LUCKNOW SWACCHATA ABHIYAN PVT LTD. (LSA) / CHENNAI MSW PVT LTD. (CMSPL)

Tender Document

Tender Reference Number: CMSPL- LMC- C&T-4/001/24-25

For

"DESIGN, DETAIL ENGINEERING, CONSTRUCTION, ERECTION & COMMISSIONING OF MECHANIZED STATIC GARBAGE TRANSFER STATION (INCLUDING CIVIL, MECHANICAL & ELECTRICAL WORKS) AT VARIOUS LOCATIONS IN LUCKNOW CITY, U.P."

April'2024

CMSPL/LSA

CHENNAI MSW PVT LTD. (CMSPL)
Tender Document
Tender Reference Number: CMSPL- LMC- C&T-4/001/24-25

LMC has selected CMSPL as a successful bidder for the execution of MSW project of Lucknow city. Subsequently, as per the project requirement an SPV was formed by CMSPL in the name and style of Lucknow Swachhata Abhiyan Pvt Ltd (LSA). On behalf of LMC, CMSPL/LSA will execute the mentioned works duly following e-tender. CMSPL/LSA either through itself or through their selected contractor will execute the works. LMC or their representatives will inspect, certify, and release the relevant payments to CMSPL/LSA as per the progress made.

NOTICE INVITING TENDER

1. CMSPL/LSA invites E-Tenders from experienced and eligible contractors for Design, Detail Engineering, Construction, Erection, Commissioning and of Mechanized Static/portable Garbage Transfer Stations – FCTS/PCTS (including Civil, Mechanical & Electrical Works on lump sum basis) in Lucknow Municipal Corporation Zone-4 as per schedule given below:

Tendering Document No.	CMSPL- LMC- C&T-4/001/24-25
Name of the Work	Design, Engineering, Construction, Erection, commissioning and of 2 FCTS and 4 PCTS in Zone-4 at Lucknow.
Brief Scope of Work	Green Field/Upgradation of TS - Design, Detail Engineering, Supply, Construction, Erection, Commissioning of Mechanized Static/Portable Garbage Transfer Stations – FCTS/PCTS (including Civil, Mechanical & Electrical Works on lump sum basis) in Zone-4, under Lucknow Municipal Corporation
Period of Completion	FCTS: 180 days from signing of agreement. 1.Bhaisora 2.Dayal Square PCTS-120 days from signing of agreement. 1. Kailash Kunj 2. Mithaiwala Square 3. Vineet Khand-06 4. B.B.D University Area
Website/portal address	resustainability.com/tenders
Type of contract	Lump sum contract
Information & Details	
(i) Date of publishing of Tender	03 April 2024 at 09:00 Hrs
(ii) Document download starting date	03 April 2024 at 09:00 Hrs
(iii) Document download ending date	09 April 2024 at 18:00 Hrs
(iv) Bid submission starting date	17 April 2024 at 09:00 Hrs
(v) Bid submission ending date	19 April 2024 at 18:00 Hrs
(vi) Date of opening of technical documents of tender	23 April 2024 at 14:00 Hrs
(vii) Date of opening of financial documents of tender/Bid due date	24 April 2024 at 14:00 Hrs

Eligibility Criteria	As mentioned in this document
Tender issuing and Accepting Officer	CMSPL/LSA
Executing Agency	CMSPL/LSA
Earnest Money Deposit (EMD)	₹ 5,00,000/ (Five Lakhs only) in form of DD Payable at Hyderabad.
Non- refundable cost of Tender document	₹ 5000/- (Rupees Five Thousand only)
Last date & time of submission of tender	Up to 14:00 hours of Date 14.04.2024
Period during which hard copy in original of EMD, Cost of Tender Document, Letter of Acceptance of tender conditions (unconditional) and other document as per NIT shall be submitted	Up to 14:00 hours of Date 14.04.2024
Date & Time of Opening of Technical Tender	16:00 hours of Date 15.04.2024
Date & Time of Opening of Financial Tender	16:00 hours of Date 16.04.2024
Validity of Offer	120 days from the bid due date.
Estimated project cost	₹ 36.50 Cr (Approx.) excluding GST
Last date for submission of Pre bid queries and mail address	10.04.2024 ; to be shared on email id: info@resustainability.com
Pre bid meeting (Virtual)	13.04.2024 @ 3.00-4.00pm on link: LSA - Transfer Stations Prebid Replies Saturday, 13 April · 3:00 – 4:00pm Time zone: Asia/Kolkata Google Meet joining info Video call link: https://meet.google.com/hpc-ypmc-ytz Or dial: (US) +1 636-707-2679 PIN: 748 407 867# More phone numbers: https://tel.meet/hpc-ypmc-ytz?pin=2018772211455
Contact person on behalf of CMSPL/LSA at Lucknow for site visits	Murali Krishna, 8142842293

The intending tenderer must read the terms and conditions of the contract carefully. The tenderer should only submit his tender if he considers himself eligible and is in possession of all the documents required.

Information and Instruction for tenderers posted on website, along with corrigendum shall form part of Tender Document.

2. QUALIFYING REQUIREMENT FOR BIDDER:

a) TECHNICAL QUALIFICATION:

For demonstrating the technical capacity and experience (the "technical qualification"), the bidder has to comply the following conditions.

The bidder should have successfully completed *Similar works during the last Five (7) years as mentioned below:

1. Three similar works costing not less than ₹ 500 Lacs each

OR

2. Two similar works costing not less than ₹ 750 Lacs each

OR

3. One similar work costing not less than ₹ 1500 Lacs.

Note:
*Similar works means: Design, Detail Engineering, Construction, Erection, commissioning and O&M of Mechanized Static Garbage Transfer Station (including Civil, Mechanical & Electrical Works) in any of Urban Local Bodies (ULB's) across India. The bidder shall comply the following type of specialized works like:

a. Construction/ Modernization/Operation & Maintenance of minimum 25 no's Transfer Stations/ Secondary Collection & Transfer Points in the last 3 (three) years.
b. Structural Steel (like PEB) works for the sheds with AZ150/SDP with a minimum of 20,000 sqm.
c. RFRC (Recron Fibre Reinforced Concrete) flooring works.
d. Piling works (Driven/Bored Cast Insitu min. 450mm dia).
e. Installation and Commission of Static Horizontal Compaction Machine along with minimum of 24 m^3 containers
f. SC –260 or similar Tip Cart Mechanism / model SC – 350 with Hopper for at least 5 stations for FCTS.
g. Experience in Leachate handling, Disposal & application of protective coating such as EN901 etc.
h. Installation and Commission of Portable Compactor Machine model MX- 160/16m^3 with Tip Cart Loading Mechanism for at least 50 no's of PCTS.

Pre-qualification of the bidders pertaining to similar works will be ascertained based on the technical knowhow and to the discretion of the CMSPL/LSA.
The Bidders under suspension, debarred, blacklisted by any of GoI, GoUP, PSU's, ULBs, Municipal Corporations whose contracts stand terminated as on bid due date are ineligible to participate in this tender.

1. FINANICAL QUALIFICATION:

For demonstrating the financial qualification, the Applicant/Bidder would be required to satisfy the following Financial Capability.

i. Average turnover for the last three completed financial years (FY 2020-21, FY 2021-2022& FY 2022-2023) should be at least equal to Rs 10 Crores (Rupees Ten Cores only).

ii. Net worth as at the end of the most recent financial year that is FY 2022-23 or Bank Solvency Certificate of Rs 1 Crore (Rupees One Crore) which should have been issued by any Commercial or Scheduled Bank within six months from the date of bid submission.

iii. Bidder should not have incurred loss in more than 2 years during the last 3 years ending 31.03.2023.

2. CRITERIA FOR EVALUATION

a. Proposals are invited to finalize the successful bidder based on the Quality, Cost base Assessment.

b. The "Preferred Bidder/Applicant" shall be the applicant/bidder obtaining the minimum 70% marks in the Technical Evaluation Procedure and Cost Basis assessment.

c. Technical Evaluation Proposal will be evaluated on the basis of Applicant's experience, its understanding of scope of work as set out in the tender document, proposed approach & methodology, project schedule and resource deployment. Only those Applicants/Bidder who obtains a score of [70 (seventy marks] or more out of 100 (one hundred) in the criteria for technical evaluation shall qualify for further consideration of financial / price bid opening.

d. The evaluation of the technical bid / proposal submissions will be carried out in the following four stages.

i. Stage # 1 : The first stage would involve a Test of Responsiveness. Those Bids found to be substantially responsive will be evaluated in the second stage.

ii. Stage # 2 : In the second stage, the information of the Bidder/Applicants relating to their eligible technical experience and financial capability would be evaluated as per below evaluation methodology and obtaining the required technical score as per evaluation methodology. Only those Bidder/Applicants who qualify in the second stage would be considered for evaluation in the third stage i.e. financial / price bid opening.

iii. Stage # 3 : In the third stage, the Online Financial / Price Bids of technically qualified bidder will be opened and given marks as per the cost basis assessment.

iv. Stage # 4 : In the fourth stage, all the technically qualified bidders with their financial opening score will be evaluated and given marks to identify the successful bidder who scores the highest marks out of 100 marks as per the Quality Cum - Cost Base Assessment.

3. **TECHNCIAL EVALUATION METHODOLOGY:**

The evaluation of the proposal shall be undertaken as per the following parameters:

SL NO.	BID EVALUATION PARAMETERS	MAX MARKS
	A. Technical Qualification:	
1	The bidder should have successfully completed *similar works during the last seven (7) years as mentioned below: a. Three similar works each costing not less than ₹ 500 Lacs each OR b. Two similar works each costing not less than ₹ 750 Lacs each OR c. One similar work costing not less than ₹ 1500 Lacs.	**40 Marks** 15 18 20
2	Construction/ Modernization, Operation & Maintenance of Transfer Stations/ Secondary Collection & Transfer Points in the last three years a. 25 Nos b. 35 Nos c. 45 Nos	 15 18 20
	B. Approach & Methodology	**20 Marks**
3	a. Approach & Methodology for undertaking the construction activities b. Equipment Procurement Planning and Strategy with detail construction schedule. c. Resource Utilization Statement i.e. Construction Equipment deployment plan and Manpower deployment plan. d. Overall Layout Plan, and DLP plan e. Environment, Health & Safety Policy & Strategy	4 4 4 4 4
	C. Financial Qualification	**40 Marks**
4	Average Annual Turn Over in the last 4 years a. 20 Crores b. More than 20 Crores and Upto 30 Crores c. More than 30 Crores	 10 15 20
5	Net worth of Company in the preceding financial year or bank solvency value issued by the banker. a. 1 Crore b. More than 1 Crore and upto 2 Crores c. More than 2 Crores and above	 10 15 20
TOTAL		**100**

Note :

i. The bidder who achieves overall score of 70 marks (threshold score) would be deemed to meet the required technical experience criteria for qualification and shall be considered for opening the Financial bid and for Financial evaluation.

ii. The bidders who scored less than 70 marks in the Quality Cum Technical Assessment shall be rejected and their financial proposal shall not be opened thereof.

iii. The bidders must provide the necessary information relating to the Technical Capacity and Financial Capacity.

4. SELECTION OF THE BIDDER i.e AWARD CRITERIA / SELECTION BASED ON QUALITY- CUM- COST BASIS SELECTION (QCBS).

The project will be awarded to the bidder who has obtained the highest combined score of Technical (70 %) and Financial (30 %) as per the following Methodology and Formulas.

a. Technical Score Formula : Tf=70xTm/T
Whereas:
- Tf is the Total Techncial Score of a bidder.
- Tm is the Technical Score obtained by the bidder as above Table of Technical Evaluation Methodology.
- T is the Total Highest Score among all the bidders in Technical Evaluation Methodology.

b. Financial Score Formula : Sf=30xFm/F
Where as:
- Sf is the Total Financial Score of a bidder.
- Fm is the lowest quote amongst all the technical qualified bidders and
- F is the quote by the respective bidder.

c. **Combined and Final evaluation:** The scores of the bidders on the Technical evaluation methodology and the financial evaluation / assessment criteria will be added. The bidder who has obtained the highest combined score will be the Preferred Bidder (Selected Bidder)

d. **Illustration for Award Criteria / Assessment:**
The following is the example of computation of Technical and Financial Score for Award Criteria i.e. Technical / Quality Assessment + Cost Basis Assessment.

i. Technical Scores obtain by bidder as per Technical / quality evaluation.

BIDDER	SCORE AS PER TECHNICAL VALUATION	WEIGHTAGE AVERAGE TECHNICAL SCORE OBTAINED
Bidder # 1	70	**54**
Bidder # 2	80	**62**
Bidder # 3	90	**70**

Example : Tf=70xTm/T
Bidder # 1 = 70 x 70/90 = 54 Score
Bidder # 2 = 70 x 80/90 = 62 Score
Bidder # 3 = 70 x 90/90 = 70 Score

i. Financial Quote / Score obtain by bidder as per evaluation.

BIDDER	QUOTE MADE BIDDER	RATING	WEIGHTAGE AVERAGE FINANCIAL SCORE OBTAINED
Bidder # 1	90	L1	**30**

Bidder # 2	100	L2	**27**
Bidder # 3	110	L3	**25**

For Example: Sf=30xFm/F

Bidder # 1 = 30 x 90/90 = 30 Score
Bidder # 2 = 30 x 100/90 = 27 Score
Bidder # 3 = 30 x 110/90 = 25 Score

ii. Combined Technical and Financial Score for selecting the bidder as per the Technical Assessment and Quote Basis Assessment:

BIDDER	**MARKS OBAINTED UNDER TEHCNICAL**	**MARKS OBTAINED UNDER FINANCIAL**	**COMBINED SCORE**
Bidder # 1	54	30	84
Bidder # 2	62	27	89
Bidder # 3	**70**	**25**	**95**

As per the above Combined Score, the bidder # 3 has obtained the highest combined score will be the Preferred Bidder (Selected Bidder) for award of project and signing the agreement with the employer i.e CMSPL/LSA.

To facilitate evaluation of Bids, CMSPL/LSA may, at its sole discretion, seek clarifications in writing from any Bidder regarding its Bid.

CMSPL/LSA reserves the right not to proceed with the Bidding Process/annul the Bidding process at any time without notice or liability and to reject any Bid without assigning any reasons.

No Joint venture or Consortium of firms shall be allowed to submit the bid and the bidders should meet the above criteria by himself/ themselves.

2.1 Net worth as on 31.03.2023 should not be less than ₹ 100.0 Lacs or a Bank Solvency certificate to be submitted for the same value, which should have been issued by the Bank within six months from the date of publication of this NIT.

2.2 Bidder should not have incurred loss in more than 2 years during the last 3 years ending 31.03.2023. Bidder should submit copies of GST Registration, EPF Registration Certificate & PAN Card.

2.3 Information regarding the constitution of the applicant/firm e.g. Proprietary, Partnership, Private Ltd. etc. along with the proofs such as copies of registration/ partnership deed etc. to be submitted by the bidder.

2.4 The copy of above documents shall be submitted by the bidder/tenderer along with hard copies of other required documents.

2.5 Tender Document shall be submitted/uploaded with the mandatory documents such as

a) Demand Draft / Pay order or Banker`s Cheque towards cost of tender document, in case of downloaded from website.
b) proof of deposit towards e-Tender Processing Fee.
c) Demand Draft/Pay Order or Banker's Cheque of any Nationalized or all Commercial

Scheduled Bank against EMD & all other documents as per NIT.

Scope of work

1) Bhaisoara Transfer Station

Scope of Work: Design, Supply, Construction, Erection, Commissioning and O&M of Mechanized Static Garbage Transfer station at Bhaisoara Transfer Station with 3Bin facility.

A. Civil Works:

1. Site development works including survey.
2. Construction of Civil works including Area levelling, Excavation, Soil Filling Foundations, Flooring, Brickwork, Plastering, Painting etc.
3. Supply, Fabrication and Erection of Structural steel shed with AZ-150/SDP including Turbo vents, skylights, sheeting etc.
4. Providing proper drainage system with internal and external drains.
5. Providing RFRC Flooring.
6. Providing Leachate collection sump and connecting to the drain, with EN901 coating for handling leachate.
7. Providing boundary wall with brickwork including foundations.
8. Providing Water supply system with underground sump including bore well, pump and piping fixtures. Two coats of water proofing compound inside sump (Nitobond).

B. Electrical Works:

Supply, Installation, Testing & Commissioning of Internal Electrification works which includes Main Distribution Panel, Sub Distribution Boards, LT cables, cable trays and top covers, Earthing, indoor and outdoor area lighting with all safety standards etc.

C. Mechanical Works:

Supply, Installation and Commissioning of mechanical equipment like Capsules/Containers, Hoppe₹ Compactors etc.

Specifications for Mechanical Equipment's:

A. Static Horizontal Compaction Machine model SC –260 with Tip Cart Mechanism / model SC –350 with Hopper

Static Compactor machine along with complete Electricals and Hydraulic system consist of

- Horizontal Compaction Machine SC – 260 with Tip Cart mechanism / SC – 350 with Hopper
- Hopper
- Guillotine system
- Hydraulic Clamping Claw
- Drainage System for leachate
- Hydraulic Power Pack
- PLC based Electronic Controls.
- Container change over system (Two Containers)

Container A container of Volumetric Capacity of 20 Cum. consists of

- Cylindrical Shell with Guillotine door.
- Leachate collection Tray
- Ratchet Mechanism for closing and opening of container Doo₹
- Drain Valves.
- Set of metallic Rolle₹
- Sub frame.

2) Dayal Square Transfer Station

Scope of Work: Design, Supply, Construction, Refurbishment, Erection and Commissioning of Mechanized Static Garbage Transfer station at Dayal Square Transfer Station with 3Bin facility – Two level FCTS.

A. Civil Works:

1. Site development works including survey.
2. Construction of Civil works including Area levelling, Excavation, Soil filling, Foundations, Flooring, Brickwork, Plastering, Painting etc.
3. Supply, Fabrication and Erection of Structural steel shed with AZ-150/SDP including Turbo vents, skylights, sheeting etc.
4. Refurbishment works includes Dismantling and demolishing of brickwork, RR masonry, CC flooring, RCC structure, barricading sheets etc., Excavation and shifting of spilled waste/slush
5. Providing piling works for pile foundations.
6. Providing proper drainage system with internal and external drains.
7. Providing RFRC Flooring.
8. Providing Leachate collection sump and connecting to the drain, with EN901 coating for handling leachate.
9. Providing boundary wall with brickwork including foundations.
10. Providing Water supply system with underground sump including bore well, pump and piping fixtures. Two coats of water proofing compound inside sump (Nitobond).

B. Electrical Works:

Supply, Installation, Testing & Commissioning of Internal Electrification works which includes Main Distribution Panel, Sub Distribution Boards, LT cables, cable trays and top covers, Earthing, indoor and outdoor area lighting with all safety standards and etc..

C. Mechanical Works:

Supply, Installation and Commissioning of mechanical equipment's like Capsules/Containers, Hoppers, Compactors etc.

Specifications for Mechanical Equipment's:

A. Static Horizontal Compaction Machine model SC –260 with Tip Cart Mechanism / model SC –350 with Hopper

Static Compactor machine along with complete Electricals and Hydraulic system consist of

- Horizontal Compaction Machine SC – 260 with Tip Cart mechanism / SC – 350 with Hopper
- Hopper
- Guillotine system
- Hydraulic Clamping Claw
- Drainage System for leachate
- Hydraulic Power Pack
- PLC based Electronic Controls.
- Container change over system (Two Containers)

Container A container of Volumetric Capacity of 20 Cum consists of

- Cylindrical Shell with Guillotine door.
- Leachate collection Tray
- Ratchet Mechanism for closing and opening of container Doo₹
- Drain Valves.
- Set of metallic Rollers.
- Sub frame.

3) Kailash Kunj: 2Bin Portable Compactor Transfer Station

Scope of Work: Design, Supply, Construction, Refurbishment, Erection and Commissioning of Mechanized Static Garbage Transfer station at Kailash Kunj Transfer Station with 2Bin facility.

A. Civil Works:

1. Site development works including survey.
2. Construction of Civil works including Area levelling, Excavation, Soil filling, Foundations, Flooring, Brickwork, Plastering, Painting etc.
3. Supply, Fabrication and Erection of Structural steel shed with AZ-150/SDP including Turbo vents, skylights, sheeting etc.
4. Dismantling and demolishing of existing structure.
5. Providing proper drainage system with internal and external drains.
6. Providing RFRC Flooring.
7. Providing Leachate collection sump and connecting to the drain, with EN901 coating for handling leachate.
8. Providing boundary wall with brickwork including foundations.
9. Providing Water supply system with underground sump including bore well, pump and piping fixtures. Two coats of water proofing compound inside sump (Nitobond).

B. Electrical Works:

Supply, Installation, Testing & Commissioning of Internal Electrification works which includes Main Distribution Panel, Sub Distribution Boards, LT cables, cable trays and top covers, Earthing, indoor and outdoor area lighting with all safety standards etc.

C. Mechanical Works:

Supply, Installation and Commissioning of mechanical equipment like Capsules/Containers, Hoppers, Compactors etc.

Specifications for Mechanical Equipment's:

A. **Portable Compactor Machine model MX-160/16CuM with Tip Cart Loading Mechanism**

Mobile Compactor machine along with complete Electricals and Hydraulic system consist of

- Compaction Unit MX–160 with 16 Cum Body
- Tip Cart Loading mechanism
- Hopper / Charging Chamber
- Hydraulic Operated Rear Door Locking Mechanism
- Leachate Drainage System
- Electrohydraulic Power Pack Complete
- Supporting Tracks with Compactor stoppers.

4) Mithaiwala Square: 2 Bin Portable Compactor Transfer Station

Scope of Work: Design, Supply, Construction, Refurbishment, Erection and Commissioning of Mechanized Static Garbage Transfer Station at Mithaiwala Square Transfer Station with 2Bin facility.

A. Civil Works:

1. Site development works including survey.
2. Construction of Civil works including Area levelling, Excavation, Foundations, Flooring, Brickwork, Plastering, Painting etc.
3. Supply, Fabrication and Erection of Structural steel shed with AZ-150/SDP including Turbo vents, skylights, sheeting etc.
4. Dismantling and demolishing of existing structure.
5. Providing proper drainage system with internal and external drains.
6. Providing RFRC Flooring.
7. Providing Leachate collection sump and connecting to the drain, with EN901 coating for handling leachate.
8. Providing boundary wall with brickwork including foundations.
9. Providing Water supply system with underground sump including bore well, pump and piping fixtures. Two coats of water proofing compound inside sump (Nitobond).

B. Electrical Works:

Supply, Installation, Testing & Commissioning of Internal Electrification works which includes Main Distribution Panel, Sub Distribution Boards, LT cables, cable trays and top covers, Earthing, indoor and outdoor area lighting with all safety standards etc.

C. Mechanical Works:

Supply, Installation and Commissioning of mechanical equipment like Capsules/Containers, Hoppers, Compactors etc.

Specifications for Mechanical Equipment's:

A. **Portable Compactor Machine model MX-160/16CuM with Tip Cart Loading Mechanism**

Mobile Compactor machine along with complete Electricals and Hydraulic system consist of

- Compaction Unit MX–160 with 16 Cum Body
- Tip Cart Loading mechanism
- Hopper / Charging Chamber
- Hydraulic Operated Rear Door Locking Mechanism
- Leachate Drainage System
- Electrohydraulic Power Pack Complete
- Supporting Tracks with Compactor stoppers.

5) Vineet Khand-06: 2Bin Portable Compactor Transfer Station

Scope of Work: Design, Supply, Construction, Refurbishment, Erection and Commissioning of Mechanized Static Garbage Transfer station at Vineet Khand-06 Transfer Station with 2Bin facility.

A. Civil Works:

1. Site development works including survey.
2. Construction of Civil works including Area levelling, Excavation, Soil filling, Foundations, Flooring, Brickwork, Plastering, Painting etc.
3. Supply, Fabrication and Erection of Structural steel shed with AZ-150/SDP including Turbo vents, skylights, sheeting etc.
4. Dismantling and demolishing of existing structure.
5. Providing proper drainage system with internal and external drains.
6. Providing RFRC Flooring.
7. Providing Leachate collection sump and connecting to the drain, with EN901 coating for handling leachate.
8. Providing boundary wall with brickwork including foundations.
9. Providing Water supply system with underground sump including bore well, pump and piping fixtures. Two coats of water proofing compound inside sump (Nitobond).

B. Electrical Works:

Supply, Installation, Testing & Commissioning of Internal Electrification works which includes Main Distribution Panel, Sub Distribution Boards, LT cables, cable trays and top covers, Earthing, indoor and outdoor area lighting with all safety standards etc.

C. Mechanical Works:

Supply, Installation and Commissioning of mechanical equipment like Capsules/Containers, Hoppe₹ Compactors etc.

Specifications for Mechanical Equipment's:

A. **Portable Compactor Machine model MX-160/16CuM with Tip Cart Loading Mechanism**

Mobile Compactor machine along with complete Electricals and Hydraulic system consist of

- Compaction Unit MX–160 with 16 Cum Body
- Tip Cart Loading mechanism
- Hopper / Charging Chamber
- Hydraulic Operated Rear Door Locking Mechanism
- Leachate Drainage System
- Electrohydraulic Power Pack Complete
- Supporting Tracks with Compactor stoppe₹

6) Near BBD: 2Bin Portable Compactor Transfer Station

Scope of Work: Design, Supply, Construction, Erection and Commissioning of Mechanized Static Garbage Transfer station at Near BBD 2Bin site Transfer Station with 2Bin facility.

A. Civil Works:

1. Site development works including survey.
2. Construction of Civil works including Area levelling, Soil filling, Excavation, Foundations, Flooring, Brickwork, Plastering, Painting etc.
3. Supply, Fabrication and Erection of Structural steel shed with AZ-150/SDP including Turbo vents, skylights, sheeting etc.
4. Providing proper drainage system with internal and external drains.
5. Providing RFRC Flooring.
6. Providing Leachate collection sump and connecting to the drain, with EN901 coating for handling leachate.
7. Providing boundary wall with brickwork including foundations.
8. Providing Water supply system with underground sump including bore well, pump and piping fixtures. Two coats of water proofing compound inside sump (Nitobond).

B. Electrical Works:

Supply, Installation, Testing & Commissioning of Internal Electrification works which includes Main Distribution Panel, Sub Distribution Boards, LT cables, cable trays and top covers, Earthing, indoor and outdoor area lighting with all safety standards etc.

C. Mechanical Works:

Supply, Installation and Commissioning of mechanical equipment like Capsules/Containers, Hoppers, Compactors etc.

Specifications for Mechanical Equipment's:

A. **Portable Compactor Machine model MX-160/16CuM with Tip Cart Loading Mechanism**

Mobile Compactor machine along with complete Electricals and Hydraulic system consist of

- Compaction Unit MX–160 with 16 Cum Body
- Tip Cart Loading mechanism
- Hopper / Charging Chamber

- Hydraulic Operated Rear Door Locking Mechanism
- Leachate Drainage System
- Electrohydraulic Power Pack Complete
- Supporting Tracks with Compactor stoppers.

Set of Contract/Tender Documents:

The following documents will constitute set of tender documents:

i. Notice Inviting Tender.

ii. Special Instructions to Bidder

iii. Instruction to Tenderers & General Conditions of Contract (Vol-I/2015)

iv. List of Approved Banks

v. Quoting Sheet for Tenderer

vi. Bill of Quantities (Annexure – I)

vii. Tender Drawings (Annexure – II)

viii. Acceptance of Tender Conditions (Annexure-III)

ix. Civil, Electrical & Mechanical Technical Specifications (Annexure-IV)

2.6 The tenderers are required to quote strictly as per terms and conditions, specifications, standards given in the tender documents and not to stipulate any deviations.

2.7 When it is desired by CMSPL/LSA to submit revised financial tender then it shall be mandatory to submit revised financial tender. If not submitted, then the tender submitted earlier shall become invalid.

2.8 Bidder to submit hard copies of all the documents including valid GST registration, EPF registration, PAN Card etc. or any other licenses/registrations as desired by CMSPL/LSA.

2.9 If the contractor is found ineligible after opening of tenders, his tender shall become invalid and cost of tender document shall not be refunded.

2.10 Notwithstanding anything stated above, CMSPL/LSA reserves the right to assess the capabilities and capacity of the tenderer to perform the contract, in the overall interest of project. In case, tenderer's capability and capacities are not found satisfactory, CMSPL/LSA reserves the right to reject the tender at its discretion without assigning any reason.

Certificate of Financial Turn over: At the time of submission of tender, the tenderer shall submit Affidavit/ Certificate from Chartered Accountant mentioning Financial Turnover of last 3 years or for the period as specified in the tender document and any further details if required may be asked from the tenderer after opening of technical tende₹

List of Documents to be within the period of tender submission:

i. Demand Draft/Pay Order or Banker's Cheque of any Nationalized or Commercial Scheduled Bank towards EMD.

ii. Demand Draft/Pay Order or Banker's Cheque of any Scheduled Bank towards cost of Tender Document.

iii. Letter of Acceptance of tender condition (unconditional) as per format enclosed in Annexure-II. Certificate of Financial Turnover duly certified by CA as indicated above.

iv. Form XXVI (Appendix–O) of GCC – Affidavit.

v. Power of Attorney of the person for signing/submitting the tender.

vi. Valid GST registration, EPF registration, PAN No, etc.

vii. All pages of tender document along with the Corrigendum (if any) duly signed by the authorized person.

viii. If the tenderer offers any condition or conditional rebate, their tender shall summarily be rejected.

MEMORANDUM

Sl. No	Description	Values/Description to be applicable for relevant clause(s)
1.	Name of work	Design, Engineering, Supply, Construction, Erection, commissioning and O&M of 2 FCTS and 4 PCTS in Zone-4 at Lucknow.
2.	Owner	Lucknow Municipal Corporation ("LMC")
	Concessionaire	Chennai MSW Private Limited ("CMSPL")/ LSA.
3.	Type of Tender	LUMPSUM Contract
4.	Earnest Money Deposit	₹ - _____ (Rupees-_____) in the form of DD/ FDR/CDR
5.	Mobilization Advance (interest free)	Not Applicable
6.	Validity of Tender	120 Days from the bid due date.
7.	Performance Guarantee	5.00% (Five Percent only) of contract value in the form of bank guarantee to be submitted within 30 days from the issue of Letter of intimation or on the date of signing of the agreement, whichever is earlier.
8.	Security Deposit/Retention Money	2.5 % (Two and half Percent only) of the gross value of each running bill subjected to maximum of 2.5% of contract value.
09.	Time allowed for starting the work	The start date of contract shall be reckoned within 14 days from the date of issue of letter of intimation.
10	Escalation	Rates and amount Quoted by contractor shall be firm and fixed for entire contract period as well as extended period until completion of the works. No escalation shall be applicable on this contract.
11	Training	Necessary training shall be imparted to at least 2 Nos. staff placed in the TS. Necessary hand-holding for training/ up-gradation shall be provided by the contractor. Training regarding operation and maintenance of Fixed/Static and Portable Compactors is desirable.

3. PROJECT DESCRIPTION:

3.1 Funding Details of Project:

Funds have been made available to CMSPL/LSA by LMC for Design, Detail Engineering, Supply, Construction, Erection and commissioning of Mechanized Static Garbage Transfer Station (including Civil, Mechanical & Electrical Works) in Lucknow Municipal Corporation, Lucknow.

3.2 Scope:

It is proposed to Develop Design, Detail Engineering, Supply, Construction, Erection and commissioning of Mechanized Static Garbage Transfer Stations (including Civil, Mechanical & Electrical Works) of 2 FCTS and 4 PCTS in Zone-4 at Lucknow Municipal Corporation.

3.3 Site and Its Connectivity:

Sr. no.	Item	Quantity
1	Design, Detail Engineering, Supply, Construction, Erection and commissioning of Mechanized Static Garbage Transfer Station (including Civil, Mechanical & Electrical Works) in Lucknow Municipal Corporation, Lucknow	2 FCTS and 4 PCTS in Zone 4 at Lucknow Municip Corporation.

The sites are located within the Municipal corporation limits and having situated at various locations in Zone-4, for Package-1. Since there are multiple sites in and around Lucknow, bidder has to visit all such sites, understand the layouts and BOQ shall be prepared for estimates and quantify the job accordingly, before submitting the bid.

LMC has selected CMSPL as a successful bidder for the execution of MSW project at Lucknow city. Subsequently, as per the project requirement an SPV was formed by CMSPL in the name and style of Lucknow Swachhata Abhiyan Pvt Ltd (LSA). On behalf of LMC, CMSPL/LSA will execute the mentioned works through e-tender mechanism. CMSPL/LSA either itself or through their selected contractor will execute the works. LMC will inspect, certify and release the relevant payments to CMSPL/LSA as per the works done.

GENERAL CONDITIONS
OF THE CONTRACT

1.0 GENERAL

The Contract means the documents forming the tender and acceptance thereof and the formal agreement executed between the competent authority on behalf of CMSPL/LSA and the contractor, together with the documents referred to therein including these conditions, the specifications, designs, drawings and instructions issued from time to time by the Engineer-in-Charge and all these documents taken together, shall be deemed to form one contract and shall be complementary to one another.

1.1 In the contract, the following expressions shall, unless the context otherwise requires, have the meanings, hereby respectively assigned to them.

1.2 "CMSPL"/"LSA" proposes to get the works executed as mentioned in the tender document.

1.3 The conceptual drawings will be provided by CMSPL/LSA and works to be executed by the Successful bidder as per the Design, drawings and BOQs approved as "GOOD FOR CONSTRUCTION " by CMSPL/LSA.

1.4 OTHER DEFINITIONS:

a) "ENGINEER-IN-CHARGE" means Authorized person as designated by CMSPL/LSA to act as Engineer-in-charge of the work.

b) "WORKS OR WORK" the expression works or work shall unless there be something either in the subject or context repugnant to such construction, be construed and taken to mean the works by or by virtue of the contract to be executed whether temporary or permanent, and whether original, modified, altered, substituted or additional.

c) "CONTRACTOR" The Contractor shall mean the individual, firm or company, whether incorporated or not, undertaking the works and shall include the legal personnel, representative of such individual or the persons comprising such firm or company, or the successors of such firm or company and the permitted assignees of such individual, firm or company.

d) "DRAWINGS" mean the drawings referred to in the contract document/Bill of Quantities, specifications and any modifications of such drawings or such other drawings as may from time to time be furnished or approved by CMSPL/LSA.

e) "SITE" means the lands and other places on, under, in or through which the works are to be executed or carried out and any other lands or places provided by LMC/CMSPL/LSA or used for the purpose of the works/contract.

f) "APPROVAL" means approved in writing including subsequent written confirmation of previous verbal approval.

g) "WRITING" means any manuscript typed written or printed statement under or over signature and/or seal as the case may be.

h) "MONTH" means English Calendar month, 'Day' means a Calendar day of 24 hours each.

i) "CONTRACT VALUE" means the sum for which the tender is accepted as per the letter of intent.

j) "LANGUAGE" means all documents and correspondence in respect of this tender/contract shall be in English.

k) "OWNER/CLIENT" means LMC, acting through it's ……or any other officer so nominated by him and shall include their legal successors and permitted assignees. For all financial matters the decision of …… will be final and binding.

l) "TENDER" means the Contractor's priced offer to CMSPL/LSA for the execution and completion of the work and the remedying of any defects therein, in accordance with the provisions of the Contract, as accepted by the Letter of Intent or Letter of Award. The word TENDER is synonymous with Bid and the word TENDER DOCUMENTS with "Bidding Documents" or "offer documents".

m) The headings in the clauses/conditions of tender documents are for convenience only and shall not be used for interpretation of the clause/ condition.

n) Words imparting the singular meaning only also include the plurals and Vice-versa where the context requires. Words importing persons or parties shall include firms, Boards and organizations having legal capacities.

2.0 SITE VISIT AND COLLECTING LOCAL INFORMATION:

Before submission of tender, the bidders are advised to visit the site (s), its surroundings to assess and satisfy themselves about the local conditions such as the working and other constraints at site, approach roads to the site, availability of water & power supply, application of taxes, duties, cesses and levies as applicable, nature of ground, soil and sub-soil condition, underground water table level, accommodations they may require etc., & any other relevant information required by them to execute complete scope of work. The bidders may obtain all necessary information as to risks, weather conditions, contingencies & the circumstances (insurgencies etc.) which may influence or affect their tender prices. Bidder shall be deemed to have considered site conditions whether he has inspected it or not and to have satisfied himself in all respect before quoting his rates and no claim or extra charges whatsoever in this regard shall be entertained/payable by CMSPL/LSA at a later date.

2.1 The tenders (also called bids), not submitted in prescribed format or in the prescribed manner, shall be rejected by the CMSPL/LSA at the risk and responsibility of the bidder.

2.2 All the information as called for in the tender document should be submitted truly, clearly, legibly, transparently, unambiguously and without the use of abbreviations. It shall be submitted in English.

2.3 All the crucial figures, like rates and amount should be written in figures followed by words in a bracket.

2.4 There shall be no over-writing in the tender document and other papers submitted. The same person, who signs the tender document, should initial all the additions, alterations, deletions and cuttings with stamp (or seal) failing to do so, the tender may be rejected.

2.5 All the rates and amounts shall be quoted in Indian Rupees (INR) and shall be presumed to be in Indian Rupees unless specifically permitted to be quoted otherwise in this tender document.

2.6 Each page of this tender document should be signed by the bidder with seal in token of having read, understood and accepted the terms and conditions of this contract.

2.7 Each bidder is required to deposit an earnest money (EMD) of ₹ 5,00,000/ (Rupees: Five Lakhs only) in form of Bank Draft drawn from a nationalized Bank in favor of **Chennai MSW Pvt. Ltd/LSA, payable at Hyderabad**. The earnest money for the unsuccessful bidder shall be returned on finalization of the tender without any interest.

2.8 The bidder should submit the tender covering following details:

i. EMD

ii. technical bid,

iii. commercial bid

Respectively, giving full details with supporting documents as required for technical bid. Tenders giving insufficient particulars are liable to be rejected.

2.9 The Technical bid should contain the technical details about the bidder, such as document showing office address, contact person, telephone / fax numbers, service network available inside India, Construction team and equipment details, Operations Team, Maintenance support etc., terms and conditions of supply, warranty and payment mode, etc. and the specification of the items offered with forwarding documents.

2.10 The bidder should submit the Commercial Bid through online portal by stating unit value and its total value offered. This will be opened in the presence of agency's representative (one per agency) for only those agencies who have been found technically qualified/acceptable. The price shall

include all taxes (except GST), cost of supply, installation, commissioning at the site.

2.11 The prices quoted should be firm and inclusive of all Taxes and duties. However, GST is exclusive to the contract price, which shall be paid in additional at the prevailing GST rate.

2.12 CMSPL/LSA reserves the right to reject any or all of the tenders without assigning any reasons.

2.13 The rates, finalized through this tender, will be operative for the entire period of contract.

2.14 The submission of more than one tender by the same agency under different name is prohibited. Such tenders shall be rejected and no representation or correspondence shall be entertained with the vendo₹

2.15 Performance security: The successful bidder shall have to enter into an agreement with the tender calling authority/CMSPL/LSA for successful completion of construction, supply & installation of the tendered items after proper inspection within stipulated period and also for performance warrantee of the items from the date of construction, supply/ installation up to a period of 1 (one) year. In this regard, the bidder has to furnish the security deposit at the rate of 5% of the total amount of the Work excluding all taxes in the form of NSC/Post Office Savings Bank A/c /FDR/ Bank Guarantee from any nationalized bank duly pledged in favor of CMSPL/Tender Calling Authority/LSA.

3.0 SCOPE:

Design, Detail Engineering, Supply, Construction, Erection and commissioning of Mechanized Static Garbage Transfer Station (including Civil, Mechanical & Electrical Works) in Lucknow Municipal Corporation.

Sr. no.	Item	Quantity
1	Design, Detail Engineering, Supply, Construction, Erection and commissioning of Mechanized Static Garbage Transfer Station (including Civil, Mechanical & Electrical Works) in Lucknow Municipal Corporation, Lucknow	As per drawings/ BOQ

Carrying out additional survey if required/as recommended by CMSPL/LSA as confirmatory soil testing to ascertain safe bearing capacity of soil for foundation of the building.

4.0 VALIDITY OF TENDER:

The tender for the works shall be valid for a period of not less than 120 (one hundred and twenty) days from the Bid due date. The earnest money will be forfeited without any prejudice to any right or remedy, in case the bidder withdraws his tender during the validity period or in case he changes his offer to his benefit which is not acceptable to CMSPL/LSA. The validity period may be extended at the discretion of CMSPL/LSA.

5.0 ACCEPTANCE OF TENDER:

CMSPL/LSA reserves to itself the authority to reject any or all the tenders received without assigning any reason. The acceptance of a tender shall be effective from the date on which the letter of intent of acceptance of the tender is put in the communication by CMSPL/LSA.

6.0 PAYMENTS:

Post award of the Contract, the Contractor shall prepare and submit payment milestones to CMSPL/LSA; based on the approval of CMSPL/LSA payments will be processed accordingly.

Contractor shall submit monthly Running Account (RA) bills for the work completed during the month as approved by CMSPL/LSA, before 10th of each month for the preceding month.

Payment at agreed unit rates will be made only for the actual quantity executed and certified by CMSPL/LSA.

CMSPL/LSA shall release 100% of bill value to Contractor, as per the progress of work within 15 days from the date of receipt of corresponding works related payments from LMC upon making necessary recovery of Mobilization Advance, retaining Security Deposit/Retention money, any statutory deductions including but not limited to Tax Deducted at Source (TDS) and any other deductions under this Agreement.

All bills shall be supported by proof of certification for acceptable quantities by CMSPL/LSA along with approved drawings and test certificates and quality reports.

7.0 PERFORMANCE SECURITY:

Within thirty (30) days from the issue of letter of intent/ letter of award or such extended time as may be granted by CMSPL/LSA in writing, the contractor shall submit to CMSPL/LSA a performance bank guarantee in the form appended, from any Nationalized Bank equivalent to 5 % (Five percent only) of the contract value for the due and proper execution of the Contract at the time of signing of contract. In case the contractor fails to submit the performance guarantee of the requisite amount within the stipulated period or extended period, letter of intent /letter of award will automatically stand withdrawn and EMD of the contractor shall be forfeited. No payment shall be released to the contractor until the performance guarantee is submitted. Performance guarantee shall be returned after completion of defect liability period, upon issuance of defect liability certificate to the contractor.

8.0 SECURITY DEPOSIT/ RETENTION MONEY:

The Security deposit or retention money shall be deducted from each running bill of the contractor @2.5% (Two and half percent only) of the gross value of the Running account bill subject to maximum of 2.5% of contract value. After completion of 50% of project work, the contractor can replace the amount of Security Deposit by submission of Bank Guarantee of equivalent amount from a Nationalized Bank in the prescribed format of CMSPL/LSA. The security deposit or retention money shall be refunded to the contractor in two parts i.e. 50% on issue of completion certificate by the CMSPL/LSA and balance 50% after issuance of defects liability certificate and after compilation of provision given in the clause 42 or on payment of the amount of the final bill whichever is later.

9.0 MOBILIZATION OF MEN, MATERIALS AND MACHINERY:

All expenses towards mobilization at site and de-mobilization including bringing in equipment,

work force, materials, dismantling the equipment, clearing the site etc. shall be deemed included in prices quoted and no separate payment on account of such expenses shall be entertained.

9.1 It shall be entirely the Contractor's responsibility to provide, operate and maintain all necessary construction equipment, scaffolding's & safety, gadget, lifting tackles, tools and appliances to perform the work in a workman like and efficient manner and complete all jobs as per the specifications and within the schedule time of completion of work. Further, contractor shall also be responsible for obtaining temporary electricity and water connection for all purposes. The contractor shall also make standby arrangement for water & electricity to ensure un-interrupted supply.

9.2 The procurement and supply in sequence and at the appropriate time of all materials and consumable shall be entirely the contractor's responsibilities and his rates for execution of work shall be inclusive of supply of all these items.

9.3 It is mandatory for the contractor to provide safety equipment and gadgets to its all workers, supervisory and Technical staff engaged in the execution of the work while performing works at site. The minimum requirement (but not limited to) shall be gum boots, safety helmets, Rubber hand gloves, face masks, safety nets, belts, goggles etc. as per work requirements. Sufficient nos. of these equipment and gadgets shall also be provided to LMC/CMSPL/LSA by the contractor at his own cost for use of LMC/CMSPL/LSA Officials and/ or workforce while working/supervision at site. No staff/ worker shall be allowed to enter the site without these equipment/gadgets.

9.4 The cost of the above equipment/ gadgets are deemed to be included in the rates quoted by the contractor for the items & works as per Bill of Quantities and contractor shall not be entitled for any extra cost in this regard. The above norm is to be strictly complied with at site. In case the contractor is found to be deficient in providing Safety Equipment/ Gadgets in the opinion of Engineer-in-charge, the Engineer-in-charge at his option can procure the same at the risk & cost of contractor and provide the same for the use of work site and shall make the recoveries from the bills of the contractor for the same. The decision of the Engineer-in-charge shall be final and binding on contractor in this regard.

9.5 All designs, drawings, BOQs, etc., except Bar Bending Schedule, Shop & Fabrication drawings, for all works shall be approved by CMSPL/LSA for all buildings services along with the tender documents. For development works, drawings will be supplied in phased manner as the works progress. However, it shall be the duty and responsibility of the contractor to bring to the notice of the CMSPL/LSA in writing as to any variation, discrepancy or any other changes required and to obtain revised drawings and designs and/or approval of the CMSPL/LSA in writing for the same.

9.6 One copy of contract documents including drawings furnished to the contractor shall be kept at the site and the same shall at all reasonable times be available for inspection of CMSPL/LSA officials.

9.7 All materials, construction plants, equipment etc. Once brought by the contractor within the project area, will not be allowed to be removed from the premises without the written permission of the CMSPL/LSA. Similarly, no enabling works built by the contractor for the main construction undertaken by him, shall be dismantled and removed without the written consent of the CMSPL/LSA.

9.8 Contractor shall have to prepare the Bar Bending Schedule, shop and fabrication drawings free of cost, if required for any of the items of work. Two copies of these drawings each including for revision will be submitted to CMSPL/LSA for approval. Before executing the item, shop

drawings should be approved by CMSPL/LSA.

10.0 INCOME TAX DEDUCTION:

Income tax deductions shall be made from all payments made to the contractor including advances against work done, as per the rules and regulations in force, in accordance with the Income Tax act prevailing from time to time.

11.0 TAXES AND DUTIES:

The contractor shall be responsible for the payment, wherever payable, at his own cost of all taxes such as GST, Royalty, or any other similar tax/cess in the state concerned, toll charges, labor cesses, levy of any other taxes or duties which may be specified by local / state/ central government from time to time on all material articles which may be used for this work.

11.1 The rates quoted by him in the tender for buildup area and in bill of quantities shall be inclusive of all taxes (except GST), duties etc. Applicable GST shall be paid in additional by CMSPL/LSA at the prevailing rate, upon receiving relevant documents from the Contractor. The imposition of any new and/or increase in the aforementioned taxes, duties/levies (including fresh imposition of any other Tax) during the currency of the contract shall be borne by the contractor. In the event of non- payment / default in payment of any of the above taxes, CMSPL/LSA reserves the right to with-hold the dues / payments of contractor and make payment to local/state/Central Government authorities or to laborers as may be applicable.

11.2 The rate quoted by the contractor shall be deemed to be inclusive of all taxes as given in para 11.1. Tax deductions at source shall be made as per laws prevalent in the State. GST shall be paid in additional by CMSPL/LSA upon receipt of the same from LMC.

11.3 The contractor shall pay the stamp duty and registration charges, if any, on the contract agreement levied by the Government or any other statutory body.

11.4 It will be incumbent upon the Contractor to obtain a registration certificate under GST and the Contractor shall furnish necessary evidence to this effect to CMSPL/LSA. Taxes on the transactions between the contractor and his sub- contractor / Vendors etc. shall not be reimbursed by CMSPL/LSA

12.0 ROYALTY ON MATERIALS:

The contractor shall deposit royalty and obtain necessary permit from the local authorities and quoted rates shall be inclusive of royalty (If any). Contractor should submit such royalty challans along with the submission of monthly RA Bills.

13.0 RATES TO BE FIRM:

Rate must be quoted lump sum on turnkey basis expressed in Indian Rupees per unit noted in the bill of quantities against all items attached for this purpose. The rates quoted by the tenderer shall be firm and fixed for the entire period of completion including extended period if any and until handing over of the work. No revision to rates shall be allowed on account of any increase in prices of materials, labour, POL and Overheads, taxes etc. or any other statutory increase during the entire contract period or extended contract period.

13.1 The contractor shall be deemed to have inspected the site, its surrounding and acquainted itself with the nature of the ground, accessibility of the site and full extent and nature of all operations necessary for the full and proper execution of the contract, space for storage of materials, construction plant, temporary works, restrictions on the plying of heavy vehicles in area, supply and use of labour, materials, plant, equipment and laws, rules and regulations, if any, imposed by the local authorities.

13.2 The rates and prices to be tendered and bill of quantities are for completed and finished items of works and complete in all respects. It will be deemed to include all constructional plant, labor, supervision, materials, transport, all temporary works, erection, maintenance, contractor's profit and establishment/overheads, shop drawing, fabrication drawing (if required), stacking yard, etc. all general risk, taxes, royalty, duties, cess and other levies, insurance liabilities and other statutory obligations set out or implied in the tender documents and contract.

14.0 ESCALATION:

No price escalation shall be provided to contractor.

15.0 INSURANCE UNDER WORKMEN COMPENSATION ACT:

Contractor is required to take insurance cover under the Workman Compensation Act, 1923 amended from time to time from an approved insurance company and pay premium charges thereof. Wherever required by LMC/CMSPL/LSA the contractor shall produce the policy or the policies of Insurance and the receipt of payment of the current premiums.

16.0 THIRD PARTY INSURANCE:

Contractor is required to take third party insurance cover for an amount of 5% (five percent) of contract value from an approved insurance company for insurance against any damage, injury or loss which may occur to any person or property including that of LMC, arising out of the execution of the works or temporary works. Wherever required by CMSPL/LSA the contractor shall produce the policy or the policies of Insurance and the receipts of payment made against current premiums.

In case of failure of the contractor to obtain contractors all risk policy, insurance under workman compensation act and third party insurance as described above within one month from the date of commencement of work, running account payments of the contractor shall be withheld till such time the aforesaid insurance covers are obtained and submitted by the contractor.

17.0 INDEMNITY AGAINST PATENT RIGHTS:

The contractor shall fully indemnify the LMC/CMSPL/LSA from and against all claims and proceedings for or on account of any infringement of any patent rights, design, trademark or name or other protected rights in respect of any construction plant, equipment, drawings, machine, work or material used for in connection with the works or temporary works.

18.0 LABOUR LAWS TO BE COMPLIED BY THE CONTRACTOR:

The contractor shall obtain a valid license under the contract labour (R & A) Act 1970 and the contract labour Act (R&A) Central Rules 1971 and amended from time to time, and continue to have a valid license until the completion of the work including defect liability period. The contractor shall also abide by the provision of the child labor (Prohibition and Regulation) Act, 1986 and amended from time to time. Any failure to fulfill this requirement shall attract the penal provisions of this contract arising out the resultant for non-execution of the work before

the commencement of work.

No labour below the age of 18 years shall be employed for the work at the site.

19.0 LABOUR SAFETY PROVISION:

The contractor shall be fully responsible to observe the labour safety provisions.

20.0 OBSERVANCE OF LABOUR LAWS:

The contractor shall be fully responsible for observance of all labor laws applicable including local laws and other laws applicable in this matter and shall indemnify and keep indemnified LMC /CMSPL/LSA against effect or non-observance of any such laws. The contractor shall be liable to make payment to all its employees, workers and sub-contractors and make compliance with labor laws. If CMSPL/LSA is held liable as "Principal Employer" to pay contributions etc. under legislation of Govt. or Court decision in respect of the employees of the contractor, then the contractor would reimburse the amount of such payments, contribution etc. to CMSPL/LSA and/ or same shall be deducted from the payments, security deposit etc. of the contractor.

21.0 LAW GOVERNING THE CONTRACT:

The Indian Laws shall govern this contract for the time being in force and courts at Lucknow has the jurisdiction.

22.0 EMPLOYMENT OF PERSONNEL:

The contractor shall employ only Indian Nationals as his representatives, servants and workers after verifying their antecedents and loyalty. He shall ensure that no personnel of doubtful antecedents and any other nationality in any way is associated with the works.

22.1 The CMSPL/LSA shall have full power and without giving any reason to the contractor, immediately to get removed any representative, agent, servants and workers or employees on account of misconduct negligence or incompetence or whose continued employment may in his opinion be undesirable. The contractor shall not be allowed for any compensation on this account.

23.0 TECHNICAL STAFF FOR WORK:

The contractor shall employ at his cost adequate number of technical staff during the execution of this work depending upon the requirement of work. For this purpose the numbers to deployed, their qualification, experience as decided by CMSPL/LSA shall be final and binding on contractor. The contractor shall not be entitled for any extra payment in this regard. The technical staff should be available at site, whenever required by LMC/CMSPL/LSA to take such instructions.

24.0 LAND FOR LABOUR HUTS/ SITE OFFICE AND STORAGE ACCOMMODATION:

The contractor shall arrange the land for temporary office, storage accommodation, labour huts at his own cost and get the clearance of local authorities for setting up of labour camp

and it is deemed included in the rates quoted by the contractor for the works.

25.0 WATCHING AND LIGHTING:

The contractor at his own cost shall take all precautions to ensure safety of life and property by providing necessary barriers, lights, security guards etc. during the progress of work as directed by Engineer-in-Charge.

26.0 WORKMEN'S COMPENSATION ACT:

The contractor shall at all times indemnify LMC/CMSPL/LSA against all claims for compensation under the provision of workmen's compensation Act or any other law in force, for any workmen employed by the contractor or his sub-contractor in carrying out the contract and against all costs and expenses incurred by the LMC/CMSPL/LSA therewith.

27.0 MINIMUM WAGES ACT:

The contractor shall comply with all the provisions of the minimum wages Act, 1948, contract labour Act (R&A) 1970, and rules framed there under and other labor laws/local laws affecting contract labor that may be brought into force from time to time.

28.0 LABOUR RECORDS:

The contractor shall submit by 4th & 19th of every month to the Engineer-in-Charge of CMSPL/LSA a true statement, showing in respect of the second half of the preceding month and the first half of the current month, respectively, of the following data:-

a) The number of the labour employed by him (category wise).

b) Their working hours.

c) The wages paid to them.

d) The accidents that occurred during the said fortnight showing the circumstances under which they happened and the extent of damage and injury caused.

e) The number of female workers who have been allowed Maternity Benefits and the amount paid to them.

f) Any other information required by Engineer-in-Charge.

29.0 WORK TO BE EXECUTED IN ACCORDANCE WITH SPECIFICATIONS, DRAWINGS, AND ORDERS ETC.

The contractor shall execute the whole and every part of the work in the most substantial and workmen like manner both as regards materials and otherwise in every respect in strict accordance with the specifications. The contractor shall also conform exactly, fully and faithfully to the design, drawings and instructions in writing in respect of the work assigned by the Engineer-in-Charge and the contractor shall be furnished free of charge one copy of the contract documents together with specifications, designs, drawings.

The contractor shall comply with the provisions of the contract and execute the works with care and diligence and maintain the works and provide all labor and materials, tools and plants including for measurements and supervision of all works, structural plans and other things of temporary or permanent nature required for such execution and maintenance in so far as the necessity for providing these is specified or is reasonably inferred from the contract. The

contractor shall take full responsibility for adequacy, suitability and safety of all the works and methods of construction.

30.0 DIRECTION FOR WORKS:

All works to be executed under the contract shall be executed under the direction and subject to approval in all respect of the Engineer-in-Charge of CMSPL/LSA who shall be entitled to direct at what point or points and in what manner works are to be commenced and executed.

31.0 TIME SCHEDULE & PROGRESS:

Time allowed for carrying out all the works shall be minimum of 120 days for PCTS and maximum of 180 days for FCTS, which shall be reckoned from the date of handing over of the site. Time shall be the essence of the contract and contractor shall ensure the completion of the entire work within the stipulated time of completion.

