or Structural Steel or composite) expressly (but not limited to) includes following: -
 - Studying the Architectural Concept Design, Structural Design Philosophy, submitting proposed structural design framework of each building/floor/area and obtaining approval of IRCON. Due care to be taken for integrating the structural drawing with the Architectural Drawings & with all MEP Services, Landscape features & Elevation features etc.
 - Design on software like STAAD-Pro/ETAB and drawing on a software like Auto CAD including fabrication drawings, shop drawings, bar bending schedule etc. of each and every component of buildings/spaces within Scope of work on suitable scale, including but not limited to: -
 - Foundation Drawings/Details & Schedule, whether pile/ raft or

strip footing and/or combination of footings in accordance with the recommendations of soil report and codes.

- Basement (if applicable) (if applicable) Drawings.
- Column Drawings/Schedule;
- Peripheral Diaphragm wall, retaining walls, Soil Nails, Shotcrete or any other suitable method to retain the earth cutting etc.
- Suspended floors, roofs, landings, balconies and access platform.
- Shelves (Cast in situ/pre-cast);
- Lintels, beams, plinth beams, girders, bressumers and cantilevers.
- Columns, Pillars, Piers, Abutments, Posts and Struts;
- Stairs (including landings);
- Arches, domes, vaults; curved floor plates in plan
- Shafts.
- Vertical and horizontal fins individually or forming box louvers band, fascias and eaves boards.
- All steel structures in building / roof coverings etc. including projection, pergolas, trellis, porch etc.

➤ Execution of complete work as per detailed scope of work, Technical specification and drawings.

- vi. The Structural system is designed as conventional beam and slab framed earthquake resisting structure.

Design Life

Materials and construction systems has been selected to be consistent with the requirements of a “life of the building” as defined in Table 1 of IS 875: “Code of practice for design loads of building and construction”. This category relates to “Important buildings and structures and recommends a specified design life of 100 years.

Location

Jaipur, India

Longitude (°E) : 75°49'E
 Latitude (°N) : 26°55' N"
 Altitude (m) : 431m

Wind Loads

The wind load shall be taken as per IS: 875 (Part-3) and wind pressure calculation done as follows:

$$p_z = 0.6 V_z^2 \text{ N/sqm}$$

$$V_z = K_1 \times K_2 \times K_3 \times K_4 \times V_b$$

Where,

V_z = Design wind velocity
 K_1 = Probability factor or Risk coefficient has been taken 1.0.
 K_2 = Terrain, height and structure size factor, category '2' and class 'C' have been considered.
 K_3 = Topography factor = 1.0 (Plain topography)
 K_4 = Importance factor for the cyclonic region.
 V_b = Basic wind speed = 47m/s
 (Refer Annexure A of IS 875(Part-3):2015

Note: Wind shear is much smaller with respect to Earthquake, hence it is ignored.

Seismic Loads

The structure is to be designed for the minimum static seismic base shear set out by IS 1893 (Part 1): using the parameters shown in the table below. These forces are treated as ultimate forces.

Seismic Zone	Zone II (Refer Annexure E of IS 1893 (Part-1):2016)
Seismic Zone Factor 'Z'	0.16
Soil Profile	To be assessed by the bidder

Occupancy of building	As per layout
Seismic Importance Factor 'I'	1.5
Response Reduction Factor	R = 5.0 Refer to Table 9, IS 1893
Fundamental Period of Vibration	Time Period= $0.075 \times (H)^{0.75}$ H – Height of Building above Ground Floor LVL. d – base dimension of the building at the plinth level along the considered direction of earthquake shaking, in m.
Seismic Building Weight	To include all components of Self Weight, Superimposed Dead Load, any other permanent weight and 50% of Live Load.

Response spectrum method was used as per IS: 1893 (Part-1) 2016 with the following data:

$$\text{Design horizontal seismic coefficient } A_h = \frac{ZI(S_a)}{2R_g}$$

2.1.2 Architectural & Civil finishing for all Works under Scope

a) The scope of work of the Contractor shall be as under: -

- i. Preparation of drawing & integration of all work into BIM model;
- ii. Shop drawings and its approval;
- iii. Supply, fabrication, Construction, Installation and Commissioning.
- iv. The contractors shall take CAD drawings from IRCON & using his structural design, integrate all aspects of the project into a BIM model which will be shared & used for construction.

b) Further details (in brief) are as under: -

- i. The Basements (if applicable) shall be used for parking, services & maintenance of the project. The Basement (if applicable) will include: -

- The Basement (if applicable) floors shall be finished with non-suspended vacuumed watered reinforced concrete floor with broadcasting of floor hardener complete as per specifications.
 - Fire Exit stairs with Signage as per Fire norms. Fire exit staircase doors to have panic bars & Fire rated glass 200 x 300 mm vision panel per shutter.
 - Access to all areas.
- ii. The finishing works of all Basements (if applicable) / buildings and external areas outside building & all common areas within the buildings (like lift lobbies, staircases, ground floor lobbies, covered walkways, service lift lobbies & service areas, toilets etc.) is included in the Scope of Works. The various parts of the project shall be finished / executed as per Schedule of Finishes provided in tender document, technical specifications and tender drawings.

2.2.2.1 Boundary Wall (Not in the scope of the contractor)**2.2.2.2 Green Building Certification**

The project is to be built fully compliant to 4 Star GRIHA norms with aspiration to achieve higher Star GRIHA rating for complete scope in this contract. All electrical & mechanical fittings / fixture / appliances, to be provided for the work, should have latest minimum 4-star rating (of BEE) as available in market. Since, the proposed construction is for 4 star GRIHA rating, all fittings and fixtures shall be provided which suits to the GRIHA rating.

2.2.3 Miscellaneous & Allied works**a) Plumbing & Sanitary Work**

- i. The Scope of work of the Contractor shall be as under: -
- Detailed Designing/preparation of Shop drawings and its approval.
 - Supply, fabrication, Construction, Installation and Commissioning of water treatment plant, MBBR sewer treatment plant.
 - Obtaining Approval from Concerned Civic Authority/ Govt. Bodies / MOEF for pollution.
- ii. Further, details (in brief) are as under: -

- The Plumbing/Sanitary Design & Schematic/Line drawings are also included in the Scope of work. However, detailed fabrication/execution drawings & shop drawings, as required site are to be prepared by the Contractor and got approved from IRCON before proceeding with the work.
- The preparation of Sanitary/Plumbing fabrication & shop drawings expressly (but not limited to) includes the following: -
 - Integration of detailed shop drawings with Civil/Structural details prepared by Contractor for each building and obtaining approval of IRCON.
 - Preparation of fabrication & shop drawings on a software like AutoCAD etc. of each and every part of building having a sanitary/plumbing aspect within Scope of work on suitable scale.
- The Execution of Plumbing/Sanitary work for buildings /spaces as per Scope of the work read with Technical Specifications and Drawings. The sleeves, cut out, drainage arrangement, embedment, concealed piping, hot & cold water arrangement, overhead tanks, water recycling system etc. and connecting the service to the main line of competent Authorities are expressly included (but not limited to, in the scope of work).
- The toilets in all floors of all blocks are to be completely fitted & furnished including all plumbing & sanitary fixtures & fitting.
- Additional toilets for drivers, security & maintenance staff are also to be built & furnished as per requirements.

b) External Water Supply & Sewerage, Storm Water Drainage System, Drainage System, Rain Water Harvesting

- i. The scope of work of the Contractor shall be as under:-
 - Detailed Designing/preparation of Shop drawings and its approval;
 - Supply, fabrication, Construction, Installation and Commissioning of materials as per latest NBC.
 - Obtaining Approval from Local Body.

ii. Further, details (in brief) are as under: -

- The External Water Supply & Sewerage, Storm Water Drainage System, Drainage System, Rainwater Harvesting Design & Schematic/Line drawings are in the scope of work. Detailed fabrication/execution drawings & shop drawings, as required at site are to be prepared by the Contractor and shall be got approved from IRCON before execution of the work.
- The preparation of External Water Supply & Sewerage, Storm Water Drainage System, Drainage System, Rain Water Harvesting, Design fabrication & shop drawings expressly (but not limited to) includes the following: -
 - Integration of detailed shop drawings with Civil/Structural details prepared by Contractor for each building and obtaining approval of IRCON.
 - Preparation of fabrication & shop drawings on a software like AutoCAD etc.

iii. The execution of work for above scope of the work read with Technical Specifications and Drawings and connecting the services from first manhole to the main line of the local authority including approval from Govt. bodies.

iv. Design, installation, testing, commissioning and handing over of the above services with all services in running condition is included in Contractor's scope of work.

c) Fire Fighting

i. As per Latest NBC and as approved by local fire office, the scope of work of the Contractor shall be as under: -

- Detailed Designing/preparation of Shop drawings and its approval;
- Supply, fabrication, Construction, Installation and Commissioning of Fire Fighting network including pumps;
- Water curtain in Basements (if applicable)
- Obtaining approval of Local Fire Services

ii. Further, details (in brief) are as under: -

- Detailed Design & engineering, supply, erection, testing, commissioning and handing over of complete fire protection system for all the buildings and premises in line with the stipulation of Latest National Building Code.
- The work shall include providing and commissioning fire-fighting pumps, delivery line, electrical Panel, internal and external Hydrants, sprinkler system, piping, hose cabinet and landing valves, portable fire extinguisher and any other firefighting measure (including inert gas flood in electrical panel rooms) complete as per requirement of Latest National Building Code.
- The system shall be supplied installed, tested and got approved from the local/statutory authority and handed over to employer as per Drawing and Technical Specifications.

Following are the Fire Fighting and Fire Protection System Proposed as per NBC: -

- Fire Extinguisher system and Latest FHC provisions
- Piping system confirming to IS: 1239 – MS Heavy Class
- Wet Riser system
- External fire hydrants
- OH Fire water tank
- Sprinkler in Basement (if applicable) /entire complex as per latest NBC provisions.
- Underground Fire water static storage in accordance to NBC requirement.

Fire department connection shall be provided on the external wall/ at designated location for Underground tank, Fire brigade draw-out connection shall be provided to draw-out water during the emergence of fire.

The fire pumping system shall comprise of independent electrical pump and sprinkler system, driven by the dedicated diesel engine & pumps.

- d) Electrical Services like ESS, DG Sets, Panels, Distribution, Internal Electrical Works, Fire Alarm, CCTV etc.** (reference of DBR shall be taken for detailed design, fabrication & shop drawings)

The electrical services scope of works includes the following:-

- i. HV meter room, 11 KV HV Switchgear, 11 KV Transformers and 11 KV Power Distribution.
- ii. Power back up standby Generating System for 100 % Load
- iii. MV Switchgear and Power distribution
- iv. UPS for emergency lighting and low voltage equipment's including, EPABX, Fire Alarm, CCTV, BMS, IT, Access Control System etc.
- v. General lighting/power layout for car parks and electrical, mechanical rooms, platforms, ceiling fans at platforms and where required.
- vi. Lightning Protection System
- vii. Earthing and T-N-S grounding system
- viii. Automatic fire suppression system with linear heat sensing trace tube for panels
- ix. External Lighting Installation
- x. Complete Internal Lighting
- xi. Complete Internal Electrical
- xii. Complete Lift / Escalator Work
- xiii. Arrangements for voltage fluctuation protection

The total load demand of the development shall be met by two independent sub-stations (for Technology Centre building) 11 kV substation with required no. of transformers for the further sub distribution as described in the DBR, layouts/SLD.

The earthing system will be in conformity with the IS: 3043. All non-current carrying metal parts forming part of the electrical system shall be connected to the grounding system. The requirement of Indian Electricity Rules and statutory requirement of local Electricity authority shall also be met fully.

- Automatic Power factor equipment (Capacitor Panel) shall be installed to enhance the power factor to the value of 0.95 in addition detuned filter

shall be integrated with capacitor panel in order to suppress the harmonics.

- Voltage Drop shall not be more than 4% from the output of the distribution transformer to the final distribution board.
- FRLS PVC insulated copper wires will be used for all sub mains and final circuit wiring in conduit. All life safety equipment cabling shall be Fire Survival category
- ISI marked MS conduit will be used for wiring/ extra low voltage wiring e.g. Telephone cable, data cable, and security co-axial cable, etc. like risers, plant rooms, car park and above false ceiling.
- Armored cable will be used as per DBR and all cable shall be fire resistant.

Emergency Lighting / Escape lighting will be capable of: -

- Indicating clearly the escape routes.
- Providing adequate illumination along such routes to allow safe movement of persons towards and through the exits,
- Ensuring that fire alarm call points and firefighting equipment provided along the escape routes can be readily located.

d (1)) Transformer, DG, UPS

i. The scope of work of the Contractor shall be as under:-

- Detailed Designing/preparation of Shop drawings and its approval;
- Supply, fabrication, Construction, Installation and Commissioning;
- Obtaining approval of Concerned Civic Authority & Fire Department.

ii. Further, details (in brief) are as under:-

- Providing a complete, end to end, Electrical Supply System that will include Receiving HT 11 KV supply from Distribution Company, Installation of Electrical Sub stations as per norms in electrical substation building, HT panels, LT panels, capacitor panel, Diesel Generators & ensuring complete distribution as per internal electrical scheme.

- Preparation of Shop Drawings for Transformer, HT Panels, DG Set, Bus Trunking etc. and obtaining approval of the same from IRCON and Power Supply agency.
- Construction of Machine Foundations for all heavy Equipment
- Supplying and fixing of all equipment like Transformer, HT Panels, LT Panel, DG Set, UPS, Bus Trunking, earthing, power cable, safety equipment etc. as per technical specification & drawings and direction of IRCON/Power supply Agency and as per Drawing and Technical Specification.
- Commissioning and handing over.
- Taking approval of installations from Electricity Supply Distribution Authorities/ Statutory Authorities.

d (2)) Internal Electrical Works

i. The scope of work of the Contractor shall be as under: -

- Detailed Designing/preparation of Shop drawings and its approval
- Supply, fabrication, Construction, Installation and Commissioning.

ii. Further, details (in brief) are as under:-

- The internal electrification Design & Schematic/Line drawings are included in the Scope of work. Any improvements recommended in drawings as per updated technology/product for benefit of project may be proposed by the contractor at the time of execution to be approved by IRCON. However, detailed fabrication and shop drawings, as required for execution at site are to be prepared by the Contractor in B.I.M. (Building Information Modelling) format and got approved from IRCON before proceeding with the work.
- The Layout design (Scheme of Electrical arrangements of Electrical works for buildings/spaces and shop drawings in B.I.M. (Building Information Modelling) format of each and every aspect of the project, required for execution integrated with Civil/ Structural /Architectural Drawings for each Building/Spaces and obtaining approval of IRCON.
- Preparation of Drawing of each and every part of building having an

Internal Electrical aspect within Scope of work on suitable scale.

- The Execution of Internal Electrical work for buildings /spaces as per Scope of work read with Technical Specifications and Drawings. The following items are expressly included (but not limited to) in Internal Electrical execution: -
 - Each floor/area slab/wall concealed electrical copper wiring/ cabling / conduiting including fan boxes, conduits, wires/cables etc.;
 - Various type of direct dimmable (on TCP/IP) LED Lighting fixture, sensors, fans, exhaust fans;
 - Switch boards, switches, plugs, fans, exhaust fans, regulators, UPS, etc.;
 - Distribution boards, Circuit breaker, MCB, RCCB, MCCB, Junction boxes, meters, Electrical Panels (Low Voltage/ Medium Voltage/High Voltage), Earthing etc.;
 - L.T., M.V., Cables laying including customized cable tray for multiple services installation in Basements (if applicable), supporting accessories, fittings & fixtures etc.,
 - Diesel Generator sets with start-stop switches, alternator, fuel tank, exhaust system, acoustic & weather proof enclosure etc.
 - Insulation of all equipment/fittings etc. and commissioning the same

d (3)) Internal Lighting Works

i. The scope of work of the Contractor shall be as under:-

- Detailed Designing/preparation of Shop drawings and its approval
- Supply, fabrication, Construction, Installation and Commissioning.

ii. Further, details (in brief) are as under:-

- Light Fixture Design

- All the fixtures to be of best quality finish (in terms of product design, appearance, powder coating, internal reflectors, diffusers and overall finish) in order to give the interiors and Basement (if applicable) car parking a distinctive look and feel.
- All fixtures to have such fixing arrangements to the surfaces these have to connect, that orientation of fixtures remains architecturally aligned, fixtures are trim-less or have less than 3mm trim; connectors between lengths and to the mounting surfaces are quite robust and mostly click fixed.
- Fixture wattages have not been defined. Only minimum Lumen have been defined for each fixture. All fixtures (except for Aviation lights and Exit signs) have been rated for its Lumen package (coming out of fixture) and not system wattage. Lumen output from the fixtures have been defined to achieve the desired Lux levels and the manufacturer will offer lowest wattage possible as per the best product technology available at the time of procurement, to meet the Lumen requirement
- All fixtures to operate on constant current of 700mA and voltage between 12V- 48V.

d (4)) Fire Alarm System

i. The scope of work of the Contractor shall be as under:-

- Detailed Designing/preparation of Shop drawings and its approval;
- Supply, fabrication, Construction, Installation and Commissioning;
- Obtaining approval

ii. Further details (in brief) are as under: -

- Detailed fabrication & shop drawings, required in B.I.M (Building Information modeling format) as required for execution at site are to be prepared by the Contractor and got approved from IRCON before proceeding with the work.
- To provide fire alarm and detection system with associated communication and notification as per Drawing and Technical Specification.

- The system shall be supplied installed, tested and got approved from the local/statutory authority and handed over to employer in an operational condition as per Drawing and Technical Specification.

The emergency lighting will be provided to be put on within 1 sec of the failure of the normal lighting supply. Fire Alarm and Detection System will comprise of below mentioned components: -

- Intelligent addressable Fire Detection system with communication, notification & Interface capability
- Manual call points for activation of fire alarm system manually.
- Integrated Emergency Voice Evacuation System
- Interlocking with other equipment's likes Elevators, Air-conditioning Units, Smoke Extraction system etc.

d (5) CCTV

i. The scope of work of the Contractor shall be as under: -

- Detail design/preparation of drawings based on DBR;
- Detailed Designing with Shop drawing & obtaining IRCON's approval
- Supply, Fabrication, Construction, Installation and Commissioning.
- Obtaining Statutory & IRCON's approval of Commissioning.

ii. Further details (in brief) are as under: -

Providing, installation, testing & commissioning of IP based CCTV system in the entire Complex including. The CCTV system shall monitor entrances, waiting areas, circulation areas, lobbies, lift lobbies, stair cases, common areas, parking in Basements (if applicable), entry and exit of the building/site, platforms Service areas including HVAC plants etc. as specified.

d (6)) Panels & Distribution System

i. The scope of work of the Contractor shall be as under: -

- Detail design/preparation of drawings based on DBR;

- Detailed Designing with Shop drawing & obtaining IRCON's approval.
- Supply, Fabrication, Construction, Installation and Commissioning.
- Obtaining Statutory & IRCON's approval of Commissioning.

ii. Further details (in brief) are as under: -

- Providing and laying/fixing cabling from the main receiving station, rising main, meter, electrical panel etc. as per Drawing and Technical Specification
- Construction of Service ducts for electrical supply etc. as per Drawing and Technical Specification.
- Testing & commissioning of complete installation after Service Connection/tapping of electrical supply from the main/municipal system by executing agency.
- Construction of Service ducts for electrical, water supply etc. as per Drawing and Technical Specification

e) HVAC System

i. Scope of works

- Scope of works shall include the following provision:

Air-conditioning & mechanical ventilation work

Mechanical ventilation system for Basement (if applicable) car parking, AC plant room, DG Room, Mechanical Rooms, Electrical Rooms, Toilets, Kitchens, Stores & Pantry and other spaces wherever required.

Smoke Evacuation System for all air-conditioned / public areas as required

Pressurization system for Lifts, Lift Lobby and closed staircases.

- **Design Criteria**

- Location

Jaipur, India

Longitude (°E)	:	75°49'E
Latitude (°N)	:	26° 55'N
Altitude (m)	:	431m

- Outdoor Design Conditions:

Summer

43.3° C Dry Bulb; 23.9°C Wet Bulb; 20% RH

Monsoon

35° C Dry Bulb; 28.3°C Wet Bulb; 60% RH

Winter

7.2° C Dry Bulb; 5.0°C Wet Bulb; 70% RH

- Indoor Design Conditions

Summer & Monsoon :

24.0 ± 1.0°C

Relative Humidity 50 - 60%

Winter :

21 ± 1.0°C

Relative Humidity not to fall below 40%.

- Mechanical Ventilation Rates:

Where mechanical ventilation is required, the air change shall be as follows:

Space	Ventilation
Kitchen	35 ACPH exhaust through dry scrubber
	Fresh air supply through air washer (FDV Unit) @ 85% of exhaust capacity, rest makeup air shall be through adjacent areas like restaurant / canteen / food court etc. or through TFA unit.
Public Toilet	12 -15 ACPH
Smoke stop lobby	25-30 Pa (As per Latest NBC)
Staircase & Lift well	50 Pa (As per NBC)
Plant Rooms / Electrical Rooms	15 – 20 ACPH (As per NBC)
DG Room	Shall be calculated based on DG set heat dissipation with 5 Dec C temperature rise.
STP	30 ACPH

Electrical Rooms in Signal building	10 ACPH
Stores	6 ACPH
Basement (if applicable)	6 ACPH in Normal Operation (As per NBC)
Ventilation	12 ACPH in case of emergency (As per NBC)
All other ventilation areas shall be ventilated as per NBC / Fire Authority.	

➤ **Design Parameters**

• **Chilling Units**

Performance rating of the chilling units shall be based on the following design parameters:

Temperature of chilled water entering chiller	12.2 °C (54 °F)
Temperature of chilled water leaving chiller	6.7 °C (44 °F)
Fouling factor for evaporator	0.0005 sqft/hr ⁰ F/Btu
Max. permissible pressure drop in chiller	10 m of water head
Temperature of condenser water entering condenser	31.1 °C (88 °F)
Temperature of condenser water leaving condenser	36.7 °C (98 °F)
Fouling factor for condenser	0.001 sqft/hr ⁰ F/Btu)
Max. permissible pressure drop in condenser	10 m of water head
COP / IPLV at AHRI conditions for 225 TR Water Cooled Screw Chillers	5.8 / 7.5
COP / IPLV at AHRI conditions for 775 TR Water Cooled Centrifugal Chillers	6.5 / 8.9

Minimum requirement of either COP or IPLV of respective efficiency level shall be met.

Chiller COP shall be fine-tuned in accordance with energy simulation results provided by contractor.

- Chilled Water Piping:

Piping shall be sized for the following design parameters:

Maximum velocity of flow	1.2 mps (4 fps) for piping 50 mm & under
	2.5 mps (8 fps) for piping over 50 mm dia
Maximum friction	5m / 100m run

- Duct Design:

Design parameter for duct design shall be:

Max. flow velocity in main ducts for air-conditioning	1500 fpm
Max. flow velocity in ducts for ventilation in Basement car parking (if applicable) (Normal Mode)	1800 fpm
Max. flow velocity in ducts for ventilation in Basement car parking (if applicable) (Fire Mode)	2400 fpm
Max. flow velocity in ducts for ventilation in Services Rooms (AC plant, Sub-station, Pump Room, STP etc.)	1800 - 2200 fpm
Maximum flow velocity in toilet exhaust duct	1500 - 1800 fpm
Max. flow velocity in kitchen exhaust duct	1800 - 2200 fpm
Max. flow velocity in kitchen SA duct	1500 - 1800 fpm
Max. flow velocity at pressurization ducts	2500 fpm
Max. velocity at air-conditioning supply air outlet & return air inlets	500 fpm
Max. velocity at car parking supply air outlet & exhaust air inlets (in normal mode)	500 fpm

Max. velocity at services rooms supply air outlet & exhaust air inlets	500 - 700 fpm
Max. velocity at kitchen supply air outlet & toilet exhaust air inlets	500 fpm
Max. velocity at pressurization supply air outlet	750 fpm
Maximum friction in ducts	1 cm WG / 100 m run

- Cooling Tower:

Inlet temperature	36.7 °C (98 °F)
Outlet temperature	31.1 °C (88 °F)

➤ **AC Load Calculations:**

Detailed AC load calculations shall be done by the contractor on Carrier Hourly Analysis Program (HAP) after finalizing architecture space planning drawings with sections & elevation and the building envelope. It may be noted that the heat load provided above in the report is only for general guidance. The contractor shall provide a detailed working for meeting the design requirement. The bidder shall submit tonnage requirement based on their working considering the input design conditions specified in DBR to meet the indoor design conditions / criteria. The contractor shall submit their load calculation to IRCON for approval.

