



SHAHEED MOHTARMA BENAZIR BHUTTO
INSTITUTE OF TRAUMA

No: PROC/SMBBIT/2022-23/66

Dated: 20 / August / 2022

AWARD OF TENDER

M/s. UNITED CONSTRUCTION COMPANY,
C-19, Metroville-1, Block No. 03,
S.I.T.E, Karachi.
Contact # 0300-8270283

SUBJECT: AWARD OF TENDER - OPERATION, RUNNING, REPAIR & MAINTENANCE OF ELECTRICAL WORKS, POWER GENERATION, HEATING, VENTILATION, AND AIR CONDITIONING (HVAC), BUILDING MANAGEMENT SYSTEM (BMS), BUILDING MAINTENANCE CIVIL, PLUMBING, RO, & ELECTRICAL & GAS BOILER
NIT# PROC/SMBBIT/2021-22/467 (Dated: 10th May-2022),
REF# PROC/SMBBIT/(R&M-04)/2022-23 FOR FINANCIAL YEAR 2022-23

We are pleased to award you the job of the above-mentioned subject. Scope of work, and terms & conditions as same specified in the Contract Agreement with effect from 01st/09/2022 till 30th/06/2023

REFERENCE CORRESPONDENCE:

NIT #	PROC/SMBBIT/2021-22/467 (Dated: 10th May-2022)
NIT Reference #	PROC/SMBBIT/(R&M-04)/2022-23
PPMS ID:	T00518-21-0005
Bid Opening Date :	27-May-2022
BER ID:	BE00518-21-0005-7
Letter of Acceptance #	PROC/SMBBIT/2022-23/41 (Dated: 12-August-2022)

MANPOWER COST

S.#	Position	Qty.	Qualification	Experience	Monthly Each	Monthly Total	Yearly Total
SHIFT INCHARGE / SUPERVISORS							
1	Shift Incharge / Supervisors (On Call 24x7 basis)	3	B. Tech / DAE in Mechanical	5/8 years of relevant experience.	121,800	365,400	4,384,800
TECHNICIANS							
1	Power Controlling Technician	2	DAE (Electrical)	3/5 years of relevant experience.	86,600	173,200	2,078,400



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Dated: 20/ August / 2022

S.#	Position	Qty.	Qualification	Experience	Monthly Each	Monthly Total	Yearly Total
2	Electrical Technician	7	DAE (Electrical)	3/5 years of relevant experience.	66,000	462,000	5,544,000
3	Associate Electrical Technician	7	SSC / DAE (Electrical)	3/5 years of relevant experience.	42,300	296,100	3,553,200
4	Mechanical Technician	2	SSC / DAE (Mechanical)	3/5 years of relevant experience.	69,300	138,600	1,663,200
5	Associate Mechanical Technician	1	Middle / SSC	2/3 years of relevant experience	53,900	53,900	646,800
6	AC Technician	7	D.A.E Mechanical / A.C Refrigeration	3/5 years of relevant experience.	55,600	389,200	4,670,400
7	BMS Technicians	5	DAE in Electronics / Mechanical	3/5 years of relevant experience.	51,200	256,000	3,072,000
8	Technician for AHU, FCU, PUMPS	7	Middle / SSC	3/5 years of relevant experience.	46,900	328,300	3,939,600
9	Diesel & Gas Generator Technician	3	SSC / DAE (Mechanical)	Min. 5 years of relevant experience.	61,200	183,600	2,203,200
10	Associate Diesel & Gas Generator Technician	2	Middle / SSC	Min. 3 years of relevant experience.	42,300	84,600	1,015,200
11	Split AC & VRV Chillers Technician	1	D.A.E Mechanical / A.C Refrigeration	5/8 years of relevant experience.	111,600	111,600	1,339,200
12	Winder upto 5hp cum Electrician	1	Middle / SSC	5/8 years of relevant experience.	57,700	57,700	692,400
OPERATORS							
1	Chiller Operator	7	D.A.E Mechanical / AC Refrigeration	5/8 years of relevant experience.	61,600	431,200	5,174,400



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INSTITUTE OF TRAUMA**

No: PROC/SMBBIT/2022-23/66

Dated: 20 / August / 2022

S.#	Position	Qty.	Qualification	Experience	Monthly Each	Monthly Total	Yearly Total
3	Diesel & Gas Generator Operator	2	Middle / SSC	2/3 years of relevant experience.	38,500	77,000	924,000
4	BMS Operator	4	SSC / HSC	3/5 years of relevant experience.	42,300	169,200	2,030,400
5	Pump Operator	4	Middle / SSC	3/5 years of relevant experience	34,600	138,400	1,660,800
6	Boiler Operator	2	Middle / SSC	1 st class boiler attendant license with 5/8 years of relevant experience	96,200	192,400	2,308,800
7	R.O Operator	2	Middle / SSC	3/5 years of relevant experience	73,100	146,200	1,754,400
GENERAL WORKERS:							
1	Duct Man	1	Middle / SSC	5/8 years of relevant experience.	67,300	67,300	807,600
2	General Fitter	1	Middle / SSC	5/8 years of relevant experience.	79,800	79,800	957,600
3	Welder	1	Middle / SSC	5/8 years of relevant experience.	48,100	48,100	577,200
4	Carpenter	1	Middle / SSC	5/8 years of relevant experience.	57,700	57,700	692,400
5	Aluminum & Glass Worker	1	Literate / Middle	3/5 years of relevant experience	61,600	61,600	739,200
6	Furniture Polisher	1	Literate / Middle	3/5 years of relevant experience	51,900	51,900	622,800
7	False Ceiling Worker	1	Literate / Middle	3/5 years of relevant experience	61,600	61,600	739,200



SHAHEED MOHTARMA BENAZIR BHUTTO INSTITUTE OF TRAUMA

No: PROC/SMBBIT/2022-23/ 66

Dated: 20 / August / 2022

S.#	Position	Qty.	Qualification	Experience	Monthly Each	Monthly Total	Yearly Total
8	Mason	1	Literate / Middle	3/5 years of relevant experience	61,622	61,622	739,464
9	Plumber	4	Literate / Middle	3/5 years of relevant experience	54,300	217,200	2,606,400
10	Painter	2	Literate / Middle	3/5 years of relevant experience	46,200	92,400	1,108,800
11	General Helper	7	Literate / Middle	3/5 years of relevant experience	38,150	267,050	3,204,600
Total Staff with Supervisor / Incharge		90					

S.#	Name	Payment Frequency	Monthly Payment Total	Annual Amount Total
A. MONTHLY PAYMENT				
1	Manpower Cost	Monthly	5,120,872	61,450,464
2	Boiler Consumables	Monthly	35,391	424,692
3	R.O Consumables	Monthly	63,164	757,968
4	Monthly Open / Close Circuit Chemical charges Chillers	Monthly	219,353	2,632,236
Monthly Total **			5,438,780	65,265,360

B. QUARTERLY PAYMENT				
1	Quarterly Diesel Generators Servicing Cost	Quarterly	505,064	2,020,256
2	Quarterly Gas Generators Servicing Cost	Quarterly	505,064	2,020,256
3	OEM consultancy charges of shaungling chillers	Quarterly	409,213	1,636,852
4	OEM consultancy charges of Kawasaki chillers	Quarterly	165,897	663,588
5	OEM consultancy charges of BMS	Quarterly	398,153	1,592,612
Quarterly Total **			1,983,391	7,933,564

C. YEARLY & ANNUALLY PAYMENT				
1	Annual HT Maintenance Cost	Yearly	1 Job	692,159

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Dated: 20/ August / 2022

S. #	Name	Payment Frequency	Monthly Payment Total	Annual Amount Total
2	Annual Transformer Maintenance Cost	Yearly	1 Job	4,497,652
3	Annual Diesel Generators Maintenance Cost	Yearly	Both Diesel Genset	387,093
4	Annual Gas Generators Maintenance Cost	Yearly	Both Gas Genset	387,093
5	Air & Water Balancing charges of HVAC	Annual	1 Job	1,681,827
6	Annual maintenance of charges Chiller (Shaungling)	Annual	2 Chillers Shaungling	1,623,579
7	Annual maintenance charges of Chiller (Kawasaki)	Annual	1 Chiller Kawasaki	1,042,202
8	Annual maintenance charges of cooling tower with all parts, consumables and accessories	Annual	3 Cooling Tower	5,389,809
9	Boiler Annual Maintenance	Annual	Gas Boiler	1,161,279
Yearly & Annually Total **				16,862,693

D	Chiller dosing of chemical as per consultant recommendation charges	As per need	-	1,069,114
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GRAND TOTAL (A+B+C+D)				91,130,731
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**All costs will be billed after verification of work from concerned Assistant Managers / In-charges / Supervisors of relevant departments.

Payment of Non-Functional Equipment / Machinery will start after it functional.