31.1 The contractor shall also furnish within 10 days of date of letter of Intent, a CPM / PERT chart/ Bar Chart for completion of work within stipulated time. This will be duly approved from CMSPL/LSA. This approved CPM/ PERT Chart shall form a part of the agreement. Achievement of total completion has to be within the time period allowed.

31.2 Contractor shall submit fortnightly/ Monthly (as directed by Engineer-in-Charge) progress reports on a format approved by Engineer-in- Charge highlighting status of various activities and physical completion of work.

31.3 The contractor shall submit completion report with as built drawings and maintenance schedule to the office of Engineer-in-Charge, of CMSPL/LSA in writing within a period of 30 days of completion of work.

32.0 WATER AND ELECTRICITY:

The contractor shall make his own arrangement for Water & Electrical power for construction and other purposes at his own cost and pay requisite electricity and water charges. The contractor shall also make standby arrangement for water & electricity to ensure un-interrupted supply.

33.0 INDIAN STANDARDS:

Wherever any reference is made to any IS in any particular specifications, drawings or bill of quantities, it means the Indian Standards editions with the amendments prevailing at the last date of receipt of tender documents.

34.0 MATERIALS AND SAMPLES:

The materials/ products used on the works shall be one of the reputed make/ brands. The contractor shall submit samples/ specimens of materials/ products to the Engineer-in-Charge for prior approval. In exceptional circumstances, Engineer-in-Charge may allow alternate equivalent makes/ brands of products/ materials at his sole discretion. The final choice of brand/ make shall remain with the CMSPL/LSA Engineer-in-Charge, whose decision in this matter shall be final and binding and no extra charges on this account shall be payable to the Contractor.

In case no make or brand of any materials, articles, fittings, accessories etc. is specified, the same shall comply with the relevant Indian Standard Specifications and shall bear the ISI/BIS mark. The Engineer- in-charge of CMSPL/LSA shall have the discretion to check quality of materials and equipment to be incorporated in the work, at source of supply or site of work and even after used in the work. They shall also have the discretion to check the workmanship of various items of work to be executed in this work. The contractor shall provide the necessary facilities and assistance for this purpose.

34.1 The above provisions shall not absolve the contractor from the quality of final product and in getting the material and workmanship quality checked and approved from the Engineer-in-Charge of CMSPL/LSA.

34.2 The brands of all materials, articles fittings etc. approved together with the names of the manufacturers and firms from which supplies have been arranged shall be recorded in the site order book.

34.3 All tests shall be carried out in the presence of CMSPL's/LSA representative. All costs towards samples, materials, collection, transport, workers, testing etc. shall be borne by the Contractor and are deemed included in the rates quoted by him in the bill of quantities.

35.0 TESTS AND INSPECTION:

The contractor shall carry out various mandatory tests as per specifications and the technical documents that will be furnished to him during the performance of the work.

All the tests on materials, as recommended by relevant Indian Standard Codes or other standard specifications (including all amendments current at the last date of submission of tender documents) shall be got carried out by the contractor at the field testing laboratory or any other recognized institution/ laboratory, at the direction of the CMSPL/LSA. All testing charges, expenses etc. shall be borne by the contractor.

The contractor at their own cost shall carry out all the tests, either on the field or outside laboratories concerning the execution of the work and supply of materials.

36.0 CARE OF WORKS:

From the commencement to the completion of works and handing over, the contractor shall take full responsibility for care thereof all the works and in case of any damage/loss to the works or to any part thereof or to any temporary works due to lack of Precautions or due to negligence on part of Contractor, the same shall be made good by the Contractor.

37.0 RESTRICTION ON SUBLETTING:

The contractor shall not sublet or assign the whole or part of the works except where otherwise provided, by the contract and even then only with the prior written consent of the CMSPL/LSA and such consent if given shall not relieve the contractor from any liability or obligation under the contract and he shall be responsible for the acts, defaults or neglects of any sub-contractor, his agents, servants or workman as full as if they were the acts, defaults or neglects of the contractor, his agent, servants or workman provided always that the provision of labour on piece work basis shall not be deemed to be a subletting under this clause.

38.0 CO-ORDINATION WITH OTHER AGENCIES:

Work shall be carried out in such a manner that the work of other Agencies operating at the site is not hampered due to any action of the Contractor. Proper Co-ordination with other Agencies will be Contractor's responsibility. In case of any dispute, the decision of CMSPL/LSA shall be final and binding on the contractor. No claim whatsoever shall be admissible on this account.

39.0 CANCELLATION / DETERMINATION OF CONTRACT IN FULL OR PART:

Subject to other provisions contained in this clause the Engineer-in-Charge of CMSPL/LSA may, without prejudice to his any other rights or remedy against the contractor in respect of any delay, inferior workmanship, any claims for damages and/or any other provisions of this contract or otherwise, and whether the date of completion has or has not elapsed, by notice in writing absolutely determine the contract in any of the following cases:

i) If the contractor fails to complete the work within the stipulated date or items of work with individual date of completion, if any stipulated, on or before such date(s) of completion and does not complete them within the period specified in a notice given in writing in that behalf by the Engineer-in-Charge; or

ii) If the contractor shall offer or give or agree to give to any person in CMSPL/LSA service or to any other person on his behalf any gift or consideration of any kind as an inducement or reward for doing or forbearing to do or for having done or forborne to do any action relation to the obtaining or execution of this or any other contract or

iii) If the contractor shall enter into a contract with CMSPL/LSA in connection with which commission has been paid or agreed to be paid by him or to his knowledge, unless the particulars of any such commission and the terms of payment thereof have been previously disclosed in writing to the Engineer-in-Charge; or

iv) If the contractor shall obtain a contract with CMSPL/LSA as a result of wrong tendering or other non bona-fide methods of competitive tendering; or

v) If the contractor being an individual, or if a firm, any partner thereof shall at any time be adjudged insolvent or have a receiving order or order for administrative of his estate made against him or shall take any proceedings for liquidation or composition (other than a voluntary liquidation for the purpose of amalgamation or reconstruction) under any Insolvency Act for the time being in force or make any conveyance or assignment of his effects or composition or arrangement for the benefit of his creditors or purport so to do, or if any application be made under any Insolvency Act for the time being in force for the sequestration of his estate or if a trust deed be executed by him for benefit of his creditors; or

vi) If the contractor being a company, shall pass a resolution or the Court shall make an order for the winding up of the company, or a receiver or manager on behalf of the debenture holders or otherwise shall be appointed or circumstances shall arise which entitle the Court or debenture holders to appoint a receiver or manager; or

vii) If the contractor shall suffer an execution being levied on his goods and allow it to be continued for a period of 21 days; or

viii) If the contractor assigns, transfers, sublets (engagement of labor on a piece-work basis or of the labor with materials not to be incorporated in the work, shall not be deemed to be subletting) or otherwise parts with or attempts to assign, transfer sublet or otherwise parts with the entire works or any portion thereof without and prior written approval of

the Engineer-in-Charge of CMSPL/LSA.

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

40.0 CONTRACTOR LIABLE TO PAY COMPENSATION EVEN IF ACTION NOT TAKEN:

In any case in which any of the powers conferred upon the Engineer-in-Charge by relevant clause thereof, shall have become exercisable and the same are not exercised, the non-exercise thereof shall not constitute a waiver of any of the conditions hereof and such powers shall notwithstanding be exercisable in the event of any future case of default by the contractor and the liability of the contractor for compensation shall remain unaffected. In the event of the Engineer-in-Charge putting in force all or any of the powers vested in him under the preceding clause he may, if he so desires after giving a notice in writing to the contractor, take possession of (or at the sole discretion of the Engineer-in-Charge which shall be final and binding on the contractor) use as on hire (the amount of the hire money being also in the final determination of the Engineer-in-Charge) all or any tools, plant, materials and stores, in or upon the works, or the site thereof belonging to the contractor, or procured by the contractor and intended to the used for the execution of the work/or any part thereof, paying or allowing for the same in account at the contract rates, or in the case of these not being applicable, at current market rates to be certified by the Engineer-in-Charge, whose certificate thereof shall be final, and binding on the contractor and/or direct the contractor, clerk of the works, foreman or other authorized agent to remove such tools, plant, materials, or stores from the premises (within a time to be specified in such notice) in the event of the contractor failing to comply with any such requisition, the Engineer-in-Charge may remove them at the contractor's expense or sell them by auction or private sale on account of the contractor and his risk in all respects and the certificate of the Engineer-in-Charge as to the expenses of any such removal and the amount of the proceeds and expenses of any such sale shall be final and conclusive against the contractor.

41.0 TIME ESSENCE OF CONTRACT & EXTENSION FOR DELAY:

The time allowed for execution of the Works as specified in the terms of contract or the extended time in accordance with these conditions shall be the essence of the contract. The execution of the works shall commence within 14th day or such period as mentioned in the letter of award after the date on which the Engineer-in-Charge of CMSPL/LSA issues written orders to commence the work. If the Contractor commits default in commencing the execution of the work as previously mentioned, CMSPL/LSA shall without prejudice to any other right or remedy available in law, be at liberty to forfeit the earnest money absolutely.

41.1 Within 10 (Ten) days of Letter of Intent, the Contractor shall submit a Time and Progress Chart (CPM/PERT/Quantified Bar Chart) and get it approved by the Engineer-in-Charge of CMSPL/LSA. The Chart shall be prepared in direct relation to the time stated in the contract documents for completion of items of the works. It shall indicate the forecast of the dates of commencement and completion of various items, trades, sections of the work and may be amended as necessary by agreement between the Engineer-in-Charge of CMSPL/LSA and the Contractor within the limitations of time stipulated in the Contract documents, and further to ensure good progress during the execution of the work, the contractor shall in all cases in which the time allowed for any work exceeds one month

(save for special jobs for which a separate program has been agreed upon) complete 1/8th of the whole of work before 1/4th of the whole time allowed in the contract has elapsed, 3/8th of the work before one half of such time has elapsed and 3/4th of the work before 3/4th of such time has elapsed. The physical report including photographs shall be submitted by the contractor on the prescribed format & the intervals (not exceeding a month) as decided by the Engineer in Charge. The compensation for delay shall be levied at intermediate stages also, in case the required progress is not achieved to meet the above time deadlines of the completion period and progress chart, provided always that the total amount of Compensation for delay to be paid under this condition shall not exceed 10% of the tendered value of work".

41.2 If the work(s) be delayed by:

a) force-majeure or

b) abnormally bad weather, or

c) serious loss or damage by fire, or

d) civil commotion of workmen, strike or lockout, affecting any or the trades employed on the work, or

41.3 Delay on the part of other contractors or tradesmen engaged by Engineer-in-Charge in executing work not forming part of the Contract, or

41.4 Any other cause which, in the absolute discretion of the CMSPL/LSA, is beyond the Contractor's control, then upon the happening of any such event causing delay, the Contractor shall immediately give notice thereof in writing to the Engineer-in-Charge of CMSPL/LSA but shall nevertheless contractor shall constantly use his best endeavors to prevent or make good the delay and shall do all that may be reasonably required to the satisfaction of the Engineer-in-Charge of CMSPL/LSA to proceed with the works.

41.5 Request for extension of time, to be eligible for consideration, shall be made by the Contractor in writing within 14 (fourteen) days of the happening of the event causing delay on the prescribed form. The Contractor may if practicable, indicate in such a request the period for which extension desired.

42.0 DEFECTS LIABILITY PERIOD:

The contractor shall be responsible for the rectification of defects in the works for a period of 12 (twelve) months from the date of taking over of the works by the CMSPL/LSA. Any defects discovered and brought to the notice of the contractor forthwith shall be attended to and rectified by him at his own cost and expense. The Engineer-in-charge of CMSPL/LSA on successful rectification of all defects will issue defect liability certificate (DLC). However, in case the contractor fails to carry out any rectifications within Defects Liability Period, the same may without prejudice to any other right or remedy available be got rectified by CMSPL/LSA's Authorized Representative at the cost and expense of the contractor and cost of such rectifications, as decided by the Engineer –in-charge CMSPL/LSA, shall be deducted from the contractor's due amount or adjusted against the Performance Guarantee/Security Deposit, if subsisting. The decision of CMSPL/LSA shall

be final and binding.

43.0 FORCE MAJEURE:

Any delay or failure of the performance of either party hereto shall not constitute default here under to give rise to any claims for damages, if any to the Extent such delay or failure of performance is caused by occurrences such as acts of God or the public enemy, expropriation, compliance with any order or request of Government authorities, acts of war, rebellions, sabotage fire, floods, illegal strikes, or riots (other than contractor's employees). Only extension of time shall be considered for Force Majeure conditions as accepted by CMSPL/LSA. No adjustment in contract price shall be allowed for reasons of force majeure.

44.0 ARBITRATION:

44.1 Except where otherwise provided in the contract, all questions and disputes relating to the meaning of the specifications, design, drawings and instructions herein before mentioned and to the quality of workmanship or materials used in the work or as to other question, claim, right or rates for extra items sanctioned and decided or not by the competent authority under the conditions, of this contract matter or thing whatsoever in any was arising out of or relating to the contract designs, drawings, specifications, estimates, instructions or order on these conditions or otherwise concerning the work of the execution of failure to execute the same whether arising during the progress of the work or after the completion of abandonment thereof, shall at the first instance shall be settled amicably by negotiations between the contractor & CMSPL/LSA representatives within 30 days from the date of such dispute arises, failing which same shall be referred to the arbitration through appointment of sole Arbitrator as mutually agreed between contractor & CMSPL/LSA as per Arbitration & conciliation Act, 1996 and any amendments thereof.

44.2 The venue of arbitration shall be Lucknow. Any suit or application for the enforcement of this arbitration shall be filed in the competent court at (UP), no other court or any other district or outside Uttar Pradesh shall have any jurisdiction in the matter. The award of the arbitrator shall be final, conclusive and binding on both the parties to the contract.

45.0 JURISDICTION:

The agreement shall be executed on non-judicial stamp paper purchased in Lucknow. Courts in Lucknow, U.P alone will have jurisdiction to deal with matters arising there from, to the exclusion of all other courts.

46.0 SUSPENSION OF WORKS:

(a) The contractor shall, on receipt of the order in writing of the Engineer-in-charge CMSPL/LSA, suspend the progress of the works or any part thereof for such time and in such manner as the Engineer- in-charge may consider necessary for any of the following reasons:

i) On account of any default on part of the contractor, or

ii) for Improper execution of the works or part thereof for reason other than the default of the contractor, or

iii) For safety of the works or part thereof.

The contractor shall, during such suspension, properly protect and secure the works to the extent necessary and carry out the instructions given in that behalf by the Engineer-in-charge, CMSPL/LSA.

(b) If the suspension is ordered for reasons (ii) and (iii) in sub-Para (a) above.

i) The contractor shall be entitled to an extension of the time equal to the period of every such suspension plus 25%. No adjustment of contract price will be allowed for reasons of such suspension.

ii) In the event of the Contractor treating the suspension as an abandonment of the Contract by CMSPL/LSA, he shall have no claim to payment of any compensation on account of any profit or advantage which he may derived from the execution of the work in full.

47.0 CONTRACT COORDINATION PROCEDURES, COORDINATION MEETINGS AND PROGRESS REPORTING:

The Contractor shall prepare and finalize in consultation with CMSPL/LSA, a detailed contract coordination procedure within 15 days from the date of issue of Letter of Intent for the purpose of execution of the Contract.

47.1 The Contractor shall have to attend all the meetings at any place or in Lucknow at his own cost with LMC/CMSPL/LSA or Consultants of LMC/CMSPL/LSA during the currency of the Contract, as and when required and fully cooperate with such persons and agencies involved during these discussions.

47.2 During the execution of the work, Contractor shall submit at his own cost a detailed Monthly progress report to the Engineer-in-charge of CMSPL/LSA by 5th of every month. The format of monthly progress report shall be as approved by Engineer-in-Charge of CMSPL/LSA.

48.0 CONTRACT AGREEMENT:

The Contractor shall enter into a Contract Agreement with the CMSPL/LSA within 10 days from the date of Letter of Intent or within such extended time, as may be granted by the CMSPL/LSA. The cost of stamp papers, stamp duty, registration, if applicable on the contract, shall be borne by the Contractor. In case, the contractor does not sign the agreement as above or start the work within 30 days of the issue of letter/ e-mail of intent, his Earnest Money Deposit is liable to be forfeited and letter of intent consequently will stand withdrawn.

49.0 MANNER OF EXECUTION OF AGREEMENT:

The agreement as per prescribed Pro forma as enclosed shall be signed at the office of the CMSPL/LSA within 10 days from the date of issue of Letter of Intent. The Contractor shall provide for signing of the Contract, appropriate Power of Attorney and the requisite documents/materials. Unless and until a formal contract is prepared and executed, the Letter of Intent read in conjunction with the Bidding Documents will constitute a binding contract.

49.1 The agreement will be signed in two originals, whereas the Contractor shall be provided with one signed original, and the other will be retained by the CMSPL/LSA.

49.2 The Contractor shall provide free of cost to the LMC/CMSPL/LSA all the Engineering data, drawings and descriptive materials submitted along with the bid, in at least 2 (two) copies to form an integral part of the Agreement within seven 7 days after issuing of Letter of Intent.

49.3 Subsequent to signing of the Agreement, the Contractor at his own cost shall provide to the CMSPL/LSA with at least two (2) true hardbound copies of Agreement within thirty (30) days of its signing.

Appendix - 'M'

LISTS OF APPROVED BANKS

Nationalized Banks:

The BGs shall be accepted from all Nationalized Banks, and / or Scheduled banks

National banks in India

From sources across the web

Bank of India	Canara Bank	Bank of Baroda
Bank of Maharashtra	Indian Overseas Bank	Punjab National Bank
State Bank of India	UCO Bank	Indian Bank
Punjab and Sind Bank	Union Bank of India	Allahabad Bank
Axis Bank	H d f c bank	Oriental Bank of Commerce
Syndicate Bank	Andhra Bank	Bandhan Bank
Dena Bank	Dhanlaxmi Bank	ICICI Bank
IndusInd Bank		

(Judicial Stamp paper of appropriate value as per UP State)

PROFORMA OF BANK GUARANTEE (FOR MOBILIZATION ADVANCE)

To
CMSPL/LSA,

(Address of submission as mentioned in "Notice Inviting Tender")

1- In Consideration of the Chennai MSW Pvt. Ltd. (hereinafter called "CMSPL" or LSA which expression shall unless repugnant to the subject or context include his successor and assigns) having agreed under the terms and conditions of Contract No…….dated…….made between……...and the in connection with (hereinafter called "the said contract") to make at the request of the Contractor a Mobilization Advance of Rs…. for utilizing it for the purpose of the Contract on his furnishing a guarantee acceptable to the , we the Bank (hereinafter referred to the "the said Bank") and having our registered office at……do hereby guarantee the due recovery by the of the said advance as provided according to the terms and conditions of the Contract. We……..do hereby undertake to pay the amount due and payable under this Guarantee without any demur; merely on a demand from the stating that the amount claimed is due to the under the said Agreement. Any such demand made on the….shall be conclusive as regards the amount due and payable by the…under this guarantee and agree that the liability of the……to pay the amount so demanded shall be absolute and unconditional not withstanding any dispute or disputes raised by the Contractor and not withstanding any legal proceeding pending in any court or Tribunal relating thereto. However, our liability under this Guarantee shall be restricted to an amount not exceeding Rs…

2- We……Bank further agree that the shall be the sole judge of and as to whether the amount claimed has fallen due to the under the said agreement or whether the said Contractor has not utilized the said advance or any part thereof for the purpose of the Contract and the extent of loss or damage caused to or suffered by the on account of the said advance together with interest not being recovered in full and the decision of the that the amount has fallen due from contractor or the said contractor has not utilized the said advance or any part thereto for the purpose of the contract and as to the amount or amounts of loss or damage caused to or suffered by the shall be final and binding on us.

3- We, the said bank, further agree that the Guarantee therein contained shall remain in full force and effect till the said advance has been fully recovered and its claims satisfied or discharged and till CMSPL/LSA certify that the said advance has been fully recovered, unless a notice of the claims under this Guarantee has been served on the Bank before the expiry of the said Bank Guarantee in which case the same shall be enforceable against the Bank.

4- The shall have the fullest liberty without affecting in any way the liability of the Bank under this Guarantee or indemnity from time to time to vary any of the terms and conditions of the said Contract or the advance or to extend time of performance by the said Contractor or to postpone for any time and from time to time of the powers exercisable by it against the said Contractor and either to enforce or forbear from enforcing any of terms and conditions governing the said Contract or the advance or securities available to the and the said Bank shall not be released from its liability under these presents by any exercise

by the of the liberty with reference to the matters aforesaid or by reasons of time being given to the said Contractor or any other forbearance, act or omission on the part of the or any indulgence by the to the said Contractor or of any other matter or thing whatsoever which under the law relating to sureties would but for this provision have the effect of so releasing the bank from its such liability.

5- It shall not be necessary for the to proceed against the Contractor before proceeding against the Bank and the Guarantee herein contained shall be enforceable against the bank notwithstanding any security at the time when proceedings are taken against the Bank hereunder or unrealized.

6- We, the said Bank, lastly undertake not to revoke this Guarantee during its currency except with the previous consent of the in writing and agree that any change in the constitution of the said Contractor or the said Bank shall not discharge our liability hereunder.

For and on behalf of Bank

(NAME AND DESIGNATION)

WITNESS.

1._____

2._____

PROFORMA OF BANK GUARANTEE

(IN LIEU OF SECURITY DEPOSIT)

In consideration of the Chennai MSW Private Limited, (hereinafter called "the CMSPL") or LSA which expression shall include its successors and assigns having awarded to M/s (hereina
fter
called "the Supplier/Contractor") which expression shall wherever the subject or context so permits includes its successors and assigns) a Contract in terms inter-alia of the company's letter No…..... dated…....and the Contract/Purchase Conditions of the Company and upon the condition of the Supplier/Contractor furnishing Security for the performance of the Supplier's obligations and /or discharge of the contractor's/supplier's liability under and/or in connection with the said supply contract up to a sum of Rs….....
(Rupees…..... only) We … ((hereinafter called "The Bank") which expression shall include its successors and assigns) hereby undertake and guarantee payment to CMSPL/LSA forthwith on the same day on demand in writing and without protest or demur of any and all moneys payable by the supplier/contractor to the Company under, in respect or in connection with the said contract inclusive of all the losses, damages, costs , charges and expenses and other moneys payable in respect of the above as specified in any notice of demand made by the Company to the Bank with reference to this guarantee up to and aggregate limit of Rs……...(Rupees…..only) and the bank hereby agree with the company that:

1. This Guarantee shall be continuing guarantee and shall..…remain valid and irrevocable for all claims of the Company and liabilities of Supplier/Contractor arising up to and until midnight of….....

2. This Guarantee shall be in addition to any other Guarantee or Security whatsoever that the Company now or at any time have in relation to the Supplier's obligations/liabilities under and/ or in connection with the said supply/contract, and the company shall have full authority to take recourse or to enforce this Security in preference to any other Guarantee or Security which the Company may have or obtain and no forbearance on the part of the Company in enforcing or requiring enforcement of any other Security shall have the effect of releasing the Bank from its liability here under.
3. The Company shall be at liberty without reference to the Bank and without affecting the full liability of the Bank here under to take any other security in respect of the Supplier's/Contractor's obligations and/ or liabilities under or in connection with the said supply/contract or to grant time and / or indulgence to the supplier / contractor or to increase or otherwise vary the prices or the total contract value or to release or to forbear from enforcement of all or any of the conditions under the said supply / contract and / or the remedies of the Company under any other security/securities now or hereafter held by the Company and no such dealings, increase(s) or other indulgence(s) or arrangement(s) with the supplier / contractor or releasing or forbearance whatsoever shall have the effect of releasing the Bank from its full liability to the Company here under or prejudicing rights of the company against the Bank.

4. This Guarantee shall not be determined or affected by the liquidation or winding up, dissolution or change of constitution or insolvency of the supplier / contractor but shall in all respects and for all purposes be binding and operative until payment of all moneys payable to

the company in terms thereof.

5. The Bank hereby waives all rights at any time inconsistent with the terms of this Guarantee and the obligations of the Bank in terms hereof shall not be otherwise affected or suspended by reason of any dispute or disputes having been raised by the supplier/ contractor (whether or not pending before any Arbitrator, Tribunal or Court) or any denial or liability by the supplier/ contractor stopping/ preventing or purporting to stop or prevent any payment by the Bank to the Company in terms thereof.

6. The amount stated in any notice of demand addressed by the company to the Guarantor as liable to be paid to the Company by the supplier/contractor or as suffered or incurred by the Company on account of any losses or damages, costs, charges and / or expenses shall as between the Bank and the Company be conclusive of the amount so liable to be paid to the company or suffered or incurred by the company as the case may be and payable by the Guarantor to the Company in terms hereof subject to a maximum of Rs…….(Rupees only),

7. Unless demand or claim under this Guarantee is made on the Guarantor in writing within three months form the date of expiry of the Guarantee I e up to the Guarantor shall be discharged from all liabilities under this Guarantee there under.

Notwithstanding anything contained herein before our liability under this guarantee is restricted to Rs…… (Rupees…….....only). This guarantee will expire on

any
claim under this Guarantee must be received by us within three months from the date of expiry i.e. …….....(date, three months after the expiry date) and if no such claim has been received by us by that date all your rights under this guarantee will cease.

For and on behalf of the Bank

Place:

Date:

WITNESS:

1.

2.

PROFORMA OF INDENTURE FOR SECURED ADVANCEOR CREDIT

THIS INDENTURE made this day of_____between_____(hereinafter called the contractor) which expression shall where the Context as admits or implies be deemed to include his executor/administrators and assign of the one part and CMSPL/LSA.

Whereas by an agreement dated (hereinafter called the said agreement). The Contractor has agreed to construct.

In addition, whereas the Contractor has applied to the Engineer that he may be or be given credit for materials brought by him to the site of the work subject to the said agreement for use in construction of the work.

NOW THIS INDENTURE WITNESSETH that in pursuance of the said agreement and in consideration of the sum of ₹ ___(Rupees_____only) paid to the contractor by Engineer. The receipt where the Contractor hereby acknowledges and of such advance or credit (if any), as may be made to him as previously mentioned the Contractor hereby covenants and agrees with The Engineer and declares as follows:

1. That all sums given as advance or credit by The Engineer to the Contractor as previously mentioned shall be employed by the Constructor in or toward the execution of the said works and for no other purpose whatsoever.

2. That the material for which the advance or credit is given are offered to and accepted by The Engineer as security and are absolutely the Contractor's own property and free from encumbrances of any kind the Contractor will not make any application for or receives further advance or credit on the security or material which are not absolutely his own property and free from encumbrances of any kind and the Contractor shall indemnify The Engineer against any claims to any material in respect of which advance or credit has been made to him as aforesaid.

3. That the said material and all other material on the security of which any further advance or advances or credit may be given as aforesaid (hereinafter called the said materials) shall be used by the Contractor s solely in the execution of the said works in accordance with the direction of the Engineer and in terms of said agreement.

4. That the Contractor shall make at his own cost all necessary and adequate arrangement for the proper safe custody and protection against all risks of the said material and that until used in the construction as aforesaid the material shall remain at the site of the said works in Contractor's custody and on his responsibility and shall at all times be open to inspection by The Engineer. In the events of the materials or any part thereof being stolen, destroyed or damaged or becoming deteriorated in greater degree than in due to reasonable use and wear thereof the Contractor will replace the same with other materials of like quality of repair and make good the same as required by The Engineer.

5. That said material shall not on any account be removed from the site of work expect with the written permission of The Engineer.
6. That the advance shall be repayable in full when or before Contractor receives payment from The Engineer of the price payable to him for the said work under the term and provisions of the said agreement. Provided that if any intermediate payments are made to the Contractor on account of work done then on the occasion of each payment The Engineer will be at liberty to make a recovery from the Contractor's bill from such payments by deducting there from the value of the said materials than actually used in the contraction and in respect of which recovery has not been made previously. The value of this purpose being determined in respect of each description of materials at the rates at which the amounts of the advance as made under these presents was calculated.

7. That if the Contractor shall at any time make at any default in the performance of observance in respect of any of the terms and provisions of the said agreement or of that provisions the total amount of the advance or advances that may still be owing to CMSPL/LSA, shall immediately on the happening of such default be repayable by the Contractor to CMSPL/LSA.

8. That the Contractor hereby charges all the said materials with the repayment to The Engineer of all sums advances or credit as previously mentioned and all costs. Charges, damages and expenses payable under these presents PROVIDED ALWAYS it is hereby agreed and declared that notwithstanding anything in the said agreement and without prejudice to the powers contained therein if and wherever the covenant for payment and repayment herein before contained shall be become enforceable and the money owing shall not be paid in accordance therewith. The Engineer may at any time thereafter adopt all or any of the following courses he may deem best:

    a. Seize and utilize the said material or any part thereof in the completion of the said works in accordance with the provision in that behalf contained in the said agreement debating the Contractor with the actual cost of effecting such completion and the amount due in respect of advance or credit under these presents and crediting the Contractor with value of work done as if he has carried it out in accordance with the said agreement and the rates thereby provided if the balance is against the Contractor is to pay the same to the engineer on demand.

    b. Remove and sell by public auction the seized materials or any part thereof and out of the money arising from the sale repay the engineer under these presents and pay over the surplus (if any) to the Contractor.

    c. Deduct all or any part of the moneys owing from any sums due to the contractor under said agreement.

9. Except in the event of such default on the part of contractor as previously mentioned, interest or the said advance shall not be payable.
10. That in the event of conflict between the provisions of these presents and the said agreements, the provision of these presents shall prevail and in the event of any dispute or difference arising over the construction or effect of these presents, the settlement of which has not been herein before expressly provided for the same shall so far as is lawful be referred to Managing Director, CMSPL/LSA/ LMC or to such person as he may appoint whose decision shall be final and the provision of the India arbitration Act. For the time being in force shall apply to such reference.

IN WITNESS whereof the said the engineer and the contractor hereunto set their respective hands and seals the day year first above written.

Signed Sealed and delivered by

Contractor The Engineer-in-charge.

AGREEMENT FORM

This agreement made on this…..day of (Month) (Year), between CMSPL/LSA (a successful bidder selected by Lucknow Municipal Corporation for the execution of MSW project in the Lucknow city. On behalf of LMC, CMSPL/LSA whose Registered Office is at Hyderabad (hereinafter referred to as the "CMSPL" or LSA which expression shall include its administrators, successors, executors and assigns) of the one part and M/s (NAME OF CONTRACTOR) (hereinafter referred to as the 'Contractor' which expression shall unless the context requires otherwise include its administrators, successors, executors and permitted assigns) of the other part.

WHEREAS, CMSPL/LSA has desirous of construction of (NAME OF WORK) (hereinafter referred to as the "PROJECT"), had invited tenders as per Tender documents vide NIT No. . . .

AND WHEREAS (NAME OF CONTRACTOR) had participated in the above referred tender vide their tender dated____and CMSPL/LSA has accepted their aforesaid tender and awarded the contract for (NAME OF PROJECT) on the terms and conditions contained in its Letter of Intent No._____and the documents referred to therein, which have been unequivocally accepted by (NAME OF CONTRACTOR) vide their acceptance letter dated_____resulting into this contract.

NOW THEREFORE THIS DEED WITNESSETH
AS UNDER:

ARTICLE 1.0 – AWARD OF CONTRACT

1.1. SCOPE OF WORK

CMSPL/LSA has awarded the contract to (NAME OF CONTRACTOR) for the work of (NAME OF WORK) on the terms and conditions in its letter of intent No.__dated_____and the documents referred to therein. The award has taken effect from (DATE) i.e. the date of handing over of site. The terms and expressions used in this agreement shall have the same meanings as are assigned to them in the "Contract Documents" referred to in the succeeding Article.

ARTICLE 2.0 – CONTRACT DOCUMENTS

2.1 The contract shall be performed strictly as per the terms and conditions stipulated herein and in the following documents attached herewith (hereinafter referred to as "Contract Documents").

a) Notice Inviting Tender vide No._____date_____and tender documents consisting of:

i) General Conditions of Contract (GCC) along with amendments to GCC (if any) issued (Volume-I).

ii) All items under AOW and Bill of Quantities along with amendments/corrigendum of schedule items, if any (Volume-II).

b) (NAME OF CONTRACTOR) letter proposal dated _____ and their subsequent communication:

i) Letter of Acceptance of Tender Conditions dated _____

ii) _____

2.2 CMSPL/LSA's detailed Letter of Intent No. _____Dated _____including all items under AOW and Bill of Quantities. Agreed time schedule, Contractor's Organization Chart and list of Plant and Equipment submitted by Contractor.

2.3 All the previously mentioned contract documents referred to in Para 2.1 and 2.2 above shall form an integral part of this Agreement, in so far as the same or any part thereof column, to the tender documents and what has been specifically agreed to by CMSPL/LSA in its Letter of Intent. Any matter inconsistent therewith, contrary or repugnant thereto or deviations taken by the Contractor in its "TENDER" but not agreed to specifically by CMSPL/LSA in its Letter of Intent, shall be deemed to have been withdrawn by the Contractor without any cost implication to CMSPL/LSA. For the sake of brevity, this Agreement along with its previously mentioned contract documents and Letter of Intent shall be referred to as the "Contract".

ARTICLE 3.0 – CONDITIONS & COVENANTS

3.1 The scope of Contract, Consideration, Terms of Payments, Advance, Security Deposits, Taxes wherever applicable, Insurance, Agreed Time Schedule, Compensation for delay and all other terms and conditions contained in CMSPL/LSA's Letter of Intent No.----dated ____are to be read in conjunction with other aforesaid Contract Documents. The contractor shall duly perform the contract strictly and faithfully in accordance with the terms of this contract.

3.2 The scope of work shall also include all such items which are not specifically mentioned in the Contract Documents but which are reasonably implied for the satisfactory completion of the entire scope of work envisaged under this contract unless otherwise specifically excluded from the scope of work in the Letter of Intent.

3.3 Contractor shall adhere to all requirements stipulated in the Contract documents.

3.4 Time is the essence of the Contract and it shall be strictly adhered. The progress of work shall conform to the agreed works schedule/contract documents/tender documents and Letter of Intent.

3.5 This agreement constitutes full and complete understanding between the parties and terms of the presents. It shall supersede all prior correspondence to the extent of inconsistency or repugnancy to the terms and conditions contained in Agreement. Only a written instrument signed by the authorized representative of both the parties shall effect any modification of the Agreement.

3.6 The total contract price for the entire scope of this contract as detailed in Letter of Intent is ₹ xxxxxxxxx (Rupees_only), which shall be governed by the stipulations of the contract documents.

3.7 Prices are firm and no price escalation whatsoever is not applicable for this contract.

3.8 The works are to be completed within 4 months from the date of handing over of site (s)

ARTICLE 4.0 – NO WAIVER OF RIGHTS

4.1. Neither the inspection by CMSPL/LSA or the Engineer-in-Charge or any of their officials, employees or agents nor order by CMSPL/LSA or the Engineer-in-Charge for payment of money or any payment for or acceptance of, the whole or any part of the work by CMSPL/LSA or the Engineer-in-Charge nor any extension of time nor any possession taken by the Engineer-in-Charge shall operate as waiver of any provisions of the contract, or of any power herein reserved to CMSPL/LSA, or any right to damage herein provided, nor shall any waiver of any breach in the contract be held to be a waiver or any other or subsequent breach.

ARTICLE 5.0 – GOVERNING LAW AND JURISDICTION

5.1 The Laws applicable to this contract shall be the laws in force in India and jurisdiction of (U. P - Lucknow) Court(s) only.

5.2 Notice of Default:

Notice of default given by either party to the other party under the Agreement shall be in writing and shall be deemed to have been duly and properly served upon the parties hereto, if delivered against acknowledgment due or by FAX or by registered mail duly addressed to the signatories at the address mentioned herein above.

IN WITNESS WHEREOF, the parties through their duly authorized representatives have executed these presents (execution whereof has been approved by the Competent Authorities of both the parties) on the day, month and year first above mentioned at

For and on behalf of:	For and on behalf
(NAME OF CONTRACTOR)	Chennai MSW Pvt. Ltd (CMSPL) /LSA.
WITNESS:	WITNESS:
1.	1.
2.	2.

FINANCIAL BID/ PRICE BID

Rates be quoted as follows

To,
The Authorized Representative,
CMSPL/LSA,
Lucknow.

1. Having examined the conditions of the contract, Specifications, Drawings, Design etc. of the tender for execution of the above said works, we, the undersigned, offer to execute and complete such works and remedy any defects therein in conformity with the conditions of the contract, specifications, drawings, design, scope of work etc. for

S. No	Design, Detail Engineering, Supply, Construction, Erection and commissioning of Mechanized Static Garbage Transfer Station (including Civil, Mechanical & Electrical Works) in Lucknow Municipal Corporation, Lucknow in the following locations:	In Figure.	In Words
1	Bhaisora		
2	Dayal Chowk		
3	Kailashkunj		
4	Mithaiwala		
5	Vineet Khand		
6	New BBD Site		
	Total Amount		

- We undertake, if our tender is accepted, we shall commence the works as soon as reasonably possible after the receipt of the engineer's notice to commence, handing over of sites and to complete the whole of the works comprised in the contract within 4 (Four)months as stipulated in the tender.
- We agree to abide by this tender for the validity period of 120 days from the date fixed for receiving the same and it shall remain binding upon us.
- The contract is not complete and binding between us unless and until a formal agreement is prepared and executed for this tender, followed by signing & stamping on the original tender document generated by Lucknow Nagar Nigam together with your written acceptance thereof and formal letter of intent/letter of award.
- We understand that you are not bound to accept the lowest or any tender you may receive.

Dated this ……. day of

Signature…… in the capacity of …….

Duly authorized to sign tender for and on behalf of ……..

Address ……..

Occupation ……

Company Seal …….

ANNEXURE I

BILL OF QUANTITIES FOR TENDERING
(CIVIL, MECHANICAL AND ELECTRICAL WORKS)

LUCKNOW SWACHHATA ABHIYAN PRIVATE LIMITED
Bhaisora Transfer Station - Bill of Quantities

Item No	Description of Item	Units	Quantity	Unit Rate (in Rs.)	Amount (in Rs)	Remarks
A	**Civil Works**					
1	Compacting the Original Ground: Loosening, leveling and compacting original ground supporting embankment to facilitate placement of first layer of embankment, scarified to a depth of 150mm, mixed with water at OMC and then compacted by rolling so as to achieve minimum dry density for embankment construction complete and as directed.	Sqm	5,720.64			
2	Site Development (Site Clearance) a. Cleaning of unwanted material b.Cleaning of waste water and rubbish	Sqm	11,780.46			
3	S/C For Earth work excavation in all kinds of soil: Excavation by mechanical means (Hydraulic excavator)/manual means in trenches, pits, pipe lines, foundations, column footings, walls etc. in earth's soils of all types, gravel, sand, soft & hard murum, and boulders up to 0.03 cum. size including removing the excavated material upto a distance of 50 M beyond the edge of excavation for all lifts, stacking or spreading as directed, shoring, strutting for protecting the sides of foundation, dewatering/bailing of sub-soil water if any preparing base for foundation etc., and back filing the excavated pit or trench using the approved excavated material in layers including watering and ramming as required or as directed by Engineer-In-charge, including all labour and materials complete. (PCC area only measured for base measurement)	cum	1,712.77			
4	S/C For Excavation in hard rock: Excavation by mechanical means (Hydraulic excavator)/manual means in trenches, pits, pipe lines, foundations, column footings, walls etc. in hard rock and boulders by blasting or controlled blasting including removing the excavated material upto a distance of 50 M beyond the edge of excavation for all lifts, stacking or spreading as directed, shoring, strutting for protecting the sides of foundation, dewatering/bailing of sub-soil water if any preparing base for foundation etc., and back filing the excavated pit or trench using the approved excavated material in layers including watering and ramming as required or as directed by Engineer-In-charge, including all labour and materials complete.	M3	500.52			
5	Granular sub-base - 150mm thick: Construction of granular sub-base by providing close graded material, mixing in a mechanical mix plant at OMC, carrying of mixed material to work site, spreading in uniform layers with motor grader on prepared surface and compacting with vibratory power roller to achieve the desired density, complete as per Clause 401.	Cum	157.65			
6	PCC (1:4:8): Plain Cement concrete of mix 1:4:8 using Ordinary Portland cement conforming to IS 1489), River sand and graded stone aggregates of 40 mm maximum size at all depths below plinth level including cost of cement and all materials, leads and lifts, transportation to site of work, consolidation, finishing, curing, etc. complete but excluding form work as per specifications for mud mat in foundations of masonry walls or others etc. complete as per specs. and as directed for finished item of work.	cum	213.59			

LUCKNOW SWACHHATA ABHIYAN PRIVATE LIMITED
Bhaisora Transfer Station - Bill of Quantities

Item No	Description of Item	Units	Quantity	Unit Rate (in Rs.)	Amount (in Rs)	Remarks
7	PCC (1:2:4)Providing and laying Plain Cement Concrete 1:2:4 nominal mix using Ordinary Port Land Cement, sand and crushed stone aggregate 20 mm nominal size mechanically mixed, including tamping, curing, shuttering etc., as required placed in the foundation, under slabs, on grade etc., including all tools and tackles, formwork if required etc. complete as directed by the Engineer-in-charge	cum	5.29			
8	S/C For RR Stone Masonary for foundation "RR Masonry in CM (1:6): Providing uncoursed random rubble masonry of trap/granite/quartzite/gneiss stone above/below plinth level or ground level in foundation and plinth in cement mortar 1:6 including dewatering, striking out joints on exposed faces, curing, scaffolding, raking out joints, plastering, pointing with same mortar etc complete as per specifications and directions of Engineer-in-charge.	cum	23.76			
9	RFRCC M25 for Flooring: Supplying and laying reinforced cement concrete of RFRCC M25 Grade (steel fibers @ 15kg/cum) as defined in IS:456, Flooring / Road including cost and conveyance of all materials vibrating with mechanical vibrator, levelling, curing etc., but excluding cost of shuttering, etc., complete finished item and as directed by Engineer-in-charge	cum	945.93			
10	RCC : M-25 Grade: Supplying and laying reinforced cement concrete of M 25 Grades as defined in IS:456, in all types of foundations and super structures, in walls, slab, columns, beams, lintels, chajjas, floor/roof slabs, staircase, footings, basements, cellars, trenches, drains, encasing of structural steel members / pipelines, etc. including cost and conveyance of all materials vibrating with mechanical vibrator , curing etc., but excluding cost of shuttering and steel reinforcement. All wars shall be as per drawings, specifications and directions of the Engineer/Consultant, super-plasticizer as per manufacturer's instruction/directions.	cum	345.98			
11	Reinforcement Steel: Supply, fabrication and erection of Reinforcement bars for Reinforced cement concrete items at and at all depths and heights below and above plinth level with high yield strength deformed bars confirming to IS 1786 with TM Treatment from approved source (Vizag steel, Tata, SAIL make), including supply to site, providing fan hooks of required shape, dowels for bonding masonry, transporting steel to site, decoiling, removing of scales, straightening, cutting, bending, tying bars with chairs, space bars wherever required, in position with two strings of 18 gauge soft drawn annealed MS binding wire etc., complete as specified and directed.	kg	25,251.00			
12	Shuttering : Providing standard form work of steel plates, centering and shuttering at all depths and heights of work below and above plinth level, vertical, horizontal, inclined including strutting, propping using steel pipes/acro staging, removal, cleaning of the same for inset reinforced cement concrete works and in plain cement concrete work as required including chamfers, splays, keys, wedges, nails, bracings, brackets and applying one coat of shuttering oil on all shuttering surfaces coming in to contact with concrete etc., complete as directed including cost of materials, conveyance, labour and all other incidental charge etc. complete as directed to the finished item of work.	sqm	1,972.77			

LUCKNOW SWACHHATA ABHIYAN PRIVATE LIMITED
Bhaisora Transfer Station - Bill of Quantities

Item No	Description of Item	Units	Quantity	Unit Rate (in Rs.)	Amount (in Rs)	Remarks
13	Brick work in CM (1:6) 230mm th.: Brick masonry work using specified class II well burnt clay bricks of specified class, size and quality in cement mortar (1:6) at all depths and heights below and above plinth level including cost and conveyance of all materials, pilasters, steel tubular scaffolding, raking out joints, curing etc., complete as per specifications and as directed. Brick shall be laid flat in the projections for the finished item of work.	cum	323.64			
14	Plastering-15mm th. in CM (1:6): Cement plastering 15 mm thick for internal surfaces of walls in cement mortar (1:6) neatly smooth finished at and all heights above plinth level over brick walls or concrete surfaces, RCC and also other places wherever required including making necessary grooves in between junctions of brick masonry and over brick walls or concrete surface, preparation of surface, steel/tubular scaffolding, curing, etc., complete as directed as per standard specs. for the finished item of work.	sqm	3,289.57			
15	Water Proof Plastering in CM (1:3) : Supply and providing Cement plastering 12 mm thick for internal surfaces of walls in cement mortar (1:3) with coarse sand with 5 % cico or any other approved water proofing compound including taxes and neatly smooth finished at and all heights above plinth level over brick walls or concrete surfaces, RCC and also other places wherever required including making necessary grooves in between junctions of brick masonry and over brick walls or concrete surface, preparation of surface, steel/tubular scaffolding, curing, etc., complete as directed as per standard specs. for the finished item of work.	sqm	37.18			
16	Providing and applying plaster of paris putty of 2 mm thickness over plastered surface to prepare the surface even and smooth complete finished item and as directed by engineer in charge.	sqm	524.08			
17	Finishing walls with Acrylic emulsion paint having Alkali & fungal resistance, dirt resistance exterior /interior paint of required shade over one coat of primer, including all matrials, labour charges, tools & tackles, necessary scaffolding, etc., complete finished item	sqm	2,340.00			
18	Snow Cem Painting-Snowcem: Providing and applying two coats cement based paint (Snowcem or approved brand) conforming to IS:5410-1990, over one coat of primer including preparing the surface to receive priming & finishing coats, scaffolding, curing etc. complete in any shade as directed by Engineer-in-charge	Sqm	2,340.02			
19	S/C For Cement Punning: Supply and applying Neat cement punning by tamping, trowelling, and with a finishing floating coat of neat cement slurry @ 2.20kg. of cement per Sq.m. of area, including cost of cement, tools, labour, cleaning the sub-base surface, curing, etc. all complete and as per directions of Engineer-in-charge.	Sqm	399.70			
20	S/C for fabrication of Structural Works for base plates 0.3mm X .15mm X .008mm	Kg	283.00			

LUCKNOW SWACHHATA ABHIYAN PRIVATE LIMITED
Bhaisora Transfer Station - Bill of Quantities

Item No	Description of Item	Units	Quantity	Unit Rate (in Rs.)	Amount (in Rs)	Remarks
21	S/C for Fabrication of structural works. fixing of Drains MS Grating for Drain Supply, fabricate and erection drain grating using ISA 40x40x5mm, 35x35x3mm for grill frame and 35 x 3mm Flat for horizontals including all materials, labour charges, Two coats of enamel paint over 1 coat of steel primer, etc., as per drawing complete finished item and as directed by engineer-in-charge	Kg	3,710.00			
22	S/C For Enamel Painting; Providing and applying two coats of enamel paint over one coat of primer and putty of approved colour, including scaffolding if necessary and cleaning and preparing the surface, etc. complete as directed by Engineer-in-charge	sqm	98.79			
23	S/C For Grouting with GP2: Providing GP grouting for PEB base plates with GP2 grout including supply of all materials, conveyance, wastages, etc. complete for the finished item of the work as directed by the Engineer in charge at site.	cum	2.14			
24	S/C For Construction Joint : Service charges for Preparing 10 mm wide x 50 mm deep contraction joint using groove cutting machine @ 5m spacing, providing and filling joints with approved joint filler/ sealants such as Bitumen epoxy, etc., complete finished item and as directed by Engineer-in-charge.	Rmt	436.82			
25	S/C For Filling with available exc earth : Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20cm in depth, consolidating each deposited layer by watering, and compacting to 95% modified proctor density, dressing, trimming, etc all complete as per drawing, specifications and as directed by Engineer-in-charge (compacted finished area / volume only measured for payment) avialable soils within the site.	Cum	2,252.08			
26	S/C For Filling with Approved Soil : Filling with approved material obtained from borrow pits (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20cm in depth, consolidating each deposited layer by watering, and compacting to 95% modified proctor density, dressing, trimming, etc all complete as per drawing, specifications and as directed by Engineer-in-charge (compacted finished area / volume only measured for payment)	Cum	21,710.89			
27	Providing and fixing of HDPE 150mm Dia Pipe with exacavtion/ jointing materials & labour etc all complete as per drawing, specifications and as directed by Engineer-in-charge	rmt	50.00			
28	Providing and fixing of 100mm Dia Pipe with exacavtion/ jointing materials & labour etc all complete as per drawing, specifications and as directed by Engineer-in-charge	rmt	30.00			
29	Providing and fixing of HDPE 300mm Dia Pipe with exacavtion/ jointing materials & labour etc all complete as per drawing, specifications and as directed by Engineer-in-charge	rmt	8.50			

LUCKNOW SWACHHATA ABHIYAN PRIVATE LIMITED
Bhaisora Transfer Station - Bill of Quantities

Item No	Description of Item	Units	Quantity	Unit Rate (in Rs.)	Amount (in Rs)	Remarks
30	Providing and fixing of 40mm dia CPVC Pipe Charges towards Supply & laying of under floor PVC drainage pipes, specials of approved make conforming to to IS:13592 Type 'B' (6 kg/sq.cm.) using lubricant as per manufacturer's specification, including cutting the pipes square to the required lengths, necessary wall cutting, chasing & restoring to the original condition, testing for water tightness etc. The formation of pipe sockets by heating the pipe shall not be permitted the joints for plain ended pipes shall be made using couplers if necessary. Rate shall also include the cost of GI 'U' clamps of 12/16mm thick to be provided at not more than 1.5m c/c for horizontal ceiling suspended pipes. (Internal Piping). Including labour & all other necessary accessories.	rmt	5.10			
31	Providing and fixing of 150mm dia PVC Pipe Charges towards Supply & laying of under floor PVC drainage pipes, specials of approved make conforming to to IS:13592 Type 'B' (6 kg/sq.cm.) using lubricant as per manufacturer's specification, including cutting the pipes square to the required lengths, necessary wall cutting, chasing & restoring to the original condition, testing for water tightness etc. The formation of pipe sockets by heating the pipe shall not be permitted the joints for plain ended pipes shall be made using couplers if necessary. Rate shall also include the cost of GI 'U' clamps of 12/16mm thick to be provided at not more than 1.5m c/c for horizontal ceiling suspended pipes. (Internal Piping). Including labour & all other necessary accessories.	rmt	10.50			
32	S/C For Coloured glazed tile : Providing & laying Glazed Vitrified tiles to internal walls to required height height6 to 8mm thick length equal to flooring tiles, set over the base coat of CM (1:3) 12 mm thick with cement slurry of honey-like consistency spread at the rate of 3.30 kgs per sqm and jointed with white cement paste mixed with the pigment of matching shade to full depth, etc., complete for finished item of work as directed by engineer-in-charge	sqm	186.47			
33	Supply and fixing of Outdoor Auto-Tracking Camera, 12 Pre-Set dots Tracking,360° Visual Coverage with necessary fixtures including the erection charges .	Nos	1.00			
34	Supply and fixing charges for Vehicle stopper beams in parking with edge angles. (Synthetic Plastic & Rubber Car Wheel Stopper) - 600mm Black with yellow reflective Strip.	Nos	10.00			
35	supply and fixing charges of Kerb stone with all necessary civil works and required fixtures including packing and properly laying and painting snow cem.	Rmt	100.00			
36	MS Man Hole Cover 600mm X 600mm: Providing and fixing MS Manhole cover of size 600 x 600 mm with frame with locking arrangement, etc. cover and frame (heavy duty, HD-20 grade designation) conforming to I.S. 12592, total weight of cover and frame to be not less than 50kg., fixed in cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size) including centring, shuttering all complete. (rate includes Excavation, foot rests and 12mm thick cement plaster at the external surface)	no's	1.00			

LUCKNOW SWACHHATA ABHIYAN PRIVATE LIMITED
Bhaisora Transfer Station - Bill of Quantities

Item No	Description of Item	Units	Quantity	Unit Rate (in Rs.)	Amount (in Rs)	Remarks
37	PVC water stopper: Providing and Laying PVC water stopper 250mm wide including cost of material , labour charges etc., complete as per specifications & as advised by the Engineer In charge.	rmt	18.40			
38	Supply and filling expansion joint using Polyurethane Sealant sealing compound including cleaning the joint, all material, labour charges, all tools and tackles, necessary scaffolding etc., complete finished item and as per drawing and as directed by engineer-in-charge	Sqm	714.00			
39	RCC 450mm dia Hume pipe	nos	270.00			
40	Manhole cover with pvc rung (HD 20) 600mm x 600mm	nos	15.00			
41	Supply & Fixing of CC Manhole cover (600MMX600MM) as Per IS Standrads as directed by engineer/incharge	Nos	4.00			
42	EN 901 Painting	Sqm	14.70			
43	Boring/drilling bore well of required dia for casing/ strainer pipe, by suitable method prescribed in IS: 2800 (part I), including collecting samples from different strata, preparing and submitting strata chart/ bore log, including hire & running charges of all equipments, tools, plants & machineries required for the job, all complete as per direction of Engineer-in-charge, upto 90 metre depth below ground level with installing 400 mm dia approved brand HDPE pipe.	Meter	400.00			
44	Topographical survey Carrying out a topographical survey of the area shown by the engineer-in-charge/client. Surveying will be carried out to fix coordinates, dimensions of the roads, existing ground facilities like building, shed, shops , road, electrical poles, HT line, drains, man holes , major trees, telephone poles and water bodies.	LS	1.00			
45	Geotechnical Survey Equipment charges per day Standard Penetration tests (SPT) were conducted in these boreholes and relevant soil samples were collected. Soil tests were carried out in the laboratory to ascertain the allowable bearing capacity of encountered strata. To conduct tests on different samples in the laboratory as such as grain size Analysis, Atterberg limit, density, Consolidation test , shear properties, natural moisture and determining the engineering characterstics	Nos	3.00			
46	Supply and Fixing of Name Board and MS Fabrication work with flexible board with all necessary items.	sqm	34.40			
47	Supply, Fabricate and erection of Structural shed with AZ-150/SDP	Tons	60.07			
48	Supply of 304 Stainless Steel turbo ventilator. Japan NSK self-lubricating bearing and metal support including transportation.	Nos	5.00			
49	Supply of polycarbonate FRP skylight with 1-2mm thickness, Including transportation	Sqm	86.40			
50	Supply charges for Membrane Filtration Stainless Steel Water Purifiers, For Commercial, RO Capacity: 1000-1500 (Liter/hour) including necessary plumbing materials with operations complete with all necessary fixtures and tools at the site as required by the client with Installation charges with necessary fixtures and tools complete and as directed by the Engineer-in-charge.	LS	1.00			

LUCKNOW SWACHHATA ABHIYAN PRIVATE LIMITED
Bhaisora Transfer Station - Bill of Quantities

Item No	Description of Item	Units	Quantity	Unit Rate (in Rs.)	Amount (in Rs)	Remarks
54	Supply and fixing of Ventilated GI rolling shutter with neat finishing and fireproofing and installation Providing and fixing Automatic rolling shutter power-driven with pull & push type provision for rolling shutters of approved make out of 18 gauge, 75 mm wide cold rolled steel laths of convex corrugation, with side guides and bottom rail, with interlocking arrangements of steel laths by means of alternate clips, suspension shaft with High tension coil type springs two numbers, mounted on specially designed pipe shaft, with bracket plates, guide channels, ball bearing arrangements, for inside & and outside locking with push & and pull operations complete with all necessary fixtures and tools at site as required by the client.	Sqm	26.00			
55	**CC Road**		-			
a	Compacting the Original Ground: Loosening, leveling and compacting original ground supporting embankment to facilitate placement of first layer of embankment, scarified to a depth of 150mm, mixed with water at OMC and then compacted by rolling so as to achieve minimum dry density for embankment construction complete and as directed.	M2	2,117.50			
b	Granular sub-base - 150mm thick: Construction of granular sub-base by providing close graded material, mixing in a mechanical mix plant at OMC, carrying of mixed material to work site, spreading in uniform layers with motor grader on prepared surface and compacting with vibratory power roller to achieve the desired density, complete as per Clause 401.	M3	317.63			
c	PCC (1:4:8): Plain Cement concrete of mix 1:4:8 using Ordinary Portland cement conforming to IS 1489), River sand and graded stone aggregates of 40 mm maximum size at all depths below plinth level including cost of cement and all materials, leads and lifts, transportation to site of work, consolidation, finishing, curing, etc. complete but excluding form work as per specifications for mud mat in foundations of masonry walls or others etc. complete as per specs. and as directed for finished item of work.	M3	211.75			
d	RFRCC M25 for Flooring: Supplying and laying reinforced cement concrete of RFRCC M25 Grade as defined in IS:456, Flooring / Road including cost and conveyance of all materials vibrating with mechanical vibrator, levelling, curing etc., but excluding cost of shuttering, etc., complete finished item and as directed by Engineer-in-charge	M3	370.56			
Total Value of Civil Works (in Rs.)					**0**	
B	**Mechanical**					
1	Static Horizontal Compaction Machine model SC –260 with Tip Cart Mechanism / model SC –350 with Hopper	Nos	3.00			
2	Container of Volumetric Capacity of 20 Cum consists	Nos	5.00			
Total Value of Mechanical Works (in Rs.)					**0**	

LUCKNOW SWACHHATA ABHIYAN PRIVATE LIMITED

BHAISORA TRANSFER STATION - Bill of Quantities - Electrical Works

S.NO	Item No	ITEM DESCRIPTION	UNIT	QTY	SUPPLY RATE	ERECTION RATE	SUPPLY & ERECTION	TOTAL	REMARKS
		LT WORKS :							
A		**LOW VOLTAGE PCC /APFC / MCC**							
		Supply (as per approved make only), Installation, testing and commissioning of following switchboards floor mounting type in single/Double front execution, along with base frame including unloading, shifting to intermediate stores, if site is not ready and loading, unloading, transportation from owner's store / yard to the site of the erection, unpacking, assembly (Incl. installation & wiring of loose parts supplied by OEM vendor) installation on foundation (minor civil work inclusive),or fixing on wall or steel structure, leveling, grouting, proper alignment, tightening of busbars with required torque, testing and calibration of relays and meters etc, Including all labour and erection material / hardware complete as per specification of this tender, and direction of Engineer in charge and under supervision and instruction of panel manufacturer. **For Mounting types of all panels, refer Technical Specification of LT Switchboard.** **Vendors shall quote unit rates of all type of outgoing feeders and vertical cubical with vertical & horizontal busbars and wiring for addition and deletion during detailed engineering.** **Vendor's offer should include all charges of minimum 2 visit of 5 days each of Panel OEM commissioning Engineer for supervision of erection and commissioning of Panels (includes Travelling + Stay, etc.). All the interlocks, wiring as to be demonstrated at site as per requirement.**							
1.1		**Switch Board Designation : Outdoor Type MAIN PCC CUM APFCR PANEL** **Quote as per IEC 60439**	No.	1					
		Voltage : 415 V							
		Construction : IP-65, Indoor type, Single Front with Bottom Cable Entry							
		Mounting : Floor Mounting with Stand							
		Paint Shade : RAL 7032 (Siemens Grey)							
		Cable Entry : Bottom							
		Location : Electrical Panel Room							
		Refer Annexure -1 for detailed boq							
		Incoming Feeder :							
		EB & DG Incomer : 630A FP ATS							
		CTs-630 / 5 A, CL 1, 6 Nos.							
		DV(0-500V), DA(0 - 630A) - 2Sets.							
		Indication Lamps -R Y B.							
		EB & DG ON Status - ON Indication Lamps							
		Common Incomer : 630A 4 Pole, 36kA/sec MCCB with							
		CTs-630 / 5 A, CL 1, 4 Nos.							
		DV(0-500v), DA(0 - 630A) - 3Sets.							
		Indication Lamps -R Y B, ON, OFF, TRIP.							
		Surge Protection Device (SPD) TYPE 1 -CLASS I WITH 32A MPCB 65kA CONTROL. Other items as requried for safe and efficient electrical panel as mentioned in Sepcification.							
		Outgoing Feeders :							
		One (1) 250A, 36kA/sec 4P MCCB with On, Off & Trip Indication lamps							
		Six (6) 125A, 36kA/sec 4P MCCB with On, Off & Trip Indication lamps							
		Seven (7) 63A, 10kA/sec 4P MCB's.							
		32A 3-Phase 5-Pin Power Sockets with MCB control - 2Nos							
		One (1) 15 KVAR capacitor banks with 32A TP MCB control for transformer fixed bank.							
		One (1) 250A, 36kA/sec 4P MCCB with UV Coil with On, Off & Trip Indication lamps - APFCR Incoming Feeder							
		Two (2) 5 KVAR capacitor banks with 32A TP MCB control with capacitor duty contactors suitable for 5KVAR of including start/stop push buttons and with On, Off indication lamps.							
		One (1) 10 KVAR capacitor banks with 32A TP MCB control with capacitor duty contactors suitable for 10KVAR of including start/stop push buttons and with On, Off indication lamps.							
		One (1) 15 KVAR capacitor banks with 32A TP MCB control with capacitor duty contactors suitable for 15KVAR of including start/stop push buttons and with On, Off indication lamps.							
		Two (2) 20 KVAR capacitor banks with 63A TP MCB control with capacitor duty contactors suitable for 20KVAR of including start/stop push buttons and with On, Off indication lamps.							

