IN THE HON'BLE NATIONAL GREEN TRIBUNAL

PRINCIPAL BENCH, NEW DELHI

M.A. No. 44/2024

In

ORIGINAL APPLICATION No. 170/2021

NOORUL SEHAR LARI …APPLICANT

Versus

STATE OF UP & ORS. …RESPONDENT(S)

INDEX

	Copy of the **DPR Report on Drain Construction and Wastewater Treatment**	50-248
4.	**ANNEXURE-3** Copy of the **Water Test Report on Treated Effluent from the Waste Stabilization Pond**	

THROUGH

Date:27.02.2025

Place: New Delhi

PRIYANKA SWAMI
ADVOCATE
NAGAR PANCHAYAT, LAR, UTTAR PRADESH F-13,
JANGPURA, NEW DELHI 110014
E-mail:advpriyankaswami@gmail.com

IN THE HON'BLE NATIONAL GREEN TRIBUNAL

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M.A. No. 44/2024

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ORIGINAL APPLICATION No. 170/2021

NOORUL SEHAR LARI …APPLICANT

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COMPLIANCE REPORT ON BEHALF OF EXECUTIVE OFFICER, NAGAR PANCHAYAT, LAR, UTTAR PRADESH, ALONG WITH SUPPORTING AFFIDAVIT.

MOST RESPECTFULLY SHOWETH:

1. The present compliance report is being submitted in adherence to the directions passed by the Hon'ble National Green Tribunal (NGT) regarding environmental management and wastewater treatment in Nagar Panchayat Lar, District Deoria, Uttar Pradesh. Nagar Panchayat Lar has taken all necessary steps as per the Tribunal's directives to address environmental concerns and improve wastewater treatment infrastructure.

2. This report presents a **factual account** of all actions taken by Nagar Panchayat Lar, **covering drainage infrastructure upgrades, construction of oxidation ponds,**

establishment of a waste stabilization pond, and ongoing management of fecal sludge and treated water. In compliance with the Tribunal's directives, an **elaborate plan** for future expansion has also been prepared, demonstrating the Nagar Panchayat's **sustained commitment** to public health and environmental protection.

3. That previously, the drain of Nagar Panchayat, which passed adjacent to **Gata No. 1712**, was an unpaved structure, causing wastewater to accumulate and overflow onto private graveyard land. Consequently, Nagar Panchayat Lar promptly converted the entire stretch of this drain into a reinforced concrete (RCC) structure, thereby eliminating any ingress of drain water into the said plot. Copy of **Geo-tagged Photographs of the Drain After Completion** along with **Drain Completion Certificate** is annexed herein as **Annexure-1(Colly)**. The financial outlay for this specific work is set forth below, reflecting the costs borne by private sources and the outcomes achieved:

Description of Work	**Cost (INR)**	**Funding Source**	**Outcome**
Construction of paved drain from Central School	496,095.00	Private Sources	Prevented overflow toward the private graveyard

Description of Work	Cost (INR)	Funding Source	Outcome
(Indira Nagar Ward) to big graveyard			
Drain construction in front of the graveyard	495,000.00	Private Sources	Stopped water ingress near graveyard boundary
RCC drain from graveyard gate to Shambhu Singh's field	1,455,803.00	Private Sources	Created an uninterrupted paved pathway for wastewater flow
Total	**2,446,898.00**	–	**Fully resolved the issue of drain water entering Plot No. 1712**

4. It is further submitted that, in adherence to the Hon'ble Tribunal's directions, Nagar Panchayat Lar implemented a comprehensive plan to enhance wastewater treatment practices. These measures include laying hume pipes from Shambhu Singh's field to a newly created waste stabilization pond, constructing two oxidation ponds for preliminary treatment, and adopting both bioremediation and phytoremediation

methods. The waste stabilization pond, located in Plot No. 2008 and spread over 28 decimals, has been lined with High-Density Polyethylene (HDPE) material and fortified with cement pillars and barbed wire fencing. Copy of the **DPR Report on Drain Construction and Wastewater Treatment** is annexed herein as **Annexure-2**. The table below captures the expenditures associated with these initiatives:

Description of Work	**Cost (INR)**	**Funding Source**	**Purpose/Outcome**
Laying hume pipe from Shambhu Singh's field to the Waste Stabilization Pond	679,125.00	Private Sources	Directed wastewater efficiently to the stabilization pond
HDPE Pond Liner for the stabilization pond	68,500.00	Private Sources	Prevented seepage and safeguarded the pond's structural integrity
Fencing of the stabilization pond with barbed wire	88,361.00	Private Sources	Provided security and prevented unauthorized access
Phytoremediation plants (Canna Indica, Narkul, Arvi,	50,000.00	Private Sources	Strengthened natural water purification

Description of Work	Cost (INR)	Funding Source	Purpose/Outcome
Poseidona Australis, etc.)			processes and ecological balance
Capital expenditure for drains, oxidation ponds, and stabilization pond (cumulative)	33,32,884.00	Private Sources	Comprehensive development of wastewater management infrastructure
Annual expenditure on bioremediation	867,684.00	Private Sources	Ensured ongoing biological treatment for sustained water quality improvement

5. It is respectfully informed that two oxidation ponds, **measuring 1 m x 3 m and 1 m x 1 m x 2 m,** serve to reduce the organic load through bioremediation before water enters the main waste stabilization pond. Phytoremediation has been reinforced by planting species such as Canna Indica, Narkul, Arvi, and Poseidona Australis, thereby enhancing pollutant removal through natural processes. Subsequent to this treatment regimen, water quality assessments indicate that the Biochemical Oxygen Demand (BOD) of the treated water is 23.8 mg/L, the Chemical Oxygen Demand (COD) is 100 mg/L, Suspended Solid Particles measure 48.4 mg/L, and Fecal

Coliform Counts stand at 360 CFU/100 mL and 200 CFU/100 mL. Copy of the **Water Test Report on Treated Effluent from the Waste Stabilization Pond** is annexed herein as **Annexure-3**. These findings are summarized below:

Parameter	**Measured Value**
Biochemical Oxygen Demand	23.8 mg/L
Chemical Oxygen Demand	100.00 mg/L
Suspended Solid Particles	48.4 mg/L
Fecal Coliform Count	360 CFU/100 mL & 200 CFU/100 mL

6. It is humbly stated that the primary drain carries only domestic wastewater, as septic tank effluent does not enter it. Nevertheless, Nagar Panchayat Lar has diligently complied with Swachh Survekshan 2023 guidelines by adopting a cluster approach in collaboration with Nagar Palika Parishad Deoria, whereby fecal sludge is transported to the Faecal Sludge Treatment Plant (FSTP) in Jatmalpur. Two sewer suction machines have been deployed, and private operators are mandated to dispose of fecal sludge exclusively at the designated FSTP site, thereby ensuring that waste is handled safely and scientifically.

7. It is also respectfully submitted that water treated in the waste stabilization pond is being utilized for irrigating approximately 10 to 15 acres of farmland, supporting road and drain construction, and suppressing dust through tanker-based sprinkling. A forward-looking plan has been prepared to connect the waste stabilization pond located in Gata No. 1712 to Dhaveria Pokhara, thereby diverting surplus treated water during monsoon seasons into a proposed larger stabilization pond, where it may be utilized for fish farming and other ecological purposes. Furthermore, Nagar Panchayat Lar has formulated a proposal for the construction of two additional large waste stabilization ponds at Dhoviya Pokhara and Math Pokhara. This proposal, prepared by RCUES Snow Fountain Civil Engineering Vocation Training Institute Samiti (recognized by NITI Aayog), has been submitted to higher authorities for the requisite approvals.

8. It is submitted with the utmost humility and respect that all measures enumerated herein have been undertaken in conformity with the orders of the Hon'ble National Green Tribunal, prioritizing both environmental sustainability and public welfare. Nagar Panchayat Lar remains firmly committed to the scientific, efficient, and sustainable treatment of wastewater, alongside the proper management of fecal sludge. Regular reviews and water quality checks are conducted, and authorities shall continue to furnish updated reports to the Hon'ble Tribunal regarding any further advancements or improvements. All statements contained herein are made in

good faith, with a sincere resolve to adhere to the directives of this Hon'ble Tribunal and uphold environmental protection and community well-being

9. That Nagar Panchayat Lar remains **fully committed** to implementing environmental regulations and ensuring compliance with the Tribunal's orders. All necessary measures have been taken to ensure wastewater treatment and fecal sludge management are **scientific, efficient, and environmentally sustainable**.

10. The Nagar Panchayat humbly submits that all the aforementioned steps have been undertaken **in good faith and due diligence**, prioritizing **environmental protection and public welfare**. The Nagar Panchayat shall continue to comply with the Hon'ble Tribunal's directions and provide periodic updates on further improvements in wastewater treatment and environmental management.

THROUGH

Date:27.02.2025
Place: New Delhi

PRIYANKA SWAMI
ADVOCATE
NAGAR PANCHAYAT, LAR, UTTAR PRADESH F-13,
JANGPURA, NEW DELHI 110014
E-mail:advpriyankaswami@gmail.com

INDIA NON JUDICIAL

IN-UP22822259206366X

Government of Uttar Pradesh

e-Stamp

ACC Name-Jai Nath Yadav ACC Code-UP14530104
ACC Address-Salempur, Mobile-7054723384
License NO-123 Tehsil & District-Salempur, Deoria

Certificate No.	:	IN-UP22822259206366X
Certificate Issued Date	:	27-Feb-2025 03:37 PM
Account Reference	:	NEWIMPACC (SV)/ up14530104/ SALEMPUR/ UP-DRA
Unique Doc. Reference	:	SUBIN-UPUP1453010442867282101596X
Purchased by	:	MRIDUL KUMAR SINGH S O VED PRAKASH SINGH
Description of Document	:	Article 4 Affidavit
Property Description	:	Not Applicable
Consideration Price (Rs.)	:	
First Party	:	MRIDUL KUMAR SINGH S O VED PRAKASH SINGH
Second Party	:	Not Applicable
Stamp Duty Paid By	:	MRIDUL KUMAR SINGH S O VED PRAKASH SINGH
Stamp Duty Amount(Rs.)	:	10 (Ten only)

NOTARY S. K. TIWARI GOVT. OF U.P.

IN THE HON'BLE NATIONAL GREEN TRIBUNAL
PRINCIPAL BENCH, NEW DELHI
M.A. No. 44/2024
In
ORIGINAL APPLICATION No. 170/2021

Please write or type below this line

NOORUL SEHAR LARI ...APPLICANT

Versus

STATE OF UP & ORS. ...RESPONDENT(S)

AFFIDAVIT

I, **MRIDUL KUMAR SINGH,** aged about **38 years** s/o **Sh.VED PRAKASH SINGH,** is presently posted as **Executive Officer, Lar Uttar Pradesh** having an office at **Lar, Uttar Pradesh.**

NOTARY S. K. TIWARI GOVT. OF U.P. 27/2/25

1. That I am posted as stated above and well conversant with the facts of the present case and as such competent to swear this affidavit before this Tribunal.
2. That the accompanying Compliance report has been drafted by our counsel upon my instructions.
3. That the contents of the accompanying Compliance report are true and correct, and the knowledge has been derived from official records and nothing material has been concealed therefrom.

DEPONENT

VERIFICATION

Verified on solemn affirmation at Lar, U.P. on this ____ day of 2025, that the contents of the foregoing affidavit are true and correct to the best of my knowledge and no part of it is false and nothing material has been concealed therefrom.

DEPONENT

27/2/25

NOTARY
S. K TIWARI
27/2/25
GOVT. OF U.P.

ANNEXURE-1

CENTRAL SCHOOL SE KABRISTAN GATE TAK NALA

558


GPS Map Camera
Lar, Uttar Pradesh, India
6x2f+vv3, Lar, Uttar Pradesh 274502, India
Lat 26.202108° Long 83.974812°
01/03/2025 01:12 PM GMT +05:30
Google

कार्यालय नगर पंचायत लार, देवरिया।

पत्रांक–मेमो न0पं0लार / 2022–23 दिनांक–23.09.2022

कार्य पूर्णता प्रमाण पत्र

(Work Completion Certificate)

प्रमाणित किया जाता है कि 15वॉ वित्त आयोग के अन्तर्गत प्राप्त धनराशि से **इन्दिरानगर वार्ड में सेन्ट्रल पब्लिक स्कुल के सामने गेट तक नाला निर्माण कार्य** पूर्ण करा लिया गया है।

1.	कार्य का नाम	इन्दिरानगर वार्ड में सेन्ट्रल पब्लिक स्कुल के सामने गेट तक नाला निर्माण कार्य।
2	अनुबंध संख्या	1
3	अनुबंध की लागत	498750.00
4	कार्य प्रारम्भ की तिथि	28.06.2021
5	अनुबन्ध के अनुसार कार्य पूर्ण करने की तिथि	28.07.2021
6	अन्तिम देयक के अनुसार समस्त कार्य की कुल लागत	496095.00
7	कार्य पूर्ण करने की वास्तविक तिथि	23.09.2022

कृत कार्य की कुल धनराशि (शब्दों में)–रूपया **चार लाख छियानवे हजार पन्चानवे रूपया मात्र।**

अधिशासी अधिकारी
नगर पंचायत लार
देवरिया।

(15 वॉ वित्त आयोग) कार्य संख्या–3

कार्यालय नगर पंचायत लार जनपद–देवरिया

पत्रांक मेनो/न0पं0लार/2021–22 दिनांक 28-06-2021

कार्यादेश

मे0 नीरज कुमार सिंह
बरडीहा दलपत लार
देवरिया

आपको इस कार्यादेश द्वारा सूचित किया जाता है,कि आप द्वारा डाली गयी ई–निविदा संख्या–2021_DOLBU_595940_1 न्यूनतम होने के कारण स्वीकृत कर लिया गया है। जिसका विवरण निम्न है।

क्र0सं0	कार्य का नाम	आगणन की धनराशि	फर्म/ठेकेदार द्वारा भरा गया दर	अनुबन्ध हेतु देय स्टाम्प पेपर	कार्य पूर्ण की अवधि
1	इन्दिरानगर वार्ड में सेन्ट्रल पब्लिक स्कुल के सामने गेट तक नाला निर्माण कार्य।	500000.00	आगणन दर से 0.25 प्रति0 कम पर	मु0 110.00 रू0 मात्र	एक माह

अतः कार्यादेश प्राप्ति के तीन दिन के भीतर आप नियमानुसार स्टैम्प पेपर अनुबन्धित कराना सुनिश्चित करें। तत्पश्चात कार्यालय को सूचना देकर निर्माण कार्य प्रारम्भ करें। तथा गुणवत्ता के जॉच के उपरान्त भुगतान हेतु बिल कार्यालय को प्रस्तुत करें।

अधिशासी अधिकारी
नगर पंचायत लार
देवरिया

Form No. 26

CONTRACTOR'S BILL

Town Area /Nagar Palika .... छपार

Date of Payment Made for........ इन्दिरानगर वार्ड में सेन्ट्रल पब्लिक स्कूल के सामने गेट तक नाला निर्माण कार्य

name of contractor .... मो० मोहन कुमार सिंह

Description of work	Quantity	Rate	Per	Amount Rs.	Ps.
(1) Site clean with all cutte	One	L.S.	Job	8500	00
(2) E/W excavation in all condition	199.66	120.00	m3	23959	20
(3) Disposal of excavated soil	199.66	183.50	m3	36637	61
(4) C.C. 1:6:12 cemt, for B/B	17.61	3170.00	m3	55823	70
(5) B/W 1:4 cemt, etc	59.88	4555.00	m3	272753	40
(6) Plast 1:4 cemt, etc	174.15	157.00	m2	27341	55
(7) P.C.C 1:2:4 cemt, etc, etc	3.84	6520.00	m3	25036	80
Total Rs				444052	26
Say Rs				444052	00
Deduction of 0.25% T.D.S.				1110	00
				442942	00
Add 12% G.S.T.				53153	00
				496095	00
Deduction of 2% I.T.				9922	00
" " 1% L.C.				4429	00
" " 1% S.G.S.T.				4429	00
" " 1% C.G.S.T.				4429	00
Net Rs				472886	00

Carried Over

Discription of Work	Quantity	Rate	Per	Amount Rs.	Ps.
This is certified that work has been complited satisfactory. JE Nagar Panchayat (Nagar Palika Parishad) AE As per site inspection work checked and found correct. work is satisfactory passed for payment Rs. .... E.O. Nagar Panchayat Nagar Palika Parishad साहोब देवी Chairman Nagar Panchayat Nagar Palika Parishad		Total Value of work done or supplies made up to data deduct previous payment Other deductions it any		472886	- 00
		Net amount payable		472886	- 00

Signature of Contractor

Certified that the work was completed on..................22-09-2022..................in accorbance with the estimate measured by me on..................23-09-2022..................and the measurements as shown on page ....501-532.....of my measurements book No. ....48641..........were as follows.

Signature of officer-in chrage

Certified that Rs. ....are available in the budged under Hoad public work. rate checked and fournd correct.

Signature of E.O. ....Date....................
Passed by chairman for Rs. ....Sig. of Chairman..........................

Nagar Panchayat Committee/ Nagar Palika Parishad

Pay Rs. ....

Chairman
Nagar Panchayat Committee/
Nagar Palika Parishad.
Date..

अधिशासी अधिकारी/अध्यक्ष महोदय,

बुनियादी अनुदान

कृपया अवगत कराना है, कि नगर पंचायत लार में निम्न विवरण के अनुसार **15 वाँ वित्त आयोग** से प्राप्त धनराशि के सापेक्ष निर्माण/स्थापना कार्य **मे0 नीरज कुमार सिंह** द्वारा कराया गया था। जिसका बिल अवर अभियन्ता नगर पंचायतें देवरिया द्वारा स्थलीय निरीक्षण कर प्रथम एवं अन्तिम बिल तैयार किया गया है। जिलाधिकारी महोदय देवरिया द्वरा गठित टास्क फोर्स द्वारा सत्यापनोपरान्त जिलाधिकारी महोदय देवरिया के आदेश दिनांक 11 दिसम्बर 2022 द्वारा भुगतान हेतु संस्तुति की गयी है। कार्य का विवरण निम्नवत है।

क्र0	कार्य का नाम	आगणन की धनराशि	बिल की धनराशि	बिल से की गयी कटौतीयां						देय धनराशि	देय जी0एस0टी0 12 %	शुद्ध देय धनराशि मय जी0एस0टी0
				आयकर कटौती 2.24 %	श्रम उपकर कटौती 1 %	जी0एस0टी0 कटौती (C Gst 1 %)	जी0एस0टी0 कटौती (S Gst 1 %)	पेनाल्टी अवर अभि0/अधि0 अभि0	कुल कटौतीयां			
1	2	3	4	5	6	7	8	9	10	11	12	13
1	इन्दिरानगर वार्ड में सेन्ट्रल पब्लिक स्कूल के सामने गेट तक नाला निर्माण कार्य।	500000.00	442942.00	9922.00	4429.00	4429.00	4429.00	0	23209.00	419733.00	53153.00	472886.00

उपरोक्त विवरण के अनुसार **मे0 नीरज कुमार सिंह** के नाम **मु0 472886.00 रू0 (मु0 चार लाख बहत्तर हजार आठ सौ छियासी रू0)** मात्र का भुगतान किया जाना प्रस्तावित है, तथा आयकर के मद में अधिशासी अधिकारी नगर पचांयत लार के नाम **मु0 9922.00 रू0 (मु0 नौ हजार नौ सौ बाईस रू0)** मात्र एवं श्रम उपकर के मद में **मु0 4429.00 रू0 (मु0 चार हजार चार सौ उन्तीस रू0)** मात्र का चेक तैयार कर जमा कराया जाना है। कृपया उक्त भुगतान हेतु स्वीकृति प्रदान करते हुये पी0पी0ए0 तैयार करने का आदेश प्रदान करना चाहें।