➤ **Salient Features of HVAC System:**

- Minimum efficiencies of HVAC system shall meet ECBC and ASHRAE Standard 90-1-2007.
- There shall be a dedicated Central AC Plants: For Admin Building, concourse areas. The AC Plant shall be independent. Air-cooled split type units (wall mounted / cassette / Ductable type) with energy saving inverter type compressors (4-star BEE rating) / VRF system will be provided as per requirement in Signal panel building.
- Air conditioning system shall comprise of high efficiency centrifugal water-cooled chilling machines with VFD for office building AC plant & water-cooled screw chilling machines with Star-Delta starter. Chillers shall be provided with automatic tube

cleaning system for condenser. AC Plant manager will be provided to operate the AC plant efficiently. Plant manager will be supplied by the chiller manufacturer or authorized by the chiller manufacturer. In the later case chiller manufacturer will be responsible for the AC plant manager.

- The chilling machines shall use refrigerants R-134a with Zero Ozone depletion potential / R-514a with Zero Ozone depletion potential & negligible global warming potential as compared to other refrigerant used in HVAC system.
- Use of refrigerant with Zero Ozone Depletion Potential (ODP) and low Global Warming Potential (GWP)
- Secondary chilled water system with variable speed pumps through adjustable frequency drives for maximizing energy conservation for office building. Primary chilled water system with variable speed pumps through adjustable frequency drives for maximizing energy conservation for Technology Centre building.
- Dedicated Secondary Chilled Water Pump sets with one standby for each zone of office building. Office building shall be divided into two zones i.e. zone-1 & zone-2 (as per drawing / as per direction of engineer-in charge).
- AHRI Certified Enthalpy Wheels for pre-cooling fresh air in all TFA Units for recovery of energy from exhaust air to reduce fresh air load on the system.
- All AHUs shall be with UL 2043 and UL 1995 listed AHU mounted UVGI system and should also have UL listed Engineered Indoor Air Quality Management System with Ozone Technology to remove biological contamination, VOCs and bad odor.
- High efficiency IE3 motors.
- Individual open type expansion tank complete with insulation for both the AC plants.
- Pressurisation system for Lifts, lift lobby, staircases as per LATEST NBC.
- Mechanical Ventilation system for Basement (if applicable) parking as per LATEST NBC.

- Basement (if applicable) ventilation exhaust duct and smoke evacuation duct shall be provided with fire paint, flame bar or equivalent meeting the required standard to achieve desired fire rating as per LATEST NBC.

f) Mechanical Ventilation, Smoke Extraction & Pressurization:

i. The scope of work of the Contractor shall be as under :-

- Detailed Designing/preparation of Shop drawings and its approval;
- Supply, fabrication, Construction, Installation and Commissioning;
- Obtaining approval.

ii. Further details (in brief) are as under :-

- Preparation of shop drawings in BIM (Building Information Modelling Format) integrating with the structural and Architectural Drawings for Basement ventilation (if applicable) and as per Drawing and Technical Specification, as required for execution at site are to be prepared by the Contractor and got approved from IRCON before proceeding with the work.
- Collection of data and preparation of pressurization calculation and data sheet for blowers and obtaining approval of IRCON.
- Supplying and fixing of all equipment as per technical specification, drawings and design.
- Ducting, Insulation and Fixing of blowers etc.
- Commissioning of the entire system.
- Taking approval of the Rajasthan Fire Services on completion of work.
- Work includes pressurization of all staircases, all elevators & all elevator lobbies.
- Work includes smoke exhaust ventilation from all floors of all blocks.
- Work includes Basement (if applicable) ventilation as per fire norms – including fresh air supply & ventilation. Work includes provision of

ventilation according to parking requirements & norms for supply & exhaust of carbon dioxide.

➤ Air Distribution -

Air shall be distributed through factory fabricated ducts.

➤ Exhaust from Toilets

Mechanical exhaust is provided for all toilets. Toilets are provided with in line exhaust. Make up will come from adjoining areas through door under cut or transfer grill.

➤ Exhaust from Basements Car Parking (if applicable)

Mechanical ventilation system for Basement car parking (if applicable) is designed to provide 6 air changes per hour (ACPH) for normal ventilation and additional 6 air changes per hour in case of fire or distress call. The system shall comprise fresh air and extract air fans sized for 6 ACPH and 6 ACPH respectively in case of normal operation & Additional fresh air and exhaust fan are also provided which will run in case of fire with same air changes per hour connected to respective fresh air and exhaust air shafts. Adequate number of CO sensors & PLC panel shall be provided in each zone. The normal exhaust fan shall be operated through getting signal from Carbon Monoxide (CO) sensor / PLC panel. PLC panel shall give signal to exhaust & supply fans simultaneously so that supply & exhaust fans shall operate simultaneously in such a way that excessive negative / excessive positive pressure is not created. PLC panel shall have facility to operate both the exhaust fans & both the supply fans of each zone cyclically. All the fans shall also operate manually.

➤ Exhaust from D.G. Room

Mechanical Ventilation system is proposed in DG set room as per DG set heat dissipation to keep the DG room temperature within a limit to avoid any de-rating in DG output. DG room supply and exhaust air quantity shall be calculated based on DG set heat dissipation data. DG Room shall be provided supply and exhaust arrangement to maintain DG Room temperature as recommended by the manufacturer. In order to control the Noise level acoustic lining shall be provided in DG room.

g) Building Management System:-

The EPC Contractor shall carry out Design, Engineering, Supply, Installation and Testing & Commissioning of BMS Works.

Complete system shall be hooked on to BMS system. Proposed BMS system shall be logically structured into three distinctive levels, which are

- Management Level,
- Automation Level and
- Field Level.

Each level shall be autonomous from the other. Peer to peer communication shall be possible on all system levels and the system design shall be modular in structure to allow straight forward extensions.

HVAC, Fire, WTP, ETP, STP, PA System, HSD storage pumping system & Lifts etc. will also hooked on to BMS system.

State of art Building Management System (BMS) will integrate multiple building functions including equipment supervision and control, alarm management, energy management, information management and historical data collection and archiving. The system shall be modular in nature and shall permit expansion of both capacity and functionality through the addition of field devices / programming. The failure of any single component or network connection shall not interrupt the execution of control strategies at other operational devices.

Scope of Work:

The proposed BMS system will consist of the following:

Central control station for monitoring, control and alarm through operator interface station (OIS). Software for building management system and energy management system. System integration unit consisting of gateways, interface units etc. Portable operator terminals, Sensors and field devices consisting of but not limited to the following:

- Immersion type temperature sensors
- Duct type temperature sensors
- Outside air and humidity sensors
- Water flow meter
- Differential pressure switch across the AHU

- Level switches for indicating water level in cooling towers, tanks etc.
- Water flow switches
- pH Sensor
- TDS Sensor
- Differential pressure transmitters
- Current transducers
- Voltage transducers

Stand-alone intelligent 32 bit Direct Digital Controller (DDC),
Line/Field Devices etc. for but not limited to the following:

- HVAC system
- VRV/VRF system
- Hot water system
- Water supply system
- Water softening plant
- Fire fighting system
- Fire alarm system
- Lifts, Escalators (if any)
- UPS
- VFD integration
- Fire alarm integration
- LT panels energy consumption parameters
- Air handling unit & Forced cooling unit
- Solar PV system/Inverters

➤ **Public Address System & CCTV System**

The plant will operate automatically as per programmed schedule the controllers will estimate the actual requirement on any particular day depending on outside temperature and accordingly decide the lead time required to achieve design inside conditions, in all areas, at the start of offices.

DDC to DDC networking shall be through LAN Cabling.

All standby pumps can be rotated to provide equal wear and tear and reduce fatigue.

The water supply system is controlled and operated as per requirement without any wastage.

All other services are monitored as per requirement.

Comprehensive I/O summary with relevant A/I, A/O, D/I, D/O details for all equipment and systems covered under BMS shall be prepared during detailed engineering.

h) Solar Panels

i. The scope of work of the Contractor shall be as under :-

- Detail design/preparation of drawings based on DBR;
- Detailed Designing/preparation of Shop drawings and its approval;
- Supply, fabrication, Construction, Installation and Commissioning;

ii. Further, details (in brief) are as under :-

- The scope shall include detailed designing and fabrication/execution drawings and shop drawings, as required for generating solar power for street lighting and other areas, shall be prepared by the Contractor and got approved from IRCON.
- Supplying and fixing of all equipments/Solar panels/networking etc. as per technical specification, drawings and design.
- Commissioning & testing of the entire system.

i) Lifts / Escalators

i. The scope of work of the Contractor shall be as under :-

- Detailed Designing/preparation of Shop drawings and its approval;
- Supply, fabrication, Construction, Installation and Commissioning;
- Obtaining approval of Lift Inspector

ii. Further details (in brief) are as under: -

- Refer DPR and Technical Specifications.
- Providing, installation, testing and commissioning and handing over of elevators of required capacity as per drawings and technical specification. Detailed fabrication & shop drawings, required in B.I.M (Building Information modeling format) as required for execution at site are to be prepared by the Contractor and got approved from IRCON before proceeding with the work.
- Obtaining approval from lift inspector before commissioning.
- Service Elevators – The lifts shall be of high quality, maintenance friendly finishes & include all accessories. The touch panel shall be with LED display. The internal finishes & all features of all elevators shall be similar. The interiors shall be in Brushed Stainless Steel finish at all sides.

j) Site Development & Landscape

i. The scope of work of the Contractor shall be as under:-

- Detailed Design for selected works such as Stainless Steel works/ Artworks etc.;
- Detailed Designing/preparation of Shop drawings and its approval from IRCON;
- Supply, fabrication, Construction, Installation and Commissioning;

ii. Further details (in brief) are as under: -

- Construction of Internal Roads, Berms, Pathways, Kerbs, open

parking space etc. including connecting with the external road network as per Drawing and Technical Specification.

- Hard and Soft Landscape in open land area including all horticulture operation, earth filling, grassing, tree plantation etc. as per Drawing and Technical Specification.
- Hard landscape to be done to achieve a high quality urban environment with permanent maintenance friendly features using granites in variety of anti-skid finishes.
- Work to include built in planters & seating, large tree planters in stone, bush / ground covers in planters, street furniture in mono lithic stone benches.
- Street furniture to include litterbins, water fountains, bollards, Fire tender path markers etc. will be developed, approved & installed.
- Roads to have recycled Concrete kerb stones.
- Fire tender path to be maintained & marked around all Blocks as per Fire norms.
- Ramp entrances & exits to have MS Trellis with Multiwall polycarbonate canopies as per detailed design so as to shelter the entrances.
- Basement (if applicable) Fire exits to be made as landscaped features by enclosing in Trellis & planters at Ground level.

k) STP / WTP

i. Sewage Treatment Plant (MBBR Technology)

- **The scope of work of the Contractor shall be as under: -**
 - Detail design/preparation of drawings based on DBR;
 - Detailed Designing/preparation of Shop drawings and its approval;
 - Supply, Fabrication, Construction, Installation and Commissioning.

- Obtaining statutory approval from local authority & IRCON for Commissioning.

➤ **Further details (in brief) are as under:-**

- Capacity of STP – 25 KLD (MBBR TECHNOLOGY)
- There will be a city sewer connection, but all the sewerage generated will be fully treated within the project at the STP & waste water is recycled.
- Providing a Sewerage Water Treatment Plant in an underground construction which will be used to collect, hold, recycle & redistribute water. The waste will be collected from sewerage network. The distribution will be done to horticulture & to dual plumbing network in toilets for flushing & to any other identified locations.

Solid Waste Management as per LATEST NBC

Following would be the major sources of generation of solid waste: -

- Packaging waste / Building materials during construction.
- Waste from office building establishments.
- Street sweepings and horticulture.

ii. Water Treatment Plant [Domestic Water – IS-10500; Soft Water – Commercial Zero]

➤ **The scope of work of the Contractor shall be as under:-**

- Detail design/preparation of drawings based on DBR;
- Detailed Designing/preparation of Shop drawings and its approval from IRCON;
- Supply, Fabrication, Construction, Installation and Commissioning.
- Obtaining Statutory & IRCON approval of Commissioning.

➤ **Further details (in brief) are as under :-**

Providing, installation and commissioning of water treatment Plant & underground storage tanks with pump room etc. These include tanks for fire, treated water (soft water) & recycled water (STP). Treated Water Supply shall be made to all occupants throughout the day through OHT or as per schedule settled with client. The supply distribution shall be through details given in technical specification documents.

The water will be treated as per required health standards for safe drinking water.

The primary fresh water source will be municipal water supply.

Water treatment plant (WTP) provisioned to ensure that the chemical and bacteriological parameters of water supply in the development are in accordance with World Health Organization (WHO) Standards. WTP Specifications will be based on the water test, analysis report of the sourced water. Water required for potable purpose will be in compliance of IS: 10500 standards.

RO Water Treatment & Water Cooler for drinking water – Sizing as per water demand minimum one per floor.

l) Low Voltage Services; Computer / LAN Networking; Wi-Fi Points; EPABX System; Access Control System

i. Computer / LAN Networking/ Wi-Fi Points

- RJ 45 data outlets points will be provided for Computers, Networking, Telephones, Wi-Fi, Access Control, CCTV, Information Display system, BMS, etc. as per requirement in rooms and other areas at various floors.
- The Data Outlet points shall be connected to Rack Panel/Computer hub with 4 **pair** CAT-6/ CAT-6a wiring in Raceways, recessed/ surface conduit as required. UPS Power supply shall be provided to Network Rack, Servers & Computers wherever required.
- The maximum length of the Cat 6a cable from end user point to the Hub or Edge switches shall not be more than 90 M. Beyond 90 M length Fiber Optic Cable shall be used.
- The Rack Panel/computer hub at various floors will be connected to Main rack of the building/ block with Fibre Optic Cable through conduit or raceways on surface/ recess.

- Suitable Data Centre with false flooring shall be established which comprises both LAN server & IPABX server. There shall be proper redundant (24 X 7) cooling facility in the Data Centre to maintain the desired temperature, humidity & Indoor air quality for smooth operation of the System.
- The server shall be connected to Distribution switch through Optical Fibre cable. Distribution switch shall be connected to Edge switches with optical fiber cable in underground DWC HDPE pipe of suitable size for outside connectivity or in cable raceway/conduit inside the buildings.
- The Server shall have Firewall protection, Bandwidth management & required client Access license.
- The incoming Fibre cable from Service provider for the Broadband connectivity shall be terminated in the Server room. The laying and termination of Fibre optic cable within the campus will be provided.
- The Rack Panel comprising of jack/Patch panels, Network switches, patch cords, power supply units, Cooling Fans, Wire managers, LIUs, Trans-receivers, Fiber patch cord etc. of individual buildings/Blocks/floors.
- LAN Infrastructure at different Floors shall be used commonly for IPABX, BMS, Access Control System, CCTV, Information Display system etc. along with LAN.
- Brick masonry manholes with covers shall be provided at suitable lengths to facilitate easy wire/cable pulling.
- Wireless access points for Wi-Fi connectivity are to be provided.

ii. EPABX System

- RJ-45 Telephone socket outlets with suitable IP Phones instruments shall be provided at convenient locations, as required. CAT6/ CAT 6a wiring shall be provided in recessed/surface conduits / raceways from each telephone point up to the Rack panel (Patch Panel & Switch) at each floor or nearest Rack Panel of all buildings /Blocks. The Maximum length of the CAT6/ CAT 6a cable shall be 90 M.
- EPABX with minimum capacity of 100 Telephones & expandable up to 200 telephones shall be located at Server Room. This will also serve Training Centre, Production Block, Hostel Blocks, Executive Hostel and Utility Block.
- EPABX with minimum capacity of 50 Telephones & expandable up

to 100 telephones shall be located at Server Room of the Admin Building. This is for reception and common areas only and will also be extended in a limited way in all blocks.

- The Rack Panels (comprising of jack/Patch panels, Network switches, patch cords, power supply units, Cooling Fans, Wire managers, LIUs, Trans receivers, Fiber patch cord etc.) shall be connected to the main IPABX Server Rack with optical Fiber cables to be laid underground in DWC HDPE Pipe of suitable size.
- Manholes with covers shall be provided in the underground DWC HDPE pipes at suitable lengths for easy pulling & maintenance of cables.

iii. Access Control System (For Office Building and Office Rooms)

- Access Control system will be magnetic door type controlled through Card readers and biometrically.
- All entrances i.e main & floor entrances shall be provided with Access Control System. IP based door controllers shall be provided as required.
- LAN infrastructure shall be used for network connectivity of IP based door controllers. Each Controller will control four No. of Magnetic locks which can be for single or double leaf door.
- The centralized control will be managed through a server to be installed in main Security Control/ Server Room.
- For Overriding Purpose Push Button will be provided inside the rooms.
- The system will be capable to record the biometric attendance of the authorized personnel and the records will be stored in server.
- The ACS shall be of an open-architecture, PC-based system utilizing the Windows Operating Systems (OS). The system shall consist, but not be limited of the following major components:

Central Management Server

Central Database Server

Dedicated workstation for centralized security management functions.

- The ACS shall have a modular structure that allow for future system expansion with minimum cost and disruption to the existing operational system. Common extensions shall include but not limited to the following: Number of operator workstation

m) Outdoor & Landscape Lighting

i. The Scope of work of the Contractor shall be as under: -

- Detailed Designing/preparation of Shop drawings and its approval from IRCON;
- Supply, Fabrication, Construction, Installation and Commissioning.

All external landscaped areas will be adequately lit with approved lighting fixtures so as to provide lighting to all pedestrian walkway, vehicular roads, entrances to complex, to buildings, to Basements (if applicable) etc., to all fire exits. The landscape lighting will be done so as to create a pleasant environment in the evening for a safe & pedestrian friendly environment. The lighting will accentuate trees by up lighting, direct traffic by motor able embedded lights, highlight ramps by wall embedded lights, highlight traffic directions by corner / curved street markings. There will be green planters that will have sufficient bollards / planters ground embedded lights to showcase the greenery in the evenings. Street light with LED light, landscape light, all signage as per Drawing and Technical Specification.

The design of lighting and fixture selection in these areas shall harmonize with the landscape.

Ornamental and pole-mounted light fixtures are to be appropriately scaled for each landscape situation. Alternates to pole lighting shall be considered to provide ambient and pathway lighting.

Accent lighting must be located to avoid viewing bright sources from buildings and public areas.

Pavement lights to be selected and spaced to provide even illumination. Intersections, crossings, steps and ramps to be adequately illuminated for safety.

Provide adequate lighting and fixture selection for all directional, location and safety signage.

n) External Services Layout, Distribution & Miscellaneous

i. Installation, testing and commissioning of rain water harvesting system, water supply system, sewerage system and drainage system as per Drawing

and Technical Specification.

- ii. Supply and Installation of pumps and construction of underground water tanks and overhead tanks
- iii. Providing and laying/fixing cabling from the main receiving station, rising main, meter, electrical panel etc. as per Drawing and Technical Specification
- iv. Street light with LED light, land scape light, all signage as per Drawing and Technical Specification.
- v. Construction of Internal Roads, Berms, Pathways, Kerbs, open parking space etc. including connecting with the external road network as per Drawing and Technical Specification.
- vi. Construction of Service ducts for electrical, water supply and signal cables etc. as per Drawing and Technical Specification.
- vii. Testing & Commissioning of complete installation after Service Connection/tapping of the water supply, sewerage, drainage, electricity, signal cables etc. to the main/municipal system by executing agency.

Scope of Work for Maintenance during Defect Liability Period (DLP).

(Note: The manpower and consumables required for operation of services and assets is not in the scope of contractor. Maintenance and defect rectifications of all the assets created/supplied by contractor during defect liability period is in their scope of work. In case of any dispute in this regard, decision of engineer shall be final and binding)

2.3 Scope of Maintenance of Civil Works

- 2.3.1 The Agency shall maintain all assets of Civil works created through this agreement. No extra payment shall be admissible for scope of work including materials for Maintenance during DLP period.
- 2.3.2 The Agency shall be responsible to attend all complaints arises through any medium in the spirit of maintaining the campus and all assets in impeccable condition. Accordingly, depending upon the number of complaints, the agency shall employ the number of workers to attend the complaint within prescribed time for which no extra payment will be admissible.
- 2.3.3 In all cases he shall attend the complaint in the specified duration as mentioned below:-

- a) The following complaints (Known as “No delay”) shall be attended within 6 hrs. on receipt: -
 - i. Removing choke of drainage pipes, manholes.
 - ii. Restoration of water supply.
 - iii. Leakage of water supply pipes.
 - iv. Repair of overflowing cisterns/tanks.

2.3.4 The following complaints (Known as “Minor”) shall be attended within 24 hrs. on receipt:-

- a) Replacement of glass panes.
- b) Carpenter complaints.
- c) Mason complaints, such as patch plaster, corner repair, etc.

2.3.5 Major Complaints – Complaints other than no delay and minor complaints shall be attended with in shortest reasonable time in consultation with Engineer-in-Charge.

2.4 **Scope of Maintenance Electrical & Mechanical Work**

The Agency shall maintain and operate all MEP assets created through this agreement. No extra payment shall be admissible for scope of work including materials for Maintenance during DLP period.

2.4.1 Internal Electrical Installations and outdoor Lighting

- a) The scope of all work includes maintenance of Electrical Installations created through this agreement
- b) The following activities are covered under the scope of work:
- c) Taking steps for preventive Maintenance
 - a) Checking of DB's, main boards and rising mains etc.
 - b) Cleaning of fans and fittings once in a year or as required.
 - c) Insulation test and recording the test results once a year.
 - d) Earth test and recording the test result once a year.

- d) Maintenance activities carried out as per schedule should be recorded in the Maintenance register. When tests are carried out the test result should be recorded with appropriate identification references and got authenticated by Engineer-in-charge.
- 2.4.2 Maintenance of all type of wiring and including street lighting.
- 2.4.3 Repair & replacement of all type of fittings (wall bracket, mirror light, ceiling circular, bulk head) to make the installation functional.
- 2.4.4 Repair and rewinding of A.C. ceiling fan, exhaust fan, replacement of ball bearing/bush, capacitor etc.
- 2.4.5 Replacement of modular switch, 16 amps 1 way/2-way switch, socket, bell push, telephone socket etc. and call bell, wall bracket fitting, choke starter etc.
- 2.4.6 Replacement of faulty SP/DP/TP/FP MCB, Isolators and MCCB's etc. to keep the installation intact and functional.
- 2.4.7 Replacement of choke, tube, HPSV/MH lamp Halogen Lamp, CFL lamp, Igniter etc.
- 2.4.8 All electrical installations i.e. ceiling fans, fl. fittings, main boards, exposed & accessible surface of conduits etc. shall be painted with synthetic enameled paint.
- 2.4.9 In case of wiring of any circuit or point or sub main is burnt/damaged the replacement of faulty wiring will be executed by the firm within the scope of this contract.
- 2.4.10 In case UG cable at feeder pillar/street light pole/near main board or en route is damaged the firm shall repair and make straight through joint to make the installation healthy and functional.
- 2.4.11 Contractor shall deploy adequate staff including wiremen, khalasi etc.
- 2.4.12 The agency shall take prompt action to attend any complaint assigned to him through site order book/verbal instruction from Engineer-in-charge or on telephones BUILDING SEWA KENDRA from occupants. In all cases attend the complaints in the specified duration as mentioned below :-
- a) No delay complaints of emergent nature (such as electricity not being available) shall be attended within 4 hours.

- b) Minor complaints will be attended within 24 hours.
- c) Major complaints will be attended within 15 days or as decided by Engineer-in-charge.
- d) A log book to be maintained for all type of work & Complaints separately for checks.

2.4.13 Sub-Station and DG Sets

The scope of work includes comprehensive maintenance of Sub Station and DG sets through Manufacturers / Authorized Service Agencies. No extra payment shall be admissible for scope of work for Maintenance during DLP period.