LUCKNOW SWACHHATA ABHIYAN PRIVATE LIMITED

BHAISORA TRANSFER STATION - Bill of Quantities - Electrical Works

S.NO	Item No	ITEM DESCRIPTION	UNIT	QTY	SUPPLY RATE	ERECTION RATE	SUPPLY & ERECTION	TOTAL	REMARKS
		Two (2) 25 KVAR capacitor banks with 63A TP MCB control with capacitor duty contactors suitable for 25KVAR of including start/stop push buttons and with On, Off indication lamps.							
1.2		**Switch Board Designation : Transfer Station Panel** **Quote as per IEC 60439**	No.	1					
		Voltage : 415 V							
		Construction : IP-65, Outdoor type, Single Front with Bottom Cable Entry with Stand							
		Mounting : Floor Mounting with Stand							
		Paint Shade : RAL 7032 (Siemens Grey)							
		Cable Entry : Bottom							
		Location : Transfer Station							
		Refer Annexure -1 for detailed boq							
		Incoming Feeder :							
		Incomer : 125A 36KA FP MCCB							
		CTs-125 / 5 A, CL 1, 3 Nos.							
		DV(0-500V), DA(0 - 125A) - 1Set.							
		Indication Lamps -R Y B, ON, OFF, TRIP.							
		Earth faultb relay with CBCT							
		Outgoing Feeders :							
		One (1) 100A, 36kA/sec 4P MCCB with On, Off & Trip Indication lamps							
		Seven (7) 63A, 10kA/sec 4P MCB's.							
		32A 3-Phase 5-Pin Power Sockets with MCB control - 2Nos							
1.3		**Switch Board Designation : Vehicle Maintenance Shed Panel** **Quote as per IEC 60439**	No.	1					
		Voltage : 415 V							
		Construction : IP-65, Outdoor type, Single Front with Bottom Cable Entry with Stand							
		Mounting : Floor Mounting with Stand							
		Paint Shade : RAL 7032 (Siemens Grey)							
		Cable Entry : Bottom							
		Location : Vehicle Maaintenance Shed							
		Refer Annexure -1 for detailed boq							
		Incoming Feeder :							
		Incomer : 125A 36KA FP MCCB							
		CTs-125 / 5 A, CL 1, 3 Nos.							
		DV(0-500V), DA(0 - 125A) - 1Set.							
		Indication Lamps -R Y B, ON, OFF, TRIP.							
		Earth faultb relay with CBCT							
		Outgoing Feeders :							
		One (1) 100A, 36kA/sec 4P MCCB with On, Off & Trip Indication lamps							
		Seven (7) 63A, 10kA/sec 4P MCB's.							
		32A 3-Phase 5-Pin Power Sockets with MCB control - 2Nos							
1.4		**Switch Board Designation : MRF Shed Panel** **Quote as per IEC 60439**	No.	1					
		Voltage : 415 V							
		Construction : IP-65, Outdoor type, Single Front with Bottom Cable Entry with Stand							
		Mounting : Floor Mounting with Stand							
		Paint Shade : RAL 7032 (Siemens Grey)							
		Cable Entry : Bottom							
		Location : MRF Shed							
		Refer Annexure -1 for detailed boq							
		Incoming Feeder :							
		Incomer : 250A 36KA FP MCCB							
		CTs-125 / 5 A, CL 1, 3 Nos.							
		DV(0-500V), DA(0 - 250A) - 1Set.							
		Indication Lamps -R Y B, ON, OFF, TRIP.							
		Earth faultb relay with CBCT							
		Outgoing Feeders :							
		Two (2) 100A, 36kA/sec 4P MCCB with On, Off & Trip Indication lamps							
		Eight (8) 63A, 10kA/sec 4P MCB's.							
		Eight (8) 32A, 10kA/sec 4P MCB's.							
		32A 3-Phase 5-Pin Power Sockets with MCB control - 2Nos							
B		**DISTRIBUTION BOARDS**							

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S.NO	Item No	ITEM DESCRIPTION	UNIT	QTY	SUPPLY RATE	ERECTION RATE	SUPPLY & ERECTION	TOTAL	REMARKS
		Supply, Installation, testing and commissioning of following distribution boards. MCB distribution boards shall be totally with single door/double door, Surface/recessed mounting type, outer door shall be hinged type with push in type spring / magnetic lock, inner door shall be fixed up with screws with cutouts for MCB operation, copper busbar of at least 1.5 times the rating of incomer MCB / MCCB, with adequate space for termination of incoming and outgoing cables, removable un drilled top & bottom gland plates, suitable for wall, column mounting type. The incoming MCB / MCCB shall be provided in separate compartment. The MCCB shall have front drive mechanism and door interlock. DB shall be concealed type /wall/angle mounted. DB shall be completely wired up, upto incoming and outgoing terminals by PVC insulated flexible copper wire of adequate rating. All MCB in Lighting DB shall be suitable for Curve B. and MCB in Power DB shall be suitable for Motive power (Curve C). In case Db's 3phase I/C & 1phase O/G neutral of each phase shall be isolated. Note : Separate canopay to be fabricated for the DB which are placeing out door against protection from water,whether,dust							
		ALL MCB (B type & C type) in DB's complying IS 60898 / IEC 60947 with IP 54 protection							
		Distribution Board							
2.1		Tag No. : DB-1	Nos	1					
	2.5.2	3 Ph - 8 WAY VTPN DB							
	2.2.14	Incomer : 125A FP MCCB							
	2.10.1	Outgoing : 32A SP MCBs-24nos, 'C' Curve							
		The above complete with interconnections, etc. DB should be with Metal Door & IP 54							
2.2		Tag No. : PDB1-(Office)	Nos	1					
	2.4.1	3 Ph - 4 WAY TPN DB							
	2.15.3	Incomer : 63A 30mA FP ELCB							
	2.10.1	Outgoing : 12 Nos, 10A SP MCBs 'C' Curve							
		The above complete with interconnections, etc. DB should be with Metal Door & IP 43 4 WAY TPN DB							
2.3		Tag No. : LDB (MRF Shed, Vehicle Maintenance Shed, Transfer Station, Security Room)	Nos	2					
	2.3.3	12-WAY SPN DB							
	2.14.2	Incomer : 40A,DP ELCB 30 mA -1 Nos							
	2.10.1	Outgoing : 6 Nos, 10A SP MCBs 'C' Curve							
		The above completee with interconnections, etc. DB should be with Metal Door & IP 43 12 WAY SPN DB							
		FEEDER PILLAR PANEL							
2.4		Tag No. STLDB 1 (@Vehicle Tyre Wash)	Nos.	1					
		Incomer: 125A 4P MCCB -1 NOS							
		Sub incomer :63A, 100mA RCBO of 10KA breaking capacity -3 NOS							
		125/5A, CL-1, 15VA, Tape wound CT's -3Nos							
		6A, Control MCB - 3Nos							
		LED Type R-Y-B Phase Indication Lamps. - (1 sets)							
		On,Off & Trip Indications: (1 sets)							
		SPD,63A TP Contactor, Digital Timer Control, Phase Indication Lamps, ON/OFF Push Buttons , Auto Manual Selector Switch and Neutral Links							
		Outgoings:							
		Six (6) 63A 4P MCB's							
		Two (2) 63A Power Sockets							
		Bus bar Al. flat suitable capacity 125A per each phase.(433V, 3 Phase)							
		Bus bar Al. flat suitable capacity 63A per each neutral							
		415V, 125Amps, 4W Grade Aluminium							
C		**LT CABLE SYSTEM**							

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BHAISORA TRANSFER STATION - Bill of Quantities - Electrical Works

S.NO	Item No	ITEM DESCRIPTION	UNIT	QTY	SUPPLY RATE	ERECTION RATE	SUPPLY & ERECTION	TOTAL	REMARKS
		Supply & Unloading at site, Laying, Installation, site testing and commissioning of horizontal and vertical laying and dressing using cable tie, etc. of following sizes cables on trays / through pendants / GI conduits, clamping on wall / ceiling / supported on structures / pull through pipes / readymade trench. The scope includes clamping of cables by ready made G.I. spacers, saddles or clamps fabricated out of M.S. strip 3 mm thick, supply of all clamping materials and hardware etc., providing cable markers made out of aluminium strip and 75x20 mm in size with cable number and size punched on it. Cable marker shall be provided to cables at every 20 meter interval and at both the ends.Empty cable drums shall be returned to stores. This activity also includes unloading, shifting of cables upto stores & stores to site. In case of laying unlisted cables, rate of cable whose outer dia is closest to the cable sizes quoted shall beapplicable. The same shall hold good for cable termination also.							
		1.1 KV, XLPE insulated copper/aluminium conductor of class -2 as per IS 8130 armoured / unarmoured, solid / stranded inner sheathed ST-2 PVC & outer sheathed FRLS type ST-2 as per IS 5831, power cables of following sizes:							
		LT Cables							
3.1	501	3.5CX240SQMM.AL.XLPE.AR	Mtr	300					
3.2	501	3.5CX95SQMM.AL.XLPE.AR	Mtr	130					
3.3	501	3.5CX35SQMM.AL.XLPE.AR	Mtr	180					
3.4	501	3.5CX25SQMM.AL.XLPE.AR	Mtr	110					
3.5	501	4CX16SQMM.AL.XLPE.AR	Mtr	220					
3.6	501	4CX6SQMM.AL.XLPE.AR	Mtr	1200					
3.7		4CX2.5SQMM.CU.XLPE.AR	Mtr	300					
3.8		5CX2.5SQMM.CU.XLPE.Flexible Cable	Mtr	100					
		CABLE END TERMINATION							
		Supply, Installation, testing and commissioning of Cable end termination with Double compression Brass Nickel Pleated cable gland with all necessary hard wears like cu / Al / Bimetalic lugs & PVC hood, ferrules etc. of following copper/alum. conductor armoured / unarmoured cables including supply of all materials, drilling of gland plates and dressing of cables inside panel. All necessary material and hardware for termination purpose will be provided by the contractor. All Labour completee as per the specification of this tender and direction of engineer in charge.							
		1.1 KV, XLPE insulated copper/aluminium conductor armoured / unarmoured, inner shethed PVC & outer sheathed FRLS power cables of following sizes using Double Compression Gland:							
4.1		3.5CX240SQMM.AL.XLPE.AR	Nos	10					
4.2		3.5CX95SQMM.AL.XLPE.AR	Nos	6					
4.3		3.5CX35SQMM.AL.XLPE.AR	Nos	4					
4.4		3.5CX25SQMM.AL.XLPE.AR	Nos	2					
4.5		4CX16SQMM.AL.XLPE.AR	Nos	6					
4.6		4CX6SQMM.AL.XLPE.AR	Nos	40					
4.7		4CX2.5SQMM.CU.XLPE.AR	Nos	20					
4.8		5CX4SQMM.CU.XLPE.Flexible Cable	Nos	6					
D		**LIGHT FIXTURES**							
		Supply, Installation, testing and commissioning of following Lighting Fixtures with Lamps and control gear including mounting of fixtures Recessed / Surface / Suspension along with all its accessories, checking of internal wiring, structural steel & hardware etc. and with all kind of required hardware's to complete installation. (Inclusive of supply, installation of cable & termination of 3C x 2.5 Sqmm Cu flexible cable FRLS / 3R x 2.5 Sqmm Cu wire from light fitting to JB side along with GI conduit - Normal/ FLP - as per type of light fitting). **Supply of all materials required for complete installation shall be provided by the contractor.**							

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BHAISORA TRANSFER STATION - Bill of Quantities - Electrical Works

S.NO	Item No	ITEM DESCRIPTION	UNIT	QTY	SUPPLY RATE	ERECTION RATE	SUPPLY & ERECTION	TOTAL	REMARKS
		Lighting fixture supports (structural steel or readymade supports design with light fixtures) average weighted 6 Kg shall be considered as part of lighting fixtures system activity and shall not be paid extra **1. Vendor should quote all Light fixtures with 3 years unconditional warranty period.** **2. For consideration of equivalent makes, please ensure that the lumens output of the light fitting is equal to that mentioned in this BOQ line item.**							
		OUTDDOR LIGHTING FIXUTE							
5.1		INDUSTRIAL HIGH BAY LIGHT FIXTURE, complete with *Epoxy dia cast aluminium with toughened glass *Dust & Moisture proof Fixture (IP 66) *complete with mounting accessories *150W LED. *LED/Driver - Osram/Nichia/Seoul *System Lumens Output 10000 Lumens and colour Temp. 5700K Havell's or Wipro or Lighting Technology equivalent	Nos	10					
5.2		INDUSTRIAL FLOOD LIGHT FIXTURE, complete with *Epoxy dia cast aluminium with toughened glass *Dust & Moisture proof Fixture (IP 66) *complete with mounting accessories *150W LED. *LED/Driver - Osram/Nichia/Seoul *System Lumens Output 10000 Lumens and colour Temp. 5700K Havell's or Wipro or Lighting Technology equivalent	Nos	6					
		STREET LIGHTING POLE							
5.3		Supply, erection, testing and commissioning of GI hot dip galvanized 8.0 Mtrs (above ground) long octagonal poles with 3mm thick HT steel plate with a bottom 155mm dia and top 75mm dia, base plate of size 260mmx260mmx16mm thick welded to bottom of pole, terminal box with required door size and all accessories like connector and fuse base, foundation bolts with washers and nuts of 4 sets. including of 1.5mtrs single arm with 120W LED street light fixture (IS: 6665: 1982) in complete with all accessories as per the requirements at site and as per the directions of site engineer during execution. It includes DP control MCB, MCB box, GI pipe up to control box and wiring from control MCB to light fixture etc in complete. Supplier has to provide base template, pole execution drawing based on the local wind speed (should ensure/match the local wind speed) etc. complete with *Aluminium pressure die-cast housing *Dust & Moisture proof Fixture (IP 66) *Beam angle with Type 2 Distribution. *complete with mounting accessories *120W LED. *LED/Driver - Osram/Nichia/Seoul Havell' or Wipro or Philips or Lighting Technology equivalent Foundation : RESL Civil Scope	Nos	6					
		Decorative Light Fixtures							
5.4		Supply, erection, testing and commissioning of decorative gate 40W light fitting with bulbs and all necessary accessories and to be fixed on walls.(use 3C X 1.5 Sqmm CU XLPE ARM CABLE for power supply) (Make Havells/Crompton) (Make : Havells, Model No : RUBYPT40WLED830PSYMTOPC)	No's	4					
F		**INTERNAL ELECTRIFICATION :**							
		Main Wiring :							

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S.NO	Item No	ITEM DESCRIPTION	UNIT	QTY	SUPPLY RATE	ERECTION RATE	SUPPLY & ERECTION	TOTAL	REMARKS
6.1	1.7.3	Providing all materials, accessories, labour etc. and wiring using 2 runs (Ph & N) of 2.5/4 Sq.mm and 1 run of 4Sq.mm (for earth) PVC insulated multi strand copper conductor wires of 600V grade drawn in suitable PVC conduit pipe (It includes wiring in the floor/raceways proper opening of raceways as per seating arrangement/lab equipment positioning & proper closing of the raceways as per standards; where ever piping in the floor/ceiling, the conduit should PVC) as per site engineer instructions with all accessories from nearest distribution board to switch board including proper chasing & plastering works (conforming to IS: 1881, IS:1882). for Raw power	Rmt	100					
6.2	1.7.2	Providing all materials, accessories, labour etc. and wiring using 2 runs (Ph & N) of 2.5 Sq.mm and 1 run of 2.5Sq.mm (for earth) PVC insulated multi strand copper conductor wires of 600V grade drawn in suitable PVC conduit pipe (It includes wiring in the floor/raceways proper opening of raceways as per seating arrangement/lab equipment positioning & proper closing of the raceways as per standards; where ever piping in the floor, the conduit should PVC) as per site engineer instructions with all accessories from nearest distribution board to switch board including proper chasing & plastering works (conforming to IS: 1881, IS:1882).	Rmt	160					
		Point Wiring :							
		Provide all materials, accessories, labour etc. and wiring, testing, commissioning for lights, using 3 runs of 1.5 Sq.mm PVC insulated multi strand copper conductor wires of 600V grade drawing in PVC conduit pipe as per site engineer instructions with all accessories Suitable for false ceiling from switch board to respective points including all civil and mechanical works. (Concealed Wiring). (conforming to IS: 1881, IS:1882).							
6.3	123(b)	Lights points with control switches. (Min. 6-9Mtrs to be considered for each point it includes false ceiling wiring, conduit wiring, from switch board to individual light/fan/ex.fan) includes suitable size of modular metal boxes and frames.	No's	20					
6.4	123(b)	Fan points with electronic regulators. (Min. 6-9Mtrs to be considered for each point it includes false ceiling wiring, conduit wiring, from switch board to individual light/fan/ex.fan) includes suitable size of modular metal boxes and frames.	No's	7					
		Supply, erection, testing and commissioning of 1 x 18w LED tube light fitting with bulbs and all necessary accessories and to be fixed on walls.	No's	14					
6.5		Supply, erection, testing and commissioning of 9W LED Bulb light fitting with bulbs & holders including all necessary accessories.	No's	19					
6.6		Supply, installation, testing and commissioning of 6A, 5 pin socket outlet with 6A switches with gang box concealed type with all necessary accessories complete as required including wiring from distribution board. (operating height should be maintained as per IS) includes suitable size of modular metal boxes and frames	No's	14					
6.7		Supply, installation, testing and commissioning of 16/6A, 5 pin socket outlet with 16A switches with gang box concealed type with all necessary accessories complete as required including wiring from distribution board.(operating height should be maintained as per IS) includes suitable size of modular metal boxes and frames.	No's	8					
6.8	1501.0	Supply, erection, testing and commissioning of wall mounted fans that should be dual tone (non-white color) with electronic regulator. Vendor should submit the photograph of material, with make and model before procurement for approval.	No's	2					
6.9		Supply, erection, testing and commissioining of exhaust fan with Sweep size 300mm, made of sturdy engineering plastic with necessary holes in the walls & etc in complete. Vendor should submit the photograph of material, with make and model before procurement for approval.	No's	1					
6.9	2.20	Supply erection ,testing and commissioning of 32Amps 5 pin industrial socket with metal cald body with all accessories required for installation , work includes supply and installation at wall flused inside the wall which includes chipping of wall fixing the metal clad box inside the wall and connecting the cable to mcb and fixing the it properly inside the box and adding extra cable for plug top etc.,	No's	1					
		Industrial MCB Control switch & MCB with Sockets IN Enclosure With Front Plate & Plug Top.							

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S.NO	Item No	ITEM DESCRIPTION	UNIT	QTY	SUPPLY RATE	ERECTION RATE	SUPPLY & ERECTION	TOTAL	REMARKS
7.10		Supply, installation, testing and commissioning of 63A 3PH 5 Pin Industrial type metal clad plug and socket with 63A 4PMCB control enclosed in sheet metal box with 63A plug top concealed type with all necessary accessories complete as required for welding purpose as required and instructed by site engineer.	Nos	3					
F		**CABLE TRAY**							
		Supply, Installation of prefabricated hot dip galvanised (460 gms per sq. met.), ladder / perforated type cable trays of minimum 2 mm thick as per details given below. Prefabricated, bends and couplers with G.I. Nuts and bolts. Gas cutting of cable trays at site is not permitted. If any welding is to be done on cable trays, the welded part shall be touched up with anti-corrosive primer and silver paint. The running rate shall include bends and couplers. Cable tray supports shall be paid extra. Before fabricating, the contractor has to get the cable tray support design approved from the site – engineer/consultant. Minimum Distance between two cable tray supports for Horizontal cable tray and vertical cable tray shall be 1.5m to 1.8 m (Depending on size) and 1M respectively. For Ladder type cable tray distance between two rungs should be 300mm							
		Cable Trays with Earthing: Shall be with Strip earthing as specified in each size of cable tray. Bolted on both sides of the cable tray with provision for jointing the adjoining pieces by means of a additional Piece of strip with holes provided at all ends for the same. Also extra Holes for Tapping. The jointing portion shall be atleast 100 mm in length & shall be raised/away from Main side frame of the Tray to enable Bolting for Jointing & Tappings. The Running meter lengths of cable Trays Shall include all types of standard Joints,"+" "U"; "T"; "L" Horizontal, vertical, Bends etc.Straight, Left hand, Right Hand reducers etc. Horizontal, vertical inside & vertical outside elbows completee with all necessary Hardwares like Nuts Bolts, Plain & Spring washers, etc. Vendor should quote excluding structural steel.							
		Perforated Type Cable Tray (2mm Thickness)							
8.1		50 x 50 mm wide cable tray perforated type	Mtrs	130					
8.2	4.6.1	100 x 50 mm wide cable tray perforated type	Rmt	110					
8.3	4.6.3	200/225 x 50 mm wide cable tray perforated type	Rmt	50					
8.4	4.6.4	300 x 50 mm wide cable tray perforated type	Rmt	30					
		CABLE TRAY COVER							
		Supply and Installation of cable tray covers fabricated out of 1.6mm thick hot dip GI along with fixing arrangement. The cable tray cover shall be removable type.							
8.5		cover for 50mm	Mtrs	130					
8.6		cover for 100mm	Rmt	110					
8.7		cover for 200mm	Rmt	50					
8.8		cover for 300mm	Rmt	30					
G		**STRUCTURAL STEEL**							
9.1		Supply, Installation & Fabrication of ISI mark structural steel in form of MS angles, channels, flats etc. for supporting various items of equipment such 'as various panels, cable trays, push button stations,'junction boxes,light fittings, DB etc. including drilling, welding grouting, chipping, bolting with supply of required hardware including anchor fastners required for mounting. Fabricated and installed structural steel shall be suitably painted with 2 coats of epoxy paint after applying 2 coats of red oxide primer. Colour shade of supports shall be same as that of main shade of support structureor will be as per site engineers approval.	MT	0.75					
H		**LT CABLES TRENCH:**							
10.1		Supply, Excavation & Back filling of Cable trench of size 1000mm (W) x 1000mm (D) & providing sand cushioning of 100mm before and after laying the cables and providing bricks on sides and top of the cables for safety reasons and as per standards including all civil works as required & cable route markers for every 3Mtrs of distance. (Main Cable Trench)	Rmt	30					

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S.NO	Item No	ITEM DESCRIPTION	UNIT	QTY	SUPPLY RATE	ERECTION RATE	SUPPLY & ERECTION	TOTAL	REMARKS
10.2		Supply, Excavation & Back filling of Cable trench of size 600mm (W) x 750mm (D) & providing sand cushioning of 100mm before and after laying the cables and providing back filling for safety reasons and as per standards including cable route markers for every 3Mtrs of distance. (Outgoing Feeders Trench & Street Lights Cable Trench)	Rmt	80					
I		**HT / LT Cable Route Marker**							
		Supply & fixing of cable route markers with aluminium cast material 150mm Dia round with 6mm thickness to be placed for every 8 mtrs distance with two holes for mounting, embossed with 3mm letters & arrow mark for direction indication. Route marker to be painted with yellow in background, letters and arrow direction to be painted in black and should be mounted on M.S. Angle 25X25X3mm with standard length of 1mtr which includes construction of PCC pedastal mount 300mm(L) X 300mm(B) X 500mm(H) as per site engineer instructions. (Route markers should display on UG Cable trench)							
11.1		440V LT Cable Route Market	Nos	20					
J		**HUME PIPES**							
12.1		Supply & laying of RCC hume pipes NP4 300mm under IS:458-1988 for road crossing of cables along with 1Mtr X 1Mtr chambers with top man hole chamber covers as instructed by site engineer.	Rmt	10					
K		**EARTHING**							
		Supply, Installation of hot dipped G.I /Copper bare earth conductor bar / flexible wire /strip of following sizes on trays / wall / Buried underground / supported on structures / pull through pipes/conduits. The installation shall include drilling of holes,connection of adequate lugs, clamping, hardware material. Welded joints shall be used for G.I. strips. Welded joints after welding shall be painted with anticorrosive black bitumen paint, excavation & refilling of 600mm depth soil for burying the strip wherever applicable shall include in the rate. All required materials & accessories including civil construction material shall be in contractor's scope.							
		Hot dip galvanised strip							
13.1		50 x 6 mm G.I strip	Mtrs	63					
13.2	5.15	25 x 5 mm G.I strip	Mtrs	80					
		Flexible cables							
13.3		1Cx4 sq.mm	Mtrs	110					
13.4		1Cx150 sq.mm-DG Neutral	Mtrs	13					
		Cable Termination including PVC gland and copper lugs							
13.50		1Cx150 sq.mm	Nos.	2					
L		**EARTHING STATION**							
14.1	5.6	EARTH PIT (PLATE TYPE EARTHING) (COPPER ELECTRODE) Supply, Installation, testing of earthing station as per IS 3043 & CEA standard 'B-class' complete with CU Plate earthing 600x600x3.15 mm inclusive 2runx25x6 mm copper strip to be connected between CU plate to the earth electrode. 40mm dia, 8feet long CU pipe, watering pipe with funnel, salt, charcoal, 2feetx2fet masonry chamber shall be RCC/Brick (fine masonry with 1:3:6 ratio) & C.I inspection cover with proper painting & marking. The scope includes excavation of pit 2.5Mtr depth, filling with alternate layers of charcoal & salt, back filing etc. Earthing shall confirm to IS 3043. Scope Including 1) Testing earth resistively and electrode resistance. 2) Equipotential bar & test link.	Nos	2					

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S.NO	Item No	ITEM DESCRIPTION	UNIT	QTY	SUPPLY RATE	ERECTION RATE	SUPPLY & ERECTION	TOTAL	REMARKS
14.2	5.4	EARTH PIT (PLATE TYPE EARTHING) (GI ELECTRODE) Supply, Installation, testing of earthing station as per IS 3043 & CEA standard 'B-class' complete with G.I. plate earthing (600x600x6mm) inclusive of 2runx25x6mm GI strip to be connected between GI plate to the Electrode. 40 mm dia, 8feet long G.I. pipe, watering pipe with funnel, salt, charcoal and 2feetx2fet masonry chamber shall be RCC/ Brick (fine masonry with 1:3:6 ratio) provided with G.I frame & C.I inspection cover with proper painting & marking. The scope includes excavation of pit 2.5Mtr depth, filling with alternate layers of charcoal & salt, back filing etc. Earthing shall confirm to IS 3043. Scope Including 1) Testing earth resistively and electrode resistance. 2) Equipotential bar & test link. (Security-2, MRF Panel-2, Vehicle Work Shop-2, Transfer Station-2, Street Lighting-2, Baler & Tromels-6, Compactors-3,8-Way VTPN DB-2, DG-2)	Nos	16					
K		**LIGHTNING PROTECTION SYTEM**							
		Supply, Installation, Testing and commissioning of External Lightning Protection System as Per IS / IEC 62305-3 including air termination and fixing arrangements as per following. Must be used Glue for fixing on Roof and everywhere and should not do puncher.							
15		Supply, erection, testing and commissioning of lightening arrestor including lightening spike to cover 70 mt dia with including constructing & formation of copper earth pits with 'B' class 40 mm G.I. pipe of 8 feet with funnel and copper plate(600mmx600mmx3mm) earthing with alternative layer of salt, sand, bentonite powder and charcoal including civil work of excavation & back filling, construction of chambers with man hole cover as per IE Rules along with laying of 25x3mm copper strip on required no of insulators on sheds including all necessary works. (Minimum 15Mtrs of copper strip to be consider, to be placed on the top of the sheds/buildings/tanks etc as instructed by site engineer)	No's	1					
L		**MISCELLANEOUS & SAFETY**							
16.1		Supply & laying of 8 SWG G.I wire with all necessary connections with nuts & bolts.	Kg's	4					
16.2		Supply and Installation of Piping For metering with 32mm B Class GI Pipe connecting the metering equipment and metering cubicles as per EB specification	Sets	1					
16.3		Supply and Installation of 4 Sand Buckets with Stand as per Local EB standards	Sets	1					
16.4		Supply and Installation of 10Kg Powder type fire extinguishers	Nos	1					
16.5		11 kV Grade 3 mm thick Rubber mat - size of 2X1 mtr. (as per new IS 15652/IEC 61111)	Mtr.	1					
16.6		1.1 kV Grade 3 mm thick Rubber mat - size of 2X1 mtr. (as per new IS 15652)	Mtr.	1					
16.7		Shock treatment chart as per electricity board requirement (In English, Hindi & Local Language)	Nos	1					
16.8		First aid box with standard items	Nos	1					
16.10		11KV Danger Board as required by the Electrical authorities (In English, Hindi & Local Language)	Nos	1					
16.11		433 V Danger Board as required by the Electrical authorities (In English, Hindi & Local Language)	Nos	1					
16.12		11KV grade Rubber Hand Gloves - 1 Set (with certificate)	Sets	1					
16.13		433 V grade Rubber Hand Gloves - 1 Set (with certificate)	Sets	1					
16.14		Dry Chemical powder type fire extinguisher complete with initial charges, hose and fixing brackets etc 5 KG capacity confirming to IS: Standard	Set	1					
N		**DG-SET**							
27		Supply, installation, erection, testing and comissioning of diesel engine with rated of 380 KVA at 0.8 P.F, 1500 RPM, 4 stroke, multicylinder coupled to brush less type 433V 50 cycle/sec self excited alternator completeed with cushy pads, domestic silencer exhaust pipe completee with alternator auxiliaries, radiator, electronic governor panel, 24Volts chargable battery including initial charging of batteries, control panel with ammeter, ammeter selector switch, voltmeter and voltage selector switch, frequency meter, Hrs meter amd KWH meter in sound proof canapoy as required and completee as per specification.	No's	1					
		TOTAL						**0**	

LUCKNOW SWACHHATA ABHIYAN PRIVATE LIMITED
Dyal Chowk Transfer Station

Item No	Description of Item	Units	Quantity	Unit Rate (in Rs.)	Amount (in Rs)	Remarks
A	**Civil Works**					
1	Site Development (Site Clearance) a. Cleaning of unwanted material b.Cleaning of waste water and rubbish	Sqm	8,389.17			
2	Topographical survey Carrying out a topographical survey of the area shown by the engineer-in-charge/client. Surveying will be carried out to fix coordinates, dimensions of the roads, existing ground facilities like building, shed, shops , road, electrical poles, HT line, drains, man holes , major trees, telephone poles and water bodies.	LS	1.00			
3	Geotechnical Survey Equipment charges per day Standard Penetration tests (SPT) were conducted in these boreholes and relevant soil samples were collected. Soil tests were carried out in the laboratory to ascertain the allowable bearing capacity of encountered strata. To conduct tests on different samples in the laboratory as such as grain size Analysis, Atterberg limit, density, Consolidation test , shear properties, natural moisture and determining the engineering characterstics	LS	1.00			
4	Earth work excavation in all kinds of soil: Earthwork excavation in all kinds of soils except rock requiring blasting in any kind of foundation works including for trenches, pits and tunnels etc., for varying depths below average ground level including shoring, strutting for protecting the sides of foundation, dewatering/ bailing out water from foundations by pumping or by whatever means to dry up the area if required without any extra payment including leveling, ramming the bed of excavation and stacking the excavated soil away from the edge of excavation etc. complete as directed by the Engineer-in-charge for finished item of work.	cum	4,504.41			
5	S/C for compaction and consolidation S/C For Compaction and consolidation Loosening, leveling and compacting: Original ground supporting embankment to facilitate placement of first layer of embankment, scarified to a depth of 150mm, mixed with water at OMC and then compacted by rolling so as to achieve minimum dry density for embankment construction complete and as directed.	Sqm	6,570.03			
6	Filling with available excavated earth : Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20cm in depth, consolidating each deposited layer by watering, and compacting to 95% modified proctor density, dressing, trimming, etc all complete as per drawing, specifications and as directed by Engineer-in-charge (compacted finished area / volume only measured for payment) available soils within the site.	cum	5,602.98			
7	S/C-Filling with Approved Soil: Filling with available soil (C& D)including spreading and rolling. in layers not exceeding 300mm towards plinth / to maintain FGL to required slope and dimensions with available soil including compaction the same with 10 - 12 T vibrating with beam / sheep foot rollers so as to achieve 95% protector density at optimum moisture content, All density tests required to be carried out will be at contractor's cost. Measurement will be based on the consolidated and finished dimensions, as shown in drawings, Including cost of bed preparation with roller compaction also, etc., complete finished item and as directed by Engineer-in-charge	cum	17,828.51			

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Item No	Description of Item	Units	Quantity	Unit Rate (in Rs.)	Amount (in Rs)	Remarks
8	PCC (1:4:8): Plain Cement concrete of mix 1:4:8 using Ordinary Portland cement conforming to IS 1489), River sand and graded stone aggregates of 40 mm maximum size at all depths below plinth level including cost of cement and all materials, leads and lifts, transportation to site of work, consolidation, finishing, curing, etc. complete but excluding form work as per specifications for mud mat in foundations of masonry walls or others etc. complete as per specs. and as directed for finished item of work.	cum	1,127.41			
9	S/C-Constn of granular subbase for roads S/C For Constn of Granular Subase for Roads-"Granular Sub-Base -50MM Thk: Construction of Granular Sub-Base by providing close graded material, mixing in a mechanical mix plant at OMC, carryingof mixed material to work site, spreading in uniform layers with motor grader on prepared surface and compacting with vibratory power roller to achieve the desired density, complete as per Clause 401."	cum	1,967.09			
10	S/C Supplying & Laying RCC 1:1:2-M25 S/C For RCC : M-25 Grade: Supplying and laying reinforced cement concrete of M 25 Grades as defined in IS:456, in all types of foundations and super structures, in walls, slab, columns, beams, lintels, chajjas, floor/roof slabs, staircase, footings, basements, cellars, trenches, drains, encasing of structural steel members / pipelines, etc. including cost and conveyance of all materials vibrating with mechanical vibrator , curing etc., but excluding cost of shuttering and steel reinforcement. All wars shall be as per drawings, specifications and directions of the Engineer/Consultant, super-plasticizer as per manufacturer's instruction/directions.	cum	1,310.19			
11	S/C for C&S (Centering & Shuttering) S/C For Ramp Centering&Shuttering : Providing standard form work of steel plates, centering and shuttering at all depths and heights of work below and above plinth level, vertical, horizontal, inclined including strutting, propping using steel pipes/acro staging, removal, cleaning of the same for inset reinforced cement concrete works and in plain cement concrete work as required including chamfers, splays, keys, wedges, nails, bracings, brackets and applying one coat of shuttering oil on all shuttering surfaces coming in to contact with concrete etc., complete as directed including cost of materials, conveyance, labour and all other incidental charge etc. complete as directed to the finished item of work.	Sqm	2,611.07			
12	S/C for C&S (Centering & Shuttering) S/C For Centering&Shuttering : Providing standard form work of steel plates, centering and shuttering at all depths and heights of work below and above plinth level, vertical, horizontal, inclined including strutting, propping using steel pipes/acro staging, removal, cleaning of the same for inset reinforced cement concrete works and in plain cement concrete work as required including chamfers, splays, keys, wedges, nails, bracings, brackets and applying one coat of shuttering oil on all shuttering surfaces coming in to contact with concrete etc., complete as directed including cost of materials, conveyance, labour and all other incidental charge etc. complete as directed to the finished item of work.	Sqm	2,418.30			

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Item No	Description of Item	Units	Quantity	Unit Rate (in Rs.)	Amount (in Rs)	Remarks
13	S/C For RFRC M25 For Flooring Supplying and laying reinforced cementconcrete of RFRCC M25 Grade as defined in IS:456,Flooring / Road including cost and conveyance of all materials vibrating with mechanical vibrator, levelling, curing etc., but excluding cost of shuttering, etc., complete finished item and as directed by Engineer-in-charge	cum	1,829.26			
14	S/C for Reinforcement cutting & bending S/C For Reinforcement Steel: Supply, fabrication and erection of Reinforcement bars for Reinforced cement concrete items at and at all depths and heights below and above plinth level with high yield strength deformed bars confirming to IS 1786 with TM Treatment from approved source (Vizag steel, Tata, SAIL make), including supply to site, providing fan hooks of required shape, dowels for bonding masonry, transporting steel to site, decoiling, removing of scales, straightening, cutting, bending, tying bars with chairs, space bars wherever required, in position with two strings of 18 gauge soft drawn annealed MS binding wire etc., complete as specified and directed.	MT	1,66,505.27			
15	S/C for RR Stone Masonry S/C For RR Stone Masonry : Randum Rubble stone masonry using approved quality and size of stone obtained from local quarry in foundations and plinth at all depths below plinth level in cement mortar (1:6) including cost and conveyance of stone for masonry, bond stones, scaffolding and all other materials, raking out joints or simultaneous flush pointing with the same mortar to the faces covered under earth, curing charges etc. complete as directed and as directed to the finished item of work	cum	159.52			
16	S/C for Brick masonry 230MM Thk S/C For Brick work in CM (1:6) 230MM Thk.: Brick masonry work using specified class II well burnt clay bricks of specified class, size and quality in cement mortar (1:6) at all depths and heights below and above plinth level including cost and conveyance of all materials, pilasters, steel tubular scaffolding, raking out joints, curing etc., complete as per specifications and as directed. Brick shall be laid flat in the projections for the finished item of work.	cum	267.75			
17	S/C for 15mm Plastering in 1:6 S/C For Plastering-15mm th. in CM (1:6): Cement plastering 15 mm thick for internal surfaces of walls in cement mortar (1:6) neatly smooth finished at and all heights above plinth level over brick walls or concrete surfaces, RCC and also other places wherever required including making necessary grooves in between junctions of brick masonry and over brick walls or concrete surface, preparation of surface, steel/tubular scaffolding, curing, etc., complete as directed as per standard specs. for the finished item of work.	Sqm	4,904.76			
18	Water Proof Plastering in CM (1:3) : Supply and providing Cement plastering 12 mm thick for internal surfaces of walls in cement mortar (1:3) with coarse sand with 5 % cico or any other approved water proofing compound including taxes and neatly smooth finished at and all heights above plinth level over brick walls or concrete surfaces, RCC and also other places wherever required including making necessary grooves in between junctions of brick masonry and over brick walls or concrete surface, preparation of surface, steel/tubular scaffolding, curing, etc., complete as directed as per standard specs. for the finished item of work.	Sqm	37.18			

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Item No	Description of Item	Units	Quantity	Unit Rate (in Rs.)	Amount (in Rs)	Remarks
19	S/C For Cement Punning: Supply and applying Neat cement punning by tamping, trowelling, and with a finishing floating coat of neat cement slurry @ 2.20kg. of cement per Sq.m. of area, including cost of cement, tools, labour, cleaning the sub-base surface, curing, etc. all complete and as per directions of Engineer-in-charge.	Sqm	152.50			
20	S/C for Acrylic Emulsion Painting S/C For Acrylic Emulsion Painting : Finishing walls with Acrylic emulsion paint having Alkali & fungal resistance, dirt resistance exterior /interior paint of required shade over one coat of primer, including all matrials, labour charges, tools & tackles, necessary scaffolding, etc., complete finished item	Sqm	4,295.43			
21	S/C-Miscellaneous - Enamel painting S/C For Enamel Paint: Providing and applying 2 coats of Enamel Paiant over 1 coat of primer for steel surfaces including all matgerials, labour charges, etc., complete finished item and as directed by engineer-in-charge	Sqm	1,601.81			
22	Snow Cem Painting-Snowcem: Providing and applying two coats cement based paint (Snowcem or approved brand) conforming to IS:5410-1990, over one coat of primer including preparing the surface to receive priming & finishing coats, scaffolding, curing etc. complete in any shade as directed by Engineer-in-charge	Sqm	1,320.00			
23	Supply of material charges for EN 901 Nitocote EN901 is a two-part material and can be applied by brush, roller, or airless spray. Applying one coat of primer of Nito prime and Nitocote EN901 is grey in color. It is formulated to be applied in one or two coats to achieve a minimum total dry film thickness of 500 microns. Nitocote EN901 exhibits excellent chemical resistance in pH ranging from 1-14 at 25°C	Sqm	14.70			
24	S/C for fabrication of Structural Works S/C For Fabrication of Structural Steel : Structural Steel works for Drain MS Grating	Kg	30,263.69			
25	S/C for construction joint S/C For Contraction Joint : Making 10 mm wide x 50 mm deep Contraction joint using groove cutting machine @ 5m spacing, providing and filling joints with approved joint filler and sealants, etc., complete finished item and as per direction of Engineer-in-charge	Rmt	3,356.53			
26	Expansion joint	Sqm	-			
27	Supply and fixing of Barbed wire with necessary tools and consumables.	Kgs	-			
28	Providing and fixing of 100mm Dia PVC Pipe with all necessary fixtures	M	40.00			
29	Providing and fixing of HDPE 300mm Dia Pipe With all necessary fixtures	M	20.00			
30	Providing and fixing of 40mm dia PVC Pipe Charges towards Supply & laying of under floor PVC drainage pipes, specials of approved make conforming to to IS:13592 Type 'B' (6 kg/sq.cm.) using lubricant as per manufacturer's specification, including cutting the pipes square to the required lengths, necessary wall cutting, chasing & restoring to the original condition, testing for water tightness etc. The formation of pipe sockets by heating the pipe shall not be permitted the joints for plain ended pipes shall be made using couplers if necessary. Rate shall also include the cost of GI 'U' clamps of 12/16mm thick to be provided at not more than 1.5m c/c for horizontal ceiling suspended pipes. (Internal Piping). Including labour & all other necessary accessories.	M	25.00			

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Item No	Description of Item	Units	Quantity	Unit Rate (in Rs.)	Amount (in Rs)	Remarks
31	Providing and fixing of 150mm dia PVC Pipe with all necessary fixtures	M	150.00			
32	Supply and Erection of MS Grating for Drain : Supply, fabricate and erection drain grating using ISA 40x40x5mm, 35x35x3mm for grill frame and 35 x 3mm Flat for horizontals including all materials, labour charges, Two coats of enamel paint over 1 coat of steel primer, etc., as per drawing complete finished item and as directed by engineer-in-charge	kg	6,362.99			
33	Dismanatling and Demolishing of Brick : Dismantling Brick Masonry in cement mortar or lime mortar and stacking the material as directed with all leads & lifts compete as directed by Engineer-in-charge.	cum	421.52			
34	Dismanatling and Demolishing of RR Masonary : Dismantling Stone Masonry in cement mortar or lime mortar and stacking the material, seggregating the usable and unusable and throwing away the unusable ones at the nearest approved dumping yard with all leads & lifts compete as directed by Engineer-in-charge.	cum	146.52			
35	Dismantling & Demolition of CC Flooring : Dismantling RCC work of all grades of concrete by mechanical/manual means and sorting out the materials such as steel etc. and stacking them with all leads & lift as directed by Engineer-in-charge	cum	1,000.00			
36	Dismantling of barricading sheet mechanical/manual means and sorting out the materials such as steel etc. and stacking them with all leads & lift as directed by the Engineer-in-charge	Sqm	306.00			
37	Dismantling & Demolition of RCC Structure : Dismantling RCC work of all grades of concrete by mechanical/manual means and sorting out the materials such as steel etc. and stacking them with all leads & lift as directed by Engineer-in-charge	Sqm	1,452.05			
38	Supply and Fixing of GI Sheet Cladding : Supply and fixing 0.5mm thick galvanized / pre-painted G.I. profiled sheets fixed to the steel frame with 14 size self-drilling screws with neoprene washer including all material, men & machinery, necessary scaffolding etc., complete finished item and as directed by Engineer- in-charge	Kg	1,862.65			
39	Supply and fixing charges for Vehicle stopper beams in parking with edge angles. (Synthetic Plastic & Rubber Car Wheel Stopper) - 600mm Black with yellow reflective Strip.	Nos	10.00			
40	Supply and fixing charges of Outdoor Auto-Tracking Camera, 12 Pre-Set dots Tracking,360° Visual Coverage with necessary fixtures including the erection charges .	Nos	4.00			
41	supply and fixing charges of Kerb stone with all necessary civil works and required fixtures including packing and properly laying and painting snow cem	Rmt	112.00			
42	Supply and fixing of Ventilated GI rolling shutter with neat finishing and fireproofing and installation Providing and fixing Automatic rolling shutter power-driven with pull & push type provision for rolling shutters of approved make out of 18 gauge, 75 mm wide cold rolled steel laths of convex corrugation, with side guides and bottom rail, with interlocking arrangements of steel laths by means of alternate clips, suspension shaft with High tension coil type springs two numbers, mounted on specially designed pipe shaft, with bracket plates, guide channels, ball bearing arrangements, for inside & and outside locking with push & and pull operations complete with all necessary fixtures and tools at site as required by the client.	Sqm	52.00			

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Item No	Description of Item	Units	Quantity	Unit Rate (in Rs.)	Amount (in Rs)	Remarks
43	MS Man Hole Cover 600mm X 600mm: Providing and fixing MS Manhole cover of size 600 x 600 mm with frame with locking arrangement, etc. cover and frame (heavy duty, HD-20 grade designation) conforming to I.S. 12592, total weight of cover and frame to be not less than 50kg., fixed in cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size) including centring, shuttering all complete. (rate includes Excavation, foot rests and 12mm thick cement plaster at the external surface)	Nos	1.00			
44	Supply & Fixing of CC Manhole cover (600MMX600MM) as Per IS Standrads as directed by engineer/incharge	Nos	5.00			
45	PVC water stopper: Providing and Laying PVC water stopper 250mm wide including cost of material , labour charges etc., complete as per specifications & as advised by the Engineer In charge.	Rmt	18.40			
46	RCC 450mm dia Hume pipe Providing and laying Non Pressure NP-3 class (Medium duty) R.C.C. pipes including collars/spigot jointed with stiff mixture of cement mortar in the proportion of 1:2 (1 cement : 2 fine sand) including testing of joints etc. complete	Rmt	100.00			
47	Supply, Fabricate and erection of Structural shed with AZ-150/SDP	MT	70.00			
48	Excavation of spilled waste/slush and shifting charges	LS	1.00			
49	Pile foundation Drilling 500mm Dia pile drilling with 12 mtr depth with RCC M 25 Design Mix concrete and proper reinforcement with bentonite chemical and hydraulic rig and embedded in the pile cap with a hydraulic rig. Pile cap with RCC M25 Grade concrete including the cost of shuttering and steel Reinforcement with all neat finishing works and proper curing.Pile Integrity test sonic echo test and Vertical load test including chipping the lean concrete and debris cleaning as per the specification and as directed by site incharge	Nos	36.00			
50	SS hand rail Hand Railing: Providing and fixing handrail at all heights with 32mm dia GI pipe for verticals & horizontals, 25mm dia pipe for bracings. welding to steel ladders, balcony railing and staircase railing including applying 2 coats of enamel paint over one coat of approved steel primer, all materials, tools, and labour etc. complete as per specification, drawings(provided during execution) and direction of engineer-in-charge.	Kg	533.46			
51	Supply and Fixing of Name Board and MS Fabrication work with flexible board with all necessary items.	Sft	393.60			
52	Drilling Of Bore Well , Casing Pipe ,fixing of pump,HDPE Pipe, Electrical works Etc	LS	1.00			
53	Water supply, hand wash, drinking water and Leachate drainage system , Collection tank & Pumps	LS	1.00			
Total Value of Civil Works (in Rs.)						

B	**Mechanical Works**					
1	Static Horizontal compaction machine model SC- 350 with hopper	Nos	3			
2	A container of volumetric capacity of 20 cum consisit of	Nos	5			
Total Value of Mechanical Works (in Rs.)						

LUCKNOW SWACHHATA ABHIYAN PRIVATE LIMITED

DAYAL TRANSFER STATION - Bill of Quantities - Electrical Works

S.NO	Item No	ITEM DESCRIPTION	UNIT	QTY	SUPPLY	ERECTION	SUPPLY& ERECTION	TOTAL	REMARKS
					RATE	RATE			
A		**LOW VOLTAGE PCC /APFC / MCC**							
		Supply (as per approved make only), Installation, testing and commissioning of following switchboards floor mounting type in single/Double front execution, along with base frame including unloading, shifting to intermediate stores, if site is not ready and loading, unloading, transportation from owner's store / yard to the site of the erection, unpacking, assembly (Incl. installation & wiring of loose parts supplied by OEM vendor) installation on foundation (minor civil work inclusive),or fixing on wall or steel structure, leveling, grouting, proper alignment, tightening of busbars with required torque, testing and calibration of relays and meters etc, Including all labour and erection material / hardware complete as per specification of this tender, and direction of Engineer in charge and under supervision and instruction of panel manufacturer. **For Mounting types of all panels, refer Technical Specification of LT Switchboard.** **Vendors shall quote unit rates of all type of outgoing feeders and vertical cubical with vertical & horizontal busbars and wiring for addition and deletion during detailed engineering.** **Vendor's offer should include all charges of minimum 2 visit of 5 days each of Panel OEM commissioning Engineer for supervision of erection and commissioning of Panels (includes Travelling + Stay, etc.). All the interlocks, wiring as to be demonstrated at site as per requirement.**							
1.1		**Switch Board Designation : MAIN PCC CUM APFCR PANEL with Stand** **Quote as per IEC 60439**	No.	1					
		Voltage : 415 V							
		Construction : IP-65, Indoor type, Single Front with Bottom Cable Entry							
		Mounting : Floor Mounting with Stand							
		Paint Shade : RAL 7032 (Siemens Grey)							
		Cable Entry : Bottom							
		Location : Electrical Panel Room							
		Refer Annexure -1 for detailed boq							
		Incoming Feeder :							
		EB & DG Incomer : 630A FP ATS							
		CTs-630 / 5 A, CL 1, 6 Nos.							
		DV(0-500V), DA(0 - 630A) - 2Sets.							
		Indication Lamps -R Y B.							
		EB & DG ON Status - ON Indication Lamps							
		Common Incomer : 630A 4 Pole, 36kA/sec MCCB with							
		CTs-630 / 5 A, CL 1, 4 Nos.							
		DV(0-500v), DA(0 - 630A) - 3Sets.							
		Indication Lamps -R Y B, ON, OFF, TRIP.							
		Surge Protection Device (SPD) TYPE 1 -CLASS I WITH 32A MPCB 65kA CONTROL. Other items as requried for safe and efficient electrical panel as mentioned in Sepcification.							
		Outgoing Feeders :							
		One (1) 250A, 36kA/sec 4P MCCB with On, Off & Trip Indication lamps							
		Six (6) 125A, 36kA/sec 4P MCCB with On, Off & Trip Indication lamps							
		Seven (7) 63A, 10kA/sec 4P MCB's.							
		32A 3-Phase 5-Pin Power Sockets with MCB control - 2Nos							
		One (1) 15 KVAR capacitor banks with 32A TP MCB control for transformer fixed bank.							
		One (1) 250A, 36kA/sec 4P MCCB with UV Coil with On, Off & Trip Indication lamps - APFCR Incoming Feeder							
		Two (2) 5 KVAR capacitor banks with 32A TP MCB control with capacitor duty contactors suitable for 5KVAR of including start/stop push buttons and with On, Off indication lamps.							
		One (1) 10 KVAR capacitor banks with 32A TP MCB control with capacitor duty contactors suitable for 10KVAR of including start/stop push buttons and with On, Off indication lamps.							
		One (1) 15 KVAR capacitor banks with 32A TP MCB control with capacitor duty contactors suitable for 15KVAR of including start/stop push buttons and with On, Off indication lamps.							
		Two (2) 20 KVAR capacitor banks with 63A TP MCB control with capacitor duty contactors suitable for 20KVAR of including start/stop push buttons and with On, Off indication lamps.							
		Two (2) 25 KVAR capacitor banks with 63A TP MCB control with capacitor duty contactors suitable for 25KVAR of including start/stop push buttons and with On, Off indication lamps.							