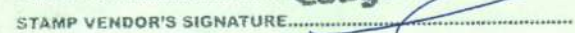
RECEIVED BY
Accounts Department
SMBB INSTITUTE OF TRAUMA
Inward No. 0028
Dated 22-08-2022

CHIEF OPERATING OFFICER / DDO
SMBB Institute of Trauma – Karachi

Copy forwarded to concern for information and necessary action, please;

1. The Director A&F, SPPRA with reference to PPMS ID: T00518-21-0005 & BER # BE00518-21-0005-7
2. Assistant Manager HVAC / Supervisor HVAC, SMBB Institute of Trauma, Karachi
3. Assistant Manager Civil & Plumbing, SMBB Institute of Trauma, Karachi
4. Assistant Manager Electrical / Supervisor Electrical, SMBB Institute of Trauma, Karachi
5. Supervisor Mechanical, SMBB Institute of Trauma, Karachi
6. Account & Finance Department, SMBB Institute of Trauma, Karachi

CHIEF OPERATING OFFICER / DDO
SMBB Institute of Trauma - Karachi



RUPEES ONE HUNDRED ONLY

11 AUG 2022

SHAHEED MOHTARMA BENAZIR BHUTTO INSTITUTE OF TRAUMA, KARACHI(Hereinafter called the **Procuring Agency**)

A department under control of Government of Sindh, having its office at SMBB Institute of Trauma, Chand Bibi Road, Karachi, Sindh, Pakistan hereinafter mentioned at "**the Client**" which expression shall be deemed to mean and include its successor-in-interest and permitted assigns;

Whereas the **Contractor** has agreed to render certain services i.e. "Operation, Running, Repair & Maintenance of Electrical Works, Power Generation, Heating, Ventilation, And Air Conditioning (HVAC), Building Management System (BMS), Building Maintenance Civil, Plumbing, Ro, & Electrical & Gas Boiler" at SMBB Institute of Trauma, Karachi, Sindh, Pakistan and has necessary know how and staff in the respect.

AND

Whereas the **Client** is desirous of availing the services offered by the contractor for "Operation, Running, Repair & Maintenance of Electrical Works, Power Generation, Heating, Ventilation, And Air Conditioning (HVAC), Building Management System (BMS), Building Maintenance Civil, Plumbing, Ro, & Electrical & Gas Boiler" at SMBB Institute of Trauma, Karachi, Sindh, Pakistan on terms and conditions as per standard bidding document in said NIT for its premises at the cost of **Rs. 91,130,731/-** as per year (The Contract Amount) as per below;

Name	Payment Frequency	Cost	Total Cost (PKR/annum)
Manpower Cost	Monthly	5,120,872	61,450,464
Annual HT Maintenance Cost	Yearly	692,159	692,159
Annual Transformer Maintenance Cost	Yearly	4,497,652	4,497,652
Quarterly Diesel Generators Servicing Cost	Quarterly	505,064	2,020,256
Quarterly Gas Generators Servicing Cost	Quarterly	505,064	2,020,256
Annual Diesel Generators Maintenance Cost	Yearly	387,093	387,093
Annual Gas Generators Maintenance Cost	Yearly	387,093	387,093
Air & Water Balancing charges of HVAC	Annual	1,681,827	1,681,827
Monthly Open / Close Circuit Chemical charges Chillers	Monthly	219,353	2,632,236
Annual maintenance of charges Chiller (Shaungling)	Annual	1,623,579	1,623,579
Annual maintenance charges of Chiller (Kawasaki)	Annual	1,042,202	1,042,202
Annual maintenance charges of cooling tower with all parts, consumables and accessories	Annual	5,389,809	5,389,809

Name	Payment Frequency	Cost	Total Cost (PKR/annum)
OEM consultancy charges of shaungling chillers	Quarterly	409,213	1,636,852
OEM consultancy charges of Kawasaki chillers	Quarterly	165,897	663,588
OEM consultancy charges of BMS	Quarterly	398,153	1,592,612
Chiller dosing of chemical as per consultant recommendation charges	As per need	1,069,114	1,069,114
Boiler Consumables	Monthly	35,391	424,692
R.O Consumables	Monthly	63,164	757,968
Boiler Annual Maintenance	Annual	1,161,279	1,161,279
TOTAL			91,130,731

All costs will be billed after verification of work from concerned Assistant Managers / In-charges / Supervisors of relevant departments.

**Payment of Non-Functional Equipment / Machinery will start after it functional.

Escalation Price	
2nd Year	10%
3rd Year	10%

SCOPE OF WORK / SCHEDULE OF REQUIREMENTS

S.#	Position	Qty.	Qualification	Experience	Monthly Each	Monthly Total	Yearly Total
Shift In-charges / Supervisors							
1	Shift In-charges / Supervisors (On Call 24x7 basis)	3	B. Tech / DAE in Mechanical	5/8 years of relevant experience.	121,800	365,400	4,384,800
Technicians							
1	Power Controlling Technician	2	DAE (Electrical)	3/5 years of relevant experience.	86,600	173,200	2,078,400
2	Electrical Technician	7	DAE (Electrical)	3/5 years of relevant experience.	66,000	462,000	5,544,000
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6	AC Technician	7	D.A.E Mechanical / A.C Refrigeration	3/5 years of relevant experience.	55,600	389,200	4,670,400
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8	Technician for AHU, FCU, PUMPS	7	Middle / SSC	3/5 years of relevant experience.	46,900	328,300	3,939,600
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12	Winder upto 5hp cum Electrician	1	Middle / SSC	5/8 years of relevant experience.	57,700	57,700	692,400

Operators

1	Chiller Operator	7	D.A.E Mechanical / AC Refrigeration	5/8 years of relevant experience.	61,600	431,200	5,174,400
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6	Boiler Operator	2	Middle / SSC	1 st class boiler attendant license with 5/8 years of relevant experience	96,200	192,400	2,308,800
7	R.O Operator	2	Middle / SSC	3/5 years of relevant experience	73,100	146,200	1,754,400

General Workers:

1	Duct Man	1	Middle / SSC	5/8 years of relevant experience.	67,300	67,300	807,600
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S.#	Position	Qty.	Qualification	Experience	Monthly Each	Monthly Total	Yearly Total
2	General Fitter	1	Middle / SSC	5/8 years of relevant experience.	79,800	79,800	957,600
3	Welder	1	Middle / SSC	5/8 years of relevant experience.	48,100	48,100	577,200
4	Carpenter	1	Middle / SSC	5/8 years of relevant experience.	57,700	57,700	692,400
5	Aluminum & Glass Worker	1	Literate / Middle	3/5 years of relevant experience	61,600	61,600	739,200
6	Furniture Polisher	1	Literate / Middle	3/5 years of relevant experience	51,900	51,900	622,800
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8	Mason	1	Literate / Middle	3/5 years of relevant experience	61,622	61,622	739,464
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10	Painter	2	Literate / Middle	3/5 years of relevant experience	46,200	92,400	1,108,800
11	General Helper	7	Literate / Middle	3/5 years of relevant experience	38,150	267,050	3,204,600
Total Staff with Supervisor / Incharge		90				5,120,872	61,450,464

NOTE:

1. All staff would be interviewed and selected by the consent of competent authority after verification of their relevant documents (Qualification and Experience).
2. Contractor should be attached CV, Academic documents and Experience certificates. (According to above mentioned criteria).

A. SCOPE OF WORK FOR ELECTRICAL

Operations and Maintenance (O&M) of electrical equipment/installations of the building which are listed as follows but not limited to:

- HT Panels / 11 kV Panels and Phase Reversal Panels
- LT Panels/Distribution Panels/Generator Control Panels/Bus Couplers/PFI Panels
- Main Distribution Boxes (MDBs)/Sub Main Distribution Boxes (SMDBs)
- Floor Distribution Boxes
- Main and sub main cables
- Earthing conductors and earthing points
- Lightning protection facilities
- Wiring for points and / or circuits and / or outlets
- Light Fixtures, power points
- Any other area falling under electrical department



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- Two transformers of PEL make of rating 2000 kVA each placed in our HT Room. Details of each are as follows:
- KVA: 2,000 KVA
- Volts (HV): 11,000 volts
- Volts (LV): 415 volts
- Ampere (HV): 104.9 A
- Ampere (LV): 2782.4 A
- Phases (HV): 3 phase
- Phases (LV): 3 phase
- Frequency (Hz.): 50 Hz.
- Vector Group: DYN-11
- Specification: IEC60076
- Type of Cooling: ONAN
- Total Mass (Kg.): 5,160 kg.
- Year of Manufacture: 2014
- Impedance Volts (%): 6

HT Volts	Switch position	LT Volts
11550	1	415
11275	2	
11000	3	
10725	4	
10450	5	

- Both corrective and preventive maintenance will be carried out of above equipment/installations.
- Contractor must ensure that operation and maintenance of each equipment/installations is carried out on daily, weekly, monthly and on annual basis as per requirement.
- The contractor will provide uniform, identity cards to each and every deployed staff.
- The contractor shall provide the list of staff with telephone numbers to procuring agency.
- The contractor should ensure all safety precautions for its staff.
- The contractor staff should be equipped with proper hand tools, machines and similar equipment's as per required nature of work.
- The maintenance logs of each equipment/installation should have maintained and submit to procuring agency on regular basis.
- All Maintenance Schedules formats will be provided by competent authority.

1. SCHEDULE OF PREVENTIVE MAINTENANCE ACTIVITIES:

Following are the preventive maintenance activities of individual equipment to be performed on daily/weekly, monthly, quarterly/bi-annual and/or annual basis in addition to corrective maintenance. The detailed service report and log book of each activity should be maintained and submitted to the authorized representative of Procuring Agency on monthly basis.

