

DEENDAYAL PORT AUTHORITY

An ISO 9001 : 2008 & ISO 14001 : 2004 Certified Port



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Budgetary Offer

for

“Design, Manufacturing, Supply, Installation, Erection, Testing and Commissioning of 66/11kV GIS Substation at SIPC Kandla on LSTK basis”

Mechanical Department, DPA invites Budgetary Offer for the work of “Design, Manufacturing, Supply, Installation, Erection, Testing and Commissioning of 66/11kV GIS Substation at SIPC Kandla” from the reputed firms who have executed similar work in Government/public sectors and other leading private organizations. The Budgetary Offer documents containing details of Scope of Work and technical specifications are enclosed herewith.

The interested firms are requested to submit stamped & signed budgetary quotation for the said work in format enclosed at Annexure – II through following mail id: cme@deendayalport.gov.in on or before 8th April 2026 and also to be submitted in hard copies to the office of the undersigned.

s/d

Chief Mechanical Engineer
Deendayal Port Authority

1. Introduction

Deendayal Port Authority (DPA) is continuously augmenting its power infrastructure to meet the growing operational requirements of the port and to ensure reliable and uninterrupted power supply to various facilities. In line with this, it is proposed to establish a 66/11 kV GIS Substation at Kandla to strengthen the distribution network, improve system reliability, and support future load growth.

The proposed substation shall be developed using Gas Insulated Switchgear (GIS) technology, which offers advantages such as compact footprint, enhanced reliability, and suitability for operation in coastal and corrosive environments like Kandla. The project shall be executed on a Supply, Installation, Testing and Commissioning (SITC) basis under Lump Sum Turnkey (LSTK) mode, wherein the Contractor shall be responsible for delivering a fully integrated and operational substation.

This document outlines the broad scope, requirements, and expectations from prospective bidders for submission of budgetary offers, which shall be used for internal planning and further tendering process.

2. Objective

The objective of this work is to design, engineer, supply, install, test, and commission a 66/11 kV GIS Substation at Kandla on a Lump Sum Turnkey (LSTK) basis, ensuring a reliable, efficient, and future-ready power distribution system within the port area. The project aims to strengthen the existing electrical infrastructure, enhance system reliability and redundancy, and cater to the present and anticipated load demand of the port.

The substation shall be developed with modern GIS technology, integrated with SCADA and protection systems, and designed for safe, continuous, and efficient operation under prevailing site conditions, including the coastal and corrosive environment. The work shall be executed in a manner that ensures seamless integration with the existing network, minimal disruption to ongoing operations, and provision for future expansion.

3. Scope of work

3.1 SUPPLY, INSTALLATION, TESTING & COMMISSIONING – ELECTRICAL SYSTEM

3.1.1 66 kV GIS SWITCHGEAR SYSTEM

The Contractor shall design, engineer, supply, install, test, and commission an indoor type, double

bus, 66 kV SF6 Gas Insulated Switchgear (GIS) system complete in all respects.

- **Configuration:** The GIS shall comprise incomer bays (2 Nos.), transformer bays (3 Nos.), feeder bays (3 Nos.), one (1) bus coupler bay, and two (2) bus voltage transformer (VT) modules, forming a complete system in accordance with the approved Single Line Diagram (SLD).
- **Bay Equipment & Functional Requirements:** Each bay shall be complete with circuit breakers, disconnectors, earthing switches, current transformers (CTs), voltage transformers (VTs), fast acting earthing switches, and Local Control Cubicles (LCCs). All equipment shall be fully interlocked, integrated, and suitable for local as well as remote operation.
- **SF6 Gas System:** The GIS shall be supplied with first fill SF6 gas, density monitoring system, pressure monitoring devices, and all associated accessories required for safe and reliable operation.
- **Provision for Future Expansion:** The GIS shall be designed with extendable bus arrangement on both sides to facilitate future expansion without major modification or shutdown of the existing system.
- **66 kV Cable System:** The scope shall include design, supply, laying, termination, testing, and commissioning of 66 kV XLPE cables (630 sq.mm), including GIS terminations, outdoor terminations, lightning arrestors, link boxes, and all associated accessories.

3.1.2 11 kV GIS SWITCHBOARD

The Contractor shall supply, install, test, and commission the complete 11 kV indoor GIS switchboard.

- **Configuration:** The switchboard shall comprise incomer panels (3 Nos.), one (1) DG incomer panel, two (2) bus couplers, sixteen (16) outgoing feeder panels, and three (3) capacitor feeder panels.
- **Protection, Control & Metering:** Each panel shall be equipped with numerical protection relays, CTs, VTs, metering, and control systems, ensuring reliable protection and operation of feeders.
- **SCADA Compatibility:** The switchboard shall be fully compatible with IEC 61850-based SCADA system and shall support remote monitoring and control.

3.1.3 POWER TRANSFORMERS & ASSOCIATED SYSTEMS

- **New Transformer Supply:** The Contractor shall supply, install, test, and commission Two (2) No. 12.5 MVA, 66/11 kV power transformer with OLTC, ester oil insulation, RTCC panel, and complete protection system.
- **Associated Systems:** The Contractor shall provide Neutral Grounding Resistor (NGR),

nitrogen injection fire protection system, and all auxiliary systems required for safe operation.

3.1.4 66 kV OUTDOOR SYSTEM / METERING YARD

- **Transmission Line Interface:** The Contractor shall design, supply, and erect transmission line tower, foundations, and ACSR Panther conductor for connectivity with the grid.
- **Outdoor Equipment:** Supply and installation of bus post insulators, lightning arrestors, and associated equipment shall be included.
- **Modification Works:** Modification of existing towers for cable termination, including supply of all hardware, connectors, and fittings, shall be carried out.

3.1.5 CONTROL & PROTECTION SYSTEM

- **Control & Relay Panels:** The Contractor shall supply, install, and commission control and protection panels for all bays, including line, transformer, and bus coupler bays.
- **Protection Scheme:** Complete protection schemes using numerical relays, bay control units, and interlocking systems shall be implemented.
- **System Integration:** All protection and control systems shall be integrated with the SCADA system for centralized monitoring and control.

3.1.6 SUBSTATION AUTOMATION SYSTEM (SCADA)

- **System Scope:** The Contractor shall provide a complete IEC 61850 compliant Substation Automation System (SCADA), including servers, operator workstations, HMI, and engineering tools.
- **Communication Infrastructure:** Supply, laying, termination, and commissioning of Optical Fiber Cable (OFC) network (approx. 3000 m), Ethernet switches, and communication hardware shall be included.
- **Integration:** The SCADA system shall integrate 66 kV GIS, 11 kV GIS (new and existing), transformer systems, and auxiliary systems into a unified control platform.

3.1.7 AUXILIARY SYSTEMS

- **Electrical Auxiliary Systems:** The Contractor shall provide complete auxiliary systems including 110V DC battery and charger system, DC Distribution Board (DCDB), LT AC Distribution Boards, emergency lighting, and inverter system.
- **DG System & Capacitor Bank:** Scope includes shifting and commissioning of DG set and supply, installation, and commissioning of 11 kV capacitor banks (400 kVAR).
- The Contractor shall design, supply, install, test, and commission 1 No. 500 kVA, 11/0.433 kV Station Transformer along with complete auxiliary power system including 11 kV feeder, LT panels, cabling, earthing, civil works, protection, control, and all associated accessories

required for a fully functional substation.

- All works, materials, approvals, and commissioning shall be entirely in the Contractor's scope.

3.1.8 CABLES & CABLING WORKS

- **Cable Supply & Installation:** The Contractor shall supply, lay, terminate, test, and commission all 11 kV cables, LT power cables, and control cables.
- **Cable Management System:** Cable trays, routing, dressing, tagging, HDPE ducts, and trench works shall be executed ensuring proper segregation and mechanical protection.

3.1.9 EARTHING & LIGHTNING PROTECTION

- **Earthing System:** A complete earthing system including copper electrodes, GI flats, and maintenance-free earthing shall be designed and installed.
- **Lightning Protection System:** Air terminals, down conductors, and earthing pits shall be provided to ensure adequate protection against lightning.

3.1.10 MECHANICAL & SAFETY SYSTEMS

- **Ventilation & Fire Protection:** GIS hall ventilation system and complete fire detection and protection systems shall be provided.
- **Safety Equipment:** Fire extinguishers, hydrant provisions, EOT crane (5 MT), ladders, tools, and insulating mats shall be supplied.

3.1.11 BUILDING SERVICES & UTILITIES

- **Utility Systems:** The Contractor shall provide complete building services including illumination system, high mast lighting, air conditioning, CCTV surveillance, water supply, plumbing, and furniture.

3.1.12 COMPLETENESS OF SCOPE & STATUTORY COMPLIANCE

- **Comprehensive Responsibility:** The scope of work under this contract shall be deemed to be complete in all respects, and the Contractor shall be responsible for design, engineering, supply, installation, testing, commissioning, and successful operation of the substation as a fully functional system.
- **Inclusion of All Activities:** All materials, equipment, components, accessories, consumables, services, and incidental works required to be executed comprehensively to complete and for satisfactory performance of the system & shall be deemed included in the Contractor's scope, irrespective of whether specifically mentioned in the bid documents or not.
- **Testing & Commissioning:** The Contractor shall carry out all necessary factory tests, site tests,

pre-commissioning checks, and final commissioning activities, including trial operation and system integration, to ensure reliable and safe operation of the entire system.

- **Statutory Approvals & Liaison:** The Contractor shall be fully responsible for all coordination, liaison, follow-up, documentation, and compliance with statutory authorities including, but not limited to: GETCO / State Transmission Utility, Electrical Inspectorate, Local regulatory authorities. The Contractor shall obtain all necessary approvals, clearances, and permissions required for installation, energization, and commissioning of the substation.
- **Cost Inclusion:** All costs related to statutory liaison, documentation, approvals, testing, and commissioning activities shall be deemed included in the Contractor's scope. All statutory fees, if applicable, shall be reimbursed at actuals.
- **Integration & Interface Responsibility:** The Contractor shall ensure complete integration of all systems including GIS, transformers, switchgear, SCADA, cabling, civil works, and existing installations. All interface issues shall be resolved within the Contractor's scope.
- **No Additional Claims:** No extra cost or time shall be admissible on account of omission of any item or activity required for completeness, statutory compliance, or successful commissioning of the system.

3.2 CIVIL WORKS

The Contractor shall carry out complete civil works for the substation, including design, engineering, and execution.

- **Site Development:** Survey, soil investigation, contouring, excavation, filling, compaction, road works, drainage, and yard grading shall be carried out.
- **Foundations:** Pile foundations, equipment foundations, and cable trenches shall be designed and constructed.
- **Buildings:** Construction of GIS building, control room, office, DG room, and all associated RCC and masonry works shall be included.
- **Infrastructure Works:** Water supply, sewerage system, boundary fencing, paving, landscaping, cable trenches, and ducting shall be executed.
- **Finishing Works:** Painting, waterproofing, anti-termite treatment, false ceiling, ACs lighting fixtures, and architectural works shall be completed.