LUCKNOW SWACHHATA ABHIYAN PRIVATE LIMITED

DAYAL TRANSFER STATION - Bill of Quantities - Electrical Works

S.NO	Item No	ITEM DESCRIPTION	UNIT	QTY	SUPPLY	ERECTION	SUPPLY& ERECTION	TOTAL	REMARKS
					RATE	RATE			
B		**DISTRIBUTION BOARDS**							
		Supply, Installation, testing and commissioning of following distribution boards. MCB distribution boards shall be totally with single door/double door, Surface/recessed mounting type, outer door shall be hinged type with push in type spring / magnetic lock, inner door shall be fixed up with screws with cutouts for MCB operation, copper busbar of at least 1.5 times the rating of incomer MCB / MCCB, with adequate space for termination of incoming and outgoing cables, removable un drilled top & bottom gland plates, suitable for wall, column mounting type. The incoming MCB / MCCB shall be provided in separate compartment. The MCCB shall have front drive mechanism and door interlock. DB shall be concealed type. DB shall be completely wired up, upto incoming and outgoing terminals by PVC insulated flexible copper wire of adequate rating. All MCB in Lighting DB shall be suitable for Curve B. and MCB in Power DB shall be suitable for Motive power (Curve C). In case Db's 3phase I/C & 1phase O/G neutral of each phase shall be isolated. Note : Separate canopay to be fabricated for the db which are placeing out door against protection from water,whether,dust							
		ALL MCB (B type & C type) in DB's complying IS 60898 / IEC 60947							
		Lighting Distribution Board							
2.1	2.5.2	Tag No. : PDB-1	Nos	1					
	2.2.14	3 Ph - 8 WAY VTPN DB							
	2.10.1	Incomer : 125A FP MCCB							
		Outgoing : 32A SP MCBs-24nos, 'C' Curve							
		The above complete with interconnections, etc. DB should be with Metal Door & IP 43 8 WAY VTPN DB							
2.2	2.4.1	Tag No. : LDB1-(Office building)	Nos	1					
	2.15.3	3 Ph - 4 WAY TPN DB							
	2.10.1	Incomer : 63A 30mA FP ELCB							
		Outgoing : 12 Nos, 10A SP MCBs 'C' Curve							
		The above complete with interconnections, etc. DB should be with Metal Door & IP 43 4 WAY TPN DB							
2.3	2.3.2	Tag No. : LDB 2 - (Toilet block, office store)	Nos	2					
	2.14.2	8-WAY SPN DB							
	2.10.1	Incomer : 32A,DP RCBO 30 mA -1 Nos							
		Outgoing : 12 Nos, 10A SP MCBs 'C' Curve							
		The above completee with interconnections, etc. DB should be with Metal Door & IP 43 8 WAY SPN DB							
C		**CABLE SYSTEM**							
		Supply & Unloading at site, Laying, Installation, site testing and commissioning of horizontal and vertical laying and dressing using cable tie, etc. of following sizes cables on trays / through pendants / GI conduits, clamping on wall / ceiling / supported on structures / pull through pipes / readymade trench. The scope includes clamping of cables by readymade G.I. spacers, saddles or clamps fabricated out of M.S. strip 3 mm thick, supply of all clamping materials and hardware etc., providing cable markers made out of aluminium strip and 75x20 mm in size with cable number and size punched on it. Cable marker shall be provided to cables at every 20-meter interval and at both the ends. Empty cable drums shall be returned to stores. This activity also includes unloading, shifting of cables up to stores & stores to site. In case of laying unlisted cables, rate of cable whose outer dia is closest to the cable sizes quoted shall be applicable. The same shall hold good for cable termination also.							
		1.1 KV, XLPE insulated copper/aluminium conductor of class -2 as per IS 8130 armoured / unarmoured, solid / stranded inner sheathed ST-2 PVC & outer sheathed FRLS type ST-2 as per IS 5831, power cables of following sizes:							

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S.NO	Item No	ITEM DESCRIPTION	UNIT	QTY	SUPPLY	ERECTION	SUPPLY& ERECTION	TOTAL	REMARKS
					RATE	RATE			
		LT Cables							
3.1		3.5CX300SQMM.AL.XLPE.AR	Mtr	400					
3.2		3.5CX95SQMM.AL.XLPE.AR	Mtr	240					
3.3		3.5CX25SQMM.AL.XLPE.AR	Mtr	100					
3.4		4CX10SQMM.AL.XLPE.AR	Mtr	200					
3.5		4CX6SQMM.AL.XLPE.AR	Mtr	500					
3.6		4CX2.5SQMM.CU.XLPE.AR	Mtr	200					
3.7		5CX4 SQMM.CU.FLEXIBLE	Mtr	77					
D		**CABLE END TERMINATION**							
		Supply, Installation, testing and commissioning of Cable end termination with Double Compression Brass Nickel Pleated cable gland with all necessary hard wears like cu / Al / Bimetallic lugs & PVC hood, ferrules etc. of following copper/alum. conductor armoured / unarmoured cables including supply of all materials, drilling of gland plates and dressing of cables inside panel. All necessary material and hardware for termination purpose will be provided by the contractor. All Labour complete as per the specification of this tender and direction of engineer in charge.							
		1.1 KV, XLPE insulated copper/aluminium conductor armoured / unarmoured, inner sheathed PVC & outer sheathed FRLS power cables of following sizes using Double Compression Gland:							
4.1		3.5CX300SQMM.AL.XLPE.AR	Nos	6					
4.2		3.5CX95SQMM.AL.XLPE.AR	Nos	6					
4.3		3.5CX25SQMM.AL.XLPE.AR	Nos	6					
4.4		4CX10SQMM.AL.XLPE.AR	Nos	2					
4.5		4CX6SQMM.AL.XLPE.AR	Nos	8					
4.6		4CX2.5SQMM.CU.XLPE.AR	Nos	30					
4.7		5CX4 SQMM.CU.FLEXIBLE	Nos	3					
E		**LIGHT FIXTURES**							
		Supply, Installation, testing and commissioning of following Lighting Fixtures with Lamps and control gear including mounting of fixtures Recessed / Surface / Suspension along with all its accessories, checking of internal wiring, structural steel & hardware etc. and with all kind of required hardware's to complete installation. (Inclusive of supply, installation of cable & termination of 3C x 2.5 Sqmm Cu flexible cable FRLS / 3R x 2.5 Sqmm Cu wire from light fitting to JB side along with GI conduit - Normal/ FLP - as per type of light fitting). **Supply of all materials required for complete installation shall be provided by the contractor.**							
		Lighting fixture supports (structural steel or readymade supports design with light fixtures) average weighted 6 Kg shall be considered as part of lighting fixtures system activity and shall not be paid extra **1. Vendor should quote all Light fixtures with 3 years unconditional warranty period.** **2. For consideration of equivalent makes, please ensure that the lumens output of the light fitting is equal to that mentioned in this BOQ line item.**							
		INDUSTRIAL LIGHTING FIXUTE							
5.1		INDUSTRIAL HIGH BAY LIGHT FIXTURE, complete with *Epoxy dia cast aluminium with toughened glass *Dust & Moisture proof Fixture (IP 66) *complete with mounting accessories *150W LED. *LED/Driver - Osram/Nichia/Seoul *System Lumens Output 10000 Lumens and colout Temp. 5700K Havell's or Wipro OR Lighting Technology	Nos	10					
		COMMERCIAL LIGHTING FIXUTE							

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S.NO	Item No	ITEM DESCRIPTION	UNIT	QTY	SUPPLY	ERECTION	SUPPLY& ERECTION	TOTAL	REMARKS
					RATE	RATE			
5.2		COMMERCIAL RECESSED MOUNTING TYPE TUBE LIGHTER FIXTURE, complete with * IP20 *complete with mounting accessories *18W LED. *LED/Driver - Osram/Nichia/Nation star *System Lumens Output 1800 Lumens and color Temp. 6000K Havell's or Wipro or Lighting Technology equivalent	Nos	15					
5.3		COMMERCIAL SURFACED MOUNTING TYPE LED BULB LIGHTER FIXTURE, complete with * IP20 *complete with mounting accessories *9W LED Bulb. *LED/Driver - Osram/Nichia/Nation star *System Lumens Output 1800 Lumens and color Temp. 6000K Havell's or Wipro or Lighting Technology equivalent	Nos	10					
		OUTDDOR LIGHTING FIXUTE							
5.4		INDUSTRIAL FLOOD LIGHT FIXTURE with 75mm dia 6Mtr length Hot dip galavanized Pole for supporting light. complete with *Epoxy dia cast aluminium with toughened glass *Dust & Moisture proof Fixture (IP 66) *complete with mounting accessories *150W LED. *LED/Driver - Osram/Nichia/Seoul *System Lumens Output 10000 Lumens and colour Temp. 5700K Havell's or Wipro or Lighting Technology equivalent	Nos	12					
		STREET LIGHTING POLE							
5.5		Supply, erection, testing and commissioning of GI hot dip galvanized 8.0 Mtrs (above ground) long octagonal poles with 3mm thick HT steel plate with a bottom 155mm dia and top 75mm dia, base plate of size 260mmx260mmx16mm thick welded to bottom of pole, terminal box with required door size and all accessories like connector and fuse base, foundation bolts with washers and nuts of 4 sets. including of 1.5mtrs single arm with 120W LED street light fixture (IS: 6665: 1982) in complete with all accessories as per the requirements at site and as per the directions of site engineer during execution. It includes DP control MCB, MCB box, GI pipe up to control box and wiring from control MCB to light fixture etc in complete. Supplier has to provide base template, pole execution drawing based on the local wind speed (should ensure/match the local wind speed) etc. complete with *Aluminium pressure die-cast housing *Dust & Moisture proof Fixture (IP 66) *Beam angle with Type 2 Distribution. *complete with mounting accessories *120W LED. *LED/Driver - Osram/Nichia/Seoul Havell' or Wipro or Philips or Lighting Technology equivalent Foundation : RESL Civil Scope	Nos	4					
F		**INTERNAL ELECTRIFICATION :**							
		Main Wiring :							
6.1	1.7.3	Providing all materials, accessories, labour etc. and wiring using 2 runs (Ph & N) of 4 Sq.mm and 1 run of 2.5/4Sq.mm (for earth) PVC insulated multi strand copper conductor wires of 600V grade drawn in suitable PVC conduit pipe (It includes wiring in the floor/raceways proper opening of raceways as per seating arrangement/lab equipment positioning & proper closing of the raceways as per standards; where ever piping in the floor/ceiling, the conduit should PVC) as per site engineer instructions with all accessories from nearest distribution board to switch board including proper chasing & plastering works (conforming to IS: 1881, IS:1882). for Raw power	Rmt	80					

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S.NO	Item No	ITEM DESCRIPTION	UNIT	QTY	SUPPLY	ERECTION	SUPPLY& ERECTION	TOTAL	REMARKS
					RATE	RATE			
6.2	1.7.2	Providing all materials, accessories, labour etc. and wiring using 2 runs (Ph & N) of 2.5 Sq.mm and 1 run of 2.5Sq.mm (for earth) PVC insulated multi strand copper conductor wires of 600V grade drawn in suitable PVC conduit pipe (It includes wiring in the floor/raceways proper opening of raceways as per seating arrangement/lab equipment positioning & proper closing of the raceways as per standards; where ever piping in the floor, the conduit should PVC) as per site engineer instructions with all accessories from nearest distribution board to switch board including proper chasing & plastering works (conforming to IS: 1881, IS:1882).	Rmt	220					
		Point Wiring :							
		Provide all materials, accessories, labour etc. and wiring, testing, commissioning for lights, using 3 runs of 1.5 Sq.mm PVC insulated multi strand copper conductor wires of 600V grade drawing in PVC conduit pipe as per site engineer instructions with all accessories Suitable for false ceiling from switch board to respective points including all civil and mechanical works. (Concealed Wiring). (conforming to IS: 1881, IS:1882).							
6.3	123(b)	Lights points with control switches. (Min. 6-9Mtrs to be considered for each point it includes false ceiling wiring, conduit wiring, from switch board to individual light/fan/ex.fan) includes suitable size of modular metal boxes and frames.	No's	20					
6.4	123(b)	Fan points with electronic regulators. (Min. 6-9Mtrs to be considered for each point it includes false ceiling wiring, conduit wiring, from switch board to individual light/fan/ex.fan) includes suitable size of modular metal boxes and frames.	No's	5					
		Supply, erection, testing and commissioning of 1 x 18w LED tube light fitting with bulbs and all necessary accessories and to be fixed on walls.	No's	6					
6.5		Supply, erection, testing and commissioning of 9W LED Bulb light fitting with bulbs & holders including all necessary accessories.	No's	8					
6.6		Supply, installation, testing and commissioning of 6A, 5 pin socket outlet with 6A switches with gang box concealed type with all necessary accessories complete as required including wiring from distribution board. (operating height should be maintained as per IS) includes suitable size of modular metal boxes and frames	No's	7					
6.7		Supply, installation, testing and commissioning of 16/6A, 5 pin socket outlet with 16A switches with gang box concealed type with all necessary accessories complete as required including wiring from distribution board.(operating height should be maintained as per IS) includes suitable size of modular metal boxes and frames.	No's	7					
6.8	1501.0	Supply, erection, testing and commissioning of wall/ceiling mounted fans that should be dual tone (non-white color) with electronic regulator. Vendor should submit the photograph of material, with make and model before procurement for approval.	No's	3					
6.9		Supply, erection, testing and commissioining of exhaust fan with Sweep size 300mm, made of sturdy engineering plastic with necessary holes in the walls & etc in complete. Vendor should submit the photograph of material, with make and model before procurement for approval.	No's	1					
6.9	2.20	Supply erection ,testing and commissioning of30/ 32Amps 5 pin industrial socket with metal cald body with all accessories required for installation , work includes supply and installation at wall flused inside the wall which includes chipping of wall fixing the metal clad box inside the wall and connecting the cable to mcb and fixing the it properly inside the box and adding extra cable for plug top etc.,	No's	3					
		Industrial MCB Control switch & MCB with Sockets IN Enclosure With Front Plate & Plug Top.							
F		**CABLE TRAY**							

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S.NO	Item No	ITEM DESCRIPTION	UNIT	QTY	SUPPLY	ERECTION	SUPPLY& ERECTION	TOTAL	REMARKS
					RATE	RATE			
		Supply, Installation of prefabricated hot dip galvanized (460 gms per sq. met.), ladder / perforated type cable trays of minimum 2 mm thick as per details given below. Prefabricated, bends and couplers with G.I. Nuts and bolts. Gas cutting of cable trays at site is not permitted. If any welding is to be done on cable trays, the welded part shall be touched up with anti-corrosive primer and silver paint. The running rate shall include bends and couplers. Cable tray supports shall be paid extra. Before fabricating, the contractor has to get the cable tray support design approved from the site – engineer/consultant. Minimum Distance between two cable tray supports for Horizontal cable tray and vertical cable tray shall be 1.5m to 1.8 m (Depending on size) and 1M respectively. For Ladder type cable tray distance between two rungs should be 300mm.							
		Cable Trays with Earthing: Shall be with Strip earthing as specified in each size of cable tray. Bolted on both sides of the cable tray with provision for jointing the adjoining pieces by means of a additional Piece of strip with holes provided at all ends for the same. Also extra Holes for Tapping. The jointing portion shall be at least 100 mm in length & shall be raised/away from Main side frame of the Tray to enable Bolting for Jointing & Tapping's. The Running meter lengths of cable Trays Shall include all types of standard Joints,"+" "U"; "T"; "L" Horizontal, vertical, Bends etc. Straight, Left hand, Right Hand reducers etc. Horizontal, vertical inside & vertical outside elbows complete with all necessary Hardware's like Nuts Bolts, Plain & Spring washers, etc.							
		Perforated Type Cable Tray (2mm Thickness)							
7.1		50 x 50 mm wide cable tray perforated	Mtrs	100					
7.2	4.6.1	100 x 50 mm wide cable tray perforated	Mtrs	80					
7.3	4.6.4	300 x 50 mm wide cable tray perforated	Mtrs	50					
		CABLE TRAY COVER							
		Supply and Installation of cable tray covers fabricated out of 1.6mm thick hot dip GI along with fixing arrangement. The cable tray cover shall be removable type.							
7.4		cover for 50mm	Mtrs	100					
7.5		cover for 100mm	Mtrs	80					
7.6		cover for 300mm	Mtrs	50					
G		**STRUCTURAL STEEL**							
8.1		Supply, Installation & Fabrication of ISI mark structural steel in form of MS angles, channels, flats etc. for supporting various items of equipment such 'as various panels, cable trays, push button stations,'junction boxes,light fittings, DB etc. including drilling, welding grouting, chipping, bolting with supply of required hardware including anchor fastners required for mounting. Fabricated and installed structural steel shall be suitably painted with 2 coats of epoxy paint after applying 2 coats of red oxide primer. Colour shade of supports shall be same as that of main shade of support structureor will be as per site engineers approval.	MT	0.50					
H		**EARTHING**							
a		Lighting fixture earthing is part of wiring & shall be by way of 3rd wire of 2.5 Sq.mm.,.							
b		Earthing of the LSBs, shall be by way of 3rd wire of 2.5 Sq.mm.,							
c		Earthing of the SPN sockets, shall be by way of 3rd wire of 2.5 / 4 Sq.mm.,							
d		Earthing of the TPN sockets, shall be by way of separate earth wire of 4 Sq.mm.,							
e		Double earthing required for all the equipment with voltage higher than 230 V							
		Supply, Installation of hot dipped G.I /Copper bare earth conductor bar / flexible wire /strip of following sizes on trays / wall / Buried underground / supported on structures / pull through pipes/conduits. The installation shall include drilling of holes, connection of adequate lugs, clamping, hardware material. Welded joints shall be used for G.I. strips. Welded joints after welding shall be painted with anticorrosive black bitumen paint, excavation & refilling of 600mm depth soil for burying the strip wherever applicable shall include in the rate. All required materials & accessories including civil construction material shall be in contractor's scope.							

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S.NO	Item No	ITEM DESCRIPTION	UNIT	QTY	SUPPLY	ERECTION	SUPPLY& ERECTION	TOTAL	REMARKS
					RATE	RATE			
9.1		**Hot dip galvanized strip**							
		50 x 6 mm G.I strip	Mtrs	70					
	5.15	25 x 5 mm G.I strip	Mtrs	120					
9.2		**Flexible cables**							
		Supply, unloading at site, Installation of flexible cables of following sizes on trays / wall / Buried underground / supported on structures / pull through pipes/conduits. The installation shall include drilling of holes, connection of adequate lugs, clamping, hardware material. Welded joints shall be used for G.I. strips. Welded joints after welding shall be painted with anticorrosive black bitumen paint, excavation & refilling of 600mm depth soil for burying the strip wherever applicable shall include in the rate. All required materials & accessories including civil construction material shall be in contractor's scope. Green XLPE insulated Flexible Copper cable for Earthing of equipment. **Electrical contractor scope shall also include supply required terminations at both end with required glands & Cu Lugs.**							
		1Cx2.5 sq.mm	Mtrs	150					
		1Cx150 sq.mm-DG Neutral	Mtrs	20					
		Cable Termination including PVC gland and copper lugs							
		1Cx150 sq.mm	Nos.	1					
I		**EARTHING STATION**							
10.1		EARTH PIT (PLATE TYPE EARTHING) (COPPER ELECTRODE) Supply, Installation, testing of earthing station as per IS 3043 & CEA standard 'B-class' complete with CU Plate earthing 600x600x3.15 mm inclusive 2runx25x6 mm copper strip to be connected between CU plate to the earth electrode. 40mm dia, 8feet long CU pipe, watering pipe with funnel, salt, charcoal, 2feetx2fet masonry chamber shall be RCC/Brick (fine masonry with 1:3:6 ratio) & C.I inspection cover with proper painting & marking. The scope includes excavation of pit 2.5Mtr depth, filling with alternate layers of charcoal & salt, back filing etc. Earthing shall confirm to IS 3043. Scope Including 1) Testing earth resistively and electrode resistance. 2) Equipotential bar & test link. (DG Neutral)	Nos	2					
10.2		EARTH PIT (PLATE TYPE EARTHING) (GI ELECTRODE) Supply, Installation, testing of earthing station as per IS 3043 & CEA standard 'B-class' complete with G.I. plate earthing (600x600x6mm) inclusive of 2runx25x6mm GI strip to be connected between GI plate to the Electrode. 40 mm dia, 8feet long G.I. pipe, watering pipe with funnel, salt, charcoal and 2feetx2fet masonry chamber shall be RCC/ Brick (fine masonry with 1:3:6 ratio) provided with G.I frame & C.I inspection cover with proper painting & marking. The scope includes excavation of pit 2.5Mtr depth, filling with alternate layers of charcoal & salt, back filing etc. Earthing shall confirm to IS 3043. Scope Including 1) Testing earth resistively and electrode resistance. 2) Equipotential bar & test link. (VTPN DB-6, DB-2, PCC-2, Compactors-6)	Nos	10					
J		**LIGHTNING PROTECTION SYTEM**							
		Supply, Installation, Testing and commissioning of External Lightning Protection System as Per IS / IEC 62305-3 including air termination and fixing arrangements as per following. Must be used Glue for fixing on Roof and everywhere and should not do puncher.							

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S.NO	Item No	ITEM DESCRIPTION	UNIT	QTY	SUPPLY	ERECTION	SUPPLY& ERECTION	TOTAL	REMARKS
					RATE	RATE			
11.1		Supply, erection, testing and commissioning of lightening arrestor including lightening spike to cover 70 mt dia with including constructing & formation of copper earth pits with 'B' class 40 mm G.I. pipe of 8 feet with funnel and copper plate(600mmx600mmx3mm) earthing with alternative layer of salt, sand, bentonite powder and charcoal including civil work of excavation & back filling, construction of chambers with man hole cover as per IE Rules along with laying of 25x3mm copper strip on required no of insulators on sheds including all necessary works. (Minimum 15Mtrs of copper strip to be consider, to be placed on the top of the sheds/buildings/tanks etc as instructed by site engineer)	No's	1					
		CABLES TRENCH:							
11.2		Supply, Excavation & Back filling of Cable trench of size 1000mm (W) x 750mm (D) & providing sand cushioning of 100mm before and after laying the cables and providing bricks on sides and top of the cables for safety reasons and as per standards including all civil works as required & cable route markers for every 3Mtrs of distance.	Rmt	37					
K		**LT Cable Route Marker**							
		Supply & fixing of cable route markers with aluminium cast material 150mm Dia round with 6mm thickness to be placed for every 8 mtrs distance with two holes for mounting, embossed with 3mm letters & arrow mark for direction indication. Route marker to be painted with yellow in background, letters and arrow direction to be painted in black and should be mounted on M.S. Angle 25X25X3mm with standard length of 1mtr which includes construction of PCC pedastal mount 300mm(L) X 300mm(B) X 500mm(H) as per site engineer instructions. (Route markers should display on UG Cable trench)							
12.1		11KV Cable Route Marker	Nos	2					
12.2		440V LT Cable Route Marker	Nos	4					
		SAFETY ITEMS for HT & LT :							
		Supply & Installation of the following safety items as per Electrical Inspectorate's requirement.							
12.3		First aid box with standard items	Nos	1					
12.4		11KV grade Rubber Hand Gloves - 1 Set (with certificate)	Sets	1					
12.5		433 V grade Rubber Hand Gloves - 1 Set (with certificate)	Sets	1					
12.6		11KV Danger Board as required by the Electrical authorities (In English, Hindi & Local Language)	Nos	1					
12.7		433 V Danger Board as required by the Electrical authorities (In English, Hindi & Local Language)	Nos	1					
12.8		11 kV Grade 3 mm thick Rubber mat - size of 2X1 mtr. (as per new IS 15652/IEC 61111)	Mtr.	1					
12.9		1.1 kV Grade 3 mm thick Rubber mat - size of 2X1 mtr. (as per new IS 15652)	Mtr.	2					
13.0		Shock treatment chart as per electricity board requirement (In English, Hindi & Local Language)	Nos	2					
13.1		Supply and Installation of 4 Sand Buckets with Stand as per Local EB standards	Sets	1					
13.12		Supply and Installation of 10Kg Powder type fire extinguishers	Nos	1					
13.13		Dry Chemical powder type fire extinguisher complete with initial charges, hose and fixing brackets etc 5 KG capacity confirming to IS: Standard	Set	2					
		DG SET:							
14		Supply, installation,testing and commissioning of **200 KVA DG** Set with Acoustic enclosure 415V,3 phase,50Hz frequency,0.8 PF with RPM 1500 powered by power engine , electrical alternator, radiator coolant, Micrprocesser based controller with AMF relay with selection modes auto/manual with low lube oil pressure and high water temperature protection system,lube oil cooler,lube oil filter,fuel filters,residential silencer ,anti vibrator and 1meter extended chimney etc., in complete with necessary wiring and display. (CPCB-II)	Nos	1					
					TOTAL			-	

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Item No	Description of Item	Units	Quantity	Unit Rate (in Rs.)	Amount (in Rs)	Remarks
1	Site Development (Site Clearance) a. Cleaning of unwanted material b.Cleaning of waste water and rubbish	sqm	980			
2	Topographical survey Carrying out a topographical survey of the area shown by the engineer-in-charge/client. Surveying will be carried out to fix coordinates, dimensions of the roads, existing ground facilities like building, shed, shops , road, electrical poles, HT line, drains, man holes , major trees, telephone poles and water bodies.	LS	1			
3	Geotechnical Survey Equipment charges per day Standard Penetration tests (SPT) were conducted in these boreholes and relevant soil samples were collected. Soil tests were carried out in the laboratory to ascertain the allowable bearing capacity of encountered strata. To conduct tests on different samples in the laboratory as such as grain size Analysis, Atterberg limit, density, Consolidation test , shear properties, natural moisture and determining the engineering characterstics	LS	3			
4	Earth work excavation in all kinds of soil: Earthwork excavation in all kinds of soils except rock requiring blasting in any kind of foundation works including for trenches, pits and tunnels etc., for varying depths below average ground level including shoring, strutting for protecting the sides of foundation, dewatering/ bailing out water from foundations by pumping or by whatever means to dry up the area if required without any extra payment including leveling, ramming the bed of excavation and stacking the excavated soil away from the edge of excavation etc. complete as directed by the Engineer-in-charge for finished item of work.	cum	489.43			
5	Compacting the Original Ground: Loosening, leveling and compacting original ground supporting embankment to facilitate placement of first layer of embankment, scarified to a depth of 150mm, mixed with water at OMC and then compacted by rolling so as to achieve minimum dry density for embankment construction complete and as directed.	sqm	893.67			
6	PCC (1:4:8): Plain Cement concrete of mix 1:4:8 using Ordinary Portland cement conforming to IS 1489), River sand and graded stone aggregates of 40 mm maximum size at all depths below plinth level including cost of cement and all materials, leads and lifts, transportation to site of work, consolidation, finishing, curing, etc. complete but excluding form work as per specifications for mud mat in foundations of masonry walls or others etc. complete as per specs. and as directed for finished item of work.	cum	114.50			
7	PCC 1:2:4 for plinth protection Plain Cement concrete of mix 1:2:4 using Ordinary Portland cement conforming to IS 1489), River sand and graded stone aggregates of 40 mm maximum size at all depths below plinth level including cost of cement and all materials, leads and lifts, transportation to site of work, consolidation, finishing, curing, etc. complete but excluding form work as per specifications for mud mat in foundations of masonry walls or others etc. complete as per specs. and as directed for finished item of work.	cum	1.88			

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Item No	Description of Item	Units	Quantity	Unit Rate (in Rs.)	Amount (in Rs)	Remarks
8	Supply and Laying of RR Masonry in CM (1:6): Providing uncoursed random rubble masonry of trap/granite/quartzite/gneiss stone above/below plinth level or ground level in foundation and plinth in cement mortar 1:6 including dewatering, striking out joints on exposed faces, curing, scaffolding, raking out joints, plastering, pointing with same mortar etc complete as per specifications and directions of Engineer-in-charge.	cum	10.83			
9	RFRCC M25 for Flooring: Supplying and laying reinforced cement concrete of RFRCC M25 Grade (Recron fibers) as defined in IS:456, Flooring / Road including cost and conveyance of all materials vibrating with mechanical vibrator, levelling, curing etc., but excluding cost of shuttering, etc., complete finished item and as directed by Engineer-in-charge	cum	150.29			
10	RCC : M-25 Grade: Supplying and laying reinforced cement concrete of M 25 Grades as defined in IS:456, in all types of foundations and super structures, in walls, slab, columns, beams, lintels, chajjas, floor/roof slabs, staircase, footings, basements, cellars, trenches, drains, encasing of structural steel members / pipelines, etc. including cost and conveyance of all materials vibrating with mechanical vibrator , curing etc., but excluding cost of shuttering and steel reinforcement. All wars shall be as per drawings, specifications and directions of the Engineer/Consultant, super-plasticizer as per manufacturer's instruction/directions.	cum	96.31			
11	Reinforcement Steel: Supply, fabrication and erection of Reinforcement bars for Reinforced cement concrete items at and at all depths and heights below and above plinth level with high yield strength deformed bars confirming to IS 1786 with TM Treatment from approved source (Vizag steel, Tata, SAIL make), including supply to site, providing fan hooks of required shape, dowels for bonding masonry, transporting steel to site, decoiling, removing of scales, straightening, cutting, bending, tying bars with chairs, space bars wherever required, in position with two strings of 18 gauge soft drawn annealed MS binding wire etc., complete as specified and directed.	kg	6,661.37			
12	Shuttering : Providing standard form work of steel plates, centering and shuttering at all depths and heights of work below and above plinth level, vertical, horizontal, inclined including strutting, propping using steel pipes/acro staging, removal, cleaning of the same for inset reinforced cement concrete works and in plain cement concrete work as required including chamfers, splays, keys, wedges, nails, bracings, brackets and applying one coat of shuttering oil on all shuttering surfaces coming in to contact with concrete etc., complete as directed including cost of materials, conveyance, labour and all other incidental charge etc. complete as directed to the finished item of work.	sqm	558.35			

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Item No	Description of Item	Units	Quantity	Unit Rate (in Rs.)	Amount (in Rs)	Remarks
13	Brick work in CM (1:6) 230mm th.: Brick masonry work using specified class II well burnt clay bricks of specified class, size and quality in cement mortar (1:6) at all depths and heights below and above plinth level including cost and conveyance of all materials, pilasters, steel tubular scaffolding, raking out joints, curing etc., complete as per specifications and as directed. Brick shall be laid flat in the projections for the finished item of work.	cum	38.50			
14	Plastering-15mm th. in CM (1:6): Cement plastering 15 mm thick for internal surfaces of walls in cement mortar (1:6) neatly smooth finished at and all heights above plinth level over brick walls or concrete surfaces, RCC and also other places wherever required including making necessary grooves in between junctions of brick masonry and over brick walls or concrete surface, preparation of surface, steel/tubular scaffolding, curing, etc., complete as directed as per standard specs. for the finished item of work.	sqm	346.07			
15	Finishing walls with Acrylic emulsion paint having Alkali & fungal resistance, dirt resistance exterior /interior paint of required shade over one coat of primer, including all matrials, labour charges, tools & tackles, necessary scaffolding, etc., complete finished item	sqm	186.07			
16	MS Grating for Drain Supply, fabricate and erection drain grating using ISA 40x40x5mm, 35x35x3mm for grill frame and 35 x 3mm Flat for horizontals including all materials, labour charges, Two coats of enamel paint over 1 coat of steel primer, etc., as per drawing complete finished item and as directed by engineer-in-charge	Kg	320.00			
17	Providing GP groughting for PEB base plates	cum	0.35			
18	Water Proof Plastering in CM (1:3) : Supply and providing Cement plastering 12 mm thick for internal surfaces of walls in cement mortar (1:3) with coarse sand with 5 % cico or any other approved water proofing compound including taxes and neatly smooth finished at and all heights above plinth level over brick walls or concrete surfaces, RCC and also other places wherever required including making necessary grooves in between junctions of brick masonry and over brick walls or concrete surface, preparation of surface, steel/tubular scaffolding, curing, etc., complete as directed as per standard specs. for the finished item of work.	sqm	37.18			
19	MS Man Hole Cover 600mm X 600mm: Providing and fixing MS Manhole cover of size 600 x 600 mm with frame with locking arrangement, etc. cover and frame (heavy duty, HD-20 grade designation) conforming to I.S. 12592, total weight of cover and frame to be not less than 50kg., fixed in cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size) including centring, shuttering all complete. (rate includes Excavation, foot rests and 12mm thick cement plaster at the external surface)	Nos	1.00			

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Item No	Description of Item	Units	Quantity	Unit Rate (in Rs.)	Amount (in Rs)	Remarks
20	Filling with available excavated earth : Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20cm in depth, consolidating each deposited layer by watering, and compacting to 95% modified proctor density, dressing, trimming, etc all complete as per drawing, specifications and as directed by Engineer-in-charge (compacted finished area / volume only measured for payment) available soils within the site.	cum	220.98			
21	PVC water stopper: Providing and Laying PVC water stopper 250mm wide including cost of material , labour charges etc., complete as per specifications & as advised by the Engineer In charge.	Rmt	18.40			
22	Construction of Granular Sub-Base: Construction of granular sub-base by providing close graded Material, mixing in a mechanical mix plant at OMC, carriage of mixed Material to work site, spreading in uniform layers with motor grader on prepared surface and compacting with vibratory power roller to achieve the desired density, complete as per clause 401 MoRTH	cum	94.50			
23	Construction of dry lean cement concrete: Construction of dry lean cement concrete Sub-base over a prepared sub-grade with coarse and fine aggregate conforming to IS: 383, the size of coarse aggregate not exceeding 25 mm, aggregate cement ratio not to exceed 15:1, cement content not to be less than 150 kg/ cum, concrete strength not to be less than 10 Mpa at 7 days, compacting with 8-10 tonnes vibratory roller, finishing and curing, etc., completely finished item and as directed by Engineer-in-charge	cum	63.00			
24	Kerb Stone: Providing and laying at or near ground level factory-made kerbstone of M-25 grade cement concrete in position to the required line, level and curvature, jointed with cement mortar 1:3 (1 cement: 3 coarse sand), including making joints with or without grooves (thickness of joints except at sharp curve shall not to more than 5mm), including making drainage opening wherever required complete etc. as per direction of Engineer-in-charge (length of finished kerb edging shall be measured for payment).	Rmt	252.00			
25	Contraction Joint : Service charges for Preparing 10 mm wide x 50 mm deep contraction joint using groove cutting machine @ 5m spacing, providing and filling joints with approved joint filler/ sealants such as Bitumen epoxy, etc., complete finished item and as directed by Engineer-in-charge.	Rmt	336.45			
26	Supply & Fixing of CC Manhole cover (600MMX600MM) as Per IS Standrads as directed by engineer/incharge	Nos	5.00			
27	RCC 450mm dia Hume pipe	Rmt	100.00			
28	EN 901 Painting	Sqm	14.70			
29	Painting for External Walls: Providing and applying two coats cement based paint (Snowcem or approved brand) conforming to IS:5410-1990, over one coat of primer including preparing the surface to receive priming & finishing coats, scaffolding, curing etc. complete in any shade as directed by Engineer-in-charge	sqm	17.28			

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Kailashkunj Transfer Station - Bill of Quantities

Item No	Description of Item	Units	Quantity	Unit Rate (in Rs.)	Amount (in Rs)	Remarks
30	MS Entrance & Exit Gate: Providing and fixing M.S. Gate using with Tubular rectangular/ L-Type sections, made of 1.60 mm thick M.S. Sheet, joints mitred, welded and ground finish, with profiles of required size, including fixing of necessary butt hinges and screws, locking arrangement and applying two coats of approved enamel paint over one coat of a priming coat, etc., complete finished item as per drawings and as directed by Engineer-in-charge	kg	1,600.00			
31	Tensile Fab with structural steel	sqm	3,060.15			
32	Neat Cement punning	sqm	80.00			
33	Supply and fixing charges for 5 HP Motar including all necessary plumbing works & comissioning	LS	1.00			
34	Supply and Installation of Syntex water tank at an elevated location including all necessary fictures, plumbing items etc.	LS	1.00			
35	Supply, Fabricate and erection of Structural shed with AZ-150/SDP	MT	11.66256			
36	S/c for Turbo Vents Supply of 304 alluminium turbo ventilators. Japan NSK self-lubricating bearing and metal support including transportation.	Nos	4			
37	S/c for Sky lights Supply of polycarbonate FRP skylight with 1-2mm thickness, Including transportation	Sqm	86.40			
38	Epoxy Paint on floor for leachate drainout : Supply and applying epoxy paint over levelling course on cleaned surfce including all materials, labour charges, etc., complete finished item and as directed by engineer-in-charge	sqm	129.584			
39	Dismantling of the existing structures	Sqm	139.75			
40	S/C for Supply and fixing of Ventilated GI rolling shutter with neat finishing and fireproofing and installation Providing and fixing Automatic rolling shutter power-driven with pull & push type provision for rolling shutters of approved make out of 18 gauge, 75 mm wide cold rolled steel laths of convex corrugation, with side guides and bottom rail, with interlocking arrangements of steel laths by means of alternate clips, suspension shaft with High tension coil type springs two numbers, mounted on specially designed pipe shaft, with bracket plates, guide channels, ball bearing arrangements, for inside & and outside locking with push & and pull operations complete with all necessary fixtures and tools at site as required by the client.	sqm	52			
41	Supply and Fixing of Name Board and MS Fabrication work with flexible board with all necessary items.	sqm	12.48			
42	Supply charges for Membrane Filtration Stainless Steel Water Purifiers, For Commercial, RO Capacity: 1000-1500 (Liter/hour) including necessary plumbing materials with operations complete with all necessary fixtures and tools at the site as required by the client including Installation charges with necessary fixtures and tools	LS	1			
Total Value of Civil Works (in Rs.)					**0**	
B	**Mechnical Works**					
1	Supply and Eection of Tract Plate - 4Nos	Kg	3668.78			
2	Supply & Installation of Portable Compactor Machine model MX-160/16CuM with Tip Cart Loading Mechanism (2+1)	Nos	3			
Total Value of Mechanical Works (in Rs.)					**0**	

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KAILASH KUNJ TRANSFER STATION - Bill of Quantities - Electrical Works

S.NO	Item No	ITEM DESCRIPTION	UNIT	QTY	SUPPLY	ERECTION	SUPPLY+ ERECTION	TOTAL	REMARKS
					RATE	RATE			
A		**LT PANEL**							
		Supply,Erection, testing & commissioning of Distribution panel with stand as per local EB rules & standards, including in complete jointing, bus bar jointing of individual compontents interlocking checking/wiring & proper welding works as per IEC: 60439: (Cable entry : Bottom of the panel)							
1.1		**Switch Board Designation : Power Distribution Panel** **Quote as per IEC 60439** **Vendor shall quote this panel with 50kA.**	No.	1					
		Voltage : 415 V							
		Construction : Single Front, IP-65 Double Door, Bottom Cable Entry							
		Dimension : To be assessed by Contractor.							
		Refer Annexure -1 for detailed boq							
		Incoming Feeder :							
		EB & DG Incomer : 100A FP ATS							
		CTs-100 / 5 A, CL 1, 6 Nos.							
		DV(0-500v), DA(0 - 100A) - 2Sets.							
		Indication Lamps -R Y B.							
		EB & DG ON Status - ON Indication Lamps							
		Common Incomer : 100A 4 Pole, 36kA/sec MCCB with							
		CTs-100 / 5 A, CL 1, 4 Nos.							
		DV(0-500v), DA(0 - 100A) - 3Sets.							
		Indication Lamps -R Y B, ON, OFF, TRIP.							
		Surge Protection Device (SPD) TYPE 1 -CLASS I WITH 32A MPCB 65kA CONTROL. Other items as requried for safe and efficient electrical panel as mentioned in Sepcification.							
		Outgoing Feeders :							
		Six (6) 32A, 10kA/sec 4P MCB's.							
		Eight (8) 63A, 10kA/sec 4P MCB's.							
		63A 3-Phase Power Sockets - 2Nos							
		Two (2) 5 KVAR capacitor banks with 32A TP MCB control with capacitor duty contactors suitable for 5KVAR of including on/off push buttonn and indication lamps, use 6Sq.mm Cu wire for power control.							
B		**DISTRIBUTION BOARDS**							
		Supply, Installation, testing and commissioning of following distribution boards. MCB distribution boards shall be totally with single door/double door, Surface/recessed mounting type, outer door shall be hinged type with push in type spring / magnetic lock, inner door shall be fixed up with screws with cutouts for MCB operation, copper busbar of at least 1.5 times the rating of incomer MCB / MCCB, with adequate space for termination of incoming and outgoing cables, removable un drilled top & bottom gland plates, suitable for wall, column mounting type. The incoming MCB / MCCB shall be provided in separate compartment. The MCCB shall have front drive mechanism and door interlock. DB shall be concealed type. DB shall be completely wired up, upto incoming and outgoing terminals by PVC insulated flexible copper wire of adequate rating. All MCB in Lighting DB shall be suitable for Curve B. and MCB in Power DB shall be suitable for Motive power (Curve C). In case Db's 3phase I/C & 1phase O/G neutral of each phase shall be isolated.							
		ALL MCB (B type & C type) in DB's complying IS 60898 / IEC 60947							
		Lighting Distribution Board							
2.1	2.3.3	Tag No. : LDB1 (Shed Lighting)	Nos	1					
	2.15.2	12-WAY SPN DB							
	2.10.1	Incomer : 40A,DP ELCB 30 mA -1 Nos							
		Outgoing : 10Nos, 10A SP MCBs 'C' Curve							
		The above complete with interconnections, etc. DB should be with Metal Door & IP 43 12 WAY SPN DB							
C		**CABLE SYSTEM**							

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S.NO	Item No	ITEM DESCRIPTION	UNIT	QTY	SUPPLY	ERECTION	SUPPLY+ ERECTION	TOTAL	REMARKS
					RATE	RATE			
		Supply & Unloading at site, Laying, Installation, site testing and commissioning of horizontal and vertical laying and dressing using cable tie, etc. of following sizes cables on trays / through pendants / GI conduits, clamping on wall / ceiling / supported on structures / pull through pipes / readymade trench. The scope includes clamping of cables by ready made G.I. spacers, saddles or clamps fabricated out of M.S. strip 3 mm thick, supply of all clamping materials and hardware etc., providing cable markers made out of aluminium strip and 75x20 mm in size with cable number and size punched on it. Cable marker shall be provided to cables at every 20 meter interval and at both the ends.Empty cable drums shall be returned to stores. This activity also includes unloading, shifting of cables upto stores & stores to site. In case of laying unlisted cables, rate of cable whose outer dia is closest to the cable sizes quoted shall beapplicable. The same shall hold good for cable termination also.							
		1.1 KV, XLPE insulated copper/aluminium conductor of class -2 as per IS 8130 armoured / unarmoured, solid / stranded inner sheathed ST-2 PVC & outer sheathed FRLS type ST-2 as per IS 5831, power cables of following sizes:							
		LT Cables							
3.1	501	3.5CX25SQMM.AL.XLPE.AR	Mtr	77					
3.2	501	4CX10SQMM.AL.XLPE.AR	Mtr	31					
3.3	501	4CX6SQMM.AL.XLPE.AR	Mtr	50					
3.4		4CX2.5SQMM.CU.XLPE.AR	Mtr	53					
3.5		5CX4SQMM.CU.XLPE.Flexible Cable	Mtr	39					
		CABLE END TERMINATION							
		Supply, Installation, testing and commissioning of Cable end termination with Double compression Brass Nickel Pleated cable gland with all necessary hard wears like cu / Al / Bimetalic lugs & PVC hood, ferrules etc. of following copper/alum. conductor armoured / unarmoured cables including supply of all materials, drilling of gland plates and dressing of cables inside panel. All necessary material and hardware for termination purpose will be provided by the contractor. All Labour complete as per the specification of this tender and direction of engineer in charge.							
		1.1 KV, XLPE insulated copper/aluminium conductor armoured / unarmoured, inner shethed PVC & outer sheathed FRLS power cables of following sizes using Double Compression Gland:							
4.1		3.5CX25SQMM.AL.XLPE.AR	Nos	2					
4.2		4CX10SQMM.AL.XLPE.AR	Nos	2					
4.3		4CX6SQMM.AL.XLPE.AR	Nos	4					
4.4		4CX2.5SQMM.CU.XLPE.AR	Nos	8					
4.5		5CX2.5SQMM.CU.XLPE.Flexible Cable	Nos	2					
D		**LIGHT FIXTURES**							
		Supply, Installation, testing and commissioning of following Lighting Fixtures with Lamps and control gear including mounting of fixtures Recessed / Surface / Suspension along with all its accessories, checking of internal wiring, structural steel & hardware etc. and with all kind of required hardwares to complete installation. (Inclusive of supply, installation of cable & termination of 3C x 2.5 Sqmm Cu flixible cable FRLS / 3R x 2.5 Sqmm Cu wire from light fitting to JB side along with GI conduit - Normal/ FLP - as per type of light fitting). **Supply of all materials required for complete installation shall be provided by the contractor.**							
		Lighting fixture supports (structural steel or readymade supports design with light fixtures) average weighted 6 Kg shall be considered as part of lighting fixtures system activity and shall not be paid extra **1. Vendor should quote all Light fixtures with 3 years unconditional warranty period.** **2. For consideration of equivalent makes, please ensure that the lumens output of the light fitting is equal to that mentioned in this BOQ line item.**							
		OUTDDOR LIGHTING FIXUTE							

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S.NO	Item No	ITEM DESCRIPTION	UNIT	QTY	SUPPLY	ERECTION	SUPPLY+ ERECTION	TOTAL	REMARKS
					RATE	RATE			
5.1		INDUSTRIAL HIGH BAY LIGHT FIXTURE, complete with *Epoxy dia cast aluminium with toughened glass *Dust & Moisture proof Fixture (IP 66) *complete with mounting accessories *150W LED. *LED/Driver - Osram/Nichia/Seoul *System Lumens Output 10000 Lumens and colout Temp. 5700K Havell's or Wipro OR Lighting Technology	Nos	4					
E		**INTERNAL ELECTRIFICATION :**							
		Main Wiring :							
6.1	1.7.3	Providing all materials, accessories, labour etc. and wiring using 2 runs (Ph & N) of 4 Sq.mm and 1 run of 2.5Sq.mm (for earth) PVC insulated multi strand copper conductor wires of 600V grade drawn in suitable PVC conduit pipe (It includes wiring in the floor/raceways proper opening of raceways as per seating arrangement/lab equipment positioning & proper closing of the raceways as per standards; where ever piping in the floor/ceiling, the conduit should PVC) as per site engineer instructions with all accessories from nearest distribution board to switch board including proper chasing & plastering works (conforming to IS: 1881, IS:1882). for Raw power	Rmt	50					
6.2	1.7.2	Providing all materials, accessories, labour etc. and wiring using 2 runs (Ph & N) of 2.5 Sq.mm and 1 run of 2.5Sq.mm (for earth) PVC insulated multi strand copper conductor wires of 600V grade drawn in suitable PVC conduit pipe (It includes wiring in the floor/raceways proper opening of raceways as per seating arrangement/lab equipment positioning & proper closing of the raceways as per standards; where ever piping in the floore, the conduit should PVC) as per site engineer instructions with all acessories from nearest distribution board to switch board including proper chasing & plastering works (conforming to IS: 1881, IS:1882).	Rmt	90					
		Point Wiring :							
		Provide all materials, accessories, labour etc. and wiring, testing, commissioning for lights, using 3 runs of 1.5 Sq.mm PVC insulated multi strand copper conductor wires of 600V grade drawing in PVC conduit pipe as per site engineer instructions with all acessories Suitable for false ceiling from switch board to respective points including all civil and mechanical works. (Concealed Wiring). (conforming to IS: 1881, IS:1882).							
6.3	123(b)	Lights points with control switches. (Min. 6-9Mtrs to be considered for each point it includes false ceiling wiring, conduit wiring, from switch board to individual light/fan/ex.fan) includes suitable size of modular metal boxes and frames.	No's	19					
6.4	123(b)	Fan points with electronic regulators. (Min. 6-9Mtrs to be considered for each point it includes false ceiling wiring, conduit wiring, from switch board to individual light/fan/ex.fan) includes suitable size of modular metal boxes and frames.	No's	6					
6.5		Supply, erection, testing and commissioning of 1 x 18w LED tube light fitting with bulbs and all necessary accessories and to be fixed on walls.	No's	12					
6.6		Supply, erection, testing and commissioning of 9W LED Bulb light fitting with bulbs & holders including all necessary accessories.	No's	8					
6.7		Supply, installation, testing and commissioning of 6A, 5 pin socket outlet with 6A switches with gang box concealed type with all necessary accessories complete as required including wiring from distribution board. (operating height should be maintained as per IS) includes suitable size of modular metal boxes and frames	No's	3					
6.8		Supply, installation, testing and commissioning of 16/6A, 5/6 pin socket outlet with 16A switches with gang box concealed type with front white modular plate with 25mm pvc conduit pipe all necessary accessories complete as required including wiring from distribution board(operating height should be maintained as per IS) includes suitable size of modular metal boxes and frames.	No's	3					
6.9	1501.0	Supply, erection, testing and commissioning of wall/ceiling mounted fans that should be dual tone (non-white color) with electronic regulator. Vendor should submit the photograph of material, with make and model before procurement for approval.	No's	1					

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S.NO	Item No	ITEM DESCRIPTION	UNIT	QTY	SUPPLY	ERECTION	SUPPLY+ ERECTION	TOTAL	REMARKS
					RATE	RATE			
6.10		Supply, erection, testing and commissioining of exhaust fan with Sweep size 300mm, made of sturdy engineering plastic with necessary holes in the walls & etc in complete. Vendor should submit the photograph of material, with make and model before procurement for approval.	No's	4					
6.11	2.20	Supply erection ,testing and commissioning of 32Amps 5 pin industrial socket with metal cald body with all accessories required for installation , work includes supply and installation at wall flused inside the wall which includes chipping of wall fixing the metal clad box inside the wall and connecting the cable to mcb and fixing the it properly inside the box and adding extra cable for plug top etc.,	No's	3					
F		**CABLE TRAY**							
		Supply, Installation of prefabricated hot dip galvanised (460 gms per sq. met.), ladder / perforated type cable trays of minimum 2 mm thick as per details given below. Prefabricated, bends and couplers with G.I. Nuts and bolts. Gas cutting of cable trays at site is not permitted. If any welding is to be done on cable trays, the welded part shall be touched up with anti-corrosive primer and silver paint. The running rate shall include bends and couplers. Cable tray supports shall be paid extra. Before fabricating, the contractor has to get the cable tray support design approved from the site – engineer/consultant. Minimum Distance between two cable tray supports for Horizontal cable tray and vertical cable tray shall be 1.5m to 1.8 m (Depending on size) and 1M respectively. For Ladder type cable tray distance between two rungs should be 300mm							
		Cable Trays with Earthing: Shall be with Strip earthing as specified in each size of cable tray. Bolted on both sides of the cable tray with provision for jointing the adjoining pieces by means of a additional Piece of strip with holes provided at all ends for the same. Also extra Holes for Tapping. The jointing portion shall be atleast 100 mm in length & shall be raised/away from Main side frame of the Tray to enable Bolting for Jointing & Tappings. The Running meter lengths of cable Trays Shall include all types of standard Joints,"+" "U"; "T"; "L" Horizontal, vertical, Bends etc.Straight, Left hand, Right Hand reducers etc. Horizontal, vertical inside & vertical outside elbows complete with all necessary Hardwares like Nuts Bolts, Plain & Spring washers, etc.							
		Perforated Type Cable Tray (2mm Thickness)							
7.1		50 x 50 mm wide cable tray perforated	Mtrs	100					
7.2	4.6.1	100 x 50 mm wide cable tray perforated	Mtrs	60					
		CABLE TRAY COVER							
		Supply and Installation of cable tray covers fabricated out of 1.6mm thick hot dip GI along with fixing arrangement. The cable tray cover shall be removable type.							
7.3		cover for 50mm	Mtrs	100					
7.4		cover for 100mm	Mtrs	60					
G		**STRUCTURAL STEEL**							
8.1		Supply, Installation & Fabrication of ISI mark structural steel in form of MS angles, channels, flats etc. for supporting various items of equipment such 'as various panels, cable trays, push button stations,'junction boxes,light fittings, DB etc. including drilling, welding grouting, chipping, bolting with supply of required hardware including anchor fastners required for mounting. Fabricated and installed structural steel shall be suitably painted with 2 coats of epoxy paint after applying 2 coats of red oxide primer. Colour shade of supports shall be same as that of main shade of support structureor will be as per site engineers approval.	MT	0.35					
H		**EARTHING**							
a		Lighting fixture earthing is part of wiring & shall be by way of 3rd wire of 2.5 Sq.mm.,.							
b		Earthing of the LSBs, shall be by way of 3rd wire of 2.5 Sq.mm.,							
c		Earthing of the SPN sockets, shall be by way of 3rd wire of 2.5 / 4 Sq.mm.,							
d		Earthing of the TPN sockets, shall be by way of separate earth wire of 4 Sq.mm.,							

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S.NO	Item No	ITEM DESCRIPTION	UNIT	QTY	SUPPLY	ERECTION	SUPPLY+ ERECTION	TOTAL	REMARKS
					RATE	RATE			
e		Double earthing required for all the equipment with voltage higher than 230 V							
		Supply, Installation of hot dipped G.I /Copper bare earth conductor bar / flexible wire /strip of following sizes on trays / wall / Buried underground / supported on structures / pull through pipes/conduits. The installation shall include drilling of holes,connection of adequate lugs, clamping, hardware material. Welded joints shall be used for G.I. strips. Welded joints after welding shall be painted with anticorrosive black bitumen paint, excavation & refilling of 600mm depth soil for burying the strip wherever applicable shall include in the rate. All required materials & accessories including civil construction material shall be in contractor's scope.							
9.1		**Hot dip galvanised strip**							
9.1.1	5.90	25 x 5 mm G.I strip	Mtrs	65					
9.1.2		25 x 3 mm G.I strip	Mtrs	150					
9.2.1		Supply & laying of 8 SWG G.I wire with all necessary connections with nuts & bolts.	Kg's	5					
		EARTHING STATION							
10.1		EARTH PIT (PIPE) (GI ELECTRODE) Supply, Installation, testing of earthing station as per IS 3043 & CEA regulation complete with G.I. plate earthing (600x600x6mm) inclusive of 2runx 25x6mm GI strip to be connected between GI plate to the Electrode. 50 mm dia, 3 M long G.I. pipes, salt, charcoal & 2 nos. . The masonary chamber shall be RCC/ Brick (fine masonary with 1:3:6 ratio) provided with G.I frame & C.I inspection cover with proper painting & marking. The scope includes excavation of pit, filling with alternate layers of charcoat & salt, back filing etc. Earthing shall confirm to IS 3043. Scope Including 1) Testing earth resistively and electrode resistance. 2) Equipotential bar & test link.	Nos	5					
I		**LIGHTNING PROTECTION SYTEM**							
		Supply, Installation, Testing and commissioning of External Lightning Protection System as Per IS / IEC 62305-3 including airtermination and fixing arrangements as per following. Must be used Glue for fixing on Roof and every where and should not do puncher.							
11.1		Supply, erection, testing and comissioning of lightening arrestor including lightening spike to cover 70 mt dia with including constructing & formation of copper earth pits with 'B' class 40 mm G.I. pipe of 8 feet with funnel and copper plate(600mmx600mmx3mm) earthing with alternative layer of salt, sand, bentonate powder and charcoal including civil work of excavation & back filling, construction of chambers with man hole cover as per IE Rules along with laying of 25x3mm copper strip on required no of insulators on sheds including all necessary works. (Minimum 15Mtrs of copper strip to be consider, to be placed on the top of the sheds/buildings/tanks etc as instructed by site engineer)(1 nos for Transformer Yard & 1 nos for SBR Blower Building)	No's	1					
J		**MISCELLANEOUS ITEM**							
		Safety Items							
		Supply & Installation of the following safety items as per Electrical Inspectorate's requirement.							
12.1		1.1 kV Grade 3 mm thick Rubber mat - size of 2X1 mtr. (as per new IS 15652)	Mtr.	1					
12.2		Shock treatment chart as per electricity board requirement (In English, Hindi & Local Language)	Nos	1					
12.3		First aid box with standard items	Nos	1					
12.4		433 V Danger Board as required by the Electrical authorities (In English, Hindi & Local Language)	Nos	1					
12.5		Rubber Hand Gloves - 1 Set (with certificate)	Set	2					