- a) The scope of work includes comprehensive maintenance of Sub Station and DG sets through Manufacturers / Authorized Service Agencies, no extra payment shall be admissible for scope of work for Maintenance during DLP period.
- b) The scope of work includes annual maintenance of Substation equipment i.e. servicing of HT panel, MV Panel, Dehydration of transformer Oil, PT's, calibration of IDMT relays once a year, replacement of silica gel in breather and topping of transformer oil to the correct level in the conservator tank as and when required.
- c) To plug the leakage of transformer oil if any replacement of ring/gasket, LT bushing etc. if required.
- d) Repair and replacement of MCCB/FSU, indicating instruments, meters etc. in HT panel, MV panel/feeder pillars.
- e) Repair and replacement of internal wiring, fuses, MCB in HT/LT panel whenever required.
- f) Carrying out B check of DG sets (replacement of all filters and lube oil, coolant corrosion register element etc.
- g) Replacement of battery terminals, hose pipes, V belt etc. whenever needed.
- h) Topping of distilled water in the batteries, replacement of battery whenever required.

- i) Cleaning of DG Sets, AMF panel and making minor adjustment/repair whenever required to make the DG set functional.
- j) Daily Routine Checks
 - i. Keep the Substation and DG Set Room clean: wipe out dirt from external surface of engine, generator and control panels, transformer, HT panel etc.
 - ii. Check the levels of diesel in daily services tank, lubricant oil, in engine crankcase, and water in radiator. Fill / Top up as necessary.
 - iii. Inspect the engine for leakage of diesel oil, engine (lub.) oil, and coolant in the respective system.
 - iv. Check that the selector in control panel is in AUTO mode.
 - v. Record the reading of voltage of supply and engine battery voltage.
 - vi. Run each DG Sets for a period of 5-10 minutes daily for testing and entries of these tests shall be recorded in log books of each DG Sets.
 - vii. Checking the MV panel etc. for local heating of any feeder.
 - viii. Check for any leakage of transformer oil, level of oil in consecrated tank, condition of silica gel and take remedial action required.
- k) Weekly Checks
 - i. Check the automatic starting of engine by switching of the main supply to the AMF panel. Run the set on load for 15 minutes. Observe for any abnormality of noise. Vibration, bearing surface heating (whether warm), engine pick up, voltage level and frequency.
 - ii. Check the level of electrolyte in the battery of the engine. Top up with distilled water as necessary. If the battery needs charging (as can be judged by the cell voltage). Arrange for its charging early and also examine whether trickle charger is defective.
 - iii. Check whether all panels lamps, fuses & instruments are healthy in the control panel.
- l) Monthly Checks

- i. Checks engine radiator for air restriction if any. Clean-up Check the conditions of drive belts, hose and radiator cap.
 - ii. Clean the battery terminals and apply grease to prevent corrosion. Check specific gravity of the electrolyte.
 - iii. Check the exhaust system for leakage, corrosion and vibration, see whether the exhaust smoke is not very dark.
 - iv. Check that there are no restrictions to air flow in air cleaner.
 - v. Check that oil heater is functional.
 - vi. Check coupling with alternator for any sign of fatigue.
- m) Six Monthly Checks
 - i. Inspect the electrical control panel and starters to see that all power/control contacts are clean all terminations, including control cables. Tighten as required.
 - ii. Inspect all cable end terminations, including control cables, tighten as required.
 - iii. Check all safety control and alarms in the set supply system.
 - iv. Check and change filters of diesel oil, engine (lub.) oil, coolant and air cleaner element of the engine after checking total hours of operation and manufacture's recommendation. Drain and change the cooling water.
 - v. Check the belt tension. Tighten if required.
- n) Annual Checks
 - i. Inspect the fuel tank for any sedimentation. Clean up.
 - ii. Replace the engine oil as per hours of operation and recommendation of the manufacturer.
 - iii. Check shaft alignment and condition of anti-vibration mountings, in case any abnormal noise or vibration is observed.

iv. Blow through radiator core in a direction opposite to the normal flow of air (Reverse flushing). conduct megger test on all cabling, mains and control wiring motors, and earth test, (Earth test is to be done in summer).

o) Contractor should deploy adequate Staff for maintenance of Sub Station and DG sets

2.4.14 Water Supply and Fire Fighting (wet riser) Pump Sets and Addressable Fire Alarm System and Sewage Disposal Pump Set / Recycling plant / Compost Plant / Water Treatment Plant / R O Plant and Water Coolers

a) The scope of work includes comprehensive maintenance of Water Supply and Fire Fighting Pump Sets and Addressable Fire Alarm System and Sewage Disposal Pump Set / Recycling plant / WTP / Compost Plant / Water Coolers through Manufacturers / Authorized Service Agencies, No extra payment shall be admissible for scope of work for Maintenance during DLP period.

b) Maintenance of all the above pump sets as and when required.

c) Repair / rewinding of pump sets, replacement of ball bearing, impeller, gland plate etc. as per requirement to keep the system functional.

d) Repair/replacement of starters, MCCB, contactor, pressure switch, relay etc. for water supply and firefighting pump set.

e) To check the fire alarm system and carryout preventive maintenance as per Schedule given below.

f) To replace any faulty detector, hooter, any PCB etc. in the control panel if required to keep the system healthy.

g) Rectify any leakage in the pipe line of fire fighting systems, replacement of any accessories of firefighting system whenever needed.

h) All the pump sets, control panel and firefighting pump sets and pipe line and accessories etc. shall be painted with synthetic enameled paint of approved shade once a year.

i) Daily checks :-

i. Check the power supply of all the panels in buildings/floors.

- ii. Check the healthiness of battery and battery water/electrolyte as required.
 - iii. Check the fault indication of the panel and rectify the same.
 - iv. Check whether signals of fire and fault condition are transmitted from detector / devices on main control panel.
- j) Weekly Checks :-
- i. Operate a call point and detector to test the system. Each week choose a different detector/device so that all detectors may be tested.
 - ii. Check the fault circuit of each loop/zone from the panel.
 - iii. Check the talk back units/PA system circuits and remove faults if any.
 - iv. Checks the water level in the fire tank/terrace tank and fill-up the tank.
 - v. Check the all glands/valves at the terrace and prevent leakage, if any.
 - vi. Check healthiness of the power supply of main control / starter panel, voltage, fuses, remote starters, contactors, power, connection etc.
 - vii. Check the status of hose pipes, nozzles etc.
 - viii. Check the working condition of the pump- motor set.
- k) Monthly Checks :-
- i. Checks and test the performance of all the hooters/alarms/speakers/talkback unit.
 - ii. Check the performance of the manual call points. Check its glasses.
 - iii. Test check auto-manual function of pressure switch of the down comer system.
 - iv. Check and clean the Y-strainer/stop valves flange gaskets as reqd.
 - v. Conducting of fire drills

- vi. For WET RISER SYSTEM, the following work including tests/ checks are to be carried out as per the demand of the installation and/ are, as per direction of Engineer-in-charge and proper logbook should be maintained and got test check by the Engineer-in-charge or his authorized representatives.
- l) For making the users familiar with the system, Fire drill shall be carried out. Local fire service and nodal officers in charge of various parts of the building shall be involved in conducting fire drill. Operation of the system shall be demonstrated so that all users are confident of the system and aware of their duties and responsibility during fire.
- m) Healthiness of System
 - i. The Healthiness of the system shall be checked through fortnightly testing. During the fortnightly testing a particular block shall be taken up all internal hydrants and adjoining yard hydrant of all the building shall be operated and checked.
 - ii. During the subsequent fortnightly different blocks shall be selected so as to ensure that all the internal hydrants and yard hydrants of all the blocks is checked once in six months.
 - iii. The details of such fortnightly testing shall be conducted in presence of IRCON's Engineers to the extent feasible and shall be recorded in register along with date timing and findings.
- n) For Sewage Disposal Pump Set.
 - i. Maintenance of sewage disposal pump set in two shift i.e. 6AM to 2 PM and 2 PM to 10 PM.
 - ii. In addition to the maintenance of sewage disposal pump set any repair to pump set, replacement of parts, rewinding of motor, repair/ replacement of valves, rectification of leakage in the pipe line, welding, repair/replacement of starter etc. or included in the scope of work of this contract.
- o) The contractor should deploy adequate staff for maintenance of STP

2.4.15 Lifts / Escalators

- a) The Comprehensive Maintenance of Lifts & Escalators should be carried out through Manufacturers / Authorized Service Agencies, No extra

payment shall be admissible for scope of work for Maintenance during DLP period.

- b) The firm shall depute trained supervision staff for the maintenance and upkeep of the lift in safe operating conditions.
- c) The technician/lift mechanic of the firm shall make entries in the logbook of the service and other works carried out by him. The lift mechanic of the company shall certify in the logbook that “the lift is fit for use” and that all the safety devices are working. He shall also mention his name with dates and time in the logbook.
- d) The complaint lodged over telephone shall be made by the officials of Users/lift operator and the same will be entered in the logbook and the said complaint must to be attended within 24 hours by the firm.
- e) If the agency fails to attend the complaint within 24 hours of any lift, the recovery as deemed fit by Engineer-In-Charge will be made from his monthly payment.
- f) Relaxation is permissible in the extent of following items.

S. No.	Due to break down/failure	No. of days
1.	Rewinding of DC Hoist Motor, AC Motor replacement of brush, bearings	10
2.	Repair of gears box	8
3.	Replacement of sheave and sheet top	3
4.	Replacement of steel rope, chain, tape of selector governor	2
5.	Replacement of break shoe lining	1
6.	Replacement of trailing cable	5
7.	Winding, repair of break motor, door drive, cam moto	1

- g) The maintenance, routine as well as preventive shall be carried out as per manufactures’ standard prescription.
- h) The firm shall be responsible to carry out the following free of cost during maintenance contract replacement of:-

- i. All parts of main control panel i.e. relay, relay coils, moving contract/fixed contact, landing locks, rectifiers, resistance, transformer, indicating light, rewinding of motor, transformer and other items covered under maintenance sheave.
 - ii. Replacement/repair of control board of lift, DC motor, AC motor, gear box, DC generator, safety devices of all lifts indication lamps, guide rail, steel ropes, flywheel sheave.
- i) The existing parts required to be replaced shall be replaced with existing make of the part. Dismantled material will not be returned to IRCON.
 - j) In the event of mishap/accident caused not due to the user/lift operator than the firm shall stand responsible on any damage/injury to this staff and equipment.
 - k) Staff to be deployed
 - i. As per OEM standard practice.
 - l) Qualification and experience
 - i. As per OEM standard practice.

2.4.16 CCTV

- a) The maintenance of the CCTV system shall be done through Manufacturer / Authorized Service Agencies. No extra payment shall be admissible for scope of work for Maintenance during DLP period.
- b) No T & P shall be issued by IRCON.
- c) The Engineer/Technician deployed should have the knowledge of latest digital complete Surveillance system installed at site.
- d) In case of non-deputation of Engineer/Technician as per requirement, a recovery as deemed fit by Engineer-in-Charge.
- e) The firm shall give the name of persons with full address along with 2 nos. of passport size photographs to make the security pass for smooth entry.
- f) The firm will be responsible for character or behavior & health of the person deputed on the job by them.

- g) Normal maintenance including cleaning of equipment, checking of cameras, inputs with testing replacement/providing minor items like connectors, small wire, glass fuse, solder wire, PVC Sleeves, PVC Tap resetting of software with the firm and/or for any major repair/replacement of faulty parts are deemed to be included within the quoted rates of the contractor and no extra payment shall be made by IRCON on such account. The agency shall intimate to IRCON for any major defect/breakdown and shall record in the log book accordingly.

2.4.17 BMS / Parking Management System

- a) The maintenance of the BMS / Parking Management System shall be done through Manufacturer / Authorized Service Agencies. No extra payment shall be admissible for scope of work for Maintenance during DLP period.
- b) No T & P shall be issued by IRCON.
- c) The Engineer/Technician deployed should have the knowledge of latest digital complete Surveillance system installed at site.
- d) In case of non-deputation of Engineer/Technician as per requirement, a recovery as deemed fit by Engineer-in-Charge.
- e) The firm shall give the name of persons with full address along with 2 nos. of passport size photographs to make the security pass for smooth entry.
- f) The firm will be responsible for character or behavior & health of the person deputed on the job by them.
- g) Normal maintenance including cleaning of equipment, checking of cameras, inputs with testing replacement/providing minor items like connectors, small wire, glass fuse, solder wire, PVC Sleeves, PVC Tap resetting of software with the firm and/or for any major repair/replacement of faulty parts are deemed to be included within the quoted rates of the contractor and no extra payment shall be made by IRCON on such account. The agency shall intimate to IRCON for any major defect/breakdown and shall record in the log book accordingly.

2.5 Horticulture Works (Not Applicable)

- 2.5.1 Complete maintenance of the entire garden features of the garden area i.e. lawn, trees, shrubs, hedge, potted plants, flowers beds, creepers etc. and other garden

feature including watering hoeing, making of plants basic manuring, trimming and cleaning of hedges / plants, Beds, spraying of insecticides, fungicides, weeding, mowing, and top dressing of lawn with good earth and manure and hedge clipping and removal of the garden waste, composting of green waste from plants, trees, lawn mowing, etc. as per direction and satisfaction of the Engineer-in-charge to maintain the plants, hedge and lawns in good and healthy conditions at all the time during the maintenance period. No extra payment shall be admissible for scope of work for Maintenance during DLP period.

a) The following activities are covered under this contract: -

S. No.	Item of work	Nos./Qty./Frequency Required
(i)	Pruning & trimming of trees/ shrubs creepers etc.	Yearly/need base with the permission of forest department
(ii)	Hedges Cutting	Monthly
(iii)	Any other item (Horticulture, Civil, Elect, U/F water supply) required for proper maintenance	On need basis
(iv)	Irrigation	Daily
(v)	(i) Manuring (ii) Fertilization	Once in a year In winter In summer and rainy season As per requirement
(vi)	Lawn Mowing	Monthly
(vii)	Plant Protection	Need Based
(viii)	Cultivation & Weeding	As and when required
(ix)	Seasonal Flowers	Wherever feasible
(x)	Top dressing with soil &/or manure	Yearly
(xi)	Repair & replacement of plants, leveling etc.	As and when required
(xii)	Annual Tree Plantation under Van Mohotsav Program	Once in a year (in monsoon)

b) Total Mali to be deployed: 02 Nos. (Only Indicative)

c) The following conditions shall be followed:-

- i. In case of any causality of shrubs, trees or any other plants is found during maintenance the Agency should replace the trees/ shrubs/ other plants of the same height and specification by another at his risk and cost and nothing extra shall be paid for the same in this

regard. The decision of IRCON shall be final and binding in this regard.

- ii. In case, if it is observed that the maintenance is not healthy and to the required standard, no payment shall be made of the specific area for the period over which the maintenance has been found to be neglected. The decision of IRCON shall be final and binding in this regard.
- iii. The required quantity of insecticides/pesticides will be arranged by the agency for proper maintenance (only during the maintenance period) if needed.
- iv. The rejected & substandard material should be removed from the site of work immediately; IRCON shall not be responsible for any damage/ loss of rejected material. If the same is not removed within five days after issuing notice in writing by IRCON, then recovery shall be as deemed fit by Engineer-In-Charge

2.6 Housekeeping (Not applicable)

- a) Agency shall carry out complete job of housekeeping of the common areas of the complex excluding the inside of retail units through this agreement. No extra payment shall be admissible for scope of work for Operation & Maintenance during DLP period.
 - i. Mopping, cleaning and maintaining all common areas, lawns, Basements (if applicable), roads, paths and open surface parking in the complex.
 - ii. Maintaining all common toilets in hygienic condition.
 - iii. Collection of garbage from Garbage bins, campus and disposing it to Municipal Garbage Collection point/or at any other location in the area as per directives of local body.
 - iv. To aggregate organic waste and to feed the same to compost plant.
- b) The following shall be the conditions for carrying out this job :-
- c) The bidder shall arrange closed metaled trolley of sizes for taking out the inorganic garbage to nearby authorized municipal dumping ground.

- d) The Contractor shall arrange Indicative list of machineries (T&P) required for moping/sweeping/cleaning/garbage chute cleaning.
- i. Double bucket trolley (Wringer trolley with wheels) with two buckets system of 25 liters each – 04 Nos.
 - ii. High pressure water jet machine mounted with battery/ generator system and Water storage tank complete on wheels – 01No.
 - iii. Wheel mounted dustbin closed trolley for disposal of garbage from chutes – 04 Nos.
 - iv. Walk behind Petrol Driven Sweeping Machine with single broom and 0.70m roller width – 01No.
 - v. Operator for Vacuum cleaner – 01No.
- e) Supervisor, who will supervise the moping / cleaning/sweeping work, shall have a mobile phone facility so that tenants / IRCON officers can contact him at any time.
- f) The chemicals regarding toiletries etc. shall be as approved by the Engineer-in-charge.
- g) Minimum Manpower and Machines proposed to be employed for Mechanized Housekeeping
- i. For sweeping/cleaning/moping/cleaning of garbage chute, following man power shall be engaged :-

Indicative Manpower	Nos.
For Sweeping / Moping/ cleaning	8
Operator for water Jet machine	4
Operator for Vacuum cleaner (skilled)	
Operator for Petrol Driven Sweeping Machine	
Supervisor	1

- h) Recovery on account of non-deployment of above Machine & Equipments required for sweeping/cleaning/moping of garbage chute as deemed fit by Engineer-In-Charge will be made.
- i) Frequency of mechanized housekeeping shall be as given below :-

S. No	Area	Job	Frequency	Machine to be deployed
1.	Boundary wall including Stone and Grills.	Dry dusting	Fortnightly	Dry Vacuum Cleaners
		Pressure washing entire compound wall	Quarterly	High Pressure Water Jet
2.	Parking & Outside paved area	Vacuum Sweeping	Daily	Walk behind sweeper
		Pressure washing	Weekly	High Pressure Water Jet
3.	Kota / Marble / Granite / Mosaic / Ceramic tile flooring	Wet & dry cleaning	Daily before 9:00 AM & as per site requirement	Manually (Mopping trolley with double bucket system)
		Buffing of floors	Fortnightly	Manually
		Scrubbing of floors	Fortnightly	Manually
4.	Internal wall / Column surface with wall paneling / cladding of stone, Wood, Marble slats, Stones jalis etc. (Granite / RCC / Plastered) in common areas	Dry dusting including spot cleaning up to 6 ft. Height	Daily	Dry vacuum Cleaners Manually
		Wet mopping Signages & display	Weekly	Manually
		Vacuum cleaning all wall surface including grooves etc.	Quarterly	Dry Vacuum Cleaner
5.	Staircases	Cleaning	Daily	Dry Vacuum Cleaning/ Manually
		Scrubbing of steps & railings etc.	Monthly	Manually
6.	Skirting	Scrub cleaning	Monthly	Hand scrubber & Manually
7.	Dustbins in Open Area within campus	Complete cleaning from inside & outside	Weekly	Manually
		Emptying garbage bags	Daily or as & when required as per requirement	Manually

S. No	Area	Job	Frequency	Machine to be deployed
		Vacuum Cleaning	Monthly	Dry Vacuum cleaner
8.	Cobwebs	Check for cobwebs removal	Daily as required	Dry Vacuum cleaner & Manually
9.	Door mats	Dusting & cleaning	Daily	Dry Vacuum cleaner & Manually
10.	Removal of Garbage	At Nearest Garbage Dump pit	Daily or as & when Required as per requirement	Manually
11.	Lawn / Parks	Sweeping	Daily	Manually
12.	Lifts	Sweeping & moping	Daily or as & when required as per requirement	Dry vacuum cleaner & manually

- j) The above frequencies for cleaning are minimum required, however, in addition to above other cleaning works such as cleaning of tree leaves from roads & pavements etc. shall be cleaned regularly. The campus is to be maintained neat & clean.
- k) All consumables such as fresheners, soaps, deodorizers, dusters, brooms, cleaners, mops and other accessories and attachment etc. required to be provided by Agency of approved quality as per the direction of Engineer-in-Charge.

2.6 Project Facilities

The EPC Contractor shall provide the Project Facilities in accordance with the provisions of this contract. Such Project Facilities shall include:

- (a) Site Office
- (b) Furniture and Other Office Equipment
- (c) Vehicles
- (d) Local area network (LAN), Wi-Fi of speed not less than 50 mbps, Computers with updated version of Operating system, Software like AUTO CAD, Building Information Modeling (BIM), Project monitoring software like MS

project etc. All software should be multi user. Also providing facility of fax and e-mail.

2.6.1 Description of Project Facilities

The contractor shall provide for the use of the Engineer/ MoMSME, at his own cost, the Site office, Office equipment, communication and drawing facilities throughout the project duration and during the defects liability period as the Engineer may require, the details of facilities are detailed below. All the facilities under this clause will continue to be maintained by the Contractor free of cost till the defect liability period is over. Thereafter the Contractor shall dismantle the building and take away all the materials, office furniture, & equipment etc. which will be the property of the Contractor.

a) Site Office

- i. The site office should remain open for 24 hours a day and 7 days a week i.e. round the clock till the defect liability period is over. Accordingly, watch & ward, upkeep of the office and the premises including proper lighting of the premises is to be maintained.
- ii. Site Office shall provide the following rooms:

Details of Rooms	Approximate Area Required (Sq. mt.)
Office for Visiting Officer of MoMSME/Ircon	12.00
Other Officers of the Engineer i. e. DGMs @ 5.5 sq. mt. each	11.00
Conference room. (seating capacity of at least 10 persons)	20.00
Pantry & Kitchen area – 1 No.	5.00
File and Documents & Instruments Storage	10.00
Toilets	10.00
Total “A” (Approx.)	68 .00
Common Area/Verandah @ 10% of “A” above	7.00
GRAND TOTAL (Approx.)	75 Sq. mt.

- iii. Materials used for the construction of the offices shall be new and of good quality. Materials shall be chosen such that the buildings when erected shall give good ventilation, heat and sound insulation.

- iv. All buildings shall be supplied with continuous 24 hour running potable cold water to the kitchens and washrooms. The toilets may use raw water for flushing. The Contractor shall also arrange for the constant and hygienic disposal of all effluent, sewage and rubbish from the buildings.
- v. The building shall be supplied with electricity, AC 240 Voltage 50 Hz that shall be distributed to each room in accordance with the regulations. Lighting and electrical power points shall be provided in each room. The disposition and location of light and power points will be as directed by the Engineer/MoMSME. 24 hours power supply is to be arranged by contractor to meet full power load. Each room including Conference/Visitor Room shall be provided with Air Conditioners and Fans of appropriate capacity.
- vi. Firefighting equipment shall be provided in accordance with the local regulations.
- vii. The Contractor is required to maintain the office till completion of defect liability period if any and provide the following, but not limited to:
 - Pay all charges for electricity, Wi-Fi & remote accessing, water, telephone etc.
 - Carryout necessary repairs to office and equipment as and when required.
 - Providing consumable to office and office equipments, stationary, pantry, toiletry etc. as and when required.
 - Personnel for Day-to-Day cleaning and maintenance (safaiwala), cook for pantry and 1 office boy.
- viii. Deploy 2 watchmen/ security guards each in 3 shifts, sufficient lighting for the premises.

b) Furniture and Other Office Equipment

The Contractor shall supply and maintain the following new furniture and equipment to the site office within two months from the Appointed Date until the defect liability period is over.

Description of Item	Tentative Nos.
Conference Table of Godrej or similar (3200mm x 1500mm)	1

Executive Table of Godrej Model S1017 or similar	1
Executive Table of Godrej Model S1010 or similar	3
Executive sitting revolving chair with cushion of Godrej PCH-7001 or similar	1
Sitting revolving chair similar to Godrej 7046R	3
Visitors Chairs PCH-7112R of Godrej or similar	10
Steel Office Almirah with internal shelves (Big) of Godrej or similar	3
Vertical Filling Cabinet 4-drawer (1320x620x470)	3
Wi-Fi connection not less than 50 mbps speed.	One set
First aid kits for up to all the persons working & Site Office persons.	One Set
Safety helmets to officers and Staff	20 Nos.
Safety Shoes to officers and staff	20 Nos.
Safety harness	10 Nos.
Day-glow waist coat	20
Pairs industrial safety goggles	10 pairs
Electric Kettle of about 1000ml or more Capacity	1
Water Purifier (RO) of 15 Liter or above Capacity	1
Refrigerator of 165 Lit or above	1
Microwave Oven	1
Induction Cooktop	1
Fire extinguisher	As required confirming to the stipulations of Local Authorities
Silent DG set with AMF panel of matching capacities for site Office (minimum power of 25 KVA)	1

(Above mentioned no. of items to be provided is tentative and shall be decided on mutual basis)

c) Vehicles

- i. The EPC contractor shall provide road transport at his own cost for the use of the Engineer/MoMSME and its representative within one month from the Appointed Date till completion of the Defect Liability Period or extended Defect Liability Period.
- ii. The Contractor shall provide the following type of vehicles with fuel, Engine Oil, lubricants, other consumables, driver, insurance etc. as per requirement indicated below.