3.3 LINE-IN LINE-OUT (LILO) OF GETCO TRANSMISSION LINE

The proposed substation is located approximately **2.5 km from the nearest existing transmission line of Gujarat Energy Transmission Corporation (GETCO)**. The Contractor shall execute the **Line-In Line-Out (LILO)** of the identified transmission line to establish connectivity to the proposed GIS substation.

The scope under LILO shall include, but not be limited to, the following:

- Identification and finalization of the exact LILO point on the existing GETCO transmission line in consultation with GETCO.
- **Detailed survey, route alignment, profiling, and preparation of construction drawings.**
- Design, engineering, supply, erection, testing, and commissioning of: Two line bays (Line-In and Line-Out) at the proposed substation
- All associated primary equipment including GIS bays, breakers, isolators, CTs, PTs, surge arresters, etc.
- Transmission line (approx. 2.5 km or as per actual route) including towers/poles, conductors, insulators, OPGW (if applicable), and accessories
- Protection, control, SCADA, and energy metering systems
- Construction of transmission line from the LILO point to the substation including tower erection, stringing, foundations, and associated civil works.
- Integration of the existing transmission line into the substation through LILO configuration, ensuring system continuity and reliability.
- Planning and execution of shutdowns with minimum interruption to the existing network, including obtaining approvals from GETCO/SLDC.
- Complete liaison with GETCO and statutory authorities for approvals, inspections, and charging permission.
- Obtaining all statutory clearances including Right of Way (RoW), crossings (road/rail/utility), and local authority permissions.
- Testing, commissioning, and successful energization of both Line-In and Line-Out circuits.
- The stated distance of **2.5 km is indicative**, and the Contractor shall execute the work based on the **actual surveyed route without any additional cost.**
- All activities including survey, design approvals, liaisoning, shutdown coordination, statutory compliance, and commissioning shall be **fully in the Contractor's scope.**
- No separate payment shall be made for any deviation in route length, terrain, or difficulties

encountered.

4. SPECIAL CONDITIONS OF CONTRACT

4.1 PROJECT SITE CONDITIONS

- **Location Characteristics:** The proposed substation is located within Kandla Port area, which is a coastal and industrial zone. The Contractor shall consider high humidity, saline atmosphere, corrosive environmental conditions, and wind/dust conditions typical of port operations.
- **Design Considerations:** All equipment, structures, and materials shall be suitable for such environmental conditions. Adequate corrosion protection measures such as galvanization, epoxy coating, and suitable material selection shall be adopted.
- **Constructability & Access:** The Contractor shall consider site constraints, space availability, access for transportation and erection, and ongoing port operations while planning execution.

4.2 NATURE OF CONTRACT (LSTK BASIS)

- **Single Point Responsibility:** The work shall be executed on a Lump Sum Turnkey (LSTK) basis. The Contractor shall be fully responsible for design, engineering, supply, installation, testing, commissioning, and performance of the complete system.
- **SITC Coverage:** The scope shall include all activities required for successful commissioning, including coordination and interfacing with existing systems and utilities.

4.3 BATTERY LIMITS & INTERFACES

Scope Boundary: All works within the substation boundary shall be deemed included in the Contractor's scope.

Interface Points: The Contractor shall include all works related to:

- 66 kV incoming termination up to substation interface
- 11 kV outgoing feeder connectivity
- Integration with existing substations / network

Responsibility for Interfaces: All interfacing, matching, and compatibility issues shall be within Contractor's responsibility.

No Additional Claims: No additional cost or time shall be admissible on account of interface complexities.

4.4 BASIS OF DESIGN & STANDARDS

- **Applicable Standards:** All equipment and works shall comply with relevant IS / IEC standards and latest GETCO specifications.
- **Design Philosophy:** The Contractor shall adopt a proven and uniform design ensuring reliability, safety, and ease of maintenance.
- **Suitability for Site Conditions:** The design shall consider coastal and corrosive environment of Kandla.

4.5 STATUTORY APPROVALS & LIAISON

- **Contractor's Responsibility:** The Contractor shall be responsible for all coordination, liaison, and follow-up with statutory authorities including GETCO, Electrical Inspectorate, and other applicable bodies.
- **Approval Scope:** Preparation, submission, and obtaining approvals for drawings, documents, and test reports required for installation and commissioning shall be in Contractor's scope.
- **Cost Inclusion:** All liaison efforts shall be deemed included in the scope. Statutory fees may be reimbursed at actuals.

4.6 COMPLETION PERIOD:

The entire work shall be completed within 12 (Twelve) months from the date of LOA.

4.7 LIQUIDATED DAMAGES (LD):

- **LD Rate:** In case of delay, LD shall be levied at 0.5% per week or part thereof of the total contract price subject to maximum of 10% of the contract price.
- **Applicability:** LD shall apply for the delays attributable to the Contractor including engineering, procurement and execution etc.
- **No Escalation:** No price escalation, for whatsoever reason, shall be admissible during the currency of contract including extension, if any.

Schedule B:

Annexure I

Sr. No.	Description	Amount (INR)
1	Total Lump Sum Price for Design, Manufacturing, Supply, Installation, Erection, Testing and Commissioning of 66/11kV GIS Substation at SIPC Kandla on LSTK basis	
Amount in word in Rs.: _____		

Annexure II: INDICATIVE PRICE BREAK-UP (FOR ANALYSIS PURPOSE ONLY)

Sr. No.	Material Description	Unit	QTY	Unit Rate	Amount
A	Main Equipment 66/11kV GIS Sub-Station				
1	66KV GIS EQUIPMENT				
1.1	<p>66KV INDOOR TYPE DOUBLE BUS SF6 GAS INSULATED SWITCHGEAR</p> <p>Supply Installation, Testing and Commissioning of 66KV, 2500 Amps, 31.5kA for 3 Sec. Indoor type GIS Switchgear suitable for monitoring and controlling from SCADA over IEC 61850 Protocol With Double Bus Arrangement, in line with the tender SLD, with all required accessories, first fill SF6 Gas, PD Sensors, blanking plates, test plugs, Conforming to the technical specifications No. 1, relevant latest standards & latest GETCO specification as applicable. Offered GIS shall be supplied with all required accessories / modules to facilitate expansion on both the sides in future.</p> <p>Configurations shall be as below: INCOMER - 2 NOS. OUTGOING TRAF0. FDR. - 3 NOS. BUS COUPLER - 1 NOS. BUS PT - 1 & 2 - 2 NOS.</p>				
1.2	<p>INCOMER MODULE</p> <p>3- Ø 66 kV, 2500 A, 31.5 kA-3 sec, metal enclosed SF6 Gas Insulated Switchgear - Line bay Module comprising (a) Circuit breaker (b) Current transformer (c) Line side Disconnecter with one maintenance earthing switch (d) High speed/Fast Acting Line Earthing switch (e) Voltage Transformer, 66KV/v3//110V/v3, 3C (f) Bus Disconnecter with Earthing switch (Bus side common earthing switch for two bus) (g) Bus Disconnecter without Earthing Switch (h) LCC Panel (i) 66KV Power Cable module (j) All other items including control cables as per technical specification No. 1</p>	Set	2		
1.3	<p>OUTGOING TRANSFORMER MODULE</p> <p>3- Ø 66 kV, 2500 A, 31.5 kA-3 sec, metal enclosed SF6 Gas Insulated Switchgear - 66/11 KV Transformer bay Module comprising (a) Circuit breaker (b) Current transformer (c) Earthing Switch (d) Transformer side Disconnecter with one maintenance earthing switch (e) Earthing switch (f) Bus Disconnecter with Earthing switch (g) Bus Disconnecter without Earthing Switch (h) LCC Panel (i) 66KV Power Cable module (j) All other items as per technical specification No. 1</p>	Set	2		

1.4	OUTGOING FEEDER MODULE 3- Ø 66 kV, 2500 A, 31.5 kA-3 sec, metal enclosed SF6 Gas Insulated Switchgear - 66/11 KV Transformer bay Module comprising (a) Circuit breaker (b) Current transformer (c) Earthing Switch (d) Feeder side Disconnector with one maintenance earthing switch (e) Earthing switch (f) Bus Disconnector with Earthing switch (g) Bus Disconnector without Earthing Switch (h) LCC Panel (i) 66KV Power Cable module (j) All other items as per technical specification No. 1	Set	3		
1.5	MAIN BUSCOUPLER 3- Ø 66 kV, 2500 A, 31.5 kA-3 sec, metal enclosed SF6 Gas Insulated	Set	1		

Sr. No.	Material Description	Unit	QTY	Unit Rate	Amount
	Switchgear - Bus Coupler bay Module comprising (a) Circuit breaker (b) Current transformer (c) Bus Disconnector with one Earthing switch (d) LCC Panel (e) All other items as per technical specification No. 1.				
1.6	BUS VT MODULE 3- Ø 66 kV, 31.5 kA-3 sec, metal enclosed SF6 Gas Insulated Switchgear - Bus VT Module comprising (a) 3 X Single phase Voltage transformer 66KV/ SQRT 3//110V/ SQRT 3 -segrigated from bus bar unit (b) High speed/Fast Acting Earthing switch (c) Bus Disconnector with Earthing switch (d) All other items as per technical specification No. 1.	Set	2		
I	1C X 630 SQ.MM. AL. 66KV, XLPE, AL. CORRUGATED CABLE	MTRS.	1550		
II	66KV GIS TERMINATION SUITABLE FOR 1C X 630 SQ.MM. AL. 66KV CABLE WITH MALE AND FEMAL CONTACT	Set	15		
III	66KV OUTDOOR TERMINATION SUITABLE FOR 1C X 630 SQ.MM. AL. 66KV CABLE	Set	25		
IV	66KV OUTDOOR TERMINATION SUITABLE FOR 1Cx630SQMM AL. 66KV CABLE WITH 66KV METAL OXIDE LIGHTING ARRESTOR, HARDWARE, ACCESSORIES SUITABLE FOR MOUNTING ON TOWER OF D/C TRANSMISSION LINE	Nos	6		
V	3 phase Link box with SVL	Nos	5		
VI	3 phase Link box with out SVL	Nos	5		
VII	Co-Axial Cable	Mtrs	200		
2	11 KV INDOOR GIS SWITCHBOARD Supply Installation, Testing and Commissioning of 11KV, 2500 Amps, 26.3kA for 3 Sec. Indoor type GIS Switchgear with Numerical Protection relays suitable for monitoring and controlling from SCADA over IEC 61850 Protocol, in line with the tender SLD, with all required accessories, first fill SF6 Gas, test plugs, Conforming to the specifications No. 2. Offered GIS shall be supplied with all required accessories / modules to facilitate expansion on both the sides in future.				