Please ensure following during maintenance activities:

- Maintenance personnel must wear proper PPEs (personnel protective equipment) and carry basic tools, multi-meter, clamp-on meter etc.
- During live system inspections, keep safe limits of approach to live parts
- Make entries of the observations in log/check sheets Electrical Equipment Checklists

2. DAILY MAINTENANCE:

- Cleaning of room and area surrounding LT & PFIP panels and DBs. The access to panels/DBs should be clear, unobstructed and free from objects
- Electrical room, SMDB and DBs will be maintained floor wise i.e each day, all electrical installations on a selected floor as per maintenance schedule will undergo preventive maintenance
- Walk around visual inspection to check apparent condition, abnormal noise/smell
- Checking of indication lamps, meters, display panels



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- Check for loose/broken connections, cable terminations and/or damage components and overheating marks
- Check if room temperature is maintained as per specifications
- All observations/activity must be noted in provided formats
- Noting down all load and temperature parameters, KE reading and transformer temperature reading

3. WEEKLY MAINTENANCE:

- Cleaning of HT & Substation room and area surrounding panels. The access to panels should be clear, unobstructed and free from objects.
- Walk around visual inspection to check apparent condition, abnormal noise/smell
- Checking of Indication lamps, meters and operations counter of panels
- Cleanliness of Room and area surrounding transformer. The access should be clear, unobstructed and free from objects
- Walk around visual inspection of transformer to check apparent condition, oil leakages and abnormal noise/smell
- Checking of Silica gel, breather, oil levels indicators, and gauges
- Checking of Indication lamps, meters and operations counter of panels
- All observations/activity must be noted in provided formats

4. MONTHLY MAINTENANCE:

- Checking of doors, door locks, door stops, light, vermin proofing and grounding connection
- Checking of wiring, terminal blocks, Protective relays and accessories
- Checking of LT/HT/Transformer Panel grounding connections
- Checking of trolley Rack IN/OUT operation and floor level
- Checking of transformer body ground Connections
- Checking of transformer neutral ground connections
- Checking transformer bushing conditions and tightness (HV/LV/Neutral)
- Physical checking of Buchholz relay for any leakages, damages, proper connections
- Checking of MCB/MCCB switches, fuses, relay fittings, wiring, terminal blocks in DBs/SMDBs
- Checking of doors, Locks, Door packing, panel lights, vermin proofing, cleaning and proper glands for cable entrance in DBs/SMDBs
- All observations/activity must be noted in provided formats

5. ANNUAL MAINTENANCE (IF APPLICABLE): FOR HT PANELS:

- Thorough cleaning and servicing of all HT panels.
- Inspection, Cleaning, Servicing and lubrication of Circuit Breaker Mechanism
- Cleaning and lubricating all movable mechanical parts
- Checking tightness of all power and control cables
- Earth Resistance Test of panel Ground connections
- Checking healthiness of VCB bottles and coils
- Insulation Resistance Test (poles, bus bars and power cables)
- Contact resistance Test of VCB
- Checking healthiness of protective relays and CTs/PTs
- Tripping testing of VCB through over-current and earth fault relay
- Breaker Timing Test
- Vacuum Integrity Test (Destructive Testing)
- Bus Bar Inspection & Testing



FOR TRANSFORMERS:

- Thorough cleaning and servicing of complete transformer
- Buchholz relay functional test (Alarm and trip indications and alarm)
- Oil temperature alarm and trip test indications and alarm
- Winding temperature alarm and trip test indications and alarm (if applicable)
- PRD trip test indications and alarm (if applicable)
- Oil Dielectric Test
- Offload tap changer test operation



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- Winding Resistance Measurement
- Static resistance measurement of Contacts
- Insulation Resistance & DAR/PI
- Transformer Turn Ratio Test
- Capacitance and Dissipation Factor of windings
- Tan Delta Test of Bushings and Winding
- Sweep Frequency Response Analysis
- Excitation Current

FOR LT/PHASE REVERSAL/MDBS/DBS/EARTH PITS PANELS:

- Thorough cleaning and servicing of all panels
 - Cleaning and servicing of Air Circuit Breakers (ACB)
 - Checking reset mechanism and tripping of ACBs
 - Checking tightness of all power and control cables
 - Functional tests of ACBs
 - Insulation Resistance test of bus bars
 - Earth Resistance Test of panels
 - Checking of P.F equipment, capacitor banks, relays (in case of PFI panel)
 - Insulation Resistance Test of all LT cables
 - Breaker Timing Test
 - Bus Bar Inspection & Testing
 - Thorough cleaning and servicing of all DB panels
 - Checking of Magnetic Contactors' operation
 - Checking of selector switches operation
 - Checking of timer relay connections, ammeter and voltmeter terminals
 - Checking tightness of all power and control cables
 - Checking Panels grounding connections
 - Checking of earth pits of buildings through Earth Resistance tests
- The cost of above all tests and activities will have to be borne by the contractor.

6. CORRECTIVE MAINTENANCE:

All types of complaints requiring circuit modification, lighting and power connection, faulty lights replacements, rectification and any other electrical works will be carried out by the contractor staff. The contractor must provide its staff with the proper tools and accessories to carry out the required works smoothly. Safety protocols must be followed while carrying out any activity.

NOTE:

- All the maintenance / servicing works should be carried out in such a way so that the equipment can be used for its optimum performances. Any work which is found to be required for optimum performance of the system has to be done.
- Necessary care should be taken while carrying out all types of maintenance / servicing of equipment to avoid damages.
- Any breakdown complaint should be attended immediately to avoid disturbance in center activities. Spares & tools required to attend any breakdown has to be maintained.
- During routine / periodic maintenance and during breakdown maintenance the contractor shall repair faulty parts / equipment with his resources. Repair shall be done in such a way that it should not affect the performance & life of the equipment, and while doing maintenance work, care should be taken.
- All the works are to be done as per daily / monthly/ half yearly or yearly schedule. In case, if it requires the same work to be done in-between, same shall be attended.
- The essence of the contract is to maintain the system in such a way that it gives desired optimum performance. Repair / replacement of all the parts / equipment required for proper functioning of the machine, whether specified or not, are included in the scope of work.



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7. SHIFT WISE WORK FLOW FOR ELECTRICAL:

A tentative shift wise work flow is given as follows:

S.#	Activity	Frequency	Time	Responsible Shift
1	KE Meter Reading	Daily	8:30 AM – 9:00 AM	A
2	HT Room & Transformer Maintenance	Weekly	Anytime during shift and any day during week when workload is low	A/B
3	DB/MDB/SMDB/Electric Room Maintenance	Daily	9:00 AM	A
4	Technical Parameters	Daily	12:00 AM, 02:00 AM, 04:00 AM, 06:00 AM, 08:00 AM, 10:00 AM,	A, B, C, C+
	(A, V reading)		12:00 PM, 02:00 PM, 04:00 PM, 06:00 PM, 08:00 PM, 10:00 PM	
5	Temperature and Humidity logging	Daily	12:00 AM, 02:00 AM, 04:00 AM, 06:00 AM, 08:00 AM, 10:00 AM,	A, B, C, C+
			12:00 PM, 02:00 PM, 04:00 PM, 06:00 PM, 08:00 PM, 10:00 PM	
6	Floor Wise Technical Parameters	Daily	12:00 PM	A
	(per phase A, V reading)			
7	LT/PF/Control Panel Maintenance	Daily	11:30 PM	C, C+
8	HT Room Fan Operation	Daily	8:30 AM, 4:30 PM,	A, B, C, C+
	(Turn OFF one fan,		12:30 AM	
	Turn ON other fan)			
9	Electrical Complaints	Daily	24 hours	A, B, C, C+
10	Any other work as assigned	When assigned	When assigned	A, B, C, C+

B. SCOPE OF WORKPOWER GENERATION SYSTEM (GENSETS):

Operations and Maintenance (O & M) of following but not limited to:

S No.	Fuel Type	Rating	Qty.	Make	Status
01	Diesel	1250 kW	02	Cummins	Functional
02	Gas	1250 kW	02	Caterpillar	Non-Functional

1. Maintenance of underground diesel tank of 20,000 Ltr. Capacity
2. Maintenance of two nos. of in-house diesel tanks each of 2500 Ltr. Capacity
3. Maintenance of Diesel Pump Motor
4. Synchronization Panel (Non-functional)
5. Fuel (Diesel) for Generators will be provided by the SMBBIT management.

- Both corrective and preventive maintenance will be carried out of above equipment/installations.
- Contractor must ensure that operation and maintenance of each equipment/installations is carried out on daily, weekly, monthly and on annual basis as per requirement.
- The contractor will provide uniform, identity cards to each and every deployed staff.
- The contractor shall provide the list of staff with telephone numbers to procuring agency.
- The contractor should ensure all safety precautions for its staff.



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- The contractor staff should be equipped with proper hand tools, machines and similar equipment' as per required nature of work.
- The maintenance logs of each equipment/installation should have maintained and submit to procuring agency on regular basis.
- All Maintenance Schedules formats will be provided by competent authority.

1. SCHEDULE OF MAINTENANCE ACTIVITIES

Following are the preventive maintenance activities of individual equipment to be performed on daily/weekly, monthly, quarterly/bi-annual and/or annual basis. The detailed service report and log book of each activity should be maintained and submitted to the authorized representative of Procuring Agency on monthly basis.

Please ensure following during maintenance activities:

- Maintenance personnel must wear proper PPEs (personnel protective equipment) and carry basic tools, multi-meter, clamp-on meter etc.
- During live system inspections, keep safe limits of approach to live parts
- Make entries of the observations in log/check sheets Electrical Equipment Checklists

2. MAINTENANCE PROCEDURE OF GENERATORS:

Following maintenance activities will be carried on daily, quarterly, annual basis:

3. DAILY MAINTENANCE:

- Daily Servicing and Maintenance
- General Inspection & Cleaning
- Check Engine Oil Level
- Check Radiator Water Level
- Check battery voltage/battery water & battery terminal
- Check Engine Pressure
- Check engine Temperature
- Check any abnormal sound
- Check all meters, indications, and alarms on panels
- All observations/activity must be noted in provided formats

4. QUARTERLY/250 RUNNING HOURS MAINTENANCE (WHICHEVER COMES FIRST):

- Change Engine Oil
- Change Oil Filter & Fuel Filter including strainer cleaning
- Clean/Inspect Air & Water Filter
- Clean Radiator with Pressurized Air
- Clean/ Grease Battery Terminals & Check Electrolyte Level
- Change air filter
- Addition of coolant if required
- Inspection, checking and required servicing of diesel pump motor
- All observations/activity must be noted in provided formats

5. ANNUAL MAINTENANCE (IF APPLICABLE):

- Fuel Injectors servicing & maintenance
- Fuel pumps servicing & maintenance
- Radiator De-scaling
- Self-servicing
- Charging Alternator servicing
- Alternator Re-varnishing
- Repaint on in-house diesel generator tanks, generators and allied structure
- All observations/activity must be noted in provided formats

6. CORRECTIVE MAINTENANCE:

All types of complaints requiring any modification, servicing and any other works will be carried out by the contractor staff. The contractor must provide its staff with the proper tools and accessories to carry out the required works smoothly. Safety protocols must be followed while carrying out any activity.