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S.NO	Item No	ITEM DESCRIPTION	UNIT	QTY	SUPPLY	ERECTION	SUPPLY+ ERECTION	TOTAL	REMARKS
					RATE	RATE			
12.6		4 nos. Fire Buckets (round bottom) with suitable MS stand	Set	2					
12.7		Dry Chemical powder type fire extinguisher complete with initial charges, hose and fixing brackets etc 5 KG capacity confirming to IS:Standard	Set	2					
		CABLE DRESSING :							
K		Dressing of cable and fixing the cable in tray and fixing of HT/LT cable from the nearest pole to meter board and from there to the control panel in under ground or above ground with all safety norms with proper guidence of the super visor wilth neccessary supports/cable tray/trench etc.,	LS	1					
L		**DG-SET**							
14		Supply, installation, erection, testing and comissioning of diesel engine with rated of 20 KVA at 0.8 P.F, 1500 RPM, 4 stroke, multicylinder coupled to brush less type 433V 50 cycle/sec self excited alternator completeed with cushy pads, domestic silencer exhaust pipe completee with alternator auxiliaries, radiator, electronic governor panel, 24Volts chargable battery including initial charging of batteries, control panel with ammeter, ammeter selector switch, voltmeter and voltage selector switch, frequency meter, Hrs meter amd KWH meter in sound proof canapoy as required and completee as per specification. Note: Dg set need to quoted along with 4 wheel trolley	No's	1					
						TOTAL		**0**	

LUCKNOW SWACHHATA ABHIYAN PRIVATE LIMITED
Mithaiwala Transfer Station - Bill of Quantities

Item No	Description of Item	Units	Quantity	Unit Rate (in Rs.)	Amount (in Rs)	Remarks
A	**Civil Works**					
1	Compacting the Original Ground: Loosening, leveling and compacting original ground supporting embankment to facilitate placement of first layer of embankment, scarified to a depth of 150mm, mixed with water at OMC and then compacted by rolling so as to achieve minimum dry density for embankment construction complete and as directed.	Sqm	391.00			
2	Dismantaling Work Debries Removal of Concrete Breaking : Disposal of moorum/building rubbish/ malba/ similar unserviceable, dismantled or waste material by mechanical transport including loading, transporting, unloading upto a lead to the nearest Govt approved dump site. Rate includes cost for lifts, complete as per directions of Engineer-in-charge.	Cum	20.40			
3	S/C For Earth work excavation in all kinds of soil: Excavation by mechanical means (Hydraulic excavator)/manual means in trenches, pits, pipe lines, foundations, column footings, walls etc. in earth's soils of all types, gravel, sand, soft & hard murum, and boulders up to 0.03 cum. size including removing the excavated material upto a distance of 50 M beyond the edge of excavation for all lifts, stacking or spreading as directed, shoring, strutting for protecting the sides of foundation, dewatering/bailing of sub-soil water if any preparing base for foundation etc., and back filing the excavated pit or trench using the approved excavated material in layers including watering and ramming as required or as directed by Engineer-In-charge, including all labour and materials complete. (PCC area only measured for base measurement)	cum	697.78			
4	PCC (1:4:8): Plain Cement concrete of mix 1:4:8 using Ordinary Portland cement conforming to IS 1489), River sand and graded stone aggregates of 40 mm maximum size at all depths below plinth level including cost of cement and all materials, leads and lifts, transportation to site of work, consolidation, finishing, curing, etc. complete but excluding form work as per specifications for mud mat in foundations of masonry walls or others etc. complete as per specs. and as directed for finished item of work.	cum	65.85			
5	PCC (1:2:4)Providing and laying Plain Cement Concrete 1:2:4 nominal mix using Ordinary Port Land Cement, sand and crushed stone aggregate 20 mm nominal size mechanically mixed, including tamping, curing, shuttering etc., as required placed in the foundation, under slabs, on grade etc., including all tools and tackles, formwork if required etc. complete as directed by the Engineer-in-charge	cum	2.25			
6	RFRCC M25 for Flooring: Supplying and laying reinforced cement concrete of RFRCC M25 Grade (steel fibers @ 15kg/cum) as defined in IS:456, Flooring / Road including cost and conveyance of all materials vibrating with mechanical vibrator, levelling, curing etc., but excluding cost of shuttering, etc., complete finished item and as directed by Engineer-in-charge	cum	119.00			

LUCKNOW SWACHHATA ABHIYAN PRIVATE LIMITED
Mithaiwala Transfer Station - Bill of Quantities

Item No	Description of Item	Units	Quantity	Unit Rate (in Rs.)	Amount (in Rs)	Remarks
7	RCC : M-25 Grade: Supplying and laying reinforced cement concrete of M 25 Grades as defined in IS:456, in all types of foundations and super structures, in walls, slab, columns, beams, lintels, chajjas, floor/roof slabs, staircase, footings, basements, cellars, trenches, drains, encasing of structural steel members / pipelines, etc. including cost and conveyance of all materials vibrating with mechanical vibrator , curing etc., but excluding cost of shuttering and steel reinforcement. All wars shall be as per drawings, specifications and directions of the Engineer/Consultant, super-plasticizer as per manufacturer's instruction/directions.	cum	18.93			
8	Reinforcement Steel: Supply, fabrication and erection of Reinforcement bars for Reinforced cement concrete items at and at all depths and heights below and above plinth level with high yield strength deformed bars confirming to IS 1786 with TM Treatment from approved source (Vizag steel, Tata, SAIL make), including supply to site, providing fan hooks of required shape, dowels for bonding masonry, transporting steel to site, decoiling, removing of scales, straightening, cutting, bending, tying bars with chairs, space bars wherever required, in position with two strings of 18 gauge soft drawn annealed MS binding wire etc., complete as specified and directed.	kg	873.79			
9	Shuttering : Providing standard form work of steel plates, centering and shuttering at all depths and heights of work below and above plinth level, vertical, horizontal, inclined including strutting, propping using steel pipes/acro staging, removal, cleaning of the same for inset reinforced cement concrete works and in plain cement concrete work as required including chamfers, splays, keys, wedges, nails, bracings, brackets and applying one coat of shuttering oil on all shuttering surfaces coming in to contact with concrete etc., complete as directed including cost of materials, conveyance, labour and all other incidental charge etc. complete as directed to the finished item of work.	sqm	99.14			
10	Brick work in CM (1:6) 230mm th.: Brick masonry work using specified class II well burnt clay bricks of specified class, size and quality in cement mortar (1:6) at all depths and heights below and above plinth level including cost and conveyance of all materials, pilasters, steel tubular scaffolding, raking out joints, curing etc., complete as per specifications and as directed. Brick shall be laid flat in the projections for the finished item of work.	cum	4.60			
11	Water Proof Plastering in CM (1:3) : Supply and providing Cement plastering 12 mm thick for internal surfaces of walls in cement mortar (1:3) with coarse sand with 5 % cico or any other approved water proofing compound including taxes and neatly smooth finished at and all heights above plinth level over brick walls or concrete surfaces, RCC and also other places wherever required including making necessary grooves in between junctions of brick masonry and over brick walls or concrete surface, preparation of surface, steel/tubular scaffolding, curing, etc., complete as directed as per standard specs. for the finished item of work.	sqm	14.70			

LUCKNOW SWACHHATA ABHIYAN PRIVATE LIMITED
Mithaiwala Transfer Station - Bill of Quantities

Item No	Description of Item	Units	Quantity	Unit Rate (in Rs.)	Amount (in Rs)	Remarks
12	Finishing walls with Acrylic emulsion paint having Alkali & fungal resistance, dirt resistance exterior /interior paint of required shade over one coat of primer, including all matrials, labour charges, tools & tackles, necessary scaffolding, etc., complete finished item	sqm	204.00			
13	S/C for Fabrication of structural works. fixing of Drains MS Grating for Drain Supply, fabricate and erection drain grating using ISA 40x40x5mm, 35x35x3mm for grill frame and 35 x 3mm Flat for horizontals including all materials, labour charges, Two coats of enamel paint over 1 coat of steel primer, etc., as per drawing complete finished item and as directed by engineer-in-charge	Kg	420.00			
14	Structural steel for edge protection with MS Angles. Supply, fabricate, and erection of things as per drawings including all materials, labor charges, necessary scaffolding, etc., complete the finished item.	KG	400.00			
15	S/C For Filling with available exc earth : Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20cm in depth, consolidating each deposited layer by watering, and compacting to 95% modified proctor density, dressing, trimming, etc all complete as per drawing, specifications and as directed by Engineer-in-charge (compacted finished area / volume only measured for payment) avialable soils within the site.	Cum	6.90			
16	S/C For Filling with Approved Soil : Filling with approved material obtained from borrow pits (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20cm in depth, consolidating each deposited layer by watering, and compacting to 95% modified proctor density, dressing, trimming, etc all complete as per drawing, specifications and as directed by Engineer-in-charge (compacted finished area / volume only measured for payment)	Cum	675.00			
17	S/C for HDPE pipe -200 Dia Supply and fixing of HDPE pipe TEE 200 mm dia at required location in the site as instructed by Client.	Rmt	10.00			
18	Supply and fixing charges for Vehicle stopper beams in parking with edge angles. (Synthetic Plastic & Rubber Car Wheel Stopper) - 600mm Black with yellow reflective Strip.	Nos	10.00			
19	supply and fixing charges of Kerb stone with all necessary civil works and required fixtures including packing and properly laying and painting snow cem	Rmt	80.00			
20	Epoxy Paint on floor for leachate drainout : Supply and applying epoxy paint over levelling course on cleaned surfce including all materials, labour charges, etc., complete finished item and as directed by engineer-in-charge	Sqm	132.00			
21	RCC 450mm dia Hume pipe	Rmt	100.00			
22	Dowel MS bars straightening, cutting, bending, tying bars with chairs, overlaps, space bars wherever required, in position with two strings of 18 gauge soft drawn annealed MS binding wire etc., completely finished item and as directed by Engineer-in-charge	Kgs	9520.00			

LUCKNOW SWACHHATA ABHIYAN PRIVATE LIMITED

Mithaiwala Transfer Station - Bill of Quantities

Item No	Description of Item	Units	Quantity	Unit Rate (in Rs.)	Amount (in Rs)	Remarks
23	S/c for RCM Wall: micro concrete with 6mm reinforcing mesh including cost and conveyance of all materials vibrating with the mechanical vibrator, leveling, curing etc., but excluding cost of shuttering, etc., complete finished item and as directed by Engineer-in-charge	Sqm	17361.01			
24	S/C for fixing of FRP Road Crossing with all necessary fixtures	Rmt	36.00			
25	Supply & Fixing of CC Manhole cover (600MMX600MM) as Per IS Standrads as directed by engineer/incharge	Nos	5.00			
26	EN 901 Painting	Sqm	38.70			
27	Supply and Fixing of Name Board and MS Fabrication work with flexible board with all necessary items.	sqm	14.43			
28	Supply, Fabricate and erection of Structural shed with AZ-150/SDP etc complete and as directed by the Engineer in charge.	Kgs	8635.00			
29	Supply of 304 Stainless Steel turbo ventilator. Japan NSK self-lubricating bearing and metal support including transportation, Erection etc complete and as directed by the Engineer in charge.	Nos	4.00			
30	Supply of polycarbonate FRP skylight with 1-2mm thickness, Including transportation etc complete and as directed by the Engineer in charge.	Sqm	86.40			
31	Supply charges for Membrane Filtration Stainless Steel Water Purifiers, For Commercial, RO Capacity: 1000-1500 (Liter/hour) including necessary plumbing materials with operations complete with all necessary fixtures and tools at the site as required by the client with Installation charges with necessary fixtures and tools complete and as directed by the Engineer-in-charge.	LS	1.00			
32	Sump and water supply network.	LS	1.00			
Total Value of Civil Works (in Rs.)					**0**	
B	**Mechanical Works**					
1	Supply & Installation of Portable Compactor Machine model MX-160/16CuM with Tip Cart Loading Mechanism (PCTS) 2 +1)	Nos	3.00			
2	S/c Tract Plate Erection for PC with all necessary fixtures.	Kgs	3668.78			
Total Value of Mechanical Works (in Rs.)					**0**	

LUCKNOW SWACHHATA ABHIYAN PRIVATE LIMITED

MITAIWALA TRANSFER STATION - Bill of Quantities - Electrical Works

S.NO	Item No	ITEM DESCRIPTION	UNIT	QTY	SUPPLY	ERECTION	SUPPLY+ ERECTION	TOTAL	REMARKS
					RATE	RATE	AMOUNT		
A		**LT PANEL**							
		Supply,Erection, testing & commissioning of Distribution panel with stand as per local EB rules & standards, including in complete jointing, bus bar jointing of individual compontents interlocking checking/wiring & proper welding works as per IEC: 60439: (Cable entry : Bottom of the panel)							
1.1		**Switch Board Designation : Power Distribution Panel** **Quote as per IEC 60439** **Vendor shall quote this panel with 50kA.**	No.	1					
		Voltage : 415 V							
		Construction : IP-65, Outdoor type, Single Front with Bottom Cable Entry with Stand							
		Mounting : Floor Mounting with Stand							
		Paint Shade : RAL 7032 (Siemens Grey)							
		Cable Entry : Bottom							
		Location : Transfer Station Shed							
		Incoming Feeder :							
		EB & DG Incomer : 100A FP ATS							
		CTs-100 / 5 A, CL 1, 6 Nos.							
		DV(0-500v), DA(0 - 100A) - 2Sets.							
		Indication Lamps -R Y B.							
		EB & DG ON Status - ON Indication Lamps							
		Common Incomer : 100A 4 Pole, 36kA/sec MCCB with							
		CTs-100 / 5 A, CL 1, 4 Nos.							
		DV(0-500v), DA(0 - 100A) - 3Sets.							
		Indication Lamps -R Y B, ON, OFF, TRIP.							
		Surge Protection Device (SPD) TYPE 1 -CLASS I WITH 32A MPCB 65kA CONTROL. Other items as requried for safe and efficient electrical panel as mentioned in Sepcification.							
		Outgoing Feeders :							
		Six (6) 32A, 10kA/sec 4P MCB's.							
		Eight (8) 63A, 10kA/sec 4P MCB's.							
		63A Power Sockets - 2Nos							
		Two (2) 5 KVAR capacitor banks with 32A TP MCB control with capacitor duty contactors suitable for 5KVAR of including on/off push buttonn and indication lamps, use 6Sq.mm Cu wire for power control.							
B		**DISTRIBUTION BOARDS**							
		Supply, Installation, testing and commissioning of following distribution boards. MCB distribution boards shall be totally with single door/double door, Surface/recessed mounting type, outer door shall be hinged type with push in type spring / magnetic lock, inner door shall be fixed up with screws with cutouts for MCB operation, copper busbar of at least 1.5 times the rating of incomer MCB / MCCB, with adequate space for termination of incoming and outgoing cables, removable un drilled top & bottom gland plates, suitable for wall, column mounting type. The incoming MCB / MCCB shall be provided in separate compartment. The MCCB shall have front drive mechanism and door interlock. DB shall be concealed type. DB shall be completely wired up, upto incoming and outgoing terminals by PVC insulated flexible copper wire of adequate rating. All MCB in Lighting DB shall be suitable for Curve B. and MCB in Power DB shall be suitable for Motive power (Curve C). In case Db's 3phase I/C & 1phase O/G neutral of each phase shall be isolated.							
		ALL MCB (B type & C type) in DB's complying IS 60898 / IEC 60947							
		Lighting Distribution Board							
2.1	**2.3.3**	Tag No. : LDB1 (Shed Lighting)	Nos	1					
	2.15.2	12-WAY SPN DB							
	2.10.1	Incomer : 32A,DP ELCB 30 mA -1 Nos							
		Outgoing : 10Nos, 10A SP MCBs 'C' Curve							
		The above complete with interconnections, etc. DB should be with Metal Door & IP 43 12 WAY SPN DB							
C		**CABLE SYSTEM**							

LUCKNOW SWACHHATA ABHIYAN PRIVATE LIMITED

MITAIWALA TRANSFER STATION - Bill of Quantities - Electrical Works

S.NO	Item No	ITEM DESCRIPTION	UNIT	QTY	SUPPLY	ERECTION	SUPPLY+ ERECTION	TOTAL	REMARKS
					RATE	RATE	AMOUNT		
		Supply & Unloading at site, Laying, Installation, site testing and commissioning of horizontal and vertical laying and dressing using cable tie, etc. of following sizes cables on trays / through pendants / GI conduits, clamping on wall / ceiling / supported on structures / pull through pipes / readymade trench. The scope includes clamping of cables by ready made G.I. spacers, saddles or clamps fabricated out of M.S. strip 3 mm thick, supply of all clamping materials and hardware etc., providing cable markers made out of aluminium strip and 75x20 mm in size with cable number and size punched on it. Cable marker shall be provided to cables at every 20 meter interval and at both the ends.Empty cable drums shall be returned to stores. This activity also includes unloading, shifting of cables upto stores & stores to site. In case of laying unlisted cables, rate of cable whose outer dia is closest to the cable sizes quoted shall beapplicable. The same shall hold good for cable termination also.							
		1.1 KV, XLPE insulated copper/aluminium conductor of class -2 as per IS 8130 armoured / unarmoured, solid / stranded inner sheathed ST-2 PVC & outer sheathed FRLS type ST-2 as per IS 5831, power cables of following sizes:							
		LT Cables							
3.1		3.5CX25SQMM.AL.XLPE.AR	Mtr	200					
3.2		4CX10SQMM.AL.XLPE.AR	Mtr	70					
3.3		4CX6SQMM.AL.XLPE.AR	Mtr	65					
3.4		4CX2.5SQMM.CU.XLPE.AR	Mtr	70					
3.5		5CX4SQMM.CU.XLPE.Flexible Cable	Mtr	100					
		CABLE END TERMINATION							
		Supply, Installation, testing and commissioning of Cable end termination with Double compression Brass Nickel Pleated cable gland with all necessary hard wears like cu / Al / Bimetalic lugs & PVC hood, ferrules etc. of following copper/alum. conductor armoured / unarmoured cables including supply of all materials, drilling of gland plates and dressing of cables inside panel. All necessary material and hardware for termination purpose will be provided by the contractor. All Labour complete as per the specification of this tender and direction of engineer in charge.							
		1.1 KV, XLPE insulated copper/aluminium conductor armoured / unarmoured, inner shethed PVC & outer sheathed FRLS power cables of following sizes using Double Compression Gland:							
4.1		3.5CX25SQMM.AL.XLPE.AR	Nos	2					
4.2		4CX10SQMM.AL.XLPE.AR	Nos	4					
4.3		4CX6SQMM.AL.XLPE.AR	Nos	4					
4.4		4CX2.5SQMM.CU.XLPE.AR	Nos	8					
4.5		5CX2.5SQMM.CU.XLPE.Flexible Cable	Nos	4					
D		**LIGHT FIXTURES**							
		Supply, Installation, testing and commissioning of following Lighting Fixtures with Lamps and control gear including mounting of fixtures Recessed / Surface / Suspension along with all its accessories, checking of internal wiring, structural steel & hardware etc. and with all kind of required hardwares to complete installation. (Inclusive of supply, installation of cable & termination of 3C x 2.5 Sqmm Cu flixible cable FRLS / 3R x 2.5 Sqmm Cu wire from light fitting to JB side along with GI conduit - Normal/ FLP - as per type of light fitting). **Supply of all materials required for complete installation shall be provided by the contractor.**							
		Lighting fixture supports (structural steel or readymade supports design with light fixtures) average weighted 6 Kg shall be considered as part of lighting fixtures system activity and shall not be paid extra **1. Vendor should quote all Light fixtures with 3 years unconditional warranty period.** **2. For consideration of equivalent makes, please ensure that the lumens output of the light fitting is equal to that mentioned in this BOQ line item.**							
		OUTDDOR LIGHTING FIXUTE							

LUCKNOW SWACHHATA ABHIYAN PRIVATE LIMITED

MITAIWALA TRANSFER STATION - Bill of Quantities - Electrical Works

S.NO	Item No	ITEM DESCRIPTION	UNIT	QTY	SUPPLY	ERECTION	SUPPLY+ ERECTION	TOTAL	REMARKS
					RATE	RATE	AMOUNT		
5.1		INDUSTRIAL HIGH BAY LIGHT FIXTURE, complete with *Epoxy dia cast aluminium with toughened glass *Dust & Moisture proof Fixture (IP 66) *complete with mounting accessories *150W LED. *LED/Driver - Osram/Nichia/Seoul *System Lumens Output 10000 Lumens and colout Temp. 5700K Havell's or Wipro OR Lighting Technology	Nos	4					
E		**INTERNAL ELECTRIFICATION :**							
		Main Wiring :							
6.1	1.7.3	Providing all materials, accessories, labour etc. and wiring using 2 runs (Ph & N) of 4 Sq.mm and 1 run of 2.5/4Sq.mm (for earth) PVC insulated multi strand copper conductor wires of 600V grade drawn in suitable PVC conduit pipe (It includes wiring in the floor/raceways proper opening of raceways as per seating arrangement/lab equipment positioning & proper closing of the raceways as per standards; where ever piping in the floor/ceiling, the conduit should PVC) as per site engineer instructions with all accessories from nearest distribution board to switch board including proper chasing & plastering works (conforming to IS: 1881, IS:1882). for Raw power	Rmt	137					
6.2	1.7.2	Providing all materials, accessories, labour etc. and wiring using 2 runs (Ph & N) of 2.5 Sq.mm and 1 run of 2.5Sq.mm (for earth) PVC insulated multi strand copper conductor wires of 600V grade drawn in suitable PVC conduit pipe (It includes wiring in the floor/raceways proper opening of raceways as per seating arrangement/lab equipment positioning & proper closing of the raceways as per standards; where ever piping in the floore, the conduit should PVC) as per site engineer instructions with all acessories from nearest distribution board to switch board including proper chasing & plastering works (conforming to IS: 1881, IS:1882).	Rmt	170					
		Point Wiring :							
		Provide all materials, accessories, labour etc. and wiring, testing, commissioning for lights, using 3 runs of 1.5 Sq.mm PVC insulated multi strand copper conductor wires of 600V grade drawing in PVC conduit pipe as per site engineer instructions with all acessories Suitable for false ceiling from switch board to respective points including all civil and mechanical works. (Concealed Wiring). (conforming to IS: 1881, IS:1882).							
6.3	123(b)	Lights points with control switches. (Min. 6-9Mtrs to be considered for each point it includes false ceiling wiring, conduit wiring, from switch board to individual light/fan/ex.fan) includes suitable size of modular metal boxes and frames.	No's	19					
6.4	123(b)	Fan points with electronic regulators. (Min. 6-9Mtrs to be considered for each point it includes false ceiling wiring, conduit wiring, from switch board to individual light/fan/ex.fan) includes suitable size of modular metal boxes and frames.	No's	3					
6.5		Supply, erection, testing and commissioning of 1 x 18w LED tube light fitting with bulbs and all necessary accessories and to be fixed on walls.	No's	12					
6.6		Supply, erection, testing and commissioning of 9W LED Bulb light fitting with bulbs & holders including all necessary accessories.	No's	7					
6.7		Supply, installation, testing and commissioning of 6A, 5 pin socket outlet with 6A switches with gang box concealed type with all necessary accessories complete as required including wiring from distribution board. (operating height should be maintained as per IS) includes suitable size of modular metal boxes and frames	No's	2					
6.8		Supply, installation, testing and commissioning of 16/6A, 5 pin socket outlet with 16A switches with gang box concealed type with all necessary accessories complete as required including wiring from distribution board.(operating height should be maintained as per IS) includes suitable size of modular metal boxes and frames.	No's	2					
6.9	1501.0	Supply, erection, testing and commissioning of wall mounted fans that should be dual tone (non-white color) with electronic regulator. Vendor should submit the photograph of material, with make and model before procurement for approval.	No's	2					

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MITAIWALA TRANSFER STATION - Bill of Quantities - Electrical Works

S.NO	Item No	ITEM DESCRIPTION	UNIT	QTY	SUPPLY	ERECTION	SUPPLY+ ERECTION	TOTAL	REMARKS
					RATE	RATE	AMOUNT		
7.0		Supply, erection, testing and commissioining of exhaust fan with Sweep size 300mm, made of sturdy engineering plastic with necessary holes in the walls & etc in complete. Vendor should submit the photograph of material, with make and model before procurement for approval.	No's	3					
	2.20	Supply erection ,testing and commissioning of 32Amps 5 pin industrial socket with metal cald body with all accessories required for installation , work includes supply and installation at wall flused inside the wall which includes chipping of wall fixing the metal clad box inside the wall and connecting the cable to mcb and fixing the it properly inside the box and adding extra cable for plug top etc.,	No's	3					
F		**CABLE TRAY**							
		Supply, Installation of prefabricated hot dip galvanised (460 gms per sq. met.), ladder / perforated type cable trays of minimum 2 mm thick as per details given below. Prefabricated, bends and couplers with G.I. Nuts and bolts. Gas cutting of cable trays at site is not permitted. If any welding is to be done on cable trays, the welded part shall be touched up with anti-corrosive primer and silver paint. The running rate shall include bends and couplers. Cable tray supports shall be paid extra. Before fabricating, the contractor has to get the cable tray support design approved from the site – engineer/consultant. Minimum Distance between two cable tray supports for Horizontal cable tray and vertical cable tray shall be 1.5m to 1.8 m (Depending on size) and 1M respectively. For Ladder type cable tray distance between two rungs should be 300mm							
		Cable Trays with Earthing: Shall be with Strip earthing as specified in each size of cable tray. Bolted on both sides of the cable tray with provision for jointing the adjoining pieces by means of a additional Piece of strip with holes provided at all ends for the same. Also extra Holes for Tapping. The jointing portion shall be atleast 100 mm in length & shall be raised/away from Main side frame of the Tray to enable Bolting for Jointing & Tappings. The Running meter lengths of cable Trays Shall include all types of standard Joints,"+" "U"; "T"; "L" Horizontal, vertical, Bends etc.Straight, Left hand, Right Hand reducers etc. Horizontal, vertical inside & vertical outside elbows complete with all necessary Hardwares like Nuts Bolts, Plain & Spring washers, etc.							
		Perforated Type Cable Tray (2mm Thickness)							
7.1		50 x 50 mm wide cable tray perforated	Mtrs	100					
7.2	4.6.1	100 x 50 mm wide cable tray perforated	Mtrs	50					
		CABLE TRAY COVER							
		Supply and Installation of cable tray covers fabricated out of 1.6mm thick hot dip GI along with fixing arrangement. The cable tray cover shall be removable type.							
7.3		cover for 50mm	Mtrs	100					
7.4		cover for 100mm	Mtrs	50					
G		**STRUCTURAL STEEL**							
8.1		Supply, Installation & Fabrication of ISI mark structural steel in form of MS angles, channels, flats etc. for supporting various items of equipment such 'as various panels, cable trays, push button stations,'junction boxes,light fittings, DB etc. including drilling, welding grouting, chipping, bolting with supply of required hardware including anchor fastners required for mounting. Fabricated and installed structural steel shall be suitably painted with 2 coats of epoxy paint after applying 2 coats of red oxide primer. Colour shade of supports shall be same as that of main shade of support structureor will be as per site engineers approval.	MT	0.35					
H		**EARTHING**							
a		Lighting fixture earthing is part of wiring & shall be by way of 3rd wire of 2.5 Sq.mm.,.							
b		Earthing of the LSBs, shall be by way of 3rd wire of 2.5 Sq.mm.,							
c		Earthing of the SPN sockets, shall be by way of 3rd wire of 2.5 / 4 Sq.mm.,							
d		Earthing of the TPN sockets, shall be by way of separate earth wire of 4 Sq.mm.,							

LUCKNOW SWACHHATA ABHIYAN PRIVATE LIMITED

MITAIWALA TRANSFER STATION - Bill of Quantities - Electrical Works

S.NO	Item No	ITEM DESCRIPTION	UNIT	QTY	SUPPLY	ERECTION	SUPPLY+ ERECTION	TOTAL	REMARKS
					RATE	RATE	AMOUNT		
e		Double earthing required for all the equipment with voltage higher than 230 V							
		Supply, Installation of hot dipped G.I /Copper bare earth conductor bar / flexible wire /strip of following sizes on trays / wall / Buried underground / supported on structures / pull through pipes/conduits. The installation shall include drilling of holes,connection of adequate lugs, clamping, hardware material. Welded joints shall be used for G.I. strips. Welded joints after welding shall be painted with anticorrosive black bitumen paint, excavation & refilling of 600mm depth soil for burying the strip wherever applicable shall include in the rate. All required materials & accessories including civil construction material shall be in contractor's scope.							
9.1		**Hot dip galvanised strip**							
9.1.1	5.15	25 x 5 mm G.I strip	Mtrs	40					
9.1.2		25 x 3 mm G.I strip	Mtrs	120					
9.2.1		Supply & laying of 8 SWG G.I wire with all necessary connections with nuts & bolts.	Kg's	5					
		EARTHING STATION							
10.1		EARTH PIT (PIPE) (GI ELECTRODE) Supply, Installation, testing of earthing station as per IS 3043 & CEA regulation complete with G.I. plate earthing (600x600x6mm) inclusive of 2runx 25x6mm GI strip to be connected between GI plate to the Electrode. 50 mm dia, 3 M long G.I. pipes, salt, charcoal & 2 nos. . The masonary chamber shall be RCC/ Brick (fine masonary with 1:3:6 ratio) provided with G.I frame & C.I inspection cover with proper painting & marking. The scope includes excavation of pit, filling with alternate layers of charcoat & salt, back filing etc. Earthing shall confirm to IS 3043. Scope Including 1) Testing earth resistively and electrode resistance. 2) Equipotential bar & test link.	Nos	4					
I		**LIGHTNING PROTECTION SYTEM**							
		Supply, Installation, Testing and commissioning of External Lightning Protection System as Per IS / IEC 62305-3 including airtermination and fixing arrangements as per following. Must be used Glue for fixing on Roof and every where and should not do puncher.							
11.1		Supply, erection, testing and comissioning of lightening arrestor including lightening spike to cover 70 mt dia with including constructing & formation of copper earth pits with 'B' class 40 mm G.I. pipe of 8 feet with funnel and copper plate(600mmx600mmx3mm) earthing with alternative layer of salt, sand, bentonate powder and charcoal including civil work of excavation & back filling, construction of chambers with man hole cover as per IE Rules along with laying of 25x3mm copper strip on required no of insulators on sheds including all necessary works. (Minimum 15Mtrs of copper strip to be consider, to be placed on the top of the sheds/buildings/tanks etc as instructed by site engineer)(1 nos for Transformer Yard & 1 nos for SBR Blower Building)	No's	1					
J		**MISCELLANEOUS ITEM**							
		Safety Items							
		Supply & Installation of the following safety items as per Electrical Inspectorate's requirement.							
12.1		1.1 kV Grade 3 mm thick Rubber mat - size of 2X1 mtr. (as per new IS 15652)	Mtr.	2					
12.2		Shock treatment chart as per electricity board requirement (In English, Hindi & Local Language)	Nos	1					
12.3		First aid box with standard items	Nos	1					
12.4		433 V Danger Board as required by the Electrical authorities (In English, Hindi & Local Language)	Nos	2					
12.5		Rubber Hand Gloves - 1 Set (with certificate)	Set	1					

LUCKNOW SWACHHATA ABHIYAN PRIVATE LIMITED

MITAIWALA TRANSFER STATION - Bill of Quantities - Electrical Works

S.NO	Item No	ITEM DESCRIPTION	UNIT	QTY	SUPPLY	ERECTION	SUPPLY+ ERECTION	TOTAL	REMARKS
					RATE	RATE	AMOUNT		
12.6		4 nos. Fire Buckets (round bottom) with suitable MS stand	Set	2					
12.7		Dry Chemical powder type fire extinguisher complete with initial charges, hose and fixing brackets etc 5 KG capacity confirming to IS:Standard	Set	2					
K		**CABLE DRESSING :**							
13		Dressing of cable and fixing the cable in tray and fixing of HT/LT cable from the nearest pole to meter board and from there to the control panel in under ground or above ground with all safety norms with proper guidence of the super visor wilth neccessary supports/cable tray/trench etc.,	LS	1					
L		**DG-SET**							
14		Supply, installation, erection, testing and comissioning of diesel engine with rated of 20 KVA at 0.8 P.F, 1500 RPM, 4 stroke, multicylinder coupled to brush less type 433V 50 cycle/sec self excited alternator completeed with cushy pads, domestic silencer exhaust pipe completee with alternator auxiliaries, radiator, electronic governor panel, 24Volts chargable battery including initial charging of batteries, control panel with ammeter, ammeter selector switch, voltmeter and voltage selector switch, frequency meter, Hrs meter amd KWH meter in sound proof canapoy as required and completee as per specification. note: dg set should be quoted along with 4 wheel trolley	No's	1					
		TOTAL						**0**	

LUCKNOW SWACHHATA ABHIYAN PRIVATE LIMITED

Vineet Khand Transfer Station - Bill of Quantities

Item No	Description of Item	Units	Quantity	Unit Rate (in Rs.)	Amount (in Rs)	Remarks
1	Site Development (Site Clearance) a. Cleaning of unwanted material b.Cleaning of waste water and rubbish	sqm	1480			
2	Topographical survey Carrying out a topographical survey of the area shown by the engineer-in-charge/client. Surveying will be carried out to fix coordinates, dimensions of the roads, existing ground facilities like building, shed, shops , road, electrical poles, HT line, drains, man holes , major trees, telephone poles and water bodies.	LS	1			
3	Geotechnical Survey Equipment charges per day Standard Penetration tests (SPT) were conducted in these boreholes and relevant soil samples were collected. Soil tests were carried out in the laboratory to ascertain the allowable bearing capacity of encountered strata. To conduct tests on different samples in the laboratory as such as grain size Analysis, Atterberg limit, density, Consolidation test , shear properties, natural moisture and determining the engineering characterstics	LS	3			
4	Earth work excavation in all kinds of soil: Earthwork excavation in all kinds of soils except rock requiring blasting in any kind of foundation works including for trenches, pits and tunnels etc., for varying depths below average ground level including shoring, strutting for protecting the sides of foundation, dewatering/ bailing out water from foundations by pumping or by whatever means to dry up the area if required without any extra payment including leveling, ramming the bed of excavation and stacking the excavated soil away from the edge of excavation etc. complete as directed by the Engineer-in-charge for finished item of work.	cum	408.48			
5	Compacting the Original Ground: Loosening, leveling and compacting original ground supporting embankment to facilitate placement of first layer of embankment, scarified to a depth of 150mm, mixed with water at OMC and then compacted by rolling so as to achieve minimum dry density for embankment construction complete and as directed.	sqm	1,503.89			
6	PCC (1:4:8): Plain Cement concrete of mix 1:4:8 using Ordinary Portland cement conforming to IS 1489), River sand and graded stone aggregates of 40 mm maximum size at all depths below plinth level including cost of cement and all materials, leads and lifts, transportation to site of work, consolidation, finishing, curing, etc. complete but excluding form work as per specifications for mud mat in foundations of masonry walls or others etc. complete as per specs. and as directed for finished item of work.	cum	94.42			
7	PCC 1:2:4 for plinth protection Plain Cement concrete of mix 1:2:4 using Ordinary Portland cement conforming to IS 1489), River sand and graded stone aggregates of 40 mm maximum size at all depths below plinth level including cost of cement and all materials, leads and lifts, transportation to site of work, consolidation, finishing, curing, etc. complete but excluding form work as per specifications for mud mat in foundations of masonry walls or others etc. complete as per specs. and as directed for finished item of work.	cum	5.59			

LUCKNOW SWACHHATA ABHIYAN PRIVATE LIMITED

Vineet Khand Transfer Station - Bill of Quantities

Item No	Description of Item	Units	Quantity	Unit Rate (in Rs.)	Amount (in Rs)	Remarks
8	Supply and Laying of RR Masonry in CM (1:6): Providing uncoursed random rubble masonry of rap/granite/quartzite/gneiss stone above/below plinth level or ground level in foundation and plinth in cement mortar 1:6 including dewatering, striking out joints on exposed faces, curing, scaffolding, raking out joints, plastering, pointing with same mortar etc complete as per specifications and directions of Engineer-in-charge.	cum	10.59			
9	RFRCC M25 for Flooring: Supplying and laying reinforced cement concrete of RFRCC M25 Grade (Recron fibers) as defined in IS:456, Flooring / Road including cost and conveyance of all materials vibrating with mechanical vibrator, levelling, curing etc., but excluding cost of shuttering, etc., complete finished item and as directed by Engineer-in-charge	cum	257.80			
10	RCC : M-25 Grade: Supplying and laying reinforced cement concrete of M 25 Grades as defined in IS:456, in all types of foundations and super structures, in walls, slab, columns, beams, lintels, chajjas, floor/roof slabs, staircase, footings, basements, cellars, trenches, drains, encasing of structural steel members / pipelines, etc. including cost and conveyance of all materials vibrating with mechanical vibrator , curing etc., but excluding cost of shuttering and steel reinforcement. All wars shall be as per drawings, specifications and directions of the Engineer/Consultant, super-plasticizer as per manufacturer's instruction/directions.	cum	67.96			
11	Reinforcement Steel: Supply, fabrication and erection of Reinforcement bars for Reinforced cement concrete items at and at all depths and heights below and above plinth level with high yield strength deformed bars confirming to IS 1786 with TM Treatment from approved source (Vizag steel, Tata, SAIL make), including supply to site, providing fan hooks of required shape, dowels for bonding masonry, transporting steel to site, decoiling, removing of scales, straightening, cutting, bending, tying bars with chairs, space bars wherever required, in position with two strings of 18 gauge soft drawn annealed MS binding wire etc., complete as specified and directed.	kg	4,990.53			
12	Shuttering : Providing standard form work of steel plates, centering and shuttering at all depths and heights of work below and above plinth level, vertical, horizontal, inclined including strutting, propping using steel pipes/acro staging, removal, cleaning of the same for inset reinforced cement concrete works and in plain cement concrete work as required including chamfers, splays, keys, wedges, nails, bracings, brackets and applying one coat of shuttering oil on all shuttering surfaces coming in to contact with concrete etc., complete as directed including cost of materials, conveyance, labour and all other incidental charge etc. complete as directed to the finished item of work.	sqm	471.94			

LUCKNOW SWACHHATA ABHIYAN PRIVATE LIMITED
Vineet Khand Transfer Station - Bill of Quantities

Item No	Description of Item	Units	Quantity	Unit Rate (in Rs.)	Amount (in Rs)	Remarks
13	Brick work in CM (1:6) 230mm th.: Brick masonry work using specified class II well burnt clay bricks of specified class, size and quality in cement mortar (1:6) at all depths and heights below and above plinth level including cost and conveyance of all materials, pilasters, steel tubular scaffolding, raking out joints, curing etc., complete as per specifications and as directed. Brick shall be laid flat in the projections for the finished item of work.	cum	37.95			
14	Plastering-15mm th. in CM (1:6): Cement plastering 15 mm thick for internal surfaces of walls in cement mortar (1:6) neatly smooth finished at and all heights above plinth level over brick walls or concrete surfaces, RCC and also other places wherever required including making necessary grooves in between junctions of brick masonry and over brick walls or concrete surface, preparation of surface, steel/tubular scaffolding, curing, etc., complete as directed as per standard specs. for the finished item of work.	sqm	341.00			
15	Finishing walls with Acrylic emulsion paint having Alkali & fungal resistance, dirt resistance exterior /interior paint of required shade over one coat of primer, including all matrials, labour charges, tools & tackles, necessary scaffolding, etc., complete finished item	sqm	181.00			
16	MS Grating for Drain Supply, fabricate and erection drain grating using ISA 40x40x5mm, 35x35x3mm for grill frame and 35 x 3mm Flat for horizontals including all materials, labour charges, Two coats of enamel paint over 1 coat of steel primer, etc., as per drawing complete finished item and as directed by engineer-in-charge	Kg	320.00			
17	Providing GP groughting for PEB base plates	cum	0.35			
18	Water Proof Plastering in CM (1:3) : Supply and providing Cement plastering 12 mm thick for internal surfaces of walls in cement mortar (1:3) with coarse sand with 5 % cico or any other approved water proofing compound including taxes and neatly smooth finished at and all heights above plinth level over brick walls or concrete surfaces, RCC and also other places wherever required including making necessary grooves in between junctions of brick masonry and over brick walls or concrete surface, preparation of surface, steel/tubular scaffolding, curing, etc., complete as directed as per standard specs. for the finished item of work.	sqm	37.18			
19	MS Man Hole Cover 600mm X 600mm: Providing and fixing MS Manhole cover of size 600 x 600 mm with frame with locking arrangement, etc. cover and frame (heavy duty, HD-20 grade designation) conforming to I.S. 12592, total weight of cover and frame to be not less than 50kg., fixed in cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size) including centring, shuttering all complete. (rate includes Excavation, foot rests and 12mm thick cement plaster at the external surface)	no's	1.00			

LUCKNOW SWACHHATA ABHIYAN PRIVATE LIMITED

Vineet Khand Transfer Station - Bill of Quantities

Item No	Description of Item	Units	Quantity	Unit Rate (in Rs.)	Amount (in Rs)	Remarks
20	Filling with available excavated earth : Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20cm in depth, consolidating each deposited layer by watering, and compacting to 95% modified proctor density, dressing, trimming, etc all complete as per drawing, specifications and as directed by Engineer-in-charge (compacted finished area / volume only measured for payment) available soils within the site.	cum	33.96			
21	PVC water stopper: Providing and Laying PVC water stopper 250mm wide including cost of material , labour charges etc., complete as per specifications & as advised by the Engineer In charge.	rmt	18.40			
22	Construction of Granular Sub-Base: Construction of granular sub-base by providing close graded Material, mixing in a mechanical mix plant at OMC, carriage of mixed Material to work site, spreading in uniform layers with motor grader on prepared surface and compacting with vibratory power roller to achieve the desired density, complete as per clause 401 MoRTH	cum	187.52			
23	Construction of dry lean cement concrete: Construction of dry lean cement concrete Sub-base over a prepared sub-grade with coarse and fine aggregate conforming to IS: 383, the size of coarse aggregate not exceeding 25 mm, aggregate cement ratio not to exceed 15:1, cement content not to be less than 150 kg/ cum, concrete strength not to be less than 10 Mpa at 7 days, compacting with 8-10 tonnes vibratory roller, finishing and curing, etc., completely finished item and as directed by Engineer-in-charge	cum	125.01			
24	Kerb Stone: Providing and laying at or near ground level factory-made kerbstone of M-25 grade cement concrete in position to the required line, level and curvature, jointed with cement mortar 1:3 (1 cement: 3 coarse sand), including making joints with or without grooves (thickness of joints except at sharp curve shall not to more than 5mm), including making drainage opening wherever required complete etc. as per direction of Engineer-in-charge (length of finished kerb edging shall be measured for payment).	rmt	500.05			
25	Contraction Joint : Service charges for Preparing 10 mm wide x 50 mm deep contraction joint using groove cutting machine @ 5m spacing, providing and filling joints with approved joint filler/ sealants such as Bitumen epoxy, etc., complete finished item and as directed by Engineer-in-charge.	rmt	671.00			
26	Supply & Fixing of CC Manhole cover (600MMX600MM) as Per IS Standrads as directed by engineer/incharge	Nos	5.00			
27	RCC 450mm dia Hume pipe	m	100.00			
28	EN 901 Painting	Sqm	14.70			
29	Painting for External Walls: Providing and applying two coats cement based paint (Snowcem or approved brand) conforming to IS:5410-1990, over one coat of primer including preparing the surface to receive priming & finishing coats, scaffolding, curing etc. complete in any shade as directed by Engineer-in-charge	sqm	8.64			

LUCKNOW SWACHHATA ABHIYAN PRIVATE LIMITED

Vineet Khand Transfer Station - Bill of Quantities

Item No	Description of Item	Units	Quantity	Unit Rate (in Rs.)	Amount (in Rs)	Remarks
30	MS Entrance & Exit Gate: Providing and fixing M.S. Gate using with Tubular rectangular/ L-Type sections, made of 1.60 mm thick M.S. Sheet, joints mitred, welded and ground finish, with profiles of required size, including fixing of necessary butt hinges and screws, locking arrangement and applying two coats of approved enamel paint over one coat of a priming coat, etc., complete finished item as per drawings and as directed by Engineer-in-charge	kg	800.00			
31	Neat Cement punning	sqm	80.00			
32	Supply and fixing charges for 5 HP Motar including all necessary plumbing works & comissioning	LS	1.00			
33	Supply and Installation of Syntex water tank at an elevated location including all necessary fictures, plumbing items etc.	LS	1.00			
34	Supply, Fabricate and erection of Structural shed with AZ-150/SDP	MT	11.4192			
35	S/c for Turbo Vents Supply of 304 alluminium turbo ventilators. Japan NSK self-lubricating bearing and metal support including transportation.	Nos	4			
36	S/c for Sky lights Supply of polycarbonate FRP skylight with 1-2mm thickness, Including transportation	Sqm	86.40			
37	Epoxy Paint on floor for leachate drainout : Supply and applying epoxy paint over levelling course on cleaned surfce including all materials, labour charges, etc., complete finished item and as directed by engineer-in-charge	sqm	126.88			
38	Dismantling of the existing structures	sqm	150.18			
39	S/C for Supply and fixing of Ventilated GI rolling shutter with neat finishing and fireproofing and installation Providing and fixing Automatic rolling shutter power-driven with pull & push type provision for rolling shutters of approved make out of 18 gauge, 75 mm wide cold rolled steel laths of convex corrugation, with side guides and bottom rail, with interlocking arrangements of steel laths by means of alternate clips, suspension shaft with High tension coil type springs two numbers, mounted on specially designed pipe shaft, with bracket plates, guide channels, ball bearing arrangements, for inside & and outside locking with push & and pull operations complete with all necessary fixtures and tools at site as required by the client.	Sqm	52			
40	Supply and Fixing of Name Board and MS Fabrication work with flexible board with all necessary items.	sqm	12.48			
	Total Value of Civil Works (in Rs.)				**0**	
B	**Mechnical Works**					
1	Supply and Eection of Tract Plate - 4Nos	Kg	3673.22			
2	Supply & Installation of Portable Compactor Machine model MX-160/16CuM with Tip Cart Loading Mechanism (2+1)	Nos	3			
	Total Value of Mechanical Works (in Rs.)				**0**	

LUCKNOW SWACHHATA ABHIYAN PRIVATE LIMITED

Vineet Khand Transfer Station - Bill of Quantities - Electrical Works

S.NO	Item No	ITEM DESCRIPTION	UNIT	QTY	SUPPLY	ERECTION	SUPPLY+ ERECTION	TOTAL	REMARKS
					RATE	RATE			
A		**LT PANEL**							
		Supply,Erection, testing & commissioning of Distribution panel with stand as per local EB rules & standards, including in complete jointing, bus bar jointing of individual compontents interlocking checking/wiring & proper welding works as per IEC: 60439: (Cable entry : Bottom of the panel)							
1.1		**Switch Board Designation : Power Distribution Panel** **Quote as per IEC 60439** **Vendor shall quote this panel with 36kA.**	No.	1					
		Voltage : 415 V							
		Construction : Single Front, IP-65 Double Door, Bottom Cable Entry							
		Dimension : To be assessed by Contractor.							
		Refer Annexure -1 for detailed boq							
		Incoming Feeder :							
		EB & DG Incomer : 160A FP ATS							
		CTs-160 / 5 A, CL 1, 6 Nos.							
		DV(0-500v), DA(0 - 160A) - 2Sets.							
		Indication Lamps -R Y B.							
		EB & DG ON Status - ON Indication Lamps							
		Common Incomer : 160A 4 Pole, 36kA/sec MCCB with							
		CTs-160 / 5 A, CL 1, 4 Nos.							
		DV(0-500v), DA(0 - 160A) - 3Sets.							
		Indication Lamps -R Y B, ON, OFF, TRIP.							
		Surge Protection Device (SPD) TYPE 1 -CLASS I WITH 32A MPCB 65kA CONTROL. Other items as requried for safe and efficient electrical panel as mentioned in Sepcification.							
		Outgoing Feeders :							
		Six (8) 32A, 10kA/sec 4P MCB's.							
		Eight (8) 63A, 10kA/sec 4P MCB's.							
		Power Sockets - 2Nos							
		Two (2) 5 KVAR capacitor banks with 32A TP MCB control with capacitor duty contactors suitable for 5KVAR of including on/off push buttonn and indication lamps, use 6Sq.mm Cu wire for power control.							
B		**DISTRIBUTION BOARDS**							
		Supply, Installation, testing and commissioning of following distribution boards. MCB distribution boards shall be totally with single door/double door, Surface/recessed mounting type, outer door shall be hinged type with push in type spring / magnetic lock, inner door shall be fixed up with screws with cutouts for MCB operation, copper busbar of at least 1.5 times the rating of incomer MCB / MCCB, with adequate space for termination of incoming and outgoing cables, removable un drilled top & bottom gland plates, suitable for wall, column mounting type. The incoming MCB / MCCB shall be provided in separate compartment. The MCCB shall have front drive mechanism and door interlock. DB shall be concealed type. DB shall be completely wired up, upto incoming and outgoing terminals by PVC insulated flexible copper wire of adequate rating. All MCB in Lighting DB shall be suitable for Curve B. and MCB in Power DB shall be suitable for Motive power (Curve C). In case Db's 3phase I/C & 1phase O/G neutral of each phase shall be isolated.							
		ALL MCB (B type & C type) in DB's complying IS 60898 / IEC 60947							
		Lighting Distribution Board							
2.1	**2.3.3**	Tag No. : LDB1 (Shed Lighting)	Nos	1					
	2.15.2	12-WAY SPN DB							
	2.10.1	Incomer : 32A,DP RCBO 30 mA -1 Nos							
		Outgoing : 10Nos, 10A SP MCBs 'C' Curve							
		The above complete with interconnections, etc. DB should be with Metal Door & IP 43 12 WAY SPN DB							
2.2	**2.4.2**	Tag No. : LDB2 (Office building/toilet)	Nos	1					
	2.1.1	6-WAY TPN DB							
	2.10.1	Incomer : 32A,4P ELCB 30 mA -1 Nos							
		Outgoing : 14Nos, 10A SP MCBs 'C' Curve							

LUCKNOW SWACHHATA ABHIYAN PRIVATE LIMITED

Vineet Khand Transfer Station - Bill of Quantities - Electrical Works

S.NO	Item No	ITEM DESCRIPTION	UNIT	QTY	SUPPLY	ERECTION	SUPPLY+ ERECTION	TOTAL	REMARKS
					RATE	RATE			
		The above complete with interconnections, etc. DB should be with Metal Door & IP 43 12 WAY SPN DB							
C		**CABLE SYSTEM**							
		Supply & Unloading at site, Laying, Installation, site testing and commissioning of horizontal and vertical laying and dressing using cable tie, etc. of following sizes cables on trays / through pendants / GI conduits, clamping on wall / ceiling / supported on structures / pull through pipes / readymade trench. The scope includes clamping of cables by ready made G.I. spacers, saddles or clamps fabricated out of M.S. strip 3 mm thick, supply of all clamping materials and hardware etc., providing cable markers made out of aluminium strip and 75x20 mm in size with cable number and size punched on it. Cable marker shall be provided to cables at every 20 meter interval and at both the ends.Empty cable drums shall be returned to stores. This activity also includes unloading, shifting of cables upto stores & stores to site. In case of laying unlisted cables, rate of cable whose outer dia is closest to the cable sizes quoted shall beapplicable. The same shall hold good for cable termination also.							
		1.1 KV, XLPE insulated copper/aluminium conductor of class -2 as per IS 8130 armoured / unarmoured, solid / stranded inner sheathed ST-2 PVC & outer sheathed FRLS type ST-2 as per IS 5831, power cables of following sizes:							
		LT Cables							
3.1	501	3.5CX25SQMM.AL.XLPE.AR	Mtr	146					
3.2	501	4CX10SQMM.AL.XLPE.AR	Mtr	93					
3.3	501	4CX6SQMM.AL.XLPE.AR	Mtr	120					
3.4		4CX2.5SQMM.CU.XLPE.AR	Mtr	177					
3.5		5CX4 SQMM.CU.FLEXIBLE	Mtr	77					
		CABLE END TERMINATION							
		Supply, Installation, testing and commissioning of Cable end termination with Double compression Brass Nickel Pleated cable gland with all necessary hard wears like cu / Al / Bimetalic lugs & PVC hood, ferrules etc. of following copper/alum. conductor armoured / unarmoured cables including supply of all materials, drilling of gland plates and dressing of cables inside panel. All necessary material and hardware for termination purpose will be provided by the contractor. All Labour complete as per the specification of this tender and direction of engineer in charge.							
		1.1 KV, XLPE insulated copper/aluminium conductor armoured / unarmoured, inner shethed PVC & outer sheathed FRLS power cables of following sizes using Double Compression Gland:							
4.1		3.5CX25SQMM.AL.XLPE.AR	Nos	2					
4.2		4CX10SQMM.AL.XLPE.AR	Nos	6					
4.3		4CX6SQMM.AL.XLPE.AR	Nos	6					
4.4		4CX2.5SQMM.CU.XLPE.AR	Nos	14					
4.5		5CX4 SQMM.CU.FLEXIBLE	Nos	3					
D		**LIGHT FIXTURES**							
		Supply, Installation, testing and commissioning of following Lighting Fixtures with Lamps and control gear including mounting of fixtures Recessed / Surface / Suspension along with all its accessories, checking of internal wiring, structural steel & hardware etc. and with all kind of required hardwares to complete installation. (Inclusive of supply, installation of cable & termination of 3C x 2.5 Sqmm Cu flixible cable FRLS / 3R x 2.5 Sqmm Cu wire from light fitting to JB side along with GI conduit - Normal/ FLP - as per type of light fitting). Supply of all materials required for complete installation shall be provided by the contractor.							