सरोज देवी

अधिशासी अधिकारी
नगर पंचायत-लार
देवरिया

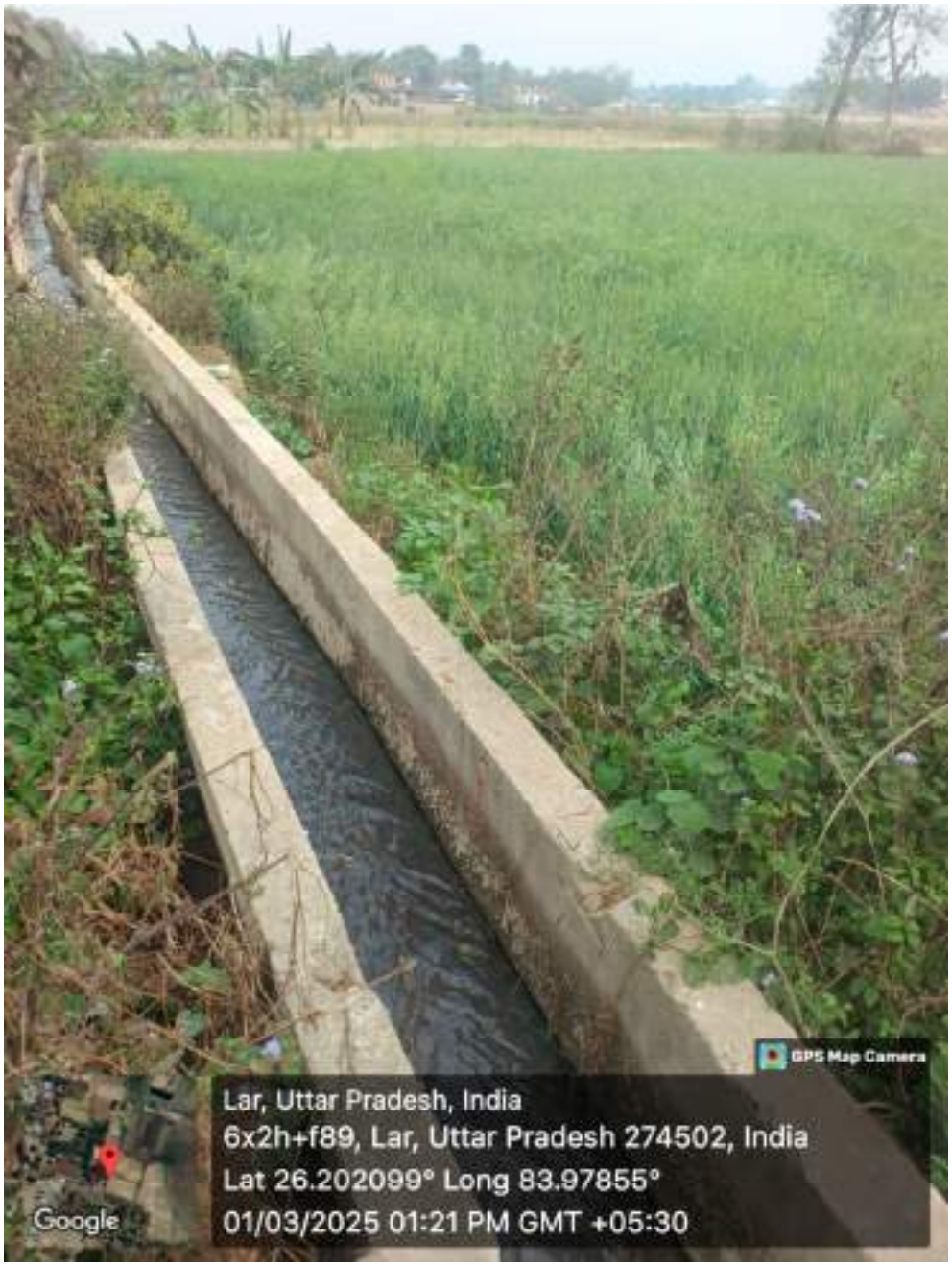
अधिशासी अधिकारी/ अध्यक्ष महोदय

उपरोक्त स्वीकृति/आदेश के क्रम में 15 वाँ वित्त आयोग से **मे0 नीरज कुमार सिंह** के नाम **मु0 472886.00 रू0 (मु0 चार लाख बहत्तर हजार आठ सौ छियासी रू0)** मात्र भुगतान हेतु पी0पी0ए0 संख्या C1222021570.....दिनांक 12/12/2022 तैयार कर प्रस्तुत हैं। कृपया सहमति की दशा में निर्गत पी0पी0ए0/चेक पर हस्ताक्षर करना चाहें।

सरोज देवी

नगर पंचायत-लार
देवरिया

KABRISTAN SE SHAMBHU KE KHET TAK RCC DRAIN


GPS Map Camera
Lar, Uttar Pradesh, India
6x2h+f89, Lar, Uttar Pradesh 274502, India
Lat 26.202099° Long 83.97855°
01/03/2025 01:21 PM GMT +05:30
Google

कार्यालय नगर पंचायत लार, देवरिया।

पत्रांक–मेमो न0पं0लार / 2023–24 दिनांक–22.08.2023

कार्य पूर्णता प्रमाण पत्र

(Work Completion Certificate)

प्रमाणित किया जाता है कि राज्य वित्त आयोग के अन्तर्गत प्राप्त धनराशि से **नगर पंचायत लार में कब्रिस्तान गेट से शम्भु सिंह के खेत तक आर0सी0सी0 नाला का निर्माण कार्य** पूर्ण करा लिया गया है।

1.	कार्य का नाम	नगर पंचायत लार में कब्रिस्तान गेट से शम्भु सिंह के खेत तक आर0सी0सी0 नाला का निर्माण कार्य।
2	अनुबंध संख्या	1
3	अनुबंध की लागत	1456927.00
4	कार्य प्रारम्भ की तिथि	20.07.2023
5	अनुबन्ध के अनुसार कार्य पूर्ण करने की तिथि	20.08.2023
6	अन्तिम देयक के अनुसार समस्त कार्य की कुल लागत	1455803.00
7	कार्य पूर्ण करने की वास्तविक तिथि	22.08.2023

कृत कार्य की कुल धनराशि (शब्दों में)–रूपया **चौदह लाख पचपन हजार आठ सौ तीन रूपया मात्र।**

अधिशासी अधिकारी
नगर पंचायत लार
देवरिया।

(राज्य वित्त आयोग) कार्य सं0 –1

कार्यालय नगर पंचायत लार जनपद–देवरिया

पत्रांक: मेमो /न0पं0लार/2023–24 दिनांक: 20.07.2023

कार्यादेश

मे0 अनवारूल हसन
मठ वार्ड मुहल्ला खीरी लार
देवरिया।

आपको इस कार्यादेश द्वारा सूचित किया जाता है,कि आप द्वारा डाली गयी ई–निविदा संख्या– 2023_DOLBU_819806_1 न्यूनतम होने के कारण स्वीकृत कर लिया गया है। जिसका विवरण निम्न है।

क्र0सं0	कार्य का नाम	आगणन की धनराशि	फर्म/ठेकेदार द्वारा भरा गया दर	कार्य पूर्ण की अवधि
1	नगर पंचायत लार में कब्रिस्तान गेट से शम्भु सिंह के खेत तक आर0सी0सी0 नाला का निर्माण कार्य।	1461311.00	आगणन दर से 0.30 प्रति0 कम पर	3 माह

अतः कार्यादेश प्राप्ति के तीन दिन के भीतर आप नियमानुसार स्टैम्प पेपर अनुबन्धित कराना सुनिश्चित करें। तत्पश्चात कार्यालय को सूचना देकर निर्माण कार्य प्रारम्भ करें। तथा गुणवत्ता के जॉच के उपरान्त भुगतान हेतु बिल कार्यालय को प्रस्तुत करें।

अधिशासी अधिकारी
नगरपंचायत लार
देवरिया

Interim Bill

Form No. 26

CONTRACTOR'S BILL

Town Area /Nagar Palika ....भार–देवरिया....

Date of Payment Made for....ग्राम पंचायत भार के में कब्रिस्तान गेट से शमशू सिंह के खेत तक आर.सी.सी नाला का निर्माण कार्य।....

name of contractor ....मै० अनवारुल हसन....

Description of work	Quantity	Rate	Per	Amount Rs.	Ps.
1. Site clearence with all complete	1 Job	L.S	Job	5000	00
2. E/W excavation in foundation in ordinary soil.	228.69 m3	120.00	m3	27442	80
3. Disposal of excavated earth.	160.08 m3	183.50	m3	29374	68
4. Sand filling in Nala with all complete.	38.11 m3	850.00	m3	32393	50
5. CC in 1:4:8 with cement and c.sand and 40mm gauge stone Ballast.	38.11 m3	5435.00	m3	207127	85
6. M.S or iron work in R.C.C work including in all.	55.18 qtl.	4815.00	qtl.	265691	70
7. R.C.C work in 1:1.5:3 with cement and c.sand and 20mm gauge stone Ballast.	69.29 m3	9560.00	m3	662412	40
8. S/F of Granite sign Board with all complete.	1 Job	L.S	Job	8000	00
				1237442	93
			Say	1237443	00
Deduction 0.30% T. Rate ...				3712	00
				1233731	00
	Add 18% GST			222072	00
				1455803	00
deduction	2.24% I Tax			27636	00
"	1.0% L.C			12337	00
"	1.0% C.G.S.T			12337	00
"	1.0% S.G.S.T			12337	00
				1391156	00
				1391156	00

Continued

Page .....

Discription of Work	Quantity	Rate	Per	Amount Rs.	Ps.
This is certified that work has been complited satisfactory.			B.F -	1391156	00
JE Nagar Panchayat (Nagar Palika Parishad) AE As per site inspection work checked and found correct. work is satisfactory passed for payment Rs.		Total Value of work done or supplies made up to data deduct previous payment Other deductions it any			
E.O. Nagar Panchayat Nagar Palika Parishad Chairman Nagar Panchayat Nagar Palika Parishad					
		Net amount payable		1391156	00

अनवार्हल हसन
Signature of Contractor

Certified that the work was completed on.....21-08-2022.....in accorbance with the estimate measured by me on.....22-08-2022.....and the measurements as shown on page .....164.....of my measurements book No. .....Hached.....were as follows.

Signature of officer-in chrage

Certified that Rs. .....are available in the budged under Hoad public work. rate checked and fournd correct.

Signature of E.O. ..... 1391156- .....Date.....

Passed by chairman for Rs. .....Sig. of Chairman.....

Nagar Panchayat Committee/ Nagar Palika Parishad

Pay Rs. .....

Chairman
Nagar Panchayat Committee/
Nagar Palika Parishad

अधिशासी अधिकारी/अध्यक्ष महोदय,

कृपया अवगत कराना है, कि नगर पंचायत लार में निम्न विवरण के अनुसार राज्य वित्त आयोग से प्राप्त धनराशि के सापेक्ष निर्माण कार्य **मे0 अनवारूल हसन** द्वारा कराया गया था। जिसका बिल अवर अभियन्ता नगर पंचायतें देवरिया द्वारा स्थलीय निरीक्षण कर प्रथम एवं अन्तिम बिल तैयार किया गया है। जनपद स्तरीय गठित टास्क फोर्स द्वारा सत्यापनोपरान्त जिलाधिकारी महोदय के कार्यालय के पत्र दिनांक 04 सितम्बर 2023 द्वारा भुगतान हेतु संस्तुति की गयी है। *प्रश्नगत कार्य के सापेक्ष प्राप्त मु0 1233731.00 रू0 का बिल अवर अभियन्ता द्वारा तैयार किया गया है। जिसके सापेक्ष बिल धनराशि मु0 677966.00 रू0 के सापेक्ष भुगतान किया गया है। अवशेष बिल धनराशि मु0 555765.00 रू0 मात्र के सापेक्ष भुगतान किया जाना अवशेष है।* कार्य का विवरण निम्नवत है।

क्र0	कार्य का नाम	आगणन की धनराशि	बिल की धनराशि	प्रस्तावित भुगतान की धनराशि	बिल से की गयी कटौटीयां					देय धनराशि	देय जी0एस0टी0 18 %	शुद्ध देय धनराशि मय जी0एस0टी0
					आयकर कटौती 2.24 %	श्रम उपकर कटौती 1 %	जी0एस0टी0 कटौती (C Gst 1 %)	जी0एस0टी0 कटौती (S Gst 1 %)	कुल कटौतियां			
1	2	3	4	5	6	7	8	9	10	11	12	13
1	नगर पंचायत लार में कब्रिस्तान गेट से शम्भु सिंह के खेत तक आर0सी0सी0 नाला का निर्माण कार्य।	1461311.00	1233731.00	555765.00	12449.00	5558.00	5558.00	5558.00	29123.00	526642.00	100038.00	626680.00

उपरोक्त विवरण के अनुसार राज्य वित्त आयोग से प्राप्त धनराशि से **मे0 अनवारूल हसन** के नाम **मु0 626680.00 रू0 (मु0 छः लाख छब्बीस हजार छः सौ अस्सी रू0) मात्र** का भुगतान किया जाना प्रस्तावित है तथा आयकर के मद में अधिशासी अधिकारी नगर पचांयत लार के नाम **मु0 12449.00 रू0 (मु0 बारह हजार चार सौ उन्चास रू0) मात्र** एवं श्रम उपकर के मद में **मु0 5558.00 रू0 (मु0 पाँच हजार पाँच सौ अन्ठावन रू0) मात्र** का चेक तैयार कर जमा कराया जाना है, कृपया उक्त भुगतान हेतु सहमति की दशा में, स्वीकृति प्रदान करते हुये पी0पी0ए0 तैयार करने का आदेश प्रदान करना चाहें।

अधिशासी अधिकारी
नगर पंचायत लार
देवरिया

अध्यक्ष
नगर पंचायत लार
देवरिया

अधिशासी अधिकारी/अध्यक्ष महोदय

उपरोक्त स्वीकृति/आदेश के क्रम में राज्य वित्त आयोग से मे0 अनवारूल हसन के नाम **मु0 626680.00 रू0 (मु0 छः लाख छब्बीस हजार छः सौ अस्सी रू0) मात्र** भुगतान हेतु पी0पी0ए0 संख्या.....CV2301319461 दिनांक 2-11-23 तैयार कर प्रस्तुत हैं। कृपया सहमति की दशा में निर्गत चेक पर हस्ताक्षर करना चाहें।

अधिशासी अधिकारी
नगर पंचायत लार
देवरिया

अध्यक्ष
नगर पंचायत लार
देवरिया

अधिशासी अधिकारी / अध्यक्ष महोदय,

कृपया अवगत कराना है, कि नगर पंचायत लार में निम्न विवरण के अनुसार **राज्य वित्त आयोग** से प्राप्त धनराशि के सापेक्ष निर्माण कार्य **मै0 अनवारूल हसन** द्वारा कराया गया था। जिसका बिल अवर अभियन्ता नगर पंचायतें देवरिया द्वारा स्थलीय निरीक्षण कर प्रथम एवं अन्तिम बिल तैयार किया गया है। जनपद स्तरीय गठित टास्क फोर्स द्वारा सत्यापनोपरान्त जिलाधिकारी महोदय के कार्यालय के पत्र दिनांक 04 सितम्बर 2023 द्वारा भुगतान हेतु संस्तुति की गयी है। *प्रश्नगत कार्य के सापेक्ष प्राप्त मु0 1233731.00 रू0 का बिल अवर अभियन्ता द्वारा तैयार किया गया है। परन्तु धनराशि उपलब्ध नही होने के कारण बिल धनराशि मु0 677966.00 रू0 के सापेक्ष भुगतान किया जाना है।* कार्य का विवरण निम्नवत है।

क्र0	कार्य का नाम	आगणन की धनराशि	बिल की धनराशि	प्रस्तावित भुगतान की धनराशि	बिल से की गयी कटौतीयां					देय धनराशि	देय जीएस0टी0 18 %	शुद्ध देय धनराशि मय जीएस0टी0
					आयकर कटौती 2.24 %	श्रम उपकर कटौती 1 %	जीएस0टी0 कटौती (C Gst 1 %)	जीएस0टी0 कटौती (S Gst 1 %)	कुल कटौतीयां			
1	2	3	4	5	6	7	8	9	10	11	12	13
1	नगर पंचायत लार में कब्रिस्तान गेट से शम्भु सिंह के खेत तक आर0सी0सी0 नाला का निर्माण कार्य।	1461311.00	1233731.00	677966.00	15186.00	6780.00	6780.00	6780.00	35526.00	642440.00	122034.00	764474.00

उपरोक्त विवरण के अनुसार राज्य वित्त आयोग से प्राप्त धनराशि से **मै0 अनवारूल हसन** के नाम **मु0 764474.00 रू0 (मु0 सात लाख चौसठ हजार चार सौ चौहत्तर रू0)** मात्र का भुगतान किया जाना प्रस्तावित है, तथा आयकर के मद में अधिशासी अधिकारी नगर पचांयत लार के नाम **मु0 15186.00 रू0 (मु0 पन्द्रह हजार एक सौ छियासी रू0)** मात्र एवं श्रम उपकर के मद में **मु0 6780.00 रू0 (मु0 छः हजार सात सौ अस्सी रू0)** मात्र का चेक तैयार कर जमा कराया जाना है, कृपया उक्त भुगतान हेतु सहमति की दशा में, स्वीकृति प्रदान करते हुये पी0पी0ए0 तैयार करने का आदेश प्रदान करना चाहें।

29.9.23

अधिशासी अधिकारी
नगर पंचायत लार
देवरिया

अध्यक्ष
नगर पंचायत लार
देवरिया

अधिशासी अधिकारी / अध्यक्ष महोदय

उपरोक्त स्वीकृति/आदेश के क्रम में **राज्य वित्त आयोग** से **मै0 अनवारूल हसन** के नाम **मु0 764474.00 रू0 (मु0 सात लाख चौसठ हजार चार सौ चौहत्तर रू0)** मात्र भुगतान हेतु पी0पी0ए0 संख्या C0913374[illegible] दिनांक 29.9.23 तैयार कर प्रस्तुत है। कृपया सहमति की दशा में निर्गत चेक पर हस्ताक्षर करना चाहें।

29.9.23

अधिशासी अधिकारी
नगर पंचायत लार
देवरिया

अध्यक्ष
नगर पंचायत लार
देवरिया

573

BADE KABRISTAN KE PAS NALA

कार्यालय नगर पंचायत लार, देवरिया।

पत्रांक–मेमो न0पं0लार / 2023–24 दिनांक–10.07.2023

कार्य पूर्णता प्रमाण पत्र

(Work Completion Certificate)

प्रमाणित किया जाता है कि राज्य वित्त आयोग के अन्तर्गत प्राप्त धनराशि से **बड़े कब्रिस्तान के पास नाला निर्माण कार्य** पूर्ण करा लिया गया है।

1.	कार्य का नाम	बड़े कब्रिस्तान के पास नाला निर्माण कार्य।
2	अनुबंध संख्या	1
3	अनुबंध की लागत	489060.00
4	कार्य प्रारम्भ की तिथि	24.10.2022
5	अनुबन्ध के अनुसार कार्य पूर्ण करने की तिथि	24.11.2022
6	अन्तिम देयक के अनुसार समस्त कार्य की कुल लागत	514141.00
7	कार्य पूर्ण करने की वास्तविक तिथि	10.07.2023

कृत कार्य की कुल धनराशि (शब्दों में)–रूपया **मु0 पॉच लाख चौदह हजार एक सौ एकतालीस रूपया मात्र।**

अधिशासी अधिकारी
नगर पंचायत लार
देवरिया।

(राज्य वित्त आयोग द्वारा कार्य)

कार्य सं0–02

कार्यालय नगर पंचायत लार जनपद–देवरिया

पत्रांक 1111 /न0पं0लार/2019–20 दिनांक 24-10-2022

कार्यादेश

मे0 नीरज कुमार सिंह
प्रो0–आशा देवी
ग्राम–बरडीहा दलपत,
देवरिया

आपको इस कार्यादेश द्वारा सूचित किया जाता है,कि आप द्वारा डाली गयी निविदा न्यूनतम होने के कारण स्वीकृत कर लिया गया है। जिसका विवरण निम्न है।

क्र0सं0	कार्य का नाम	आगणन की धनराशि	फर्म/ठेकेदार द्वारा भरा गया दर	अनुबन्ध हेतु देय स्टाम्प पेपर	कार्य पूर्ण की अवधि
1	बड़े कब्रिस्तान के पास नाला निर्माण कार्य।	495000.00	आगणन दर से 1.2 प्रति0 कम दर पर	मु0 110.00 रू0 मात्र	एक माह

अतः कार्यादेश प्राप्ति के तीन दिन के भीतर आप नियमानुसार स्टैम्प पेपर अनुबन्धित कराना सुनिश्चित करें। तत्पश्चात कार्यालय को सूचना देकर निर्माण कार्य प्रारम्भ करें। तथा गुणवत्ता के जॉच के उपरान्त भुगतान हेतु बिल कार्यालय को प्रस्तुत करें।

अधिशासी अधिकारी
नगर पंचायत लार
देवरिया

सरोज देवी
अध्यक्ष
नगर पंचायत लार
देवरिया

Form No. 26

CONTRACTOR'S BILL

Town Area /Nagar Palika ...... लार

Date of Payment Made for ...... इन्दिरा नगर वार्ड में बड़े कब्रिस्तान के पास नाला निर्माण कार्य।

name of contractor ...... मै० नीरज कुमार सिंह

Description of work	Quantity	Rate	Per	Amount Rs.	Ps.
1- Site clearance with all lb	one	ls	ls	2000	-
2- E/w excavation in foundation of drain	199-67	120-0	m3	23960	40
3- disposal of excavated waste material from site to 50m distance	199-67	183-50	m3	36639	45
4- CC work in 1:6:12 with cm. f.sand and brick ballast	17-62	3170-0	m3	55855	40
5- M150 class brick work in 1:4 with cm. f.sand	59-90	4555-0	m3	272844	50
6- 12 mm thick plaster in 1:3 with cm. f.sand	174-15	157-0	m2	27341	55
7- PCC work in 1:2:4 with cm. c.sand and grit	3-43	6520-0	m3	22363	60
				441004	90
				441005	-
Deduction of 1-20% T.R @				5292	-
				435713	-
Add 18% GST @				78428	-
				514141	-
" 2-24% 9% ..@				9760	-
1% LC @				4357	-
1% SGST @				4357	-
1% CGST @				4357	-
				491310	-
Carried Over					

Continued Page .....