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NOTE:

- All the maintenance / servicing works should be carried out in such a way so that the equipment can be used for its optimum performances. Any work which is found to be required for optimum performance of the system has to be done.
- Necessary care should be taken while carrying out all types of maintenance / servicing of equipment to avoid damages.
- Any breakdown complaint should be attended immediately to avoid disturbance in center activities. Spares & tools required to attend any breakdown has to be maintained.
- During routine / periodic maintenance and during breakdown maintenance the contractor shall repair faulty parts / equipment with his resources. Repair shall be done in such a way that it should not affect the performance & life of the equipment, and while doing maintenance work, care should be taken.
- All the works are to be done as per daily / monthly/ half yearly or yearly schedule. In case, if it requires the same work to be done in-between, same shall be attended.
- The essence of the contract is to maintain the system in such a way that it gives desired optimum performance. Repair / replacement of all the parts / equipment required for proper functioning of the machine, whether specified or not, are included in the scope of work.

Note # 1: The cost of all above material and tests will be borne by the Contractor.

7. SHIFT WISE WORK FLOW FOR ELECTRICAL:

A tentative shift wise work flow is given as follows:

S.#	Activity	Frequency	Time	Responsible Shift
1	KE Meter Reading	Daily	8:30 AM – 9:00 AM	A
2	HT Room & Transformer Maintenance	Weekly	Anytime during shift and any day during week when workload is low	A/B
3	DB/MDB/SMDB/Electric Room Maintenance	Daily	9:00 AM	A
4	Technical Parameters	Daily	12:00 AM, 02:00 AM, 04:00 AM, 06:00 AM, 08:00 AM, 10:00 AM,	A, B, C, C+
	(A, V reading)		12:00 PM, 02:00 PM, 04:00 PM, 06:00 PM, 08:00 PM, 10:00 PM	
5	Temperature and Humidity logging	Daily	12:00 AM, 02:00 AM, 04:00 AM, 06:00 AM, 08:00 AM, 10:00 AM,	A, B, C, C+
			12:00 PM, 02:00 PM, 04:00 PM, 06:00 PM, 08:00 PM, 10:00 PM	
6	Floor Wise Technical Parameters	Daily	12:00 PM	A
	(per phase A, V reading)			
7	LT/PF/Control Panel Maintenance	Daily	11:30 PM	C, C+
8	HT Room Fan Operation	Daily	8:30 AM, 4:30 PM,	A, B, C, C+
	(Turn OFF one fan,		12:30 AM	
	Turn ON other fan)			
9	Electrical Complaints	Daily	24 hours	A, B, C, C+
	Any other work as assigned	When assigned	When assigned	A, B, C, C+



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MAIN POINTS OF A & B:

1. Maintenance Services of the Generators, Electrical and Allied Equipment according to manufacturer's manual and specific building requirement.
2. Maintenance services for all Allied equipment including but not limited to LT Panel, Phase reversal Panels, Transformers, HT Switches, fuel tanks, fuel piping system, equipment in electrical distribution room and parts of generators such as electrical and control breakers, oil, air and fuel filters, batteries, battery chargers, dc motors, fuel pumps, fan belts, actuator, modules, relays, sensors and switches and any other device or component operating in conjunction with above listed equipment.
3. Services for ensuring switching of power in case of utility failure and for testing purposes.
4. Services for and general upkeep of generators, electrical generator room, and LT Rooms, HT Rooms and electrical rooms surrounding areas.
5. The contractor shall be responsible for ensuring that no Safety of the system is by-passed in any way, under any circumstances.
6. The contractor shall be responsible for any loss or damage to the SMBBIT property, data, or persons etc. during or due to the services carried out by the service provider under this contract.
7. Should keep the tools, equipment, and calibrated instruments at site for carrying out the continuous and uninterrupted management services.
8. The contractor shall maintain a log management services/ repairs/other services of the equipment as per service execution plan.
9. All readings shall be recorded in printed log sheets prepared as per standard format.
10. Daily continuous and uninterrupted service execution report shall be prepared and signed by contractor in which all-continuous and uninterrupted management services details will be written on a printed logbook, as per format.
11. Contractor will have to arrange OEM manufacturer manual of all above equipment mentioned under the scope of works
12. The maintenance will be carried out as recommended in the OEM manufacturer manual and at intervals defined in the OEM manufacturer manual
13. Both corrective and preventive maintenance will be carried out of above equipment/installations.
14. Contractor must ensure that operation and maintenance of each equipment/installation is carried out on daily, weekly, and monthly and on annual basis as per requirement of manufacturer manual which will be arranged by the contractor himself.
15. The contractor will provide uniform, identity cards to each deployed staff approved by the SMBB IT.
16. The contractor shall provide the list of staff with telephone numbers to procuring agency.
17. The contractor should ensure all safety precautions for its staff, workplace etc.
18. The contractor staff should be equipped with proper hand tools, machines and similar equipment' as per required nature of work.
19. The maintenance logs of each equipment/installation should maintain and submit to procuring agency on regular basis.

METHOD OF PERFORMING WORKS:

The contractor is required to submit a narrative outlining the method of performing the Works. The narrative should indicate in detail and include but not be limited to:

- I. The sequence and methods in which he proposes to carry out the maintenance works, including the formats to be used which must comply with the manufacturer manual's recommendations.
 - II. A list of all tools proposed to be used in carrying out the Works at Site, including number of each kind, make, type, capacity of all equipment, working condition, which shall be deployed by him for maintenance, in sufficient detail to demonstrate fully that the equipment and installation will meet all the requirements of the Technical Provisions.
 - III. The procedure for maintenance of equipment in compliance with the manufacturer manual's recommendations.
 - IV. Organization chart indicating head office & field office personnel involved in management, supervision, and engineering of the Works to be done under the Contract.
- The contractor shall list in these plan details of all staff he will employ to perform maintenance works, together with their names, qualifications, experience, positions held.
- The method of performing works should comply with the requirements of applicable standards



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TYPICAL LIST OF TOOLS REQUIRED FOR WORKSHOP:

The typical list of tools which the contractor must have but not limited to the following:

- Plier Set
- Cutter Plier Set
- Screwdriver Star Set
- Ring Spanner Set
- Star L-Key Set
- L. Key Set
- Box Spanner set
- Screw Drivers Set
- Hammer Cross Peen 1Kg
- Drill Machine
- Lubricating material
- Digital Multi-meter
- Infrared Temperature Gun
- Digital Tongue Tester (Clamp meter) 1000A
- Air Blower for cleaning
- Screw wrench
- Screwdriver Set
- Hammer Ball Peen 1Kg
- LV Toolbox/Bag
- D-Spanner Set
- Torch

C. SCOPE OF WORK HVAC:

Provide complete operations and preventive maintenance of following equipment/installations and their allied accessories of the building which are listed as follows but not limited to:

S.#	Description of equipment	Quantity +/-
1	Multi-Energy Absorption Chiller – Direct Flue Gas 420 Tons	03
2	Cooling towers	03
3	Fresh Air Handling Units	13
4	Air Handling Units	28
5	Fan Coil Units	187
6	Exhaust Fans	65
7	Water Cooler & Dispenser	45
8	Refrigerators	30
9	VRV Chiller	03
10	Split AC Wall and floor mounted	80
11	Dehumidifier	25
12	Ducting & Piping system with duct heaters in 18 numbers operation theatres at 6 th , 8 th , 9 th & 11 th floor.	1 Job

1. Ensure that operation and maintenance of each unit will be carried out on regular, fortnightly, and monthly and on early basis as per procuring agency requirement. (Enclosed)
2. The contractor will provide uniform, identity cards to each and every deployed staff.
3. The contractor shall provide the list of staff with telephone numbers to procuring agency.
4. The contractor should ensure all safety precautions for its staff.
5. The contractor should be equipped with proper hand tools, machines and similar equipment' as per procuring agency requirement. (Enclosed)
6. The contractor must notify by written notice to procuring agency prior to making of any repair.
7. The detailed service report and log book of each unit should maintained as per manufacturer manual & procuring agency requirement and submit to procuring agency on regular basis.
8. All Below Maintenance Schedules which will be provide by HVAC Competent authority.

MANDATORY NOTE:

The Contractor will enter into an agreement with the manufacturer / sole agent of the chillers for their consultancy, troubleshooting, annual maintenance contract and contractor will bear all charges of that contract and also share detail report about chiller and cooling towers with procuring agency time to time.

2. Calibration, water & air balancing, consumables monthly of close/ open circuit/cooling tower, chillers shaungling qty.02 & Kawasaki qty.01 annual maintenance including recommended chemical dosing after test of water like lithium molibidate & octylealchol solely contractor responsibility and contractor will also share reports and proof of chemical dosing with procuring agency and also contractor will bear all charges of all works.

1. SCHEDULE OF PREVENTIVE MAINTENANCE ACTIVITIES:

Following are the preventive maintenance activities of individual equipment to be performed on daily/weekly, monthly, quarterly/bi-annual and/or annual basis in addition to corrective maintenance. The detailed service report and log book of each activity should be maintained and submitted to the authorized representative of Procuring Agency on monthly basis.