Type of Vehicle	Numbers
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Bolero or similar	01 No.
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The vehicle requirement given above is the maximum requirement of the vehicles at a time. However, requirement in a particular period will be intimated to the contractor on programme basis at least 7 days before the actual date of requirement. The Contractor shall withdraw vehicle(s) if the same is not further required by the Engineer/MoMSME. In such cases the instructions shall be given in writing 7 days in advance.

- iii. The Contractor shall employ and make available competent drivers fully licensed to operate the vehicles as and when required by the Engineer/MoMSME. The Contractor shall replace drivers at the request of the Engineer/MoMSME.
- iv. The vehicles shall be licensed and insured for use on the public highway and shall have comprehensive insurance cover for any qualified driver authorized by the Authority together with any authorized passengers and the carriage of goods or samples.

d) Office Equipment

The Contractor shall provide at his own cost new equipment and software as listed below and maintain them including the supply of consumables such as cartridges, papers etc, for the exclusive use of the Engineer/MoMSME. The Contractor shall provide and maintain the following equipment for the use of the Engineer/MoMSME within one month from the date of issuance of LOA until the defect liability period is over. On completion of defect liability period, the equipment shall be property of the Contractor.

S. No	Description	Tentative No.
a)	Desktop computer of approved standard and specification with latest windows operating system and antivirus.	3 Nos. (If Authority desires, laptops are to be provided in lieu of Desktops)
b)	Multifunctional Printer cum Scanner cum Photocopier with LAN system and for paper prints capable of reduction and copying A3 & A4 size paper with automatic document feeder capability & sorter and duplex facility.	A3 Size – 1 no.
c)	Printer Laser Jet A4 Size (Color)	1 no.

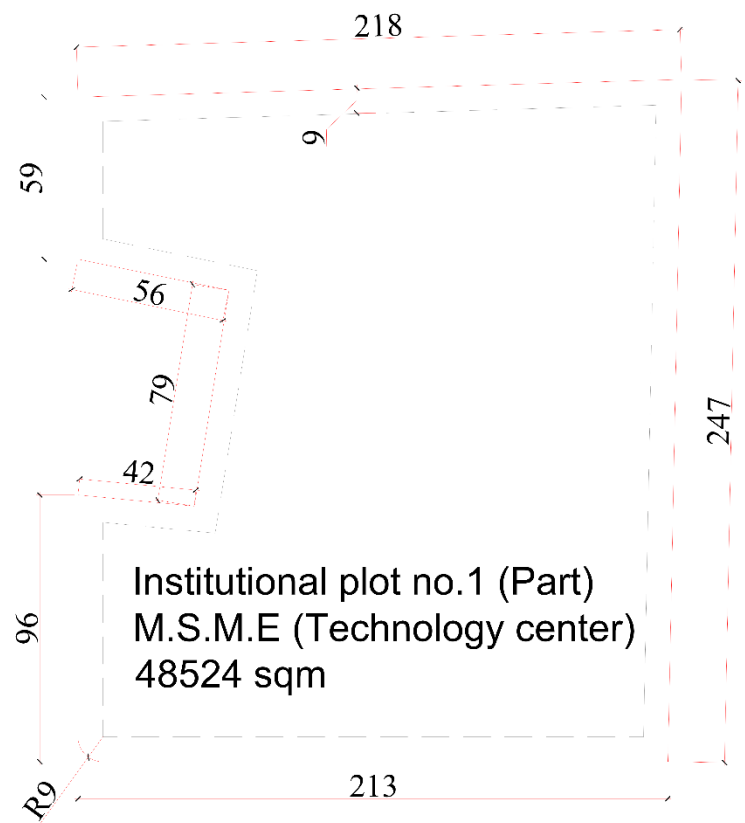
d)	Application software with latest release	1. Microsoft Office 2. AutoCAD3D 2018 3. MS Project/Sure Track
h)	Central UPS system with sufficient power backup (with minimum backup time of 30 minutes) to meet the power load in case of power disruption, with Surge Protection Devices	
i)	Power supply for the systems is to be AC 240 volts, 50Hz through normal Building wiring circuit mains, power regulator, stabilizer or transformer should be supplied by the Contractor for the computer systems such that the system can function efficiently.	

2.7 Exclusions to Work

The following works are not in the scope of work of contractor. In case of contravention of stipulation of this clause from any other clause/provision elsewhere in the tender document, then this clause shall have superseding effect to the extent of contravention.

- a) Statutory fee for permanent services connections i.e. Electricity, Water, Telecom, Sewage (etc.) for operation. However, the contractor shall obtain all the approvals on behalf of Client.
- b) Expenditure on consumption of electricity, water, security, Diesel Cost for running generator, during DLP period.
- c) Housekeeping

ANNEXURE-1(A)
Land Profile
of
MSME Technology Centre, Jaipur (Rajasthan)



ANNEXURE-2**Brief Summary of Works in Scope of Construction Agencies**

Sr. No.	Subject	Design by Contract or as per DBR	Detailed Design with Shop Drawings & Approvals	Supply Fabrications Construction Installations & Commissioning	Statutory Approvals (Authority)	DBR Enclosed for
1.	Structural Works	✓	✓	✓	-	✓
2.	Architectural & Civil Finishing	✓	✓	✓	-	✓
3.	Plumbing	✓	✓	✓	Competent Authority	✓
4.	External Water Supply & Sewerage, SW & Drainage, RWH	✓	✓	✓	Competent Authority	✓
5.	Fire Fighting	✓	✓	✓	Competent Authority	✓
6.	Electrical Services					
a)	11 KV Sub Station Equipment including Transformer & HT Panel	✓	✓	✓	Competent Authority	✓
b)	UPS	✓	✓	✓	-	✓
c)	DG Set	✓	✓	✓	Competent Authority	✓
d)	Internal Electrical Work	✓	✓	✓	Electrical Inspector	✓
e)	Internal Lighting	✓	✓	✓	Electrical Inspector	✓
f)	Fire Alarm System	✓	✓	✓	Competent Authority	✓
g)	CCTV	✓	✓	✓	-	✓
h)	Panels	✓	✓	✓	Competent Authority	✓
i)	Distribution	✓	✓	✓	-	✓
7.	Mechanical Ventilation / HVAC	✓	✓	✓	Competent Authority	✓
8.	Solar Panels	✓	✓	✓	-	✓
9.	Elevators/Escalators	✓	✓	✓	Lifts Insp.	✓
10.	Site Development & Landscape	✓	✓	✓	-	-
11.	STP	✓	✓	✓	Competent	✓

					Authority	
12.	HSD Daily Storage Tank	✓	✓	✓	Competent Authority	✓
13.	WTP	✓	✓	✓	-	✓
14.	Miscellaneous Other Services					
(a)	PA System applicable to Fire Fighting	✓	✓	✓	Competent Authority	✓
(b)	Solid Waste Management & Bio Waste Composting Plant	✓	✓	✓	-	✓
(c)	Outdoor lighting	✓	✓	✓	Electrical Inspector	-
(d)	EPABX System	✓	✓	✓	-	✓
(e)	Integrated Passenger Information and Announcement System in Station Building(Not required)	✓	✓	✓	Competent Authority	✓
(f)	Signage Systems	✓	✓	✓	-	✓
(g)	Parking Management System including Stack Parking and Boom barriers	✓	✓	✓	Competent Authority	✓
(h)	Security Scanners	✓	✓	✓	Competent Authority	✓
(i)	Façade Cleaning System	✓	✓	✓	-	✓
(j)	Clean Agent Fire Suppression System for room flooding in Signal Building	✓	✓	✓	Competent Authority	✓
(k)	Gas Flooding for Electrical Panels	✓	✓	✓	Competent Authority	✓
(l)	Access Control System	✓	✓	✓	-	✓
(m)	Building Management System	✓	✓	✓	-	✓
(n)	Automatic Sliding Doors	✓	✓	✓	-	✓
(o)	Data Networking/LAN and WiFi System	✓	✓	✓	-	✓

ANNEXURE-3
BOUNDARY WALL
(not in the scope of the contractor)

ANNEXURE–4
INDICATIVE AREA CHART
(Refer Civil Infrastructure, Clause 2.1.3 of SCC & Annexure 1 of DBR - Details of
Indicative Infrastructure Facilities)

Annexure - 5

Soil Investigation Report

(Attached as an Annexure along with Tender Details)

ANNEXURE-6

FORMAT FOR INSURANCE SURETY BOND FOR PERFORMANCE SECURITY

(To be execute on Non-Judicial Stamp paper of appropriate value)

(See Clause 8.1 of GCC)

Insurance Surety Bond No.....

Date.....

(Name of the Contract)

To: (Name and address of Tender Inviting Authority i.e. IRCON)

Dear Sirs,

In consideration of the[*Employer's Name*] (hereinafter referred to as the 'Employer' which expression shall unless repugnant to the context or meaning thereof, include its successors, administrators and assigns) having awarded to M/s [Concessionaire's *Name*]with it
s

Registered/Head Office at (hereinafter referred to as the 'Concessionaire', which expression shall unless repugnant to the context or meaning thereof, include its successors administrators, executors and assigns), a Contract by issue of Employer's Letter of Acceptance No. datedand the same having been acknowledged by the Concessionaire, for [Contract sum in figures and words] for..... [*Name of the work*] and the Concessionaire having agreed to provide a Contract Performance Guarantee for the faithful performance of the entire Contract equivalent to(*).....of the said value of the aforesaid work under the Contract to the Employer.

We[*Name & Address of the Insurance Company*] having its Head Office at

..... (hereinafter referred to as the 'Surety', which expression shall, unless repugnant to the context of meaning thereof, include its successors, administrators, executors and assigns) do hereby guarantee and undertake to pay the Employer, on demand any and all monies payable by the Concessionaire to the extent of (*) as aforesaid

at any time upto (@).....[*days/month/year*] without any demur, reservation, contest, recourse or protest and/or without any reference to the Concessionaire. Any such demand made by the Employer on the Surety shall be conclusive and binding notwithstanding any difference between the Employer and the Concessionaire or any dispute pending before any Court, Tribunal, Arbitrator or any other authority. The Surety undertakes not to revoke this guarantee during its currency without previous consent of the Employer and further agrees that the guarantees herein contained shall continue to be enforceable till the Employer discharges this guarantee or till

.....[days/month/year]/whichever is earlier.

The Employer shall have the fullest liberty, without affecting in any way the liability of the Surety under this guarantee, from time to time to extend the time for performance of the Contract by the Concessionaire. The Employer shall have the fullest liberty, without affecting this guarantee, to postpone from time to time the exercise of any powers vested in them or of any right which they might have against the Concessionaire, and to exercise the same at any time in any manner, and either to enforce or to forbear to enforce any covenants, contained or implied, in the Contract between the Employer and the Concessionaire or any other course or remedy or security available to the Employer. The Surety company shall not be released of its obligations under these presents by any exercise by the Employer of its liberty with reference to the matters aforesaid or any of them or by reason of any other act or forbearance or other acts of omission or commission on the part of the Employer or any other indulgence shown by the Employer or by any other matter or thing whatsoever which under law would, but for this provision have the effect of relieving the Surety.

The Surety declares that this Insurance Surety Bond is issued by the..... (name of Surety/Insurance Company) as per applicable rules and regulations of insurance regulatory development authority of India (IRDAI), and also agrees that the Employer at its option shall be entitled to enforce this Guarantee against the Surety as a principal debtor, in the first instance without proceeding against the Concessionaire and notwithstanding any security or other guarantee the Employer may have in relation to the Concessionaire's liabilities.

- i) Our liability under this Insurance Surety Bond shall not exceed(*).....
- ii) This Insurance Surety Bond shall be valid up to(+).....
- iii) We are liable to pay the guaranteed amount or any part thereof under this Insurance Surety Bond only and only if Employer serve upon Insurance Company a written claim or demand on or before@.....

Dated thisday of 20..... at.....

WITNESS

Signed for and on behalf of the Insurance Company (Surety)

1.
(Signature)

.....
(Signature)

.....
(Name)

.....
(Name)

SECTION – 3 OF SCC (AMENDMENT TO GCC)

1.0 Order of Priority of Contract Documents:

Where there is any conflict between the various documents in the contract, the following order of priority shall be followed i.e. a document appearing earlier shall override the document appearing subsequently:

- i. Agreement
- ii. Letter of Award, along with statement of agreed variations and its enclosures, if any.
- iii. Notice inviting Tender
- iv. Instruction to the tenderer
- v. Appendix to the Tender
- vi. Form of Bid
- vii. Amendments to Tender Documents
- viii. Special Condition of Contract (SCC).
- ix. General Conditions of Contract
- x. Relevant B.I.S. Codes and Standards
- xi. Design Basis Reports (DBR)
- xii. Drawings.
- xiii. Technical specifications.
- xiv. CPWD/ MORTH specifications (as specified in Technical Specification of the Tender) update with correction slips issued up to last date of receipt of tenders.
- xv. Financial Bid comprising Schedule of Payments.

2.0 Scope of Work

As already defined in the Section -2 of SCC.

3.0 Mobilization Advance (New Clause, Not in G.C.C.)

(Note: Contractors may note that as IRCON is executing the subject work on behalf of the client i.e. The Development Commissioner, Ministry of Micro, Small & Medium Enterprises, New Delhi, all payments to successful Contractor as per contract shall be made only after receipt of requisite funds from the client. The Contractor is required to submit the invoice in the name of Designated TC of MoMSME by using GSTIN of designated TC of MoMSME. IRCON will make payment to Contractor through Treasury Single Account (TSA). For statutory deduction from bills like TDS, GST-TDS, Cess etc. TAN/PAN/GST Numbers of Designated TC of MSME shall be used. Details of Designated TC of MSME shall be intimated in due course.)

3.1 Conditions for Payment:

If requested by the Contractor in writing, the Employer/ Engineer shall make an interest-bearing mobilization advance payment to the Contractor for an amount not more than 10 (Ten) percent of the original contract value. The Mobilization Advance shall be Marginal Cost of Fund Based Lending Rate (MCLR) (1 Year or for the tenor as applicable) of State Bank of India plus 1%, as effective on the date of approval of payment of Mobilization Advance by the Competent Authority. Interest will be compounded annually on reducing balance. Payment of such advance shall be made after fulfilment of the following conditions to the satisfaction of the Engineer:

- i. Execution of the Agreement between the Engineer and the Contractor.
- ii. Submission of Performance Security by the contractor in accordance with Clause 8.2 of General Conditions of Contract.
- iii. Submission of an unconditional Bank Guarantee in the prescribed format (Format will be provided on request) from a Scheduled Bank in India for an amount equal to 110% of the Mobilization Advance being paid. The Bank Guarantee may be submitted into two parts subject to each having a minimum value of 10% of the contract value. Such Bank Guarantee shall remain effective until the advance payment along with the interest has been recovered from the Contractor. Bank Guarantee(s) for the amount recovered from the Contractor shall be released to the Contractor progressively.

3.2 Payment

After fulfillment of the pre-conditions as described in para 3.1 above, the mobilization advance shall be released to the Contractor in following stages:

Stage-I: Maximum 5% of contract value on fulfillment of the conditions described in clause 3.1 above.

Stage-II: Maximum 5% of contract value on establishment of site camps and offices, mobilization of necessary Plant and Machinery and man power and other facilities for commencement of work.

Satisfactory Utilization certificate from the contractor for Stage-I mobilization advance should be obtained before releasing stage-II advance.

3.3 Recovery

3.3.1 The recovery of mobilization advance along with upto date interest thereon shall commence from the Contractor's on account bills when the value of the work executed under the contract reaches 15% of original contract value, and shall be completed when the value of work executed reaches 85% of the original contract value. The installments on each "on account bill" shall be on pro-rata basis.

3.3.2 In the event of amount of outstanding advance with interest thereon becoming more than the available B.G., the Contractor shall have to provide a fresh B.G. with increased

amount or provide a separate B.G. to cover additional amount likely to be overdue beyond the existing value of Bank Guarantee.

3.4 Calculation of Interest

Interest shall be compounded on diminishing balance basis on the amount of advance outstanding. The date of issue of cheque/ RTGS/ NEFT shall be reckoned as the date on which the recovery has been made for purpose of computing the outstanding advance and working out the interest.

4.0 Supply of Materials by Engineer (Ref.: Existing G.C.C. Clause '34.0' shall be replaced as under)

Contractor shall make his own arrangements at his cost for all materials required for execution, completion and maintenance of all items of work included in his scope of work to the complete satisfaction of the Engineer Incharge. Engineer Incharge neither supply any materials nor shall assist for procurement of any materials required for execution, completion and maintenance of works.

5.0 Supply of Plant and Machinery by Employer/Engineer (Ref.: Existing G.C.C. Clause '35.0' shall be replaced as under')

Contractor shall make his own arrangements at his cost for all plant and machinery required for execution, completion and maintenance of all items of work included in his scope of work to the complete satisfaction of the Engineer. Engineer neither supply any plant and machinery nor shall assist for procurement of any plant and machinery required for execution, completion and maintenance of works. The batching plant shall be fully automated and computerized. The Contractor shall be responsible for providing daily print outs of cement consumption which shall be reconciled with BOQ.

6.0 Laboratory

6.1 Contractor shall have to provide a field laboratory for carrying out all tests required, as per Specifications or as stated elsewhere in the contract, including supply of laboratory equipment and also provision of adequate number of qualified personnel, erection, maintenance and running of laboratory including all consumable during execution of works.

6.2 The design of concrete mix, well in advance, shall be done by the contractor and get approved by IRCON. IRCON reserves the right to suggest changes in the concrete mix submitted by the contractor and no claim on account of these changes shall be entertained from the contractor. The approved concrete mix would be followed strictly by the contractor.

6.3 The contractor shall also be responsible for carrying out all tests at site and getting approval from the client for the same. For site testing all the materials, equipment,

- consumables, Stationary & samples etc. including manpower will be arranged by contractor at his own cost.
- 6.4 The contractor shall also be responsible for the collection of samples at source or in the field and its submission at the central lab/any third party Lab (NABL approved lab/ Government Lab) for the tests to be done at central lab/any third party Lab.
- 6.5 All materials to be incorporated in the permanent works for which the testing facility is not available in central laboratory, will be tested from IRCON's approved institute/Laboratory. All the cost of such testing & it's arrangements & witnessing by the Engineer/Clients, will be borne by the contractor. Nothing extra will be payable on this account.
- 6.6 The contractor will deploy a qualified Quality & Material Engineer along with trained lab technicians and required number of helpers/Assistants for fulfillment of their scope of work & specified frequency for testing, that too on time.
- 6.7 The contractor shall furnish samples of the all materials indicating the Date, location & source and obtain the approval of source before proceeding with execution of works.
- 6.8 The contractor shall be fully responsible for obtaining all approvals of all sources as well as finished works from IRCON/Consultants/Clients, as directed by The Engineer and/or other than what has been specifically mentioned elsewhere.
- 6.9 In case of failure on the part of the contractor to provide above facilities, IRCON shall arrange & provide the same and recover all direct/indirect cost from the contractor's payments. No claim shall be entertained on this account.
- 6.10 Testing facilities for other construction materials as per direction of Engineer in charge.
- 6.11 The contractor should make his own arrangement for taking samples to approved laboratory, testing centers including to the site laboratory as directed by the Engineer at their cost.
- 6.12 The contractor shall provide all tools, plants and equipment and skilled and unskilled labours for collecting the test samples, their handling at his own cost as directed by Engineer / his representative.
- 6.13 The contractor shall nominate one Engineer exclusively for the quality control that would be responsible for co-ordination with Engineer and for maintenance of quality records as per ISO-9001-2008 requirement at no extra cost.
- 6.14 The Contractor has to provide a field laboratory and/or laboratories within 30 days of issue of Letter of Acceptance, adjacent to site of subject work for carrying out various tests as required, as per Specifications or as stated elsewhere in the contract, including supply of laboratory equipment and also provision of adequate number of qualified personnel, skilled/unskilled workers, erection, maintenance and running of laboratory including all consumable like chemicals and reagents. The laboratory shall be equipped with necessary equipment to carry out various tests such as sieve analysis, compression test on cubes, slump test, workability test etc. on aggregates, cement,

water and concrete as required for ensuring the required quality and standard conforming to codal provision and specifications. All the pressure gauges, machines, equipment, and other measuring and testing equipment of lab. shall be got checked /calibrated regularly as directed by Engineer-in-charge and necessary certificates furnished to him.

6.15 The Contractor's site laboratory equipped with at least following apparatus and equipment of standard ISI make shall function under the guidance of Engineer. This list is indicative not exhaustive.

- Hydraulic Cube testing M/c (200 T Capacity)
- Aggregate Impact test – Apparatus
- Flakiness Index apparatus
- Sieve set – coarse & fine aggregate
- Drying oven (300° C)
- Slump cone set
- Weighing balances
- Cube moulds (Sufficient numbers but not less than 100 Nos.)
- Stop watch
- Measuring jar (1000 ml to 50 ml.)
- Thermometer
- Cement testing equipments as per direction of Engineers –in charge
- And any other items as required by the Engineer

6.16 The Contractor must get the calibrations of all his testing equipment, lab equipment, instruments etc. from Govt./Govt. approved agencies. He should submit all the calibration certificates of his instruments / equipment before the use of these instruments / equipment to IRCON and take prior permission for their use from IRCON. All this equipment/instruments shall be calibrated on quarterly basis or earlier if required and as per the instructions of IRCON as and when calibration is required. These all calibrations shall be carried out by the contractor at his own cost without charging any amount to IRCON.

6.17 CHARGES FOR TESTING:

No payment shall be made to the Contractor for setting up laboratory, unless otherwise stipulated in BOQ. No payment shall be made for getting any tests from the outside laboratory approved by the Engineer and rate quoted in Bill of Quantities shall be deemed to include all testing and other costs.

7.0 Taxes and Duties (Ref.: G.C.C. Clause '56.0', '57.0', '62.0' '64.0' and sub-clause no. 4.3, 4.4 and 4.5 of 'Instructions To Tenderers')

7.1 The Contractor shall get registered with the concerned Goods and Services Tax Department of the relevant state(s) of the project and submit a copy of the same to the Employer/Engineer. He shall be responsible for filing Goods and Services tax returns

and assessments, as necessary as per prevalent Laws, Rules and Regulations and shall also furnish necessary certificates to Employer/Engineer from time to time. (Refer clause 56.0 (v) of GCC).

Wherever certain exemptions / benefits are available on custom duty the Contractor shall consider the same while quoting his rates. For instance, materials/ Plant and Machinery etc. used for execution of the projects financed by International organizations enjoy exemption from custom duty under Foreign Trade Policy as Deemed Export on fulfilling the conditions as per Govt. notifications. Similarly, the Contractor shall ensure that whenever any benefits are available under any other law, these shall be considered while quoting the rates.

8 Price Adjustment /Escalation (Ref.: Existing G.C.C. Clause ‘57.0’ shall be replaced as under)

No claim on account of any escalation on whatsoever ground shall be entertained at any stage of works. All rates as per Bill of Quantities (BOQ) quoted by contractor shall be firm and fixed for entire contract period as well as extended period for completion of the works. No escalation shall be applicable on this contract.

9 Performance Security & Retention Money (Existing clause shall be read in conjunction with GCC Clause No.8)

9.1 Clause 8.1 of GCC may be read as under: The Performance Guarantee shall be in the form of an irrevocable Bank Guarantee (BG)/Insurance Surety Bond (ISB). PBG should be submitted on the Proforma annexed as Annexure-II & from any Scheduled Bank for an amount of 5% (Five percent) of the contract value (including GST and all other duties & taxes). In case of foreign bidder or in case of Global Tender, if Bank Guarantee is from a foreign bank branch situated outside India, the Bank Guarantee shall be issued through any of the Scheduled Commercial Bank in India. In case BG is issued directly by a bank outside India, it should be in the same currency as the contract, executed on Letter Head of the Bank and should be advised and payable through their Indian Branch/ Corresponding Bank in India. The issuing Bank shall also state the name and designation of the next Higher Authority of the Officials who have issued the BG. This B.G./ISB shall be initially valid upto 60 days beyond the stipulated date of completion. In case, the time for completion of work get extended, the Contractor shall get the validity of P.G. extended to cover such extended time for completion of work plus 60 days. Insurance Surety Bond should be in the format at Annexure - VIII(A) from an insurance company registered under Insurance Act 1938 or as amended from time to time and approved by Insurance Regulatory Development Authority of India (IRDAI)

9.2 The contractor produces a clearance certificate from the labour office. As soon as the work is virtually completed, the contractor shall apply for the labour clearance certificate to the Labour Officer under intimation to the Engineer-in-Charge. The Engineer-in-Charge, on receipt of the said communication, shall write to the Labour

Officer to intimate if any complaint is pending against the contractor in respect of the work. If no complaint is pending, on record till after 3 months after completion of the work and/or no communication is received from the Labour Officer to this effect till six months after the date of completion, it will be deemed to have received the clearance certificate.