Discription of Work	Quantity	Rate	Per	Amount Rs.	Ps.
This is certified that work has been complited satisfactory. JE Nagar Panchayat (Nagar Palika Parishad) AE As per site inspection work checked and found correct. work is satisfactory passed for payment Rs. ..... E.O Nagar Panchayat Nagar Palika Parishad Chairman Nagar Panchayat Nagar Palika Parishad		Total Value of work done or supplies made up to data deduct previous payment Other deductions it any	BF	491310 →	
			Net amount payable	491310 →	

Signature of Contractor

Certified that the work was completed on.....in accorbance with the estimate measured by me on.....and the measurements as shown on page ...Cal.-A.22.....of my measurements book No. .....Attached.....were as follows.

Signature of officer in chrage

Certified that Rs. .....are available in the budged under Hoad public work. rate checked and fournd correct.

Signature of E.O. .....Date.....

Passed by chairman for Rs. .....Sig. of Chairman.....

Nagar Panchayat Committee/ Nagar Palika Parishad

Pay Rs. .....

Chairman
Nagar Panchayat Committee/
Nagar Palika Parishad.

Date.....

अधिशासी अधिकारी/अध्यक्ष महोदय

कृपया अवगत कराना है, कि नगर पंचायत लार में निम्न विवरण के अनुसार राज्य वित्त आयोग से प्राप्त धनराशि के सापेक्ष निर्माण कार्य मे0 नीरज कुमार सिंह द्वारा कराया गया था। जिसका बिल अवर अभियन्ता नगर पंचायतें देवरिया द्वारा स्थलीय निरीक्षण कर प्रथम एवं अन्तिम बिल तैयार किया गया है। कार्य का विवरण निम्नवत है।

क्र0	कार्य का नाम	आगणन की धनराशि	बिल की धनराशि	बिल से की गयी कटौतीयां						देय धनराशि	देय जी0एस0टी0 18 %	शुद्ध देय धनराशि मय जी0एस0टी0
				आयकर कटौती 2.24 %	श्रम उपकर कटौती 1	जी0एस0टी0 कटौती (C Gst 1 %)	जी0एस0टी0 कटौती (S Gst 1 %)	पेनाल्टी अवर अभि0/अधि0 अभि0	कुल कटौतीयां			
1	2	3	4	5	6	7	8	9	10	11	12	13
1	इन्दिरानगर वार्ड में बड़े कब्रिस्तान के पास नाला निर्माण कार्य।	495000.00	435713.00	9760.00	4357.00	4357.00	4357.00	0	22831.00	412882.00	78448.00	491310.00

उपरोक्त विवरण के अनुसार राज्य वित्त आयोग से प्राप्त धनराशि से मे0 नीरज कुमार सिंह के नाम **मु0 491310.00 रू0 (मु0 चार लाख एकानवे हजार तीन सौ दस रू0) मात्र** का भुगतान किया जाना प्रस्तावित है, तथा आयकर के मद में अधिशासी अधिकारी नगर पचायत लार के नाम **मु0 9760.00 रू0 (मु0 नौ हजार सात सौ साठ रू0) मात्र** एवं श्रम उपकर के मद में **मु0 4357.00 रू0 (मु0 चार हजार तीन सौ सन्तावन रू0) मात्र** का चेक तैयार कर जमा कराया जाना है, कृपया उक्त भुगतान हेतु सहमति की दशा में, स्वीकृति प्रदान करते हुये पी0पी0ए0 तैयार करने का आदेश प्रदान करना चाहें।

अधिशासी अधिकारी
नगर पंचायत लार
देवरिया

4/7/23
अध्यक्ष
नगर पंचायत लार
देवरिया

अधिशासी अधिकारी/अध्यक्ष महोदय

उपरोक्त स्वीकृति/आदेश के क्रम में राज्य वित्त आयोग से मे0 नीरज कुमार सिंह के नाम **मु0 491310.00 रू0 (मु0 चार लाख एकानवे हजार तीन सौ दस रू0) मात्र** भुगतान हेतु पी0पी0ए0 संख्या 0723070572/1 दिनांक 10/7/23 तैयार कर प्रस्तुत हैं। कृपया सहमति की दशा में निर्गत चेक पर हस्ताक्षर करना चाहें।

अधिशासी अधिकारी
नगर पंचायत लार
देवरिया

4/7/23
अध्यक्ष
नगर पंचायत लार
देवरिया

...m No. 26

CONTRACTOR'S BILL

...Nagar Palika .... [illegible]

Payment Made for.... नगर पंचायत [illegible] के हरिनगर वार्ड में [illegible] सिंह के खेत से नगर पंचायत की [illegible] तक ह्यूम पाइप डालने का कार्य।

...me of contractor .... मे. [illegible] दुबे

	Description of work	Quantity	Rate	Per	Amount Rs.	Ps.
1	Site clearance with all [illegible]	[illegible]	LS	Job	7000	-
2	E/W excavation in foundation of chamber	160.41	120	m3	19249	-
3	C.C. work in [illegible] with [illegible] and [illegible]	21.97	3635	m3	79670	-
4	[illegible] brick work in [illegible] with [illegible]	18.65	5265	m3	90062	-
5	12 mm thick plaster [illegible] 1:3 with [illegible]	21.40	137	m2	11237	-
6	R.C.C. work in [illegible] with [illegible] and [illegible]	2.41	6520	m3	15757	-
7	R.C.C. work in [illegible] with [illegible] and [illegible]	0.91	8500	m3	8005	-
8	[illegible] for R.C.C. work	0.50	4815	[illegible]	4265	-
9	S/F of 450 mm dia NP-3 hume pipe	176.0	1705	mtr	300080	-
10	S/F of 450 mm dia NP-3 collar [illegible]	85.0	430	Nos	37640	-
11	Fixed steel [illegible] for chamber	[illegible]	LS	Job	2500	-
12	S/F of 200 mm dia PVC pipe	[illegible]	LS	Job	7580	-
					579507	-
	Deducting	0.70%	T.R. @		4057	-
					575570	-
		Add 18% GST @			103595	-
					679125	-
		[illegible]			12892	-
		@ 1% [illegible]			5755	-
		@ 1% [illegible]			5755	-
		@ 1% [illegible]			5755	-
					649698	-

Carried Over

Discription of Work	Quantity	Rate	Per	Amount Rs.	Ps.
This is certified that work has been complited satisfactory.			ৰিষ	646966	/-
JE Nagar Panchayat (Nagar Palika Parishad)					
AE					
As per site inspection work checked and found correct. work is satisfactory passed for payment Rs.					
E.O. Nagar Panchayat Nagar Palika Parishad Chairman Nagar Panchayat Nagar Palika Parishad		Total Value of work done or supplies made up to data deduct previous payment Other deductions it any			
		Net amount payable		646966	/-

Signature of Contractor

Certified that the work was completed on ....27-07-2023.... in accorbance with the estimate measured by me on ....28-07-2023.... and the measurements as shown on page ....Col. 05.1.... of my measurements book No. ....Attached.... were as follows.

Signature of officer-in chrage

Certified that Rs. .... are available in the budged under *Hoad public work. rate checked and fournd correct.*

Signature of E.O. ....

अधिशासी अधिकारी/अध्यक्ष महोदय

कृपया अवगत कराना है, कि नगर पंचायत लार में निम्न विवरण के अनुसार राज्य वित्त आयोग से प्राप्त धनराशि के सापेक्ष निर्माण कार्य मे0 अश्वनी दूबे द्वारा कराया गया था। जिसका बिल अवर अभियन्ता नगर पंचायतें देवरिया द्वारा स्थलीय निरीक्षण कर प्रथम एवं अन्तिम बिल तैयार किया गया है। जिलाधिकारी महोदय देवरिया द्वारा गठित टास्क फोर्स द्वारा से सत्यापनोपरान्त कार्यालय जिलाधिकारी देवरिया के पत्र दिनांक:04 जुलाई 2023 द्वारा भुगतान हेतु संस्तुति कि गयी है। कार्य का विवरण निम्नवत है।

क्र0	कार्य का नाम	आगणन की धनराशि	बिल की धनराशि	बिल से की गयी कटौतीयां						देय धनराशि	देय जी0एस0टी0 12 %	शुद्ध देय धनराशि मय जी0एस0टी0
				आयकर कटौती 2.24 %	श्रम उपकर कटौती 1 %	जी0एस0टी0 कटौती (C Gst 1 %)	जी0एस0टी0 कटौती (S Gst 1 %)	पेनाल्टी अवर अभि0/अधि0 अभि0	कुल कटौतीयां			
1	2	3	4	5	6	7	8	9	10	11	12	13
1	इन्दिरानगर वार्ड में शम्भु सिंह के खेत से नगर पंचायत की बंजर भूमि तक ह्यूम पाईप डालने का कार्य।	691531.00	575530.00	12892.00	5755.00	5755.00	5755.00	0	30157.00	545373.00	103595.00	648968.00

उपरोक्त विवरण के अनुसार राज्य वित्त आयोग से प्राप्त धनराशि से मे0 अश्वनी दूबे के नाम मु0 648968.00 रू0 (मु0 छः लाख अड़तालिस हजार नौ सौ अड़सठ रू0) मात्र का भुगतान किया जाना प्रस्तावित है, तथा आयकर के मद में अधिशासी अधिकारी नगर पचांयत लार के नाम मु0 12892.00 रू0 (मु0 बारह हजार आठ सौ बानवे रू0) मात्र एवं श्रम उपकर के मद में मु0 5755.00 रू0 (मु0 पॉच हजार सात सौ पचपन रू0) मात्र का चेक तैयार कर जमा कराया जाना है, कृपया उक्त भुगतान हेतु सहमति की दशा में, स्वीकृति प्रदान करते हुये पी0पी0ए0 तैयार करने का आदेश प्रदान करना चाहें।

10/7/2023
अधिशासी अधिकारी
नगर पंचायत लार
देवरिया

10/7/23
अधिशासी
नगर पंचायत लार
देवरिया

अधिशासी अधिकारी/अध्यक्ष महोदय

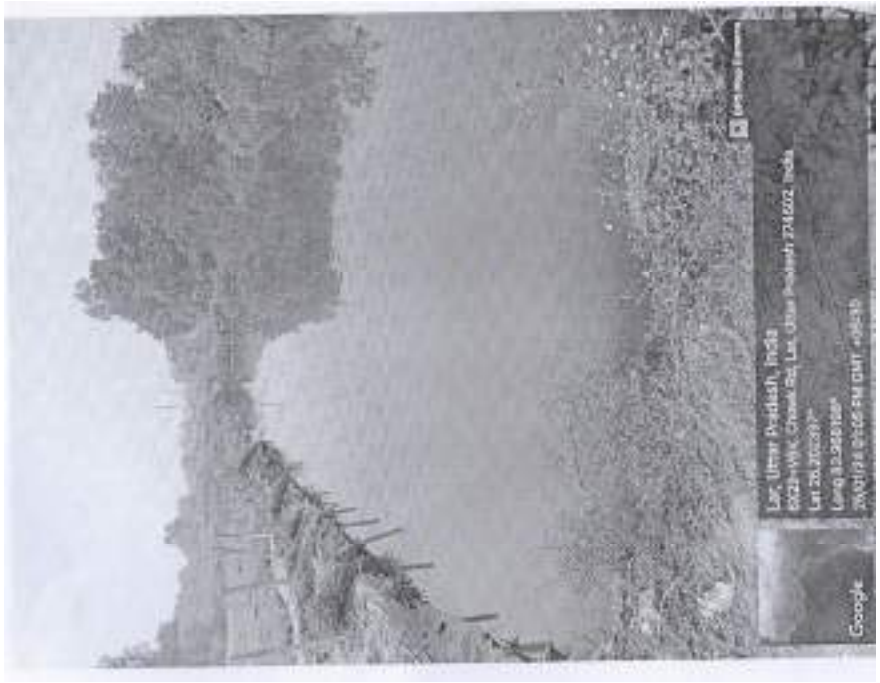
उपरोक्त स्वीकृति/आदेश के क्रम में राज्य वित्त आयोग से मे0 अश्वनी दूबे के नाम मु0 648968.00 रू0 (मु0 छः लाख अड़तालिस हजार नौ सौ अड़सठ रू0) मात्र भुगतान हेतु पी0पी0ए0 संख्या(ओ)2314693658 दिनांक 10-7-23 तैयार कर प्रस्तुत हैं। कृपया सहमति की दशा में निर्गत चेक पर हस्ताक्षर करना चाहें।

10/07/2023
अधिशासी अधिकारी
नगर पंचायत लार
देवरिया

10/7/23
अधिशासी
नगर पंचायत लार
देवरिया

WASTE STABILIZATION POND

583



...रंग नगर पंचायत

फर्म- अनूप मिश्रा

कुण्डावल तारा, पोस्ट- लार रोड, जिला- देवरिया (उ0प्र0)

बिजक सं०- 54 दिनांक.....

ग्राहक का नाम श्री....अध्यक्ष/अधिशासी अधिकारी नगर पं० लार.....

ग्राहक का पता.....नगर पंचायत लार देवरिया.....

राज्य.....उ०.....प्र०.....राज्य कोड.....०१.....

GSTIN:.....

क्र.सं.	वस्तु का नाम	HSN CODE	तादात	दर	मूल्य
1	वेस्ट स्टेबलाईजेशन पाण्ड में पालिथिन लगाने का कार्य		228.33 वर्ग मी०	254.24 प्रतिवर्ग मी०	58051-00
			CGST- 9%		5224.50
			SGST- 9%		5224.50

सम्पूर्ण योग शब्दों में:	टोटल	68500-00
	डिसकाउन्ट	—
	सम्पूर्ण योग	68500-00

सम्पूर्ण योग शब्दों में: छः अड़सठ हजार पाँच सौ रुपये मात्र

नोट- बिका हुआ माल वापस नहीं होगा।
भूत-चुक, लेनी-देनी

पाते- [illegible]
अनूप मिश्रा
अधिकृत हस्ताक्षरकर्ता

अधिशासी अधिकारी / अध्यक्ष महोदय,

कृपया अवगत कराना है, कि नगर पंचायत लार में निम्न विवरण के अनुसार इन्दिरानगर वार्ड में डम्पिंग ग्राउन्ड के पास वेस्ट स्टेबलाईजेशन पाण्ड की तली में पालीथिन लगाने का कार्य मे0 अनुप मिश्रा द्वारा कराया गया था। उक्त ठेकेदार द्वारा नियमानुसार स्टाम्प पेपर पर अनुबन्ध करते हुये कार्यालय में जमा करा दिया गया है। उक्त कार्य का विवरण निम्नवत है।

क्र0	कार्य का नाम	आगणन की धनराशि	बिल की धनराशि	बिल से की गयी कटौटीयां				शुद्ध देय धनराशि	देय जी0एस0टी0 18%	शुद्ध देय धनराशि मय जी0एस0टी0
				आयकर	CGST कटौती 1%	SGST कटौती 1%	कुल कटौटीयां			
1	2	3	4	5	6	7	8	9	10	11
1	इन्दिरानगर वार्ड में डम्पिंग ग्राउन्ड के पास वेस्ट स्टेबलाईजेशन पाण्ड की तली में पालीथिन लगाने का कार्य।	कोटेशन के अनुसार	58051.00	1300.00	581.00	581.00	2462.00	55589.00	10449.00	66038.00

उपरोक्त विवरण के अनुसार मे0 अनुप मिश्रा के नाम मु0 66038.00 रू0 (मु0 छाछठ हजार अड़तीस रू0) मात्र का भुगतान किया जाना प्रस्तावित है, तथा आयकर के मद में अधिशासी अधिकारी नगर पचांयत लार के नाम मु0 1300.00 रू0 (मु0 एक हजार तीन सौ रू0) मात्र का चेक तैयार कर जमा कराया जाना है, कृपया उक्त भुगतान हेतु स्वीकृति प्रदान करते हुये चेक तैयार करने का आदेश प्रदान करना चाहें।

अधिशासी अधिकारी
नगर पंचायत लार
देवरिया

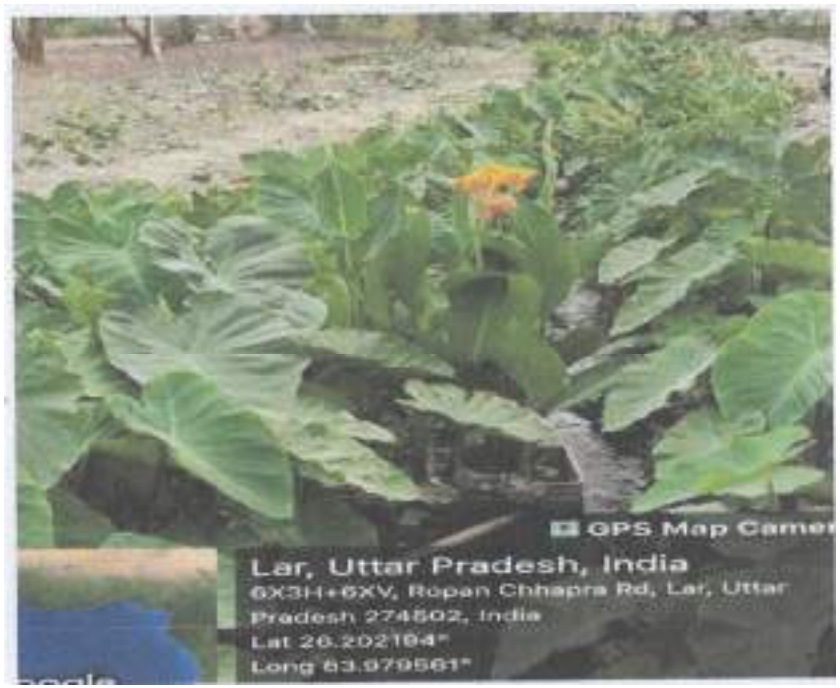
अध्यक्ष
नगर पंचायत लार
देवरिया

अधिशासी अधिकारी / अध्यक्ष महोदय,

उपरोक्त स्वीकृति क्रम में मे0 अनुप मिश्रा के नाम मु0 66038.00 रू0 (मु0 छाछठ हजार अड़तीस रू0) मात्र के भुगतान हेतु चेक/पी0पी0ए0 संख्य E0224655356 दिनांक 27-2-24 तैयार कर प्रस्तुत हैं। कृपया सहमति की दशा में निर्गत पी0पी0ए0/चेक पर हस्ताक्षर करना चाहें।

अधिशासी अधिकारी
नगर पंचायत लार
देवरिया

अध्यक्ष
नगर पंचायत लार
देवरिया


GPS Map Camer
Lar, Uttar Pradesh, India
6X3H+6XV, Ropan Chhapra Rd, Lar, Uttar Pradesh 274502, India
Lat 26.202184°
Long 83.979561°

(राज्य वित्त आयोग) कार्य सं0 –3

कार्यालय नगर पंचायत लार जनपद–देवरिया

पत्रांक: मेमो /न0पं0लार/2022–23 दिनांक: 03.03.2023

कार्यादेश

मे0 जे0 शार्प टेक्नोलाजी
एल0डी0ए0 कालोनी
ऐशबाग लखनऊ
लखनऊ।

आपको इस कार्यादेश द्वारा सूचित किया जाता है,कि आप द्वारा डाली गयी ई–निविदा संख्या– 2023_DOLBU_778078_1 न्यूनतम होने के कारण स्वीकृत कर लिया गया है। जिसका विवरण निम्न है।

क्र0सं0	कार्य का नाम	आगणन की धनराशि	फर्म/ठेकेदार द्वारा भरा गया दर
1	बायोरेमेडिएशन कार्य/फाईटोरेमेडिएशन कार्य।	867684.00	मु0 2100.00 रू0 प्रति एम0एल0डी0/दिन

अतः कार्यादेश प्राप्ति के तीन दिन के भीतर आप नियमानुसार मु0 110.00 रू0 (100+10) का स्टाम्प पेपर पर अनुबन्धित कराना सुनिश्चित करें। तत्पश्चात कार्यालय को सूचना देकर कार्य प्रारम्भ करें।

अधिशासी अधिकारी
नगरपंचायत लार
देवरिया

J-SHARP TECHNOLOGY

J-SHARP TECHNOLOGY

Phone No. 0522-4951996
Mobile No. 08765350826

Email - jsharptechnology@gmail.com Websit - www.jsharptechnology.com

PAN NO.-AAJFJ5161G GSTN NO- 09AAJFJ5161G1Z8

Tax Invoice

Invoice No.	JST/BILL/BIOR/2023-24/110	Bill Period -03 March 2023 To 01 April 2023			
Invoice Date	03/07/2023				
Reverse Charge(V/N)	No				
State	U.P	GSTN	09AAJFJ5161G1Z8	Code	09
	Bill to Party				
To	Executive Officer				
Client Name	Nagar Panchayat Laar				
Address	Deoria				
GSTN					
State	U.P.	your order-मेमो /न०पं०लार /2022 -23 Date-03/03/2023			

Bill Period-03 March 2023 To 01 April 2023

S.No	Product Description	Per/Days	Per/Month	HSN Code	Total
01	नगर पंचायत लार देवरिया नगर क्षेत्र में नालो के पानी को नदी में गिरने से रोकने हेतु प्रतिदिन 3एम0एल0डी0 वॉटर रोकने हेतु बायो रेमेडिएशन का कार्य।	3MLD	90MLD	9994	160169.49

Company Bank Detail-	**Sub Total**	1,60,169.49
Bank: Punjab National Bank	CGST@9%	14,415.25
Bank A/C: 0501101100103 5	SGST@9%	14,415.25
Bank IFSC: PUNB0050110	**Total Amount With Tax**	1,89,000.00
Branch: Mandir Marg, Mahanagar, Lucknow-(226006)		
Amount in words	Rupees One Lakh Eighty Nine Thousand Only.	