Please ensure following during maintenance activities:

- Maintenance personnel must wear proper PPEs (personnel protective equipment) and carry basic tools, multi-meter, clamp-on meter etc.
- During live system inspections, keep safe limits of approach to live parts
- Make entries of the observations in log/check sheets HVAC Equipment Checklists

2. DAILY MAINTENANCE:

1. Check for any complaints that are reported and troubleshoot them immediately.
2. AC system of the important & critical facilities are to be continuously monitored and corrective actions are to be taken immediately so as not to affect the facility concerned
3. If any important activities like seminars / lectures / meetings / interviews are planned in the Institute, concerned AC system has to be inspected and normal functioning of AC system is to be ensured.
4. Adjustments in the system to achieve required temperature & RH level as required by the user. Release of air locks / blocks in the system.
5. If there is any instruction to operate the AC systems in the specific timings, the same has to be materialized.
6. General inspection of the AC system and rectification if any abnormality exists.
7. Attending to the planned / scheduled preventive maintenance.
8. Updating of all the relevant documents, logs, history books etc.
9. Reporting of day's work and progress to concerned Engineer-in-charge.

3. QUARTERLY MAINTENANCE:

1. Inspect connection for any water leaks in the coil and connection. Check the tightness of hose, fittings & tighten if necessary. There should not be any flooding of water from the AHU.
2. Check and clean drain pan, condensate drain pipe and floor drains to ensure no choking and flooding.
3. Cleaning of cooling coils, fins and filters, air & water flow, release of air lock etc.
4. Open up the electrical control panel, inspect for any blackening of contacts, loosening of connections, component condition etc. rectify if any abnormality is noticed.
5. Inspect the conditions of the thermometers and pressure gauges for proper function.
6. Check for proper operation of the associated measuring, control and safety device like thermostat, humidistat, 3 way actuating valves etc. Reset if required.
7. Check, report and rectify, if any abnormal noise / vibration is observed.
8. Check and re-tighten any loose bolts and nuts in proper sequence.
9. Clean all the type air filters.
10. Check the fan belts for proper tension, and replace if necessary, and examine the fans for correct alignment, lubricate the bearing as required.
11. Check heater bank condition and rectify if any problem exists.
12. Inspect the condition of insulation materials and rectify if necessary.
13. Clean the water strainer of chilled water system.
14. Entire AHU room to be thoroughly cleaned with vacuum cleaner & to be made clean & dust free.

4. YEARLY MAINTENANCE:

1. Perform quarterly services.
2. Overall servicing of the unit, cleaning, reduction of noise level, checking of mechanical assemblies, foam insulators over the pipes.
3. De scaling of copper tubes of the cooling coil (the water circuit) by suitable means as per manufacturer's recommendation and general standards.
4. Parameter checking before & after servicing



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5. Air flow checking & adjustment / balancing, if required
6. Checking and calibration of temperature and pressure gauges on supply & return chilled water lines and replacement of the same if required.
7. Checking of unit efficiency, total capacity delivery of the unit & bringing it to optimum performance level, air flow and water temperature measurements on supply & return ends.
8. General checking of electrical switchgears controls etc. All electrical system should be checked through competent persons.
9. Cleaning of ducting system having diffusers, grills, dampers etc.
10. Necessary documentation of parameters (before & after servicing work) and submission of checklist

NOTE:

1. If it is required to clean the cooling coil by water jet, the same has to be done by removing the cooling coil with all precautionary measures & taking it to a convenient place for full cleaning of water & air circuits. Coil to be cleaned with suitable chemical & water jet. This work is to be done carefully without damaging the AHU & the coil.
2. Coil, fins, filters etc. are to be thoroughly cleaned to achieve desired air and water flow rates.
3. All the maintenance / servicing works should be carried out in such a way so that the equipment unit can be used for its optimum performances. Any work which is found to be required for optimum performance of the system has to be done.
4. Necessary care should be taken while carrying out all types of maintenance / servicing of equipment to avoid damages.
5. Contractor should supply all necessary materials like Nitrogen, Electric Welding Plant and Allied Accessories, Gas Welding Plant with allied accessories suitable grade of grease / lubricant, cleaning brush etc., to carry out servicing.

5. BREAKDOWN MAINTENANCE:

Any breakdown complaint should be attended immediately to avoid disturbance in center activities. Spares & tools required to attend any breakdown has to be maintained.

After attending to breakdowns, the unit / system shall be closely observed / monitored next day and parameters shall be checked & recorded.

During routine / periodic maintenance and during breakdown maintenance the contractor shall repair faulty parts / equipment with his resources. Repair shall be done in such a way that it should not affect the performance & life of the equipment, and while doing maintenance work, care should be taken that water should not come out from the unit.

All the works to be done as per daily / monthly/ half yearly or yearly schedule In case, if it requires the same work to be done in-between, same shall be attended.

The essence of the contract is to maintain the Air-conditioning system in such a way that it gives desired optimum performance. Repair / replacement of all the parts / equipment required for proper functioning of the machine, whether specified or not, are included in the scope of work.

6. DE-SCALING & CLEANING OF COOLING COILS & FINS:

It is a once in a year activity. The work procedure is as follows:

Ensure that the power supply of the unit should be disconnected / switched off and caution board to be fixed at the main isolation of power supply. Take pre-service system running parameter readings (Air flow, DB, WB temp. readings, electrical parameters etc.)

Ensure that main valves (ball valves of the unit) should be in closed condition. Arrange to cover & ensure that water should not fall on electrical control box, motorized valves, pressure gauges, etc. Failure to cover electrical control box, Motorized valves and other electrical circuits where water fall on such item may lead to serious injury / death / damage to the equipment accessories etc, for which contractor is solely responsible. Loosen the hose clips and remove the connections from the cooling coil. Prepare the chemical mixture & keep it ready in a container / tank. Circulate it through the cooling coil for specified time as recommended by the manufacturer. (Note: Contractor should arrange for container / tank etc.) After circulation of chemical mixture through the cooling coil, flush out the coil using fresh water before connecting the hose connections.

Coil fins should be cleaned using fins cleaning chemical, brush & should be cleaned to remove the sediments & dust particles of the entire coil. Should ensure there should not be any folding of coil fins which may result in improper flow of air through the coil. Should ensure that always air should



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be passed through the coil, any bypass of airflow should be attended immediately and rectified. Ensure that cooling coil filters is in good / clean condition, if the filter is choked, the same should be cleaned and fixed. Reconnect all the systems & take the post service running parameter readings. After completing the work, it should be ensured that the entire unit & the surrounding area are cleaned thoroughly.

NOTE:

Any accidents occurred due to negligence / inexperience during work is purely the responsibility of the contractor, Contractor should also ensure that water should not come outside the rooms while executing the work. Prior approval should be obtained from Engineer-in-Charge for the chemical / solution being used for de-scaling. The chemical shall be recommended by manufacturer. Arrangement of pump, chemical tank, a small power distribution board with back up protection of MCB/Fuse/ELCB required for operation of motors pump sets is the responsibility of the contractor.

7. METHOD OF PERFORMING WORKS:

The contractor is required to submit a narrative outlining the method of performing the Works. The narrative should indicate in detail and include but not be limited to:

- I. The sequence and methods in which he proposes to carry out the maintenance works, including the formats to be used which must comply with the manufacturer manual's recommendations.
- II. A list of all tools proposed to be used in carrying out the Works at Site, including number of each kind, make, type, capacity of all equipment, working condition, which shall be deployed by him for maintenance, in sufficient detail to demonstrate fully that the equipment and installation will meet all the requirements of the Technical Provisions.
- III. The procedure for maintenance of equipment in compliance with the manufacturer manual's recommendations.
- IV. Organization chart indicating head office & field office personnel involved in management, supervision, and engineering of the Works to be done under the Contract.
- V. The contractor shall list in these plan details of all staff he will employ to perform maintenance works, together with their names, qualifications, experience, positions held.

The method of performing works should comply with the requirements of applicable standards

8. LIST OF TOOLS REQUIRED FOR WORKSHOP:

The typical list of tools which the contractor must have but not limited to the following:

S. #	Description	Unit	Sizes	Qty.
1	Karcher Pump	150 bar	-	02
2	Air Blower	-	-	02
3	Pipe Wrench	-	8"10"12"14"	4 Each
4	Adjustable Wrench	-	6"8"10"12"	4 Each
5	Hammer	FLAT	-	2
6	Hammer	PIN BALL	-	2
7	Pliers	-	-	04
8	Cutter Pliers	-	-	04
9	Nose Pliers	-	-	04
10	Ellen Key	MM	-	03
11	Ellen Key	INCHES	-	03
12	Spanner Set	RING	-	02
13	Spanner Set	FIX	-	02
14	Screw Driver	SET	-	5
15	Mechanical Screw Driver	SET	-	01
16	Hack Saw Frame	-	-	02
17	Hack Saw Blade	-	2 SIDED	24
18	Knife Blade	-	-	06
19	Star Set	-	-	04
20	Grip Pliers	-	-	04
21	Measuring Tape	-	50'20'15'	3 Each
22	Gauge Manifold Complete Set	R22,R410a	5/16 .1/4	2/4
23	Electric Welding Complete Set	-	-	01