LUCKNOW SWACHHATA ABHIYAN PRIVATE LIMITED

Vineet Khand Transfer Station - Bill of Quantities - Electrical Works

S.NO	Item No	ITEM DESCRIPTION	UNIT	QTY	SUPPLY RATE	ERECTION RATE	SUPPLY+ ERECTION	TOTAL	REMARKS
		Lighting fixture supports (structural steel or readymade supports design with light fixtures) average weighted 6 Kg shall be considered as part of lighting fixtures system activity and shall not be paid extra **1. Vendor should quote all Light fixtures with 3 years unconditional warranty period.** **2. For consideration of equivalent makes, please ensure that the lumens output of the light fitting is equal to that mentioned in this BOQ line item.**							
		OUTDDOR LIGHTING FIXUTURE							
5.1		INDUSTRIAL HIGH BAY LIGHT FIXTURE, complete with *Epoxy dia cast aluminium with toughened glass *Dust & Moisture proof Fixture (IP 66) *complete with mounting accessories *150W LED. *LED/Driver - Osram/Nichia/Seoul *System Lumens Output 10000 Lumens and colout Temp. 5700K Havell's or Wipro OR Lighting Technology	Nos	6					
5.2		INDUSTRIAL FLOOD LIGHT FIXTURE, complete with *Epoxy dia cast aluminium with toughened glass *Dust & Moisture proof Fixture (IP 66) *complete with mounting accessories *150W LED. *LED/Driver - Osram/Nichia/Seoul *System Lumens Output 10000 Lumens and colout Temp. 5700K Havell's or Wipro OR Lighting Technology	Nos	8					
E		**INTERNAL ELECTRIFICATION :**							
		Main Wiring :							
6.1	1.7.2	Providing all materials, accessories, labour etc. and wiring using 2 runs (Ph & N) of 2.5 Sq.mm and 1 run of 2.5Sq.mm (for earth) PVC insulated multi strand copper conductor wires of 600V grade drawn in suitable PVC conduit pipe (It includes wiring in the floor/raceways proper opening of raceways as per seating arrangement/lab equipment positioning & proper closing of the raceways as per standards; where ever piping in the floore, the conduit should PVC) as per site engineer instructions with all acessories from nearest distribution board to switch board including proper chasing & plastering works (conforming to IS: 1881, IS:1882).	Rmt	140					
		Point Wiring :							
		Provide all materials, accessories, labour etc. and wiring, testing, commissioning for lights, using 3 runs of 1.5 Sq.mm PVC insulated multi strand copper conductor wires of 600V grade drawing in PVC conduit pipe as per site engineer instructions with all acessories Suitable for false ceiling from switch board to respective points including all civil and mechanical works. (Concealed Wiring). (conforming to IS: 1881, IS:1882).							
6.2	123(b)	Lights points with control switches. (Min. 6-9Mtrs to be considered for each point it includes false ceiling wiring, conduit wiring, from switch board to individual light/fan/ex.fan) includes suitable size of modular metal boxes and frames.	No's	8					
6.3	123(b)	Fan points with electronic regulators. (Min. 6-9Mtrs to be considered for each point it includes false ceiling wiring, conduit wiring, from switch board to individual light/fan/ex.fan) includes suitable size of modular metal boxes and frames.	No's	5					
		Supply, erection, testing and commissioning of 1 x 18w LED tube light fitting with bulbs and all necessary accessories and to be fixed on walls.	No's	6					
6.4		Supply, erection, testing and commissioning of 9W LED Bulb light fitting with bulbs & holders including all necessary accessories.	No's	8					

LUCKNOW SWACHHATA ABHIYAN PRIVATE LIMITED

Vineet Khand Transfer Station - Bill of Quantities - Electrical Works

S.NO	Item No	ITEM DESCRIPTION	UNIT	QTY	SUPPLY	ERECTION	SUPPLY+ ERECTION	TOTAL	REMARKS
					RATE	RATE			
6.5		Supply, installation, testing and commissioning of 6A, 5 pin socket outlet with 6A switches with gang box concealed type with all necessary accessories complete as required including wiring from distribution board. (operating height should be maintained as per IS) includes suitable size of modular metal boxes and frames	No's	7					
6.6		Supply, installation, testing and commissioning of 16/6A, 5 pin socket outlet with 16A switches with gang box concealed type with all necessary accessories complete as required including wiring from distribution board.(operating height should be maintained as per IS) includes suitable size of modular metal boxes and frames.	No's	7					
6.7	1501.0	Supply, erection, testing and commissioning of wall/ceiling mounted fans that should be dual tone (non-white color) with electronic regulator. Vendor should submit the photograph of material, with make and model before procurement for approval.	No's	3					
6.8		Supply, erection, testing and commissioining of exhaust fan with Sweep size 300mm, made of sturdy engineering plastic with necessary holes in the walls & etc in complete. Vendor should submit the photograph of material, with make and model before procurement for approval.	No's	1					
6.9	2.2	Supply erection ,testing and commissioning of 32Amps 5 pin industrial socket with metal cald body with all accessories required for installation , work includes supply and installation at wall flused inside the wall which includes chipping of wall fixing the metal clad box inside the wall and connecting the cable to mcb and fixing the it properly inside the box and adding extra cable for plug top etc.,	No's	3					
F		**CABLE TRAY**							
		Supply, Installation of prefabricated hot dip galvanised (460 gms per sq. met.), ladder / perforated type cable trays of minimum 2 mm thick as per details given below. Prefabricated, bends and couplers with G.I. Nuts and bolts. Gas cutting of cable trays at site is not permitted. If any welding is to be done on cable trays, the welded part shall be touched up with anti-corrosive primer and silver paint. The running rate shall include bends and couplers. Cable tray supports shall be paid extra. Before fabricating, the contractor has to get the cable tray support design approved from the site – engineer/consultant. Minimum Distance between two cable tray supports for Horizontal cable tray and vertical cable tray shall be 1.5m to 1.8 m (Depending on size) and 1M respectively. For Ladder type cable tray distance between two rungs should be 300mm							
		Cable Trays with Earthing: Shall be with Strip earthing as specified in each size of cable tray. Bolted on both sides of the cable tray with provision for jointing the adjoining pieces by means of a additional Piece of strip with holes provided at all ends for the same. Also extra Holes for Tapping. The jointing portion shall be atleast 100 mm in length & shall be raised/away from Main side frame of the Tray to enable Bolting for Jointing & Tappings. The Running meter lengths of cable Trays Shall include all types of standard Joints,"+" "U"; "T"; "L" Horizontal, vertical, Bends etc.Straight, Left hand, Right Hand reducers etc. Horizontal, vertical inside & vertical outside elbows complete with all necessary Hardwares like Nuts Bolts, Plain & Spring washers, etc.							
		Perforated Type Cable Tray (2mm Thickness)							
7.1		50 x 50 mm wide cable tray perforated	Mtrs	120					
7.2	4.6.1	100 x 50 mm wide cable tray perforated	Mtrs	80					
		CABLE TRAY COVER							
		Supply and Installation of cable tray covers fabricated out of 1.6mm thick hot dip GI along with fixing arrangement. The cable tray cover shall be removable type.							
7.3		cover for 50mm	Mtrs	120					
7.4		cover for 100mm	Mtrs	80					
G		**STRUCTURAL STEEL**							

LUCKNOW SWACHHATA ABHIYAN PRIVATE LIMITED

Vineet Khand Transfer Station - Bill of Quantities - Electrical Works

S.NO	Item No	ITEM DESCRIPTION	UNIT	QTY	SUPPLY RATE	ERECTION RATE	SUPPLY+ ERECTION	TOTAL	REMARKS
8.1		Supply, Installation & Fabrication of ISI mark structural steel in form of MS angles, channels, flats etc. for supporting various items of equipment such 'as various panels, cable trays, push button stations,'junction boxes,light fittings, DB etc. including drilling, welding grouting, chipping, bolting with supply of required hardware including anchor fastners required for mounting. Fabricated and installed structural steel shall be suitably painted with 2 coats of epoxy paint after applying 2 coats of red oxide primer. Colour shade of supports shall be same as that of main shade of support structureor will be as per site engineers approval.	MT	0.37					
H		**EARTHING**							
a		Lighting fixture earthing is part of wiring & shall be by way of 3rd wire of 2.5 Sq.mm.,.							
b		Earthing of the LSBs, shall be by way of 3rd wire of 2.5 Sq.mm.,							
c		Earthing of the SPN sockets, shall be by way of 3rd wire of 2.5 / 4 Sq.mm.,							
d		Earthing of the TPN sockets, shall be by way of separate earth wire of 4 Sq.mm.,							
e		Double earthing required for all the equipment with voltage higher than 230 V							
		Supply, Installation of hot dipped G.I /Copper bare earth conductor bar / flexible wire /strip of following sizes on trays / wall / Buried underground / supported on structures / pull through pipes/conduits. The installation shall include drilling of holes,connection of adequate lugs, clamping, hardware material. Welded joints shall be used for G.I. strips. Welded joints after welding shall be painted with anticorrosive black bitumen paint, excavation & refilling of 600mm depth soil for burying the strip wherever applicable shall include in the rate. All required materials & accessories including civil construction material shall be in contractor's scope.							
9.1		**Hot dip galvanised strip**							
9.1.1	5.15	25 x 6 mm G.I strip	Mtrs	53					
9.1.2		25 x 3 mm G.I strip	Mtrs	120					
9.2.1		Supply & laying of 8 SWG G.I wire with all necessary connections with nuts & bolts.	Kg's	8					
		EARTHING STATION							
10.1		EARTH PIT (PIPE) (GI ELECTRODE) Supply, Installation, testing of earthing station as per IS 3043 & CEA regulation complete with G.I. plate earthing (600x600x6mm) inclusive of 2runx 25x6mm GI strip to be connected between GI plate to the Electrode. 50 mm dia, 3 M long G.I. pipes, salt, charcoal & 2 nos. . The masonary chamber shall be RCC/ Brick (fine masonary with 1:3:6 ratio) provided with G.I frame & C.I inspection cover with proper painting & marking. The scope includes excavation of pit, filling with alternate layers of charcoat & salt, back filing etc. Earthing shall confirm to IS 3043. Scope Including 1) Testing earth resistively and electrode resistance. 2) Equipotential bar & test link.	Nos	6					
I		**LIGHTNING PROTECTION SYTEM**							
		Supply, Installation, Testing and commissioning of External Lightning Protection System as Per IS / IEC 62305-3 including airtermination and fixing arrangements as per following. Must be used Glue for fixing on Roof and every where and should not do puncher.							

LUCKNOW SWACHHATA ABHIYAN PRIVATE LIMITED

Vineet Khand Transfer Station - Bill of Quantities - Electrical Works

S.NO	Item No	ITEM DESCRIPTION	UNIT	QTY	SUPPLY RATE	ERECTION RATE	SUPPLY+ ERECTION	TOTAL	REMARKS
11.1		Supply, erection, testing and comissioning of lightening arrestor including lightening spike to cover 70 mt dia with including constructing & formation of copper earth pits with 'B' class 40 mm G.I. pipe of 8 feet with funnel and copper plate(600mmx600mmx3mm) earthing with alternative layer of salt, sand, bentonate powder and charcoal including civil work of excavation & back filling, construction of chambers with man hole cover as per IE Rules along with laying of 25x3mm copper strip on required no of insulators on sheds including all necessary works. (Minimum 15Mtrs of copper strip to be consider, to be placed on the top of the sheds/buildings/tanks etc as instructed by site engineer)(1 nos for Transformer Yard & 1 nos for SBR Blower Building)	No's	1					
J		**HT / LT Cable Route Marker**							
		Supply, Installation of metalic cable Cast Iron Cable route marker with height atleast 300mm above ground level, angle/ GI pipe support and construction of PCC pedastal mount 200mm(L) X 200mm(B) X 300mm(H) as per location given by authorities & as per following							
12.1		440V LT Cable Route Market	Nos	15					
		HUME PIPES							
12.2		Supply & laying of RCC hume pipes NP4 300mm under IS:458-1988 for road crossing of cables along with 1Mtr X 1Mtr chambers with top man hole chamber covers as instructed by site engineer.	Rmt	8					
12.3		Supply, Excavation & Back filling of Cable trench of size 500mm (W) x 600mm (D) & providing sand cushioning of 100mm before and after laying the cables and providing back filling for safety reasons and as per standards including cable route markers for every 3Mtrs of distance. (Street Light Poles Trench)	Rmt	50					
J		**MISCELLANEOUS ITEM**							
		Safety Items							
		Supply & Installation of the following safety items as per Electrical Inspectorate's requirement.							
12.1		1.1 kV Grade 3 mm thick Rubber mat - size of 2X1 mtr. (as per new IS 15652)	Mtr.	1					
12.2		Shock treatment chart as per electricity board requirement (In English, Hindi & Local Language)	Nos	1					
12.3		First aid box with standard items	Nos	1					
12.4		433 V Danger Board as required by the Electrical authorities (In English, Hindi & Local Language)	Nos	2					
12.5		Rubber Hand Gloves - 1 Set (with certificate)	Set	1					
12.6		4 nos. Fire Buckets (round bottom) with suitable MS stand	Set	1					
12.7		Dry Chemical powder type fire extinguisher complete with initial charges, hose and fixing brackets etc 5 KG capacity confirming to IS:Standard	Set	1					
K		**CABLE DRESSING :**							
13		Dressing of cable and fixing the cable in tray and fixing of HT/LT cable from the nearest pole to meter board and from there to the control panel in under ground or above ground with all safety norms with proper guidence of the super visor wilth neccessary supports/cable tray/trench etc.,	LS	1					
L		**DG-SET**							
14		Supply, installation, erection, testing and comissioning of diesel engine with rated of 20 KVA at 0.8 P.F, 1500 RPM, 4 stroke, multicylinder coupled to brush less type 433V 50 cycle/sec self excited alternator completeed with cushy pads, domestic silencer exhaust pipe completee with alternator auxiliaries, radiator, electronic governor panel, 24Volts chargable battery including initial charging of batteries, control panel with ammeter, ammeter selector switch, voltmeter and voltage selector switch, frequency meter, Hrs meter amd KWH meter in sound proof canapoy as required and completee as per specification. Note : dg set should be quoted along with 4 wheel trolly	No's	1					
						TOTAL		**0**	

LUCKNOW SWACHHATA ABHIYAN PRIVATE LIMITED
New Site BBD Transfer Station - Bill of Quantities

Item No	Description of Item	Units	Quantity	Unit Rate (in Rs.)	Amount (in Rs)	Remarks
A	Civil Works					
1	Site Development (Site Clearance) a. Cleaning of unwanted material b.Cleaning of waste water and rubbish	Sqm	980.00			
2	Topographical survey Carrying out a topographical survey of the area shown by the engineer-in-charge/client. Surveying will be carried out to fix coordinates, dimensions of the roads, existing ground facilities like building, shed, shops , road, electrical poles, HT line, drains, man holes , major trees, telephone poles and water bodies.	LS	1.00			
3	Geotechnical Survey Equipment charges per day Standard Penetration tests (SPT) were conducted in these boreholes and relevant soil samples were collected. Soil tests were carried out in the laboratory to ascertain the allowable bearing capacity of encountered strata. To conduct tests on different samples in the laboratory as such as grain size Analysis, Atterberg limit, density, Consolidation test , shear properties, natural moisture and determining the engineering characterstics	LS	3.00			
4	Earth work excavation in all kinds of soil: Earthwork excavation in all kinds of soils except rock requiring blasting in any kind of foundation works including for trenches, pits and tunnels etc., for varying depths below average ground level including shoring, strutting for protecting the sides of foundation, dewatering/ bailing out water from foundations by pumping or by whatever means to dry up the area if required without any extra payment including leveling, ramming the bed of excavation and stacking the excavated soil away from the edge of excavation etc. complete as directed by the Engineer-in-charge for finished item of work.	cum	392.24			
5	S/C for compaction and consolidation S/C For Compaction and consolidation Loosening, leveling and compacting: Original ground supporting embankment to facilitate placement of first layer of embankment, scarified to a depth of 150mm, mixed with water at OMC and then compacted by rolling so as to achieve minimum dry density for embankment construction complete and as directed.	Sqm	883.76			
6	Filling with available excavated earth : Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20cm in depth, consolidating each deposited layer by watering, and compacting to 95% modified proctor density, dressing, trimming, etc all complete as per drawing, specifications and as directed by Engineer-in-charge (compacted finished area / volume only measured for payment) available soils within the site.	cum	190.59			
7	PCC (1:4:8): Plain Cement concrete of mix 1:4:8 using Ordinary Portland cement conforming to IS 1489), River sand and graded stone aggregates of 40 mm maximum size at all depths below plinth level including cost of cement and all materials, leads and lifts, transportation to site of work, consolidation, finishing, curing, etc. complete but excluding form work as per specifications for mud mat in foundations of masonry walls or others etc. complete as per specs. and as directed for finished item of work.	cum	94.61			

LUCKNOW SWACHHATA ABHIYAN PRIVATE LIMITED
New Site BBD Transfer Station - Bill of Quantities

Item No	Description of Item	Units	Quantity	Unit Rate (in Rs.)	Amount (in Rs)	Remarks
8	PCC (1:2:4): Plain Cement concrete of mix 1:2:4 using Ordinary Portland cement conforming to IS 1489), River sand and graded stone aggregates of 40 mm maximum size at all depths below plinth level including cost of cement and all materials, leads and lifts, transportation to site of work, consolidation, finishing, curing, etc. complete but excluding form work as per specifications for mud mat in foundations of masonry walls or others etc. complete as per specs. and as directed for finished item of work.	cum	15.66			
9	Construction of dry lean cement concrete: Construction of dry lean cement concrete Sub-base over a prepared sub-grade with coarse and fine aggregate conforming to IS: 383, the size of coarse aggregate not exceeding 25 mm, aggregate cement ratio not to exceed 15:1, cement content not to be less than 150 kg/ cum, concrete strength not to be less than 10 Mpa at 7 days, compacting with 8-10 tonnes vibratory roller, finishing and curing, etc., completely finished item and as directed by Engineer-in-charge	cum	63.00			
10	S/C-Constn of granular subbase for roads S/C For Constn of Granular Subase for Roads-"Granular Sub-Base -50MM Thk: Construction of Granular Sub-Base by providing close graded material, mixing in a mechanical mix plant at OMC, carryingof mixed material to work site, spreading in uniform layers with motor grader on prepared surface and compacting with vibratory power roller to achieve the desired density, complete as per Clause 401."	cum	94.50			
11	S/C Supplying & Laying RCC 1:1:2-M25 S/C For RCC : M-25 Grade: Supplying and laying reinforced cement concrete of M 25 Grades as defined in IS:456, in all types of foundations and super structures, in walls, slab, columns, beams, lintels, chajjas, floor/roof slabs, staircase, footings, basements, cellars, trenches, drains, encasing of structural steel members / pipelines, etc. including cost and conveyance of all materials vibrating with mechanical vibrator , curing etc., but excluding cost of shuttering and steel reinforcement. All wars shall be as per drawings, specifications and directions of the Engineer/Consultant, super-plasticizer as per manufacturer's instruction/directions.	cum	97.35			
12	S/C for C&S (Centering & Shuttering) S/C For Centering&Shuttering : Providing standard form work of steel plates, centering and shuttering at all depths and heights of work below and above plinth level, vertical, horizontal, inclined including strutting, propping using steel pipes/acro staging, removal, cleaning of the same for inset reinforced cement concrete works and in plain cement concrete work as required including chamfers, splays, keys, wedges, nails, bracings, brackets and applying one coat of shuttering oil on all shuttering surfaces coming in to contact with concrete etc., complete as directed including cost of materials, conveyance, labour and all other incidental charge etc. complete as directed to the finished item of work.	Sqm	569.15			
13	S/C For RFRC M25 For Flooring Supplying and laying reinforced cementconcrete of RFRCC M25 Grade as defined in IS:456,Flooring / Road including cost and conveyance of all materials vibrating with mechanical vibrator, levelling, curing etc., but excluding cost of shuttering, etc., complete finished item and as directed by Engineer-in-charge	cum	158.64			

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New Site BBD Transfer Station - Bill of Quantities

Item No	Description of Item	Units	Quantity	Unit Rate (in Rs.)	Amount (in Rs)	Remarks
14	S/C for Reinforcement cutting & bending S/C For Reinforcement Steel: Supply, fabrication and erection of Reinforcement bars for Reinforced cement concrete items at and at all depths and heights below and above plinth level with high yield strength deformed bars confirming to IS 1786 with TM Treatment from approved source (Vizag steel, Tata, SAIL make), including supply to site, providing fan hooks of required shape, dowels for bonding masonry, transporting steel to site, decoiling, removing of scales, straightening, cutting, bending, tying bars with chairs, space bars wherever required, in position with two strings of 18 gauge soft drawn annealed MS binding wire etc., complete as specified and directed.	Kg	6,695.23			
15	Supply and Providing of GP grouting for PEB base plates as instructed by client.	Cum	0.35			
16	S/C for RR Stone Masonry S/C For RR Stone Masonry : Randum Rubble stone masonry using approved quality and size of stone obtained from local quarry in foundations and plinth at all depths below plinth level in cement mortar (1:6) including cost and conveyance of stone for masonry, bond stones, scaffolding and all other materials, raking out joints or simultaneous flush pointing with the same mortar to the faces covered under earth, curing charges etc. complete as directed and as directed to the finished item of work	cum	10.59			
17	S/C for Brick masonry 230MM Thk S/C For Brick work in CM (1:6) 230MM Thk.: Brick masonry work using specified class II well burnt clay bricks of specified class, size and quality in cement mortar (1:6) at all depths and heights below and above plinth level including cost and conveyance of all materials, pilasters, steel tubular scaffolding, raking out joints, curing etc., complete as per specifications and as directed. Brick shall be laid flat in the projections for the finished item of work.	cum	19.55			
18	S/C for 15mm Plastering in 1:6 S/C For Plastering-15mm th. in CM (1:6): Cement plastering 15 mm thick for internal surfaces of walls in cement mortar (1:6) neatly smooth finished at and all heights above plinth level over brick walls or concrete surfaces, RCC and also other places wherever required including making necessary grooves in between junctions of brick masonry and over brick walls or concrete surface, preparation of surface, steel/tubular scaffolding, curing, etc., complete as directed as per standard specs. for the finished item of work.	Sqm	181.00			
19	Water Proof Plastering in CM (1:3) : Supply and providing Cement plastering 12 mm thick for internal surfaces of walls in cement mortar (1:3) with coarse sand with 5 % cico or any other approved water proofing compound including taxes and neatly smooth finished at and all heights above plinth level over brick walls or concrete surfaces, RCC and also other places wherever required including making necessary grooves in between junctions of brick masonry and over brick walls or concrete surface, preparation of surface, steel/tubular scaffolding, curing, etc., complete as directed as per standard specs. for the finished item of work.	Sqm	37.18			

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New Site BBD Transfer Station - Bill of Quantities

Item No	Description of Item	Units	Quantity	Unit Rate (in Rs.)	Amount (in Rs)	Remarks
20	S/C for Acrylic Emulsion Painting S/C For Acrylic Emulsion Painting : Finishing walls with Acrylic emulsion paint having Alkali & fungal resistance, dirt resistance exterior /interior paint of required shade over one coat of primer, including all matrials, labour charges, tools & tackles, necessary scaffolding, etc., complete finished item	Sqm	181.00			
21	Snow Cem Painting-Snowcem: Providing and applying two coats cement based paint (Snowcem or approved brand) conforming to IS:5410-1990, over one coat of primer including preparing the surface to receive priming & finishing coats, scaffolding, curing etc. complete in any shade as directed by Engineer-in-charge	Sqm	17.28			
22	Supply of material charges for EN 901 Nitocote EN901 is a two-part material and can be applied by brush, roller, or airless spray. Applying one coat of primer of Nito prime and Nitocote EN901 is grey in color. It is formulated to be applied in one or two coats to achieve a minimum total dry film thickness of 500 microns. Nitocote EN901 exhibits excellent chemical resistance in pH ranging from 1-14 at 25°C	Sqm	141.58			
23	S/C for fabrication of Structural Works S/C For Fabrication of Structural Steel : Structural Steel works for Drain MS Grating	Kg	3,060.00			
24	S/c for Turbo Vents Supply of 304 alluminium turbo ventilators. Japan NSK self-lubricating bearing and metal support including transportation.	Nos	4.00			
25	S/c for Sky lights Supply of polycarbonate FRP skylight with 1-2mm thickness, Including transportation	Sqm	86.40			
26	Constraction Joint S/C For Contraction Joint : Making 10 mm wide x 50 mm deep Contraction joint using groove cutting machine @ 5m spacing, providing and filling joints with approved joint filler and sealants, etc., complete finished item and as per direction of Engineer-in-charge	Rmt	336.00			
27	Supply and Erection of MS Grating for Drain : Supply, fabricate and erection drain grating using ISA 40x40x5mm, 35x35x3mm for grill frame and 35 x 3mm Flat for horizontals including all materials, labour charges, Two coats of enamel paint over 1 coat of steel primer, etc., as per drawing complete finished item and as directed by engineer-in-charge	kg	1,920.00			
28	supply and fixing charges of Kerb stone with all necessary civil works and required fixtures including packing and properly laying and painting snow cem	Rmt	252.00			
29	Supply and fixing of Ventilated GI rolling shutter with neat finishing and fireproofing and installation Providing and fixing Automatic rolling shutter power-driven with pull & push type provision for rolling shutters of approved make out of 18 gauge, 75 mm wide cold rolled steel laths of convex corrugation, with side guides and bottom rail, with interlocking arrangements of steel laths by means of alternate clips, suspension shaft with High tension coil type springs two numbers, mounted on specially designed pipe shaft, with bracket plates, guide channels, ball bearing arrangements, for inside & and outside locking with push & and pull operations complete with all necessary fixtures and tools at site as required by the client.	Sqm	78.00			

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Item No	Description of Item	Units	Quantity	Unit Rate (in Rs.)	Amount (in Rs)	Remarks
30	MS Man Hole Cover 600mm X 600mm: Providing and fixing MS Manhole cover of size 600 x 600 mm with frame with locking arrangement, etc. cover and frame (heavy duty, HD-20 grade designation) conforming to I.S. 12592, total weight of cover and frame to be not less than 50kg., fixed in cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size) including centring, shuttering all complete. (rate includes Excavation, foot rests and 12mm thick cement plaster at the external surface)	Nos	1.00			
31	Supply & Fixing of CC Manhole cover (600MMX600MM) as Per IS Standrads as directed by engineer/incharge	Nos	5.00			
32	PVC water stopper: Providing and Laying PVC water stopper 250mm wide including cost of material , labour charges etc., complete as per specifications & as advised by the Engineer In charge.	Rmt	18.40			
33	RCC 450mm dia Hume pipe Providing and laying Non Pressure NP-3 class (Medium duty) R.C.C. pipes including collars/spigot jointed with stiff mixture of cement mortar in the proportion of 1:2 (1 cement : 2 fine sand) including testing of joints etc. complete	Rmt	100.00			
34	Supply, Fabricate and erection of Structural shed with AZ-150/SDP	MT	11.42			
35	Secrity post Supply and fixing of Security post with necessary furniture will be installed at the required location and as instructed by client.	LS	1.00			
36	Supply and Fixing of Name Board and MS Fabrication work with flexible board with all necessary items.	Sqm	12.48			
Total Value of Civil Works (in Rs.)					**0**	
B	**Mechanical Works**					
1	Supply and Eection of Tract Plate -4Nos	Kg	3668.78			
2	Supply & Installation of Portable Compactor Machine model MX -160/16 cum with tip cart loading mechanism (2 +1)	Nos	3			
Total Value of Mechanical Works (in Rs.)					**0**	

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New BBD Transfer Station - Bill of Quantities - Electrical Works

S.NO	Item No	ITEM DESCRIPTION	UNIT	QTY	SUPPLY	ERECTION	SUPPLY+ ERECTION	TOTAL	REMARKS
					RATE	RATE			
A		**LT PANEL**							
		Supply,Erection, testing & commissioning of Distribution panel with stand as per local EB rules & standards, including in complete jointing, bus bar jointing of individual compontents interlocking checking/wiring & proper welding works as per IEC: 60439: (Cable entry : Bottom of the panel)							
1.1		**Switch Board Designation : Power Distribution Panel** **Quote as per IEC 60439** **Vendor shall quote this panel with 50kA.**	No.	1					
		Voltage : 415 V							
		Construction : IP-65, Outdoor type, Single Front with Bottom Cable Entry with Stand							
		Mounting : Floor Mounting with Stand							
		Paint Shade : RAL 7032 (Siemens Grey)							
		Cable Entry : Bottom							
		Location : Transfer Station Shed							
		Incoming Feeder :							
		EB & DG Incomer : 100A FP ATS							
		CTs-100 / 5 A, CL 1, 6 Nos.							
		DV(0-500v), DA(0 - 100A) - 2Sets.							
		Indication Lamps -R Y B.							
		EB & DG ON Status - ON Indication Lamps							
		Common Incomer : 100A 4 Pole, 36kA/sec MCCB with							
		CTs-100 / 5 A, CL 1, 4 Nos.							
		DV(0-500v), DA(0 - 100A) - 3Sets.							
		Indication Lamps -R Y B, ON, OFF, TRIP.							
		Surge Protection Device (SPD) TYPE 1 -CLASS I WITH 32A MPCB 65kA CONTROL. Other items as required for safe and efficient electrical panel as							
		Outgoing Feeders :							
		Six (6) 32A, 10kA/sec 4P MCB's.							
		Eight (8) 63A, 10kA/sec 4P MCB's.							
		63A Power Sockets - 2Nos							
		Two (2) 5 KVAR capacitor banks with 32A TP MCB control with capacitor duty contactors suitable for 5KVAR of including on/off push buttonn and indication lamps, use 6Sq.mm Cu wire for power control.							
B		**DISTRIBUTION BOARDS**							
		Supply, Installation, testing and commissioning of following distribution boards. MCB distribution boards shall be totally with single door/double door, Surface/recessed mounting type, outer door shall be hinged type with push in type spring / magnetic lock, inner door shall be fixed up with screws with cutouts for MCB operation, copper busbar of at least 1.5 times the rating of incomer MCB / MCCB, with adequate space for termination of incoming and outgoing cables, removable un drilled top & bottom gland plates, suitable for wall, column mounting type. The incoming MCB / MCCB shall be provided in separate compartment. The MCCB shall have front drive mechanism and door interlock. DB shall be concealed type. DB shall be completely wired up, upto incoming and outgoing terminals by PVC insulated flexible copper wire of adequate rating. All MCB in Lighting DB shall be suitable for Curve B. and MCB in Power DB shall be suitable for Motive power (Curve C). In case Db's 3phase I/C & 1phase O/G neutral of each phase shall be isolated.							
		ALL MCB (B type & C type) in DB's complying IS 60898 / IEC 60947							
		Lighting Distribution Board							
2.1	**2.3.3**	Tag No. : LDB1 (Shed Lighting)	Nos	1					
	2.15.2	12-WAY SPN DB							
	2.10.1	Incomer : 32A,DP ELCB 30 mA -1 Nos							
		Outgoing : 10Nos, 10A SP MCBs 'C' Curve							
		The above complete with interconnections, etc. DB should be with Metal Door & IP 43 12 WAY SPN DB							

LUCKNOW SWACHHATA ABHIYAN PRIVATE LIMITED

New BBD Transfer Station - Bill of Quantities - Electrical Works

S.NO	Item No	ITEM DESCRIPTION	UNIT	QTY	SUPPLY	ERECTION	SUPPLY+ ERECTION	TOTAL	REMARKS
					RATE	RATE			
C		**CABLE SYSTEM**							
		Supply & Unloading at site, Laying, Installation, site testing and commissioning of horizontal and vertical laying and dressing using cable tie, etc. of following sizes cables on trays / through pendants / GI conduits, clamping on wall / ceiling / supported on structures / pull through pipes / readymade trench. The scope includes clamping of cables by ready made G.I. spacers, saddles or clamps fabricated out of M.S. strip 3 mm thick, supply of all clamping materials and hardware etc., providing cable markers made out of aluminium strip and 75x20 mm in size with cable number and size punched on it. Cable marker shall be provided to cables at every 20 meter interval and at both the ends.Empty cable drums shall be returned to stores. This activity also includes unloading, shifting of cables upto stores & stores to site. In case of laying unlisted cables, rate of cable whose outer dia is closest to the cable sizes quoted shall beapplicable. The same shall hold good for cable termination also.							
		1.1 KV, XLPE insulated copper/aluminium conductor of class -2 as per IS 8130 armoured / unarmoured, solid / stranded inner sheathed ST-2 PVC & outer sheathed FRLS type ST-2 as per IS 5831, power cables of following sizes:							
		LT Cables							
3.1		3.5CX25SQMM.AL.XLPE.AR	Mtr	100					
3.2		4CX10SQMM.AL.XLPE.AR	Mtr	70					
3.3		4CX6SQMM.AL.XLPE.AR	Mtr	65					
3.4		4CX2.5SQMM.CU.XLPE.AR	Mtr	70					
3.5		5CX2.5SQMM.CU.XLPE.Flexible Cable	Mtr	100					
		CABLE END TERMINATION							
		Supply, Installation, testing and commissioning of Cable end termination with Double compression Brass Nickel Pleated cable gland with all necessary hard wears like cu / Al / Bimetalic lugs & PVC hood, ferrules etc. of following copper/alum. conductor armoured / unarmoured cables including supply of all materials, drilling of gland plates and dressing of cables inside panel. All necessary material and hardware for termination purpose will be provided by the contractor. All Labour complete as per the specification of this tender and direction of engineer in charge							
		1.1 KV, XLPE insulated copper/aluminium conductor armoured / unarmoured, inner shethed PVC & outer sheathed FRLS power cables of following sizes using Double Compression Gland:							
4.1		3.5CX25SQMM.AL.XLPE.AR	Nos	2					
4.2		4CX10SQMM.AL.XLPE.AR	Nos	4					
4.3		4CX6SQMM.AL.XLPE.AR	Nos	4					
4.4		4CX2.5SQMM.CU.XLPE.AR	Nos	8					
4.5		5CX4SQMM.CU.XLPE.Flexible Cable	Nos	4					
D		**LIGHT FIXTURES**							
		Supply, Installation, testing and commissioning of following Lighting Fixtures with Lamps and control gear including mounting of fixtures Recessed / Surface / Suspension along with all its accessories, checking of internal wiring, structural steel & hardware etc. and with all kind of required hardwares to complete installation. (Inclusive of supply, installation of cable & termination of 3C x 2.5 Sqmm Cu flixible cable FRLS / 3R x 2.5 Sqmm Cu wire from light fitting to JB side along with GI conduit - Normal/ FLP - as per type of light fitting). **Supply of all materials required for complete installation shall be provided by the contractor.**							

LUCKNOW SWACHHATA ABHIYAN PRIVATE LIMITED

New BBD Transfer Station - Bill of Quantities - Electrical Works

S.NO	Item No	ITEM DESCRIPTION	UNIT	QTY	SUPPLY	ERECTION	SUPPLY+ ERECTION	TOTAL	REMARKS
					RATE	RATE			
		Lighting fixture supports (structural steel or readymade supports design with light fixtures) average weighted 6 Kg shall be considered as part of lighting fixtures system activity and shall not be paid extra **1. Vendor should quote all Light fixtures with 3 years unconditional warranty period.** **2. For consideration of equivalent makes, please ensure that the lumens output of the light fitting is equal to that mentioned in this BOQ line item.**							
		OUTDDOR LIGHTING FIXUTE							
5.1		INDUSTRIAL HIGH BAY LIGHT FIXTURE, complete with *Epoxy dia cast aluminium with toughened glass *Dust & Moisture proof Fixture (IP 66) *complete with mounting accessories *150W LED. *LED/Driver - Osram/Nichia/Seoul *System Lumens Output 10000 Lumens and colout Temp. 5700K Havell's or Wipro OR Lighting Technology	Nos	4					
E		**INTERNAL ELECTRIFICATION :**							
		Main Wiring :							
6.1	1.7.3	Providing all materials, accessories, labour etc. and wiring using 2 runs (Ph & N) of 4 Sq.mm and 1 run of 2.5Sq.mm (for earth) PVC insulated multi strand copper conductor wires of 600V grade drawn in suitable PVC conduit pipe (It includes wiring in the floor/raceways proper opening of raceways as per seating arrangement/lab equipment positioning & proper closing of the raceways as per standards; where ever piping in the floor/ceiling, the conduit should PVC) as per site engineer instructions with all accessories from nearest distribution board to switch board including proper chasing & plastering works (conforming to IS: 1881, IS:1882). for Raw power	Rmt	50					
6.2	1.7.2	Providing all materials, accessories, labour etc. and wiring using 2 runs (Ph & N) of 2.5 Sq.mm and 1 run of 2.5Sq.mm (for earth) PVC insulated multi strand copper conductor wires of 600V grade drawn in suitable PVC conduit pipe (It includes wiring in the floor/raceways proper opening of raceways as per seating arrangement/lab equipment positioning & proper closing of the raceways as per standards; where ever piping in the floore, the conduit should PVC) as per site engineer instructions with all acessories from nearest distribution board to switch board including proper chasing & plastering works (conforming to IS: 1881, IS:1882).	Rmt	150					
		Point Wiring :							
		Provide all materials, accessories, labour etc. and wiring, testing, commissioning for lights, using 3 runs of 1.5 Sq.mm PVC insulated multi strand copper conductor wires of 600V grade drawing in PVC conduit pipe as per site engineer instructions with all acessories Suitable for false ceiling from switch board to respective points including all civil and mechanical works. (Concealed Wiring). (conforming to IS: 1881, IS:1882).							
6.3	123(b)	Lights points with control switches. (Min. 6-9Mtrs to be considered for each point it includes false ceiling wiring, conduit wiring, from switch board to individual light/fan/ex.fan) includes suitable size of modular metal boxes and frames.	No's	20					
6.4	123(b)	Fan points with electronic regulators. (Min. 6-9Mtrs to be considered for each point it includes false ceiling wiring, conduit wiring, from switch board to individual light/fan/ex.fan) includes suitable size of modular metal boxes and frames.	No's	5					
6.5		Supply, erection, testing and commissioning of 1 x 18w LED tube light fitting with bulbs and all necessary accessories and to be fixed on walls.	No's	15					
6.6		Supply, erection, testing and commissioning of 9W LED Bulb light fitting with bulbs & holders including all necessary accessories.	No's	5					

LUCKNOW SWACHHATA ABHIYAN PRIVATE LIMITED

New BBD Transfer Station - Bill of Quantities - Electrical Works

S.NO	Item No	ITEM DESCRIPTION	UNIT	QTY	SUPPLY	ERECTION	SUPPLY+ ERECTION	TOTAL	REMARKS
					RATE	RATE			
6.7		Supply, installation, testing and commissioning of 6A, 5 pin socket outlet with 6A switches with gang box concealed type with all necessary accessories complete as required including wiring from distribution board. (operating height should be maintained as per IS) includes suitable size of modular metal boxes and frames	No's	5					
6.8		Supply, installation, testing and commissioning of 16/6A, 5 pin socket outlet with 16A switches with gang box concealed type with all necessary accessories complete as required including wiring from distribution board.(operating height should be maintained as per IS) includes suitable size of modular metal boxes and frames.	No's	5					
6.9	1501.0	Supply, erection, testing and commissioning of wall/ceiling mounted fans that should be dual tone (non-white color) with electronic regulator. Vendor should submit the photograph of material, with make and model before procurement for approval.	No's	1					
7.0		Supply, erection, testing and commissioining of exhaust fan with Sweep size 300mm, made of sturdy engineering plastic with necessary holes in the walls & etc in complete. Vendor should submit the photograph of material, with make and model before procurement for approval.	No's	4					
	2.20	Supply erection ,testing and commissioning of 32Amps 5 pin industrial socket with metal cald body with all accessories required for installation , work includes supply and installation at wall flused inside the wall which includes chipping of wall fixing the metal clad box inside the wall and connecting the cable to mcb and fixing the it properly inside the box and adding extra cable for plug top etc.,	No's	2					
F		**CABLE TRAY**							
		Supply, Installation of prefabricated hot dip galvanised (460 gms per sq. met.), ladder / perforated type cable trays of minimum 2 mm thick as per details given below. Prefabricated, bends and couplers with G.I. Nuts and bolts. Gas cutting of cable trays at site is not permitted. If any welding is to be done on cable trays, the welded part shall be touched up with anti-corrosive primer and silver paint. The running rate shall include bends and couplers. Cable tray supports shall be paid extra. Before fabricating, the contractor has to get the cable tray support design approved from the site – engineer/consultant. Minimum Distance between two cable tray supports for Horizontal cable tray and vertical cable tray shall be 1.5m to 1.8 m (Depending on size) and 1M respectively. For Ladder type cable tray distance between two rungs should be 300mm							
		Cable Trays with Earthing: Shall be with Strip earthing as specified in each size of cable tray. Bolted on both sides of the cable tray with provision for jointing the adjoining pieces by means of a additional Piece of strip with holes provided at all ends for the same. Also extra Holes for Tapping. The jointing portion shall be atleast 100 mm in length & shall be raised/away from Main side frame of the Tray to enable Bolting for Jointing & Tappings. The Running meter lengths of cable Trays Shall include all types of standard Joints,"+" "U"; "T"; "L" Horizontal, vertical, Bends etc.Straight, Left hand, Right Hand reducers etc. Horizontal, vertical inside & vertical outside elbows complete with all necessary Hardwares like Nuts Bolts, Plain & Spring washers, etc.							
		Perforated Type Cable Tray (2mm Thickness)							
7.1		50 x 50 mm wide cable tray perforated	Mtrs	100					
7.2	4.6.1	100 x 50 mm wide cable tray perforated	Mtrs	50					
		CABLE TRAY COVER							
		Supply and Installation of cable tray covers fabricated out of 1.6mm thick hot dip GI along with fixing arrangement. The cable tray cover shall be removable type.							
7.3		cover for 50mm	Mtrs	100					
7.4		cover for 100mm	Mtrs	50					
G		**STRUCTURAL STEEL**							

LUCKNOW SWACHHATA ABHIYAN PRIVATE LIMITED

New BBD Transfer Station - Bill of Quantities - Electrical Works

S.NO	Item No	ITEM DESCRIPTION	UNIT	QTY	SUPPLY	ERECTION	SUPPLY+ ERECTION	TOTAL	REMARKS
					RATE	RATE			
8.1		Supply, Installation & Fabrication of ISI mark structural steel in form of MS angles, channels, flats etc. for supporting various items of equipment such 'as various panels, cable trays, push button stations,'junction boxes,light fittings, DB etc. including drilling, welding grouting, chipping, bolting with supply of required hardware including anchor fastners required for mounting. Fabricated and installed structural steel shall be suitably painted with 2 coats of epoxy paint after applying 2 coats of red oxide primer. Colour shade of supports shall be same as that of main shade of support structureor will be as per site engineers approval.	MT	0.50					
H		**EARTHING**							
a		Lighting fixture earthing is part of wiring & shall be by way of 3rd wire of 2.5 Sq.mm.,.							
b		Earthing of the LSBs, shall be by way of 3rd wire of 2.5 Sq.mm.,							
c		Earthing of the SPN sockets, shall be by way of 3rd wire of 2.5 / 4 Sq.mm.,							
d		Earthing of the TPN sockets, shall be by way of separate earth wire of 4 Sq.mm.,							
e		Double earthing required for all the equipment with voltage higher than 230 V							
		Supply, Installation of hot dipped G.I /Copper bare earth conductor bar / flexible wire /strip of following sizes on trays / wall / Buried underground / supported on structures / pull through pipes/conduits. The installation shall include drilling of holes,connection of adequate lugs, clamping, hardware material. Welded joints shall be used for G.I. strips. Welded joints after welding shall be painted with anticorrosive black bitumen paint, excavation & refilling of 600mm depth soil for burying the strip wherever applicable shall include in the rate. All required materials & accessories including civil construction material shall be in contractor's scope.							
9.1		**Hot dip galvanised strip**							
9.1.1	5.15	25 x 5 mm G.I strip	Mtrs	50					
9.1.2		25 x 3 mm G.I strip	Mtrs	119					
9.2.1		Supply & laying of 8 SWG G.I wire with all necessary connections with nuts & bolts.	Kg's	4					
		EARTHING STATION							
10.1		EARTH PIT (PIPE) (GI ELECTRODE) Supply, Installation, testing of earthing station as per IS 3043 & CEA regulation complete with G.I. plate earthing (600x600x6mm) inclusive of 2runx 25x6mm GI strip to be connected between GI plate to the Electrode. 50 mm dia, 3 M long G.I. pipes, salt, charcoal & 2 nos. . The masonary chamber shall be RCC/ Brick (fine masonary with 1:3:6 ratio) provided with G.I frame & C.I inspection cover with proper painting & marking. The scope includes excavation of pit, filling with alternate layers of charcoat & salt, back filing etc. Earthing shall confirm to IS 3043. Scope Including 1) Testing earth resistively and electrode resistance. 2) Equipotential bar & test link.	Nos	4					
I		**LIGHTNING PROTECTION SYTEM**							
		Supply, Installation, Testing and commissioning of External Lightning Protection System as Per IS / IEC 62305-3 including airtermination and fixing arrangements as per following. Must be used Glue for fixing on Roof and every where and should not do puncher.							

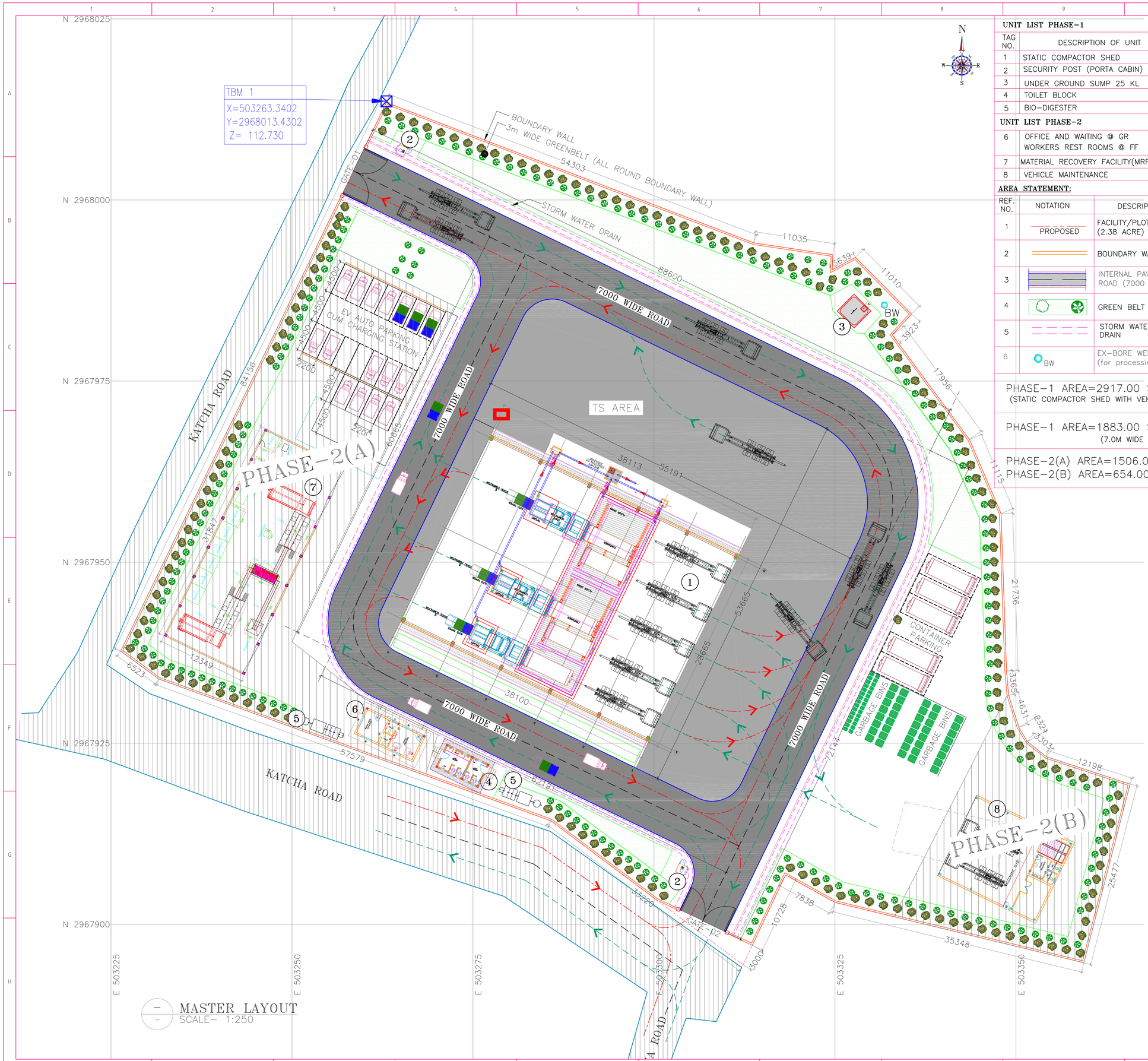
LUCKNOW SWACHHATA ABHIYAN PRIVATE LIMITED

New BBD Transfer Station - Bill of Quantities - Electrical Works

S.NO	Item No	ITEM DESCRIPTION	UNIT	QTY	SUPPLY	ERECTION	SUPPLY+ ERECTION	TOTAL	REMARKS
					RATE	RATE			
11.1		Supply, erection, testing and comissioning of lightening arrestor including lightening spike to cover 70 mt dia with including constructing & formation of copper earth pits with 'B' class 40 mm G.I. pipe of 8 feet with funnel and copper plate(600mmx600mmx3mm) earthing with alternative layer of salt, sand, bentonate powder and charcoal including civil work of excavation & back filling, construction of chambers with man hole cover as per IE Rules along with laying of 25x3mm copper strip on required no of insulators on sheds including all necessary works. (Minimum 15Mtrs of copper strip to be consider, to be placed on the top of the sheds/buildings/tanks etc as instructed by site engineer)(1 nos for Transformer Yard & 1 nos for SBR Blower Building)	No's	1					
J		**MISCELLANEOUS ITEM**							
		Safety Items							
		Supply & Installation of the following safety items as per Electrical Inspectorate's requirement.							
12.1		1.1 kV Grade 3 mm thick Rubber mat - size of 2X1 mtr. (as per new IS 15652)	Mtr.	1					
12.2		Shock treatment chart as per electricity board requirement (In English, Hindi & Local Language)	Nos	1					
12.3		First aid box with standard items	Nos	1					
12.4		433 V Danger Board as required by the Electrical authorities (In English, Hindi & Local Language)	Nos	1					
12.5		Rubber Hand Gloves - 1 Set (with certificate)	Set	2					
12.6		4 nos. Fire Buckets (round bottom) with suitable MS stand	Set	1					
12.7		Dry Chemical powder type fire extinguisher complete with initial charges, hose and fixing brackets etc 5 KG capacity confirming to IS:Standard	Set	1					
K		**CABLE DRESSING :**							
13		Dressing of cable and fixing the cable in tray and fixing of HT/LT cable from the nearest pole to meter board and from there to the control panel in under ground or above ground with all safety norms with proper guidence of the super visor wilth neccessary supports/cable tray/trench etc.,	LS	1					
L		**DG-SET**							
14		Supply, installation, erection, testing and comissioning of diesel engine with rated of 20 KVA at 0.8 P.F, 1500 RPM, 4 stroke, multicylinder coupled to brush less type 433V 50 cycle/sec self excited alternator completeed with cushy pads, domestic silencer exhaust pipe completee with alternator auxiliaries, radiator, electronic governor panel, 24Volts chargable battery including initial charging of batteries, control panel with ammeter, ammeter selector switch, voltmeter and voltage selector switch, frequency meter, Hrs meter amd KWH meter in sound proof canapoy as required and completee as per specification. Note: dg set need to quote along with 4 wheel trolley	No's	1					
						TOTAL		**0**	

ANNEXURE II

TENDER DRAWINGS



MASTER LAYOUT
SCALE– 1:250

UNIT LIST PHASE–1

TAG NO.	DESCRIPTION OF UNIT	UNIT SIZE (O/O)	QTY.	MoC
1	STATIC COMPACTOR SHED	38.10 x 28.66 m	1	PEB
2	SECURITY POST (PORTA CABIN)	1.28 x 1.28 m	2	--
3	UNDER GROUND SUMP 25 KL	3.00 x 3.00 m	1	RCC
4	TOILET BLOCK	6.49 x 3.56 m	1	RCC
5	BIO–DIGESTER	12.00 Sqm	1	--
UNIT LIST PHASE–2				
6	OFFICE AND WAITING @ GR WORKERS REST ROOMS @ FF	9.00 x 4.00 m	1	RCC
7	MATERIAL RECOVERY FACILITY(MRF)	31.80 x 12.34 m	1	PEB
8	VEHICLE MAINTENANCE	12.36 x 15.00 m	1	PEB

AREA STATEMENT:

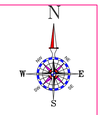
REF. NO.	NOTATION	DESCRIPTION	AREA in 'sqm'	PERIMETER in 'rmt'
1	PROPOSED	FACILITY/PLOT AREA (2.38 ACRE)	9642.39	426.45
2		BOUNDARY WALL	--	412.45
3		INTERNAL PAVED ROAD (7000 WIDE)	--	275.00
4		GREEN BELT	--	--
5		STORM WATER DRAIN	--	306
6	BW	EX–BORE WELL (for processing)	1 nos	--

PHASE–1 AREA=2917.00 SQM (0.72 ACRE)
(STATIC COMPACTOR SHED WITH VEHICLE MOVEMENT)

PHASE–1 AREA=1883.00 SQM (275.00 METERS)
(7.0M WIDE ROAD)

PHASE–2(A) AREA=1506.00 SQM (0.37 ACRE)
PHASE–2(B) AREA=654.00 SQM (0.16 ACRE)

KEY PLAN
NOT TO SCALE



FOR APPROVAL

GENERAL NOTES:

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4. ANY DISCREPANCIES NOTED SHALL BE BROUGHT TO THE NOTICE OF THE ARCHITECT PRIOR TO EXECUTION.
5. ROAD WIDTH SHOWN ARE INCLUSIVE OF BERMS & STORM WATER DRAINS SHALL BE EXECUTED AS PER SITE GRADING.
6. THESE DRAWINGS ARE ONLY FOR APPROVAL, DEVELOPED FOR PRELIMINARY STAGE DESIGN.

REV:	DESCRIPTION	BY:	DATE
01	CONCEPTUAL DWG FOR APPROVAL		18.03.2024

CLIENT :
LUCKNOW MUNICIPAL CORPORATION (LMC)
LUCKNOW, UTTAR PRADESH

CONCESSIONAIRE:
Re Sustainability Limited
11B, Level 11, Galaxy By Aurobindo, Hitech City Rd, Knowledge City Rd, Gachibowli, Hyderabad, Telangana 500081.