Term & Conditions

1- The total amount includes applicable of taxes.
2- Paying 100 % Payment within one week of the month will be mandatory.
3- It is mandatory to submit GST within the 20th of the month.
4-TDS Deduction on Management Fee.

For J-Sharp Technology

J SHARP TECHNOLOGY Authorised

Authorised Signatory

J-SHARP TECHNOLOGY

J-SHARP TECHNOLOGY

Phone No. 0522-4951996
Mobile No. 08765350826

Email - jsharptechnology@gmail.com Websit - www.jsharptechnology.com

PAN NO.-AAJFJ5161G GSTN NO- 09AAJFJ5161G1Z8

Tax Invoice

Invoice No.	JST/BILL/BIOR/2023-24/117	Bill Period -02 April 2023 To 01 May 2023			
Invoice Date	05/07/2023				
Reverse Charge(V/N)	No				
State	U.P	GSTN	09AAJFJ5161G1Z8	Code	09
	Bill to Party				
To	Executive Officer				
Client Name	Nagar Panchayat Laar				
Address	Deoria				
GSTN					
State	U.P.	your order-मेमो /न०पं०लार /2022 -23 Date-03/03/2023			

Bill Period-02 April 2023 To 01 May 2023

S.No	Product Description	Per/Days	Per/Month	HSN Code	Total
01	नगर पंचायत लार देवरिया नगर क्षेत्र में नालो के पानी को नदी में गिरने से रोकने हेतु प्रतिदिन 3एम0एल0डी0 वॉटर रोकने हेतु बायो रेमेडिएशन का कार्य।	3MLD	90MLD	9994	160169.49

Company Bank Detail-	**Sub Total**	1,60,169.49
Bank: Punjab National Bank Bank A/C: 05011011001035 Bank IFSC: PUNB0050110 Branch: Mandir Marg, Mahanagar, Lucknow-(226006)	CGST@9%	14,415.25
	SGST@9%	14,415.25
	Total Amount With Tax	1,89,000.00
Amount in words	Rupees One Lakh Eighty Nine Thousand Only.	

Term & Conditions

1- The total amount includes applicable of taxes.
2- Paying 100 % Payment within one week of the month will be mandatory.
3- It is mandatory to submit GST within the 20th of the month.
4-TDS Deduction on Management Fee.

For J-Sharp Technology

J-SHARP TECHNOLOGY Authorised

Authorised Signatory

अधिशासी अधिकारी/अध्यक्ष महोदय,

कृपया अवगत कराना है, कि नगर पंचायत लार में निम्न विवरण के अनुसार राज्य वित्त आयोग से प्राप्त धनराशि के कार्य मे0 जे0 शार्प टेक्नोलाजी द्वारा कराया गया था। फर्म/ठेकेदार द्वारा नियमानुसार जमानत की धनराशि जमा कर अनुबन्ध जमा करा दिया गया है। कार्य का विवरण निम्नवत है।

क्र0	कार्य का नाम	बिल की धनराशि	बिल से की गयी कटौतीयां				देय धनराशि	देय जी0एस0टी0 18 %	शुद्ध देय धनराशि मय जी0एस0टी0
			आयकर कटौती 2.24 %	जी0एस0टी0 कटौती (C Gst 1 %)	जी0एस0टी0 कटौती (S Gst 1 %)	कुल कटौतीयां			
1	2	3	4	5	6	7	8	9	10
1	नगर पंचायत लार में विभिन्न नालों पर बायोरेमेडिएशन प्रकिया द्वारा जल शोधन का कार्य। 03.03.2023 से 01.04.2023 तक	160169.00	3588.00	1602.00	1602.00	6792.00	153377.00	28830.00	182207.00
2	नगर पंचायत लार में विभिन्न नालों पर बायोरेमेडिएशन प्रकिया द्वारा जल शोधन का कार्य। 02.04.2023 से 01.05.2023 तक	160169.00	3588.00	1602.00	1602.00	6792.00	153377.00	28830.00	182207.00
		320338.00	7176.00	3204.00	3204.00	13584.00	306754.00	57660.00	364414.00

उपरोक्त विवरण के अनुसार मे0 जे0 शार्प टेक्नोलाजी के नाम मु0 364414.00 रू0 (मु0 तीन लाख चौसठ हजार चार सौ चौदह रू0) मात्र का भुगतान किया जाना प्रस्तावित है, तथा आयकर के मद में अधिशासी अधिकारी नगर पचांयत लार के नाम मु0 7176.00 रू0 (मु0 सात हजार एक सौ छिहत्तर रू0) मात्र का चेक तैयार कर जमा कराया जाना है। कृपया उक्त भुगतान हेतु स्वीकृति प्रदान करते हुये पी0पी0ए0 तैयार करने का आदेश प्रदान करना चाहें।

अधिशासी अधिकारी
नगर पंचायत लार
देवरिया

अध्यक्ष
नगर पंचायत लार
देवरिया

अधिशासी अधिकारी/ अध्यक्ष महोदय

उपरोक्त स्वीकृति/आदेश के क्रम में राज्य वित्त आयोग से मे0 जे0 शार्प टेक्नोलाजी के नाम मु0 364414.00 रू0 (मु0 तीन लाख चौसठ हजार चार सौ चौदह रू0) मात्र भुगतान हेतु पी0पी0ए0 संख्या 012407/6431 दिनांक 5.12.24 तैयार कर प्रस्तुत हैं। कृपया सहमति की दशा में निर्गत पी0पी0ए0/चेक पर हस्ताक्षर करना चाहें।

अधिशासी अधिकारी
नगर पंचायत लार
देवरिया

अध्यक्ष
नगर पंचायत लार
देवरिया

SHARP TECHNOLOGY

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Email - jsharptechnology@gmail.com Websit - www.jsharptechnology.com

PAN NO.-AAJFJ5161G GSTN NO- 09AAJFJ5161G1Z8

Tax Invoice

Invoice No.	JST/BILL/BIOR/2023-24/119	Bill Period -01 June 2023 To 30 June 2023			
Invoice Date	05/07/2023				
Reverse Charge(V/N)	No				
State	U.P	GSTN	09AAJFJ5161G1Z8	Code	09
	Bill to Party				
To	Executive Officer				
Client Name	Nagar Panchayat Laar				
Address	Deoria				
GSTN					
State	U.P.	your order-मेमो /न०पं०लार /2022 -23 Date-03/03/2023			

Bill Period-01 June 2023 To 30 June 2023

S.No	Product Description	Per/Days	Per/Month	HSN Code	Total
01	नगर पंचायत लार देवरिया नगर क्षेत्र में नालो के पानी को नदी में गिरने से रोकने हेतु प्रतिदिन 3एम0एल0डी0 वॉटर रोकने हेतु बायो रेमेडिएशन का कार्य।	3MLD	90MLD	9994	160169.49

Company Bank Detail-		
Bank: Punjab National Bank Bank A/C: 05011011001035 Bank IFSC: PUNB0050110 Branch: Mandir Marg, Mahanagar, Lucknow-(226006)	**Sub Total**	1,60,169.49
	CGST@9%	14,415.25
	SGST@9%	14,415.25
	Total Amount With Tax	1,89,000.00
Amount in words	Rupees One Lakh Eighty Nine Thousand Only.	

Term & Conditions

1- The total amount includes applicable of taxes.
2- Paying 100 % Payment within one week of the month will be mandatory.
3- It is mandatory to submit GST within the 20th of the month.
4-TDS Deduction on Management Fee.

For J-Sharp Technology

Authorised Signatory

SHARP TECHNOLOGY

J-SHARP TECHNOLOGY

Phone No. 0522-4951996
Mobile No. 08765350826

Email - jsharptechnology@gmail.com Websit - www.jsharptechnology.com

PAN NO.-AAJFJ5161G GSTN NO- 09AAJFJ5161G1Z8

Tax Invoice

Invoice No.	JST/BILL/BIOR/2023-24/118	Bill Period -02 May 2023 To 31 May 2023			
Invoice Date	05/07/2023				
Reverse Charge(Y/N)	No				
State	U.P	GSTN	09AAJFJ5161G1Z8	Code	09
	Bill to Party				
To	Executive Officer				
Client Name	Nagar Panchayat Laar				
Address	Deoria				
GSTN					
State	U.P.	your order-मेमो /न०पं०लार /2022 -23 Date-03/03/2023			

Bill Period-02 May 2023 To 31 May 2023

S.No	Product Description	Per/Days	Per/Month	HSN Code	Total
01	नगर पंचायत लार देवरिया नगर क्षेत्र में नालो के पानी को नदी में गिरने से रोकने हेतु प्रतिदिन 3एम0एल0डी0 वॉटर रोकने हेतु बायो रेमेडिएशन का कार्य।	3MLD	90MLD	9994	160169.49

Company Bank Detail-	**Sub Total**	1,60,169.49
Bank: Punjab National Bank	CGST@9%	14,415.25
Bank A/C: 05011011001035	SGST@9%	14,415.25
Bank IFSC: PUNB0050110	**Total Amount With Tax**	1,89,000.00
Branch: Mandir Marg, Mahanagar, Lucknow-(226006)		
Amount in words	Rupees One Lakh Eighty Nine Thousand Only.	

Term & Conditions

1- The total amount includes applicable of taxes.
2- Paying 100 % Payment within one week of the month will be mandatory.
3- It is mandatory to submit GST within the 20th of the month.
4-TDS Deduction on Management Fee.

For J-Sharp Technology

Authorised Signatory

अधिशासी अधिकारी/अध्यक्ष महोदय,

कृपया अवगत कराना है, कि नगर पंचायत लार में निम्न विवरण के अनुसार राज्य वित्त आयोग से प्राप्त धनराशि के कार्य **मैं0 जे0 शार्प टेक्नोलाजी** द्वारा कराया गया था। फर्म/ठेकेदार द्वारा नियमानुसार जमानत की धनराशि जमा कर अनुबन्ध जमा करा दिया गया है। कार्य का विवरण निम्नवत है।

क्र0	कार्य का नाम	बिल की धनराशि	बिल से की गयी कटौतीयां				देय धनराशि	देय जी0एस0टी0 18 %	शुद्ध देय धनराशि मय जी0एस0टी0
			आयकर कटौती 2.24 %	जी0एस0टी0 कटौती (C Gst 1 %)	जी0एस0टी0 कटौती (S Gst 1 %)	कुल कटौतीयां			
1	2	3	4	5	6	7	8	9	10
1	नगर पंचायत लार में विभिन्न नालों पर बायोरेमेडिएशन प्रकिया द्वारा जल शोधन का कार्य। 02.05.2023 से 31.05.2023 तक	160169.00	3588.00	1602.00	1602.00	6792.00	153377.00	28830.00	182207.00
2	नगर पंचायत लार में विभिन्न नालों पर बायोरेमेडिएशन प्रकिया द्वारा जल शोधन का कार्य। 01.06.2023 से 30.06.2023 तक	160169.00	3588.00	1602.00	1602.00	6792.00	153377.00	28830.00	182207.00
	योग–	320338.00	7176.00	3204.00	3204.00	13584.00	306754.00	57660.00	364414.00

उपरोक्त विवरण के अनुसार **मैं0 जे0 शार्प टेक्नोलाजी** के नाम **मु0 364414.00 रू0 (मु0 तीन लाख चौसठ हजार चार सौ चौदह रू0) मात्र** का भुगतान किया जाना प्रस्तावित है, तथा आयकर के मद में अधिशासी अधिकारी नगर पचांयत लार के नाम **मु0 7176.00 रू0 (मु0 सात हजार एक सौ छिहत्तर रू0) मात्र** का चेक तैयार कर जमा कराया जाना है। कृपया उक्त भुगतान हेतु स्वीकृति प्रदान करते हुये पी0पी0ए0 तैयार करने का आदेश प्रदान करना चाहें।

23.4.24

अधिशासी अधिकारी
नगर पंचायत लार
देवरिया

अध्यक्ष
नगर पंचायत लार
देवरिया

अधिशासी अधिकारी/ अध्यक्ष महोदय

उपरोक्त स्वीकृति/आदेश के क्रम में **मैं0 जे0 शार्प टेक्नोलाजी** के नाम **मु0 364414.00 रू0 (मु0 तीन लाख चौसठ हजार चार सौ चौदह रू0) मात्र** भुगतान हेतु पी0पी0ए0 संख्या-[illegible] दिनांक 25-4-24 तैयार कर प्रस्तुत हैं। कृपया सहमति की दशा में निर्गत पी0पी0ए0/चेक पर हस्ताक्षर करने की कृपा करें।

अध्यक्ष
नगर पंचायत लार
देवरिया

23.4.24

अधिशासी अधिकारी
नगर पंचायत लार
देवरिया


GPS Map Camera
Lar, Uttar Pradesh, India
6X2F+VV3, Lar, Uttar Pradesh 274502, India
Lat 26.202058°
Long 83.974378°
06/07/24 12:17 PM GMT +05:30
Google


GPS Map Camera
Lar, Uttar Pradesh, India
6X2F+VV3, Lar, Uttar Pradesh 274502, India
Lat 26.202058°
Long 83.974378°
06/07/24 12:17 PM GMT +05:30
Google


Lar, Uttar Pradesh, India

आज़ादी का अमृत महोत्सव

स्वच्छ भारत

Detail Project Report

For

Used Water Management

For

Nagar Panchayat Lar

District- Deoria

Estimate No. :-
Project Cost: - 526.48 Lacs
Financial Year: - 2024 – 25

SUBMITTED BY

SNOW FOUNTAIN CIVIL ENGINEERING VOCATIONAL TRAINING INSTITUTE SAMITI

Corporate Office: Snow Fountain Tower 46-Woodland Garden, Scorpio Club Campus, Kursi Road, Lucknow
Contact Office : 5/259 Vikas Nagar Lucknow
Phone: [illegible] 9956225950 9415001208
Email: sfcevtisamiti@gmail.com website: www.snowfoi.nlair.co.in

• Infrastructure Consultants • Architectural Projects • Housing Projects • Multistoned Buildings
• Commercial Projects • Heritage Projects • River Front Development • Soil Testing

ARCHITECTS / CONSULTANTS– AMRUT SMART CITY Projects NHAI, PFC, HPCL IOCL, NBCC HUDCO, SIDBI, MES, CANTT BOARDS, MUNICIPAL CORPORATIONS, DEVELOPMENT AUTHORITIES, LIC, SUDA, K.M.D.A

Empanelled and working:

UP. MP. WEST BENGAL. RAJASTHAN. JHARKHAND. BIHAR. JAMMU & KASHMIR

PROJECT REPORT

ANNEX 3B: CITY SANITATION ACTION PLAN (CSAP) FOR USED WATER MANAGEMENT

S. No.	Description	Particulars	Detailed Description
A	General Information		
1.	Location and Physical Aspects		
a.	Location	Name of the city, District, State	NP Lar Deoria (Uttar Pradesh)
b.	Physical Aspects	Town Area in sq.km and Class of town	10
		Number of wards	16
		Geographical description-Hilly area, River, Environmental sensitive area etc.	Plain Area
c.	Maps	Map depicting administrative boundaries, roads and railways, water bodies, Important landmarks etc. (if not available, to be prepared)	Attached with DPR
		Topo sheet (Ref: Survey of India, Scale - 1:50000) (If not readily available, get it)	Not available
2.	Demography and Growth pattern		
a.	Population	**Census Data** - Latest census data and previous census data (population projection)	
		Projected Population (**Year – 2026**)	32725
		Projected Population (**Year – 2041**)	37140
		Projected Population (**Year – 2056**)	41555
		Slum Population • Population • Households • Density	Not available
		Non Slum Population • Population (**Year-2026,2041,2056**) • Households (**Year-2026,2041,2056**) • Density (**Year-2026,2041,2056**)	

		Floating population Population per day (if available from tourism department)	5% Floating Population is adopted in Design Year
		Decadal Population Growth Rate (in %)	23%
3.	**Land Use information and Development**		
a.	**Land Use pattern**	Land use classification in the city: area under residential, commercial, institutional, open areas, slums (available / not available)	Residential, Commercial and Agricultural
		Details of Population and Projected Growth	Enclosed with DPR
b.	**Maps**	Map depicting the existing land use - residential, commercial, Institutional, slums, green cover, open land etc. (available / not available)	Attached with the DPR
B	**Technical Information: Information Regarding Used Water Infrastructure Facilities**		
4.	**Details of existing sewage infrastructure**		
a.	**Brief description of existing sewage infrastructure in the town**		
	STPs		Not available
	FSTPs		Not available
	Existing sewers		Not available
	Drains		28 Drains
	Number of cesspool tankers (govt./private)		Not available
	Funding Agencies & amount		Detail Attached with the DPR
5.	**Sewage Management**		
a.	**Sewage Generation**	**Estimated Sewage Generation**	
		For Year - 2026	1.16 MLD
		For Year - 2041	1.32 MLD
		For Year - 2056	1.47MLD

b.	Collection and Conveyance	**Network Coverage**	
		Present population covered with sewerage network	Not Covered
		Present population uncovered with sewerage network	10000
		SEPTAGE	
		Status of scheduled desludging (by ULB/ Licensed operator)	By ULB
		Drainage	
		Number of drains with length & material of construction etc. (width more than 75 cm) carrying sewage into the surface water body or open land	Enclosed on Page No.
		Status of drains with or above 75 cm width (covered/uncovered)	
		Number of outfall locations along with	
		Estimated quantity of sewage (dry weather) being discharged into surface water body or open land	
		Outfall location	
		Mention the location of outfall points (river/ natural drain/surface water body/open land)	Surface Water Body
c.	Treatment (Septage, Usad water)	**Used Water Treatment (including co-treatment)**	
		Treatment technology and capacity (MLD)	No
		Current capacity utilization–under/over (MLD)	
		Quantity of used water treated (MLD)	
		Quantity of septage co-treated (KLD)	
		Reuse (treated used water, sludge, biogas) Information along with respective quantity	
		Septage Treatment	
		Are the septage treatment facility available (Yes/No) – If 'yes'	No

		Quantity of septage to be treated (KLD)	-
		Treatment technology and capacity (KLD)	Waste Stabilization
		Current utilization - under/over (KLD)	Pond (1.16MLD)
		Reuse (treated used water, sludge, biogas) Information along with respective quantity	1.16(MLD) Treated Used Water
d.	**Operation and Maintenance**	For existing septage collection, conveyance and treatment facility	By ULB
		Responsible agency User charges for desludging, conveyance and disposal per household (Rs.)	1500/Tanker
		O&M cost for the treatment facility (Rs.) Cost recovery (%)	6.22
		Responsible agency	ULB
		Household sanitation tariff – Monthly (Rs.)	NIL
		Conservancy tax as part of property tax	NIL
		O&M cost for the conveyance and treatment facility (Rs)	1.73%
		Cost Recovery (%)	10.71%

Service Level Benchmark Present

e.	Indicators	Benchmark	Before the implementation of Project	After the implementation of Project
	Coverage of sewerage network	100%	0	50%
	Collection efficiency of sewerage network	100%	0	100%
	Adequacy of sewage treatment capacity	100%	0	100%
	Quality of sewage treatment	100%	0	100%

	Extent of reuse and recycling of sewage	100%	0	20%
	Extent of cost recovery in sewage/ used water management	100%	0	100%
	Efficiency in redressal of customer complaints	100%	0	80%
	Efficiency in collection of sewage / used water charges	100%	0	90%
	Access to toilets	100%	0	100%
	Scheduled desludging	100%	0	100%
	Notified tariff for desludging	-	Yes	Yes

f.	**Maps**	Map depicting the coverage of exrsting sewer network coverage and onsite system	
		Access to toilets	yes
		Scheduled desludging	yes
		Notified tariff for desludging	yes
C	**Institutional and Governance**		
6.	**Institutional framework**		
a.	**Regulatory Framework**	Whether Town Sanitation By Laws notify tariff for sanitation/sewage services (details)	No
		State Sanitation Strategy (available/not available)	Not Available
b.	**Institutional Arrangement**	Roles and responsibilities for dealing with sanitation/sewage services	No
c.	**Governance and Reforms**	Implementation of E-Governance in ULBs (available/ not available)	Not available
D.	**Capacity Enhancement**		
7.	**Capacity Management**		
a.	Human Resource Development	Details of the personnel engaged in sanitation services along with roles and responsibilities.	-

		Outsourcing of staff and services (available / not available)	Available
E.	Gap Analysis		
a.	Analyze the projected requirement of used water infrastructure/facilities in 2026		Yes
b.	Identify the available infrastructure in good condition		Yes
c.	Analyze the gap in various areas and suitably club as part of a project/DPR		
	Sewer network		-
	Septage conveyance		Enclosed
	STP cum FSTP		Enclosed
	Recycle and reuse potential		-
F.	Conclusion		
	On above lines identify various DPRs/ plan for projects related to		
	I&D and STP cum FSTP		Enclosed
	Sewer network		-
	Storm water drainage system		Enclosed
	Recycle and reuse projects		-
	Gap in human resources for execution and O&M etc.		-

Funding Requirement

Total fund Required	Central share @ 50%	State share @ 33%	ULB share@17%	Others (Pls specify)
526.48	263.24	173.73	89.50	

Roadmap For Achieving Mission Outcomes

Target/Year	2021-22	2022-23	2023-24	2024-25	2025-26	Remark
Cities ODF++	-	-	-	-	-	-
Cities Water+	-	-	-	-	-	-

(Er. Shubham Saxena)
Environmental Specialist
M. Tech Environmental Engg.