S. #	Description	Unit	Sizes	Qty.
24	Brazing Set Portable Complete	MINI	-	01
25	Brazing Set With Fire Arrester	BIG	-	01
26	Nitrogen Cylinder With Regulator	BIG	-	01
27	Baby Grinder	-	-	01
28	Table Grinder	-	-	01
29	Flaring Tool Professional Kit	-	-	02
30	Pipe Cutter	-	-	03
31	Drill Machine	-	-	01
32	Bids Set Complete Drill Machine	-	-	01
33	Hilti Machine	-	-	01
34	Ampere Metter	-	-	02
35	Multi Metter	-	-	01
36	Wrenched Set	MM	-	01
37	Wrenched Set	INCHS	-	01
38	Flat File	-	Diff sizes	01
39	Round File	-	Diff sizes	01
40	Triangle File	-	Diff sizes	01
41	Hole Punch	-	-	01
42	Punching Tools	-	-	01
43	Scissor Rubber Gas Kit	-	-	01
44	Round Cutter	-	-	02
45	GI Sheet Cutter	-	-	01
46	Vacuum Pump	-	-	01
47	TDS Meter	-	-	01
48	PH Meter	-	-	01
49	Bearing Puller	-	10"12"14"	3 Each
50	Digital Temperature Tester	IN/OUT	-20 TO +500	01
51	Laser Temperature Tester	GUN	-	01
52	Nylon Brush	-	-	12
53	Wire Brush	-	-	12
54	Scraper	-	2" - 3" - 4"	05
55	Chisel	-	-	03
56	Chisel	-	-	03
57	Copper Pipe Bender	-	½", 5/8", ¾"	3 Each
58	Soldering Iron With Soldering Wire	-	-	01
59	Soldering Sucker	-	-	01
60	Heat Gun For Soldering Removing	-	-	01
61	Vernier caliper	-	-	01
62	Refrigerant Recovery Pump	-	-	01
63	R.P.M Tester	-	-	01
64	C.F.M Tester	-	-	01
65	Sound Level Tester	-	-	01
66	Lugs Punch	-	-	02
67	Oil Can For Oil Filing	SMALL	-	01
68	Grease Gun	SMALL	-	01
69	Torch light	-	-	02
70	Scarf Folding	-	-	25 feet



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9. SHIFT WISE WORK FLOW FOR HVAC & BMS:

A tentative shift wise work flow is given as follows:

S.#	Activity	Frequency	Time	Responsible Shift
01	HVAC Chiller Plant LOG Sheet & Operations Register Maintain	Daily	24, Hours	A, B, C
02	HVAC Open & Close Circuit Chemical Dozing Reports	Daily	8:00 AM – 10:00 PM	A
03	HVAC Preventive Maintenance of Fresh Air Handling Units (FA- AHU)	Daily	8:00 AM – 12:00 PM	A
04	HVAC Preventive Maintenance of Air Handling Units (AHU)	Daily	When assigned	A, B, C
05	HVAC Preventive Maintenance of Fan Coil Unit (FCU)	Daily	When assigned	A, B, C
06	HVAC Preventive Maintenance of Split Ac's & Floor Standing Ac's (AC's)	Daily	8:00 AM – 10:00 PM When assigned	A & B
07	HVAC Preventive Maintenance of Dehumidifier	Daily	8:00 AM – 10:00 PM When assigned	A & B
08	HVAC Preventive Maintenance of Variable Refrigerant Volume (VRV)	Weekly	8:00 AM – 4:00 PM	A
09	HVAC Preventive Maintenance of Cooling Tower	Weekly	8:00 AM – 10:00 PM When assigned	A & B
10	DB/MDB/SMDB HVAC Plant Room & FA-AHU, Ahu's Room's	Daily	When assigned	A
11	BMS Preventive Maintenance of Fresh Air Handling Units (FA- AHU)	Daily	8:00 AM – 12:00 PM	A
12	BMS Preventive Maintenance of Air Handling Units (AHU)	Daily	When assigned	A, B, C
13	BMS Daily Working Reports	Daily	24, Hours	A, B, C
14	Any Other Work & Complains	Daily	When assigned	A, B, C

Shift Timings

- Shift A: 08:00 AM – 04:00 PM
- Shift B: 03:00 PM – 10:00 PM
- Shift C: 10:00 PM – 08:00 AM

D. SCOPE OF WORK FOR BMS:

1. Provide complete and maintenance services to building management.
2. Ensure that operation and preventive maintenance of each unit will be carried out on regular basis.

3. The contractor will provide uniform, identity cards to each and every deployed staff.
4. The contractors shall provide the list of the staff with telephone numbers to the department.
5. The contractor should ensure all safety precautions for its staff.
6. The contractor should be equipped with proper hand tools and similar equipment's.
7. The contractor shall be responsible for the execution of minor repairs and adjustments related to activities of ordinary wear and tear maintenance.
8. The contractor must notify by written notice to procuring agency prior to the making of any repair.
9. Procuring agency will provide an office to contractor for administrative purposes only.
10. The detailed service report and log book of each unit should maintained as per manufacturer

MANDATORY NOTE:

The Contractor will enter into an agreement with the manufacturer / sole agent of building management system (BMS) for their consultancy, Software updates etc. Contractor will bear all charges of that contract. Contractor will share detail report about BMS with procuring agency time to time.

E. SCOPE OF WORK CIVIL & PLUMBING DEPARTMENT

Operations, running, repair and maintenance of following but not limited to:

S. #	Equipment / Item description	Location
1.	Suction Pumps	Water storage tank
2.	Overhead Vertical Pump	Basement pump room
3.	Summer Pumps (Sump Pits)	All sump-pits
4.	Wooden Items (Doors, Cabinets, Tables, Etc.)	All floor of SMBBIT
5.	Plumbing Fittings & Fixtures (M.S, S.S, Seamless, PPR, Dadex, PVC, Etc.)	Ducts - all floor of SMBBIT
6.	Seamless Pipes, Trolleys, Grill, Gates, Statures, Beds, Barriers, Boiler Fittings, S.S Doors And Other Metallic Work.	All floors of SMBBIT
7.	Assemble and installation of glass and aluminum sliding door, windows, curtain walls and glass panel.	All floors of SMBBIT
8.	Prepare Surfaces for Painting, Including Sanding and Removing Old Paint. Fill Nail Holes, Cracks, And Joints With Putty, Plaster, Or Other Filler	All floors of SMBBIT
9.	Polishing The Wood With French Polish (Shellac Dissolved In Methylated Spirits), Using A Padded Cloth.	All floors of SMBBIT
10.	Brick Laying And Tiling	All floors of SMBBIT
11.	RO plant	05 th and 13 th floor of SMBBIT
12.	Gas Boiler	13 th floor at SMBBIT
13.	Boiler Electrical	13 th floor at SMBBIT

Note:

1. Both corrective and preventive maintenance will be carried out of above equipment/installations.
2. Contractor must ensure that operation and maintenance of each equipment/installations is carried out on daily, weekly, monthly and on annual basis as per requirement.
3. The contractor will provide uniform, identity cards to each and every deployed staff.
4. The contractor shall provide the list of staff with telephone numbers to procuring agency.
5. The contractor should ensure all safety precautions for its staff.
6. The contractor staff should be equipped with proper hand tools, machines and similar equipment' as per required nature of work.
7. The maintenance logs of each domain should maintained and submit to procuring agency representative.
8. All Maintenance Schedules formats will be provided by competent authority.
9. Maintenance of underground & overhead water tanks.



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10. Maintenance of all Pumps.
11. Maintenance of RO plant and Boiler Gas & Electrical.

1. DUTIES AND RESPONSIBILITIES SUPERVISOR:

1. Will be responsible for all smoothly running operations.
2. Will be responsible for arranging alternate staff in case of absence of regular staff.
3. Will maintain daily work record, daily complain log book.
4. The detailed service report and log book of each work should be maintained and submitted to the authorized representative of Procuring Agency on daily, weekly & monthly basis.
5. Will be responsible to arrange all tools and tackles, plants machineries, required equipment's (including consumables like drill bits, grinder blades, greases, paint brush, rollers, W.D 40 etc) to carry out operations smoothly.
6. Daily inventory management log (dead stock & new stock).

PUMP OPERATOR CUM TECHNICIAN:

1. Responsible for the pump machinery including inspecting pump, ensuring they are in working order.
2. A pump technician turns valves and begins pumps to regulate the flow of water.
3. Monitor gauges and inspects equipment to make sure that the flow is running smoothly.
4. A pump operator responsible for filling the underground tank and overhead tank.
5. A pump operator makes sure that all valves are open before starting the pump.
6. Trouble shooting and other add-on maintenance and repair work & determine technical issue.
7. Disassembling and reassembling pumps & other mechanical equipment like strainer, valves whenever required.
8. Day to day inspection and observation of the pump machinery in their work place.
9. Maintain accurate record.

WELDER:

1. Maintenance trash chute and their gates.
2. Provide lubrication grill gates.
3. Repaired/ maintenance of the S.S carpenter sheets on the doors and the S.S corners.
4. Weld/joints trolleys, grill gates, Statures, Beds, Barriers, Boiler fittings, S.S Doors and other metallic work.
5. Construct and repair outdoor equipment including ground equipment, Fences, Gates, Bumper Rail, Top Rail, etc.
6. Any other work regarding welding will be done.

PLUMBER:

1. Assemble, install, maintain, and pressure test all pipes, fittings, and fixtures of heating, water, drainage, sprinkler, and all pumps according to specifications and plumbing codes.
2. Determine sources of plumbing malfunctions and complete repairs as indicated or according to work orders.
3. Install and repair pipes, fittings, valves, fixtures, and plumbing system equipment, including sinks, commodes, water heaters, water softeners, etc.
4. Repair dishwashers and kitchen equipment that incorporate water consumption.
5. Periodic checking the pressure of water supply and PRV in the water lines.
6. Repaired/maintenance of MS pipe G.I pipe NRV, Strainer, valve etc. at pump room and overhead tank.
7. Receive and complete work orders.
8. Select material and hardware and make time and materials estimates.
9. Maintain accurate records on material and labor used.
10. Maintain inventory of district-owned tools, equipment, and materials.
11. Inspect jobs upon completion and ensure areas are clean.