2.1	INCOMER MODULE 3- Ø, 11kV, 2500A, Short Circuit Current Rating of 26.3 kA for 3 seconds, Three Phase encapsulated Unit, SF6 Gas Insulated, Metal enclosed Bus Bars, Bus Enclosures running along the length of the Switchgear to interconnect each of the Feeder Module in Single Main Bus System. Each Phase shall be complete with Inductive Voltage Transformers (VTs) / Current Transformer (CTs) complete with Isolator / Disconnect cum Earth Switches and Safety Grounding Switch, Capacitive Voltage detector, Surge Arrestor, Numerical Protection Relays, all complete with Manual and Motor Driven Operating Mechanisms and Accessories etc complete in all respects Connection, Tapping, Lugging etc.	Set	3		
2.2	DG 11KV INCOMER MODULE 3- Ø, 11kV, 2500A, Short Circuit Current Rating of 26.3 kA for 3 seconds, Three Phase encapsulated Unit, SF6 Gas Insulated, Metal enclosed Bus Bars, Bus Enclosures running along the length of the Switchgear to interconnect each of the Feeder Module in Single Main Bus System. Each Phase shall be complete with Inductive Voltage Transformers (VTs) / Current Transformer (CTs) complete with Isolator / Disconnect cum Earth Switches and Safety Grounding Switch, Capacitive Voltage detector, Surge Arrestor, Numerical Protection Relays, all complete with Manual and Motor Driven Operating Mechanisms and Accessories etc complete in all respects Connection, Tapping, Lugging etc.	Set	1		

Sr. No.	Material Description	Unit	QTY	Unit Rate	Amount
2.3	BUS COUPLER MODULE 3- Ø, 11kV, 2500A, Short Circuit Current Rating of 26.3 kA for 3 seconds, Three Phase encapsulated Unit, SF6 Gas Insulated, Metal enclosed Bus Bars, Bus Enclosures running along the length of the Switchgear to interconnect each of the Feeder Module in Single Main Bus System. Each Phase shall be complete with Current Transformer (CTs) complete with Isolator / Disconnect cum Earth Switches and Safety Grounding Switch, Capacitive Voltage detector on both the sides, Numerical Protection relay/s all complete with Manual and Motor Driven Operating Mechanisms and Accessories etc complete in all respects Connection, Tapping, Lugging etc.	Set	2		
2.4	OUTGOING LINE NEW FEEDER MODULE 3- Ø, 11kV, 1250A, Short Circuit Current Rating of 26.3 kA for 3 seconds, Three Phase encapsulated Unit, SF6 Gas Insulated, Metal enclosed Bus Bars, Bus Enclosures running along the length of the Switchgear to interconnect each of the Feeder Module in Single Main Bus System. Each Phase shall be complete with Current Transformer (CTs) complete with Isolator / Disconnect cum Earth Switches and Safety Grounding Switch, Capacitive Voltage detector, Surge Arrestor, Numerical Protection relay/s all complete with Manual and Motor Driven Operating Mechanisms and Accessories etc complete in all respects Connection, Tapping, Lugging etc.	Set	16		

2.5	11KV CAPACITOR FEEDER MODULE 3- Ø, 11kV, 1250A, Short Circuit Current Rating of 26.3 kA for 3 seconds, Three Phase encapsulated Unit, SF6 Gas Insulated, Metal enclosed Bus Bars, Bus Enclosures running along the length of the Switchgear to interconnect each of the Feeder Module in Single Main Bus System. Each Phase shall be complete with Current Transformer (CTs) complete with Isolator / Disconnect cum Earth Switches and Safety Grounding Switch, Capacitive Voltage detector, Surge Arrestor, Numerical Protection relay/s all complete with Manual and Motor Driven Operating Mechanisms and Accessories etc complete in all respects Connection, Tapping, Lugging	Set	3		
3	POWER/DISTRIBUTION TRANSFORMER				
3.1	Supply, Installation, testing and commissioning of 12.5 MVA, 66/11KV, Dyn-11, KNAN transformer with Ester Oil, OLTC, RTCC, first fill Oil, NIPS, Soak pit & all accessories, suitable for running in parallel with existing power transformers, as per specification No. 3 and standards.	Nos	2		
3.2	Disconnection from existing services, cables, Oil Draining, Dismantalling from existing substation with all accessories, packing, loading & unloading, shifting, Re-Installation at new Substation with all accessories, testing and commissioning of 10 / 12.5 MVA, 66/11KV, Dyn-11, ONAN transformer with Ester Oil, OLTC, RTCC, NIFPS, NGR, accessories, Oil Re-filling and filtration, Supply of consumables, Minor fabrication / repair works, as per technical specification No. 4 and standards.	Nos	2		
3.3	Supply, Installation, Testing and Commissioning of NGR of 11/√3kV, 656A, 9.68 ohm Suitable for Outdoor installation as per the specification No. 6.	Nos	1		
3.4	Supply, Installation, Testing and Commissioning of Nitrogen based fire prevention and protection system for 12.5MVA 66/11KV, KNAN Transformer with Ester Oil, as per the technical specification No. 7.	Nos	1		
3.5	Disconnection from existing services, cables, Dismantalling from existing substation loading & unloading, shifting, Re-Installation at new Substation with all accessories, testing and commissioning of 500 kVA, 11/0.415 KV, ONAN Indoor duty distribution transformer.	Nos	1		

Sr. No.	Material Description	Unit	QTY	Unit Rate	Amount
4	66KV OUTDOOR EQUIPMENT FOR METERING YARD				
4.5	Supply, fabrication, modification of additional cross-arm for 66KV Cable termination, 66kv Metal Oxide Lighting arrestor with necessary hardware on existing D/C Transmission Line tower with all metal parts Hot dip Galvanised as per GETCO standards.	Job	1		
4.6	Supply, installation, testing and commissioning PS Type D/C Transmission Line tower with additional cross arm, Structure, hardware, accessories suitable for connecting 66kv Cable, Lightning arrestors, Cable tray, etc. all metal parts Hot dip Galvanised as per GETCO standards.	Nos	1		

4.7	Foundation of PS Type D/C Transmission line tower. It shall be on pile foundation as per GETCO standards.	Nos	1		
4.8	Supply, installation, testing and commissioning of ACSR Panther Conductor as per GETCO standards and specifications with all the test certificates.	Mtrs	250		
4.9	Supply, installation, testing and commissioning of 66kV Bus Post Insulator including support Structures, necessary, hardware and accessories etc.	Nos	2		
4.10	Supply, installation, testing and commissioning of 66kV, Polymeric Metal Oxide, Class-II Lighting arrestor for Power Transformer, including support Structures, necessary, hardware and accessories etc. as per GETCO specifications and standards.	Nos	11		
5	66KV C&R PANEL as per Technical Specification. Control and Protection panels with Numerical Relay, Bay Control Unit all with latest state of art technology suitable for Control & Monitoring of GIS switchgear modules from SCADA over IEC 61850 Communication protocol as per technical specifications and latest GETCO specifications and practice.				
5.1	Control and Protection panels for 66KV Line Bays as per GETCO standards and specifications.	Nos	2		
5.2	Control and Protection panels for 66/11KV Transformer Bays as per GETCO standards and specifications.	Nos	3		
5.3	Control and Protection panels for 66KV Bus Coupler as per GETCO standards and specifications.	Set	1		
6	SUBSTATION AUTOMATION SYSTEM (SCADA)				
6.1	Supply, Erection, Testing and Commissioning of SCADA equipments and materials as per respective technical specification No. 8 suitable for Control & Monitoring of 66KV GIS switchgear modules, 11KV New GIS Switchboard, 11KV Existing GIS Switchboard with Switches & OFC (02 lengths), Station Auxiliaries, etc. from SCADA over IEC 61850 Communication protocol with UPS for SCADA with at least 1 Hr. backup, all required hardwares, accessories, communication cables, patch cables, SCADA Furniture, etc. as per technical specification No. 8 and latest GETCO specifications and practice with minimum spec, but not limited to it.	LOT	1		
6.2	Supply, laying, termination & commissioning of 6F, Double Sheath Armoured Outdoor, Single Mode Optic Fiber Cable fully compliant with IEC-60794-3, with HDPE duct	Mtrs	3000		
6.3	Ethernet Switch, Necessary Hardware, Modification / wiring if required, Communication Cable for Existing 11KV GIS for integration with SCADA under the scope of this tender	LOT	1		

Sr. No.	Material Description	Unit	QTY	Unit Rate	Amount
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7	11KV HT CAPACITOR BANK 11kV, 400 kVAR Indoor Fixed type Capacitor Bank complete with Disconnecting Isolator, HT Contactor, Series reactor, RVT as per GETCO specifications & standards.	Set	3		
8	110V DC BATTERIES AND BATTERY CHARGER AS PER TECHNICAL SPECIFICATION.				
I.	Supply, Installation, testing and commissioning of 110V, 240 AH VRLA DC battery set along with mounting racks	Set	1		
II	Supply, Installation, testing and commissioning of Electronic, SCADA Compatible Float and Float cum Boost Charger 110 V DC, with mandatory protections including Surge protection and annunciation as per latest GETCO Specifications.	Set	1		
9	110V DCDB Supply, Installation, testing, & Commissioning of DC Distribution Board with 20 OG Feeders	Nos	1		
10	LT AC DISTRIBUTION BOARD AS PER TECHNICAL SPECIFICATION				
10.1	Supply, Installation, testing and commissioning of SCADA Compatible 415 Volts, Main LT Distribution Board For Station Auxiliaries as per SLD and Tech. specifications. Incomer Feeder shall be Fixed type 1000 Amps, ACB with LSIG Numerical protection relay suitable for controlling and monitoring from SCADA, Outgoing shall be MCB / MCCB as per required ratings with status monitoring indicating lamps on panel.	Set	1		
10.2	415V Main Lighting Distribution Board as per requirement for the new substation	Set	1		
10.3	415V Emergency Lighting Distribution Board as per requirement for the new substation	Set	1		
10.4	415V Normal Lighting Distribution Board with timer control as per requirement for the 66KV Metering Bays, Road, at New Station	Set	1		
10.5	415V Distribution Board for Air Conditioner of New Substation	Set	1		
10.6	110V DC Emergency Lighting Distribution Board for new substation	Set	1		
11	INVERTER WITH BATTERY FOR EMERGENCY LIGHTING AS PER TECHNICAL SPECIFICATION. Inverter system provided with battery bank with total of 115 Nos of batteries to Connect in LT Panel Supply for Emergency Lighting Failure.	Set	2		
12	VISUAL MONITORING SYSTEM - CCTV AS PER TECHNICAL SPECIFICATIONS. Visual Monitoring System (CCTV) as per the technical specification No. 9 alongwith local PC monitoring set up, State of the art Night vision HD Camera - 20 Nos, necessary panels, hardware, accessories, etc. for the Complete new substation building.	Set	1		
13	ILLUMINATION, Air Conditioners, SYSTEM, SWITCH BOARD WITH RECEPTACLES ETC. AS PER TECHNICAL SPECIFICATION.				