(Er. [illegible] Nigam)
Director PHE
Retd. Executive Engineer (E/M)
U.P. Jal-Nigam

कार्यपालन अधिकारी
नगर पंचायत लार
देवरिया

1. ABBREVIATION

- **APM** Arithmetic Progression Method
- **BOD** Biochemical Oxygen Demand
- **CLF** Compact Fluorescent Lamp
- **COD** Chemical Oxygen Demand
- **CPCB** Central Pollution Control Board
- **CPHEEO** Central Public Health and Environmental Engineering Organization
- **CMC** City Municipal Council
- **DMA** Directorate of Municipal Administration
- **DPR** Detailed Project Report
- **DUDC** District Urban Development Cell
- **EIA** Environmental Impact Assessment
- **FCO** Fertilizer Control Order
- **GCL** Geosynthetic Clay Liner
- **GIS** Geographical Information System
- **GL** Ground Level
- **GPM** Geometric Progression Method
- **GPS** Global Positioning System
- **GSM** Global System Mobile
- **HDPE** High Density Polyethylene
- **HF** Horizontal Flow
- **HP** Horse Power
- **IEC** Information ,Education and Communication
- **IIM** Incremental Increase Method
- **IWMF** Integrated Waste Management Facility
- **JJM** Jal Jeevan Mission
- **LEL** Lower Explosive Limit
- **LS** Lump sum
- **MIS** Management Information System
- **MLA** Member of Legislative Assembly
- **MLC** Member of Legislative Corporation
- **MP** Member of Parliament
- **MSL** Mean Sea Level
- **NGO** Non-Government Organization
- **O&M** Operation and Maintenance
- **PGF** Planted Gravel Filter
- **SDG** Sustainable Development Goals

- **PVC** Poly Vinyl Chloride
- **RFID** Radio Frequency Identification
- **RWA** Resident Welfare Association
- **SBM** Swachh Bharat Mission
- **SBM-U** Swachh Bharat Mission - Urban
- **TMC** Town Municipal Council
- **TP** Town Panchayat
- **TPD** Tonnes Per Day
- **TPH** Tons per hour
- **ULB** Urban Local Body
- **UNESCO** United Nation Educational Scientific and Cultural Organization
- **VF** Vertical Flow

2. INTRODUCTION AND BACKGROUND

2.1 OVERVIEW OF SWACHH BHARAT MISSION

Swachh Bharat Mission Urban (SBM-U) was launched by the Hon. Prime Minister on 2nd October 2014. The outlay of the Mission was Rs. 62,009 crores, including GoI share of Rs. 14,623 crores, and a minimum state share of Rs. 4,874 crores. Balance funds (Rs. 42,535 crores) were to be generated through individual beneficiary contribution PPP and other sources. Swachh Bharat Mission Urban (SBM-U) had three major objectives:

a) Achieving 100% Open Defecation Free (ODF) status
b) Ensuring 100% scientific Solid Waste Management (SWM)
c) Behavior change through 'Jan Andolan' by 2nd October 2019 in all statutory towns.

Since the inception of the mission an enabling ecosystem has been created to facilitate/enable cities and towns across the country to implement the mission components. The policy reforms designed to encourage the conversion of waste to value was instrumental in cities adapting to this new ecosystem in a short spurt of time. As an outcome of the initiatives taken by the Government of India to implement SBM-U across all urban towns in India:

1) Source segregation of waste, which was negligible earlier has now captured the imagination of citizens and is being adopted by more and more households.

2) Cities/Towns across India has deployed, fleet of more than 2.5 lakh door to door waste collection vehicle leading to reduced garbage heaps across geographies.

3) Awareness has also been generated on critical issues such as source segregation of waste, effective management of construction & and demolition waste, reduction in single-use plastic usage etc.

4) Waste processing capacity stands at nearly 1 lakh TPD (70%) from 26000 TPD (18%) at the time of inception of mission.

5) Door-to-door collection and source segregation have gone up from negligible levels in 2014 to cover 86228 wards (97%) and 72493 wards (85%) respectively.

6) Over 90000 informal waste workers have been formalized into the waste management value chain.

7) 35 States/ UTs have become ODF (except 1 ULB of West Bengal) i.e. 4371 ULBs (out of 4372) have become ODF.

8) 66 86 lakh Individual Household Toilets (113% progress), and 6.40 lakh seats of Community/ Public Toilets (CT/ PT) (126% progress).

Further the impartial assessment undertaken by NSSO and the recommendation published following this assessment suggests an Interalia need for the mission to continue.

2.2 SWACHH BHARAT MISSION – URBAN 2.0

With the recommendations and insights provided by NSSO the need for the mission to continue was established on the grounds that the SBM should focus on new components given the achievements made and the infrastructure created with this SBM 2 0 was born with a new vision and mission statement.

SBM 2.0 was launched on 1st October 2021 with a mission period of 5 years for completing the work remaining institutionalizing 'swachh' behavior and making it sustainable. The Government of India in partnership with States/ UTs and ULBs is committed to making all cities 'Garbage Free' under SBM Urban 2.0 in order to contribute to the achievement of the Sustainable Development Goals (SDG) 2030 which will ultimately improve the quality of life and ease of living of urban populations thus leading to urban transformation.

SBM-U 2.0 will be implemented with a vision of achieving "Garbage Free" status for all cities. This will involve the following:

1) All households and premises segregate their waste into "Wet Waste" (from kitchen and gardens) and "Dry Waste" (including paper, glass, plastic, and domestic hazardous waste and sanitary waste wrapped separately).

2) 100% door to door collection of segregated waste from each household/ premise.

3) 100% scientific management of all fractions of waste including safe disposal in scientific landfills.

4) All legacy dumpsites remediated and converted into green zones.

5) All used water including faecal sludge especially in smaller cities are safely contained, transported, processed and disposed so that no untreated faecal sludge and used water pollutes the ground or water bodies.

In order to achieve this vision, the following specific objectives are targeted to be achieved during the mission period:

1. **Sustainable Solid Waste Management**

a. Ensuring cleanliness and hygiene in public places to make all cities clean.

b. Garbage free with 100% scientific processing of MSW.

c. Reducing air pollution arising out of SWM activities.

d. Phased reduction in use of single-use plastic.

2. **Sustainable Sanitation and Treatment of Used Water**

a. Holistic sanitation with end-to end solutions (from discharge, containment evacuation, transportation to safe disposal of all effluents from toilets).

b. Treatment of used water before discharge into water bodies, and maximum reuse of treated used water.

c. Eradication of hazardous entry into sewers and septic tanks, and sustaining.

d. Elimination of manual scavenging, through mechanization of sewer and septic tank cleaning operations.

3. Awareness creation along with large-scale citizen outreach to create 'Jan Andolan' and institutionalize 'swachh' behavior.

4. Create institutional capacity to effectively implement programmatic interventions to achieve mission objectives.

Under the Used Water Management component of SBM 2.0 following components will be eligible for funding namely:

a) Procurement of desludging equipment for scheduled and need based desludging of all septic tanks.

b) Interception and diversion of drains (I&D) (including last mile connectivity for nearest sewer network).

c) Construction of Sewage Treatment Plants (STPs)/STP cum Faecal Sludge Treatment Plants (FSTPs) for Used Water Treatment.

- **Mission Outcomes**

The following measurable outcomes are expected to be achieved by the end of the Mission tenure:

1. All statutory towns are certified at least 3-star Garbage Free or higher
2. All statutory towns become at least ODF+
3. All statutory towns with less than 1 lakh population become at least ODF++

At least 50% of all statutory towns with less than 1 lakh population become Water+

2.3 AUTHORITY

The work of "Preparation of DPR" for Used Water Management (UWM) with allied services at Nagar Panchayat Lar District Deoria, has been allotted the work vide letter No **193/NPL/2024-25** dated **15.10.2024** by office of Executive Officer, Nagar Panchayat Lar. This Report has been prepared as per manual on Swachh Bharat Mission 2.0 published by Central Public Health and Environmental Engineering Organization (CPHEEO) issued by Govt. of India, Ministry of Urban Development New Delhi.

2.4 ABOUT NAGAR PANCHAYAT LAR

Lar is a Nagar Panchayat of Deoria district of Uttar Pradesh state in India. Lar is located 23 KM towards South from district headquarters Lar . The physiographic of the city is mostly plain. The city has got domination of three types of soil i.e. Loam, Sandy & Clay

2.5 CLIMATIC CONDITION

Lar Weather Forecast Providing a rain, sun, and temperature. Over the course of the year, the temperature typically varies from 23°C to 33°C and is rarely below 4°C or above 7°C. Yearly average rainfall of the city is 200.66 mm.

2.6 PROJECT AREA

The Lar Nagar Panchayat had population of 15,545 as per report released by census India 2011. Lar Nagar Panchayat has total administration over 2,197 houses to which it supplies basic amenities like water and sewerage. It is also authorize to build roads within Nagar Panchayat.

2.6 INITIATIVES TAKEN BY NAGAR PANCHAYAT LAR

The ULB which manages municipal affairs in the town has undertaken several initiatives to improve Used Water Management . The key objective of these initiatives generally include enhancing coverage, conveyance, treatment and reuse of treated water promoting environmental compliance and sustainability of the system

The key Initiatives taken by ULB is as follows:-

- **Improvement of conveyances drain**
- **Interception of drains**
- **Collection of septage and its transportation to FSTP**
- **Treatment through STP and FSTP**
- **Disposal of treated water for resource generation**
- **Public awareness campaigns**
- **Community involvement**

- **Legislation and enforcement**

2.7 OBJECTIVES

In pursuance of the above, the client has entrusted the technical consultancy services and is preparing the Detailed Project Report (DPR) for implementing an efficient, environmentally sound and financially sustainable Used Water Management system to Snow Fountain Civil Engineering Vocational Training Institute Samiti (SFCEVTI), an empanelled agency in RCUES Lucknow.

Broad Outlines of the present work are outlined below:

- Review of the present status of Used Water Management in terms of coverage, conveyance, treatment and reuse of treated water.
- Establishing effective mechanism with a view point to collect 100% of the Used Water generated in the municipal area.
- Transportation of septage from household septic tanks up to FSTP.
- Identification and design of interception of drains, if required.
- Proposal for construction / extension of drains as per requirement to provide conveyance up to propose treatment plant.
- Design of STP / FSTP.
- Arrangement for reuse of treated water from STP/FSTP.
- Viability of the project on the basis of operation and maintenance and cost recovery
- Preparation of a Detailed Project Report comprising of design, drawings and costing for the following components:

1. Sewerage system and its component.
2. Faecal sludge and seepage management components.
3. Interception and diversion (I&D) works and strengthening of drainage system.

2.7 SCOPE OF WORK

The scope of the assignment for consultancy comprises:

- Detailed validation of data collected by ULB for prevailing conditions
- Ward Wise Population Projection for the Base Year 2026 from available data of census of 2011.
- Water Demand of the ULB for Base Year 2026.
- Used Water Generation for Base Year 2026.
- Preparation of Drawing and Design with calculation of Used Water System and its components.
- Preparation of Drawing and Design of STP / FSTP.
- Preparation of Drawing and Design of I&D Works and strengthening of Drainage System.
- Preparation of Bill of Quantities (BOQs) and Abstract of Cost (AOC).
- Capital cost and Operation & Maintenance (O&M) estimates.
- Financial viability of the project

3. PROJECT AREA PROFILE

3.1 LOCATION AND EXTENT

Lar is a nagar panchayat of Deoria district of Uttar Pradesh state in India. Lar is 38 km of the district headquarter Deoria. The physiographic of the city is mostly plain.

3.2 GENERAL DETAILS

The NP Lar has classified into 16 wards for administrative purposes. It covers an area of about.10.0 sq. km.

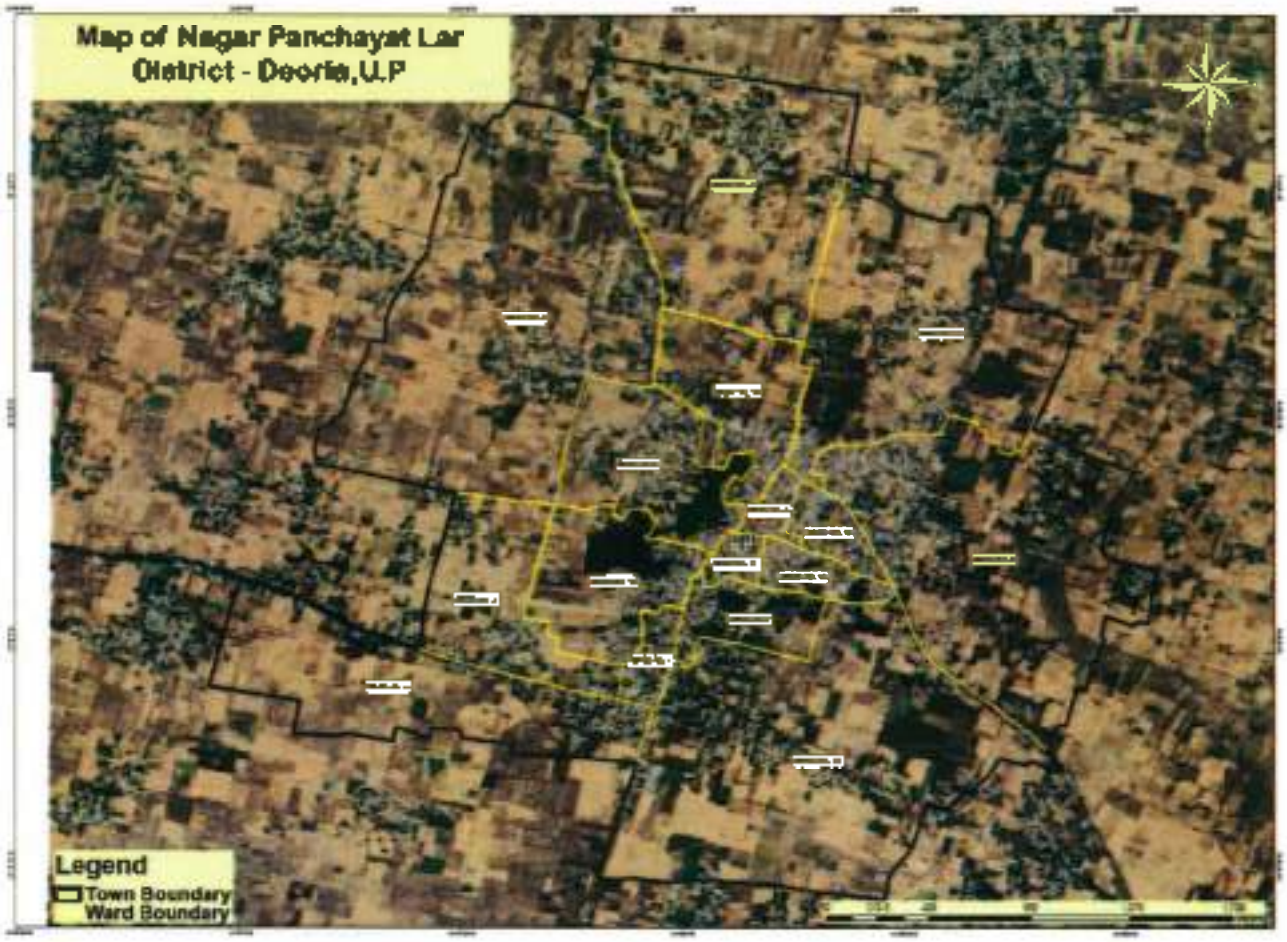
Table 3-1: Basic information about Lar NP

Particulars	Data
Population (as per census 2011)	28307
Area	10.0 sq.km
Number of Wards	16
Length of Roads	45 km
Length of Main Drain	3.57 km
Total Water Supply	1.63 MLD
Per Capita Water Supply	135 LPCD
Summer Temperature	40°C-50°C
Winter Temprature	4°C-7°C
Avg. Annual Rainfall	200.66 mm
Co-ordinates	26.2026°N 83.9679°E

Source: Census Website

3.3 MAP

Map depicting administrative boundaries, roads and railways, water bodies, Important landmarks etc.



3.4 DEMOGRAPHY

Lar is a town, tehsil and nagar panchayat of Deoria district of Uttar Pradesh In India. Lar is 23 km of the district headquarter Deoria The physiographic of the city is mostly plain.

3.5 POPULATION DETAILS

The population of the city in 1991 was 22419 in 2001 it was 25363 and was 28307 as per the 2011 census population of NP Lar over time is given in table below

Table 3-2: Decadal Growth of Population

Year	Population
1991	22419
2001	25363
2011	28307

Table 3-3:Ward-wise population and households (2011)

Ward No.	Population (2011)	Household
1	1515	336
2	1763	350
3	2128	450
4	2429	365
5	2028	465
6	1878	495
7	2028	305
8	1261	503
9	1725	385
10	1059	365
11	2302	236
12	1696	421
13	1706	320
14	1989	257
15	1503	268
16	1297	369
Total	28307	5890

3.6 FLOATING POPULATION

In Lar Nagar Panchayat about 5% to 10% person per day come from nearby villages and urban area for employment and other official/business/ personal purposes. The management of generated waste due to their different activities is being carried out by Lar Nagar Panchayat. These pose challenges to the city administration with respect to toilets, used water management and water supply.

3.7 POPULATION PROJECTION

The census 2011 population figures would be used to calculate population projection for each ward. The projections would be done using the methods recommended in CPHEEO Manual.

1. **Arithmetical Increase Method**: This method is generally applicable to large and old cities. In this method the average increase of population per decade is calculated from the past records and added to the present population to find out population in the next decade. This method gives a low value and is suitable for well settled and established communities.

2. **Incremental Increase Method**: In this method the Increment in arithmetical increaseis determined from the past decades and the average of that Increment is added to the average Increase. This method increases the figures obtained by the arithmetical increase method.

3. **Geometrical Increase Method**: In this method percentage increase is assumed to be the rate of growth and the average of the percentage increase is used to find out future increment in population. This method gives much higher value and is mostly applicable for growing towns and cities having vast scope for expansion.

3.8 OBSERVATIONS ON THE CURRENT SYSTEM

Urban Local Bodies face a variety of issues related to disposal of Used Water Management. However it is an obligatory task of the municipal body which has to be compulsorily managed by the ULB. At present the used water is flowing in the open drain of small roads and finally goes to open lands through existing drains The ULB has 28 major drains

There is a need to develop a scientific processing and disposal facility of Used water at ULB. Process can not be sustainable and workable if the design and approach is not in a scientific manner. As present the town does not have any treatment facility of used water At present the ULB has arrangement for sludge transfer facility from household septic tanks. There is no FSTP available in the ULB.

3.9 LACK OF AWARENESS AMONG PEOPLE

- Awareness among the people towards cleanliness is one of the most critical elements for the success of a Used Water Management plan. It is important and primary to design and implement proper IEC modules to highlight to the people and the children about the do's and don'ts towards maintaining a clean town. Campaigns like street plays, door to door campaigning, announcements, competitions, etc. must be organized in order to achieve the objectives.
- Awards and incentives also play an important role in encouraging people for maintaining cleanliness.
- Though SWM is an obligatory function of the ULB, this service has been poorly performed by most of them resulting in problems of public health, sanitation, and environmental degradation. With rapid pace of urbanization, the situation is becoming more and more critical day-by-day.
- The DPR would focus towards these and other subsequent issues that would come up as critical for deriving solutions to the Used Water Management problem in the town.

4. EXISTING INFRASTRUCTURE OF NP LAR

4.1 STATUS OF WATER SUPPLY IN NP LAR

In accordance with the guidelines of Central Public Health and Environmental Engineering Organization (CPHEEO), Govt. of India, Ministry of Urban Development New Delhi, the rate of water supply adopted is 135 Liters per head per day. Water supply responsibility of Nagar Panchayat is primarily dependent on sub surface of the water sources. At present, water is drawn from 4 town tube wells located across the city. Besides bore wells, water is extracted through 115 hand pumps and 2 over head tank (for daily usage) located across the city.