10 Performance Guarantee (Existing clause shall be read in conjunction with GCC Clause No.8.4)

In case where the delay is compensated by the contractor during the completion of next milestone(s), the amount towards forfeited bank guarantee(s)/FDR shall be refunded to the contractor on production of the fresh bank guarantee/FDR of the equivalent amount. Such amount will not accrue any interest to the contractor. Further, such balance/PBG/FD/ISB can also be forfeited in case of any failure by contractor to fulfill any contractual obligation in future.

11 Contractor Team Leaders (Existing clause shall be read in conjunction with GCC Clause No.12.6)

The Contractor shall appoint a design director (the "Design Director") who will head the Contractor's design units and shall be responsible for surveys, investigations, collection of data, and preparation of preliminary and detailed designs.

The contractor shall intimate to IRCON its project in charge, as its representative for the Project within 7 (Seven) days of the issue of Letter of Award. The Contractor shall intimate to IRCON the name, Designation and address of his project in charge.

12 Subletting / Sub-Contracting (Existing clause No -13 of GCC Shall be replaced as under)

- 12.1 The sub-contracting, excluding design work shall be limited to 40% of the contract value. The value of a sub-contract, other than for design work and bought out items as and when awarded, should be intimated by the Contractor to the Engineer-in-Charge and it should also be certified that the cumulative value of the sub-contracts awarded so far is within the aforesaid limit of 40%. A copy of the contract between the Contractor and sub-contractor shall be given to the Engineer-in-Charge within 15 days of signing and in any case not later than 7 days before the sub-contractor starts the work and thereafter the Contractor shall not carry any modification without the consent in writing of the Engineer-in-Charge. The terms and conditions of sub-contracts and the payments that have to be made to the sub-contractors shall be the sole responsibility of the contractor. Payments to be made to such sub-contractors will be deemed to have been included in the contract price of the Contractor. However, for major sub-contracts (each costing Rs. 50 Lacs or above), it will be obligatory on the part of the Contractor to obtain consent of IRCON. IRCON will give its consent after assessing and satisfying itself of the capability, experience and equipment resources of the sub-contractor. In case IRCON intends to withhold its consent, then IRCON will inform the Contractor

within 15 days to enable the Contractor to make alternative arrangement to fulfill his programme. Sub-contracting any part of work, however, does not absolve contractor from his responsibility for quality of final product.

- 12.2 The contractor may entrust specialist items of works like MEP services, HVAC, Lifts, Building Management System, Water Proofing, and Data & Communication networking, interiors, landscaping etc. to the agencies specialized in the specific trade. The contractor shall give the names and details of such firm whom it is going to employ for approval of IRCON. These details shall include the expertise, financial status, technical manpower, equipment, resources and list of works executed and on hand of the specialist agency. Further, prior written approval is required from IRCON to deploy such agency / sub-contractor.

- 12.3 The terms & conditions applicable to the contractor in respect of the proposed sub-contract, the same terms & conditions shall be imposed on the sub-contractor to enable the contractor to comply with his obligations under the contract with IRCON.

The sub-contractor should fulfil the qualifying criteria for contractor for the proposed value of sub-contract similarly provided in the NIT of the project.

- 12.4 Notwithstanding any consent to sub-contract given by the Engineer-in-Charge if in his opinion it is considered necessary, the Engineer-in-Charge shall have full authority to order the removal of any sub-contractor from the site or off-site place of manufacture or storage.

12.5 No Compensation Clause

The contractor shall have no claim whatsoever for compensation or idle charges against IRCON on any ground or for any reason, whatsoever.

EPC Contractor may please note that the quoted amount will be fixed and final.

In the event that the IRCON/MoMSME does not fulfill any or all of the obligations set forth in this tender document, within the period specified in this tender document, the Engineer will provide only time extension for such delays. Such time extension for completion shall be restricted only to the works/activities which are affected by the delay. No claim whatsoever shall be payable on this account.

13 Time Schedule & Progress (Existing clause shall be read in conjunction with GCC Clause No.15.0)

- 13.1 Time allowed for carrying out all the works as entered in the tender shall be as mentioned in the "Appendix to tenderer" which shall be reckoned from the date on which the letter of Award is issued to the Contractor. Time shall be the essence of the contract and contractor shall ensure the completion of the entire work within the stipulated time of completion.
- 13.2 The contractor shall also furnish within 10 days of date of issue of letter of Award a CPM network/ PERT chart/ Bar Chart for completion of work within stipulated time.

This will be duly got approved from IRCON. This approved Network/ PERT Chart shall form a part of the agreement. Achievement of milestones as well as total completion has to be within the time period allowed.

- 13.3 Contractor shall mobilize and employ sufficient resources for completion of all the works as indicated in the agreed BAR CHART/PERT Network. No additional payment will be made to the contractor for any multiple shift work or other incentive methods contemplated by him in his work schedule even though the time schedule is approved by the Engineer-in-Charge.
- 13.4 During the currency of the work the contractor is expected to adhere to the time schedule on mile stone and total completion and this adherence will be a part of Contractor's performance under the contract. During the execution of the work contractor is expected to participate in the review and updating of the Network/BAR CHART undertaken by the IRCON. These reviews may be undertaken at the discretion of Engineer-in-charge either as a periodical appraisal measure or when the quantum of work order on the contractor is substantially changed through deviation orders or amendments. The review shall be held at site or any of the offices of IRCON/owner /consultant at the sole discretion of IRCON. The contractor will adhere to the revised schedule thereafter. The approval to the revised schedule resulting in a completion date beyond the stipulated date of completion shall not automatically amount to a grant of extension of time to the contractor.
- 13.5 The Preparation of design/drawings & bill of quantities (of his stated scope of work) etc.; Bar Bending Schedule, Shop & Fabrication drawings for all work shall be supplied by the contractor as per agreed schedule/ as the work progresses.

However, it shall be the duty and responsibility of the contractor to bring to the notice of the IRCON in writing as to any variation, discrepancy or any other changes required in Drawing, design etc. whether of IRCON 's Scope or Contractor's Scope of work and to obtain/prepare (as the case may be) revised drawings and designs and / or approval of the IRCON in writing for the same.

14 Existing Services & Storage/Labour Camps within Site (Existing clause shall be read in conjunction with GCC Clause No.23.0 & 33.0)

a) Existing Services-

Existing drains, pipes, cables, overhead wires, sewer lines, water lines, signal cables, telephone cables and similar services encountered in the course of the execution of the work shall be protected/ maintained against the damage by the contractor. The contractor shall identify all underground / overhead services and take necessary measures to protect the services before starting any excavation / activity. All temporary supports and other measures required to protect and maintain the services during construction period as per direction of Engineer-in-charge, shall be deemed to be included in the quoted rate / amount of the contractor and nothing extra shall be paid on this account. For any permanent

shifting, IRCON shall arrange to shift the services as and when required. However, in the interest of work, if IRCON decides to get it shifted by the contractor, then contractor shall be paid separately at the rates as decided by the Engineer-in-charge based on the actual quantum of the work involved in shifting such utilities/services. The decision of the Engineer-in-Charge in this regard shall be final and binding.

b) Land for Storage/Labour Camps/RMC

The land for labour camp/storage/RMC shall be provided to the contractor as per the availability at site, otherwise, the contractor has to make their own arrangement for providing/installation and commissioning of their ready mix cement concrete plant and material stocking/stacking yard/labour camp etc. at a place/location separate from site, at their own cost. No extra payment shall be entertained by IRCON towards any lead on account of transportation of Ready Mix Concrete or any other material.

The contractor has to make their own arrangement for storage/stacking of all construction materials, labour camps, fabrication yard etc.

The Contractor's proposal /bid shall be deemed to have seen the site and considered this while making his proposal and his quoted price is deemed to have included the above. Further, the lease / rent charges of land, if any, shall be borne by the contractor. The Engineer-in-Charge shall only extend necessary help and issue necessary recommendations etc. to the concerned department for temporary allotment of land during construction period.

15 Protection of Environment (Existing clause shall be read in conjunction with GCC Clause No.25)

The Contractor shall take all reasonable steps to protect the environment on and off the Site and to avoid damage or nuisance to persons or to property of the public or other resulting from pollution, noise or other causes arising as a consequence of his methods of operation. The contractor shall be required to follow all the rules/norms of National Green Tribunal applicable to this work.

The contractor shall indemnify IRCON/MoMSME/its officials against any claims or obligations arising out of any damage to adjacent property, structure or to building work done by him.

16 Contractor's care of the Works (Existing clause shall be read in conjunction with GCC Clause No.26.0)

The Contractor shall bear full risk in and take full responsibility for the care of the Works and Materials, goods and equipment for incorporation therein from the Commencement

Date until the Completion Certificate is issued, except and to the extent that any loss of or damage to the same shall arise out of any default or neglect of the Employer.

The Contractor shall throughout the execution of the Works including the carrying out of any testing, commissioning (including Integrated Testing and Commissioning), or remedying of any defect:

- a) Take full responsibility for the adequacy, stability, safety and security of the Works, Plant, Goods, Contractor's Equipment, Temporary Works, operations on Site and methods of manufacture, installation, construction and transportation;
- b) Have full regard for the safety of all persons on or in the vicinity of the Site (including without limitation persons to whom access to the Site has been allowed by the Contractor), comply with all relevant safety regulations, including provision of safety gear, and insofar as the Contractor is in occupation or otherwise is using areas of the Site, keep the Site and the Works (so far as the same are not completed and occupied by the Employer) in an orderly state appropriate to the avoidance of injury to all persons and shall keep the Employer indemnified against all injuries to such persons.
- c) Provide and maintain all lights, guards, fences and warning signs and watchmen when and where necessary or required by the Engineer or by laws or by any relevant Employer for the protection of the Works and for the safety and convenience of the public and all persons on or in the vicinity of the Site; and
- d) Where any work would otherwise be carried out in darkness, ensure that all parts of the Site where work is being carried out are so lighted as to ensure the safety of all persons on or in the vicinity of the Site and of such work.

Contractor is required to take note of all the necessary provisions in Employer's Safety, Health and Environment Manual (SHE Manual) and the Contractor's price shall be inclusive of all the necessary costs to meet the prescribed safety standards. In the case, the Contractor fails in the above, the Employer may provide the necessary arrangements and recover the costs from the Contractor.

17 Contract Coordination Procedures, Coordination Meetings and Progress Reporting (Existing clause shall be read in conjunction with GCC Clause No.31.0)

The Contractor shall prepare and finalize in consultation with IRCON, a detailed contract coordination procedure within 15 days from the date of issue of Letter of Award for the purpose of execution of the Contract. The Contractor shall have to attend all the meetings at any place in India at his own cost with IRCON, Owners/ Clients or Consultants of IRCON/ Owner/ Client during the currency of the Contract, as and when required and fully cooperate with such personal and agencies involved during these discussions. The Contractor shall not deal in any way directly with the

Clients/ Owners or Consultants of IRCON/Owner/ Clients and any dealing/correspondence if required at any time with Clients/ Owners/ Consultants shall be through IRCON only. During the execution of the work, Contractor shall submit at his own cost a detailed Monthly progress & programme report to the Engineer-in-charge of IRCON by 5th of every month. The format of monthly progress & programme report shall be as approved by Engineer-in-Charge of IRCON. The contractor shall upload all required data including progress reporting and proof of progress on the MIS Reporting Dashboard Portal regularly without fail as per the instructions of the Engineer.

18 House-Keeping (Existing clause shall be read in conjunction with GCC Clause No.37.0)

- a) Housekeeping is the act of keeping the working environment cleared of all unnecessary waste, thereby providing a first-line of defence against accidents and injuries. General House-keeping shall be carried out by the contractor and ensured at all times at Work Site, Construction Depot, Fabrication Yard, Workshop, Batching Plant, Labour Camp, Stores, Offices and toilets/urinals etc. The contractor shall be responsible to provide segregated containers for disposal of debris at required places and regular cleaning of the same.
- b) All stairways, passageways and walkways/gangways shall be maintained without any blockages or obstructions. All emergency exits passageways, exits fire doors, break-glass alarm points, fire-fighting equipment, first aid stations, and other emergency stations shall be kept clean, un-obstructed and in good working order.
- c) All surplus earth and debris shall be removed/ disposed-off from the working areas immediately. Trucks carrying sand, earth and any pulverized materials etc. shall be covered while moving in order to avoid dust or odour impact. The tyres of the trucks leaving the site shall be cleaned with water, wherever the possibility of spillage on carriageways meant for regular road traffic exists.
- d) No parking of trucks/trolleys, cranes and trailers etc. shall be allowed on roads, which may obstruct the traffic movement.
- e) Roads shall be kept clear and materials like: pipes, steel, sand boulders, concrete, chips and brick etc., shall not be allowed on the roads to obstruct free movement of road traffic.
- f) Water logging or bentonite spillage on roads shall not be allowed.
- g) Proper and safe stacking of material are of paramount importance at fabrication stores, stores and such locations where material would be

unloaded for future use. The storage area shall be well laid out with easy access and material stored/stacked in an orderly and safe manner.

- h) Flammable chemicals, compressed gas cylinders etc. shall be safely stored. Unused/surplus cables, steel items and steel scrap lying scattered at different places within the working areas shall be removed to identified locations(s). All wooden scrap, empty wooden cable drums and other combustible packing materials, shall be removed from the site. Lumber with protruding nails shall be either bent/ removed and properly stacked.
- i) The compliance of above provisions is deemed to be included in the quoted amount of the contractor and no claim / payment whatsoever shall be entertained on this account.

19 Water Supply and Electricity (Existing clause shall be read in conjunction with GCC Clause No.42.0)

Arrangement of water for drinking purpose in addition to the water required for construction work is also to be made by the contractor at his own cost. The contractor shall also make his own arrangement for obtaining electric connection (s) and make necessary payment directly to the department concerned. IRCON/MoMSME will however make all reasonable recommendations to the authority concerned in this regard.

The contractor shall make his own arrangement of water for completion of work and nothing will be paid on this account. The contractor shall get the water tested with regard to its suitability and conforming to the relevant IS Code. The contractor shall obtain written approval from the Engineer-in-Charge before he proceeds by using the same for execution of work. The Contractor shall arrange recycled water for construction purpose from STPs of nearby areas/colonies at his own cost. In case the above supply is short of total requirement of water for construction purpose, then the contractor shall arrange suitable water at his own cost.

20 Time is the Essence of Contract & Extension for Delay (Existing clause shall be read in conjunction with GCC Clause No.49.0)

The following is added to Clause 49 of GCC

- A) Within 10 (Ten) days of the issue of LOA, the Contractor shall submit to the Employer and the Employer's Engineer a phase wise programme (the "Programme") for the Works as per the site condition and taking into consideration the operation of existing station and its subsequently relocation, developed using networking techniques giving the following details:

Part I: Contractor's organization for the Project, the general methods and arrangements for design and construction, environmental management plan, including design quality

plan, traffic management and safety plan covering safety of users and workers during construction, Contractor's key personnel and equipment:

Part II: Quality Assurance, Monitoring and Supervision system mechanism and records and documents, Methodology, Monthly Progress Report, Test Reports

Part III: Programme for completion of all major stages and Project Milestones of the Works as specified in Project Completion Schedule. The Programme in required format such as M.S. Project or other software as specified in the bid/tender document shall include:

- (i) the order in which the Contractor intends to carry out the Works, including the anticipated timing of each stage of design and major stages of Works;
- (ii) the periods for reviews;
- (iii) the sequence and timing of inspections and tests specified in this Contract.

The Contractor shall submit a revised programme whenever the previous programme is inconsistent with the actual progress or with the Contractor's obligations.

Part IV: Monthly cash flow forecast.

B) Milestone:

To be decided/approved on completion of final survey and finalization of BOQ and approval of design and drawing by the competent authority.

The contractor shall finalize the milestone in consultation with the Engineer-In-charge (EIC) after award of the work without changing the project duration. The decision of EIC shall be final and binding on the contractor in this regard. The Contractor has to achieve the agreed milestone during the execution of this contract. Failure to achieve these milestones shall invite withholding of appropriate amount (@1% of total contract value for each milestone) from the Running Account bill. The withheld amount against the non-achievement of any milestone can be released if delay is covered and subsequent milestone is timely achieved.

The amount withheld against the non-achievement of milestone shall be adjusted against Liquidated Damages (LD)/Compensation for Delay, if any levied on final completion. If Extension of Time is granted without any LD, the withheld amount shall be released to the contractor. However, the decision of IRCON shall be final and binding in this matter.

C Production of Records

- i) The Contractor shall, whenever required by the Engineer, produce or cause to be produced for examination by the Engineer, any quotation, invoice, cost or other account books, vouchers, receipts, letters, memoranda or any copy of or extract from any such documents and also furnish information and returns, as may be required, relating to the execution of this Contract or relevant for verifying or ascertaining the cost of execution of this Contract or ascertaining the Materials supplied by the Contractor are in accordance with the Specifications laid down in the contract. The Engineer-in-charge's decision on the question of relevancy of any document, information or returns shall be final and binding on the parties.
- ii) If any part or item of the work is allowed to be carried out by a subcontractor, assignee or any subsidiary or allied firm, the Engineer-in-charge shall have power to secure the books of such sub-Contractor, assignee or any subsidiary or allied firm through the Contractor, and shall have power to examine and inspect the same. The above obligations are without prejudice to the obligations of the Contractor under any statute, rules or order.

21 Compensation for Delay (Existing clause of GCC 49.8 shall be replaced as under)

If the contractor fails to maintain the required progress in terms of clause 49.0 or relevant clause of GCC & Special Conditions of Contract, to complete the work and clear the site on or before the contract or extended date of completion, he shall, without prejudice to any other right or remedy available under the law to the IRCON on account of such breach, pay as agreed compensation the amount calculated at the rates stipulated below as the Engineer in charge (whose decision in writing shall be final and binding) may decide on the amount of tendered value of the work for every completed day / week (as applicable) that the progress remains below that specified in Clause 49.0 or the relevant clause in GCC & Special Conditions of Contract or that the work remains incomplete.

This will also apply to items or group of items for which a separate period of completion has been specified.

Compensation for delay of work @ **0.5% per week** Provided always that the total amount of compensation for delay to be paid under this Condition shall not exceed 10% of the Tendered Value of work or of the Tendered Value of the item or group of items of work for which a separate period of completion is originally given. The amount of compensation may be adjusted or set-off against any sum payable to the Contractor under this or any other contract with IRCON.

Liquidated damages recovered at Intermediate Milestones shall be refunded to the contractor if subsequently milestone is achieved within time of next milestone. However, such Liquidated Damages shall be released after retaining token LD amount.

In case, the contractor does not achieve a particular milestone mentioned elsewhere in the tender document or the re-scheduled milestone(s), the amount shown against that milestone shall be withheld, to be adjusted against the compensation levied at the final grant of Extension of Time. With-holding of this amount or failure to achieve a milestone, shall be automatic without any notice to the Contractor. However, if the contractor catches up with the progress of work on the subsequent milestone(s), the withheld amount shall be released. In case the contractor fails to make up for the delay in subsequent milestone(s), amount mentioned against each milestone missed subsequently also shall be withheld. However, no interest, whatsoever, shall be payable on such withheld amount.

22.0 Cancellation/Determination of Contract in Full or Part (Existing clause shall be read in conjunction with GCC Clause No.50.0)

22.1 When the contractor has made himself liable for action under any of the cases aforesaid, the Engineer-in-Charge may without prejudice to any other right or remedy which shall have accrued or shall accrue hereafter to IRCON, by a notice in writing to cancel the contract as whole or only such items of work in default from the Contract, the Engineer-in-charge shall have powers:

- a) To determine or rescind the contract as aforesaid in full or part (of which termination or rescission notice in writing to the contractor under the hand of the Engineer-in-Charge shall be conclusive evidence) and get the same executed at the risk & cost of the contractor. Upon such determination or rescission, the already retained security deposit recovered under the contract and performance guarantee shall be liable to be forfeited and un-used materials, construction plants, implements, temporary buildings, etc. shall be taken over and shall be absolutely at the disposal of the IRCON.

22.2 Carrying Out Part Work at Risk & Cost of Contractor

If contractor:

- a) At any time makes default during currency of work or does not execute any part of the work with due diligence and continues to do so even after giving a notice in writing of 7 days in this respect from the Engineer-in-Charge; or
- b) Commits default in complying with any of the terms and conditions of the contract and does not remedy it or takes effective steps to remedy it within 7 days even after a notice in writing is given in that behalf by the Engineer-in-Charge; or
- c) Fails to complete the work(s) or items of work with individual dates of completion, on or before the date(s) so determined, and does not complete them within the period specified in the notice given in writing in that behalf by the Engineer-in-Charge.

The Engineer-in-Charge without invoking action under clause 50.1 of GCC may, without prejudice to any other right or remedy against the contractor which have either accrued or accrue thereafter to IRCON, by a notice in writing to take the part work/part incomplete work of any item(s) out of his hands and shall have powers to:

- i. Take possession of the site and any materials, constructional plant, equipment, stores, etc., thereon; and/or
- ii. Carry out the part work / part incomplete work of any item(s) by any means at the risk and cost of the contractor.
- iii. IRCON is entitled to auction the materials, construction plants, equipments received after termination and amounts so received shall be adjusted from the liabilities of the contractor. However, no extra amount shall be refunded back to the contractor and it shall be forfeited in the books of accounts.

The Engineer-in-Charge shall determine the amount, if any, is recoverable from the contractor for completion of the part work/ part incomplete work of any item(s) taken out of his hands and execute at the risk and cost of the contractor, the liability of contractor on account of loss or damages suffered by IRCON because of action under this clause shall not exceed 10% of the tendered value of the work.

In determining the amount, credit shall be given to the contractor with the value of work done in all respect in the same manner and at the same rate as if it had been carried out by the original contractor under the terms of his contract, the value of contractor's materials taken over and incorporated in the work and use of plant and machinery belonging to the contractor. The certificate of the Engineer-in-Charge as to the value of work done shall be final and conclusive against the contractor provided always that action under this clause shall only be taken after giving notice in writing to the contractor. Provided also that if the expenses incurred by the department are less than the amount payable to the contractor at his agreement rates, the difference shall not be payable to the contractor.

Any excess expenditure incurred or to be incurred by IRCON in completing the part work/ part incomplete work of any item(s) or the excess loss of damages suffered or may be suffered by IRCON as aforesaid after allowing such credit shall without prejudice to any other right or remedy available to IRCON in law or per as agreement be recovered from any money due to the contractor on any account, and if such money is insufficient, the contractor shall be called upon in writing and shall be liable to pay the same within 30 days.

If the contractor fails to pay the required sum within the aforesaid period of 30 days, the Engineer-in-Charge shall have the right to sell any or all of the contractors unused materials, constructional plant, implements, temporary building at site etc. and adjust

the proceeds of sale thereof towards the dues recoverable from the contractor under the contract and if thereafter there remains any balance outstanding, it shall be recovered in accordance with the provisions of the contract.

In the event of above course being adopted by the Engineer-in-Charge, the contractor shall have no claim to compensation for any loss sustained by him by reason of his having purchased or procured any materials or entered into any engagements or made any advance on any account or with a view to the execution of the work or the performance of the contract.

22.3 Withholding and Lien in Respect of Sums due from Contractor

22.3.1 Whenever any claim or claims for payment of a sum of money arises out of or under the contract or against the contractor, IRCON shall be entitled to withhold and also have a lien to retain such sum or sums in whole or in part from the security, if any, deposited by the contractor and for the purpose aforesaid, IRCON shall be entitled to withhold the security deposit, if any, furnished as the case may be and also have a lien over the same pending finalization or adjudication of any such claim. In the event of the security being insufficient to cover the claimed amount or amounts or if no security has been taken from the contractor, IRCON shall be entitled to withhold and have a lien to retain to the extent of such claimed amount or amounts referred to above, from any sum or sums found payable or which may at any time thereafter become payable to the contractor under the same contract or any other contract pending finalization of adjudication of any such claim.