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CARPENTER:

1. Plan and complete construction of cabinets, shelves, and partitions from initial layout to assembly using oral instructions, plans, specifications, blueprints, and work orders.
2. Select material and hardware and make time and materials estimates.
3. Fabricate, repair, and replace wooden desks, chairs, shelving units, doors, windows, flooring, ceiling materials, building hardware, screens, plastic laminate, and other types of furniture.
4. Construct and repair outdoor equipment including ground equipment, Fences, Gates, Bumper Rail, Top Rail, etc.
5. Detect needed repairs on buildings, grounds, and equipment by following established inspection procedures.
6. Replace, repair, and finish furniture, cabinets, fixtures, woodwork, etc.
7. Receive and complete work orders.
8. Maintain accurate records on material and labor used.
9. Maintain inventory of district-owned tools, equipment, and materials.
10. Inspect jobs upon completion and ensure areas are clean and remove scraps and lumber as needed.
11. Respond to emergency calls as needed.
12. A furniture carpenter is **responsible for building and repairing various types of furniture**. A furniture carpenter builds or repairs wooden desks, chairs, shelving units and other types of furniture

ALUMINUM AND GLASS WORKER:

1. Will fabricate windows, doors etc.
2. Assemble and installation of glass and aluminum sliding door, windows, curtain walls, glass table and glass panel.
3. Fabrication and installation support of aluminum.
4. Installation of spider glass and frameless.
5. Support in fabrication and installation support of aluminum.
6. Mainly **responsible for cutting, measuring, and installing glass or mirrors in window frames, skylights, display cases and other structures**.

PAINTER:

1. Smooth and prepare surfaces for painting, including sanding and removing old paint.
2. Fill nail holes, cracks, and joints with putty, plaster, or other filler.
3. Tape, float, and texture walls and ceilings.
4. Select premixed paints or mix required portions of pigment, oil, and thinning and drying substances to prepare paint to match specified colors.
5. Paint surfaces, using brushes, spray gun, or paint rollers, and apply paint with cloth, brush, sponge, or fingers to create special effects.
6. Erect scaffolding or set up ladder to perform tasks above ground level.
7. Prepare all painted signs required by the district.
8. Receive and complete work orders while maintaining accurate records on material and labor used.
9. Maintain inventory of tools and assist with inventory control of materials and equipment.
10. Inspect jobs upon completion and ensure areas are clean.
11. Work with building principals and supervisors to complete assigned tasks.

FURNITURE POLISHER:

1. Preparing the wood by sanding and filling in holes and chips.
2. Removing old paint spots varnish or lacquer using paint stripper or sandpaper.
3. Mixing the stain and applying it to the wood, using a brush or by spraying it on.
4. Finishing the wood with varnishes, waxes and lacquers, and perhaps a fire-retardant finish which complies with the Health and Safety and Control of Substances Hazardous to Health (COSHH) legislation.
5. If required, polishing the wood with French polish (shellac dissolved in methylated spirits), using a padded cloth.
6. Keeping up to date with new techniques and equipment.



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FALSE CEILING WORKER:

1. Measure the surface area of the ceiling to determine how much of a material will be necessary and use that information for accurate calculation.
2. Cut tiles according to specifications to ensure they fit in the desired space and then fasten tiles into the framing
3. Get rid of existing ceiling tiles to make way for the new ones and then safely remove tiles from the premises completely
4. Ensure perfect installation by trimming the edges of tiles when necessary
5. Coordinate with other professionals when additional work is necessary, such as working with a window installer to put in a skylight in the ceiling.
6. Repaired/ maintenance of metallic false ceiling, Gypsum False Ceilings and their respected network.

MASON:

1. Check work orders to determine work processes that need to be performed.
2. Measure distances from reference points in order to mark guidelines.
3. Use tools such as plumb bobs and levels to perform work processes.
4. Calculate angles and courses.
5. Determine both vertical and horizontal alignment of courses.
6. Mix cement or mortar and spread it onto foundations.
7. Lay bricks according to set plans.
8. Lay patterns or foundations according to set instructions.
9. Cut bricks according to required sizes and shapes.
10. Spread mortar on surfaces, and clean excess mortar using trowels and other hand tools.
11. Determine the effect of heat, wind, and cold on the curing of concrete.
12. Direct and oversee the casting of concrete.
13. Supervise the work of laborers.
14. Produce rough concrete surfaces, and perform finishing work on them.
15. Clean chipped areas using tools such as wire brushes.
16. Observe surfaces in order to determine if they are rough or uneven.
17. Apply compounds, for example, hardeners and sealants to perform curing work.
18. Cut out damaged areas and reinforce rods.
19. Position rods in order to repair concrete.
20. Break up rock and asphalt as needed.
21. Perform waterproofing and restoring functions on concrete.
22. Handle repair and maintenance work on existing surfaces.

R.O PLANT OPERATOR:

1. Control treatment plant machines and equipment to purify and clarify water operates and controls electric motors pumps and valve to regulate flow of raw water into treating plant.
2. Provide specifically amount of chemicals like chlorine etc.
3. Make ensure that agitators are working and flow of chemical into the R.O.
4. Tums valve to regulate water through filter beds to remove impurities.
5. Pumps purified water into main water.
6. Monitors panel board and adjust controls to regulate flow gates.
7. Clean sand filters bed using back washing.
8. Test water samples to determine acidity, color and impurities using colors meter turbid meter and conductivity meter.

BOILER OPERATOR:

1. Check gas pressure.
2. Check water level.
3. Check burner blower meter.
4. Check steam pressure scot valve.
5. Check all valves.
6. Check Electric panel.



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7. Check leakage all valve.
8. O.U Condition
9. Check full water tank.
10. Check glass level gauge.
11. Check all necessities equipment the boiler.
12. Daily log sheet check.
13. Daily activity report maintains.
14. Daily cleaning the plant room check.
15. Daily working task reporting incharge.
16. Daily operators and helpers work check.
17. Daily water level and TDS check.
18. Daily over all pipe leakage and insulation check.

2. SCHEDULE OF MAINTENANCE ACTIVITIES

Following are the preventive maintenance activities of individual equipment to be performed on daily/weekly, monthly, quarterly/bi-annual and/or annual basis. The detailed service report and log book of each activity should be maintained and submitted to the authorized representative of Procuring Agency on monthly basis.

Please ensure following during maintenance activities:

- Maintenance personnel must wear proper PPEs (personnel protective equipment) and carry basic tools bag, drill machine, grinder etc.
- Maintain log/check sheets of every job performed by the contractor.

3. MAINTENANCE PROCEDURE

Following maintenance activities will be carried on daily, quarterly, annual basis:

4. DAILY MAINTENANCE OF PUMPS:

1. Daily servicing and maintenance
2. General inspection & cleaning
3. Check oil level
4. Check pressure and leakage
5. Check temperature of motors.
6. Check any abnormal sound
7. Check all mechanical parts as well as electrical parts which may result problem.
8. All observations/activity must be noted in provided formats.

5. DAILY MAINTENANCE OF WOODEN ITEMS:

- 1) Servicing and maintenance of doors, cabinets, lockers, etc.
- 2) Replacement of floor machines and hinges where required.
- 3) General inspection of doors, cabinets, lockers, etc. in wards and other areas.
- 4) Daily checking of accessories and replacement where needed.
- 5) Any other task assigned by the in charge.

6. DAILY MAINTENANCE OF PLUMBING ITEMS:

- 1) Servicing and maintenance of PRV'S, gate valve, handle valves, etc.
- 2) Servicing and maintenance of plumbing fixtures, piping, accessories etc.
- 3) Servicing of pumps when needed.
- 4) Replacement of plumbing fixtures where required.
- 5) De clogging of basin mixture drains lines, commodes, etc.
- 6) De clogging of main drains lines inside the building in coordination with janitorial department.
- 7) Any other task assigned by the in charge.

7. DAILY MAINTENANCE OF PAINT & ART WORK:

- 1) Smooth and prepare surfaces for painting, including sanding and removing old paint where required.
- 2) Fill nail holes, cracks, and joints with putty, plaster, or other filler.
- 3) Tape, float, and texture walls and ceilings.
- 4) Select premixed paints or mix required portions of pigment, oil, and thinning and drying substances to prepare paint to match specified colors.



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- 5) Paint surfaces, using brushes, spray gun, or paint rollers, and apply paint with cloth, brush, sponge, or fingers to create special effects.
- 6) Inspect jobs upon completion and ensure areas are clean.
- 7) Receive and complete work orders while maintaining accurate records of material and labor used.

8. DAILY MAINTENANCE OF METALIC & ANCILLARY ITEMS

1. Weld/joints trolleys, grill gates, Statues, Beds, Barriers, Boiler fittings, S.S Doors and other metallic work.
2. Repairing of outdoor equipment including ground equipment, Fences, Gates, Bumper Rail, Top Rail, etc.
3. Any other work regarding welding will be done.

9. DAILY MAINTENANCE OF MASONARY WORK:

1. Replacement of floor tiles, washroom tiles & any other repairing where required.
2. Brick laying & Plastering of damage areas where required.
3. Construction of any urgent need based work.

10.DAILY MAINTENANCE OF FALSE CEILING WORK:

1. Replacement of dirty/ damage gypsum tile sheets, washroom damp sheets & any other repairing where required.
2. Repairing/ replacement of false ceiling network channels.
3. Repairing of loose false ceiling network.

11.DAILY MAINTENANCE OF GLASS WORK:

1. Replacement of damage window glasses, fixed glass & any other repairing where required.
2. Repairing/ replacement of floor hinge machine where needed.
3. Repairing of loose glass doors, fixed panels any other repairing.