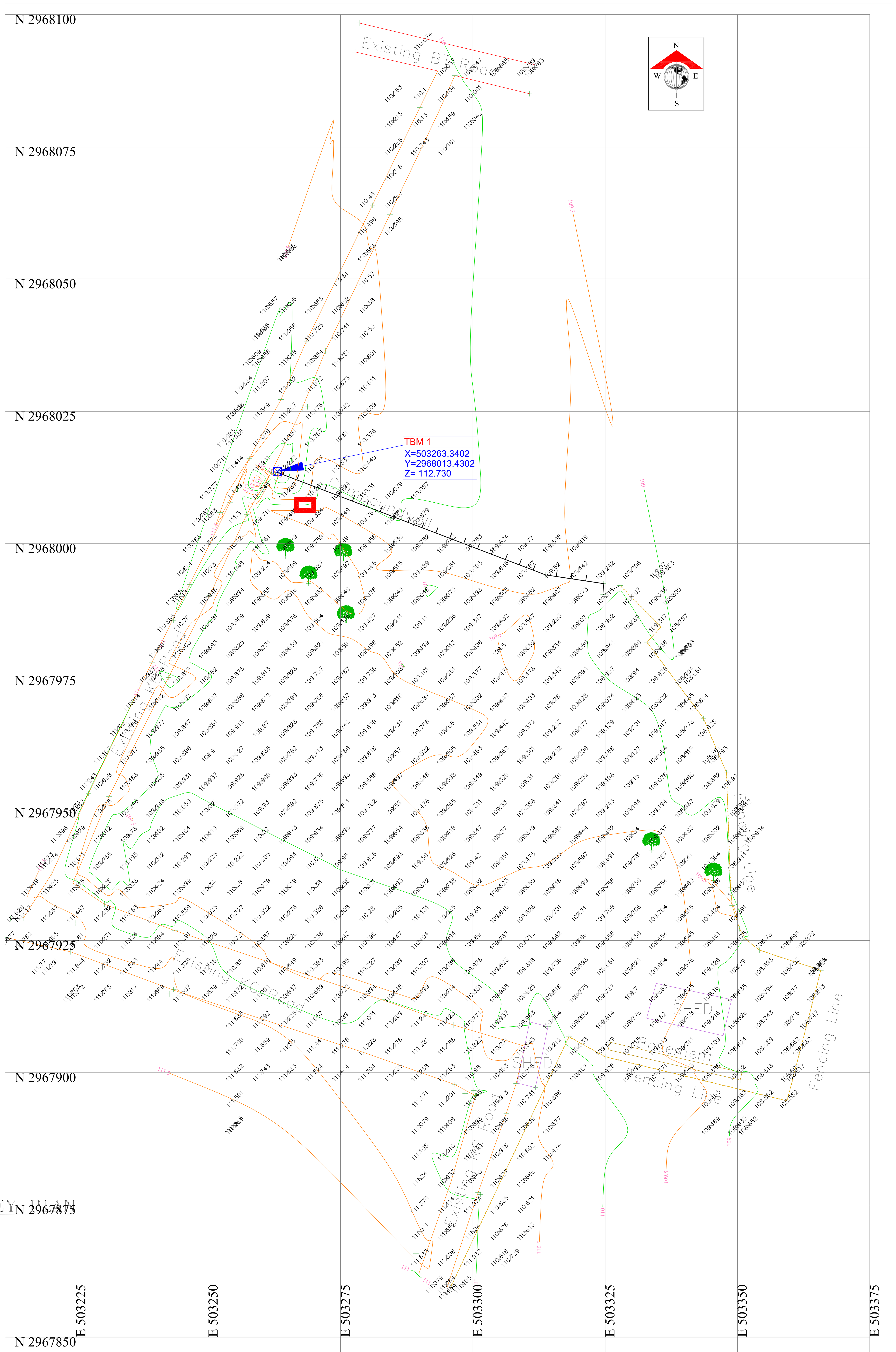
PROJECT TITLE:
INTEGRATED MUNICIPAL SOLID WASTE MANAGEMENT PROJECT (IMSWMP)
LUCKNOW, UTTAR PRADESH

DRAWING TITLE:
MASTER LAYOUT OF PROPOSED TRANSFER STATION
BHAIRSA (TS–44); ZONE 4

DRAWING NO : RESL/LMC/DRG/TS–44/100 | REV: 00

SHEET	A1;1 OF 1	APPROVED BY	V.B
SCALE	AS SHOWN	CHECKED BY	S.S
DATE	14.02.2024	DRAWN BY	M.A.C

KEY PLAN
NOT TO SCALE



TOPOGRAPHICAL SURVEY PLAN
SCALE— 1:200

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CONCESSIONAIRE:
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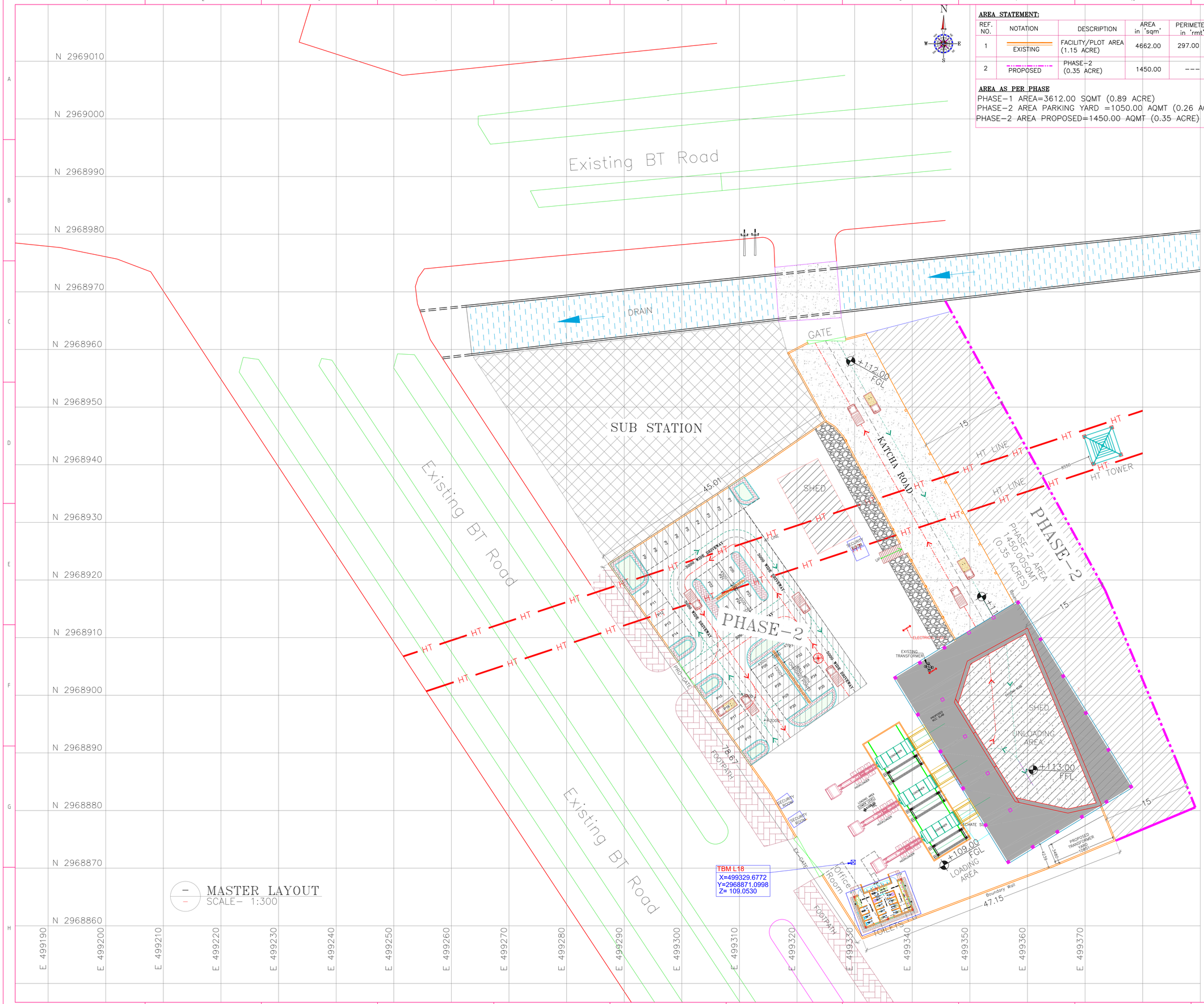
11B, Level 11, Galaxy By Aurobindo,
Hitech City Rd, Knowledge City Rd,
Gachibowli, Hyderabad,
Telangana 500081.

PROJECT TITLE:
INTEGRATED MUNICIPAL SOLID WASTE
MANAGEMENT PROJECT (IMSWMP)
LUCKNOW, UTTAR PRADESH

DRAWING TITLE:
TOPOGRAPHICAL SURVEY PLAN OF
PROPOSED TRANSFER STATION
BHAIRSA (TS-44)

DRAWING NO : RESL/LMC/DRG/TS-44/100.1		REV:	00
SHEET	A1;1 OF 1	APPROVED BY	V.B
SCALE	AS SHOWN	CHECKED BY	S.S
DATE	14.02.2024	DRAWN BY	M.A.C



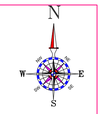
AREA STATEMENT:

REF. NO.	NOTATION	DESCRIPTION	AREA in 'sqm'	PERIMETER in 'rmt'
1	EXISTING	FACILITY/PLOT AREA (1.15 ACRE)	4662.00	297.00
2	PROPOSED	PHASE-2 (0.35 ACRE)	1450.00	---

AREA AS PER PHASE

PHASE-1 AREA=3612.00 SQMT (0.89 ACRE)
PHASE-2 AREA PARKING YARD =1050.00 AQMT (0.26 ACRE)
PHASE-2 AREA PROPOSED=1450.00 AQMT (0.35 ACRE)

KEY PLAN
NOT TO SCALE



FOR APPROVAL

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REV:	DESCRIPTION	BY:	DATE
01	CONCEPTUAL DWG FOR APPROVAL		18.03.2024

CLIENT :
LUCKNOW MUNICIPAL CORPORATION (LMC)
LUCKNOW, UTTAR PRADESH

CONCESSIONAIRE:
Re Sustainability Limited
11B, Level 11, Galaxy By Aurobindo, Hitech City Rd, Knowledge City Rd, Gachibowli, Hyderabad, Telangana 500081.

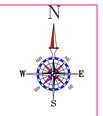
PROJECT TITLE:
INTEGRATED MUNICIPAL SOLID WASTE MANAGEMENT PROJECT (IMSWMP)
LUCKNOW, UTTAR PRADESH

DRAWING TITLE:
MASTER LAYOUT OF
PROPOSED TRANSFER STATION
DAYAL CHORAHA PARKING YARD (TS-17), ZONE 4

DRAWING NO :	REV:
RESL/LMC/DRG/TS-17/100	00

SHEET	A1;1 OF 1	APPROVED BY	V.B
SCALE	AS SHOWN	CHECKED BY	S.S
DATE	27.01.2024	DRAWN BY	M.A.C

KEY PLAN
NOT TO SCALE



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The responsibility of control, check and verification of accuracy, correctness, completeness, integration and full compliance of contract provisions in respect of design analysis and drawings rests with the design consultants and the contractor.

REV:	DESCRIPTION	BY:	DATE
01	CONCEPTUAL DWG FOR APPROVAL		18.03.2024

CLIENT :
LUCKNOW MUNICIPAL CORPORATION (LMC)
LUCKNOW, UTTAR PRADESH

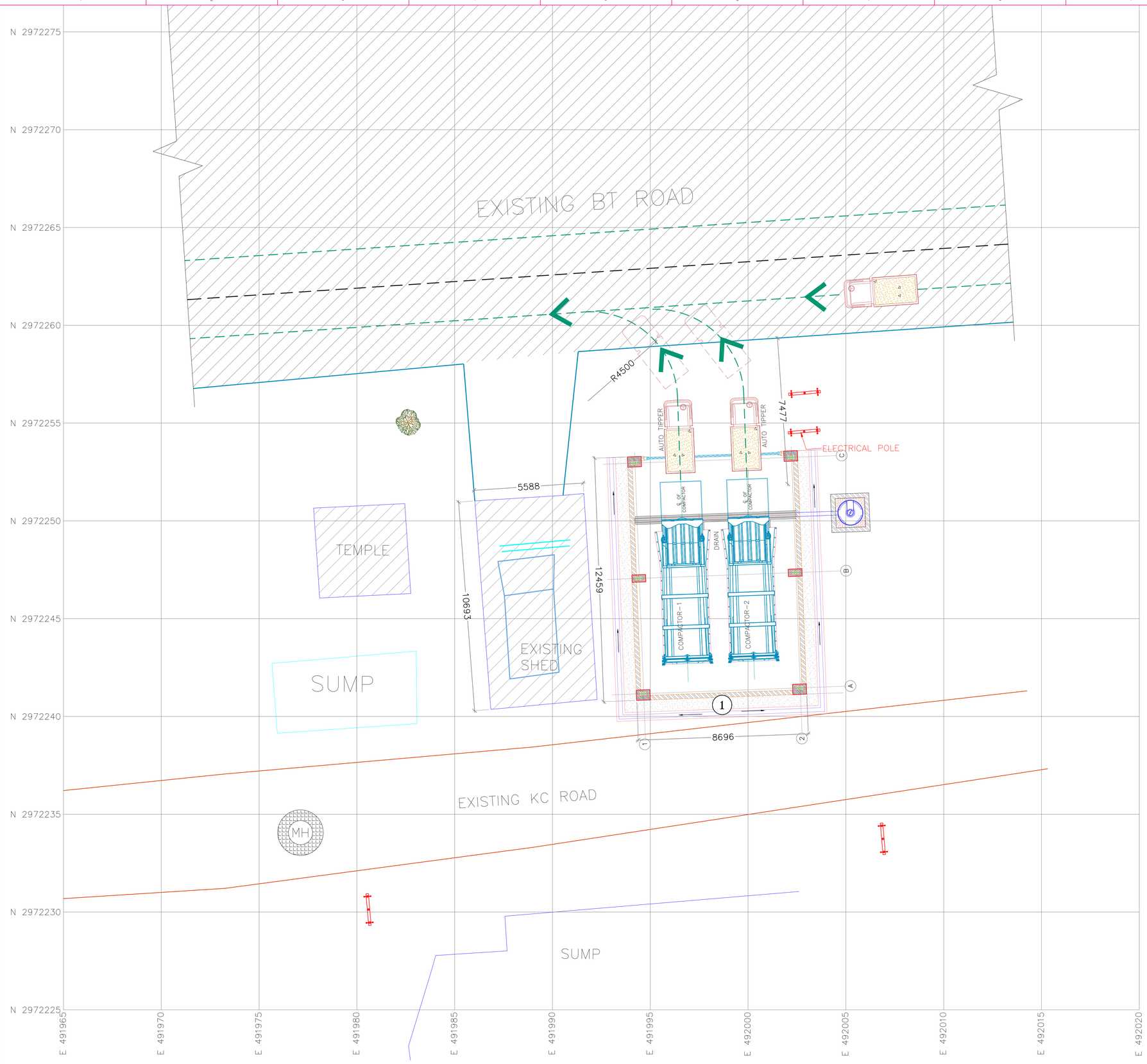
CONCESSIONAIRE:
Re Sustainability Limited
11B, Level 11, Galaxy By Aurobindo, Hitech City Rd, Knowledge City Rd, Gachibowli, Hyderabad, Telangana 500081.

PROJECT TITLE:
INTEGRATED MUNICIPAL SOLID WASTE MANAGEMENT PROJECT (IMSWMP)
LUCKNOW, UTTAR PRADESH

DRAWING TITLE:
TOPOGRAPHICAL SURVEY PLAN OF PROPOSED TRANSFER STATION
DAYAL CHORAHA PARKING YARD (TS-17), ZONE 4

DRAWING NO : RESL/LMC/DRG/TS-17/100.1	REV:	00

SHEET	A1;1 OF 1	APPROVED BY	V.B
SCALE	AS SHOWN	CHECKED BY	S.S
DATE	27.01.2024	DRAWN BY	M.A.C

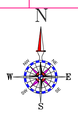


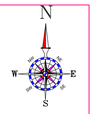
MASTER LAYOUT
SCALE– 1:100

UNIT LIST:

TAG NO.	DESCRIPTION OF UNIT	UNIT SIZE (O/O)	QTY.	MoC
1	2 BIN SELF COMPACTOR	8.70 x 12.46 m	1	PEB

KEY PLAN
NOT TO SCALE





FOR APPROVAL

GENERAL NOTES:

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3. DO NOT SCALE DRAWING. ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED.
4. ANY DISCREPANCIES NOTED SHALL BE BROUGHT TO THE NOTICE OF THE ARCHITECT PRIOR TO EXECUTION.
5. ROAD WIDTH SHOWN ARE INCLUSIVE OF BERMS & STORM WATER DRAINS SHALL BE EXECUTED AS PER SITE GRADING.
6. THESE DRAWINGS ARE ONLY FOR APPROVAL, DEVELOPED FOR PRELIMINARY STAGE DESIGN.

REV:	DESCRIPTION	BY:	DATE
01	CONCEPTUAL DWG FOR APPROVAL		18.03.2024

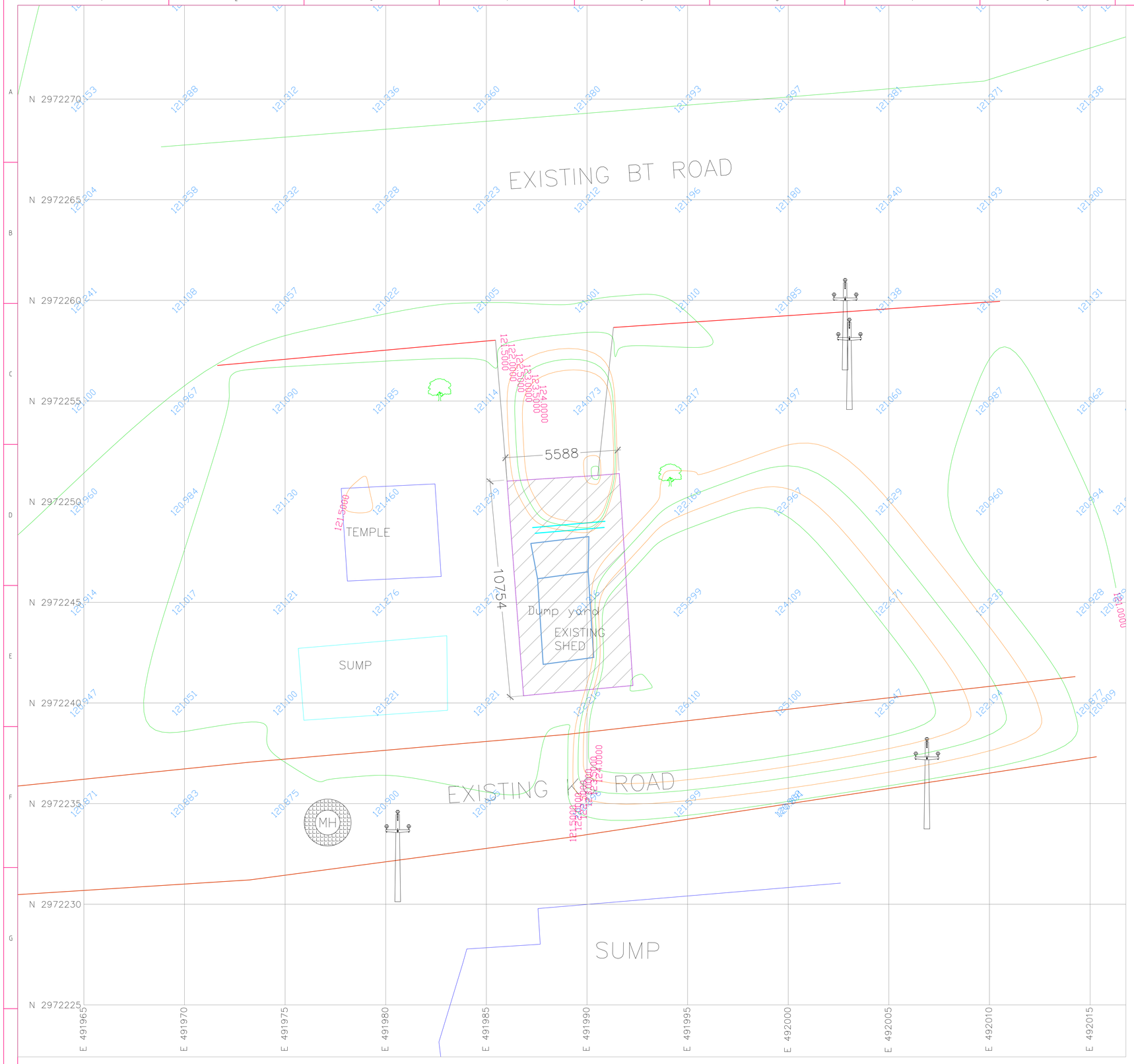
CLIENT :
LUCKNOW MUNICIPAL CORPORATION (LMC)
LUCKNOW, UTTAR PRADESH

CONCESSIONAIRE:
Re Sustainability Limited
11B, Level 11, Galaxy By Aurobindo,
Hitech City Rd, Knowledge City Rd,
Gachibowli, Hyderabad,
Telangana 500081.

PROJECT TITLE:
INTEGRATED MUNICIPAL SOLID WASTE MANAGEMENT PROJECT (IMSWMP)
LUCKNOW, UTTAR PRADESH

DRAWING TITLE:
MASTER LAYOUT OF PROPOSED TRANSFER STATION
KHAILASH KUNJ (CHIHNAT – 2 WARD)
(TS–04), ZONE 4

DRAWING NO : RESL/LMC/DRG/TS–04/ML/100			REV: 00
SHEET	A1;1 OF 1	APPROVED BY	V.B
SCALE	AS SHOWN	CHECKED BY	S.S
DATE	27.01.2024	DRAWN BY	M.A.C



TOPOGRAPHICAL SURVEY PLAN
SCALE– 1:100

LEGEND

- CC Road
- Existing Shed
- Boundary Line
- Eletrical Pole
- Divider
- Gate
- B T Road
- Boundary Wall
- Drain
- Rock & Boulder
- Transformer

KEY PLAN
NOT TO SCALE

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FOR APPROVAL

GENERAL NOTES:

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The responsibility of control, check and verification of accuracy, correctness, completeness, integration and full compliance of contract provisions in respect of design analysis and drawings rests with the design consultants and the contractor.

REV:	DESCRIPTION	BY:	DATE
01	CONCEPTUAL DWG FOR APPROVAL		18.03.2024

CLIENT :
LUCKNOW MUNICIPAL CORPORATION (LMC)
LUCKNOW, UTTAR PRADESH

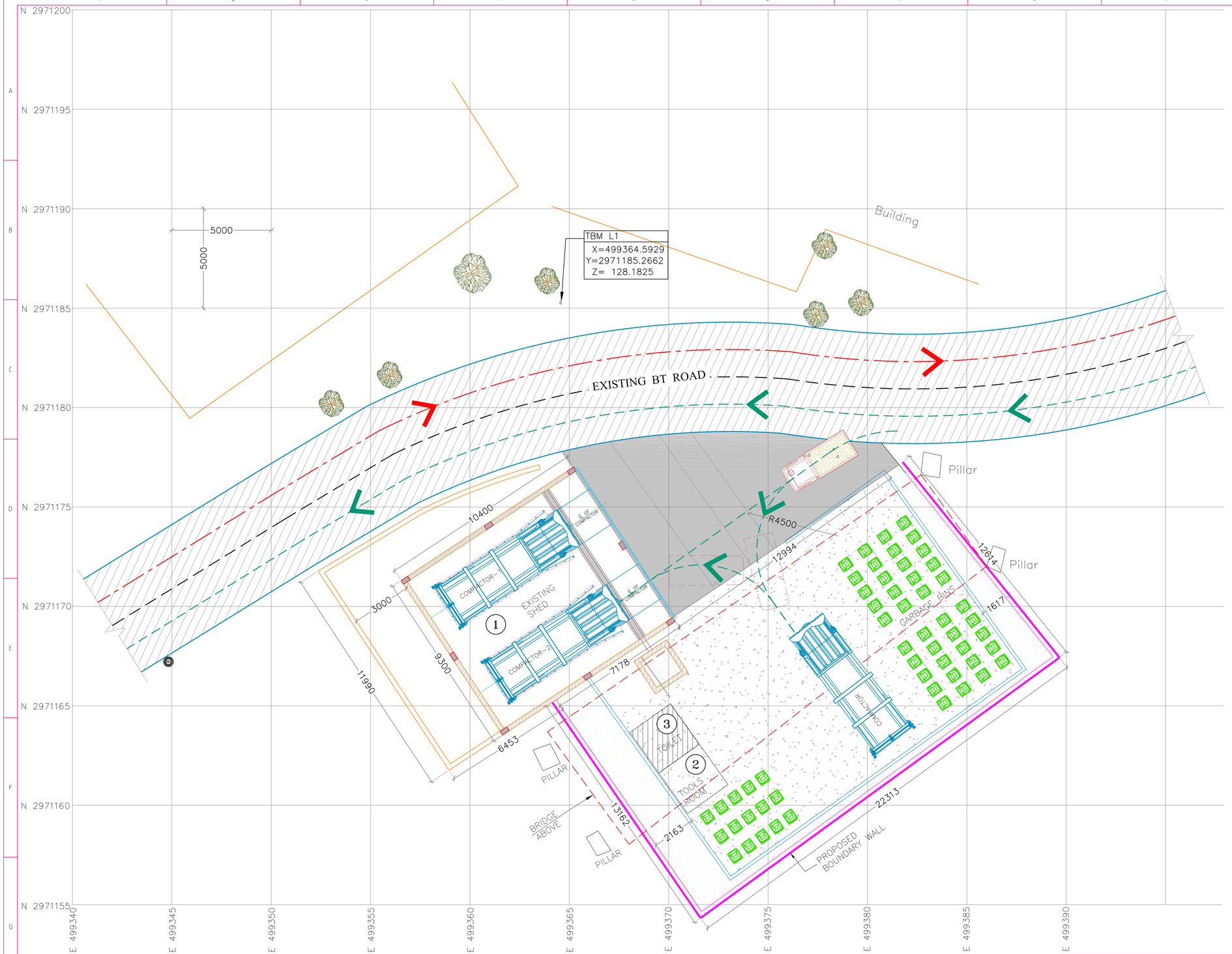
CONCESSIONAIRE:
Re Sustainability Limited
11B, Level 11, Galaxy By Aurobindo,
Hitech City Rd, Knowledge City Rd,
Gachibowli, Hyderabad,
Telangana 500081.

PROJECT TITLE:
INTEGRATED MUNICIPAL SOLID WASTE MANAGEMENT PROJECT (IMSWMP)
LUCKNOW, UTTAR PRADESH

DRAWING TITLE: TOPOGRAPHICAL SURVEY PLAN OF PROPOSED TRANSFER STATION KHAILASH KUNJ (CHIHNAT – 2 WARD) (TS–04), ZONE 4

DRAWING NO : RESL/LMC/DRG/TS-04/100.1 REV: 00

SHEET	A1;1 OF 1	APPROVED BY	V.B
SCALE	AS SHOWN	CHECKED BY	S.S
DATE	27.01.2024	DRAWN BY	M.A.C



MASTER LAYOUT
SCALE– 1:100

TAG NO.	DESCRIPTION OF UNIT	UNIT SIZE (O/O)	QTY.	MoC
1	2 BIN SELF COMPACTOR	10.40 x 9.30 m	1	PEB
2	TOOLS ROOM (PORTA CABIN)	--	1	--
3	TOILET (PORTA CABIN)	--	1	--

AREA STATEMENT:

REF. NO.	NOTATION	DESCRIPTION	AREA in 'sqm'	PERIMETER in 'rmt'
1		FACILITY/PLOT AREA	--	--
2		PROPOSED BOUNDARY WALL	--	--
3		INTERNAL OPERATIONAL AREA	117.00	--

KEY PLAN
NOT TO SCALE

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FOR APPROVAL

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REV:	DESCRIPTION	BY:	DATE
01	CONCEPTUAL DWG FOR APPROVAL		18.03.2024

CLIENT :
LUCKNOW MUNICIPAL CORPORATION (LMC)
LUCKNOW, UTTAR PRADESH

CONCESSIONAIRE:
Re Sustainability Limited
11B, Level 11, Galaxy By Aurobindo,
Hitech City Rd, Knowledge City Rd,
Gachibowli, Hyderabad,
Telangana 500081.

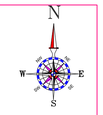
PROJECT TITLE:
INTEGRATED MUNICIPAL SOLID WASTE MANAGEMENT PROJECT (IMSWMP)
LUCKNOW, UTTAR PRADESH

DRAWING TITLE:
MASTER LAYOUT OF
PROPOSED TRANSFER STATION
MITHAIWALA CHAURAHA (PAPER MILL WARD)
(TS-02), ZONE 4

DRAWING NO : RESL/LMC/DRG/TS-02/ML/100		REV:	00
SHEET	A1;1 OF 1	APPROVED BY	V.B
SCALE	AS SHOWN	CHECKED BY	S.S
DATE	27.01.2024	DRAWN BY	M.A.C

TOPOGRAPHICAL SURVEY PLAN
SCALE– 1:100

KEY PLAN
NOT TO SCALE



FOR APPROVAL

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REV:	DESCRIPTION	BY:	DATE
01	CONCEPTUAL DWG FOR APPROVAL		18.03.2024

LEGEND

- CC Road
- Existing Shed
- Boundary Line
- Eletrical Pole
- Divider
- Gate
- B T Road
- Boundary Wall
- Drain
- Rock & Boulder
- Transforme
- Tree
- Ramp
- Greenary

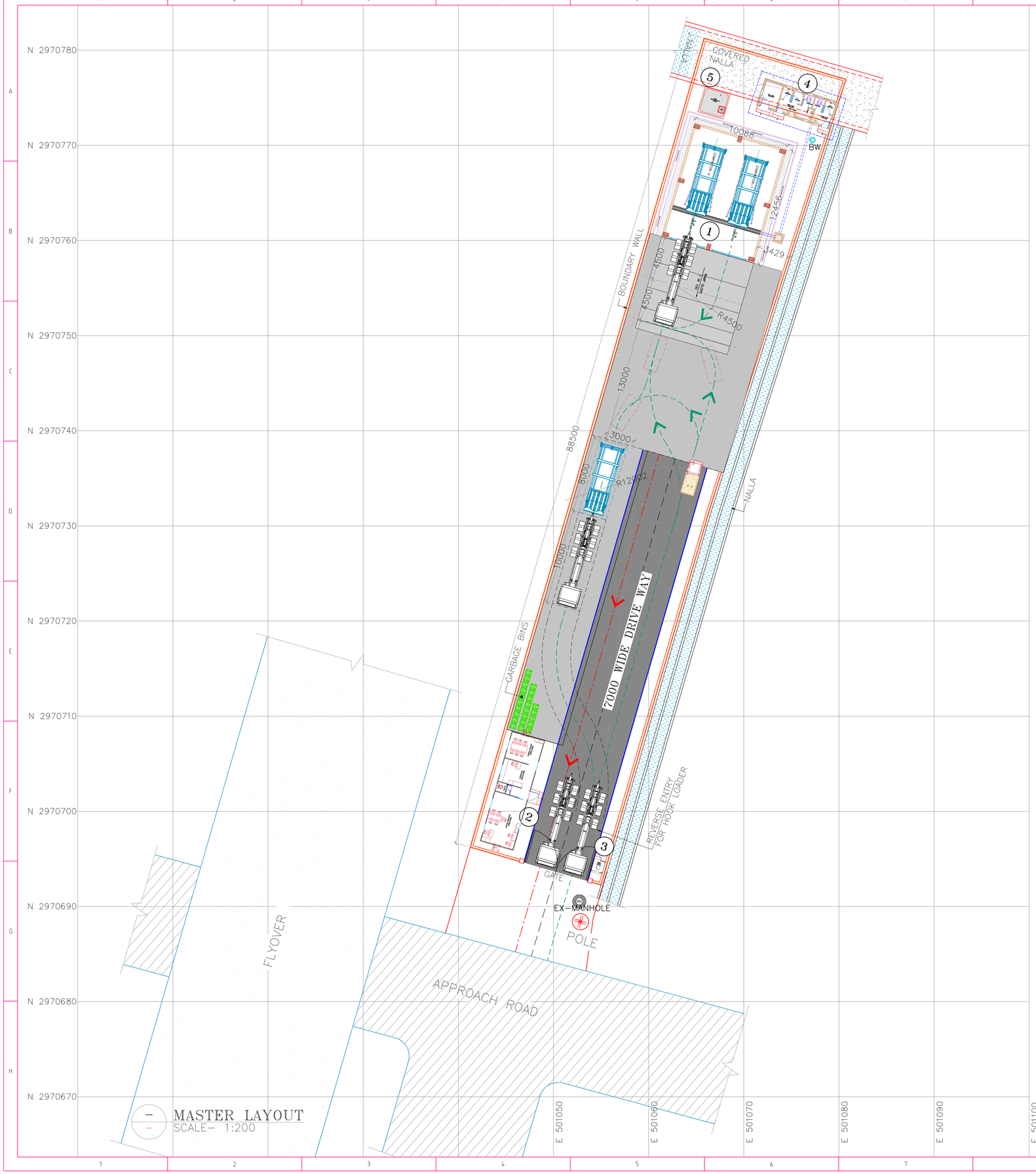
CLIENT :
LUCKNOW MUNICIPAL CORPORATION (LMC)
LUCKNOW, UTTAR PRADESH

CONCESSIONAIRE:
Re Sustainability Limited
11B, Level 11, Galaxy By Aurobindo,
Hitech City Rd, Knowledge City Rd,
Gachibowli, Hyderabad,
Telangana 500081.

PROJECT TITLE:
INTEGRATED MUNICIPAL SOLID WASTE MANAGEMENT PROJECT (IMSWMP)
LUCKNOW, UTTAR PRADESH

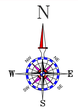
DRAWING TITLE:
TOPOGRAPHICAL SURVEY PLAN OF PROPOSED TRANSFER STATION MITHAIWALA CHAURAHA (PAPER MILL WARD) (TS-02), ZONE 4

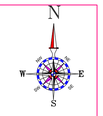
DRAWING NO : RESL/LMC/DRG/TS-02/100.1		REV:	00
SHEET	A1;1 OF 1	APPROVED BY	V.B
SCALE	AS SHOWN	CHECKED BY	S.S
DATE	27.01.2024	DRAWN BY	M.A.C



MASTER LAYOUT
SCALE- 1:200

KEY PLAN
NOT TO SCALE





CONCEPTUAL DRAWING, FOR APPROVAL

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REV:	DESCRIPTION	BY:	DATE
01	CONCEPTUAL DWG FOR APPROVAL		18.03.2024

UNIT LIST:

TAG NO.	DESCRIPTION OF UNIT	UNIT SIZE (O/O)	QTY.	MoC
1	2 BIN SELF COMPACTOR	10.08 x 12.46 m	1	PEB
2	OFFICE (PORTA CABIN)	--	1	--
3	SECURITY POST (PORTA CABIN)	--	1	--
4	TOILET BLOCK	8.11 x 3.00 m	1	--
5	UNDER GROUND SUMP 25 KL	3.0 x 3.00 m	1	RCC

AREA STATEMENT:

REF. NO.	NOTATION	DESCRIPTION	AREA in 'sqm'	PERIMETER in 'rmt'
1		FACILITY/PLOT AREA	1294.00	207.00
2		PROPOSED BOUNDARY WALL	--	199.00
3		INTERNAL OPERATIONAL AREA WITH DRIVEWAY	960.00	--
4	BW	BORE WELL (for processing)		

CLIENT :
LUCKNOW MUNICIPAL CORPORATION (LMC)
LUCKNOW, UTTAR PRADESH

CONCESSIONAIRE:
Re Sustainability Limited
11B, Level 11, Galaxy By Aurobindo, Hitech City Rd, Knowledge City Rd, Gachibowli, Hyderabad, Telangana 500081.

PROJECT TITLE:
INTEGRATED MUNICIPAL SOLID WASTE MANAGEMENT PROJECT (IMSWMP)
LUCKNOW, UTTAR PRADESH

DRAWING TITLE:
MASTER LAYOUT
TS-49, VINEET KHAND, ZONE-4

DRAWING NO : RESL/LMC/DRG/TS-49/100		REV:	R1
SHEET	A1;1 OF 1	APPROVED BY	V.B
SCALE	AS SHOWN	CHECKED BY	S.S
DATE	02.03.2024	DRAWN BY	M.A.C

TOPOGRAPHICAL SURVEY PLAN
SCALE- 1:200

KEY PLAN
NOT TO SCALE

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This document should not be relied on or used in circumstances other than those for which it was originally prepared and for which Re Sustainability Ltd. was commissioned. Re Sustainability Ltd accepts no responsibility for this document to any other party other than the person by whom it was commissioned.

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REV:	DESCRIPTION	BY:	DATE
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CLIENT :
LUCKNOW MUNICIPAL CORPORATION (LMC)
LUCKNOW, UTTAR PRADESH

CONCESSIONAIRE:
Re Sustainability Limited
11B, Level 11, Galaxy By Aurobindo, Hitech City Rd, Knowledge City Rd, Gachibowli, Hyderabad, Telangana 500081.

PROJECT TITLE:
INTEGRATED MUNICIPAL SOLID WASTE MANAGEMENT PROJECT (IMSWMP)
LUCKNOW, UTTAR PRADESH

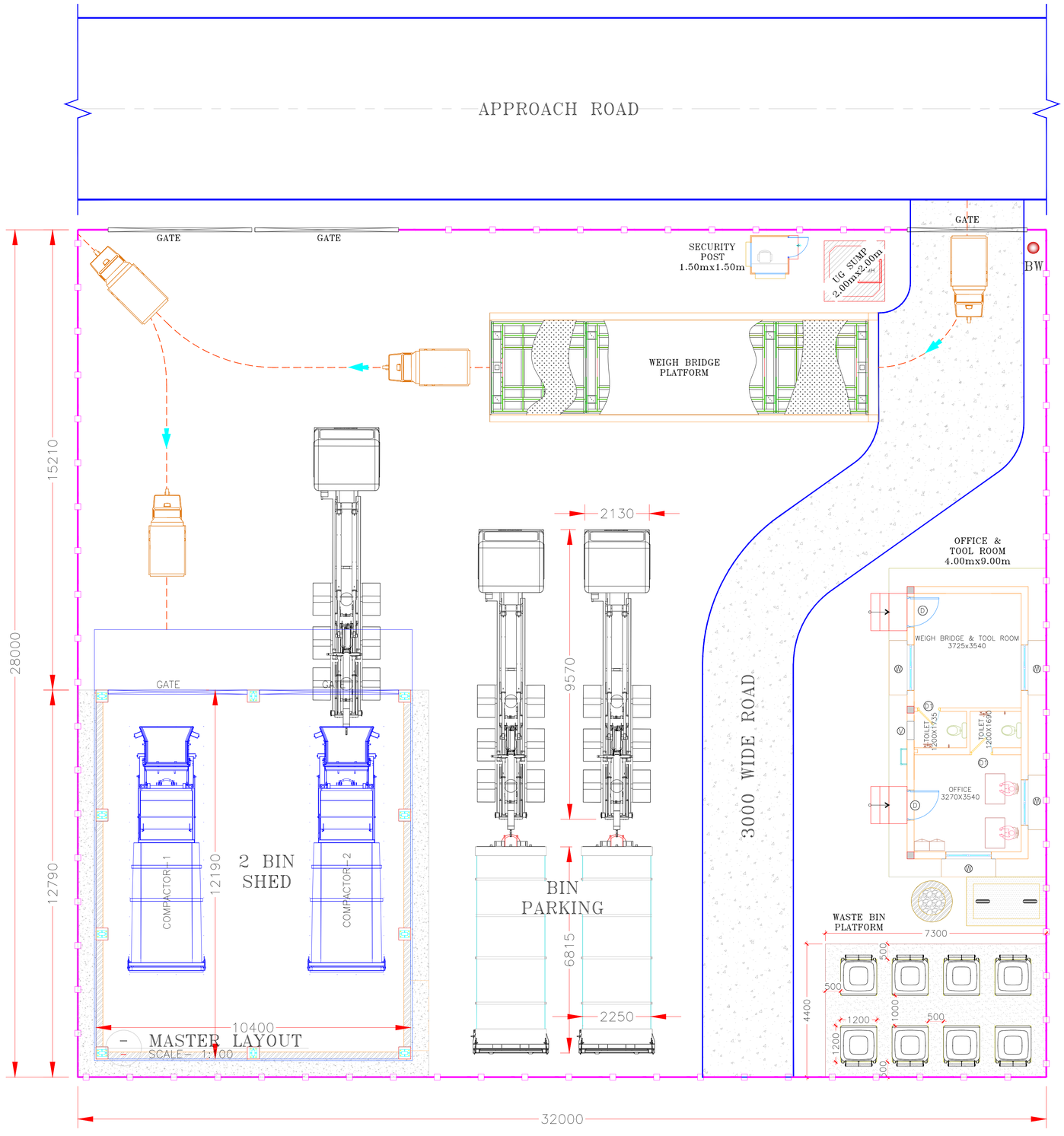
DRAWING TITLE:
TOPOGRAPHICAL SURVEY PLAN
(TS-49, VINEET KHAND), ZONE-4

DRAWING NO : RESL/LMC/DRG/TS-49/100.1 | REV: 00

SHEET	A1;1 OF 1	APPROVED BY	V.B
SCALE	AS SHOWN	CHECKED BY	S.S
DATE	17.03.2024	DRAWN BY	M.A.C

LEGEND

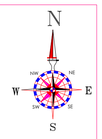
- CC Road
- Existing Shed
- Boundary Line
- Eletrical Pole
- Divider
- Gate
- B T Road
- Boundary Wall
- Drain
- Rock & Boulder
- Transforme
- Tree
- Ramp
- Greenary



MASTER LAYOUT
SCALE- 1:100

PLOT AREA : 896 SQM

KEY PLAN



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CLIENT:

--

CONTRACTOR:

Re Sustainability Ltd.
Aurobindo Galaxy Tower,
11th Floor, Block-B
Hitech City Rd, opp. IKEA,
Hyderabad, Telangana 500081

PROJECT TITLE:

LUCKNOW MUNICIPAL SOLID MANAGEMENT (MSW)

DRAWING TITLE:

TYPICAL MASTER LAYOUT OF 2BIN PCTS SITE

DRAWING NO : ML-100

SHEET	A1; 1 OF 1	SCALE	AS SHOWN

REV:	DESCRIPTION	DRN.	DGN.	CHK.	APP.	DATE
--	--	--	--	--	--	--

ANNEXURE III

ACCEPTANCE OF TENDER CONDITIONS

ACCEPTANCE OF TENDER CONDITIONS

From: (On the letterhead of the bidding company by the authorized officer having power of attorney)

To
CMSPL,

_____

_____

Sub: Design, Detail Engineering, Supply, Construction, Erection and commissioning of Mechanized Static Garbage Transfer Station (including Civil, Mechanical & Electrical Works) in Lucknow Municipal Corporation, Lucknow

Ref: N.I.T No. ……

Sir,

This has reference to above referred tender. I/We are pleased to submit our tender for the above work and I/We hereby unconditionally accept the tender conditions and tender documents in its entirety for the above work. I/we are eligible to submit the tender for the subject works and I/We are in possession of all the documents required. I/We have reviewed and read the terms and conditions of this NIT/ Tech Specifications/GCC/SCC carefully.

I/we have submitted the mandatory scanned documents such as cost of tender document, EMD, and other documents as per NIT.

Should this tender be accepted, I/We agree to abide by and fulfill all terms and conditions referred to above and as contained in tender documents elsewhere and in default thereof, agreeing to forfeit and pay CMSPL, or its successors or its authorized nominees such sums of money as are stipulated in the notice inviting tenders and tender documents.

If I/we fail to commence the work within 7 days of the date of issue of Letter of intimation and/or I/we fail to sign the agreement as per conditions of Contract and/or I/we fail to submit performance guarantee as per Clause 7 of General Conditions of Contract, I/we agree that CMSPL shall, without prejudice to any other right or remedy, be at liberty to cancel the tender and to forfeit the said earnest money as specified above.

(Signature of the tenderer)

Yours faithfully,

Dated _

With stamp & seal

ANNEXURE IV

BILL OF QUANTITIES FOR TENDERING
(CIVIL, MECHANICAL AND ELECTRICAL WORKS)

GENERAL TECHNICAL SPECIFICATIONS

FOR

CIVIL WORKS

I N D E X

1.0 EXCAVATION FOR FOUNDATIONS & TRENCHES

To provide guidelines for all types of excavation to conform to the grades, lines and dimensions.

a) Excavation shall be done in accordance with the line and depth indicated in the drawings or as directed by the Engineer.

b) The set out for excavation shall be carried out according to the drawings to proper line and level.

c) A reference Benchmark shall be established close to the site which shall be so located so as to avoid damage due to equipment movement or its impact.

d) The temporary Benchmark transferred shall be double checked and shall be got approved by an Engineer.

e) If the excavation depth is more that 1.2 m, care should be taken to avoid slippage of side slopes, depending on the type of soil, by providing shoring and shuttering or by casing the slopes.

f) The commencement of excavation shall be done using approved Company equipment and as per the plan notified to the Engineer.

g) If rock is encountered, SIC shall notify the Engineer for decision for further excavation.

h) In case water table is encountered at any stage of excavation, SIC shall notify the Engineer in this regard and await further instructions.

i) Excavated material suitable for use as backfill shall be deposited and stacked in storage piles at points convenient for re-handling of material during backfilling.

j) The method of excavation within 3 m of any existing structure shall be with proper supporting arrangement so as not to endanger the existing structure. Before starting such excavation, proposals for the method of excavation shall be made and got approved from Engineer.

k) Prior to the start of excavation, the following shall be ensured:

   i) Joint measurement of net levels of ground along with Engineer shall be taken for assessing.

   ii) Availability of excavation permits as per municipal bylaws.

   iii) Check for any underground service lines and verification/clearance from the consultant shall have to be obtained.

   iv) Fence the area with hoarding as required under local byelaws.

   v) Provide barricades & safety ribbons around the excavated area to prevent entry of unauthorized people and accidents. Caution night lamps shall be provided for excavations in open areas.

vi) Excavated material unsuitable for reuse shall be carted away to municipal dumping ground with proper documentation like trip sheet and issue and receipt vouchers.

vii) Protection for any underground services must be taken as per the instructions of the Engineer.

viii) Whenever underground water table is met, dewatering must be resorted to, in consultation with the Engineer to keep the excavated working space clean and dry.

ix) Sign boards indicating excavation work shall be erected when working in open (unfenced) areas.

2.0 CUT AND FILL, EMBANKMENT FORMATION

To provide guidelines for the Site personnel for maintaining a uniform and consistent Cut and Fill, Embankment Formation conforming to quality standards.

1. Where ever required, the site shall be cleared from all rubbish, loose soil, trees, stumps, bushes and other growing vegetation so as to have hard base.
2. The setting out shall be carried out according to the drawings to proper line and level using accurate levelling instruments i.e., Compass, Theodolite, etc. The grid levels of the existing ground shall be taken with respect to the Benchmark.
3. A reference Benchmark shall be established close to the site which shall be so located so as to avoid damage due to equipment movement or its impact.
4. The temporary Benchmark transferred shall be double checked and shall be got approved by Engineer using RFI.
5. Prior to the beginning of grading a trial pit must be excavated to the required depth to get a fair idea of the strata.
6. After taking grid levels, the same shall be plotted on a drawing and areas for cutting and levelling shall be clearly demarcated based on requirements.
7. The top soil of the filling area shall be removed to a minimum depth of 10 ~ 15 cm or to the extent of loose soil. So as to have a suitable hard base free from roots, vegetation.
8. Excavated material suitable for use as embankment material already deposited in storage piles at points convenient for rehandling of the material may be deposited on the embankment positions at convenient layer over watered and compacted sub base.
9. No Filling shall be done without the approval of the Engineer. All material intended to be used for filling shall be free from all organic and deleterious

matter. It shall be tested (Particle size distribution and standard Proctor Test) and got approved from the Engineer.

10. Fill material shall be free from large lumps, wood or other extraneous material.
11. The approved material for filling shall be free of any appreciable amount of gravel or stone particles more than 40 cm in size and of such gradation as to permit thorough compaction.
12. The parameters required for Standard Proctor's Density Tests for the cut material as well as imported material from other quarries shall be determined if the material is intended to be used for filling.
13. The filling shall be commenced in uniform layers from the lowest part/point.
14. The width of layers shall be extra for about 45 cm width on either side when measured across the cross section to have required density at the edges of embankment. After formation of embankment, the extra 45 cm has to be removed by gently without disturbing the side embankment. So as to have the entire embankment a uniform Proctor Density.
15. The formation shall be built up in layers as specified at its Optimum Moisture Content to achieve the Specified Compaction percentage.
16. Compaction shall be carried out using approved vibratory rollers.
17. When necessary, each layer before being compacted shall be processed as required to bring the moisture content sufficiently close to optimum to make possible its compaction to the required density. The material shall have uniform moisture content through the entire layer of material to be compacted.
18. Each layer of material shall be compacted uniformly by use of three-wheeled power rollers, vibrator, rollers or other approved type compactors like plate compactors. Sheep foot compactors depending upon the type of soils proposed for embankment.
19. The rolling shall be done in a longitudinal direction along the embankment and shall generally begin at the outer edges and progress towards the center in such a manner that each section receives equal compacting effect.
20. The equipment deployed for compaction shall be capable of achieving the specified degrees of compaction.
21. The compaction shall be done progressively from one side with each succeeding pass uniformly overlapping the previous pass.
22. In the case of soil raft or compaction of large areas, a test patch has to be conducted to ascertain the number of rollers required to achieve the desired compaction.

23. Maximum dry density and optimum moisture content of soil shall be determined by one of the methods described in ASTM D1557 - 70 (AASHTO T180-74) commonly known as the Standard Proctor Test. Any comparison shall achieve the compaction to the extent so as to give minimum required percentage of maximum density as per specifications.
24. At the time of compacting areas where high density is required, fill material and the surface on which it is placed shall be within the specified range of moisture content. In case the material is soft or too wet, it shall be spread out and allowed to dry sufficiently prior to compaction.
25. Prior to the start of grading, the following shall be ensured:
    i) Availability of work order as per municipal bylaws.
    ii) Joint measurement of spot level along with Engineer.
    iii) Check for any underground service lines and verification/clearance from the consultant.
    iv) Fence the area with hoarding as required under local byelaws.

3.0 PLAIN CEMENT CONCRETE

To have guidelines on execution of Plain Cement Concrete of various grades in levelling course through site mixed concrete or Ready Mixed Concrete.

A) <u>Site Mixed Plain Cement Concrete</u>

1. The design mix meant to be used in site mix should be studied in detail. Prior to use of the mix in actual work, trials needs to be carried out and 7 day compressive strength shall be ascertained.
2. The cubes tested for 7 days compressive strength should indicate values above the 7 day target mean strength of the design mix. In case the cubes fail to achieve these criteria, the concrete mix shall be redesigned.
3. The weight mix of aggregates shall be converted into volume mix based on box sizes of 30 x 30 x 30 cm. The coarse and fine aggregate shall be converted into volumes required for each 50 kg bag of cement based on their densities.
4. The water requirement for each 50 kg bag of cement mix shall be arrived at from the designed water-cement ratio.
5. Initially we may start with wooden boxes for measurement of aggregates. Subsequently we shall convert into steel boxes fabricated for this purpose after a specified lead time.
6. The boxes used for measuring shall be marked by paint for the aggregate type it is to be used with the following letters on two vertical sides of the box.

1. Sand – "S"
2. 10 mm – "10"
3. 20 mm – "20"

7. The height of the aggregate to be filled inside the box shall be marked with paint on the inside vertical faces of the box at 4 locations.
8. The measured aggregate for each mix shall be transferred into a wheel barrel which shall transport the aggregates into the hopper of the concrete mixer.
9. Water shall be put inside the rotating drum using the 5 litre bucket clearly marked with the quantum required.
10. All the aggregates and cement, 1 bag, will be collected in the hopper of the mixer which will convey the same using the lever and rope hoisting arrangement into the mixer drum for mixing.
11. The mixing time for each mix shall be maintained at 3 minutes.
12. The conveying of cement and aggregates from hopper to the drum shall be controlled in such a way that the maximum mixing time does not exceed 5 minutes for each mix.
13. After the completion of mixing, the concrete contents shall be delivered into a dumper or wheel barrow which will transport the concrete to the placing site.
14. Usual quality control tests like slump, temperature shall be carried out prior to placement of mix in forms.

B) <u>Ready Mix Plain Cement Concrete</u>

1. Vendors/Suppliers for Ready Mix Concrete shall be short listed and design mix to be obtained.
2. Design mix should be studied in detail.
3. Trial mix shall be organized and witnessed along with representatives of consultants/clients.
4. Vendors of RMC should be preferably finalized with the one with ISO 9000 series accreditation.
5. The production and batching of concrete shall be as per the procedure adopted by the Ready supplier and duly approved by Company/Consultant/ Client.
6. The transportation of batched pre-mixed concrete should be preferably through transit mixers.
7. The pre-mix concrete shall be produced with approved quantum of admixtures and retarders (if, required) to delay setting times.
8. On arrival of the mix at site, an initial check should be organized by the Foreman on the quantum received, time of despatch, arrival time etc. to check on the workability and the specifications.

9. The delivery note shall be checked by the Foreman to confirm the grade, water cement ratio and quantity.
10. The transit mixer drum shall be rotated for 2 minutes at high speed to ensure uniform mixing of concrete before pouring.
11. The Foreman shall ensure the readiness of the site to receive concrete including approval from client/consultant in the pour card prior to ordering the concrete.
12. The concrete slump and temperature shall be checked for conformity with the design mix prior to the pour.

C) Concrete Placement

1. The foreman shall ensure that the formwork is tightly constructed and the jars in contact with concrete are free from foreign matter.
2. Method of placing of concrete shall be programmed in advance and discussed with the consultant's representative for concurrence.
3. All plant and equipment used in placing of concrete shall be kept fully maintained and in clean condition free from hardened concrete and deleterious matter.
4. After pouring, the surface of the pour shall be trowelled to provide surface and slope as per the design. Two hours after the pour, water shall be sprinkled and surface to be kept wet using soaked gunny bags to prevent shrinkage cracks.
5. As soon as exposed concrete surfaces can accept further curing procedures (after one day of casting), they shall be covered by an approved curing membrane or ponding by fresh water shall be resorted to.
6. The minimum curing period shall be three days for all Plain Cement Concrete, unless otherwise instructed.
7. The stripping time for shuttering shall be one day unless otherwise instructed by the Engineer.

4.0 REINFORCED CEMENT CONCRETE

To provide guidelines to Site Personnel for Quality Assurance and Control in casting of Reinforced Concrete Structural Members.

A. Staging

1. The areas where an elevated slab has to be cast should first be surveyed for deciding the type of staging system to be adopted.
2. The ground must be surveyed and if need be, compacted with good earth to avoid settlement of staging at the time of loading and concrete pour.
3. The hydrostatic pressure that is likely to be exerted on ground by the props due to the weight of concrete must be evaluated and action must be taken.

4. The decision on the type of staging shall necessarily depend on the height of the slab from ground level.
5. Generally, a system of props and spans are used in the company for elevated slab castings. Wherever, the height requirements of the building exceeds the maximum permissible elevations of the extent staging systems, incremental height increases must be done by the use of solid blocks, steel cribs or by the use of both in combination.
6. For safety purposes, it is essential that individual props are fastened to one another.
7. Erection of props should be carefully done to avoid any accidents.
8. As far as possible, electric wires should not be pulled in between the erected props.
9. The area where the props are being erected should be cordoned off using caution tapes to prevent any unauthorized access.
10. The Props shall be erected to the proper level from the initial stage itself so as to avoid major alignment and level adjustments to forms and props just before actual pour.

B. <u>Shuttering</u>

1. For shuttering purposes, 12mm plywood is generally used for normal slab and footings and beam works. For fabrication of shuttering of deep beams (depth > 500mm) and column boxes, 18mm plywood shall be used.
2. Formwork for concrete shall be tightly constructed using good quality fair faced plywood, true to shape and dimension prescribed in the working drawings.
3. Faces of shuttering in contact with concrete shall be free from adhering grout, projecting nails, splits and other defects.
4. Shuttering oil shall be used to clean the shuttering and for easy stripping of formwork. However, excess use of mould oil should be discouraged.
5. Joints of shuttering shall be made to ensure zero loss of fine material or cement grouts during the placing and consolidation of concrete. Slurry leakage from shuttering should be controlled by all means.
6. When reinforcement is passing through a formwork, care shall be taken to ensure a close fitting joint against the steel rods so as to avoid loss of cement grout.
7. Connections shall be constructed to permit easy removal of concrete and shall be either nailed, screwed, bolted, clipped, clamped, wired or secured otherwise so as to be strong enough to retain the correct shape during pour.

8. Bolt holes used for securing formwork shall be made good after stripping.
9. When the film of shuttering ply gets worn of due to repetitive use, the form shall be remade utilizing the other face of the plywood.
10. Wooden runners should be nailed to the form at suitable intervals so as to avoid face outs due to bulging of plywood.
11. The wood used for making runners to the formwork should be straight and well seasoned.

C. <u>Reinforcement Work</u>

1. Bars shall be bent cold by machine or by other approved means as per BS 4466.
2. Prior to the start of bar bending work for each structural member, bar bending schedule must be made and got approved from the Consultant.
3. The bar bending schedule should conform to the working drawings provided in the contract.
4. For kinks the bar bending pattern should conform to the prescribed standards of radius and angles of bend.
5. All reinforcement shall be cut to the specified lengths made truly straight or bend to specified shape before it is fixed.
6. The length of right angle bends should be equal to 4 times the diameter of bar.
7. Bar splices shall be made in the reinforcement by lapping bars for a length of 42 times the diameter of the bar or as specified.
8. Bar splices shall be securely fastened together.
9. All end hooks shall have an overall length and width equal to 4 times the diameter of the bar or as specified.
10. Reinforcement shall be accurately positioned as shown on Engineer's drawing rigidly supported and wrapped together to prevent displacement during concreting.
11. Cover blocks shall be placed along with tying of reinforcement so that subsequent insertion is avoided.
12. Cover blocks shall be made of desirably the same concrete mix or grade and cured sufficiently before usage at work spot.
13. Link bars shall tightly embrace the bars with which they are intended to be in contact and shall be securely bound.
14. The reinforcement used in rebar work shall be tested to conform to the prescribed specifications. It shall be free from rust or pitting.

15. SIC shall check the steel for its dimensional accuracy and weight per unit length on receipt.
16. Prior to the pour of concrete, the SIC shall measure the reinforcement work jointly with Consultant representative in Measurement Book/Sheet for records.

D. Concrete Pour

Concrete production and placement shall conform to QC-MS-02 for site mix concrete and QC-MS-03 for ready mix concrete.

E. Formwork Removal

1. Unless otherwise stated, formworks shall be removed for each concrete member as specified in QC-MS-02 and QC-MS-03.
2. The curing period shall be a minimum of 7 days for all reinforced concrete structural members.
3. Alternate methods of curing can be adopted after the approval of Engineer and cost benefit analysis. The alternate methods include:
   a. Application of curing compound subject to manufacturer's specification.
   b. Resin based curing membrane in accordance with manufacturer's instruction.
4. Removal of formwork shall be carefully done without shock or vibrations to the concrete.
5. The minimum stripping time shall be as follows.
   a. Foundation Sides – 1 day
   b. Columns – 1 day
   c. Beams – 2 days for sides & 7 days for soffits.
   d. Slabs – 7 days
6. Wherever plastering is to be carried out hacking of concrete to a depth of 2 mm to be ensured after de-shuttering.

5.0 STORAGE OF CEMENT

To provide guidelines for storage of cement bags at site in accordance with specifications and standards.