22.3.2 It is an agreed term of the contract that the sum of money or moneys so withheld or retained under the lien referred to above by the Engineer-in-Charge or IRCON will be kept withheld or retained as such by the Engineer-in-Charge or IRCON till the claim arising out of or under the contract is determined by the competent court and that the contractor will have no claim for interest or damages whatsoever on any account in respect of such withholding or retention under the lien referred to above and duly notified as such to the contractor. For the purpose of this clause, where the contractor is a partnership firm or a limited company, the Engineer-in-Charge or the IRCON shall be entitled to withhold and also have a lien to retain towards such claimed amount or amounts in whole or in part from any sum found payable to any partner/limited company, as the case may be whether in his individual capacity or otherwise. IRCON shall have the right to cause an audit and technical examination of the works and the final bills of the contractor including all supporting vouchers, abstract, etc, to be made after payment of the final bill and if as a result of such audit and technical examination any sum is found to have been overpaid in respect of any work done by the contractor under the contract or any work claimed to have been done by him under the contract and found not to have been executed, the contractor shall be liable to refund the amount of over-payment and it shall be lawful for IRCON to recover the same from him in the manner prescribed in sub-clause 26.1 of this clause or in any other manner legally permissible; and if it is found that the contractor was paid less than what was due to him under the contract in respect of any work executed by him under it, the amount of

such under payment shall be duly paid by IRCON to the contractor, without any interest thereon whatsoever.

22.4 Lien in Respect of Claims in Other Contracts

Any sum of money due and payable to the contractor (including the security deposit returnable to him) under the contract may be withheld or retained by way of lien by the Engineer-in-Charge or by IRCON against any claim of the Engineer-in-Charge or IRCON in respect of payment of a sum of money arising out of or under any other contract made by the contractor with the Engineer-in-Charge or the IRCON. It is an agreed term of the contract that the sum of money so withheld or retained under this clause by the Engineer-in-Charge or the IRCON will be kept withheld or retained as such by the Engineer-in-Charge or the IRCON or till his claim arising out of the same contract or any other contract is either mutually settled or determined by the competent court, as the case may be, and that the contractor shall have no claim for interest or damages whatsoever on this account or on any other ground in respect of any sum of money withheld or retained under this clause and duly notified as such to the contractor.

23 **Deviations / Variations Extent and Pricing (Existing clause No -58 of GCC shall be replaced as under)**

- 23.1 The Engineer-in-Charge shall have power (i) to make alteration in, omissions from, additions to, or substitutions for the original specifications, drawings, designs and instructions that may appear to him to be necessary or advisable during the progress of the work, and (ii) to omit a part of the works in case of non-availability of a portion of the site or for any other reasons and the contractor shall be bound to carry out the works in accordance with any instructions given to him in writing signed by the Engineer-in-Charge and such alterations, omissions, additions or substitutions shall form part of the contract as if originally provided therein and any altered, additional or substituted work which the contractor may be directed to do in the manner specified above as part of the works, shall be carried out by the contractor on the same conditions in all respects including price on which he agreed to do the main work except as hereafter provided.

The time for completion of the works shall, in the event of any deviations resulting in additional cost over the tendered value sum being ordered, be extended, if requested by the contractor, as follows:

In the proportion which the additional cost of the altered, additional or substituted work, bears to the original tendered value plus

25% of the time calculated in (i) above or such further additional time as may be considered reasonable by the Engineer-in-Charge.

In the case of extra item(s) (items that are completely new, and are in addition to the items contained in the contract), the contractor may within fifteen days of receipt of order or occurrence of the item(s) claim rates, supported by proper analysis, for the work and the engineer-in-charge shall within prescribed time limit of the receipt of the claims supported by analysis, after giving consideration to the analysis of the rates submitted by the contractor, determine the rates on the basis of the market rates and the contractor shall be paid in accordance with the rates so determined.

Any operation incidental to or necessarily has to be in contemplation of tenderer while filing tender, or necessary for proper execution of the item included in the Financial Bid and Schedule of Payment whether or not, specifically indicated in the description of the item and the relevant specifications, shall be deemed to be included in the rates quoted by the tenderer or the rate given in the said schedule of rates, as the case may be. Nothing extra shall be admissible for such operations.

- a) In the case of substituted items (items that are taken up with partial substitution or in lieu of items of work in the contract), the rate for the agreement item (to be substituted) and substituted item shall also be determined in the manner as mentioned in the following para:

If the market rate for the substituted item so determined is more than the market rate of agreement item (to be substituted), the rate payable to the contractor for the substituted item shall be the rate for the agreement item (to be substituted) so increased to the extent of the difference between the market rates of substituted item and the agreement item (to be substituted).

If the market rate for the substituted item so determined is less than the market rate of the agreement (to be substituted), the rate payable to the contractor for the substituted item shall be the rate for the agreement item (to be substituted) so decreased to the extent of the difference between the market rates of substituted item and the agreement item (to be substituted).

- b) Market Rates to be determined as per various sub-clauses under the GCC clause 59.3 shall be on the basis of Prevailing rates of Material (unless mentioned otherwise), Relevant Labour authority rate for Labour, market rates of T&P etc. plus 15% towards Contractors' Profits and Overheads.

The following factors may be considered in the justification of rates on which Contractor's overhead & profit shall not be applicable:

- i. Buildings and Other Construction Worker Cess as applicable in the state of work place
- ii. EPF (Employer Contribution) component, as per EPF act on the portion of labour's wages

iii. Goods and Services Tax (GST) on works contract

23.2 Schedule of Quantities / Bill of Quantities

The quantities shown against the various items of work are only approximate quantities which may vary as per the actual requirement at site. No item which is not covered in the bill of quantities shall be executed by the Contractor without the approval of the IRCON. In case any Extra/Substituted item is carried out without specific-approval, the same will not be paid.

24 Market Rate (Existing clause No -59.2 of GCC shall be replaced as under)

Market Rate shall be the rate as decided by the Engineer-in-Charge on the basis of the prevailing cost of materials and labour at the site where the work is to be executed plus the percentage mentioned elsewhere in the tender document to cover, all overheads and profits.

25 'Measurement of Works and Payments' (Existing GCC Clause No.61.0 shall be entirely replaced and shall be read as under)

(Note: Contractors may note that as IRCON is executing the subject work on behalf of the client i.e. The Development Commissioner, Ministry of Micro, Small & Medium Enterprises, New Delhi, all payments to successful Contractor as per contract shall be made only after receipt of requisite funds from the client. The Contractor is required to submit the invoice in the name of Designated TC of MoMSME by using GSTIN of designated TC of MoMSME. IRCON will make payment to Contractor through Treasury Single Account (TSA). For statutory deduction from bills like TDS, GST-TDS, Cess etc. TAN/PAN/GST Numbers of Designated TC of MSME shall be used. Details of Designated TC of MSME shall be intimated in due course.)

A. Computerized Measurement Books

Engineer-in-Charge shall, except as otherwise provided, ascertain and determine by measurement the value of work done in accordance with the contract. All measurements of all items having financial value shall be entered by the contractor and compiled in the shape of the Computerized Measurement Book as per the format of IRCON so that a complete record is obtained of all the items of works performed under the contract. All such measurements and levels recorded by the contractor or his authorized representative from time to time, during the progress of the work, should be gotten checked by the contractor from the Engineer-in-Charge or his authorized representative as per interval or program fixed in consultation with Engineer-in-Charge or his authorized representative.

After the necessary corrections made by the Engineer-in-Charge, the measurement sheets shall be returned to the contractor for incorporating the corrections and for resubmission to the Engineer-in-Charge for the dated signatures by the Engineer-in-Charge and the contractor or their representatives in token of their acceptance.

Whenever bill is due for payment, the contractor would initially submit draft computerized measurement sheets in excel format and these measurements would be checked/test checked by the Engineer-in-Charge and/or his authorized representative. The contractor will, thereafter, incorporate such changes as may be done during these checks/test checks in his draft computerized measurements, and submit it to IRCON. **All the required documents e.g. measurement sheet, quality test reports, ESIC/EPF challans, Tax invoice, theoretical v/s actual consumption of material etc. shall also be submitted in hard as well as soft copy. No payment of RA bill shall be released until all obligations and documents as above as per direction of Engineer In-charge are provided to IRCON.**

The contractor shall, without extra charge, provide all assistance with every appliance, labour and other things necessary for checking of measurements /levels by the Engineer-in-Charge or his representative.

The contractor shall give not less than seven days' notice to the Engineer-in-Charge or his authorized representative in charge of the work before covering up or otherwise placing beyond the reach of checking and/or test checking the measurement of any work in order that the same may be checked and/or test checked and correct dimensions thereof be taken before the same is covered up or placed beyond the reach of checking and/or test checking measurement and shall not cover up and place beyond reach of measurement any work without consent in writing of the Engineer-in-Charge or his authorized representative in charge of the work who shall within the aforesaid period of seven days inspect the work, and if any work shall be covered up or placed beyond the reach of checking and/or test checking measurements without such notice having been given or the Engineer-in-Charge's consent being obtained in writing the same shall be uncovered at the Contractor's expense, or in default thereof no payment or allowance shall be made for such work or the materials with which the same was executed.

Engineer-in-Charge or his authorized representative may cause either themselves or through another officer of the IRCON to check the measurements recorded by contractor and all provisions stipulated herein above or anywhere in the tender document shall be applicable to such checking of measurements or levels.

It is also a term of this contract that checking and/or test checking the measurements of any item of work in the measurement book and/or its payment in the interim, on account of final bill shall not be considered as conclusive evidence as to the sufficiency of any work or material to which it relates nor shall it relieve the

contractor from liabilities from any over measurement or defects noticed till completion of the defects liability period.

B. Stage Payment Statement for Works

- a) The Employer shall make interim payments to the Contractor as certified by the Employer's Engineer, as specified and valued in accordance with the proportion of the Contract Price assigned to each item and its stage in Schedule of Payment.
- b) The Contractor shall base its claim for interim payment for the work executed till the end of the month for which the payment is claimed, supported with necessary particulars and documents in accordance with this Agreement. The basis of payment on "Pro rata basis" shall be worked out on the percentage of work done of total scope of work under their activity/item for the respective Cost Centre.
- c) The proportion assigned to an item will apply only to the Awarded Contract Price. It shall not apply to any additions or reductions to the Contract Price arising from the issuance of any Change of Scope Order. A Change of Scope Order shall specify the stages of interim payments for the works covered by such order.
- d) The Contractor shall submit a statement (the "Stage Payment Statement"), in 3 copies, by the 7th (seventh) day of each month (statement for the previous month) to the Employer's Engineer in the form as directed, showing the amount calculated to which the Contractor considers himself entitled for work executed under their activity/item for the respective Cost Centre. The Stage Payment Statement shall be accompanied with the progress reports, at least two set of twenty photographs and any other supporting documents.
- e) Within 7 (Seven) days of receipt of the Stage Payment Statement from the Contractor, the Engineer-in-charge shall broadly determine the amount due to the Contractor and recommend the release of 75% (seventy-five) percent of the amount so determined as part payment against the Stage Payment Statement, pending issue of the running bills Certificate (the "RA") by the Engineer-in-charge. In case of discrepancy or for want of correction in the bill submitted by contractor is returned back to the contractor, then time of 7 days will be considered from submission of bill after attending observations of the Engineer-in-charge. Within 14 (Fourteen) days of the receipt of recommendation of the Engineer-in-charge, the Employer shall make payment to the contractor through electronic payment directly to the Contractor's bank account.
- f) Within 21 (Twenty-One) days of the receipt of the Stage Payment Statement, the Engineer-in-charge shall determine the amount due and payable to the Contractor, after adjusting the payments already released to the Contractor against the said statement. In cases where there is a difference of opinion as to the value of any

stage, the Engineer-in-charge's view shall prevail.

- g) Balance payment against running bills shall be made to contractor by the Employer within 28 (twenty-eight) days of submission of Stage Payment Statement to the Engineer-in-charge. Payment by the Employer shall not be deemed to indicate the Employer's acceptance, approval, consent or satisfaction with the work done. The balance payments shall be released only after reconciling the actual measurements of work done.
- h) All such interim payments shall be regarded as payment by way of advances against final payment only and shall not preclude the requiring of bad, unsound and imperfect or unskilled work to be rejected, removed, taken away and reconstructed or re-erected. Any certificate given by the Engineer-in-charge relating to the work done or materials delivered forming part of such payment, may be modified or corrected by any subsequent such certificate(s) or by the final payment certificate and shall not by itself be conclusive evidence that any work or materials to which it relates is/are in accordance with the contract and specifications. Any such interim payment, or any part thereof shall not in any respect conclude, determine or affect in any way powers of the Engineer-in-charge under the contract or any of such payments be treated as final settlement and adjustment of accounts or in any way vary or affect the contract.

C Final Payment Statement

- a) Within 60 (Sixty) days after receiving of the Completion Certificates and upon completion of all incomplete and outstanding works, the Contractor shall submit to the Engineer-in-charge for consideration six copies of a Final Payment Statement (the "Final Payment Statement") for Works, with supporting documents showing in detail, in the form prescribed by the Engineer-in-charge:
 - i. the summary of Contractor's Stage Payment bills for Works
 - ii. the amounts received from the Employer against each bill; and
 - iii. any further sums which the Contractor considers due to it from the Employer.
- b) If the Engineer-in-charge disagrees with or cannot verify any part of the Final Payment Statement, the Contractor shall submit such further information as the Engineer-in-charge may reasonably require. The Engineer-in-charge shall deliver to the Employer:
 - i. an IPC for those parts of the Final Payment Statement which are not in dispute, along with a list of disputed items which shall then be settled in accordance with the provisions of contract; or

- ii. a Final Payment Certificate if there are no disputed items.

D Final Payment Certificate

- a) Within 90 (Ninety) days after receipt of the Final Payment Statement for Works, and the written discharge, and there being no disputed items of claim, the Engineer-in-charge shall deliver to the Employer, with a copy to the Contractor, a final payment certificate (the "Final Payment Certificate") stating:
 - i. the amount which, in the opinion of the Engineer-in-charge, is finally due under this Agreement or otherwise; and
 - ii. after giving credit to the Employer for all amounts previously paid by the Employer and for all sums to which the Employer is entitled, the balance, if any, due from the Employer to the Contractor or from the Contractor to the Employer as the case may be.
- b) The Employer shall pay to the Contractor the amount which is finally due, less all amounts previously paid by the Employer and any deductions for the amounts the Employer considers itself to be entitled in accordance with this Agreement, and shall provide the particulars thereof to the Contractor.
- c) Payment against Final Payment Certificate shall be made not later than 60 (sixty) days from the date of issue of the Final Payment Certificate for Works.

26 On Account Payments (Existing clause shall be read in conjunction with GCC Clause No.62)

- 26.1 All running payments shall be regarded as payments by way of advance against the final payment only and not as payments for work actually done and completed and/or accepted by IRCON and shall not preclude the recovery for bad, unsound and imperfect or unskilled work to be removed and taken away and reconstructed or re-erected or be considered as an admission of the due performance of the Contract, or any part thereof, in this respect, or the accruing of any claim, nor shall it conclude, determine or affect in any way the powers of the IRCON under these conditions or any of them as to the final settlement and adjustments of the accounts or otherwise, or in any other way vary/ affect the contract. The final bill shall be submitted by the contractor within three months of the completion of work, otherwise IRCON's certificate of the measurement and of the total amount payable for the work accordingly shall be final and binding on contractor. Each Running Bills should be accompanied by two sets of at-least 20 (twenty) photographs as per direction of Engineer-in-charge taken from various points depicting status of work as on Report/ Bill date and Monthly Progress Report for the concerned month in the pro-forma to be

given/ approved by Engineer-in-Charge and tax invoices as per applicable tax laws and a detailed BOQ drawn from BIM indicating the measurements and up to stage works for reconciliation from schedule of payments. Intermittent progress Photographs as and when required shall also be provided by the Contractor at his own cost as per direction of Engineer-in-Charge. No payment of running account bill shall be released unless it is accompanied by photographs, Monthly Progress Report and tax invoices as above. Part payment may be released to the contractor if Engineer In Charge is satisfied with the progress of work and milestone achieved.

- 26.2 It is clearly agreed and understood by the Contractor that notwithstanding anything to the contrary that may be stated in the agreement between IRCON and the contractor; the contractor shall become entitled to payment only after IRCON has received the corresponding payment(s) from the client/Owner for the work done by the contractor. Any delay in the release of payment by the client/ Owner to IRCON leading to a delay in the release the corresponding payment by IRCON to the contractor shall not entitle the contractor to any compensation/ interest from IRCON.
- 26.3 All payments shall be released by way of e-transfer through RTGS in India directly at their Bank account by IRCON.

27 Completion Certificate and Completion Plans (Existing clause shall be read in conjunction with GCC Clause No.65.0)

Within ten days of the completion of the work, the contractor shall give notice of such completion to the Engineer-in-Charge and within thirty days of the receipt of such notice, the Engineer-in-Charge shall inspect the work and if there is no defect in the work, shall furnish the contractor with a final certificate of completion, otherwise a provisional certificate of physical completion indicating defects (a) to be rectified by the contractor and/or (b) for which payment will be made at reduced rates, shall be issued. But no final certificate of completion shall be issued, nor shall the work be considered to be complete until the contractor shall have removed from the premises on which the work shall be executed all scaffolding, surplus materials, rubbish and all huts and sanitary arrangements required for his/their work people on the site in connection with the execution of the works as shall have been erected or constructed by the contractor(s) and cleaned off the dirt from all wood work, doors, windows, walls, floor or other parts of the building, in, upon, or about which the work is to be executed or of which he may have had possession for the purpose of the execution; thereof, and not until the work shall have been measured by the Engineer-in-Charge. If the contractor shall fail to comply with the requirements of this Clause as to removal of scaffolding, surplus materials and rubbish and all huts and sanitary arrangements as aforesaid and cleaning off dirt on or before the date fixed for the completion of work, the Engineer-in-Charge may at the expense of the contractor remove such scaffolding, surplus materials and rubbish etc., and dispose of the same as he thinks fit and clean off such dirt as aforesaid, and the contractor shall have no claim in respect of

scaffolding or surplus materials as aforesaid except for any sum actually realized by the sale thereof less actual cost incurred on removal of materials / debris / malba etc.

The Contractor shall be responsible for handing over of the project to M/s IRCON INTERNATIONAL LIMITED. The Completion Certificate shall be issued to the Contractor post fulfillment of the following mandatory requirements:

- A. Joint Inspection in the presence of IRCON & Client (MSME)**
- B. Submission of Detailed report of the rectification works carried out by the Contractor for the items highlighted during the Joint Inspection by Client & IRCON**

Payment of the final bill shall be released to the Contractor upon issuance of the Completion Certificate.

The contractor shall submit completion plan as required vide General Specifications for Electrical works as applicable within thirty days of the completion of the work. In case, the contractor fails to submit the completion plan as aforesaid, he shall be liable to pay a sum equivalent to 2.5% of the value of the work subject to a ceiling of Rs.5,00,000 (Rs. Five Lakhs only) as may be fixed by the Engineer-in-charge concerned and in this respect the decision of the Engineer-in-charge shall be final and binding on the contractor.

27.1 Set-Off of Contractor's Liabilities

IRCON shall have the right to deduct or set off the expenses incurred or likely to be incurred by it in rectifying the defects and/or any claim under this agreement against the Contractor from any or against any amount payable to the contractor under this agreement including security deposit and proceeds of performance guarantee.

27.1.1 Possession Prior to Completion

27.1.1.1 IRCON shall have the right to take possession of or use any completed or partially completed work or part of the work. Such possession or use shall not be deemed to be any acceptance of any work not completed in accordance with the contract agreement. If such prior possession or use by IRCON delays the progress of work an equitable adjustment in the time of completion will be made and the contract agreement shall be deemed to be modified accordingly. The decision of IRCON in such case shall be final binding and conclusive.

27.1.1.2 When the whole of the works or the items or the groups of items of work have been completed the contractor will give a notice to that effect to the Engineer in writing. The Engineer shall within 7 days of the date of receipt of such notice inspect the works and give instructions in writing to the contractor specifying the balance items of work which are required to be done by the contractor and shall also notify the contractor of any defect in the works affecting completion.

27.1.1.3 The contractor shall during the course of execution prepare and keep updated a complete set of 'as built' drawings to show each and every change from the contract drawings, changes recorded shall be countersigned by the Engineer-in-Charge and the contractor. Four copies of 'as built' drawings shall be supplied to IRCON by the contractor within 30 days of the completion. All costs incurred in this respect shall be borne by the contractor.

28.0 Contract Value (Existing GCC Clause No.1.0 definitions shall be replaced as under)

Contract value means the contract value after adjustments for variations (+/-) at the time of completion of the contract.

29.0 Updation of Labour Data on Indian Railways Shramikkalyan Portal by Contractor

29.1 Contractor shall abide by the provision of Payment of Wages Act & Minimum Wages Act in terms of Clause No. 40.0: "Wages of Labour" of IRCON's General Condition of Contract. In order to ensure the same an application has been developed and hosted on website 'www.shramikkalyan.indianrailways.gov.in'. Contractor shall register his firm/ company etc. and upload requisite details of labour and their payment in this portal. These details shall be available in public domain. The Registration/ updation of Portal shall be done as under: -

- a) Contractor shall apply for one-time registration of his company/ firm etc. in the Shramikkalyan portal with requisite details subsequent to issue of Letter of Acceptance. Engineer shall approve the contractor's registration on the portal within 7 days of receipt of such request.
- b) Contractor once approved by the engineer, can create password with login ID (Pan No.) for subsequent use of portal for all LoAs issued in his favour.
- c) The contractor once registered on the portal, shall provide details of his Letter of Acceptance (LOA)/ Contract Agreements on Shramikkalyan portal within 15 days of issue of the LOA for approval of the concerned engineer. Engineer shall update (if required) and approve the details of LOA filled by the contractor within 7 days of receipt of such request.
- d) After approval of LOA by the engineer, Contractor shall fill the salient details of contractor labours engaged in the contract and ensure updating of each wage payment to them on Shramikkalyan portal on monthly basis.
- e) It shall be mandatory upon the contractor to ensure correct and prompt uploading of all salient details of engaged contractual labour & payments made thereof after each wage period.

- 29.2 While processing payment of any 'On Account Bill' or 'Final Bill' or release of 'Advances' or 'Performance Guarantee/ Security Deposit', contractor shall submit a certificate to the Engineer or Engineer's representative that "I have uploaded the correct details of contract labours engaged in connection with this contract and payment made to them during the wage period in Railway's Shramikkalyan Portal at 'www.shramikkalyan.indianrailways.gov.in' till ____ Month, ____ Year."

30.0 Insurance (Existing clause shall be read in conjunction with GCC Clause No.9)

30.1 Professional Indemnity Insurance

The Contractor shall effect and maintain professional indemnity insurance, preferably in the name of IRCON/MoMSME, for the amount in Indian Rupees equivalent to 3% of the awarded contract value in respect of any design works to be carried out by, or on behalf of the Contractor. This insurance, which shall ensure the Contractor's liability by reason of professional negligence and errors in the design works, shall be valid from the date of commencement of Works, until 5 years after the date of issue of Completion Certificate.

The Engineer will not issue Final Payment Certificate until the Contractor has produced evidence that coverage of the professional indemnity insurance has been provided for the aforesaid period.

30.2 Insurance for Works and Contractor's Equipment

The Contractor shall insure the Plant, Rolling stock, Materials and Works in the joint names of the Employer, the Contractor and Sub-contractors (wherever applicable) against all loss or damage. This insurance shall cover loss or damage from any cause other than the Employer's risks listed in Sub-Clause 9.3 sub paragraphs (a), (b) and (c) of GCC. Such insurance shall be for a limit of not less than the full replacement cost (including profit) and shall also cover the costs of demolition and removal of debris. Such insurance shall be in such a manner that the Employer and the Contractor are covered from the commencement date until the date of issue of the Taking Over Certificate for the whole of Works. The Contractor shall extend such insurance to provide cover until the date of issue of the Performance Certificate, for loss or damage for which the Contractor is liable arising from a cause occurring prior to the issue of the Taking Over Certificate, and for loss or damage occasioned by the Contractor or Sub-contractors in the course of any other operations.