4.2 STATUS OF EXISTING SEWERAGE SYSTEM OF NP LAR

There is no sewage network in ULB. Everyone uses septic tank. After filling the septic tank the overflow goes to the open drains The desludging of septic tanks is being arrange by ULB on payment basis.

4.3 EXISTING USED WATER / SEWER MANAGEMENT IN NP LAR

Currently there is no existing sewer line or any centralized STP present in the town. Based on the interactions held and with reference to State Issued notifications there is no Sewer based project etc.

4.4 STATUS OF EXISTING DRAINAGE SYSTEM OF NP LAR

- **Existing Drain**
  - Drain have width less than 75 cm: - 20
  - Drain have width more than 75 cm: - 08
- **Outfall Location**

5 Outfall location sewage being discharge in surface water and open land.

Sr. No	Outfall Points	Latitude and Longitude of Outfall	Location	Area in Sqm
1.	Pond - 1	26°.12'14.01"N - 83°57'54.57"E	Ward No- 4	98664.84
2.	Pond - 2	26°.12'5.30"N - 83°58'13.99"E	Ward No -7	2430.25

Sr. No	Outfall Points	Latitude and Longitude of Outfall	Location	Area in Sqm
3.	Pond -3	26°.12'32.65"N -83°58'2.48"E	Ward No - 14	2991.04
4.	Pond - 4	26°.12'29.22"N - 83°58'17.19"E	Ward No -13	11523.83
5.	Pond - 5	26°.12'13.68"N - 83°58'46.90"E	Ward No -08	1111.86

4.5TECHNICAL INFROMATION OF NP LAR

Grey Water Management in Lar, Uttar Pradesh, involves the treatment and reuse of wastewater from domestic activities, excluding toilet waste. Efficient grey water management is crucial for improving water sustainability and environmental health in the town. Here's a brief overview of the technical aspects:

4.5.1 **Sources of Grey Water:** In Lar, grey water primarily originates from sinks, showers, washing machines, and dishwashers. This water typically contains lower levels of contaminants compared to black water (toilet waste).

Table 4-1: Characteristics of Waste Water

Sr. No	Parameter	Value*					
		Greywater	Blackwater	Septic tank effluent (treating blackwater only)	Septic tank effluent (treating blackwater and greywater)	Septic tank effluent and greywater	Sewage water**
1	BOD (mg/l)	100–300	600–1,000	300–600	80–160	150–400	250–400
2	COD (mg/l)	200–500	1,000–2,000	600–1,000	200–400	300–600	500–800
3	TSS (mg/l)	100–300	800–1,200	300–500	200–400	150–350	600–1,000
4	Faecal Coliforms (MPN/100 ml)	10^3–10^4	10^6–10^7	10^5–10^6	10^3–10^5	10^4–10^5	10^5–10^7
5	Total Coliforms (MPN/100 ml)	10^3–10^5	10^7–10^9	10^6–10^7	10^4–10^6	10^5–10^6	10^5–10^7

Source: Grey water Manual, 2021

i) **Bathroom grey water:** Bath, basin and shower contributes approximately 50% of the total grey water volume. Bathroom grey water can be contaminated with hair, soaps, shampoos, hair dyes, toothpaste, lint, nutrients, body fats, oils and cleaning products.

ii) **Laundry grey water**: Contributes approximately 30% of total grey water volume. Wastewater from the laundry varies in quality from wash water to rinse water to second rinse water. Laundry grey water can be contaminated with lint, oils, grease, laundry detergents, chemicals, soaps, nutrients and other compounds

iii) **Kitchen waste water:** Sometimes considered as a grey water source. If a suitable treatment is not available, kitchen wastewater should not be used due to the amount of contaminants (food particles, oil, grease, etc.) it contains. Fortunately kitchen grey water contributes a relatively small portion of the total available grey water (15%).

4.6 TYPICAL COMPOSITION OF GREY WATER COMPARED WITH RAW SEWAGE

Grey water composition is varied according to the source of the grey water. Table 4.2 shows the contaminants of grey water from different sources.

Table 4-2 : Water- Quality Characteristics of Selected Domestic Grey Water

Sr. No.	Water source	Characteristic
1.	Automatic Clothes Washer	Bleach, Foam, High pH, Hot water, Nitrate, Oil and Grease, Oxygen demand, Phosphate, Salinity, Soaps, Sodium, Suspended solids, and Turbidity
2.	Automatic Dish Washer	Bacteria, Foam, Food particles, High pH, Hot water, Odor, Oil and grease, Organic matter, Oxygen demand, Salinity, Soaps, Suspended solids, and Turbidity
3.	Bath tub and shower	Bacteria, Hair, Hot water, Odor, Oil and grease, Oxygen demand, Soaps, Suspended solids, and Turbidity
4.	Sinks, including kitchen	Bacteria, Food particles, Hot water, Odor, Oil and grease, Organic matter, Oxygen demand, Soaps, Suspended solids, and Turbidity

Grey water contains oils, fats, detergents, soaps, nutrients, salts and particles of hair, food and lint, which can impact on operational performance and life of a grey water irrigation system. If these contaminants aren't managed correctly they can degrade soil structure, ground water flow paths or even cause non wetting characteristics in garden soils In addition, grey water can contain pathogenic microorganisms including bacteria, protozoa, viruses and parasites in concentrations high enough to present a health risk. Therefore, a level of caution must be exercised with grey water reuse. This can be achieved by not allowing unnecessary human contact with grey water or by treating the grey water to remove or destroy the microorganisms.

Table 4-3: Chemical and Physical Quality of Grey Water Compared with Raw Sewage

Parameter	Unit	Grey water		Raw Sewage
		Range	Mean	
Suspended Solids	mg/l	45 - 330	115	100 – 500
Turbidity	NTU	22 - > 200	100	NA
BOD 5	mg/l	90 - 290	160	100 – 500
Nitrite	mg/l	< 0.1 – 0.8	0.3	10-Jan
Ammonia	mg/l	< 1.0 – 25.4	5.3	10 – 30
Total phosphorous	mg/l	0.6 – 27.3	8	30-May
Sulphate	mg/l	7.9 - 110	35	25-100
pH	-	6.6 – 8.7	7.5	6.5-8.5
Conductivity	ms/cm	325 - 1140	600	300-800
Hardness (Ca &Mg)	mg/l	15 - 55	45	200-700
Sodium	mg/l	29 – 230	70	70-300

5. POPULATION PROJECTION AND SEWAGE GENERATION

5.1 PROJECTED POPULATION

S.No.	Method of forecasting population	At Present Year 2024	At initial Stage 2026	At Mid Stage 2041	At Ultimate Stage 2056
1.	Arithmetical Increase	32135	32725	37140	41555
2.	Geometrical Increase	32935	33710	40145	47805
3.	Incremental Increase	32135	32725	37140	41555
4.	Semi log Graph Method	28870	32500	37500	42500
5.	Simple Graph Method	28730	31500	34000	37000

Population calculated by various conventional methods at various stages is tabulated as below:

As Per Manual of Water Supply & Treatment, by Geometrical Increase Method is on higher side and Simple Graph Method is on lower side. Population forecasted by Incremental Increase Method is second lowest. Population figure forecasted by Incremental Increase Method is almost in midway realistic to observing growth pattern of Nagar Panchayat Lar and hence it will be reasonably justified to adopt the population figure derived by **Incremental Increase Method** and same is adopted for years. Hence Population forecast on the basis of Incremental Increase Method for the year 2026 - 32725 and for the year 2041 - 37140 and for the year 2056 - 41555 isadopted for design purpose in this project.

Adopted Population for Design Purpose for NP Lar is : 32725

5.2 ZONAL WISE (CORE SANITATION & OUT SKIRTS) POPULATION

As Per Guideline of SBM 2.0 as per Page No. 59 & Para 7.8.3

The Lar town has been divided into two zone viz. **Zone-1 (Core Sanitation Zone)** and **Zone-2 (Outskirts Zone)** of ward are given below.

WARD WISE POPULATION CORE SANITATION ZONE

Zone No.	Sewerage Zone	Ward Covered						Population of Core Area		
		Ward No	Total Area	Total Area under Core Sanitation Zone	Total Population Year 2011	Percentage of Population Covered	Total Population Year 2011 under Core Sanitation Zone	Population 2026 @ growth rate 1.156%	Population 2041 @ growth rate 1.312%	Population 2056 @ growth rate 1.468%
1	CORE SANITATION ZONE	2	46.00	100.00	1763	100	1763	2038	2313	2588
		3	43.00	100.00	2128	100	2128	2460	2792	3124
		4	56.00	100.00	2429	100	2429	2808	3187	3566
		7	44.00	100.00	2028	100	2028	2344	2661	2978
		11	45.00	100.00	2302	100	2302	2661	3020	3380
		14	39.00	100.00	1888	100	1888	2299	2610	2920
		Total Area Covered Under Core Sanitation		600.00			Population	14511	16582	18557
							Floating Population @5%	731	829	928
							Total population of zone	15341	17411	19484

WARD WISE POPULATION OUTSKIRTS ZONE

Zone No.	Sewerage Zone	Ward No	Total Area	Total Area under Core Sanitation Zone	Total Population Year 2011	Percentage of Population Covered	Total Population Year 2011 under Core Sanitation Zone	Population 2026 @ growth rate 1.156%	Population 2041 @ growth rate 1.312%	Population 2056 @ growth rate 1.468%
2	OUTSKIRTS ZONE	1	46.00	100.00	1763	100	1763	2038	2313	2588
		5	83.00	100.00	2028	100	2028	2344	2661	2977
		6	124.74	100.00	1878	100	1878	2171	2464	2757
		8	134.04	100.00	1261	100	1261	1458	1654	1851
		10	80.00	100.00	1059	100	1059	1224	1389	1554
		9	51.00	100.00	1725	100	1725	1994	2263	2532
		12	96.87	100.00	1696	100	1696	1961	2225	2490
		13	82.79	100.00	1706	100	1706	1972	2238	2504
		15	65.00	100.00	1503	100	1503	1737	1972	2208
		16	34.00	100.00	1297	100	1297	1499	1702	1905
		Total Area Covered Under Outskirts Zone		1000.00			Population	18399	20881	23816
							Floating Population @5%	920	1044	1191
							Total population of zone	19319	21925	25007

5.3 SEWAGE GENERATION FOR CORE SANITATION ZONE

Population & Sewerage Generation					
Sr No	Description	At Present Year 2024	At initial Year 2026	At mid Year 2041	At Ultimate 2056
1	Population	12639	14611	16582	18557
1.1	Floating Population @ 5%	632	731	829	928
1.2	Total Poputaion	13271	15342	17411	19485
1.3	Core Sanitation Zone Population as per SBM 2.0 on page 62 Para4 @70% of total population	9290	10739	12188	13639
2	Rate of Water Supply (In LPCD)	135	135	135	135
3	Sewage Generation (In MLD)@ of 80% as per manual on CPHEEO	1.00	1.16	1.32	1.47
	Say In (MLD)	0.82	1.16	1.32	1.47

As per the guidelines of SBM 2.0, the STP will be designed for rate of water supply @ 135 LPCD * 80% of sewage generation * 70% of the Base year population.

6. USED WATER TREATMENT

Used Water Management often referred to as waste water management is a critical aspect of environmental stewardship and public health. This field focuses on the collection, treatment, and disposal of used water—water that has been contaminated by human activities. Effective Used Water Management is essential for maintaining water quality, protecting ecosystems, and ensuring sustainable water resources.

6.1 KEY COMPONENTS OF USED WATER MANAGEMENT

S. No	Components	Descriptions
1.	**Sewage (Used Water)**	**Used Water comprises of the following two components:** **Grey Water** :from kitchens, bathrooms, wash basins etc. **Black Water** from toilets & urinals. These may sometimes be mixed with other municipal flows such as surface water and storm water.
2.	**Generation of Domestic Used Water**	**Generation of Domestic Used water:** GOI/States/UTs endeavor to provide 135 Litres per capita per day (LPCD) of potable water through various Missions/ programmes. Of this, 80% (108 LPCD) is expected to be generated as used water.
3.	**Management of Used Water**	**Management of Used Water:** includes collection, conveyance, treatment & recycling/ disposal of all the above stated flows.
4.	**Collection**	Grey water from kitchens, bathrooms, wash basins etc. and black water from toilets shall be collected and let into the nearby sewer (i.e. off-site sanitation system) or into the onsite sanitation systems (septic tanks with soak pits)

5.	Conveyance	
5.1	Off-site System	Offsite System consists of sewage conveyance and treatment at STP
5.1.1	Interception & Diversion Drains	This is a system of intercepting & collecting sewage from municipal drains (where sewer network is absent) and to divert it to STP for treatment.
5.1.2	Sewer Network	Sewer network consists of continuous pipes laid underground, mostly along roads, to collect sewage from households and other establishments. Central portion of city area often charactenzed by high population density is designated as Core Sanitation Zone (CSZ) which is suitable/ viable for laying of sewer network. The outskirts of a city often characterized by sparse population density is designated as fringe areas. These areas are often based On - site sanitation system as laying of sewer network is often unviable.
5.2	On-Site System	Onsite treatment system (OTS) is a privately owned and Maintained sewage disposal system (other than municipal body) that treats used water and produces partially treated water. However some packaged onsite sewage treatment systems are also available.
5.2.1	Septage (from septic tanks with soak-pits)	In on-site systems, the faecal sludge and black water is accumulated in septic tank and soak pit, situated within the premises. Periodically, specialized collection vehicles will be used for desludging the septic tanks and transporting the same for treatment.
6	Treatment	Sewage is treated in STP and faecal sludge can be

		treated either at STP or STP-cum-FSTP or stand alone FSTP. Further the treatment may be centralized or decentralized treatment.
6.1	**STP**	**Sewage Treatment Plants (STP)** are used for treatment of used water coming out from Domestic, Commercial, institutional establishments etc.
6.2	**Faecal Septage Treatment Plants (FSTPs)**	**Faecal Septage Treatment Plants (FSTPs)** are used for treatment of faecal septage being periodically removed from septic tanks of domestic, commercial, Institutional establishments etc. to maintain their efficiency.
6.3	**STP-cum-FSTP**	Septage can be economically treated at STPs with certain minor modifications saving CAPEX, OPEX & land requirement.
7.	**Recycle/ Disposal**	The treated used water may be used by ULB either for self consumption,or sold, for the following purposes: 1. Non-potable purposes like flushing toilets, gardening etc 2. Agricultural purposes 3. Horticulture purposes 4. Industrial purposes 5 Municipal purposes like dust mitigation, road washing,Construction activity, etc. 6. Water body rejuvenation It is targeted to recycle and reuse at least 20% of treated used water for above mentioned purposes.

8.	User Fees	Suitable user fees matching the cost of sewage management to be levied ensuring long term sustainability and assured service delivery. Levied user charges should be sufficient to recover fully/ partial O&M cost for running the facility uninterruptedly. Along with user charges, suitable penalty provisions to be notified in ULB by laws.

SBM-U 2.0 provides funds to address the issue of Used Water Management including the safe containment, transportation and disposal of faecal sludge and septage from toilets, for cities with population of less than 1 lakh. It will help to holistically manage approximately 13000 MLD of sewage generated from the notified Class II - VI towns of the country, For purpose of estimation, census 2011 figures are considered with suitable population projections. However all statutory towns will get funding support from SBM-U.

Class of cities based on population		No. of cities	Total Population@ 2011Census (in crore)	STP capacity reqd (in MLD) (After adjusting for 23% decadal growth of population)	Average capacity (in MLD)
Class II	50000 - 99999	535	365	4498	5.5
Class III	20000 - 49999	1439	446	5494	3.5
Class III	10000 -19999	1233	1.2	2826	0.70
Class V	5000 - 9999	541	0.43		
Class VI	< 5000	153	0.05	12,818 (Approx-13,000)	
Total		3901	10.42		

Source: SBM-Urban2.0 Page no 56

6.2 PROCESSING OF USED WATER MANAGEMENT

1. **Collection:** Used water is typically collected through a network of sewers or pipes that transport it from residential, industrial, and commercial sources to treatment facilities. Proper collection systems are crucial to prevent leaks, overflows, and environmental contamination.

2. **Treatment:** The treatment process is designed to remove contaminants from used water before it is released back into the environment or reused. This usually involves several stages:

- **Primary Treatment:** Removes large solids and particulate matter through screening and sedimentation.
- **Secondary Treatment:** Uses biological processes to degrade organic matter and reduce the concentration of pollutants.
- **Tertiary Treatment:** Provides additional purification, often involving advanced filtration, chemical treatments, or disinfection to ensure the water meets stringent quality standards.

3. **Disposal or Reuse:** After treatment, used water can be safely released into natural water bodies, such as rivers or lakes, or it can be repurposed for non-potable uses, such as irrigation or industrial processes. In some cases, treated water can even be further purified for potable use, contributing to water recycling efforts.

- **Irrigation:** Treated grey water can be used for irrigation of gardens, parks, and agricultural fields, reducing the demand on freshwater resources.
- **Flushing Toilets:** In some cases, treated grey water can be used for toilet flushing, further reducing water consumption.
- **Industrial Uses:** In industrial settings, treated grey water may be reused for processes that do not require high-quality water.

4. **Infrastructure and Maintenance:** Setting up an effective grey water management system involves constructing and maintaining appropriate infrastructure, including collection tanks, treatment units, and distribution systems. Regular maintenance is

crucial to ensure the system operates efficiently and does not become a health hazard

5. Community Involvement: Educating residents about the benefits and methods of grey water management is vital for successful implementation. Community participation can enhance the effectiveness of grey water systems and promote sustainable water use practices.

Implementing these technical measures can help Lar, Deoria manage its water resources more effectively contributing to environmental sustainability and improved quality of life for its residences.

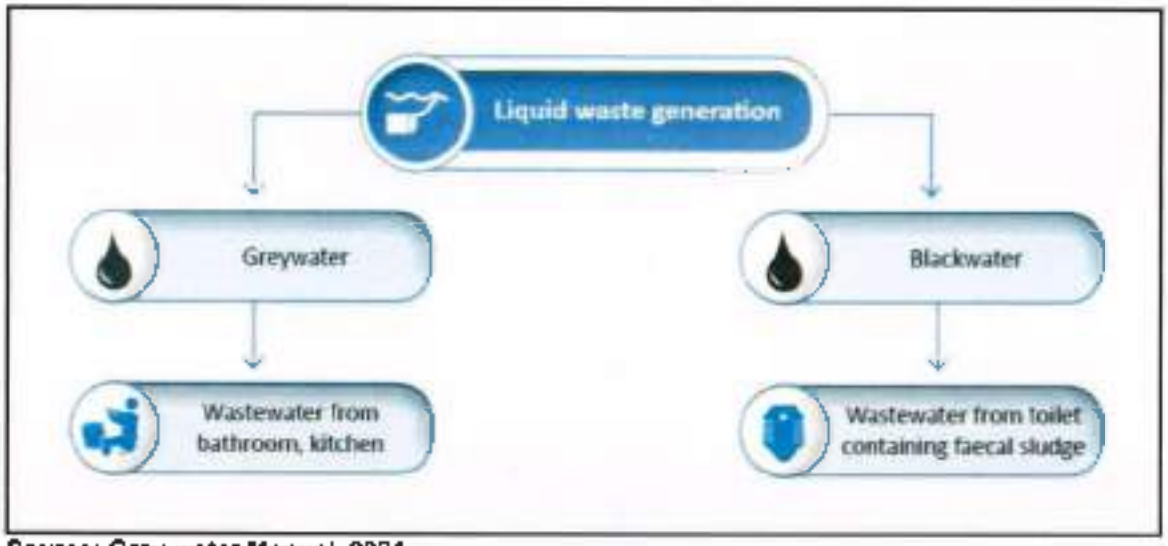
6.3 LIQUID WASTE GENERATION

The wastewater generated in the rural areas can be divided into black water and grey water depending upon the impurities they carry.

1. Black water: Wastewater generated from toilets containing faecal matter with very high amount of pathogens. Swachh Bharat Mission (Grameen) has addressed the issue of black water along with the drive against open defecation. Success was achieved through the installation on of toilets with a twin pit system in rural areas. There are still a limited number of village households that depend on septic tanks or single pits which requires faecal sludge management. A separate manual has been prepared for faecal sludge management, which also addresses the problem of black water management.

2. Grey water: Wastewater generated from bathing, washing, general cleaning, kitchen, maintenance of livestock, as well as from community stand posts, wells, hand pumps and other intuitional areas, etc. Grey water contains only one-tenth of the nitrogen that black water does and signify cantly fewer pathogens. As a result, the organic content of grey water decomposes more rapidly than that of black water and thus, its treatment is easier. These characteristics make it reusable as a sustainable source of water for irrigation, and also for other purposes, but only after treatment which allows it to meet specific quality criteria.

Figure: 6-1 Liquid Waste Generation



Source: Grey water Manual. 2021

3. Source Manual: Grey water Management

Grey water management should be cautiously handled in places where the possibility of intermixing of septic supernatant with the grey water is high. If that happens, the result is faecal contamination of grey water which means that it then requires a different and more complex treatment method. It is thus better to avoid such accidental mixing all together.