13.1	SS Building / HT DG Room / Diesel Store Room / Meter Room				
I	100W LED High Bay Light Fixtures (GIS Hall)	Nos	14		
II	36W LED - 600 x 600 Recess mounted light fixtures - CRP / SCADA / Office	Nos	20		

Sr. No.	Material Description	Unit	QTY	Unit Rate	Amount
III	22W LED Tube light	Nos	70		
IV	Split Type Cassete AC - 3 Ton - CRP Room	Nos	3		
V	Split Type AC - 1.5 Ton - Office, SCADA Room	Nos	4		
VI	Split Type AC - 1.0 Ton - Meter Room	Nos	1		
13.2	OUTDOOR				
I	High Mast for Outdoor Illumination with necessary accessories, control panel and required light fixtures.	Set	3		
II	470W LED Flood Lights	Nos	30		
13.3	POWER SOCKETS				
I	230V Single phase Earth(16 or 20A) Power Sockets	Nos	18		
II	3 phase (415V), 63A Power Sockets with plugs (INDUSTRIAL SOCKET)	Nos	5		
13.4	CEILING FANS 1200mm Sweep Fan with 5 star rating as per BEE.		6		
13.5	EXHAUST FANS Higher capacity Industrial standard Exhaust Fans.		10		
13.6	Lighting DB's				
I	8 Ways Lighting DB (24 Nos. SP MCB)	Nos	6		
II	6 Ways Lighting DB (18 Nos. SP MCB)	Nos	4		
III	4 Ways Lighting DB (12 Nos. SP MCB)	Nos	6		
IV	Industrial Lighting Distribution Boad	Nos	10		
13.7	Conduits / Flexible Wires				
1	Conduits for Illumination	Mtrs.	300		
2	Flexible Wires - 4 / 2.5 Sq.mm with all the wiring shall be concealed.	Mtrs.	5000		
14	LT POWER AND CONTROL CABLES (FRLS)				
14.1	LT POWER CABLES				
I	4X400 sq.mm XLPE AL. Cable	Mtrs	200		

II	4X70 sq.mm XLPE AL Cable	Mtrs	250		
III	1X35 sq.mm Copper Flexible cable (Battery)	Mtrs	150		
IV	4Cx16 sq.mm AL cable	Mtrs	500		
V	4Cx6 sq.mm AL cable	Mtrs	1000		
VI	2Cx6 sq.mm AL cable	Mtrs	750		
14.2	GLANDS				
I	4X400 sq.mm XLPE AL. Cable	Nos	4		
II	4X70 sq.mm XLPE AL Cable	Nos	6		
III	1X35 sq.mm Copper Flexible cable (Battery)	Nos	8		
IV	4Cx16 sq.mm AL cable	Nos	40		

Sr. No.	Material Description	Unit	QTY	Unit Rate	Amount
V	4Cx6 sq.mm AL cable	Nos	40		
VI	2Cx6 sq.mm AL cable	Nos	34		
14.3	LUGS				
I	400 sq.mm Al cable	Nos	16		
II	70 sq.mm Al cable	Nos	24		
III	35 sq.mm Al cable	Nos	8		
IV	16 sq.mm Al cable	Nos	160		
V	6 sq.mm Al cable	Nos	228		
14.4	CONROL CABLE (COPPER CABLE)				
I	12C X4 sq.mm	Mtrs	500		
II	4C X2.5 sq.mm	Mtrs	500		
III	12C X2.5 sq.mm	Mtrs	750		
IV	19C X2.5 sq.mm	Mtrs	750		
V	27C X2.5 sq.mm	Mtrs	1000		
14.5	GLANDS				
I	12C X2.5 sq.mm	Nos	30		
II	12C X4 sq.mm	Nos	32		
III	4C X2.5 sq.mm	Nos	40		
IV	19C X2.5 sq.mm	Nos	30		

V	27C X2.5 sq.mm	Nos	30		
14.6	LUGS				
1	2.5 sq.mm	Nos	3000		
2	4 sq.mm	Nos	500		
15	MECHANICAL AUXILIARY SYSTEM				
I	Ventilation System for 66kV GIS HALL as per GETCO Specifciation	Nos	1		
II	Portable Aluminium/FRP Ladder Extendable type of adequate height (as directed) for Maintenance.	Nos	5		
III	Water Cooler with purifier	Nos	1		
IV	Office furniture	LOT	1		
V	1.0 MT, Manual operated Chain Pulley Block with mono rail	Set	1		
VI	Rubber Insulating Mat Confirming to IS:15652:2006 of Size 2000 X 1000 X 3 mm Size	Nos	60		
VII	FIRE ALARM SYSTEM AS PER TECHNICAL SPECIFICATION: - Fire detection should be such that all the smoke / fire sensors installed in the system should be given invidual ID and if any of sensors observe abnormality, its ID should display on LCD screen of detection panel with alarm and annunciation so that the operational personnel target that particular place for fire extinction covering all the rooms in GIS Building	LOT	1		

Sr. No.	Material Description	Unit	QTY	Unit Rate	Amount
VIII	Carbon-di- oxide type fire extinguisher of 2 kgs.Capacity, CO2 gas as per IS 15222	Set	2		
IX	Carbon-di- oxide type fire extinguisher of 4.5 kgs., Capacity, CO2 gas as per IS 15222	Nos	12		
X	Mechanical Foam type fire extinguisher 9Lts	Set	2		
XI	ABC powder type fire extinguisher of 6 Kgs	Nos	5		
XII	Fire buckets round bottom type enamel painted, white inside & Red out side and Letter "FIRE" in black out side and handle with mounting bracket.	Nos	12		
XIII	Fire buckets with stand (Set of 4)	Set	1		
16	DG SET AS PER TECHNICAL SPECIFICATION Supply, Installation, Connection, Testing and Commissioning of LT DG 150 KVA With AMF Panel & Protection & LT Panel from Old Substation to New Substation.	Set	1		

17	EOT CRANE (Supply, Installation etc.) as per technical specification. 66KV GIS Hall 5.0 MT with permanent fixed ladder from ground to EOT Crane	Set	1		
18	EARTHING & LIGHTNING SYSTEM AND ACCESSORIES (SUPPLY, INSTALLATION etc.)				
I	Copper Bar Electrodes 32 mm dia.(3M rod)	Nos	10		
II	Copper Bar Rod 32 mm dia. For Main earthing.	Ton	7		
III	75 x 12 mm G. I. Flat	ton	1.86		
IV	24mm Dia 3000mm long Copper bonded Maintenance free chemical earthing	Nos	32		
V	25 x 3 mm GI Flat for horizontal and down conductor for control building	Mtrs.	300		
VI	25 mm dia 1000mm Long Air Termination Spike	Nos	8		
VII	Epoxy Fixing clamps for down conductors	Nos	150		
VIII	Check Pits	Nos	8		
19	66KV OUTDOOR EQUIPMENTS (SUPPLY, LAYING etc.)				
I	All types of Hardware & Fittings/Spacers/Clamp & Connectors	Lot	1		
II	66kV Long rod suspension insulators	Nos	6		
III	66kV Long rod Tension insulators	Nos	6		
IV	Tariff Metering Panel and RTU system as per GETCO Specification (Main & Check per Set)	Set	2		
V	11kV, 3CX300 sq.mm XLPE Al. Conductor cable	Mtrs	13000		
VI	11kV Indoor Termination kit suitable for 3CX300sq.mm XLPE, AL. cable Suitable for 11KV GIS with Boots	Nos	48		
VII	11kV Indoor Termination kit suitable for 3CX300sq.mm XLPE, AL. cable Suitable for Power Transformer Cable Box	Nos	10		
VIII	11kV Indoor Termination kit suitable for 3CX300sq.mm XLPE, AL. cable Suitable for APFC / DG Set	Nos	4		

Sr. No.	Material Description	Unit	QTY	Unit Rate	Amount
IX	11kV St. Through Joint kit suitable for 3CX300sq.mm XLPE, AL. cable	Nos	36		
X	Portable Earthing Rod	Nos	6		
XI	HDPE Pipe (150 mm Diameter)	Metrs	3000		
B	MANDATORY SPARES				

MANDATORY SPARES FOR POWER TRANSFORMER					
1	66KV bushing complete in all respects.	Nos	1		
2	11KV bushing complete in all respects	Nos	1		
3	Bucholz relay complete with float and contact (main tank)	Set	1		
4	Local and Remote Winding Temperature Indicator with contact and sensing device	Set	1		
5	Oil Temperature Indicator with contact and sensing device (Local and Remote)	Set	1		
6	Set of valves of all sizes (Complete set for 1 Transformer)	Set	1		
7	Complete set of gaskets used per Transformer	Nos	1		
8	Pressure relief device	Nos	2		
9	Magnetic Oil Level Gauge	Nos	2		
10	Oil surge relay	Nos	1		
11	Plank/dummy plates for radiators opening	L/s			
12	Oil temperature sensing cable with capillary	Nos	2		
13	Pressure relief device for OLTC	Nos	1		
14	Breather Assembly (for Conservator and OLTC)	Set	1		
20	COMMON SPARES, MAINTENACE TOOLS FOR 66 / 11 kV GIS				
20.1	SPARES FOR 66kV GIS				
I	SF6 Gas Pressure Relief Devices 3 Nos. of each type	set.	1		
II					

20	COMMON SPARES, MAINTENACE TOOLS FOR 66 / 11 kV GIS				
20.1	SPARES FOR 66kV GIS				
I	SF6 Gas Pressure Relief Devices 3 Nos. of each type	set.	1		
II	Pressure Gauge along with Coupling Device, Rubber Gaskets, "O" Rings and Seals for SF6 gas	Nos	1		
III	Density Monitor for SF6 Gas	Nos	1		
IV	All Types of Control Valves for SF6 Gas	Nos	1		
V	Molecular Filter for SF6 Gas with Filter Bags	%	20		
VI	SF6 Gas - Quantity be weight	%	20		
VII	Locking Device to keep the Disconnectors (Isolators) and Earthing Switches in CLOSE or OPEN Position incase of removal of the Driving Mechanism	set	1		
VIII	Coupling device for pressure gauge cum switch for connecting gas handling plant (3 Nos. of each type)	set	1		
IX	Relays, Power Contactors, push Buttons, timers & MCB etc.of each type and Rating	set	1		
X	Operation Counter	Nos	1		
XI	Spring operating mechanism, complete with all necessary connecting apparatus.	set	1		
XII	Spring Charging Motor	set	1		