The Contractor shall insure the Contractor's Equipment against all risks in the joint names of the Employer, the Contractor and Sub-contractors, (wherever applicable) against all loss or damage. This insurance shall cover loss or damage from any cause other than the Employer's risks listed in Sub-Clause 9.3 sub-paragraphs (a), (b) and (c). Such insurance shall be for a limit of not less than the full replacement value (including delivery to Site). Such insurance shall be in such a manner that each item

of equipment is insured while it is being transported to the Site and throughout the period it is on or near the Site.

30.3 Insurance against injury to Persons and Damage to Property

The Contractor shall insure against liability to third parties in the joint names of the Employer, the Contractor and Sub-contractors, (wherever applicable) for any loss, damage, death or bodily injury which may occur to any physical property (except things insured under Sub-Clause 30.2) or to any person (except persons insured under Sub-Clause 30.4), which may arise out of the performance of the Contract and occurring before the issue of the Performance Certificate. Such insurance shall be at least for the amount specified in the Appendix to Tender.

30.4 Insurance for Workers

The Contractor shall effect and maintain insurance against losses and claims arising from the death or injury to any person employed by the Contractor or any Sub-contractor (wherever applicable) in such a manner that the Employer and the Engineer are indemnified under the policy of insurance. For Sub-contractor's employees (wherever applicable), such insurance may be effected by the Sub-contractor, but the Contractor shall be responsible for compliance with this Clause.

The insurance shall be maintained in full force and effect during the whole time that these personnel are assisting in the execution of the Works. For a Subcontractor's employees, the insurance may be effected by the Subcontractor, but the Contractor shall be responsible for compliance with this Clause.

30.5 General Requirements for Insurances

The Contractor shall, within the respective periods stated in the Appendix to Tender (calculated from the Commencement Date), submit to the Employer:

- a) evidence that the insurances described in this Clause have been effected, with an Insurance Company operating in India, and
- b) copies of the policies for the insurances described in Sub-Clause 30.2, 30.3 and 30.4.

When each premium has been paid, the contractor shall submit copy of receipts to the employer. The contractor shall also, when providing such evidence, policies and receipts to the employer, notify the engineer of so doing.

The contractor shall affect all insurances for which he is responsible with insurers and in terms approved by the employer. Each policy insuring against loss or damage shall provide for payments to be made in the currencies required to rectify such loss or damage. Payments received from insurers shall be used for the rectification of such loss or damage.

The contractor (and, if appropriate, the employer) shall comply with the conditions stipulated in each of the insurance policies. The contractor shall make no material alteration to the terms of any insurance without the prior approval of the employer. If an insurer makes (or purports to make) any such alteration, the contractor shall notify the employer immediately.

If the contractor fails to effect and keep in force any of the insurances required under the contract, or fails to provide satisfactory evidence, policies and receipts in accordance with this sub-clause, the employer may, without prejudice to any other right or remedy, effect insurance for the coverage relevant to such default, and pay the premiums due. In such cases the premium paid by the employer plus overheads (equal to 50% of the premium paid) shall be recoverable from the contractor by the employer, and may be deducted by the employer from any monies due, or to become due, to the contractor or recover the same as debt due from the contractor. The contractor shall not dispute the amount of premium paid by the employer or the overhead charges thereon.

Nothing in this clause limits the obligations, liabilities or responsibilities of the contractor or the employer, under the other terms of the contract or otherwise. Any amount not insured or not recovered from the insurers shall be borne by the contractor.

The Contractor shall submit to the Engineer, the details of all claims made with the insurer and claims accepted by the insurer or any other details as required by the Engineer on monthly basis.

Note: Amount of Professional Indemnity Insurance (PII): AOA (any one accident) limit equal to **3%** of the contract value in respect of this EPC Contract with **AOY** (any one year) limit of **2 incidents in a year**.

SECTION – 4**ADDITIONAL CONDITIONS****4. GENERAL**

4.0 These Additional Conditions of Contract shall be read in conjunction with Special Conditions of Contract, General Conditions of Contract, Instructions to Tenderers (ITT), Notice Inviting Tenders (NIT), Bill of Quantities (BOQ), Tender Drawings, DBR, Technical Specifications & Other Tender Documents.

4.1 Where any portion of special conditions of contract is repugnant to or at variance with any provision of the Instructions to Tenderer and General Conditions of contract and/or the other documents forming part of the contract then unless a different intention appears, the provision of the Additional Conditions of Contract shall be deemed to override the provisions of the Special Conditions of Contract, General conditions of contract and / or the other documents forming part of the contract only to the extent such repugnant/variations in the special conditions of contract as are not possible of being reconciled with the provision with Instructions to Tenderer or Special Conditions of Contract, General Conditions of contract and/or the other documents forming part of the contract.

4.2 Change in Client Requirements

If any modification in Civil/Structural design/ drawing is needed as per site conditions and/or change in Architectural Design and/or change in client's requirement, the agency shall do/ redo the design without any extra cost as well as suggest solutions to the problems coming across during actual execution. The decision of the Engineer-in-charge shall be final and binding. No claim whatsoever will be entertained in this regard.

4.3 Tests after Completion**a) Contractor's Obligations**

The Contractor shall carry out the Tests on Completion at his own cost in accordance with the Contract after providing the documents in accordance with provisions of the agreement. The Contractor shall give, to the Engineer, 14 (fourteen) days' notice of the date after which the Contractor will be ready to carry out the Tests on Completion. Unless otherwise agreed, such Tests shall be carried out within 28 (twenty-eight) days after this date, on such day or days as the Engineer shall instruct. If it is not possible to carry out all tests within 28 (twenty-eight) days, then Engineer shall draw a programme in consultation with contractor.

Unless otherwise stated in Special Conditions of Contract, the Tests on Completion shall be carried out in the following sequence;

- i. Pre-commissioning test, which shall include appropriate instructions and (“dry” or “cold”) functional tests to demonstrate that each item of the Plant, goods and Work can safely undertake the next stage;
- ii. Commissioning Test shall include the specified operational tests to demonstrate that Works or Sections can be operated safely and as specified under all available operating condition;
- iii. Trial operation which shall demonstrate that the Works or Section perform reliably and in accordance with the Contract

The Contractor at his cost shall arrange all tools, equipment, gadgets, facilities or as deemed necessary by the Engineer for such tests, In considering the results of the tests on completion, the Engineer shall make allowances for the effect of any use of the Works by the Employer on the performance or other characteristics of the Works. As soon as the Works, or a Section, have passed the tests on completion described in subparagraphs (a), (b) or (c), the Contractor shall provide the Engineer with a certified report of the results of all such Tests.

4.4 Project Management-Building Information Modelling (BIM)

The Agency is required to do BIM modelling, clash detection, screen shots, renders and quantity take off, incorporating all disciplines - Architectural, Structural, MEP which includes, Plumbing, Fire Fighting, Electrical & ELV, facade, and other specialized services such as Lighting Design, Landscape etc. broadly the points given below are to be followed:

- a) Development of 3D models from architecture, landscape and engineering drawings like structure, MEP etc., showing all elements of works for the Basement (if applicable) and super structure of buildings and site.
- b) Extraction BOQ of modelled items from BIM Software and exporting it in excel for easier analysis and review for all the disciplines mentioned above.
- c) Views/ screenshots (jpeg) or any other appropriate format for the conflict points to be generated for review by the decision taking parties.
- d) All the Elements shall be modelled as specific assemblies accurate in terms of quantity, size, shape, location and orientation.

- e) The agency shall submit the details of the models to be developed and obtain the approval of Engineer-in-charge.
- f) The Agency would also get developed Baseline Construction Schedule using 4D simulation software package which shall be submitted to Engineer-in-charge for construction monitoring & control purposes.
- g) The Agency shall prepare phase wise (monthly) resource chart (materials, manpower and machinery) based on the project execution schedule linked to the 3D model through 5D simulation and update the same on monthly basis.
- h) Preparation of 'as built model' to be given as soft copy at the end of project execution/ construction of the project showing all services and vital points important for maintenance and operational point of view.
- i) The agency shall prepare phase wise (monthly) schedule of quantities, measurements, bill etc. as per the project execution linked with actual project progress for reconciling with monthly payments.

4.5 Prevention of Nuisance and Pollution

The contractor shall take all necessary precautions to prevent any nuisance or inconvenience to the owners, tenants or occupiers of adjacent properties and to the public in general and to prevent any damage to such properties and any pollution. He shall make good at his own cost and to the satisfaction of the Engineer-in-charge, any damage to roads, paths, drainage works or public or private property whatsoever caused by the execution of the work or by traffic brought thereon by the contractor. All waste or superfluous materials shall be cleaned away by the contractor without any reservations entirely to the satisfaction of the Engineer-in-charge at no extra cost.

The site has to be kept clean of all debris, rubbish and dirt & surplus/waste material all the time. It also includes maintenance, cleaning & de-silting the pipe lines laid by the agency for all internal services etc. executed by the agency to the entire satisfaction of the Engineer-in-charge during the maintenance periods. Cleaning and de-silting will also be done by the agency before handing over the completed structures to IRCON. All machines, equipment and labour for this purpose will be arranged by contractor at no extra cost to IRCON.

4.6 GRIHA

As the building is to be constructed as per GRIHA norms and intended for minimum 4 Star rating, the contractor has to comply all the specific requirement at their own cost such as Barricading the site at required height, covering the construction material, sedimentation tank, conserve the top soil, arrangement of wheel wash for all inward and

outward vehicle, segregation of all scrap material, disposal of hazardous extract generated during construction at appropriate place etc. The contractor should extend their all-out support to GRIHA Team as and where required for achieving the desired GRIHA rating

4.7 Statutory Fee Payment

Statutory fees, if any paid to the local bodies/Authorities in connection with the approval of the project / connection of the services/shifting of the services by the contractor shall be reimbursed by IRCON and MoMSME on submission of vouchers/ bills / receipts issued by the concerned local bodies/Authorities. The cost of restoration of any services damaged by the contractor during execution shall however be borne by the contractor.

4.8 Opening of Separate Bank Account for the Project:

The Contractor shall maintain a separate account with a Scheduled Bank for the purpose of receiving all the payments under the Contract and for utilization of payments received from the employer for disbursement to sub-contractors, sub-vendors, PRW's, suppliers etc. for this contract. The Contractor shall maintain separate books of account for all payments under this contract and the Engineer-in-Charge shall have access to it at all times.

For tracking of utilization of funds received from the Employer, the Contractor shall submit a monthly statement by 7th of every month to the Engineer-in-charge certifying the transactions pertaining to the above account along with the purpose of such transactions.

In case the Contractor wants to withdraw funds from the above bank account for any purpose other than the Contract, he shall be required to submit an undertaking to the Engineer-in-Charge certifying that all due statutory payments, labour payments and payments to all his sub-contractors/ vendors have been disbursed by him corresponding to the total payment received under the contract.

4.9 Contractor's Warranty of Design

- a) The Contractor shall be fully responsible, for the suitability, adequacy, integrity, durability and practicality of the Contractor's proposal.
- b) The Contractor warrants that the Works have been or will be designed, manufactured, installed and otherwise constructed to the highest standards available using proven up-to-date good practice. By submitting the Drawings for review to the Engineer, the Contractor shall be deemed to have represented that it has determined and verified that the design and engineering, including field construction criteria related thereto, are in conformity with the Scope of the Project, the Specifications and Standards and the Applicable Laws.

- c) The Contractor warrants that the Contractor's Proposals meet the requirements and is fit for the purpose thereof. Where there is any inadequacy, insufficiency, impracticality or unsuitability in or of the Requirements or any part thereof, the Contractor's Proposal shall take into account, address or rectify such inadequacy, insufficiency, impracticality or unsuitability at Contractor's own cost.
- d) The Contractor warrants that the Works will, when completed, comply with enactments and regulations relevant to the Works.
- e) The Contractor shall also provide a guarantee from the Designer for the design for suitability, adequacy, and practicality of design for Employer's Requirements.
- f) The Contractor shall indemnify the Employer against any damage, expense, liability, loss or claim, which the Employer might incur, sustain or be subject to arising from any breach of the Contractor's design responsibility and/or warranty set out in this Clause.
- g) Notwithstanding that such design may be or have been prepared, developed or issued by the Employer, any of Contractor's consultants, his sub-contractors and/or his qualified personnel/persons or cause to be prepared, developed or issued by others.
 - i) Notwithstanding any warranties, guaranties and/or indemnities that may be or may have been submitted by any other person.
 - ii) Notwithstanding that the same have been accepted by the Engineer, the Contractor shall be fully responsible for the Plants, Materials, goods, workmanship, preparing, developing and coordinating all design Works to enable that part of the Works to be constructed and/or to be fully operational in accordance with the Contract's requirements.

No claim for additional payment or extension of time shall be entertained and/or no review and/or observation of the Engineer and/or its failure to review and/or convey its observations on any Drawings shall relieve the Contractor of its obligations and liabilities under this Agreement in any manner nor shall the Engineer or the Employer be liable for the same in any manner; and if errors, omissions, ambiguities, inconsistencies, inadequacies or other Defects are found in the Drawings, they and the construction works shall be corrected at the Contractor's cost, notwithstanding any review under this section.

4.10 Guarantee/Warranty

All plant/equipment/machinery installed/commissioned shall be guaranteed or warrantied (as per applicability of guarantee/warranty given in technical specifications for each plant/equipment/machinery) for a period of 60 months (minimum) from the date of acceptance and taking over of the installation by IRCON/MoMSME against un-satisfactory performance and/or breakdown due to defective design, material, manufacture, workmanship or installation. The guarantee/warranty period given above is the minimum period for which a plant/equipment/machinery is required to be covered under guarantee/warranty. However, if required guarantee/warranty period in technical specification is specified more than 60 months for any plant/equipment/machinery from the date of acceptance and taking over of the installation by IRCON/ MoMSME; then the higher period will be the required period of guarantee/warranty for that particular plant/equipment /machinery. The plant/equipment/machinery or component or any part thereof found defective during the guarantee/warranty period shall be repaired or replaced free of cost to the satisfaction of the Engineer in-charge. In case it is felt by IRCON/MoMSME that undue delay is being caused by the contractor in doing this, the same will be got done by IRCON/ MoMSME at the risk and cost of the contractor. The decision of Engineer-in-charge in this regard shall be final.

4.11 Security of the Site

The Contractor shall be wholly responsible for security of site and Works. Unless otherwise stated in Special Conditions of Contract.

- a) The Contractor shall be responsible for keeping unauthorized persons off the Site; and
- b) Authorized persons shall be limited to the Employees of the Contractor, Subcontractor or persons authorized by the Engineer.

4.12 Lighting:

The contractor shall provide sufficient lighting at project site, of the right type and at the right place / location for it to be properly effective. Lighting ought not to introduce the risk of electric shock.

Therefore, 230V supplies should be used for those fittings, which are robustly installed, and well out of reach e.g. flood lighting or high-pressure discharge lamps. The contractor shall ensure that luminaries should always be so placed that no person is required to work in their own shadow and that the local light for one person is not a source of glare for the others. Strongly made clamps should be available for attaching luminaries to poles and other convenient supports.

Luminaries should be robust, resistant to corrosion and rain proof especially at the point of the cable entry. The correct type of lamp for each luminary should always be used and when lamps need to be replaced, it shall be in accordance with the supply voltage. Lamp holders not fitted with a lamp should be capped off.

The contractor shall take every effort to illuminate the work site as per the direction of Engineer-in-charge. The compliance of above provisions are deemed to be included in the quoted amount of the contractor and no claim / payment whatsoever shall be entertained on this account.

4.13 Traffic Management:

- a) The basic objective of the following guidelines is to lay down procedures to be adopted by contractor to ensure the safe and efficient movement of traffic and also to ensure the safety of workmen at construction sites.

All construction workers should be provided with high visibility jackets with reflective tapes as most of construction activities shall be done within right-of-way of the roads. The conspicuity of workmen at all times shall be increased so as to protect from speeding vehicular traffic.

The guiding principles to be adopted for safety in construction zone are to-

- i) Warn the road user clearly and sufficiently in advance.
- ii) Provide safe and clearly marked lanes for guiding road users.
- iii) Provide safe and clearly marked buffer and work zones.
- iv) Provide adequate measures that control driver behaviour through construction zones.

- b) Permission from competent authorities-

- i) Wherever operations undertaken are likely to interface with public traffic, specific traffic management plans shall be drawn up and implemented by the contractor in consultation with the approval of local police authorities, and /or the concerned metropolitan/civil authorities as the case may be.
- ii) Such traffic management plans shall include provision for traffic diversion and selection of alternative routes. If necessary, the contractor shall carry out road widening before commencement of works to accommodate the extra load. The contractor shall be responsible for getting the “Traffic Management Plan” approved from Traffic Police before taking up any construction activity on the road.

The rates quoted by the contractor shall be deemed to be inclusive of all the related cost except the cost of road widening.

- c) The primary traffic control devices used in work zones shall include signs, delineators, barricades, cones, pylons, pavement markings and flashing lights, deployment of sufficient number of Marshalls on diversion roads and nothing shall be paid on this account.

- d) Regulatory signs-

Signs impose legal restriction on all traffic. It is essential therefore, that they are used only after consulting the local police and traffic authorities and nothing shall be paid on this account.

- e) Warning signs-

Warning signs in the traffic control zone shall be utilised to warn the drivers of specific hazards that may be encountered.

The contractor shall place detour signage at strategic locations and install warning signs. In order to minimize disruption of access to residences and business, the contractor shall maintain at least one entrance to a property where multiple entrance exist.

A warning sign shall be installed on all secondary roads which merges with the primary road where the construction work is in progress at sufficient distance before it merges with the primary road so as to alert the road users regarding the “Construction Work in Progress”.

Materials hanging over/ protruded from the chassis / body of any vehicle especially during material handling shall be indicated by red indicator (red light/flag) to indicate the caution to the road users.

The compliance of above provisions are deemed to be included in the quoted amount of the contractor and no claim / payment whatsoever shall be entertained on this account

4.14 Dewatering of Site

The rates for all items shall be considered as inclusive of pumping / bailing out water, wherever necessary for which no extra payment shall be made. The area shall be kept dry when the work is in progress even below water table. Nothing extra shall be paid for removal of slush / sludge due to sub-soil condition, rains, spring etc.

4.15 Incidental Works Such as Bailing-Out Water, Shoring etc.

For execution of any items of work where incidental works such as bailing out water, shoring etc. are actually required but not specifically stated in the scope of item and/or tender document, it is to be understood that the contract amount quoted by the contractor shall cover such charges also and nothing extra on account of such incidental charges, if any, shall be paid

Various Ancillary Provisions at Site

a) Traffic cones and cylinders

Traffic cones of 500mm, 750mm and 1000mm height and 300mm to 500mm in diameter or in square shape at base and are often made of plastic or rubber and normally having retro-reflectorized red and white band shall be used wherever required.

b) Drums

Drums about 800mm to 1000mm high and 300mm in diameter can be used either as channelizing or warning devices. These are highly visible, give the appearance of being formidable objects and therefore command the respect of drivers.

c) Barricades

The barricading of the required length along the periphery of the Jaipur TC Project construction site shall be provided by the contractor, as per design and drawing approved by IRCON. The barricading shall be aesthetically maintained by regular cleaning and painting by the contractor as directed by the Engineer-in-charge, cost of which is deemed to be included in the rate quoted by the contractor. The structural dimension of the barricade, material and composition, its color scheme, IRCON/ MoMSME logo and other details shall be in accordance with the drawing and the direction of Engineer-in charge, for which nothing extra will be paid to the contractor.

Payment shall be made for providing barricading of required size/specification as per SOP of relevant item actually executed at site on a proportionate basis.

- ii) The barricading shall be provided continuously during the execution of the entire work till completion and shall not be removed at any stage without prior approval of the Engineer-in-Charge. All barricades shall be conspicuously seen in the dark/night time by the road users so that no vehicle hits the barricade. Conspicuity shall be ensured by affixing retro

reflective stripes of required size and shape at appropriate angle at the bottom and middle portion of the barricade at a minimum gap of House. In addition, minimum one red light or red light blinker should be placed at the top of each barricade. The barricading shall include the following:

- Traffic signals during construction at site for day and night, reflective signs, direction boards, marking, glow lamps, marking, caution tape, traffic signage as per requirement, flags, Traffic Marshals etc. as directed by the Engineer-in-Charge. However, traffic police signals shall not be the responsibility of the contractor.
- Cleaning of barricading every fifteen days with water and detergent so as to ensure that there is no dirt or splashes on the barricading. The dust accumulated along the barricades on the carriageway shall be removed every week.
- Installation of temporary warning signs/lamps on all barricades during the hours of darkness and kept it lit there at all times during these hours.
- Shifting and re-fixing in position as per the direction of Engineer-in-Charge and all incidentals to execute the job as many times as directed by Engineer-in-Charge.
- Repainting of the barricading after regular interval as directed by Engineer-in-Charge.
- Proper maintenance of the barricading till completion of the work by repairing/replacing the damaged barricade.
- The barricades shall be maintained in one line and level
- Barricading is also required to be erected by the contractor for segregating the area of work and deep excavation from the movement of man and machinery.

d) Cleaning of roads

The contractor shall ensure the cleanliness of roads and footpaths by deploying proper manpower for the same. The contractor shall have to ensure proper brooming, cleaning washing of roads and footpaths, at all the time, throughout the entire stretch till the currency of the contract including disposal of sweepage without any extra cost.

- e) The required number of traffic guards /marshals as decided by State Traffic Police/Engineer-in-charge shall be provided during construction period so as to ensure safe movement of traffic without any extra cost to IRCON. In case of default, the traffic guards/ marshals shall be provided by IRCON and cost thereof shall be recovered from the contractor in addition to recovery for violation of tender provisions. No claim whatsoever shall be entertained on this account.

f) Diversion of Services

All works pertaining to services including rerouting/diversion of services, routine testing, installation etc., embracing in one or more than one process shall be subject to examination and approval to each stage thereof by the Engineer-in-charge or concerned department as would be notified by the Engineer-in-charge or his accredited representative when such stage is ready. In default of such notice, the Engineer-in-Charge shall be entitled to appraise the quantity and extent thereof and the decision of Engineer-in-Charge or his accredited representative in this regard shall be final and binding.

The contractor will not have any claim in case of any delay in removal of trees or shifting, raising, removing of telegraph, telephone or electric lines (overhead or underground), water and sewer lines and other structures etc., if any, which may come in the way of the work. However, suitable extension of time will be granted to cover such delays.

g) Disposal of surplus excavated earth/ Spoils

The Contractor shall be deemed to have taken into account the quantum of excavation involved and that the surplus excavated earth remaining after use in operations such as Horticulture/Landscaping, Gardening, backfilling etc. are to be disposed-off by him; shall become his property free of cost.

It will be the responsibility of the Contractor to get the permission for yard for dumping the surplus excavated earth from local authority if required. If any fee is payable to local authority, such fee shall also be borne by the Contractor. Disposal shall be carried out strictly as per the regulations of local authority.

The contractor shall store the excavated earth required for operations such as Horticulture/Landscaping, Gardening, backfilling etc., at his own place other than the project site under his safe custody at his own cost. Thereafter, the earth so stored shall be backfilled at site at the appropriate time. The cost of storage, transportation (to & from site), handling etc. shall be borne by the contractor.

The Contractor shall also be deemed to have taken into account the credit to be given to IRCON in his quoted price for such surplus earth obtained free of cost.

The contractor shall also make his own arrangement for the disposal of the spoils from the works to such place where the same shall not cause nuisance and should be acceptable to the authorities concerned without any cost to IRCON.

4.16 Personal Protective Equipment (PPEs)

- a) The contractor shall provide required PPEs to workmen to protect against safety and/or health hazards. Primarily PPEs are required for the following protection.

- i) Head Protection (Safety helmets)
- ii) Foot Protection (Safety footwear, Gumboot, etc.)
- iii) Body Protection (High visibility clothing (waistcoat/jacket, Apron, etc.)
- iv) Personal fall protection (Full body harness, Rope-grap fall arrester, etc.)
- v) Eye protection (Goggles, Welders glasses, etc)
- vi) Hand protection (Gloves, finger coats, etc.)
- vii) Respiratory Protection (Nose mask, SCBAs, etc.)
- viii) Hearing protection (Ear plugs, Ear muffs, etc)

The PPEs and safety appliances provided by the contractor shall be of the standard as prescribed by Bureau of Indian Standards (BIS). If materials conforming to BIS standards are not available, the contractor shall procure PPE and safety appliances, as approved by the Engineer-in-charge.

- b) All construction workers should be provided with high visibility jackets with reflective tapes conforming to the requirement specified under BS EN 471: 1994. The conspicuity of workmen at all times shall be increased so as to protect them from speeding vehicular traffic.