1. Cement bags shall be stored in raised platform about 150mm above ground level and 300mm away from walls.
2. Flooring of storage area shall be damp proof.
3. Ventilators in the storage area shall be as minimum as possible in size and number to reduce circulation of air.
4. Water shall not enter in store through doors and windows.

5. To avoid loss in strength due to storage, first in/first out system shall be followed.
6. Maximum of 10 bags shall be stored in each stack. The bags shall be placed in headers and stretchers, i.e. alternatively lengthwise and crosswise.
7. Receipt date of cement shall be displayed on slate for that particular stack.
8. Storekeeper shall go through the documents to confirm regarding validity of supply.
9. If storekeeper is not sure about the supply/quality of the cement, he shall inform the site-in-charge for details regarding supply/quantity of material.
10. Cement issue register shall be maintained by the storekeeper on daily basis. He shall record the number of cement bags per issue slip and also return of bags if any and actual consumption.
11. All cement delivered to the site shall be accompanied by manufacturers test certificate showing compliance with the appropriate standards.

6.0 PLASTERING

To provide guidelines for all types of plastering both externally and internally to walls and exposed surfaces to conform to the grades, lines and dimensions.

1. The cement, water and sand shall comply with relevant specification of contract documents.
2. Metal accessories like expanded metal lathing, nails, plaster stop, angle beads shall conform to the specifications.
3. Mix proportions of mortar shall be as per the specifications and shall follow the methodology of mixing adopted for mortar for hollow block - QA-MS-08.
4. Plastering shall be made good up to metal or wood frames and skirting and around pipes or fittings.
5. Surfaces of undercoats shall be well scratched to provide a key for finishing coats.
6. All tools implements vessels and surfaces shall at all times be kept clean and strict precautions shall be taken to prevent the plaster or other materials from being contaminated by pieces of partially set material.
7. All surfaces to be plastered shall be made free from dust, grease, loose mortar etc.
8. Mortar joints in Block work shall be racked out to a depth of 15 mm.
9. Smooth or greasy cone surfaces shall be roughened by hacking.
10. All surfaces to be plastered shall be dashed with a mixture of cement and sand to form a key.

11. All surfaces shall be thoroughly sprayed with potable water and all free water is allowed to disappear before plaster is applied.
12. Before plastering is commenced, joints between different materials like joints between concrete and block work shall be reinforced with expanded metal lathing of specified width by nailing it to the block work or concrete. The reinforcement shall be fixed in such a way that is embedded completely in the undercoat of plaster.
13. The plastered surface of the wall shall be plumbed and straight from one end to other end. Plaster buttons shall be fixed at suitable intervals to indicate the thickness of the top surface line of the plaster.
14. After the preparation of surfaces as above, the undercoat shall be applied to the required thickness between screeds laid, ruled and plumbed.
15. When nearly set, the surface of the undercoat shall be scratched and cured before the finish coat is applied. This is where the plastering is to be done in two coats.
16. The finishing coat shall be applied to the required thickness by means of laying on trowel and finish to give the required surface.
17. Plaster shall be kept moist by sprinkling with water at regular intervals for a period of seven days.
18. The type of mix and thickness of plaster for each location shall be as indicated in drawings or as agreed to Engineer.
19. Any plaster of more than 12mm in thickness shall be applied in 2 coats.
20. For external plaster, the rendering shall be in 2 coats. Plaster buttons, expanded metal lath shall be fixed and rush coat applied as in the case of internal plaster. The wall shall be wetted before the application of first coat. The second coat shall be applied after the first coat has dried completely. All other procedures and methodology of internal plaster shall hold good for external render/plaster as well.

7.0 PAINTING

To act as procedural methods for the execution of Painting Works at Construction Sites.

1. The following information shall be collected from the Specification, MAS, etc. before commencing the work.
    a) Details of surface preparation to be done
    b) Method of application, whether Hand brush, Roller brush, Ordinary spray, Airless spray, etc.
    c) Sequences of coats, drying time for each coat, any curing is required.

d) Mixing ratios and type of thinner to be used
e) Temperature and Humidity limits
f) Shelf life and pot life of the product

2. Painting works shall commence only after the specified curing of the surface is completed
3. Painting activities for walls shall commence only after completing all the painting activities for the ceiling, i.e., top to bottom sequence to be followed.
4. Patch up plastering around switch boxes, conduit chasing, inserts shall be completed before commencing of the painting activities.
5. Fixing of floor skirting and the subsequent patch up plastering shall be completed before the commencement of the wall painting activities.
6. All types of wet grinding and buffing to the floor finish shall be completed before the final coat of the wall painting.
7. All painting activities except final coat shall be completed prior to fixing of switch box tops and pull box tops.
8. Fixing of M & E installations like fans, lamps, panel boards, etc. shall be fixed after the final coat is completed.
9. All installations which are likely to be fixed before the completion of the painting activities shall be protected from paint spills using polythene sheets and masking tapes.
10. Provision of Ample ventilation to the painting area, mask and gloves to the painting workers, etc. shall be adhered.
11. Smoking shall be prohibited and chances of electric sparks shall be ruled out where inflammable paint materials are being used.
12. As soon as a new lot of paint arrives at Store, a sample test patch is painted using the same and compared to be colour of the previous lots to ensure matching of colours.
13. Painting shall commence only after erection of proper stagings and platforms.

8.0 REINFORCEMENT STEEL

The contractor shall procure Mild Steel (MS) Reinforcement Bars, High Yield Strength Deformed Bars (HYSD) Bars, Rods and Structural Steel, etc., required for the works, only from the main or secondary producers, manufacturing steel to the prescribed specification of Bureau of Indian Standards or equivalent and licensed to affix ISI or other equivalent certifications marks and acceptable to the Engineer-in-charge. Necessary test certificates for each consignment are to be produced to Engineer-in-charge before use on works. The original bills of procurement should be submitted to the Engineer-in-charge for making payment of the item.

The Diameter & weight of steel should be as follows:

Sl. No.	Diameter of Rod	Sectional weight in kg / RMT
1.	08 mm	0.39
2.	10 mm	0.62
3.	12 mm	0.89
4.	14 mm	1.21
5.	16 mm	1.58
6.	18 mm	2.00
7.	20 mm	2.47
8.	22 mm	2.98
9.	25 mm	3.85
10.	28 mm	4.83
11.	32 mm	6.31
12.	33 mm	6.71
13.	36 mm	7.99
14.	40 mm	9.86
15.	42 mm	10.88

Note: - **If any rods other than those diameters specified above are procured the weights shall be as per standard steel tables.**

Reinforcement shall be free from pitting due to corrosion and free from loose rust, mill scale, paint, oil, grease, adhering earth etc. The over laps in the reinforcement shall be as per IS : 456 – 2000 wastage in steel will be at the cost of contractor.

The contractor shall procure MS and HYSD rods required for the works, only from the main manufacturing steel units to the prescribed specification of Bureau of Indian Standards or equivalent and licensed to affix to ISI or other equivalent certifications, marks and acceptable to the Engineer-in-charge. The contractor should obtain and furnish from suppliers of steel, necessary ISI test certificate for every consignment of steel, before use on work.

Mild Steel Bars shall conform to Grade I of IS : 432.

High Yield Steel Strength deformed Bars shall conform to IS : 786 Binding wire shall conform to IS : 280.

Erected and secured reinforcement after fabrication shall be inspected and approved by the Engineer prior to placement of concrete.

9.0 STRUCTURAL STEEL

1. Design Calculations & Drawing details.
2. Fabrication & Erection of Steel Structures shall be as per drawings.
3. Consumables like suitable electrodes (Megnarac / Advani make or any IS make), Industrial Gas etc., are to be used.
4. Painting of trusses with approved quality paints with one shop coat of Zinc Chromate should be applied before erecting have to be taken up.
5. Work to be done in accordance with statutory safety provisions and not exposing the employees or property to unacceptable risk. Safety rules shall be followed and contractors are accountable for compliance.
6. One shall be solely responsible for the safety & security of all the men & machinery employed by you on the job. You shall take necessary insurance coverage for the same, besides adhering the safe construction practices.
7. Obtain all necessary insurance coverage like CAR, Workmen Compensation, Public Liability besides Medical Insurance and Personal Accident Insurance for all the workmen engaged by him on the said contract works.
8. The material shall be procured, conveyed and unloaded and kept on your sage custody at the location shown by us in the Facility.

10.0 TILING WORKS IN FLOORS AND WALLS

To act as procedural methods for the laying and fixing of all types of flooring and wall tiling and to confirm with the required specifications and quality.

1. The following information shall be collected from the Specification, MAS and shop drawing before the commencement of the tiling work.
    a) Details of the Services pipes, conduits etc. which are to be concealed under the proposed tiling work.
    b) Layout pattern, colour, alignment etc. for the tiling works to be carried out.
    c) Width of the gap to be maintained between the tiles.
    d) Availability of the proper cutting tools for the tile being used.
    e) Finish details for the corner tiles of walls (whether to insert corner tiles or to travel the edges, etc).
2. The SIC shall check whether all the concealed works and insert works are completed before the commencement of the tiling works.
3. Splatter coat and first coat of plastering shall be completed before commencing the wall tiling.
4. Floor tiling shall conform to the required slope as per shop drawings/requirement.

5. Unless otherwise specified in the layout details tiling shall be done so that length of the cut piece as the left extreme shall be same as that of the right extreme. Cut piece size of lesser than half the tile shall be avoided.
6. Tile size of spacers used shall conform to the specification.
7. Tiles shall be dry laid over plain floor for inspection of the uniformity of colour shade as well as dimension within a lot and between different lots prior to actual usage.

11.0 QUALITY CONTROL MANUAL

Walls

Sl. No.	Characteristics	Specification	Measuring Equipment / Method	Sample size-frequency	Details of Inspection	Acceptance Criteria	Responsibility	Action incase of non-conformity	Responsibility
1.	Cracks	Not allowed	Visual	100-5%	Check visually	As per specification	Site In charge	Dismantle and rework	Site in charge
2.	Dampness / Leakage	Not allowed	Visual	100-5%	Check visually	As per specification	Site In charge	Dismantle and rework	Site in charge
3.	Finishing	Local Projection shall not exceed 2 mm & local depression 1.2 mm	Visual	100-5%	Check visually	As per specification	Site In charge	Dismantle and rework	Site in charge

FLOORING

Sl. No.	Characteristics	Specification	Measuring Equipment / Method	Sample size-Frequency	Details of Inspection	Acceptance Criteria	Responsibility	Action incase of non-conformity	Responsibility
1.	Level	5 mm	Measuring tape	100-5%	Mark Lobby on door frame & check with measuring tape	As per specification / drawing	Site In charge	Remove & rework	Project coordinator
2.	Line (Flooring / Skirting)	As per Architecture drawing	Visual	100-5%	Check Visually	As per specification / drawing	Site In charge	Remove & rework	Project coordinator
3.	Cracks	Not allowed	Visual	100-5%	Check Visually	As per specification / drawing	Site In charge	Remove & rework	Project coordinator
4.	Gap Filling	Cement Grout	Visual	100-5%	Check Visually	As per specification /	Site In charge	Fill with grout	Project coordinator

Sl. No.	Characteristics	Specification	Measuring Equipment / Method	Sample size-Frequency	Details of Inspection	Acceptance Criteria	Responsibility	Action incase of non-conformity	Responsibility
						drawing			
5.	Voids	No Hollow Sound	Coin	100-5%	Check Visually	As per specification / drawing	Site In charge	Remove & rework	Project coordinator
6.	Slope (Bath / WC / Balcony)	As per Architecture drawing	Level Tube	100-5%	Check Visually	As per specification / drawing	Site In charge	Remove & rework	Project coordinator
	PLATFORM								
7.	Height	As per Architecture drawing	Measuring tape	100-5%	Check Dimensions	As per specification / drawing	Site In charge	Remove & rework	Project coordinator
8.	Slope	As per Architecture drawing	Level Tube	100-5%	Check with level tube	As per specification / drawing	Site In charge	Remove & rework	Project coordinator
9.	Leakage	No leakage is allowed	Visual	100-5%	Visual	As per specification / drawing	Site In charge	Remove & rework	Project coordinator
10.	Umbra Patti	As per Architecture drawing	Measuring tape	100-5%	Check Dimensions	As per specification / drawing	Site In charge	Remove & rework	Project coordinator

WINDOWS

Sl. No.	Characteristics	Specification	Measuring Equipment / Method	Sample size-Frequency	Details of Inspection	Acceptance Criteria	Responsibility	Action incase of non-conformity	Responsibility
1.	Locks	Smooth in operation	Visual	100-5%	Locking & unlocking	As per specification	Site In charge	Reject	Project coordinator
2.	Closing & opening	Smooth in operation	Visual	100-5%	Locking & unlocking	As per specification	Site In charge	Reject	Project coordinator
3.	Gap between window frame & wall	No gap is allowed	Visual	100-5%	Check Visually	As per specification	Site In charge	Remove and rework	Project coordinator

Doors

Sl. No.	Characteristics	Specification	Measuring Equipment / Method	Sample size-Frequency	Details of Inspection	Acceptance Criteria	Responsibility	Action incase of non-conformity	Responsibility
1.	Closing & opening	Operation should be smooth	Visual	100%-5%	Check visually	As per specification	Site In charge	Reject	Site In charge
2.	Gap between window frame & wall	No gap is allowed	Visual	100%-5%	Check visually	As per specification	Site In charge	Remove & rework	Site In charge
3.	Gap between window frame & shutter	No gap is allowed	Visual	100%-5%	Check visually	As per specification	Site In charge	Remove & rework	Site In charge
4.	Painting	Shade should be uniform	Visual	100%-5%	Check visually	As per specification	Site In charge	Remove & rework	Site In charge
5.	Fitting	As per P.O	Visual	100%-5%	Check visually	As per specification	Site In charge	Remove & rework	Site In charge
6.	Moulding patti / Beading patti	As per P.O	Visual	100%-5%	Check visually	As per specification	Site In charge	Remove & rework	Site In charge

PLUMBING & SANITATION

Sl. No.	Characteristics	Specification	Measuring Equipment / Method	Sample size-Frequency	Details of Inspection	Acceptance Criteria	Responsibility	Action incase of non-conformity	Responsibility
1.	Fixing & height of all fixture from FFL	Ti should be as per plumbing layout	Measuring tape	100-5%	Check with respect to plumbing drawing	As per plumbing drawing	Site In charge	Remove & rework	Project coordinator
2.	Leakage from taps & other fixtures	No leakage	Visual	100-5%	Check visually	No leakage	Site In charge	Remove & fix new fittings or repair fittings	Site In charge
3.	Pressure at all taps	Pressure should be equal at all taps	Visual	100-5%	Check visually	Equal at all taps	Site In charge	Check for any obstructions in plumbing lines & change layout	Site In charge
4.	Functioning of stop cock	Smooth functioning	Visual	100-5%	Check by opening & closing the spindle	Smooth functioning	Site In charge	Remove the defective stop coke	Site In charge
5.	Cleaning of WC trap	It should be clean & clear of sand and other particles	Visual	100-5%	Check visually	If P-trap is clean	Site In charge	Clean thoroughly till obstruction removed with chemical or manually	Site In charge

12.0 TESTING OF WORKS & MATERIALS

a) All materials used and works done shall be subject to approval of the Engineer.

b) The contractor shall arrange sufficiently in advance to test materials and portions of works in order to prove their soundness and efficiency if required, including samples and supporting test results from the approved laboratory and other documentary evidence from the manufacturer. Wherever applicable and indicate the types of materials and their respective sources. The delivery of materials at site shall commence only after the approval of the quality, grading and sources of the materials by the Engineer.

c) The quality of all materials approved shall be maintained throughout the period of construction and periodical tests shall be carried out to ensure that it is maintained. The contractor shall conduct tests at work site / approved laboratories and shall maintain test reports at site for cement, coarse aggregates, fine aggregates, water, steel, bricks and concrete at the following frequency: -

Sl. No.	***Description of Material***	***Frequency of Test***	***Allowable Limits***
1.	Cement (IS : 8112 – 1989)		
	a) Fineness	One for each source of supply in a month	Shall not be less than 3500 sq.cm / gm
	b) Setting Time	One for each source of supply in a month	Initial setting time shall not be less than 30 minutes and final setting time shall not be more than 60 minutes.
	c) Soundness	One for each source of supply in a month	Expansion (unaerated) shall be not more than 10 mm by "Le Chatelier" method; if it fails, expansion of aerated sample shall be not more than 5 mm.
	d) Compressive Strength of Cement Mortar cubes 1 : 3 (1 Cement : 3 Standard Sand) by mass	One for each source of supply in a month	Compressive Strength for 7 days shall not be less than 330 kg / cm^2 and Compressive Strength for 28 days shall not be less than 430 kg / cm^2
2.	Coarse Aggregate : (IS383 – 1970)		
	a) Gradation	One test for 15 cum or at least on the day of concrete if	**40 mm Metal** **a) Sieve Analysis:**

Sl. No.	*Description of Material*	*Frequency of Test*	*Allowable Limits*
		concrete quantity is less then 15 cum.	63 mm – 100% 40 mm – 85 to 100% 20 mm – 0 to 2% 10 mm – 0.5% b) **Flakiness Index:** Shall be less than 30% by weight **20 mm Metal.** **a) Sieve Analysis:** 40 mm – 100 20 mm – 95 to 100% 10 mm – 25 to 55% 4.75 mm – 0 to 10% b) **Flakiness Index:** Shall be less than 25%
	b) Aggregate Impact value	Once for each source of supply or when ever change in texture is noticed.	Aggregate impact value : 20 – 40 mm (IS 2386 – 1963)
3.	Fine Aggregate (IS 383 – 1970)		
	a) Gradation for Concrete	One test for every 15 cum	Fineness modules : Fine sand limit 2.2 to 2.6
	b) Gradation for Masonry	At least once on the day of work	Medium sand limit 2.6 to 2.9
	c) Gradation for Finishing	At least once on the day of work	Coarse Sand Limit 2.9 to 3.2
	d) Bulk age	Three for each day of work i.e., morning noon and evening	
	e) Silt Content	At least once on the day of work	Silt Content : shall be less than 4% by weight
4.	Water: Chemical Test	One Test for each source	The pH value of water shall not be less then 6.
5.	Steel : F2415 (IS 1786 – 1985)		
	a) 0.2% proof stress	One for each source of supply	4150 kg / cm^2 (minimum)

Sl. No.	*Description of Material*	*Frequency of Test*	*Allowable Limits*
		and once in six months for fresh supply	
	b) Elongation	One for each source of supply and once in six months for fresh supply	Percentage of Elongation 14.5% minimum
	c) Tensile Strength	One for each source of supply and once in six months for fresh supply	Ultimate Tensile Strength 4900 kg/cm^2 (Minimum)
6.	Bricks : (IS : 1077 – 1976)		
	a) Compressive Strength	One for each source of supply and once in two months when change in texture is noticed	Shall not be less than 40 kg / cm^2
	b) Water absorption	One for each source of supply and once in two months when change in texture is noticed	Shall not be greater than 20% by weight
7.	Concrete : (IS 456 : 2000)		
	a) Cube Strength	Frequency of Testing as per clause 15.2 of IS 456 – 2000 for example 6 cube specimens, 3 each for 7 days & 28 days strength for every 15 cum. Cube shall be prepared, cured and tested in accordance with the requirement of IS 516.	a) Compressive Strength (7 days) M 15 – 100 kg / cm^2 M 20 – 135 kg / cm^2 b) Compressive Strength (28 days) M 15 – 150 kg / cm^2 M 20 – 200 kg / cm^2
	b) Slump	Thrice in a day of concrete in morning, noon & evening	a) Foundation footing 10 to 25 mm b) Column beams and slabs 25 to 40 mm (with nominal reinforcement) c) Beams, slabs – 40 to 50 mm (with congested reinforcement)

PREFERRED MAKE LIST

S.No.	DESCRIPTION OF ITEM	APPROVED MAKES	Remarks
1	TMT bars	JSW, SAIL, TATA STEEL, ISAPAT, VIZAK STEEL Or Equivalent as approved by the Engineer In charge.	
2	Cement	UltraTech Cement Ltd. JSW LTD Ambuja Cements Ltd. Shree Cement Ltd. ACC Ltd. Dalmia Bharat Ltd. JK Cement Ltd. Ramco Cements Ltd. Maha Cement, Penna Cement, Sagar Cement, Indian Cement. Or Equivalent as approved by the Engineer In charge.	
3	Rolling Sheeter	curtain - 0.900mm up to 3.5 m width, 1.20 more than 3.5 m width, Lockplate- MS plate min 3.15 mm thickness(Approved brand steel), Angle -35*35*5mm, Guide channel-MS plate Min 3.15 mm, Bracket plate- Min 3.15 mm thickness upto 2.3 m width, above 3.5m with - 6mm, Stopper -40*6mm flat, Roller- Steel Pipe upto -2m -32mm Nominal bore,3m-40mm Nominal Bore,upto-6m-50mm Normial bore, Hoodcover-0.900 mm thick, Gear, Worms etc-High Grade cast iron or Mild steel, Worms-MS or GunMetal, Guides, Lockplate, Bracketplate, Suspension shaft& Hood cover Hot dip galavinzed with a Zic coating -97.5% Pure zinc, Zic coat - 230g/m2, Painting -Rolling shutter, Expect spring &inside guide cell ZINC chormate Primer -2 coats. Or Equivalent as approved by the Engineer In charge.	
4	Admixture	BASF India Ltd. Chembond Chemicals Ltd. Fosroc Chemicals India Pvt. Ltd. Pidilite Industries Ltd. Sika India Pvt. Ltd. CICO Technologies Ltd. MYK Schomburg India Pvt. Ltd. Mapei Construction Products India Pvt. Ltd. Thermax Chemicals Or Equivalent as approved by the Engineer In charge.	
5	Bricks	Material from Nearest Source approved by our Engineer In charge.	

S.No.	DESCRIPTION OF ITEM	APPROVED MAKES	Remarks
6	Cement Grouting	Pidilite Industries Limited, Sika India Pvt Ltd,BASF Or Equivalent as approved by the Engineer In charge.	
	Bentonite Grouting		
	Chemical Grouting		
	Resin Grouting		
	Bituminous Grouting		
7	Aggregrate	Material from the Nearest Source approved by our Engineer In charge.	
8	Sand	Material from the Nearest Source approved by our Engineer In charge.	
9	PVC pipes	Finolex Industries Astral Pipes Savera Pipes. Dutron Pipes. Apollo Pipes. Kankai Pipes. Prince Pipes. Jain Pipes. Or Equivalent as approved by the Engineer In charge.	
10	Sanitary Pipes	Kohler. Hindware. Jaquar. Cera. Somany. Toto. Parryware. Asian Granito. Or Equivalent as approved by the Engineer In charge.	
11	TILES	Kajaria. Orientbell. Bajaj Tiles. Somany Ceramics. Cera Sanitaryware Ltd. Nitco. Asian Granito India Ltd. Simpolo. Or Equivalent as approved by the Engineer In charge.	
12	Grantie	new imperial red, Jhansi red, crystal yellow, Alaska white, blue dunes, Platinum white, Rajasthan black. Or Equivalent as approved by the Engineer In charge.	

S.No.	DESCRIPTION OF ITEM	APPROVED MAKES	Remarks
13	Alumiun Window	Fenesta. Tata Pravesh. Geeta Aluminium Co. Pvt. Ltd. Revathi Enterprises. Jindal and Saint Gobain Stylish Aluminium Window. Sunrise Aluminium Section & Glass. Grekon. Imperio. Or Equivalent as approved by the Engineer In charge.	
14	UPC Window	Fenesta Building Systems. Asahi India Glass Limited. Supreme Industries Limited. Veka India Pvt Ltd. Saint-Gobain India Pvt Ltd. Schueco India Pvt Ltd. Deceuninck India Pvt Ltd. Aluplast India Pvt Ltd. Or Equivalent as approved by the Engineer In charge.	
15	Steel Door	JSW Or Equivalent as approved by the Engineer In charge.	
16	Binding wire	JSW, SAIL, TATA STEEL, ISAPAT, VIZAK STEEL Or Equivalent as approved by the Engineer In charge.	
17	Coal Tar	Berger, Asain ,Indian Tar Coal Company, STP Or Equivalent as approved by the Engineer In charge.	
18	Joint Sealent Compound	Loctite 660 Retaining Compound, 50 ml. ... Stag Jointing Paste Steam Sealing Compound. ... Joint Sealing Compound. ... JOINT SEALING COMPOUND. ... Tenax Marble Joint Filling Polyester Mastics Cream. ... Dr Seal Sealing Compound Hot Bitumen As Per IS:1834. ... Stag B Red Jointing Paste Or Equivalent as approved by the Engineer In charge.	
19	Primer	Asian, Berger, Shailmar, Dulex, Snowcem, Nippon Or Equivalent as approved by the Engineer In charge.	
20	White Cement	Birla Cement, JK White Cement Or Equivalent as approved by the Engineer In charge.	
21	PVC Water Stopper	Aarti Cable And Compounds Private Limited. Swastik Industrial Products. Siddhi Rubber Udyog. Hitech Rubber Industries. Vantage Rubber Co. Or Equivalent as approved by the Engineer In charge.	
22	Steel plate ,Ralling	JSW, SAIL, TATA STEEL, ISAPAT, VIZAK STEEL Or Equivalent as approved by the Engineer In charge.	

GENERAL TECHNICAL SPECIFICATIONS

FOR

ELECTRICAL WORKS

1.1 GENERAL POINTS:

1. PCC/MCC panel should be IP55 Minimum & that should be compartmentalised as per IEC 60439. Panels should not dispatch without Third party inspection clearance.
2. Outdoor panels should be minimum IP65 with proper outdoor canopy.
3. Main incomers (ACB's/MCCB) should LSIG with O/c, S/c & E/f Protection. Draw out type with spring charge mechanism for ACB's.
4. Separate Kwh meter to be considered for sub MCC's.
5. MCC GA, SLD & BOM along with make list should be approved before fabrication.
6. Supplier / Contractor MCC to individual motors cabling (as per IS 7098 Part-1) should be above ground with proper routing, cable trays GI/FRP along with top covers & with proper mechanical supports, should get prior approval for cable routing & structural supports approvals.
7. LPBS provision for local / remote control & Auto Manual Provision for PLC operation to be considered including future interlocking mechanism.
8. Local push buttons to be provided near motor for easy operations.
9. Minimum 20% spare starters to be considered, for above 10 Nos there should be 2 spare & less than 10 there should be at least 1.
10. Supplier / fabricator should be CPRI approved for minimum 50KA.Sec.
11. Supplier/Contractor should have electrical licensee and should depute a valid electrical engineer/senior electrician for period of time till work completion.
12. Supplier/Contractor should submit all test certificates/user manuals/Approved drawings/operating manuals/warranty cards/approved drawings/as built drawings/proper handing over to be done for final payment.
13. Supplier/Contractor should get the work completion report from site engineer and project head for final payment.
14. Supplier/Contractor is responsible for minimum 12 months guaranteed for all material supplied.
15. Supplier/Contractor should dispatch material only after 100% clearance from TPI.
16. Insulation Rubber Mats are mandatory in front of supplier control panels irrespective of size / capacity. Minimum 10/12MM thickness to be considered as safety standards.
17. Final payment will be released only after Third Party / HO Engineer certification on erection quality & finishing.
18. Cable measurement sheet to be submitted for cable supply & Laying Invoice.

19. All the above points & make list will be considered as part of PO/WO irrespective of value & capacity of equipment.
20. E Waybill, Gate Entry stamp, Material Unloaded Photos & Site certification is compulsory for Invoice Approvals.
21. Contractor / Vendor should respond in 24 hours from the time of complaint logged.
22. Contractor / Vendor should procure the equipment in the name of project only.

1.2 EARTHING & LIGHTNING PROTECTION SYSTEM:

1. The earthing system for plant shall be designed for a life expectancy of at least forty (40) years, for a system fault current of 50 kA for 1.0 sec. The minimum rate of corrosion of steel for selection of earthing conductor shall be 0.12mm per year
2. Grounding and lightning protection for the entire plant / switchyard and other areas or buildings covered in the specification shall be provided in accordance with IS 3043, IEC-62305, IEEE 80. Supplier / Contractor is responsible for his scope of equipment to provide proper grounding, Double Earthing to be considered for MCC's & Motors. Supplier/Contractor is responsible to show Earth resistance value <1 Ohm.
3. In case of Chimney, Supplier should consider copper strip minimum of 25X6MM along with standard SMC/DMC insulators for Lightening Arrestor.
4. Earth pit chambers should be in line / aligned properly & minimum 2.5Mtrs distance to be provided between the earth pits.
5. Colour code to be maintained & Numbering for earth pit chambers to be considered separately for Body & Neutral Earthing.
6. Aviation lamp with top quality and make should be considered as per IS standards including wiring from nearest point with proper MS conduit & Insulators.
7. Double Earthing to be considered for all panels & equipment's from the earth pit – **GREEN & YELLOW Copper Earth Wire to be considered for sub-contractor panels & motors under their scope.**

1.3 LT MOTORS:

1. For the purpose of design of equipment/systems, an ambient temperature of 50 deg. Centigrade and relative humidity of 95% (at 40 deg C) shall be considered. The equipment shall operate in a highly polluted environment.

2. All the motors should be highly energy efficient as per IE3 standards.
3. All equipment shall be suitable for rated frequency of 50 Hz with a variation of +3% & -5%, and 10% combined variation of voltage and frequency unless specifically brought out in the specification.
4. Contractor shall provide fully compatible electrical system, equipment, accessories and services.
5. All the equipment, material and systems shall, in general, conform to the latest edition of relevant National and international Codes & Standards, especially the Indian Statutory Regulations.
6. Paint shade shall be as per RAL 5012 (Blue) for indoor and outdoor equipment.
7. Degree of Protection Degree of protection for various enclosures as per IEC60034-05 shall be as follows: - I) Motors - IP 55 ii) Cable box - IP 55. All outside motors shall be provided with canopy of adequate size to ensure no water ingress to motor.
8. TEMPERATURE RISE Air cooled motors 70 deg. C by resistance method for thermal class 155(F) insulation.
9. PHASE TO PHASE/ PHASE TO EARTH AIR CLEARANCE: Minimum inter-phase and phase-earth air clearances for LT motors with lugs installed shall be as follows: Motor MCR in KW Clearance UP to 110 KW 10mm Above 110 KW and up to 150 KW 12.5mm Above 150 KW 19mm.
10. Test reports to be submitted for all individual motors for final clearance from site.
11. Even standby motors should have respective starters like DOL, S/D & VFD's – Must follow type – II co-ordination.
12. Crane duty motors shall be squirrel cage Induction motor as per the requirement
13. Motor operating through variable frequency drives shall be suitable for inverter duty with VPI insulation. Also, these motors shall comply the requirements stipulated in IEC: 60034-18-41 and IEC: 60034-18-42 as applicable.
14. Continuous duty LT motors up to 200 KW Output rating (at 50 deg.C ambient temperature), shall be Premium Efficiency class-IE3, conforming to IS 12615, or IEC:60034-30. HT motors shall have minimum design efficiency of 95 %. However, tolerance on this efficiency value shall be applicable as per IEC 60034.
15. Suitable canopies to be provided for each motor irrespective of rating / capacity as per IS standards.

1.4 LT CABLES:

1. Cables shall be sized based on the following considerations: (a) Rated current of the equipment (b) The voltage drop in the cable, during motor starting condition, shall be limited to 10% and during full load

running condition, shall be limited to 3% of the rated voltage (c) Short circuit withstand capability This will depend on the feeder type. For a fuse protected circuit, cable should be sized to withstand the let out energy of the fuse. For breaker-controlled feeder, cable shall be capable of withstanding the system fault current level for total breaker tripping time inclusive of relay pickup time. The cables shall be suitable for laying on racks, in ducts, trenches, conduits and underground buried installation with chances of flooding by water.

2. Aluminum conductor used in power cables shall have tensile strength of more than 100 N/ sq.mm. Conductors shall be stranded.
3. XLPE insulation shall be suitable for a continuous conductor temperature of 90 deg. C and short circuit conductor temperature of 250 deg C. PVC insulation shall be suitable for continuous conductor temperature of 70 deg C and short circuit conductor temperature of 160 deg. C
4. The aluminum used for armoring shall be of H4 grade as per IS: 8130 with maximum resistivity of 0.028264-ohm mm2 per meter at 20 deg C. The sizes of aluminum armoring shall be same as indicated above for galvanized steel
5. IS:7098 (Part -I) Cross linked polyethylene insulated PVC sheathed cables for working voltages up to and including 1100V.
6. All Cables shall be armoured type, Cable lengths shall be considered in such a way that straight through cable joints are avoided.
7. 1.1 KV grade XLPE power cables shall have compacted aluminum conductor, XLPE insulated, PVC inner-sheathed (as applicable), armoured, PVC outer-sheathed conforming to IS:7098. (Part-I).
8. 1.1KV grade PVC power cables shall have aluminum conductor (compacted type for sizes above 10 sq.mm), PVC Insulated, PVC inner sheathed (as applicable) armoured, PVC outer-sheathed conforming to IS:1554 (Part-I).
9. 1.1 KV grade Trailing cables shall have tinned copper (class 5) conductor, insulated with heat resistant elastomeric compound based on Ethylene Propylene Rubber (EPR) suitable for withstanding 90 deg.C continuous conductor temperature and 250deg C during short circuit, inner-sheathed with heat resistant elastomeric compound, nylon cord reinforced, outer-sheathed with heat resistant, oil resistant and flame-retardant heavy-duty elastomeric compound conforming to IS 9968.

1.5 LT CABLE LAYING:

1. While LT cable laying, gap between one cable to another cable should be minimum 50MM or half of the dia. of the first laid cable as per standards. (Either in Trench or Tray)
2. Separate trays / trenches should be considered for power & control cables.
3. Cable dressing with 100% perfection should maintain.
4. Cables shall be laid on cable trays strictly in line with cable schedule.
5. After completion of cable laying work in the particular vertical tray, all the control cables shall be binded to trays/supports by cable clamps/ties with self-locking arrangement at every five-meter interval and at every bend.
6. Bending radius for cables shall be as per manufacturer's recommendations and IS:1255.
7. Where cables cross roads/rail tracks, the cables shall be laid in hume pipe/ HDPE pipe.
8. Also joints in critical equipment in main plant area shall not be permitted. Vendor shall identify and accordingly procure the cable drum length.
9. At least 300mm clearance shall be provided between: - HT power & LT power cables, - LT power & LT control/instrumentation cables.
10. Cable trenches shall be constructed for directly buried cables. Construction of cable trench for cables shall include excavation, preparation of sieved sand bedding, riddled soil cover, supply and installation of brick or concrete protective covers, back filling and compacting, supply and installation of route markers and joint markers. Laying of cables and providing protective covering shall be as per IS:1255.
11. Cable tags shall be provided on all cables at each end (just before entering the equipment enclosure), on both sides of a wall or floor crossing, on each duct/conduit entry, and at every 20 meters in cable tray/trench runs. Cable tags shall also be provided inside the switchgear, motor control centers, control and relay panels etc. where a number of cables enter together through a gland plate. Cable tag shall be of rectangular shape for power cables and control cables. Cable tag shall be of 2 mm thick aluminum with number punched on it and securely attached to the cable by not less than two turns of 20 SWG GI wire conforming to IS:280. Alternatively, the Contractor may also provide cable tags made of nylon, cable marking ties with cable number heat stamped on the cable tags.
12. All cable terminations shall be appropriately tightened to ensure secure and reliable connections.
13. Cable should CUT only after clearance from site engineer to HOD Electrical to avoid wastage, maximum 3-4% wastage will be allowed.

1.6 LT CABLE TERMINATIONS:

1. Cable Glands should be double compressed & Flame Proof, proper drilling on glad plate and balance wholes to be covered properly to avoid rat's entry.
2. The equipment will be generally provided with undrilled gland plates for cables/conduit entry. The Contractor shall be responsible for punching of gland plates, painting and touching up. Holes shall not be made by gas cutting. The holes shall be true in shape. All cable entry points shall be sealed and made vermin and dust proof. Unused openings shall be effectively sealed by 2mm thick aluminum sheets.
3. All the cores of the control cable to be terminated shall have identification by providing ferrules at either end of the core, each ferrule shall be indelible, printed single tube ferrule and shall include the complete wire number.

1.7 CABLE TRAYS, FITTINGS & ACCESSORIES:

1. Cable trays shall be ladder/perforated type as specified complete with hot dip galvanized matching fittings (like brackets, elbows, bends, reducers, tees, crosses, etc.) accessories (like side coupler plates, etc. and hardware (like bolts, nuts, washers, G.I. strap, hook etc.) as required. Cable tray shall be ladder type for power & control cables and perforated for instrumentation cables. Top cable tray shall be provided with tray cover in outdoor area.
2. Cable trays, fittings and accessories shall be fabricated out of rolled mild steel sheets free from flaws such as laminations, rolling marks, pitting etc. These (including hardware) shall be hot dip galvanized
3. Cable trays shall have standard width of 50MM, 100MM, 150MM, 200MM, 300MM 450MM & 600MM and standard lengths of 2.5 meter. Thickness of mild steel sheets used for fabrication of cable trays and fittings shall be 2 mm. The thickness of side coupler plates shall be 3MM. Height upto 200MM will be 50MM & more than that 100MM.
4. Cable troughs shall be required for branching out few cables from main cable route. These shall be U-shaped, fabricated of mild steel sheets of thickness 2 mm and shall be hot dip galvanized. Troughs shall be standard width of 50MM & 75MM with depth of 25MM
5. The tolerance for cable tray and accessories shall be as per IS 2102 (Part-1).
6. Support system shall be able to withstand, weight of the cable trays & weight of the cables (75 Kg/Meter run of each cable tray).
7. Cable Trays should be extended up to motor terminal box with proper finishing.
8. Final coat of paint to be done after welding works for supports & trays.

1.8 SAFETY:

1. Without safety PPE, contractor will NOT entry to work.
2. Contractor should submit ESI/PF certificates for his manpower.

1.9 TRANPORTATION:

1. Transportation should be inclusive of price submitted / Agreed along with road tax & toll charges to site.
2. Loading & Unloading at site should be Inclusive.
3. Transit Insurance should be in Supplier Scope.

STANDARD PANEL CONSTRUCTIONAL FEATURES	
A. Fabrication Details:	
Sheet Metal	Cold Rolled Cold Annealed(CRCA)
Main Frames	2.0mm (14SWG)
Doors/Partitions	1.6mm (16SWG)
Gland Plate	3mm (11SWG)
Main Cable Entry/Incomer	Bottom of the panel (May be decided at the time of GA Approvals)
Cable Outgoing	Bottom of the panel (May be decided at the time of GA Approvals)
Name plates should be provided as per load list i.e., Motor/Feeder Name and KW/HP with feeder number, etc.,	
B. Design Details:	
Design of panels	Non-Draw out type (Fixed)
Type of Construction	Fully Compartmentalized
Operation	Single Front / Double Front (May be decided at GA approvals)
Nature of Installation	Indoor/outdoor
Degree of Protection	IP-43/IP 65
Gasket	Neoprene for all doors & covers
C. Bus Bar Details:	
Current Density	0.8A/Sq. mm for Aluminium(Anodized Busbar)
Short Circuit Current Rating	50kA/sec
Busbar Insulation	PVC Heat shrinkable sleeves with R,Y,B & N Colour coding
Busbar Supports	Non Hygroscopic SMC/DMC supports
Busbar Clearances	Phase to Phase - 25mm min. Phase to Neutral - 25mm min. Phase to Earth - 25mm min. Neutral to Earth - 19mm min.
D. Painting Details:	

Material Treatment	Thorough chemical treatment with seven tank process, proof / photographs to be provided for seven tank process.
Panel Colour	Powder Coating RAL-7032 (Siemens Grey) (Minimum 100 Microns to be maintained through only for panel)
Panel consists the following:	
E. General:	
It consists of following:	

1.Seperate control transformers (2No's, 1W + 1S) to be provided of suitable capacity along with control busbar for control supply.(If starters are more than 10No's)
2.Seprate start, stop push buttons & ON/OFF/TRIP indication lamps to be provided for each feeder on door.
3.Auto/Manual selector switch to be provided (Local Remote or Auto Manual).
4.Earth Flat-50*6 to be provided (2Runs to considered if front & rear operation panel).
5.Live parts to be covered with acrylic/hylum sheet.
6.Color coded sleeves for all bus bars to be provided main & sub bus bars.
7. HV, LT & functional test to be carried out at supplier premises.
8. Testing equipment's using for routine test should be calibrated and valid certificate to be provided.
9.Routine test should carryout HV , Megger, Micrometer vernier calipus for sheet thickness
10.Bus bar test report to be submitted.
11.CPRI 50KA valid certificate to be submitted.
12.CRCA sheet test report to be submitted.
13. Paint: Color code certificate to be submitted.
14.CT's test report to be submitted.
15. Supplier should check both SLD/GA and BOQ properly before submitting the Quote.
16. No deviation is entertained in switchgear rating.
17. Type-II coordination to be followed IS=50kA at 415V, 3-Phase, 50Hz as per IS/IEC-61439
18. Minimum 2-3 days of commissioning support to be provided at free of cost.
19. In GA drawing compartments may shift either side as per site condition. In PMCC Panel, Incomer to be near to transformer side.
20. Rotary handle mechanism to be provided for S/D starters.
21. ACB for all feeders shall be equipped with LSIG protection as part of ACB release.
22. All Non-DOL feeders including incomer and bus coupler meters and circuit breakers shall be communicable type.
23. The 415V Switchgear shall confirm to IS/IEC-61439.

PREFERRED MAKES LIST		
S.NO	DESCRIPTION	MAKE
1	11/33KV Switchgear	Siemens / CG / ABB / Schneider / L&T
2	Transformer	CGL / Voltamp / Hammard/ BBL / Esennar
3	LT Panels Switchgear	Schneider / Siemens / ABB / L&T
4	LT Panel Manufacturers	IEC 60439 , CPRI Approved upto 65KA/s
5	Lighting & Power Panels (DBs) Controls & Switchgear	Havells / Legrand / C&S
6	Cables	Polycab/Havells/ KEI / Universal
8	Air Circuit Breaker	L&T / Siemens / Schneider / ABB
9	HRC / Control Fuses	L&T / Siemens / Schneider / ABB
10	Contactor	L&T / Siemens / Schneider / ABB
11	Protection Relays	L&T / Siemens / Schneider / ABB
12	Bi-metal Relays	L&T / Siemens / Schneider / ABB
14	Earth Leakage Circuit Breaker	L&T / Siemens / Schneider / ABB
17	Lighting Fixtures / Luminaires	Philips / Crompton / Wipro / Havells
18	Lighting Transformer	Voltamp / Automatic Electric / Indcoil
19	Power Capacitor	L&T / Siemens / Schneider / ABB
20	APFC Panel	L&T / CGL / ABB / Schneider/ Siemens
21	Energy Meter (Digital)	Schneider/ Elmeasure / Conserve
23	Control / Selector Switches	Siemens / L&T /Havells / Kaycee / BCH
24	Push Button & Indicating Lamps	Siemens / L&T / Teknic /Schneider/
25	Timers	Siemens / L&T / Teknic
26	Instrument Transformer (CT/PT)	Siemens / Kappa / AE / L&T / ABB / Areva / Bhel
28	Vacuum Circuit Breaker	ABB/Siemens / Schneider
29	HT / LT Cable Jointing Kit	CCI / Raychem / M. Seal /3M
30	Variable Frequency Drive	ABB / Schneider / Yaskawa / Siemens
32	Ceiling / Exhaust Fans	Crompton / Orient / Havells
33	Control Station (Local Push Button Station)	Baliga Lighting / Schneider / Hansu
34	Fuse Switch Combination	Siemens / L&T / Schneider / ABB / C&S / GE
35	Heavy Duty Switches	Siemens / Schneider / L&T /C&S /ABB / GE
37	Junction Boxes	Ex-protecta / Sudhir Swgr / FCG
38	Bus Duct (L.V.)	IEC 60439 , CPRI Approved upto 65KA/s
39	Numerical Relays	Siemens / L&T / ABB / C&S
40	Cable Glands (Double Compression.)	Braco / Comet / Connectwell/ Dowells / HMI
41	Accessories of wiring	Anchor / Jainex / Clipsal

42	Terminal Blocks	Phoenix / Wago / Elmex / Connectwell
43	Lugs	Dowell / Jainsons / Joint Well / Connect Well
44	APFC Relay	Siemens / L&T / Schneider
45	Cable Trays (Ladder / Perforated)	Hot dip galvanized with reputed make.
46	PVC Conduits & Accessories	Precision / Clipsal / L&T / Sudhakar
47	Flexible Wire (FRLS)	Havells / Polycab / Finolex
49	Module Type Plug Socket	Anchor / Havells / Schneider
50	Lightining Arrestor	Obo / Oblum

S.NO	STANADARD NOTES FOR LT WORKS
1	Contractor has to submit PMCC/ APFC GA, SLD drawings, technical specs & BOM for approval from client along with the Quotation & before proceeding for fabrication.
2	Contractor is responsible to show Earth resistance value < 2 Ohm for the Earthpits and Earth testing report need to be submitted for the same.
3	Chakkar plate of thickness 5mm to be laid in between on the exting trench in panel room to fill the gaps in betwwen the panel and closure of the cable trench.
4	Proper Alignment of earth pits, should be in line with proper colour code & numbering. 100% finishing of chambers with top covers is must to get work completion report. Earth strip should be laid in cable trays under panels
5	Earth grid/looping between the earth pits near by/in one location to be interconnected.
6	Minimum 150MM concrete BED for top entry panels
7	Proper cable tray supports & fixing, black colour for supports & final coat of silver paint for trays before laying the cable.
8	Proper cable laying & dressing with cable ties and no overlapping entertained in the same tray.
9	DB's & Switch Boards should be at proper height as per Industry Standards.
10	Cable trays should lay at minimum 150MM height from floor, shouldn't lay directly on floor / under panels on channels.
11	Cable tray should lay in the cable trench under panels, cables should not lay directly on floor below panels. Even earth strips should also lay on the same tray.
12	Work completion report is mandatory for final payment & Balance materail should handover at stores with proper inventory
13	TPI will be arranged after work completion to certify the work quality, payment will be released based on the TPI satisfactory report.
14	Proper alignment of street lights / in a line.
15	Billing/Invoicing of supply & erection should be as per site quantity measurement. Contractor shouldn't supply 100% materail as per PO QTY.
16	Contractor should supply material at site as per his/contractor engineer physical measurement before procurement.
17	Contractor should submit all makes & model's along with serial number before procuring for approval.

18	Contractor should have electrical licesence and should depute a valid electrical engineer/senior electrician for period of time till work completion.
19	Contractor should submit all test certiifcates/user manuals/operating manulas/warrenty cards/approved drawings/asbuilt drawings/proper handing over to be done.
20	Contractor should submit the work completion report from site engineer and project head for final payment.
21	Contractor is responsible for minimum 12 months gaurenteed for all material supplied and 12 months warranty from the date of handover
22	Contractor should dispatch material only after 100% clearance from TPI.
23	Contractor is responsible for safe transport of material to site and for safe loading & unloading.
24	Contractor or his men should maintain/follow safety rules strictly while working, PPE is must.
25	Contractor should submit his RA Bill at site for certification first & to HO certification.
26	Along with invoice/RA Bills DC & Gate entry is mandatory
27	Where client is not responsible for safe storage contractor should make his own arrangement.
28	Contractor should signoff this document and provide along with the techno-commercial offer.
29	Any deviation in make list, client is having 100% authority to ask for the change in make as per BOQ.
30	Contractor responsible for LC in case of tapping / jumpering misc. etc.
31	Contractor has to complete all the works within 45 to 50 Days from the date of PO.
32	Contractor is responsible for all the miscellenous works till the Charging of the trasformer.
33	Contractor should take measurement for the Busduct as per the site condition & submit drawing for GA & Technical specifications for apprvoal from client before start of fabrication.
34	Contractor should provide bus duct support at the starting & end point, and for every 3Mtr one support is required for the bus duct from DTR to L.T Kiosk.
35	Contractor need to submit the BOM, GA drawings of VCB Panel, LT Kiosk Panel, GA drawings for approval from client before proceeding for Order & Fabrication.
36	

SCOPE MATRIX						
S.NO.	DESCRIPTION OF WORK	SCOPE RESPONSIBILITY				
		Electrical Contractor	RESL	SUB CONTRACTOR	ReSL (Civil)	RESL Client
HT WORKS						
1	Nearest tapping point considerd 11KV, OH Line	✓				
2	9Mtr RS Joist/Rail pole H Beam type DP Structure	✓				
3	HT Breaker (VCB & LBS)	✓				
4	11/0.440 kV Dyn11, ONAN, Outdoor type transformer-500KVA as per local EB approved makes list	✓				
5	HT Yard Earthing with chambers & manhole covers	✓				

6	Obtaining statutory approvals from EB authorities for 1. CEIG 2. SLD 3. Complete Plant Schematic 4. DG 5. Metering , line & DTR charging	✓				
7	Substation drawings related to Transformer/HT & LT Breaker along with foundation details (Schematic)-GA	✓				
8	Design support for construction for Drawings related to Transformer/HT & LT Breaker along with foundation details (Schematic)		✓			
9	Transformer yard civil works(Double pole structure/Transformer Plinth/HT Breaker/Fencing chain link mesh/40mm Metal spreading and leveling/Gate of transformer Yard size min 19x7Mtr size)				✓	
10	HT METER ROOM			**NA**		
11	DG Platform				✓	
12	PPE, Tools & Tackeles (Hydra/Crane/JCB/Ladder)	✓				
13	Third Party Inspection for HT Equipment		✓			
	LT WORKS					
1	Main LT PMCC & APFC Panels with proper channels & supports, accessories for positioning of panels	✓				
2	Drawings related to Panels (GA, SLD, BOM) before fabrication for approvals	✓				
3	Panels Trench Detailing, cable routing, earthing layout, street lighting GA, Plant lighting GA, Road crossing drawings-Design support for execution		✓			
4	Cable trench with cable route markers	✓				
5	LT cables, cable trays with top covers,terminations,internal electrification,outdoor lighting, shed lighting, safety, LAS, Double earthing { For Main LT panels and common infra, individual equipement}	✓				
6	Safety Items, Tools & Tackeles (Hydra/Crane/JCB/Ladder)	✓				
7	Sub-MCC Panels for mechanical equipment			✓		
8	Drawings related to Sub MCC Panels (GA, SLD, BOM) before fabrications for approvals - MEE,Boiler,UFRO,DAF,OCS,Secondary Clarifier			✓		

9	Cable Laying from Main Panels to Sub MCC Panels	✓				
10	Double Earthing for Sub-MCC Panel & individual Equipements			✓		
11	EarthPit Chambers with Covers for sub-contractor panels and their equipments	✓				
12	Cable Laying from Sub Control Panel to their individual Equipments			✓		
13	Cable Trays with Top Covers from Sub Control Panel to Individual Equipments with proper cable tray routing above the ground with 3.5Mtrs height with suitable supports over the shed and cable to be dressed properly on the trays			✓		
14	Street light foundations		□		✓	
15	Third Party Inspection for LT Material	□	✓			
19	Street Light Foundations - 18 Nos.				✓	

GENERAL TECHNICAL SPECIFICATIONS

FOR

MECHANICAL WORKS

Mechanical Specifications

1) Bhaisoara Transfer Station

Scope of Work: Design, Supply, Construction, Erection, Commissioning and O&M of Mechanized Static Garbage Transfer station at Bhaisoara Transfer Station with 3Bin facility.

Specifications for Mechanical Equipment's:

A. Static Horizontal Compaction Machine model SC –260 with Tip Cart Mechanism / model SC –350 with Hopper

Static Compactor machine along with complete Electricals and Hydraulic system consist of

- Horizontal Compaction Machine SC – 260 with Tip Cart mechanism / SC – 350 with Hopper
- Hopper
- Guillotine system
- Hydraulic Clamping Claw
- Drainage System for leachate
- Hydraulic Power Pack
- PLC based Electronic Controls.
- Container change over system (Two Containers)

Container A container of Volumetric Capacity of 20 Cum. consists of

- Cylindrical Shell with Guillotine door.
- Leachate collection Tray
- Ratchet Mechanism for closing and opening of container Doors.
- Drain Valves.
- Set of metallic Rollers.
- Sub frame.

2) Dayal Square Transfer Station

Scope of Work: Design, Supply, Construction, Refurbishment, Erection and Commissioning of Mechanized Static Garbage Transfer station at Dayal Square Transfer Station with 3Bin facility – Two level FCTS.

Specifications for Mechanical Equipment's:

A. Static Horizontal Compaction Machine model SC –260 with Tip Cart Mechanism / model SC –350 with Hopper

Static Compactor machine along with complete Electricals and Hydraulic system consist of

- Horizontal Compaction Machine SC – 260 with Tip Cart mechanism / SC – 350 with Hopper
- Hopper
- Guillotine system

- Hydraulic Clamping Claw
- Drainage System for leachate
- Hydraulic Power Pack
- PLC based Electronic Controls.
- Container change over system (Two Containers)

Container A container of Volumetric Capacity of 20 Cum consists of

- Cylindrical Shell with Guillotine door.
- Leachate collection Tray
- Ratchet Mechanism for closing and opening of container Doors.
- Drain Valves.
- Set of metallic Rollers.
- Sub frame.

3) Kailash Kunj: 2Bin Portable Compactor Transfer Station

Scope of Work: Design, Supply, Construction, Refurbishment, Erection and Commissioning of Mechanized Static Garbage Transfer station at Kailash Kunj Transfer Station with 2Bin facility.

Specifications for Mechanical Equipment's:

A. Portable Compactor Machine model MX-160/16CuM with Tip Cart Loading Mechanism
Mobile Compactor machine along with complete Electricals and Hydraulic system consist of

- Compaction Unit MX–160 with 16 Cum Body
- Tip Cart Loading mechanism
- Hopper / Charging Chamber
- Hydraulic Operated Rear Door Locking Mechanism
- Leachate Drainage System
- Electrohydraulic Power Pack Complete
- Supporting Tracks with Compactor stoppers.

4) Mithaiwala Square: 2 Bin Portable Compactor Transfer Station

Scope of Work: Design, Supply, Construction, Refurbishment, Erection and Commissioning of Mechanized Static Garbage Transfer Station at Mithaiwala Square Transfer Station with 2Bin facility.

Specifications for Mechanical Equipment's:

A. Portable Compactor Machine model MX-160/16CuM with Tip Cart Loading Mechanism
Mobile Compactor machine along with complete Electricals and Hydraulic system consist of

- Compaction Unit MX–160 with 16 Cum Body
- Tip Cart Loading mechanism
- Hopper / Charging Chamber
- Hydraulic Operated Rear Door Locking Mechanism

- Leachate Drainage System
- Electrohydraulic Power Pack Complete
- Supporting Tracks with Compactor stoppers.

5) Vineet Khand-06: 2Bin Portable Compactor Transfer Station

Scope of Work: Design, Supply, Construction, Refurbishment, Erection and Commissioning of Mechanized Static Garbage Transfer station at Vineet Khand-06 Transfer Station with 2Bin facility.

Specifications for Mechanical Equipment's:

A. Portable Compactor Machine model MX-160/16CuM with Tip Cart Loading Mechanism
Mobile Compactor machine along with complete Electricals and Hydraulic system consist of

- Compaction Unit MX–160 with 16 Cum Body
- Tip Cart Loading mechanism
- Hopper / Charging Chamber
- Hydraulic Operated Rear Door Locking Mechanism
- Leachate Drainage System
- Electrohydraulic Power Pack Complete
- Supporting Tracks with Compactor stoppers.

6) Near BBD: 2Bin Portable Compactor Transfer Station

Scope of Work: Design, Supply, Construction, Erection and Commissioning of Mechanized Static Garbage Transfer station at Near BBD 2Bin site Transfer Station with 2Bin facility.

Specifications for Mechanical Equipment's:

A. Portable Compactor Machine model MX-160/16CuM with Tip Cart Loading Mechanism
Mobile Compactor machine along with complete Electricals and Hydraulic system consist of

- Compaction Unit MX–160 with 16 Cum Body
- Tip Cart Loading mechanism
- Hopper / Charging Chamber
- Hydraulic Operated Rear Door Locking Mechanism
- Leachate Drainage System
- Electrohydraulic Power Pack Complete
- Supporting Tracks with Compactor stoppers.

ANNEXURE IV

BILL OF QUANTITIES FOR TENDERING
(CIVIL, MECHANICAL AND ELECTRICAL WORKS)