XIII	Motor for drive Disconnecter / Earth Switch / Fast Acting Earth Switch of each rating and type	set	1		
XIV	Indicating lamps of each make and type	%	10		
XV	Complete set of 3 phase dis-connector including main circuit, enclosure, driving mechanism etc.for one bay	No	1		
XVI	High speed/Fast acting fault making grounding switch including main circuit , enclosure and driving mechanism etc. for one complete bay.	No	1		
XVII	Three phase Earthing switch including main circuit, enclosure, driving mechanism etc.	No	1		
XVIII	66kV, single phase current transformer complete with mounting hardware of each type and rating	Nos	2		
XIX	66kV, single phase voltage transformer ratio, 66kV/ $\sqrt{3}$ /110V/ $\sqrt{3}$ /110V/ $\sqrt{3}$ with mounting hardware	Nos	2		
20.2	SPARES FOR 11kV GIS Board	LOT	1		
I	each type and rating complete with interrupter, main circuit enclosure, with marshalling box and operating mechanism	Nos	1		
II	Rubber gasket, 'O' rings and seals of SF6 gas of each type	Set	1		
III	Trip Coils with Resistor as applicable (3 Nos. of each type)	Set	1		
IV	Closing Coils with resistor as applicable (3 Nos. of each type)	Set	1		
V	Molecular Filter for SF6 Gas with Filter Bags	10% of total quantity	10		
VI	Density / Gas pressure monitor (3 Nos. of each type)	set	1		
VII	Relays, Power Contactors, push Buttons, timers & MCB etc.of each type and Rating	set	1		
VIII	Operation Counter	Nos	1		
IX	Spring operating mechanism, complete with all necessary connecting apparatus.	set	1		
X	Spring Charging Motor	set	1		
XI	Coupling device for pressure gauge cum switch for connecting gas handling plant (3 Nos. of each type)	set	1		
XII	Indicating lamps of each make and type	%	10		
XIII	Numerical Protection Relay / BCPU of each make and model no.	Nos	1		
XIV	Relay Programming and configuration Software with necessary and suitable cables for each make and type	Nos	1		
XV	Trip Relay / Supervision Relay / Auxiliary Relay / Contact multiplier / Timers, of each make and Type	Nos	1		
XVI	MCB / Control Switch of each make and type	Nos	1		
XVII	Annunciator of each make and type	Nos	1		
XVIII	Semaphore of each make and type	Nos	3		
XIX	Multifunction Meter of each make and type	Nos	1		
XX	Indicating lamps of each make and type	%	10		
21	SPARES FOR 66KV ISOLATOR AND EARTH SWITCH	LOT	1		
I	Complete set of 3 Phase Isolator Main Power components / contacts including operating rods and driving Mechanism of each make and type	set	1		
II	Complete set of three phase earthing switch main Power components / contacts, operating rods and driving mechanism of each make and type.	set	1		
III	Limit switches and auxiliary switches for complete three phase equipment				
IV	For isolator	set	3		
V	For earth switch	set	1		
VI	Relays, Power Contactors, push Buttons, timers & MCB etc.of each type and rating	set	1		
VII	For isolator	set	3		
VIII	For earth switch	set	1		

IX	Auxiliary Switch Assembly with NO + NC (3 nos. of each type)	set	1		
X	Drive Motor for Isolator	set	1		
XI	Annunciator of each make and type	Nos	2		
22	11KV GIS Switchgear Mandatory spares & Tools	LOT	1		
I	11 KV single phase current transformer complete with mounting hardware of each type and rating	Nos	1		
II	11KV single phase voltage transformer of each type and rating	Nos	1		
22.1	CIRCUIT BREAKER	Nos	1		
I	Tripping coil	Nos	1		
II	Closing coil	Nos	1		
III	Spring charge motor	Nos	1		
IV	3-ph Vacuum circuit breaker Module	Nos	1		
V	Annunciator of each make and type	Nos	2		
22.2	SPARES FOR 110VDC BATTERY CHARGER & DCDB	LOT	1		
I	Set of relays (1 No. of each type)	set	1		
II	Set of contactor (1 No. of each type)	set	1		
III	Set of switches (1 No. of each type)	set	1		
IV	DP MCB (five nos. of each type and rating)	set	1		
22.3	SPARES OF LT SWITCHGEAR	LOT	1		
I	Auxiliary Relays (1 No. of each type)	set	1		
II	CTs and PTs (1 No. of each type)	set	1		
III	Switches/Push buttons (1 No. of each type)	set	1		
IV	MCCB (1 no. of each type and rating)	set	1		
V	Voltmeters	Nos	1		
VI	Ammeter	Nos	1		
VII	O/C & E/F relay	Nos	1		
VIII	Auxiliary contactors (1 No. of each type)	set	1		
	Busbar				
	a) Busbar insulators	Nos	5		
	b) Interphase barrier	Nos	2		
	c) Busbar strip (Aluminium)	Mtrs	5		
22.4	SPARES FOR 66KV Control Relay and Protection Panels / SCADA	LOT	1		
I	Numerical Protection Relay of each make and model no.	Nos	1		
II	Bay Control Unit of each make and model no.	Nos	1		
III	Relay Programming and configuration Software with necessary and suitable cables for each make and type	Nos	1		
IV	Trip Relay / Supervision Relay / Auxiliary Relay / Contact multiplier / Timers, of each make and Type	Nos	1		
V	MCB / Control Switch of each make and type	Nos	1		
VI	Semaphore of each make and type	Nos	3		
VII	Multifunction Meter of each make and type	Nos	1		
VIII	Ethernet switch of each type	Nos	1		
IX	LIU of each type / configuration	Nos	1		
X	Communication Cable of each type	%	20		
XI	Indicating lamps of each make and type	%	10		
XII	Convertors of each make and type	Nos	1		

	1C x 630 sqmm 66kV XLPE Underground Cable	Mtr	1200		
	66kV GIS Cable Termination	Nos	6		
	66kV Outdoor Cable Termination	Nos	10		
	66kV Cable Joint Kit with Joint Pit	Nos	6		
	3-Phase Link Box with SVL	Nos	3		
	3-Phase Link Box without SVL	Nos	3		
	RCC Duct Bank / Cable Trench for LILO System	Nos	2500		
	LILO Gantry Structure & Line Termination Arrangement	Nos	1		
	Line Shorting / Bypass Arrangement during LILO	RMT	1		
	TOTAL OF ELECTRICAL WORK (A+B+C)				

D Civil Works for GIS 66/11 KV Substation					
Sr. No.	Description	Unit	Qty.	Unit Rate	Amount
Excavation Work : (Cutting, Filling, Levelling & Foundation of 66 KV Substation)					
1.	Preparing topographical contour survey and geotechnical survey investigation, collection climatological data like rainfall, highest flood level, wind direction and speed etc. required for design.	JOB	1.00		
2.	Preparing Soil bearing test with required equipment as per IS code including field and lab test with submitting test report and taking load test at site as directed by engineer in charge.	JOB	1.00		
3.	Excavation for foundation in trenches up to 1.5 Mtr. depth including sorting out and stacking of useful materials and disposing off the excavated stuff up to 50 Mtr. lead for Loose or soft soil.	CMT	4,677.56		
4.	Excavation for foundation for depth from 1.5 Mtr. to 3 Mtr. depth including sorting out and stacking of useful materials and disposing of the excavated stuff up to 50 Mtr. lead for Loose or soft soil.	CMT	302.88		
5.	Do as above but above 3.0 Mtr. depth	CUM	37.48		
6.	Drilling of 300 mm. dia. pile at required location and depth by means of mechanical equipment with required tools and tackles as directed by engineer in charge.	RMT	146.00		
7.	Do as above but for 450 mm. dia. pile	RMT	662.76		
8.	Filling in plinth/trenches & yard with earth in 200 mm., thick layers including watering, ramming, consolidating etc., complete as directed by EIC, with excavated earth from foundation. The item rate includes all leads & lifts.	CMT	1,809.92		
9.	Filling in foundation and plinth with murrum or selected soil in layers of 200 mm. thickness including watering, ramming and consolidating, etc. complete with all lead and lift. Murrum or selected soil shall be brought from outside at any lead.	CMT	2,021.33		
10.	Removal of surplus excavated materials not required for backfill shall be deposited in areas outside plot boundary by mechanical means up to any lead as directed by Engineer-in-charge including loading, unloading & spreading in layers as per requirement of Engineer-in-Charge.	CMT	3,161.44		
11.	Filling in plinth with sand under floors including watering, ramming, consolidating and dressing etc. complete.	CMT.	14.10		
12.	Providing brick masonry in foundation and up to plinth or mezzanine floor in C.M. (1:6) including racking out joints up to 12 mm. depth, scaffolding, curing, filling up the gaps between the joints complete as directed by E.I.C. with Conventional Bricks.	CMT	123.28		

13.	Do as above Item No. 12 but for super structure Up to 5.0 Mtr. height or ground floor height with Conventional Bricks.	CMT	249.11		
14.	Do as above Item No. 12 but for super structure above 5.0 Mtr. height or first floor height including parapet and stair cabin with Conventional Bricks.	CMT	218.87		
15.	Do as above item No. 12 but for partition wall in C.M. (1:4) up to plinth & two floors G.F+F.F+Stair Cabin. Conventional Bricks.	SMT	290.13		
16.	Providing & laying control cement concrete 1:4:8 as per mix design exposed work with curing etc. complete including the cost of ply wood / steel sheathing form work & adjustable tubular steel supports / Props. but excluding the cost of reinforcement. G.F+F.F+Stair Cabin for Footing	SMT	313.50		
17.	Providing & laying control cement concrete M15 as per mix design exposed work with curing etc. complete including the cost of ply wood / steel sheathing form work & adjustable tubular steel supports / Props. but excluding the cost of reinforcement. G.F+F.F+Stair Cabin for Footing	CMT	323.59		
18.	Providing & laying control cement concrete M20 as per mix design exposed work with curing etc. complete Excluding the cost of ply wood / steel sheathing form work & adjustable tubular steel supports / Props. but excluding the cost of reinforcement.	CMT	762.46		
19.	Providing and laying controlled design mix Reinforced Cement Concrete of M25 grade with 20 mm. down size graded crushed stone aggregates for all elements including cup lock scaffolding, opening, recesses, chamfering, finishing top surfaces, vibrating, machine mixing tamping, curing, (excluding cost of centering, shuttering and reinforcement) etc. complete as per the specifications, drawing and instruction of Engineer-in-charge. Concrete shall be finished to the true line, level & as per tolerances required. up to plinth or mezzanine floor.	CMT	1,215.29		
20.	Do as above M25 above item but up to 5.0 Mtr. height or first floor height.	CMT	327.86		
21.	Do as above M25 but above 5.0 Mtr. height or first floor height including parapit and stair cabin.	CMT	189.96		
22.	Do as above but for M30 concrete for Pile casting as directed.	CMT	118.87		
23.	Applying Power trowel to concrete floor of any thickness	SMT	287.79		
24.	Providing form work of steel / ply wood planking so as to give a smooth exposed finish including centering (steel adjustable tubular supports). Shuttering strutting and propping etc. for plinth or mezzanine floor propping and centering below supporting floor to ceiling etc.	SMT	12,870.95		
25.	Do as above plinth but up to 5.0 Mtr. or ground floor height.	SMT	2,458.93		
26.	Do as above plinth but above to 5.0 Mtr. or first floor height including parapit and stair cabin.	SMT	1,424.72		
27.	Providing Thermo Mechanically treated bars (CRS steel bars) confirmed to IS : 1786 FE 500 for RCC work including bending, binding and placing in position etc. completed for RCC work for required height.	MT	262.86		
28.	P/A one coat (@ 200 microns) of Nitocote ET 402 of Fosrock over a coat of primer to Nitoprime 25 to RCC structures below ground level coming in contact with soil.	SMT	5,241.92		