The contractor shall provide safety helmet, safety shoe and high visibility clothing for all employee including workmen, traffic marshal and other employees who are engaged for any work under this contract as per the following requirement:

All employees of the contractor including workmen	Traffic marshals
<p>i) Hard hat with company Logo</p> <p>ii) Safety boots</p> <p>iii) Hi-visibility waistcoat covering upper body and meeting the following requirements as per BS EN 471:1994 :</p> <p>a) Background in florescent orange red in colour.</p> <p>b) Two vertical green strips of 5cm wide on front side covering the torso at least 5cm</p> <p>c) Two diagonal strips of 5 cm wide on back in an 'X' pattern covering at least 5cm</p> <p>d) Horizontal strips not less than 5cm wide running around the bottom of the vertical strip in front and 'X' pattern at back.</p>	<p>i) Hard hat with company Logo</p> <p>ii) Safety boots</p> <p>iii) Hi-visibility jacket upper body and meeting the following requirements as per BS EN 471:1994:</p> <p>a) Background in fluorescent orange-red in colour</p> <p>b) Jackets with full-length sleeves with two bands of retro reflective material, which shall be placed at the same height on the garment or those of the torso. The upper band shall encircle the upper part of the sleeves between the elbow and the shoulder: the bottom of the lower band shall not be less than 5 cm from the bottom of the sleeve.</p> <p>c) Two vertical green strips of 5cm wide on front side covering the torso at least 500 cm</p> <p>d) Two diagonal strips of 5cm wide on front side covering the torso at least 500cm</p> <p>e) Horizontal straight not less than 5cm wide running around the bottom of the</p>

e) The bottom strip shall be at a distance of 5cm from the bottom of the vest.	vertical strip in front and 'X' pattern at back.
f) Strips must be retro reflective and fluorescent	f) The bottom strip shall be at a distance of 5cm from the bottom of the vest.
g) Waistcoat shall have a side adjustable fit and a side and front tear away feature on vests made of nylon.	g) Strips must be retro reflective and florescent

c) Colour codes for Helmets

Safety Helmet colour Code	Person to use
White	IRCON staffs
Grey	All designers, Architect, Consultants, etc.
Violet	Main contractors (Engineers /Supervisors)
Blue	All sub-contractors (Engineers /Supervisors)
Red	Electricians (both Contractor and Sub-contractor)
Green	Safety Professionals (Both Contractor and Subcontractor)
Orange	Security Guards/Traffic marshals
Yellow	All workmen
White (with "VISITOR" sticker)	Visitors

*** (Every Helmet should have the LOGO of IRCON/MoMSME affixed/painted)**

- d) In addition to the above, any other PPE required for any specific jobs like, welding and cutting, working at height, tunnelling etc. shall also be provided to all workmen and also ensure that all workmen use the PPEs properly while on the job. The contractor shall not pay any cash amount in lieu to PPE to the workers/sub-contractors and expect them to buy and use during work.

The contractor shall at all-time maintain a minimum of 10% spare PPEs and safety appliances and properly record and show to the Engineer-in-charge during the inspections. It is always the duty of the contractor to provide

required PPEs for all visitors & IRCON staff. Towards this required quantity of PPEs shall be kept always at the security post.

- e) Notwithstanding the above, the contractor shall at their expense arrange for the safety provision as per all relevant Indian Standard Safety Codes & local bye-laws. The contractor shall provide all facilities in connection therewith and shall also issue the identity card to his labourer.

4.17 Unforeseeable Difficulties

Except as otherwise specifically stated elsewhere in the Contract:

- a. The Contractor shall be deemed to have obtained all necessary information as to risks, contingencies and other circumstances which may influence or affect the Works;
- b. By signing the Contract, the Contractor accepts total responsibility for having foreseen all difficulties and costs of successfully completing the Works; and
- c. The Contract Price shall not be adjusted to take account of any unforeseen difficulties or costs.

IRCON shall not provide any material either on chargeable or on free issue basis to the contractor for execution of the project.

- 4.18 The efforts will be made by the IRCON/ MoMSME to handover the site to the Contractor free of encumbrances. However, in case of any delay in handing over of the site to the Contractor on account of any reason whatsoever like (including but not limited to) non-vacation of quarters by occupants/social infrastructure, non-receipt of any approval/NOC from any statutory body (obtaining approval of which are excluded from contractor's scope) etc.; then IRCON shall only consider suitable extension of time for the execution of the work. It should be clearly understood that the contractor will not be entitled for any extra claim on such accounts and IRCON shall not consider any revision in contract price or any other compensation whatsoever. The contractor shall be obligated/ required to provide assistance to IRCON in obtaining statutory approvals, for commencement of work from Concerned Civic Authority, Forest Department, MoEF and other approvals by law.

4.19 Providing Plantation of Trees at Project Site and Maintenance of the Same upto Defect Liability Period

The contractor at his own cost shall plant Trees including Ornamental of height not less than 05 ft. of different varieties as per decision of Engineer in charge during

currency of the work. The contractor shall maintain the same in healthy condition upto defect liability period.

In case of change in layout/fouling with facilities/structure, the same may be replanted & their survival growth shall be ensured by the Contractor

4.20 Third Party Safety Audit: (Applicable for Projects Valuing Rs. 50 Crore and Above)

An experienced and reputed agency which shall be ISO Certified and approved by IRCON shall be engaged/ appointed by the contractor at all the projects valuing Rs.50 crores and above from the agencies for Monitoring & Auditing of Safety measures in the construction work. The scope of work of the agency so engaged shall be as under:

a) Safety Audit and Implementation of Safety Measures: The agency shall conduct periodic/quarterly safety audit of the project site through their own sufficient number of technically qualified and experienced staff (safety officers and steward) or from the appropriate authorities / statutory bodies to ensure that:

- all safety measures/ safety rules are implemented and followed at site.
- all Personal Protective Equipment (PPE) provided to workers as required under any of the provisions of the Act or the Rules conform to the relevant Indian Standards and to advise all Site Engineers/ Section-In-Charges/ Supervisors to ensure proper use of such PPEs by workers at site.
- A safe working environment is provided to all workers and supervisory staffs.
- use of various material, equipments/ tools & tackles, storage of various materials, provision of lighting & barricading etc. is done in terms of safety.
- at each and every level of the project safety has been kept in mind as an integral part of the activities.
- Keeping the site incident free, without any damage to health, property and environment.
- proper housekeeping is maintained at site as the housekeeping is directly connected with safety.
- feedback for successful performance is to be developed and is to be submitted to the Engineer in-charge on Quarterly basis.

b) Training

- To increase the safety consciousness of the workforce and the supervisory staff, periodic training and motivation towards safe practices are to be conducted by agency. The training should be of visual i.e. through videos & physical i.e. mock drills etc. The agency will conduct mock drills also.

c) Documentation & Record Keeping

- Check / update / correct and incorporate standard operation procedures in Safety Manual submitted by deployed agencies.
 - The agency shall prepare periodic reports of each site visits, training & mock drill and according instructions are to be issued to contractors through Engineer In-charge, IRCON.
- d)** The agency shall liason with law enforcing bodies, statutory bodies, media / press or any other bodies concerned in case of any untoward incidents. However, statutory payments, if any, shall be paid by deployed main contractor / IRCON.
- e)** The agency shall engage and deploy the qualified and sufficient number of manpower to audit all the safety measures and Workman Safety provisions as per IRCON safety guidelines at the site as per following qualifications, however, the decision of Engineer In-charge in this regard shall be final and binding.:

S. No.	Description	Remarks
1.	Senior Safety Officer (Overall In-charge)	<ul style="list-style-type: none"> • A recognized degree/diploma or equivalent in any branch of engineering or technology; • has had practical experience of working in a construction project site in supervisory capacity for a period of not less than 10-15 years; • Possesses a degree or diploma in construction / industrial safety recognized by the Central / State Government.
2.	Safety Officer	<ul style="list-style-type: none"> • A recognized degree/diploma or equivalent in any branch of engineering or technology; • has had practical experience of working in a construction project site in supervisory capacity for a period of not less than 5-7 years; • Possesses a degree or diploma in construction / industrial safety recognized by the Central / State Government.
3.	Steward	<ul style="list-style-type: none"> • A recognized diploma or equivalent in any branch of engineering or technology; • has had practical experience of working in a construction project site in supervisory capacity for a period of not less than 2-3 years;

		<ul style="list-style-type: none"> • Possesses a degree or diploma in construction / industrial safety recognized by the Central / State Government.
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f) The duties of Safety Audit agency shall further include the following: -

- i. Plan and organize measures necessary for creating a safe working environment for all workmen engaged at site and to prevent any kind of personal injuries and damage to property;
- ii. To advise on safety aspects in all job studies, and to carry out detailed job safety studies of selected jobs and to formulate Job Hazard Analysis Report and Safety Manual during initial mobilization stage of the project.
- iii. Prepare action proposed to be taken to prevent personal injuries and damage to property.
- iv. Conduct site safety inspections, in order to observe the physical conditions of work and the work practices and procedures followed by workers and to render advice on measures to be adopted for removing the unsafe physical conditions and preventing unsafe actions by workers and to ensure that the same will be implemented at site. To prepare & submit visit report to Engineer-in-charge.
- v. To report and investigate accidents and near misses and to recommend the preventive measures so as to ensure non-occurrence of such cases and to ensure.
- vi. To maintain such records as are necessary relating to accidents, dangerous occurrences and industrial diseases.
- vii. To organize in association with the departments concerned, campaigns, competitions, contests and other activities which will create awareness and will develop and maintain the interest of the workers in establishing and maintaining safe conditions of work and procedures.
- viii. To design and conduct suitable training and educational program for the prevention of personal injuries.
- ix. visit to workman camps and monitoring & ensuring the total hygienic conditions are provided for workman.

4.21 Waterproof Treatment

The waterproofing of Basement (if applicable), roofs, water retaining areas shall be and remain fully effective for a period of not less than 10 (Ten) years, to be reckoned from the date of expiring of the Defect Liability period, prescribed in the contract. The water proofing system has to be arranged directly through the manufacturer for complete guarantee period of 10 years with an affidavit on stamp paper.

4.22 Technical Staff for Work

- 4.22.1 The contractor shall employ at his cost the adequate number of technical staff during the execution of this work depending upon the requirement of work. For this purpose, the numbers to be deployed, their qualification, experience as decided by IRCON shall be final and binding on contractor. The contractor shall not be entitled for any extra payment in this regard. The technical staff should be available at site, whenever required by IRCON to take instructions.
- 4.22.2 Within 15 days of Letter of Award, the contractor shall submit a site organisational chart and resume including details of experience of the Project-in-Charge and other staff proposed to be deputed by him and the technical team shall be deputed by them on the Project after getting approval from Engineer-in-Charge. If desired by the contractor at later date, the Project-in-Charge and other staff whose resume is approved by IRCON can be replaced with prior written approval of IRCON and replacement shall be with equivalent or superior candidate only. Decision of Engineer-in-Charge shall be final and binding on the contractor.
- 4.22.3 Even after approving the site organizational chart, the Engineer-in-Charge due to technical reasons and exigency of work can direct the contractor to depute such additional staff as in view of Engineer-in-Charge is necessary and having qualification and experience as approved by the Engineer-in Charge. The removal of such additional staff from the site shall only be with the prior written approval of Engineer-in-Charge. The contractor shall not be paid anything extra whatsoever on account of deployment of additional staff and decision of the Engineer-in-Charge shall be final and binding on the contractor.
- 4.22.4 In case the contractor fails to employ the staff as aforesaid he shall be liable to pay a reasonable amount not exceeding **a sum of Rs.2,00,000 (Rupees Two Lakh only)** for each month of default in the case of each person. The decision of the Engineer-in-charge as to number of Technical Staff to be adequate for the project and the period for which the desired strength of technical staff was not employed by the contractor and as to the reasonableness of the amount to be deducted on this account shall be final and binding on the contractor as to the amount and the contractor's liability to pay the said amount.

4.23 QUALITY ASSURANCE PROGRAMME

To ensure that the services under the scope of this contract are in accordance with the specifications, the Contractor shall adopt Quality Assurance Programme to control such activities at the necessary points. The contractor shall prepare and finalize such Quality Assurance Programme within 15 days from date of issue Letter of Award. IRCON shall also carryout quality audit and quality surveillance

of systems and procedures of Contractor's quality control activities. A Quality Assurance Programme of Contractor shall generally cover the following:

- a) His organization structure for the management and implementation of the proposed Quality Assurance Program.
- b) Documentation control system.
- c) The procedure for purpose of materials and source inspection.
- d) System for site controls including process controls.
- e) Control of non-conforming items and systems for corrective actions.
- f) Inspection and test procedure for site activities.
- g) System for indication and appraisal of inspection status.
- h) System for maintenance of records.
- i) System for handling, storage and delivery.
- j) A quality plan detailing out quality practices and procedures, relevant standards and acceptance levels for all types of work under the scope of this contract.

All the quality reports (i.e. checklists & registers) shall be maintained /submitted by the Contractor as per IRCON QA-QC manual. Checklists & Registers enclosed in the QA-QC manual shall be followed while carrying out Construction activities (items). If any item is not covered by the Checklist/Register, the Format for the same may be developed and submitted to Engineer-in-Charge for approval and the same shall be adopted. These filled in reports shall be duly signed by representatives of contractor and IRCON. All the costs associated with Printing of Formats and testing of materials required as per technical specifications or by Engineer-in-charge shall be included in the Contractor's quoted rates in the Schedule/ Bill of quantities.

4.24 Acoustics and Vibrations

Due consideration shall be given to the acoustic environment of all public areas with particular reference to the design and performance of the public address system. The acoustic design of building must provide a good aural environment, in which people can communicate clearly and easily, and ensure that the build-up of excessive noise is suppressed. Public Address announcements must be easily heard and understood. Further, a comfortable acoustic environment must also be provided for the employees in the non-public areas, such as in office and administration areas. The detailed design consultant of the Contractor must provide documentation that the final designs achieve these goals and other measures shall be adopted including proper shapes and/or sizes of spaces and providing suitable

noise barriers etc. selection of appropriate finishes providing effective sound absorption to control the level of reverberation and provide a comfortable acoustic environment.

The structures to be built near railway tracks need to be studied for possible effects of vibrations induced by the train movement. The study shall include:

- a) Analysis of railway operation vibration levels based on vibration level measurements of existing operations and projected future operations. Vibration measurements shall include impacts, trains passing by, trains halting, train stopped at platform. The analysis should take into consideration:
- All different train types - passenger and freight.
 - Existing and projected future ambient vibration levels.
 - Soil mobility

Finite element analysis or other modeling techniques should be used to verify the potential for negative impact. As a minimum, the natural frequencies and vibration levels in the concourse and any adjacent critical occupancy such as hotel, apartments, medical facilities, studios, etc. shall be verified. (NOT REQUIRED)

- b) Design Criteria:

The ground borne vibration levels shall not exceed the noise levels indicated in Table below:

Ground-Borne Vibration (GBV) and Ground-Borne Noise (GBN) Impact Criteria for General Assessment						
Land Use Category	GBV Impact Levels (VdB ref 25.4 micro-mm /sec)			GBN Impact Levels (dB ref 20 micro Pascals)		
	Frequent Events¹	Occasional Events²	Infrequent Events³	Frequent Events¹	Occasional Events²	Infrequent Events³
Category 1: Buildings where vibration would interfere with interior operations.	65 VdB4	65 VdB4	65 VdB4	N/A4	N/A4	N/A4
Category 2: Residences and buildings	72 VdB	75 VdB	80 VdB	35 dBA	38 dBA	43 dBA

where people normally sleep						
Category 3: Institutional land uses with primarily daytime use.	75 VdB	78 VdB	83 VdB	40 dBA	43 dBA	48 dBA

Notes:

- 1) “Frequent Events” is defined as more than 70 vibration events of the same source per day.
 - 2) “Occasional Events” or “an infrequent event” is defined as between 30 and 70 vibration events of the same source per day.
 - 3) “Infrequent Events” is defined as fewer than 30 vibration events of the same kind per day.
 - 4) This criterion is based on levels that are acceptable for most moderately sensitive equipment. When there is a medical facility or a research lab on the project the vibration sensitive equipment should be identified by checking with manufacturer of equipment. If there is such equipment seek vibration criteria limits from the manufacturer. In the absence of such limits use the criteria indicated here.
 - 5) For space types not indicated refer to a similar space. These criteria do not take into consideration special project conditions. Therefore, always enquire if there is a project specific criterion. If such criteria exist then project specific criteria shall be used.
- c) Vibration Control Design Elements: If analysis indicates vibration levels will be exceeded vibration attenuating elements shall be designed and specified. Vibration control elements shall include but not be limited to structural changes, damping elements, vibration isolation, trenches, etc. All other vibration control features must be fully analyzed before vibration isolation of the track or trenches are considered.
- d) Design Verification: Upon completion of the project, the noise measurements will be made by a qualified acoustical professional to verify that the design criteria as outlined above have been met.
- e) Material should not be re-usable material and should have long performance life.
- f) All criteria & specification of RDSO Guidelines shall be followed.

4.25 Maintenance by Contractor during DLP (Agency)

- a) The Contractor shall maintain the Project for a period of 2 (Two) years commencing from the date of the Taking over Certificate (the "**DLP**")
- b) During the DLP Period, the Employer shall provide to the Contractor access to the Site for Maintaining in accordance with this Agreement.
- c) The Contractor shall be responsible for maintenance of the project as per the scope of maintenance specified in Section-2 in accordance with Good Industry Practice and to the entire satisfaction of the Engineer-in-charge.
- d) Agency shall set up a BUILDING SEWA KENDRA which will operate 24 hours on all working days.
- e) All T&P including ladders, wire drawing equipment, chase cutting equipment, drilling machine, earth resistance testing equipment etc. required for the work shall have to be arranged by the agency. No T&P shall be issued by IRCON.
- f) Staff employed by the agency shall be well-behaved, polite & courteous. In case of any complaint against staff such staff shall be replaced by the agency on demand from Engineer-in-Charge. Agency will submit police verification of worker employed for the maintenance work.
- g) The agency shall make all safety arrangement required for the labour engaged by him at his own cost. All consequences due to negligence or due to lapse of security/safety or otherwise shall remain with the agency. IRCON shall not be responsible for any mishap, injury, accident or death of the agency's staff. No claim in this regard shall be entertained /accepted by IRCON.
- h) The agency shall take immediate action to attend to any complaint assigned to him through site order book/verbal instructions from Engineer-in-Charge or on telephones/ Internet/ BUILDING SEWA KENDRA from occupants.
- i) Agency shall be fully responsible for any damage caused to Govt. property or allottee's property by him or his labour in carrying out the work and the same shall be rectified by the agency at his own cost. Chases, holes & drilling works etc. shall be done using only power operated tools. The defective items, materials, finishes, fitting shall be replaced with items of same specifications and compatible to the work.
- j) All the malba or rubbish obtained from dismantling or otherwise during the execution of the work shall be brought down through the staircase and shall not be thrown to the ground directly from the floors etc. After the collection of full truck load of the said malba (approx. 4.5 cubic meter), the same shall be disposed of by the agency to the authorized municipal dumping ground.
- k) In case of receipt of feedback from occupant/user regarding his complaint through IRCON as "unsatisfactory/shown attended without attending, the complaint, compensation per such feedback will be levied by Engineer-in-charge. This levy will

be made after duly verification of such feedback by Engineer-in-Charge. The decision of Engineer-in-charge for any amount of compensation levied shall be final and binding on the agency.

- l) The material fetched as a replacement shall be the property of the Agency.
- m) The facilities to be made available at the BUILDING SEWA KENDRA: -
 - i. Two Counters for Computer Operator cum Service Coordinator to sit and receive complaints.
 - ii. All furniture required for agency's staff shall be arranged by the agency on his own cost.
 - iii. Electric connection for general purpose at the BUILDING SEWA KENDRA shall be taken and Bills for the electricity consumed shall be paid by the agency.
 - iv. Providing 1 number of Small vehicle (Bolero or equivalent) in good running condition of latest model along with driver/fuel lubricant etc.
- n) The assistance shall be provided by the agency to Engineer-in-Charge in the following:
 - i. Assisting IRCON in detection of unauthorized encroachments in the area being maintained.
 - ii. Informing the Engineer-in-Charge regarding the failure of any service being provided by other agencies, in so far as they affect the assets being maintained under this contract so that they can be taken up with the concerned local body/departments for rectification.
- o) The agency shall be provided with an inventory list of items in campus to be maintained. The agency shall be responsible for watch and ward of such items. The loss, if any shall be made good by the agency at his cost. The decision of Engineer-in-Charge in this respect shall be final and binding on the agency.
- p) Stores and bins shall be provided by the agency for storing the Materials.
- q) The labour deployed for attending complaints should carry necessary tool kit, container (Tasla), required for mixing any cement sand or other material and should carry with them water bottle and waste bag for collection of minor rubbish material if received during attending the complaints, so that the site of work remains neat and clean.
- r) Each worker shall maintain a complaint diary and get the feedback recorded from the occupants regarding attending the complaint. In case, it is found that the complaint has been attended unsatisfactorily, it will be considered as unattended. List of such complaint shall be submitted to the Engineer-in-charge or his representative in daily basis.

- s) The agency will maintain attendance records of the staff, which may be checked by the Engineer-in-charge or his representative of the work.
- t) Bad workmanship whenever noticed and conveyed to the agency shall be rectified by the agency to the satisfaction of the Engineer-in-charge
- u) After the expiry of the contract, the Agency shall hand over the complete installations to IRCON in proper working order. All defects and deficiencies shall have to be rectified by the firm to the entire satisfaction of Engineer-in-charge failing which the work shall be got done at the risk and cost of the firm.
- v) The agency shall provide uniform along with Badge and shoes wearing logo of BUILDING SEWA KENDRA. Agency will provide neat & clean uniform to all workers. Colour & pattern of uniform shall be as per decision of Engineer-in-charge.
- w) The agency shall have registration with Employees Provident Fund Commissioner and employees State Insurance Corporation for safeguarding interest of his workmen. He shall obtain all other necessary approvals from statutory bodies as per law in force.
- x) No residential accommodation shall be provided to any of the staff engaged by the agency. The agency shall also not be allowed to erect any temporary set up for staff in the campus.

4.26 “Acceptance of Tender Conditions” Section-V

From: (To be submitted in ORIGINAL on the letter head of the company by the authorized officer having power of attorney)

IRCON INTERNATIONAL LIMITED,
C-4, District Centre, Saket,
New Delhi – 110017

Sub: Name of the work & NIT No.:

Sir,

- i) This has reference to above referred tender. I/We are pleased to submit our tender for the above work and I/We hereby unconditionally accept the tender conditions and tender documents in its entirety for the above work.
- ii) I/we are eligible to submit the tender for the subject tender and I/We are in possession of all the documents required.
- iii) I/We have viewed and read the terms and conditions of this GCC/SCC carefully. I/We have downloaded the following documents forming part of the

tender document:

- a) Notice inviting Tender
 - b) Instruction to the tenderer
 - c) Appendix to the Tender
 - d) Form of Bid
 - e) Amendments to Tender Documents
 - f) Special Condition of Contract (SCC).
 - g) General Conditions of Contract
 - h) Relevant B.I.S. Codes and Standards
 - i) Design Basis Reports (DBR)
 - j) Tender Drawings.
 - k) Technical specifications.
 - l) CPWD/ MORTH specifications (as specified in Technical Specification of the Tender) update with correction slips issued up to last date of receipt of tenders.
 - m) Financial Bid comprising of BOQ and Schedule of Payments.
- iv) I/we have uploaded the mandatory scanned documents such as cost of tender document, EMD and other documents as per Notice Inviting e-tender AND I/We agree to pay the cost of tender document, EMD.
- v) Should this tender be accepted, I/We agree to abide by and fulfill all terms and conditions referred to above and as contained in tender documents elsewhere and in default thereof, to forfeit and pay IRCON, or its successors or its authorized nominees such sums of money as are stipulated in the notice inviting tenders and tender documents.
- vi) If I/we fail to commence the work as stipulated in Letter of Award and/or I/we fail to sign the agreement as per Clause 12.5 of GCC and/or I/we fail to submit performance guarantee as per Clause 8.2 of GCC, I/we agree that IRCON shall, without prejudice to any other right or remedy, be at liberty to cancel the Letter of Award and to forfeit the said earnest money as specified above.

Yours faithfully,

(Signature of the tenderer with rubber stamp)

Dated _____