Grey water is the wastewater generated because of various domestic uses of water excluding toilets. Guidelines issued under JJM stated a proposal to supply 55 Liters of water per capita per day. and the amount of grey water generated is assumed to be 65 per cent of the quantity of water supplied. Thus, about 36 liters of grey water per capita per day is expected to be generated. Since toilet water is to be kept separate grey water is expected to be free of faucal contamination However sometimes grey water does have traces of faucal matter where intermixing of septic tank effluent with grey water has occurred.

6.4 GREY WATER MANAGEMENT

- Ensuring efficient grey water management in rural areas of India requires technological solutions to be cost-effective, capable of handling both small and large quantity is of grey water (as required), and simple enough to be operated and maintained by the GP. The SBM-G Phase-II guidelines enlist the technologies that can be implemented at the Panchayati Raj Institution (PRI) level for effective

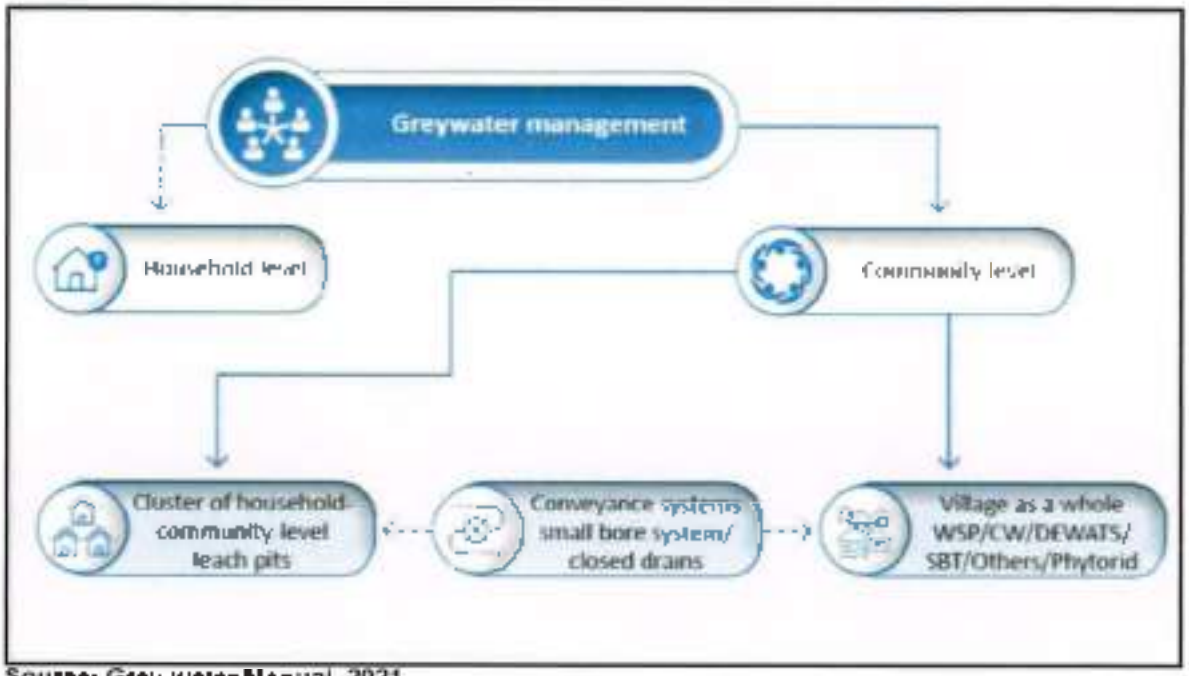
grey water management. Management of centralized infrastructure such as conveyance and treatment plants for grey water management is a difficult task for rural set elements.

- Therefore the problem of grey water management should be strategically approached wherein initially the development of household-level facilities for grey water should be focused upon followed by a cluster-level approach to cover a group of households.

- In case the above, men owned approach is not suitable for a particular location a village level grey water management facility that is appropriate in terms of related issues like land availability, feasibility of drainage line development, etc. can be implemented. SBM-G Phase-II guidelines also mention management of grey water generated in institutional areas and public areas such as water points like stand-posts, hand-pumps, common washing-bathing places etc. The methods could be on-site interventions if possible channeling of the flow into community treatment plants.

- The overall decision framework will follow Figure 3 prioritizing household-level interventions. Community-level management is divided into two parts:

Figure :6-2 Schematic for Grey Water Management Interventions



Source: Grey water Manual, 2021

Systems that can be implemented by clustering the households (5–15) and village - level systems such as WSP/CW DEWATS. In order to achieve technical and financial feasibility in respect of a village-level system coverage of at least 75 % of households is recommended.

6.5 HOUSEHOLD - LEVEL INTERVENTIONS

To provide guidelines for the implementation of interventions for grey water management following interventions are provided at household level: They are

1. **Soak Pit**
2. **Leach Pit**
3. **Magic Pit**
4. **Kitchen Garden**

The specified methods may not be effective for comprehensive grey water management:

1. Soak Pit

- **Limitation:** Soak pits are designed for absorbing small quantities of water into the ground but can become quickly saturated in areas with high grey water output or

poor soil drainage. They often lack sufficient treatment capacity, leading to potential groundwater contamination.

2. Leach Pit

- **Limitation:** Leach pits facilitate the gradual percolation of water into the soil However, they are typically not equipped to handle the organic load and contaminants found in grey water, which can lead to soil clogging and contamination if not properly maintained.

3. Magic Pit

- **Limitation:** Magic pits, which use biological processes to treat grey water, often struggle with high volumes and varying water quality. Their effectiveness can be inconsistent, and they may require frequent maintenance and monitoring, making them less reliable for large-scale or long-term management.

4. Kitchen Garden

- **Limitation:** While using grey water for irrigation in kitchen gardens can be beneficial, it is not a comprehensive solution. The method does not provide adequate treatment for contaminants and pathogens in grey water, posing health risks and limiting its applicability to small-scale, low-risk contexts.

6.6 COMMUNITY- LEVEL INTERVENTIONS

To provide guidelines for the implementation of interventions for grey water management following interventions are provided at Community level: They are.

1. **Community Leach Pit**
2. **Faecal Sludge Treatment Plant (FSTP)**
3. **Waste Stabilization Pond (WSP)**
4. **Decentralized Wastewater Treatment System (DEWATS)**
5. **Constructed Wetland (CW)**

6. **Phytorid Technology**

1. Faecal Sludge Treatment Plant (FSTP)

- **Effective:** FSTPs are specifically designed to treat and manage faecal sludge which includes grey water and other organic waste. They provide comprehensive treatment through a series of stages ensuring effective pathogen removal and nutrient reduction

2. Waste Stabilization Pond (WSP)

- **Effective:** WSPs are effective for treating large volumes of grey water through natural processes. They offer extended detention time allowing for significant biological and sedimentation treatment making them suitable for rural and semi-urban areas.

3. Constructed Wetland (CW)

- **Effective:** Constructed wetlands provide effective treatment by leveraging natural filtration processes. They handle varying grey water volumes efficiently, removing contaminants through soil and plant interactions, and are suitable for a range of scales.

4. Community Leach Pit

- **Non-Effective:** Community leach pits lack the capacity for treating the high organic load and contaminants in grey water. They are prone to rapid saturation and soil clogging, leading to ineffective treatment and potential groundwater contamination.

5. Decentralized Wastewater Treatment System (DEWATS)

- **Non-Effective:** While DEWATS can be effective in certain contexts, they may not always be suitable for handling large or variable volumes of grey water in rural settings due to their complexity and maintenance requirements.

6. Phytorid Technology

- **Non-Effective:** Phytoid systems, though useful for some wastewater treatment applications, may not provide consistent results for grey water management, especially in areas with high or variable loads, due to their limited treatment capacity and reliance on specific plant species.

In summary, FSTP, WSP, and CW are effective due to their robust treatment capabilities and scalability, while the other methods may fall short in terms of capacity, consistency, and maintenance needs.

6.7 CONVEYANCE SYSTEMS

1. Closed Drains

These drains are preferably a trapezoidal section with a half round at the base used for conveyance of grey water from the general on source to the designated treatment unit. They are either covered with removable reinforced cement concrete (RCC) covers or Shahabad tiles or any other material recommended by the state/district administration.

2. Small Bore Pipe System

Small bore sewer systems are designed to receive only the liquid portion of household grey water for off - site treatment and disposal. Grit, grease and floating materials are separated from the waste flow in interceptor tanks.

6.8 OBJECTIVES

Inclusion of Used Water Management component under SBM-U 2.0 will help to achieve following two objectives.

- All used water is safely collected, treated and reused to feasible extent and no untreated used water is discharged into water bodies or the open environment.
- All faecal matter and septage is properly collected, treated and by-products reused.

6.9 FOCUS AREAS UNDER USED WATER MANAGEMENT

To achieve the objective of treating used water before discharge into water body/ overland the following will be the major areas of focus under SBM 2.0 and will be eligible for central share of funding:

- Setting up of Sewage Treatment Plants (STPs)/ STP-cum-FSTP
- Laying Interception and Diversion (I&D) structures including provision of pumping stations and pumping main/gravity main up to STP
- Procuring adequate numbers of septic tank disludging equipments.
- Deploying Digital (IT enabled) tools for real time monitoring of efficiency parameters during the operational phase of STPs and allied equipments.

7. PROJECT COMPONENT FUNDING FOR USED WATER MANAGEMENT

7.1 SEWAGE TREATMENT PLANT

State/ULB will be free to adopt any proven technology as brought out in the CPHEEO Manual/ MoHUA Advisories from time to time. However for smaller ULBs nature-based technologies in suitable combinations may be adopted. Relevant components for integration of septage treatment at STP such as disludging ramp, screens, solid/

liquid separation chamber, pumping etc will be admissible components for central funding as part of STP.

7.2 INTERCEPTION AND DIVERSION DRAINS / OUTFALL

Sewer/ trunk main sewer: Interception and diversion drain component is eligible for funding for conveying municipal dry weather flow up to STP/ STP cum FSTP through an outfall sewer/ trunk sewer from existing/ upcoming sewer network leading to the Sewage treatment facility.

7.3 SEWER & SEPTIC TANK CLEANING MACHINES

Disludging/ cleaning equipments will be eligible for funding provided that SLTC confirms that:

(a) Private Sanitation Service Operators (PSSOs) are unlikely to be available to undertake this task at the particular ULB

(b) State/ ULB will be engaging operators on contract to run them.

7.4 PROJECT COMPONENTS TO BE FULLY FUNDED BY STATES/ULBs

- **Sewer Network**

The entire cost of sewer network being set up in the towns to be borne by the State/ UT & ULB including those of tied 15thFinance Commission (FC) Grants. The arrangements in terms of funds and timelines need to be delineated and explained to SLTC while sanctioning of projects and also communicated to the National Mission Directorate, at the time of claiming central share of funds for STPs/ STP cum FSTP and I&D infrastructure in any town. It is expected that each ULB will use 15th FC tied Grants/SFC Grants and their own resources to suitably convey sewage from the households through sewer networks to ensure robust and environmentally conscious sanitation approach. As an interim arrangement due to fund constraints or any other reasons existing and improved municipal pucca drains could be used as means of conveyance. Use of tied 15th FC grants towards development of sewage conveyance network would be monitored by Ministry in accordance with 15th FC guidelines. Further to promote planned urbanization with requisite basic services, it is advised

that in new green field developments in and around towns, provision of sewerage network along with decentralized sewage treatment facilities should be ensured. This will avoid construction of individual septic tanks and soak pits

- **Strengthening of Municipal Drains**

As an interim arrangement, till sewers are laid in town, strengthening of drainage networks is to be taken up and intercepted into existing/upcoming sewer network wherever feasible or brought to I&D point from where sewage/sludge can be conveyed to STP/ FSTP cum STP.

As in the case of sewer network, the arrangements being contemplated in terms of funds including tied 15th FC Grants and timelines need to be delineated and explained to SLTC while sanctioning of projects, and also communicated to the National Mission Directorate, at the time of submission of funds request towards STPs and I&D infrastructure. As explained above, in this case also funds mobilized out of 15th FC tied Grants/ SFC Grants and State/ULB's own resources would be monitored in adherence to 15th FC guidelines.

8. TECHNOLOGY FOR USED WATER TREATMENT

Waste water treatment typically involves three main stages primary, secondary and tertiary treatment Each stage plays a crucial role in removing contaminants from wastewater before it is released into the environment or reused.

8.1 PRIMARY TREATMENT

- **Purpose:** The primary treatment process aims to remove large solids and settle able materials from wastewater.
- **Process:** Wastewater is first passed through screens to remove debris like sticks, leaves, and plastics. Following this it enters a settling tank (or sedimentation tank) where heavier solids settle to the bottom forming sludge while lighter materials such as grease, float to the surface and are skimmed off.
- **Outcome:** This stage typically removes about 50-70% of suspended solids and a significant portion of biochemical oxygen demand (BOD).

8.2 SECONDARY TREATMENT

- **Purpose:** Secondary treatment focuses on the biological degradation of dissolved organic matter and remaining suspended solids.
- **Process:** This stage usually involves biological processes where micro-organism such as bacteria, break down organic pollutants. Common melhods include:
  - **Activated Sludge Process:** Air is introduced to promote aerobic digestion of organic matter.
  - **Trickling Filters:** Wastewater is spread over a bed of stones or plastic media, allowing biofilms of bacteria to grow and treat the wastewater as it trickles through.
  - **Outcome:** Secondary treatment can achieve a 90% or greater reduction in BOD and suspended solids, resulting in clearer and cleaner effluent.

8.3 TERTIARY TREATMENT

- **Purpose:** Tertiary treatment aims to further improve the quality of treated waste water, making it suitable for specific reuse applications or for discharge into sensilive environments.
- **Process:** This stage can include a variety of processes such as:

- **Filtration:** Removes remaining solids.

- **Disinfection:** Common methods include Chlorination or Ultraviolet (UV) light treatment to eliminate pathogens
- **Nutrient Removal:** Techniques to remove nitrogen and phosphorus which can cause eutrophication in receiving waters.

- **Outcome:** Tertiary treatment produces effluent that meets stringent quality standards suitable for irrigation, industrial processes or even potable reuse in some cases.

8.4 PRIMARY TREATMENT SYSTEMS

These three types of wastewater treatment systems are designed to separate solids from liquids, facilitating the treatment of wastewater through sedimentation processes

8.4.1 SEDIMENTATION PONDS

- **Description:** Sedimentation ponds are large shallow basins where wastewater is allowed to settle. They are often used as the first step in wastewater treatment.
- **Process:** As wastewater enters the pond, heavier solids settle to the bottom, forming sludge, while lighter materials, such as oils and greases, float to the surface. The clarified water can then overflow to further treatment processes.
- **Benefits:**
  - Simple and low-cost design.
  - Effective in removing large quantities of suspended solids.
- **Applications:** Commonly used in municipal wastewater treatment and storm water management

8.4.2 SEPTIC TANKS

- **Description:** A septic tank is a buried, watertight container used for the treatment of household wastewater in areas not connected to a centralized sewer system.

- **Process:** Wastewater from the household enters the tank, where solids settle to the bottom forming sludge while lighter materials float to the surface forming a scum layer. Anaerobic bacteria help break down organic matter. The partially treated effluent exits the tank and flows into a drain field for further treatment by soil.
- **Benefits:**
  - Provides a decentralized solution for wastewater treatment.
  - Requires minimal maintenance and no external energy input.
- **Applications:** Widely used in rural areas and single-family homes.

8.4.3 IMHOFF TANKS

- **Description:** An Imhoff tank is a type of wastewater treatment tank that combines sedimentation and anaerobic digestion in one unit.
- **Process:** Wastewater enters the tank and is separated into two chambers: the upper chamber for sedimentation and the lower chamber for anaerobic digestion. Solids settle in the upper chamber and the resulting sludge is digested in the lower chamber by anaerobic bacteria producing biogas.
- **Benefits:**
  - Reduces the volume of sludge and produces biogas for energy use.
  - Efficient in treating wastewater while minimizing land requirements.
- **Applications:** Often used in small to medium-sized communities and industries.

8.5 SECONDARY TREATMENT SYSTEMS

8.5.1 BAFFLED SEPTIC TANK

- **Description:** A baffled septic tank is a variation of a traditional septic tank that includes internal baffles to enhance the separation of solid and liquid.

- **Process:** Wastewater flows into the tank and is directed through baffles that create multiple chambers. This design helps prevent short-circuit (where wastewater bypasses treatment) by allowing for better settling of solids and promoting anaerobic digestion.
- **Benefits:**
  - Improved solids separation reduces the accumulation of sludge.
  - Enhanced treatment efficiency compared to conventional septic tanks.
- **Applications:** Suitable for residential systems and small communities where space is limited and effective treatment is needed.

8.5.2 ANAEROBIC/FIXED BED FILTERS

- **Description:** Anaerobic fixed bed filters consist of a bed of media (such as gravel, plastic or other materials) where wastewater passes through promoting biological treatment without the need for oxygen.
- **Process:** As wastewater flows over the fixed bed, anaerobic microorganisms attached to the media break down organic matter and nutrients. The design allows for the retention of biomass improving treatment efficiency.
- **Benefits:**
  - Compact design suitable for areas with space constraints.
  - Efficient organic matter removal with minimal odor issues.
- **Applications:** Commonly used in decentralized wastewater treatment systems particularly for small communities and industries.

8.5.3 TRICKLING FILTER

- **Description:** A trickling filter is a type of biological treatment system where wastewater is distributed over a bed of media (usually stones or plastic) to promote the growth of biofilm.

- **Process:** Wastewater trickles down through the media, allowing aerobic microorganisms to attach and grow. As the biofilm consumes organic matter, the treated water collects at the bottom and is discharged for further treatment or disposal.
- **Benefits:**
  - Effective in removing organic pollutants and nutrients.
  - Can handle variations in flow and loading rates.
- **Applications:** Often used in municipal wastewater treatment plants and can be integrated with secondary treatment systems.

8.6 SECONDARY AND TERTIARY TREATMENT SYSTEMS

8.6.1 POND-BASED AQUACULTURE SYSTEMS

Pond-based aquaculture systems are a widely used method for farming fish and other aquatic organisms. These systems involve the cultivation of species in natural or man-made ponds leveraging the advantages of a controlled yet semi-natural environment

8.6.1.1 Key Components

1. **Pond Design and Construction:** Ponds can be constructed in various shapes and sizes, depending on the intended scale of production. Proper design includes considerations for depth, water flow and surrounding vegetation to promote biodiversity and natural filtration.
2. **Water Quality Management:** Maintaining optimal water quality is crucial. Key parameters include:
   - **Dissolved Oxygen:** Essential for fish survival, often managed through aeration systems.
   - **PH Levels:** Should remain stable to avoid stress on aquatic life.
   - **Nutrient Levels:** Monitoring for excess nutrients is vital to prevent algal blooms and ensure a balanced ecosystem.

3. **Species Selection:** Popular species for pond farming include tilapia, catfish, carp and shrimp. The choice depends on factors like local climate, market preferences and ecological compatibility.

4. **Feeding Regimens:** Effective feeding strategies incorporate both formulated feeds and natural food sources. Using a combination helps to optimize growth rates while minimizing feed costs and environmental impact.

5. **Biodiversity and Ecosystem Management:** A well-managed pond supports a diverse ecosystem, which can enhance nutrient cycling and reduce the risk of disease. Introducing aquatic plants and invertebrates can improve habitat complexity and water quality.

6. **Sustainability Practices:** Implementing sustainable practices is crucial for minimizing negative environmental impacts. This includes managing water usage, preventing nutrient runoff and ensuring that stocking densities are appropriate to avoid overpopulation.

8.6.1.2 Economic and Social Impacts

Pond-based systems provide several economic benefits:

- **Local Food Production:** They contribute significantly to local food security by providing a reliable source of protein.
- **Job Creation:** These systems can generate employment opportunities in rural areas.
- **Community Engagement:** Small-scale pond aquaculture encourages community involvement and can be a source of income for families.

8.6.1.3 Challenges and Considerations

Despite their advantages, pond-based systems face challenges such as:

- **Water Scarcity:** In some regions, competition for water resources can limit aquaculture operations.
- **Disease Management:** High stocking densities can lead to disease outbreaks, requiring careful management and biosecurity measures.

- Regulatory Compliance: Farmers must adhere to environmental regulations to minimize impacts on local ecosystems

8.6.2 CONSTRUCTED WETLAND SYSTEMS

Constructed wetland systems are engineered ecosystems designed to mimic the functions of natural wetlands. They are primarily used for wastewater treatment, storm water management and ecological restoration. These systems utilize various vegetation, soils and microbial processes to filter pollutants and enhance water quality.

8.6.2.1 Key Components

1. Design and Structure
2. Types: Constructed wetlands can be classified into two main types:

- **Surface Flow Wetlands**: Water flows over the surface of the substrate allowing plants to take root and thrive.
- **Subsurface Flow Wetlands**: Water flows through a gravel or soil medium which supports the growth of wetland vegetation while preventing direct contact with the water surface.
- **Layouts**: They can be designed in various configurations, including single-cell, multi-cell or series arrangements depending on the treatment goals and available space.