29	Setting of template & foundation bolts in line and level before concreting of foundation and making arrangement of fixing template in such a way as it remains in position during concrete etc. comp. as directed by EIC. The rate includes supplying & fabrication for Gantry Foundation	No.	-		
30	Setting of template & foundation bolts in line and level before concreting of foundation and making arrangement of fixing template in such a way as it remains in position during concrete etc. comp. as directed by EIC. The rate includes supplying & fabrication for Gantry Foundation	No.	44.00		
31	Providing and laying 25 to 50 mm. thick Under pinning below base plate & the top surface of the foundation concrete with cement mortar in proportion of 1:3 with water cement ratio 0.4 by weight, blended with an approved free flow grout Cebex 100 OR Interplast NN or equivalent approved make (chemical supplied by contractor) as per manufacturer specification in line and level including shuttering , making top surface chamfered ,curing etc. complete as per specification & directed by Engineer in charge.	SMT	40.32		
32	Supply & Labour charge for fixing in position anchor bolts, foundation bolts in line & level with template as per drawing including application of grease and covering with plastic cover. anchor bolt handling & positioning is in scope of civil contractor for fixing bolts & quoted rates includes the same as directed.	Kg.	498.00		
33	Providing & placing 50 mm. thick & 300 mm. wide prestressed concrete cover (for clear span of up to 1.2 Meter in proportion (1:1:5:3) or M-20 necessary reinforcement or 4 mm. dia. HT steel wire-4 Nos. bars and 4 mm. dia. distribution bars at 150 mm. C/C as per drawing & design including providing & vibrating with vibrators. Finishing all the surfaces, curing by placing in water pond for ten days etc. complete as directed by E.I.C. (The rate includes cost of all material required, labour charges, transportation, loading, unloading etc.	SMT	147.00		
34	Do as above but 75 mm. thick	SMT	1,375.00		
35	Providing 20 mm. thick cement plaster single coat on masonry /bela/concrete wall/ceiling for plastering up to any floor level finished even and smooth in cement mortar 1:3 (1 Cement : 3 sand) finished with floating coat of neat cement slurry at required height.	SMT	4,953.66		
36	Providing 20 mm. thick sand face cement plaster on wall up to height 10 Meters above ground level consisting of 12 mm. thick backing coat of C.M. 1:3 (1 cement: 3 sand) and 8 mm. thick finishing coat of C.M. 1:1 (1 cement : 1 sand) etc. complete at required height.	SMT	3,982.92		
37	Providing and fixing 24 Gauge Chicken Wire Mesh at the junction of masonry work and RCC work or on any other place as directed including fixing with nails, raw/ plugs etc. complete at all heights before applying plaster.	SMT	216.00		
38	Providing cement vata (10 Cm. X 10 Cm. size) quarter round in cement mortar 1:1 including neat cement finishing watering etc. complete.	RMT	224.10		
39	Providing distempering (three coats) with oil bound distemper of approved brand and manufacture and of required shade on undercoated wall surface to give an even shade over and incl. a priming coat with distemper primer of approved brand and manufacture after thoroughly brushing the surface free from mortar droppings and other foreign matter and also incl. preparing the surface even and sand papered smooth.	SMT	4,050.47		
40	Providing & applying 3 coats of ACID/ALKALI resisting paint of approved shade & make to wall, ceiling including filling putty smoothing the surfaces scaffolding etc. complete as directed by E.I.C.	SMT	60.34		
41	Providing & applying 2 coats of APOCOLITE APEX or its equiv. ACRYLIC EXTERIOR paint on existing plastered surface or approved make & shade including finishing & thinning as per manufacturer's instruction. A gap of 6 Hrs. Should be given between 2 subsequent coats. The work should be carried out strictly as per manufacturer's specification and requirement comp. as directed by EIC at required height.	SMT	4,232.78		
42	Providing and applying 1.5 mm. thick white cement based putty to full area of plaster in two coats to fill all pores of mortar/ concrete wall & ceiling, making the surfaces good & even for painting including scaffolding / staging, necessary tools etc. complete at all levels as per instructions of Engineer-In-Charge.	SMT	4,050.48		
43	Supplying & laying self-leveling Epoxy floor topping of average 3 mm. thickness over the concrete floor for levelling undulations including filling of construction joints of size 5 mm. X 30 mm. deep / 10 mm. X 30 mm. deep, grinding the concrete surfaces if required, cleaning, checking dryness over the floor, etc. all complete.	SMT	287.79		

44	Providing and fixing approved quality rolling shutters of approved make made of 80 mm. wide M.S. Laths interlocked together through their entire length and jointed together at the ends by end locks mounted on specially designed pipe shaft with bracket plates guide channels and arrangements for inside locking with push pull operation complete including the cost of hood cover & spring etc. & three coats of oil painting of approved quality & make etc., complete. (A) Shutter having width below 3.5 meter.	SMT	18.00		
45	-Do- but extra over for providing motorised operation	SMT	30.00		
	Providing and fixing fully glazed / partly glazed double leaf 20 micron thick anodized aluminium door with following listed extruded section manufactured by Jindal Aluminium Ltd. & other accessories, the Alluminium sections are of HE9WP Group : 1) with door outer frame section of 63.5 x 38.1 x 3.18 mm thick weighing 1.777 Kg./RMT (J4605) 2) Door shutter vertical style (meeting style) of 53.7 X 44.45 X 2.30 mm. thickness (J4537) weighing 1.238 Kg./Mtr. 3) Hinge side 53.7 X 44.45 X 2.30 mm. thickness (J4540) weighing 1.173 Kg./RMT. 4) Bottom rail of size 150 X 44.45 X 2.40 mm. thickness (J4538) weighing 2.376 Kg./RMT 5) Lock rail of size 150 X 44.45 X 2.40 mm. thickness (J4538) weighing 2.376 Kg./RMT. 6) Top rail of size 47.62 X 44.45 X 3.18 mm. thickness (J4506) weighing 1.501 Kg./RMT. 7) Ventilator middle member (if required) 49.91 X 44.45 X 3.00 mm. thickness (J4621) weighing 1.495 Kg./RMT. 8) Aluminium handle 127.00 X 37 X 3.65 mm. thickness (J4483) weighing 1.912 Kg./No. 9) Tower bolt 250 mm. long (J4954) 10) Aluminium bending mortice lock (J4420) 11) Top panel using 6.0 mm. thick Triveni or Modi or Saint Gobain make float glass fixed with PVC Clear gasket 12) Bottom panel using 12 mm. thick exterior grade pre-laminated particle board of make approved by the Engineer - in - Charge (for partly glazed door) fixed with virgin PVC clear gasket. 13) Door Closer of make approved by the Engineer-in- Charge with all other required fixtures and fastening of colour anodized with aluminium beading, with all labours and materials etc. complete as directed by EIC. Aluminium section user for fixing hinges, door closer, etc. shall be filled with country teak wood to receive screws.	SMT	81.06		
47	Providing and fixing window and ventilation having extruded aluminium anodized section frame main outer size 63.50 X 38.10 X 19.5 mm. (of Jindal Section no : 4605, @ wt 1.094 Kg./Rmt), horizontal two track member size 61.85 mm. X 31.75 mm. X 1.20 mm. (of Jindal Section no.: 8687 @ wt of 0.695 Kg./Mtr), vertical member of size 61.85 mm. X 31.75mm X 1.30 mm. (of Jindal section no: 8758 @ wt of 0.659 Kg./Mtr.) with Sliding Shutters of horizontal member Size 40 mm. X 18 mm. X 1.29 mm. (of Jindal section no: 8949 @ Wt. of 0.456 Kg./Mtr.), vertical member of size 40 mm. X 18 mm. X 1.29 mm. (of Jindal Section : 8947 @ Wt. 0.457 Kg./Mtr., section 8948 @ 0.457 Kg./Mtr.) with 5 mm. thick transparent bronze colour/white tinted float glass with aluminium fittings and fixtures and transparent silicon sealant glass fixing to frame as per details etc. complete for Window.	SMT	74.25		
48	Providing and fixing in position Partly glazed & partly paneled partition using "Jindal/ Hindalco /Banco" make aluminum section with approved Poly Propylene Based Powder coating (DFT = 65-80 micron) having intermediate frame (Double groove)of size 63.5 mm. X 38.1 mm. X 3.2 mm. @ 1.79 Kg./Mtr., (Jindal code no. 20004) Outer frames (single groove)of size 63.5 mm. X 38.1 X 2.5 mm. @ 1.369 Kg/m (Jindal code no. 20065), clip 19.0 X 17.3 X 1.2 mm. @ 0.154 Kg./Mtr. (Jindal code no. 19377), Glazing Strip/Plate 44.45 X 5.72 X 3.22 @0.453 Kg./RMT, corner box section where required of size 63.5 x 2.38 @ 1.571 Kg./Mtr. (Jindal code no. 14492) as per detailed sketch including silicon sealant filing between alu. section & wall, all necessary fittings, 6.0 mm. thick plain/brown float glass /frosted glass in middle panel, Top & bottom panel with 10 mm. thk. water proof PLY fixing with 1 mm. thk. Laminates on both side .	SMT	10.50		
49	Providing and fixing Hydraulic door closure of "dorma" or approved ISI make into position etc. complete as directed.	No.	14.00		
50	Providing & fixing double action hydraulic floor spring of "HARDWYN"(MODEL No. 3000) or approved equivalent make (conforming to I.S. 6315) for aluminum doors including cost of cutting floors as required, embedding in floors and cover plates, brass pivot, single piece M.S. outer box with side plate etc. complete as per the direction of Engineer-in-Charge.	No.	27.00		
51	Providing and fabricating and placing approved quality steel work welded in built up sections, framed work incl. cutting, hoisting, fixing in position and applying a priming coat of red lead paint and 3 coats of oil painting of approved shade & make. rate includes the erection of angle post for CL fencing :- (A) In beams and joints channels angles, tees, flats with connecting cleats as in main and cross beams, hip and jack rafters, purlins connected to common rafters, for cable trench rack & Tray etc..	Kg.	25,500.56		