12.DAILY MAINTENANCE OF POLISH WORK:

1. All polished items should be clean and apply polish if necessary or any other repairing, where required.
2. Repairing of damaged door and fixed panels.
3. Any new task assigned by In-charge / Authorized Person.

13.QUARTERLY / ANNUAL MAINTENANCE (IF APPLICABLE):

1. Repair, Maintenance, Servicing & other work required in Operation Theatre should be done Quarterly or if needed early.
2. Repair, Maintenance, Servicing & other work required for Piston Pumps and Sump-Pits Pump should be done quarterly or if needed early.
3. Paint work in all parking area or on floors to maintain ambiance of Institute Quarterly or if needed early.
4. Replacement or maintenance of for ceiling and their network channels where applicable as per situation.
5. Cleaning and Maintenance of Plumbing ducts
6. Maintenance of PRV's
7. Maintenance of all doors of Institute on Annually Basis
8. Maintenance of Glass and Aluminum doors, windows and fixed partitions.

14.CORRECTIVE MAINTENANCE:

All types of complaints requiring any modification, servicing and any other works will be carried out by the contractor staff. The contractor must provide its staff with the proper tools and accessories to carry out the required works smoothly.

NOTE:

1. All the maintenance / servicing works should be carried out in such a way so that the equipment can be used for its optimum performances. Any work which is found to be required for optimum performance of the system has to be done.



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2. Necessary care should be taken while carrying out all types of maintenance / servicing of equipment to avoid damages.
3. Spares & tools required to repair any articles to be maintained.
4. During routine / periodic maintenance, the contractor shall repair faulty parts / articles with his resources. Repair shall be done in such a way that it should not affect the performance & life of the articles, and while doing maintenance work, care should be taken.
5. All the works are to be done as per daily / monthly/ half yearly or yearly schedule. In case, if it requires the same work to be done in-between, same shall be attended.
6. The essence of the contract is to maintain the system in such a way that it gives desired optimum performance. Repair / replacement of all the parts / articles required for proper functioning, whether specified or not, are included in the scope of work.

15. TYPICAL LIST OF TOOLS FOR BUILDING MAINTENANCE CIVIL & PLUMBING:

The typical list of tools which the contractor must have but not limited to the following:

- Plier Set
- Cutter Plier Set
- Screwdriver Star Set
- Ring Spanner Set
- Star L-Key Set
- L. Key Set
- Box Spanner set
- Screw Drivers Set
- Hammer Cross Peen 1Kg
- Drill Machine
- Hill Tee drill
- Power Grinder
- Baby Grinder
- Aluminum Cutter
- Lubricating material
- Screw wrench up to 18"
- Pipe wrench up to 48"
- Hammer set
- D-Spanner Set
- Welding machine
- Electric wood cutter
- Electric Randa machine
- Electric hand cutter
- Saw
- Hand Randa
- Chorsi set
- Measuring Tape set
- Jhamboor
- Sand stone
- PPR Welding machine
- False ceiling wire cutter
- PPR Pipe Cutter upto 110mm
- Glass Holding Grips
- Glass Cutter

LEAVE POLICY FOR ABOVE WORKS A, B, C& D:

- One weekly off will be given to each employee
- Contractor will intimate us about its leave policy for its employees who will be deputed at SMBB Institute of Trauma for the operation & maintenance purpose
- Duty roaster will be prepared by SMBB IT nominated officer / Supervisor / Asst. Manager / Manager.
- Only Provincial Government / Federal announced public holidays will be allowed (Intimated by nominated officer / Supervisor / Asst. Manager / Manager / In case of Emergency all leaves will be cancelled).



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- Employees will have to be present on holiday as per duty roaster and they will avail compensatory leave afterwards.
- Uninformed absence will not be allowed
- If an employee cannot make it to the duty due to genuine reason, then he has to inform his SMBB IT nominated officer / Supervisor / Asst. Manager / Manager via call or SMS
- If an employee wants to avail leave of longer duration or outstation leave due to genuine reason, then he has to submit a written application which will be forwarded and acknowledged by nominated officer / Supervisor / Asst. Manager / Manager approved by the Contractor Company.
- The contractor will have to provide replacement for the employee on leave
- SMBBIT nominated officer / Supervisor / Asst. Manager / Manager will have the authority to reject/cancel leaves without assigning any reason and employee will have to rejoin his duty within 2 days after rejection/cancellation of leaves has been communicated to him.

ATTENDANCE POLICY:

- All staff employed by contractor will mark their attendance on SMBBIT Biometric attendance system as per their Rota
- Grace period of 15 minutes will be allowed in each shift after which, the employee will be marked as **PL=Present but Late**
- If an employee comes late but within 1.5 hour of his original time, he'll be marked **PL=Present but Late**
- If an employee comes after 1.5 hour of his original shift timing, he'll be marked **Absent**
- After 2 PL marking, every 3rd late will be counted as **Absent**
- Habitual late comers will not be tolerated

WORK DISCIPLINE:

- If an employee found negligent of his duty, then on the recommendation of nominated officer / Supervisor / Asst. Manager / Manager will inform the contractor representative of the same and a showcase letter will be issued to the concerned employee from the office of contractor representative, copy of which will be given to the nominated officer / Supervisor / Asst. Manager / Manager.
- The negligent employee after receiving show cause letter, will have to provide written explanation, acceptance of which will be at the sole discretion of nominated officer / Supervisor / Asst. Manager / Manager.
- After two show cause letters, if the employee still found guilty for the third time, then a final warning letter will be issued and the employee will be asked to leave on the fourth instance and contractor will have to provide his replacement
- Eating Pan, Chewing Tobacco and Smoking at the workplace will not be allowed

GENERAL CONDITIONS:

- Contractor must abide by child labor and minimum wage law
- The Contractor shall provide complete details of staff & their telephone numbers to the SMBBIT nominated officer / Supervisor / Asst. Manager / Manager.
- The Contractors should ensure all safety precautions for its staff
- The Contractor shall ensure on its part that its team is equipped with proper hand tools and required equipment
- The Contractor will provide uniforms, protective clothing and Identity Cards to each and every deployed staff
- Contractor will be responsible for any kind of accident, injuries, temporary and permanently disabilities of its employees. Procuring Agency will investigate the incident. If negligence or violence of safety rules is determined, Procuring Agency will impose penalty on the contractor
- Contractor will immediately have to provide replacement for the its resigned/dismissed employees
- Necessary care should be taken while carrying out any repair, maintenance & servicing activity to avoid any damage
- Any mishap during occurred due to negligence / inexperience during any repair, maintenance & servicing activity will purely be the responsibility of contractor



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SAFETY OF CONTRACTOR EMPLOYEES:

Contractor will have to follow the safety protocols for its employees as defined by Fire & Safety department of SMBB IT time to time.

Now this agreement witnesseth as follows:

1. In this agreement words and expression shall have the same meanings as are respectively assigned to them in the Terms & Conditions of Tender Enquiry referred to.
2. The Following documents after incorporating addenda, if any except these parts relating to Instruction to bidders, shall be deemed to form and be read and constructed as part of this Agreement, viz:
 - a. Purchase order(s)/ Letter of Acceptance where applicable.
 - b. The completed Form of Bid along with Schedules to Bid.
 - c. Condition of Contract & Contract Data
 - d. The priced Scheduled of prices
 - e. The specifications
3. In consideration of the payments to be made by the Procuring Agency to the Contractor as hereinafter mentioned, the supplier hereby covenants with the Procuring Agency to execute and complete the works and remedy defects therein conformity and in all respects within the provision of the contract.
4. The Procuring Agency hereby covenants to pay the Contractor, in consideration of the execution and completion of the works as per provision of the contract, the contract price or such other sum as may become payable under the provision of contract at the times and in the manner prescribed by the contract.

Stamp duty @0.35% of ordered amount Rs. 318,960/- shall be paid through E-stamp duty and the paid receipt and agreement should have to be submitted to the Procurement department.

Note: Please mobilize your resources and take over the job effect from 01st September 2022.

In WITNESS WHEREOF the parties hereto have caused this Contract Agreement in accordance with their respective hands and seals, the day, month and the year first above written.

SIGNATURE OF THE CONTRACTOR


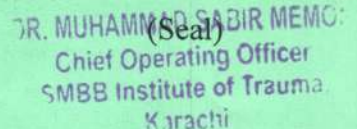

(Seal) 

Signed, Sealed and Delivered in the presence of:

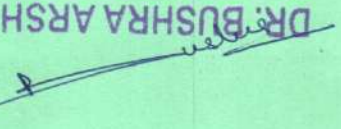
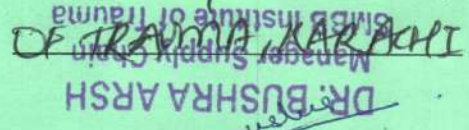
WITNESS OF CONTRACTOR

Name: Muhammad Salamat Ullah
Title: Manager Administration
Address: A-106 Sector, 14-b
Shadman Town North Karachi

SIGNATURE OF THE CLIENT


(Seal) 

WITNESS OF CLIENT

Name: DR. BUSHRA ARSH
Title: MANAGER SCM
Address: SMBB INSTITUTE
OF TRAUMA KARACHI



[illegible]

Rs 318,958/-

Description	: Contract - 15(a)
Principal	: SMBB Institute of Truama [00000-9999999-9]
Contractor	: United Construction Co [42101-8500625-5]
Applicant	: Abdul Kareem [42101-8500625-5]
Stamp Duty Paid by	: SMBB Institute of Truama [00000-9999999-9]
Issue Date	: 17-Aug-2022, 03:41:44 PM
Paid Through Challan	: 20225A3D6521FB3F
Amount in Words	: Three Lac Eighteen Thousand Nine Hundred and Fifty Eight Rupees Only

Please Write Below This Line