52	Providing & fixing MS Grill of approved quality & design weighing 15 to 20 Kg./Sq. Mtr. as per drawing & as directed with necessary grill door (if required) including welding or bolted fixtures and fastening. M.S. Flat hold fasts, 300 mm. long, 16mm dia. aldorp & 300 mm. long tower bolt necessary with handles etc. with 3 coats of oil painting of approved shade & tint with one coat of red oxide primer including grouted hold fast in CC (1:2:4) etc. complete as directed by EIC.	SMT	74.25		
53	Providing and Fixing Stainless Steel railing as per specification, drawing and as directed. Item includes all material, labour, machinery, etc. required as instructed.	RMT	54.40		
	Providing and laying approved quality polished Kotah Stone slab (25 mm. thk.) flooring including using 35 X 25 mm. approved quality machine cut, marble strip over 20 mm. (average) thick base of cement mortar 1:6 (1 cement : 6 coarse sand or L.M. 1:1.5 laid over and jointed with grey cement slurry including rubbing and mirror polishing using polishing machine with grinding six emery's of different no. including using special chemical powder for polishing including white cement coating two times during polishing for filling up minute holes or cracks in joints etc. comp. (R & B, CH-14, Item-12, P-53+ Rs. 120.00 for mirror polishing)	SMT	434.98		
54	Do as above Kota stone but length required length for step with one side polished and edge polish as required.	SMT	183.96		
55	Providing & fixing one side polished, min. 1500 mm. long and 300 mm. wide stone for window sill / door frame /door jamb with half round moulding on one side and edge polish with chamfering on other side including laying on 20 mm. thick C.M. (1:4) bedding with adhesive material as required. Measurement shall be per running meter laid single length only) but with 18/20 mm. Granite Stone	SMT	113.03		
56	Providing and laying color glazed tiles of size 300 mm. X 200 mm. X 8 mm./300 mm. X 450 mm. X 8 mm. -JOHNSON /KAJARIA /NITTCO or its equivalent make in flooring & dado laid on bed of 12 mm. thick cement mortar 1:3 (1 cement: 3 course sand) & fixing the same in cement & providing 12 mm. thick back coating of cement plaster in CM 1:3 for base, filling the joints with white/color cement neatly finishing the joints curing etc. complete.	SMT	70.36		
57	Providing & laying ceramic tiles 6 mm. to 8 mm. Thick in flooring treads of steps and landing laid on 10 mm. thick cement mortar 1:6 [1 cement : 6 coarse sand] and finished with white or colour cement complete as directed by EIC (for Battery room)	SMT	21.61		
58	Providing & fixing approved quality approved quality vitrified tiles of any size 8 mm. to 10 mm. thick of best quality matt/glossy finish of Johnson/Kajaria/Nittco or its equivalent make of required size for flooring, skirting etc. including fixing the same in cement mortar (1:2) setting with readymade tile adhesive as recommended by manufacturer's including fillings of joints mixed with pigmented cement slurry of matching shade etc. complete - 8/ 10 mm. thick Vitrified tiles of any size 8/ 10 mm. thick Vitrified tiles of any size	SMT	342.77		
59	Supplying and laying 50 mm. thick acid/alkali resistant flooring and dedo on concrete base with 25 mm. thick unglazed vitreous ceramic acid / alkali resistant tiles of size 600 X 600 mm. (Johnson make) of approved make conforming to IS:4457 over 25 mm. thick acid resistant mortar (Silicate mortar), bedding mortar in C.M 1:3 and filling the joints to full depths of tiles all as per drawings, specifications and directions of the Engineer, all materials, tools, plant and labour complete.	SMT	51.16		
60	Providing and laying both side polished stone slabs as uninal / washbasin / platform partition to be fixed in wall including making & filling jari with cement mortar 1:3 (1 cement: 3 coarse sand) if required including cutting to required size, chamfering as required, full moulding and polishing complete. (measurement shall be taken as per net plan area of slab fixed.)	SMT	5.06		
61	Providing and laying 62 mm. thick cement concrete flooring with metallic concrete hardener topping under layer 50 mm. thick cement concrete M20 grade and top layer 12 mm. thick metallic concrete hardener mix : 2 stone aggregate 6 mm. nominal size) by volume with which metallic hardening compound of approved quality is mixed in the ratio 4:1 (4 parts of cement : 1 part of metallic floor hardening compound of approved quality by weight including cement slurry, rounding off edges and strips etc. but excluding the cost of nosing of steps etc. complete.(supply of metallic floor hardener is in scope of contractor)	SMT	287.79		
62	Providing and laying 500 mm. X 500 mm. X 3 mm. thick flexible interlocking PVC tiles of "WONDER FLOOR", "ARMSTRONG" or "SUPREME" make in flooring & skirting including laying with proper joints on chequered base with all necessary materials at all levels and all heights etc. complete.	SMT	320.33		
63	Providing & fixing 15 mm. thick 'India Gypsum' make mineral fiber board tiles of 595 X 595 mm. size with revealed edges in concealed option including fixing "Gypsteel ultra" ceiling section only. False ceiling shall be fixed from RCC slab using metal rawl plug, soffit cleat, wall angle, Main & Cross T section, angle etc. as per manufacturer specification only.	SMT	297.48		
64	Providing laying and joining in true line and level UPVC pipe (SCH-40) including fittings of PRINCE/ SUPRIME/ ASTRAL/ FINOLEX or equivalent make or as approved by EIC. Pipe shall be fixed on the wall with the help of clamp at every 2000 mm. c/c or shall be concealed or necessary excavation in trenches as directed including necessary fittings including testing of pipe and joints and	RMT	30.00		

	fixing the same with adhesive solvent, including cost of all materials and necessary refilling the trenches, dressing etc. complete. For 15 mm. dia. Pipe				
65	Do but for 25 mm. pipe.	RMT	50.00		
66	Do but for 40 mm. pipe	RMT	40.00		
67	GI 'B' class pipe line of "Jindal" make including wrapping of layer of polythene sheet over a coat of bituminous paint for 15mm dia pipe.	RMT	20.00		
68	Do but for 25mm dia pipe.	RMT	30.00		
69	40 mm. dia. pipe.	RMT	50.00		
70	Providing and fixing UPVC waste water pipe (IS:15328 -2003) of approved make for sewage line including cutting, testing and providing all necessary fitting & fixtures, excavation , backfilling & removal of surplus earth ,laying into required slope, jointing & sealing the same with sealant, making the surface good etc. all complete for 75 mm. dia.	RMT	56.47		
71	110 mm. dia. - (SN -4)	RMT	30.00		
72	Providing & fixing approved quality gun metal check or non-return wheel valve for 25 mm. dia.	No.	4.00		
73	Do but for 40 mm. dia.	No.	3.00		
74	Do but for 15 mm. dia.	No.	4.00		
75	Providing and fixing approved quality screw down bib tapes of following size : (A) Brass screw down bib tap polished bright 15 mm. dia.	No.	20.00		
76	Providing & fixing Stainless steel liquid soap holder cum dispenser of approved make to the wall with necessary brackets, screws, washers, plugs etc. all as specified & directed.	No.	2.00		
77	Providing and placing on terrace (at all floor levels) polyethylene water storage tank (triple layer) of capacity 2000 Ltr. of ISI : 12701 marked indicating the BIS license No. with cover and suitable locking arrangement and making necessary holes for inlet, outlet and over flow pipes, supply and fixing of fittings but without the base support for tank (Sintex or equivalent having valid ISI License)	No.	2.00		
78	Providing & fixing to all ceiling and floor 4.00 Kg/Sq. Cm. FINOLEX OR its equivalent rigid PVC pipes of the following outside diameter, wall clips, etc. including necessary fittings like bend, shoes, Y, Tee, etc. including testing of pipes and jointed with adhesive solvent cement including cost of all materials making good wall celing and floor.. For 100 mm. O.D. pipe	RMT	224.00		
79	Providing and fixing best quality of H.D.P.E. PIPE of approved ISS quality with all accessories, fittings, jointing etc. suitable for laying cables etc. complete as directed by E.I.C. 163 mm. dia. Outer 10 Kg./Cm2	RMT	45.50		

80	Supplying, fixing & testing PVC floor trap (6 Kg./Sq. Cm.) with solvent cement joints, including all the fittings. The work shall include wall chase and making good the same in cement mortar complete to the satisfaction of engineer-in-charge. 100 mm. Dia. with 150 X 150	No.	6.00		
81	Providing and fixing Square Mouth Stone Ware Gully Trap grade "A" 100 X 100 size "P" type of approved quality, including 230 mm. thick brick masonry chamber of 300 X 300 mm. clear inside in C.M. (1:5) plastered on both sides in C.M. (1:3) with C.I cover not less than 4.5 kg and frame not less than 2.7 kg. to fixed in Cement concrete 1:2:4 including necessary excavation to required depth, 1:4:8 bedding of 150 mm. thick etc. complete.	No.	4.00		
82	Providing and constructing chambers / Manholes including excavation, backfilling, removal, formwork, reinforcement laying, M-7.5 bed concrete 150 mm. thick, 230/350 mm. thick brick masonry in cement mortar 1:6, 12 mm. Plaster in C.M (1:3) with floating coat of neat cement on inside, outside & top surface, RCC M15 grade for coping and 100 mm. thk. slab foot rest of 20 mm. dia. bar @ 300 mm. c/c etc. to receive precast cover/grating/ C.I. cover, making necessary channel into floor with PCC 1:2:4 finished with floating coat of neat cement, (excluding pre cast cover, grating, angle frame, steel reinforcement) etc. complete. 450 X 450 X 600 clear size.	No.	6.00		
83	600 X 600 X 750 mm. clear size.	No.	24.00		
84	900 X 900 X 750 mm. clear size.	No.	-		
85	1200 X 1200 X 1200	No.	3.00		
86	Providing and fixing Oval wash basin (size 550 x 440 mm. of "Cera" make (No. 1025) of white colour standard quality including inlet and outlet connections, Pillar cock, stop cock, angle cock of approved quality, C.P. Brass bottle trap, CI Brackets CP brass waste coupling, cutting & making good the wall, etc. complete. (All plumbing fixtures shall be of "Jaquar" make).	No.	2.00		
87	Providing & fixing approved quality light type C.I. Manhole covers 35 Kg. with water tight C.I. Frame & fixing the same in concrete etc. complete as directed by E.I.C. for 450 X 610 mm. size	No.	10.00		
88	Providing and fixing CI step in septic tank sock pit in c.c. as directed.	No.	46.00		
89	Providing and fixing glazed earthenware White Wall Hung European type standard WC pan of "Cera" make (no. 2115) with cistern, pair of CI chair brackets, white solid plastic seat cover (no. 2325), CP brass hinges and rubber buffers, supply & fixing of 25 mm. concealed Flush cock, 15 mm. concealed stop cock of "Jaquar" make, CP flanges, necessary fastner & fixing, cutting and making good the walls and floors where required, all complete. Providing & fixing 5 litre white P.V.C flushing cistern of Jaquar make (WHC WHT 184 A) make with necessary fixtures & fittings as per requirement.	No.	3.00		
90	Providing and fixing C.P brass toilet paper holder.	No.	4.00		
91	Providing and fixing approved make double type coat & hat hooks with flanges, fixed to wall / shutter etc. with necessary screws, washers and plugs all as specified & directed.	No.	4.00		
92	Supplying and fixing white Large flat back standard urinal 635 X 395 X 420 of "Cera" make (no. 5001/5004) with C.I large brackets, G.I extension piece, C.P. Spreader and 10 mm. Dia. C.P. connector pipe, C.P. flanges, including dome type C.P. waste coupling, waste connection through C.P. bottle trap necessary fixtures etc. complete.	No.	2.00		
93	Providing & laying of 150 mm. Dia. RCC NP-2 class conforming to IS : 458 for pipes with collar jointed drains, cables etc. including excavation upto required depth & width & disposal of surplus earth within plot boundary limits lowering to required level/gradient, jointing with CM 1:2, laying of pipe in joints, back filling the trenches, compaction and making good the same etc. complete (Encasing P.C.C. work and bed concrete for laying will be paid separately as per regular item). Inspection & hydraulic testing of the pipes will be witnessed by the representative of client/Consultant at Manufacturer's shop before dispatch.	RMT	36.00		
94	Do, but NP-3 300 mm. Dia.	RMT	56.00		
95	Supplying & stacking 25 to 40 mm. size crushed metal including transportation, filing the box etc. in S/S yard complete as directed by EIC. (Box measurement will be paid with 15% voids deductions)	CMT	118.38		
96	Supplying & stacking 6mm size grit including transportation for spreading on road filling the box etc. complete.	CMT	46.50		

97	Supplying & stacking quarry dust including transportation for spreading on road filling the box etc. complete.	CMT	46.50		
98	Labour charges for spreading 25 to 40 mm. size metal in 100mm thick layers with required grade & camber & watering rolling the each layer with 8 to 10 tones power roller including filling depression which occur during process etc. complete as directed by	CMT	93.00		
99	Do as above but with murrum	CMT	139.50		
100	Do as above but for grit	CMT	46.50		
101	Do as above but for quarry dust	CMT	46.50		
102	Providing and fixing in position best quality approved make 6 mm. beveled edge mirror of size 600 X 1000 mounted on 12 mm. thick water proof plywood backing and hardwood beading alround and mirror fixed to the backing with 4 Nos. of CP cap screws & washers including fixing the mirror to the wall with necessary screws, plugs & washers etc. complete.	No.	2.00		
102	Providing & fixing approved quality 300 X 300 mm. size marble year plate with black border all round & letters including fixing the same in cement mortar etc. comp. As directed by EIC.	No.	1.00		
104	Providing & fixing in position S.S. towel rail/napkin ring model No. 1121 & 1181 of approved make of 600 mm. length, 20 mm. dia. With a pair of brackets or flanges fixed to wall with necessary screws, plugs etc. all as specified & directed.	No.	4.00		
105	Providing & laying water proofing treatment on terrace including applying neat cement slurry 2.75 Kg./Sq. Mtr. on cement admixed with water proofing component after cleaning the surface, Laying cement concrete with brick bat 75 mm. to 100 mm. thick with 50% of C.M. 1:5 admixed with water proofing component over 20 mm. thick layer of C.M. 1:5 to required slope including ramming at junction of wall and slab, after two days of proper curing applying a second coat of cement slurry, finished the surface with 20mm thick C.M. 1:4 china mosaic flooring and finally finished surface with white cement slurry, after finishing with terrace shall be finished with water for a period of two week. The contractor shall submit Performance Guarantee of the waterproofing item at the rate of 20% of cost of item of work order at par with the tender requirement of DPA valid for a period of 5 years from actual date of completion of work.	SMT	769.80		
106	25 X 25 mm. expansion joint with Poly sulphide sealant	RMT	-		
107	5 X 10 mm. groove in floor with Poly sulphide sealant	RMT	-		
108	Providing & fixing G.I. Barbed wire fencing (12/14 Gauge) having mass and uniformity of Zinc coating & specifications shall be as per IS 2140 – 1978 & IS 4826 – 1979 code with minimum 70 micron coating having 3 horizontal rows, fixing with angle post.etc.	RMT	420.00		
109	Providing and filling 40 to 50 mm. size brick bats up to 1.5 Mt. etc. comp. as directed by E.I.C.	No.	21.20		
110	Providing and fixing with Labour charge for fabricating, erecting and fixing in position various Inserts like angles, channels, beams, chequered plates, etc. with necessary hold fasts including fixing with concrete or masonry surfaces to required level and alignment during concreting at all levels as per detail drawings, cleaning the surfaces after de-shuttering and providing and applying two coats epoxy primer and two coats of epoxy paint, consumables like welding rods etc. complete. Lugs for insert will be provided in this item. Rolling margin & wastages shall not be paid. Payment will be made based on theoretical consumption of materials worked out from construction drawings or measured as actuals if drawings are not available on weight basis by multing length / size of the section with standard unit weight as per IS. Quoted rate shall be inclusive of Hot dip galvanising of 910 Gm./Sq. Mtr. (127 Micron) for thickness of section above 5 mm. above & 610 Gm./Sq. Mtr. (87 micron) for thickness below 5 mm.	MT	17.78		
111	Providing & applying anti termite treatment, as per IS 6313 (Part - II & II 2001) for building works in pre-construction & post const. stages, using chemicals conforming to relevant IS in water emulsion and effective when applied uniformly over the area to be treated. The chemical to be used is chlorophriphos 20% EC or its equivalent. The treatment is to be carried out as per the procedure mentioned below and treated plinth surface area is to be taken for measurement. (with performance guarantee for 5 years) a) For pre-construction treatment: The contractor shall submit Performance Guarantee of the waterproofing item at the rate of 20% of cost of item of work order at par with the tender requirement of DPA valid for a period of 5 years from actual date of completion of work.	SMT	846.78		

112	Providing & fixing 110 mm. dia. PVC SWR Vent Cowl ventilator	No.	16.00		
113	Providing & fixing Acrylic name plates of required size including painting letters as directed & fixing as directed by E.I.C.	No.	17.00		
114	Providing and constructing plinth protection surrounding building as required size with excavation 300 mm. PCC 100 mm. sand filling and fixing paver blocks and curbing as per drawing.	SMT	135.14		
115	Painting the letter with best enamel oil paint in 200 to 250 mm. size etc. complete as directed by EIC (paint should be brought by the contractor)	No.	20.00		
116	Providing & Laying approved best quality of Heavy Grade – “C” class 150 mm. Dia. G.I. Water pipe including necessary excavation up to 750 mm. Depth refilling trenches including with all necessary fittings like Elbow, Tee, Union, Nipple, Plug, flange of required dia., at pipe end to connect with Trans bottom drain valve etc., welding cutting, threading as per site requirement giving leak proof test etc., complete as directed by E.I.C.	RMT	50.00		
117	Providing & Fixing 250 mm. dia. Sluice valve of gun-metal drum with necessary overhead operating devices of 25 mm. dia. G.I. Pipe fitting with special pedestal wheel etc., as directed by E.I.C.	No.	4.00		
118	Providing & fixing C.I. air pipes Heavy Type with C.I. Coupling, bends, Union end shoe, M.S. flat clamps & fixing the same with oil tank etc., complete as directed by E.I.C. (100 mm. dia.)	RMT	10.00		
119	Galvenise cable tray of 450 mm. wide.	RMT	240.00		
120	Galvenise cable tray of 600 mm. wide.	RMT	400.00		
121	Preparing the sub-grade by trimming the surface to the required level, grade and camber by excavation or filling not exceeding 60 Cms. depth. No earth is to be brought from outside. In case of filling for sub-grade, earth is to be collected and transported to road site from available stack of earth in Plot boundary after necessary loading and unloading. Filling in road shall be done by spreading in layers of 150 mm. thick and compacted to 95% Standard Proctor Density after all necessary watering, rolling and compaction. In case of excavation, surplus earth is to be disposed, spread and stacked properly in owner plot boundary as directed by the Engineer in charge. The sub grade shall be properly rolled by 10 Ton Roller.	SQM	163.80		
122	Providing and laying Water Bound Macadam Base Course of 350 mm. Thk. in three layer of 115 mm. thick each, average 158 mm. thick loose laid / 100 mm. consolidated using Black Trap Machine Cut Metal, procured from approved source, 1.58 to 1.25 Cum of 90 to 45 mm. size aggregates, 0.35 to 0.30 Cu. Mtr. of screening material of size 13.2 mm. and average 0.08 to 0.10 Cum of binding material required for each layer per 10 Sq. Mtr. of plan area of base course. Rate shall be inclusive of stacking of materials in stacks, spreading of materials, consolidation and compaction by 8/10 Ton Power roller to achieve proper grade, camber & level, watering, royalties, right of way etc. complete. (Physical requirements and gradation of materials shall be as prescribed in Clause No. 404, Grading No. 2 or 3 as per the drawing, of Table No 400-7 and Specifications No. 404.2.6 and 404.2.7, of IRC-19 or M.O.R.T. & H.) Minimum CBR value of materials shall not be less than 100 %.	CUM	163.80		
123	Providing and laying M7.5 grade (1:4:8) Plain Cement Concrete with 40mm down size graded metal including centering, shuttering if required laying, spreading, ramming, consolidating, curing and finishing top surface rough or smooth as per instructions of Engineer-in-charge.	CUM	163.80		
124	Providing & fixing a separation membrane of minimum thickness 125 micron polythene between the concrete floor and the sub-base plain cement concrete to reduce friction including cutting of plastic sheet as per site measurements, longitudinal and cross laps of minimum 150 mm. to 200 mm. The said laps however, shall not be considered for payment, the same shall be deemed to have included in quoted rate.	SQM	420.00		
125	Providing & laying controlled /design mix M20 grade concrete upto 300 mm. thick, for Road work, using 20 mm. & downgraded stone aggregates, in alternate panels of suitable size including machine mixing, mechanically vibrated with skirt vibrator, finishing to required level, grade and camber, Power troweling, brooming by appropriate wire brush, curing by ponding, etc. incl. MS Channel shuttering with provision of holes for tie / dowel bars and making saucer drain on both side of road etc. complete as per drawing as per instruction of engineer-in-charge. (Reinforcement shall be paid separately).	CUM	126.00		
126	Using "Tre mix system" (vacuum dewatering system) in flooring as per manufacturer's specification.	SQM	707.79		

127	Providing and filling Expansion joint 25 mm. wide in concrete road with top 25 mm. X 20 mm. deep gap sealed with bitumen sealing compound (grade- B), and balance bottom with 25 mm. thick. Duraboard of approved make including cleaning joint all complete as directed.	RMT	174.00		
128	Providing & laying RCC NP-3 class conforming to IS: 458 for pipes with collar jointed drains, cables etc. including excavation up to required depth & width & disposal of surplus earth within plot boundary limits lowering to required level/gradient, jointing with CM 1:2, laying of pipe in joints, back filling the trenches, compaction and making good the same etc. complete (Encasing P.C.C. work and bed concrete for laying will be paid separately as per regular item). Inspection & hydraulic testing of the pipes will be witnessed by the representative of client/Consultant at Manufacturer's shop before dispatch. 100mm dia.	RMT	80.40		
129	Providing & fixing Factory made Kerb stone using M20 concrete grade including excavation and back filling, transporting, stcking, placing kerb in position, Joint filling with C.M 1:6 etc. complete. In case of embedding kerb stones in PCC, the same shall be paid under relevant item. size 300 X 450 X 150 mm. Thick	RMT	168.00		
130	Providing and applying synthetic enamel Paint of approved make & approved colour to precast curbing in approved colour pattern in two or more coats to give good and even shade including suitable priming coat, and cleaning the surfaces with all labour and material etc. complete.	RMT	168.00		
131	Providing & fixing factory made Decorative coloured Rubber Mould M-35 "Paver Block" of 60 mm. thick of any pattern as approved, laid in line & level over and including ungraded sand bed of 100 mm. Thick including transporting, loading, unloading, stacking & fixing in position.	SQM	-		
132	Micrograding of site including cutting / filling up to average 300 mm. Depth & slope of 1:1000 from ridge to nearest drain and compacted by 3 Ton roller with suitable water sprinkling to form a smooth and compacted surface condition which shall be matching with required FGL of switchyard area including removal of surplus earth (if required) outside battery limit / plot boundary as directed by engineer in charge. No earth is to be brought from outside & if required only surplus earth available from excavation is to be utilized.	SQM	930.00		
133	Supplying and spreading "Round up"(Glyphosate 41% SL) of approved ISI standard make or equivalent weedicide for weed control in proportion of 100ml weedicide and 250 Gram Ammonium Sulphate, mixing with sticking agent mixed with 10 liter of clean fresh water and second spray with same treatment as stated above after two months and as per manufacturer's specification and as directed by Engineer-in-charge.	SQM	930.00		
134	Supplying and lowering the approved ISI submersible pump of 5 HP with required cable starter as directed including testing and commissioning to meet the required delivery head with other accessories.	No.	1.00		
135	Supply & Commissioning of a Pump Set with 1 HP Motor along with 150 Mtrs. Reinforced/braided ½ inches Dia. Pipe and 15 Mtrs. Cables.	SET	1		