3. Plant Selection

- Common wetland plants include cattails, bulrushes, and sedges. These plants are crucial for nutrient uptake, providing habitat for microorganisms that break down pollutants.

4. Water Treatment Processes

- **Physical Processes**: Sedimentation and filtration remove solids and suspended particles.

- **Processes:** Microorganisms in the root zones break down organic matter and nutrients, such as nitrogen and phosphorus, through processes like nitrification and gentrification.
- **Processes:** Adsorption and chemical reactions help further remove contaminants.

5. **Maintenance**

- Regular monitoring and maintenance are essential to ensure optimal performance. This may include managing vegetation growth, controlling invasive species and monitoring water quality.

8.6.2.2 Benefits

1. **Environmental Impact**

- Constructed wetlands enhance water quality by effectively removing contaminants and improving the health of receiving water bodies.

2. **Biodiversity**

- These systems support a diverse range of plant and animal species, contributing to habitat restoration and promoting ecological balance.

3. **Cost-Effectiveness**

4.

- Compared to traditional wastewater treatment facilities, constructed wetlands can be more cost-effective to build and maintain, especially in rural or developing areas.

5. **Aesthetic Value**

- They can enhance the landscape providing recreational opportunities and educational resources for communities.

8.6.2.3 Applications

- **Wastewater Treatment:** Used for treating municipal, agricultural, and industrial wastewater.

- **Storm water Management:** Help mitigate flooding and improve the quality of storm water runoff.
- **Ecological Restoration:** Restore degraded wetlands and improve local biodiversity.

8.6.3 AEROBIC LAGOON SYSTEMS

Aerobic lagoon systems are large, shallow ponds designed for the biological treatment of wastewater. These systems utilize aerobic microorganisms to break down organic matter in the presence of oxygen, making them an effective method for treating municipal and industrial wastewater.

8.6.3.1 Key Components

1. Design and Structure

- **Shape and Size**: Aerobic lagoons are typically rectangular or oval-shaped with a depth ranging from 1 to 5 meters. The size can vary significantly based on the volume of wastewater being treated and the desired retention time.
- **Aeration**: Oxygen is supplied to the lagoon through mechanical aerators or by natural diffusion from the atmosphere. This ensures that aerobic bacteria have the oxygen needed for decomposition

2. Biological Processes

- **Microbial Activity**: The primary treatment occurs through the action of aerobic bacteria, which consume organic matter and nutrients (such as nitrogen and phosphorus) in the wastewater.
- **Settling**: Heavier particles and sludge settle at the bottom of the lagoon while the treated effluent is typically collected from the surface.

3. Retention Time

- The efficiency of aerobic lagoons largely depends on the hydraulic retention time (HRT) which is the amount of time wastewater remains in the lagoon. Longer retention times improve treatment effectiveness.

8.6.3.2 Benefits

1. **Cost-Effectiveness:** Aerobic lagoons are generally less expensive to construct and operate compared to traditional wastewater treatment plants especially in rural areas where land is available.
2. **Simplicity:** The systems are relatively easy to maintain and operate, requiring less technical expertise than more complex treatment systems.
3. **Nutrient Removal:** They can effectively reduce biochemical oxygen demand (BOD), total suspended solids (TSS) and nutrients making the treated water suitable for discharge or further treatment.
4. **Natural Processes:** The systems rely on natural biological processes reducing the need for chemical additives and minimizing environmental impact.

8.6.3.3 Challenges

1. **Odour Management:** If not properly managed, aerobic lagoons can produce odours especially if the system experiences low oxygen levels or excessive organic loading.
2. **Climate Sensitivity:** Performance can be affected by weather conditions as colder temperatures can slow down microbial activity.
3. **Space Requirements:** Aerobic lagoons require a significant amount of land which may not be feasible in urban settings.
4. **Algal Blooms:** In some cases, excessive nutrients can lead to algal blooms which can disrupt the ecosystem and complicate the treatment process.

8.6.3.4 Applications

- **Municipal Wastewater Treatment:** Commonly used for treating sewage and storm water.
- **Industrial Effluent Treatment:** Suitable for some types of industrial wastewater, particularly those with high organic content.

- Waste Management: Effective in treating runoff and wastewater from livestock operations.

8.6.3 ANAEROBIC LAGOON SYSTEMS

Anaerobic lagoon systems are large, open bodies of water designed for the treatment of wastewater through anaerobic processes, which occur in the absence of oxygen. These systems are particularly effective for breaking down organic matter and are commonly used in agricultural and municipal wastewater management.

8.6.4.1 Key Components

1. Design and Structure

- **Shape and Size:** Anaerobic lagoons are typically deep and wide, allowing for the accumulation of sludge at the bottom. Depths usually range from 2 to 6 meters.
- **Sealed Bottom:** Many lagoons have a sealed bottom to prevent leachate from contaminating groundwater, often constructed with clay or synthetic liners.

2. Biological Processes

- **Anaerobic Digestion:** Microorganisms break down organic matter without oxygen, producing biogas (primarily methane and carbon dioxide) as a byproduct. This biogas can be captured and utilized as a renewable energy source.
- **Settling and Stratification:** Heavier solids settle to the bottom, forming a layer of sludge while the treated liquid effluent is drawn from the surface.

3. Retention Time

- The effectiveness of anaerobic lagoons depends on the hydraulic retention time (HRT), which can range from several days to several weeks, allowing sufficient time for microbial activity to degrade organic material.

8.6.4.2 Benefits

1. **Biogas Production:** One of the main advantages is the generation of biogas, which can be captured and used for energy, reducing reliance on fossil fuels.
2. **Cost-Effectiveness:** Anaerobic lagoons generally require lower operational and maintenance costs compared to aerobic treatment systems, making them economically viable for many applications.
3. **Low Oxygen Demand:** Since anaerobic processes do not require oxygen, they can operate efficiently in environments where aeration is impractical.
4. **Nutrient Reduction:** These systems can effectively reduce biochemical oxygen demand (BOD), total suspended solids (TSS), and certain nutrients, improving the quality of the effluent.

8.6.4.3 Challenges

1. **Odour Issues:** Anaerobic lagoons can produce strong odors, especially if not properly managed, due to the release of volatile fatty acids and other compounds during digestion
2. **Limited Treatment for Certain Pollutants:** While effective for organic matter, anaerobic lagoons may not adequately remove some nutrients such as nitrogen and phosphorus requiring additional treatment steps.
3. **Temperature Sensitivity:** Performance can be affected by temperature as, anaerobic microorganisms are more active in warmer conditions.
4. **Space Requirements:** Like aerobic lagoons, anaerobic lagoons require significant land area which may not be feasible in densely populated regions.

8.6.4.4 Applications

- **Agricultural Waste Management:** Commonly used for treating livestock manure and other agricultural runoff, contributing to nutrient recycling and energy production.
- **Municipal Wastewater Treatment:** Suitable for treating sewage in less populated areas or as a pre-treatment step before further processing.

- **Industrial Effluent Treatment:** Effective for industries producing high-strength organic waste, such as food processing and breweries

8.6.5 DEWATS (Decentralized Wastewater Treatment Systems)

DEWATS refers to decentralized wastewater treatment systems designed to treat wastewater close to the source of generation, particularly in rural or peri-urban areas. These systems provide a sustainable and cost-effective alternative to centralized treatment plants, addressing sanitation challenges while promoting environmental health

8.6.5.1 Key Components

1. **System Design**

- DEWATS can vary in design but typically include a series of treatment units such as settling tanks, anaerobic digesters, biofilters, and constructed wetlands.
- The layout is flexible and can be tailored to local conditions and wastewater characteristics, making them suitable for different settings.

2. **Treatment Processes**

- **Preliminary Treatment:** Involves screening and grit removal to eliminate larger solids and debris
- **Primary Treatment:** Settling tanks (or sedimentation tanks) allow suspended solids to settle, forming sludge at the bottom.
- **Secondary Treatment:** Uses biological processes, often involving anaerobic digestion, aerobic treatment or infiltration to break down organic matter and reduce pollutants.
- **Tertiary Treatment:** Additional treatment steps, such as disinfection or nutrient removal may be included to meet discharge standards

3. **Effluent Management**

- Treated effluent can be reused for irrigation, landscaping, or discharged into natural water bodies, depending on the treatment level and local regulations.

- Byproducts, such as sludge, can often be used as fertilizer or biogas for energy production

8.6.5.2 Benefits

1. Sustainability: DEWATS promote the reuse of water and nutrients, reducing the environmental impact of wastewater and supporting sustainable water management practices.
2. Cost-Effectiveness: These systems often require lower capital and operational costs compared to centralized treatment facilities, making them accessible for communities with limited resources.
3. Community Involvement: DEWATS encourage local participation in wastewater management, fostering community ownership and responsibility for sanitation.
4. Flexibility: The modular nature of DEWATS allows for easy adaptation to changing needs and conditions, making them suitable for diverse environments.

8.6.5.3 Challenges

1. Maintenance Requirements: Regular maintenance is crucial for the effective operation of DEWATS, and local capacity for maintenance can vary.
2. Public Awareness: Community education on the importance of proper wastewater management is essential for the successful implementation of DEWATS.
3. Regulatory Compliance: Ensuring that DEWATS meet local regulations and standards can be challenging, particularly in areas with limited oversight.
4. Site-Specific Limitations: The effectiveness of DEWATS can be influenced by local soil conditions, climate and available space, necessitating careful site assessment

8.6.5.4 Applications

- **Rural Areas:** Ideal for small communities and rural settings lacking centralized wastewater treatment infrastructure.
- **Peri - Urban Areas:** Effective in rapidly growing urban fringes where traditional sewer systems are not feasible.
- **Institutional Facilities:** Useful in schools, hospitals, and factories that generate significant amounts of wastewater.

8.7 SEWAGE TREATMENT PLANT (STP)

The Used Water Generated from the ULB conveyed through open drains and reaching the Ponds. At present all the used water is polluting the water bodies. As per SBM 2 0 all the used water shall be treated before disposal to any place. The ULB has 4 major drains which can be intercepted and the treatment of total used water may be done at one place. On the other hand we can do the treatment at 4 different places where at present outfalls are near ponds.

8.8 PACKAGE TYPE SEWAGE TREATMENT PLANT

Package treatment plant is a method of sewage treatment which uses physical, chemical and biological processes to remove physical, chemical and biological pollutants/contaminants. Package sewage treatment plant is beneficial for the areas like small town ships, hotels, villas, restaurants in their premise. Small sewage treatment plant used in minimal land area and for small/less population.

The major objective of mini sewage treatment plant is to produce an effluent (treated wastewater) and solid waste/sludge which is suitable for reuse or dispose back into the natural environment. The package plant includes fine screening, suspended growth biological treatment, and membrane filtration. Ultraviolet disinfection can easily be added to these systems for complete treatment.

Sewage treatment plants are available in a modular or package form. Small wastewater treatment plant involves three stages namely primary, secondary and tertiary treatment.

8.9 PROCESSING DESCRIPTION

The Raw Sewage from various streams shall be passed through Bar Screen which helps to remove the Insoluble part from the sewage. Sewage then flow by gravity in to Collection Cum Equalization Tank. From Collection cum Equalization Tank the sewage shall be move in to the Moving Bed Bio-Reactor (MBBR) Tank where the biomass is developed on the surface of Bio-media and combines it with the fine bubble diffused aeration techniques, to get a highly efficient biological treatment unit. With the higher area surface of the Bio-medra, higher organic loading rates are achieved. This reduces the overall size of the aerobic reactor with significant saving in the civil cost. The MBBR reactor sustains good microbial growth. Sewage flow by gravity in to the aeration tank. Here proper mixing of sewage water takes place with the help of Air Blower Installed

8.10 PRIMARY & SECONDARY TUBE SETTLER

From The Aeration Tank Homogenized sewage pumped to first compartment of our STP contained i.e. Primary Tube Settler (Primary settling tank) also called Sedimentation Tank (allowing heavier solids to settle to the bottom of the tank. The settled solids, called primary sludge, are then pumped to the plant's sludge handling facilities for further processing. The partially treated wastewater from the primary setting tanks then flows to the secondary settling Tank). Where the Dosing of Chemicals (LIME, ALUM, POLYELECTROLITE) take place by the dosing pump.

8.10.1 SECONDARY SETTLING TANK

Sewage from Primary Settling tank will be sent to secondary Settling Tank. A Tube Settler is provided for settling of sludge generated in the process. The visible advantages of the Tube Settler are manifold. It reduces requirement of space as the tubes provides larger surface area for faster settling of sludge and eliminated the need for moving Parts Like in Primary Tube Settler. Overflow of secondary tube settler will be sent to Holding Tank/ Ozone & Hypo Chloride Contact Tank

8.10.2 HOLDING WATER STORAGE TANK/DSF/ACF

The treated sewage is then disinfected through O ZONE O^3 & hypo chloride solution. For the tertiary treatment, a Dual Media Sand Filter will provide to reduce the suspended solids. With an activated carbon filter for removal of odor and colour.

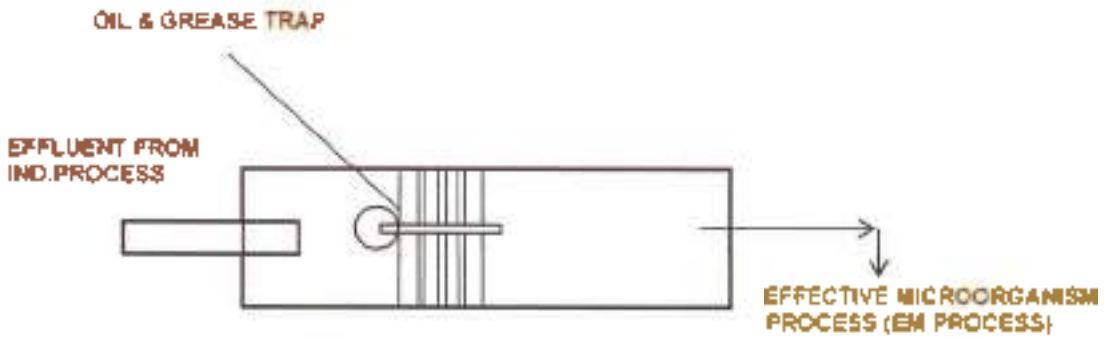
8.10.3 SLUDGE DRYING BED

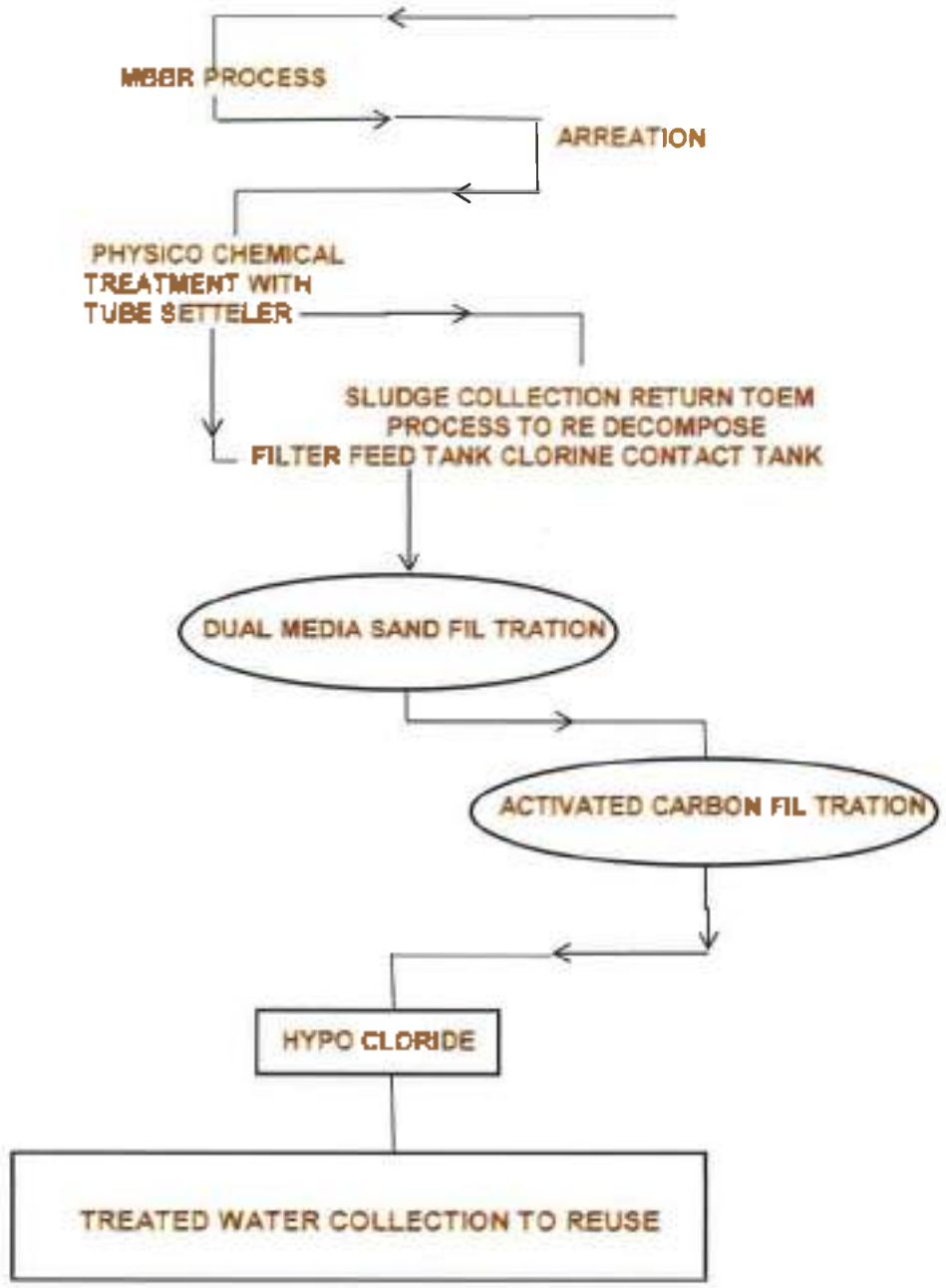
Sludge generated from Primary & Secondary Tube settler shall be withdrawn to Sludge Drying Bed through sludge pump. The Dried solid sludge is manually removed and filtrate is diverted to collection tank.

8.11 FEATURES AND BENEFITS OF MBBR PACKAGE STP

- Compact & Small footprint compared to other sewage treatment plants
- Low maintenance, low capital & operating costs
- Simple assembly and operated by on site labour
- The system is prefabricated and available from 2-250 KLD
- Easily transportable to any location unlike other conventional treatment plants
- Standard Prefabricated MS Construction with FRP coating inside
- Expandable and flexible designs
- High BOD/COD removal efficiency
- Treated water reuse in irrigation (gardening) and grey water applications.
- Minimum maintenance requirements.
- Full technical, installation and operation support from trained and experienced Our Consultancy Team. Also, providing after sales service with 24X7 available customer care dept.
- Proven Technology with reliable performance and customer satisfaction.

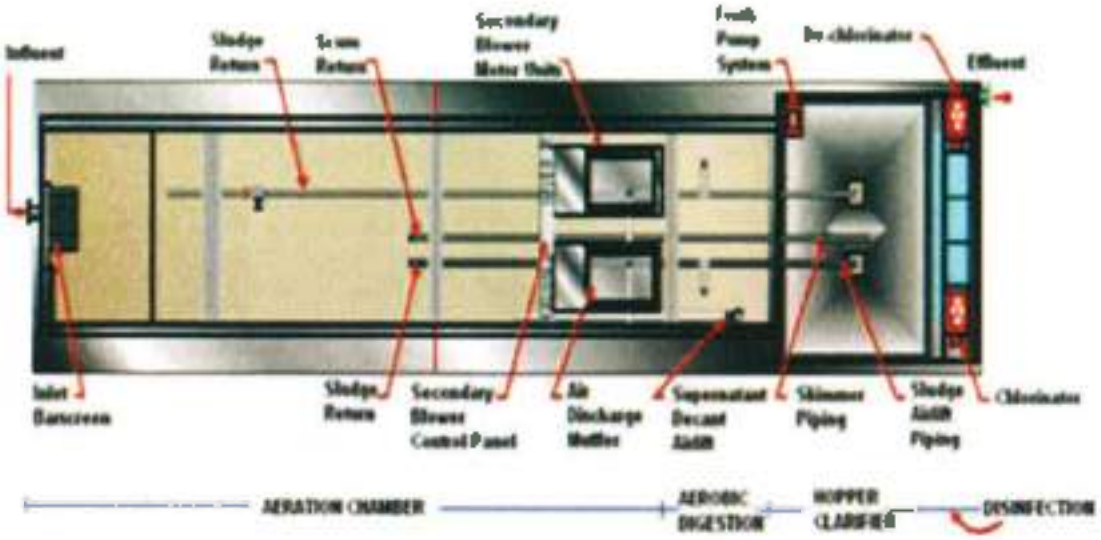
EFFLUENT CUM SEWAGE TREATMENT PLANTS



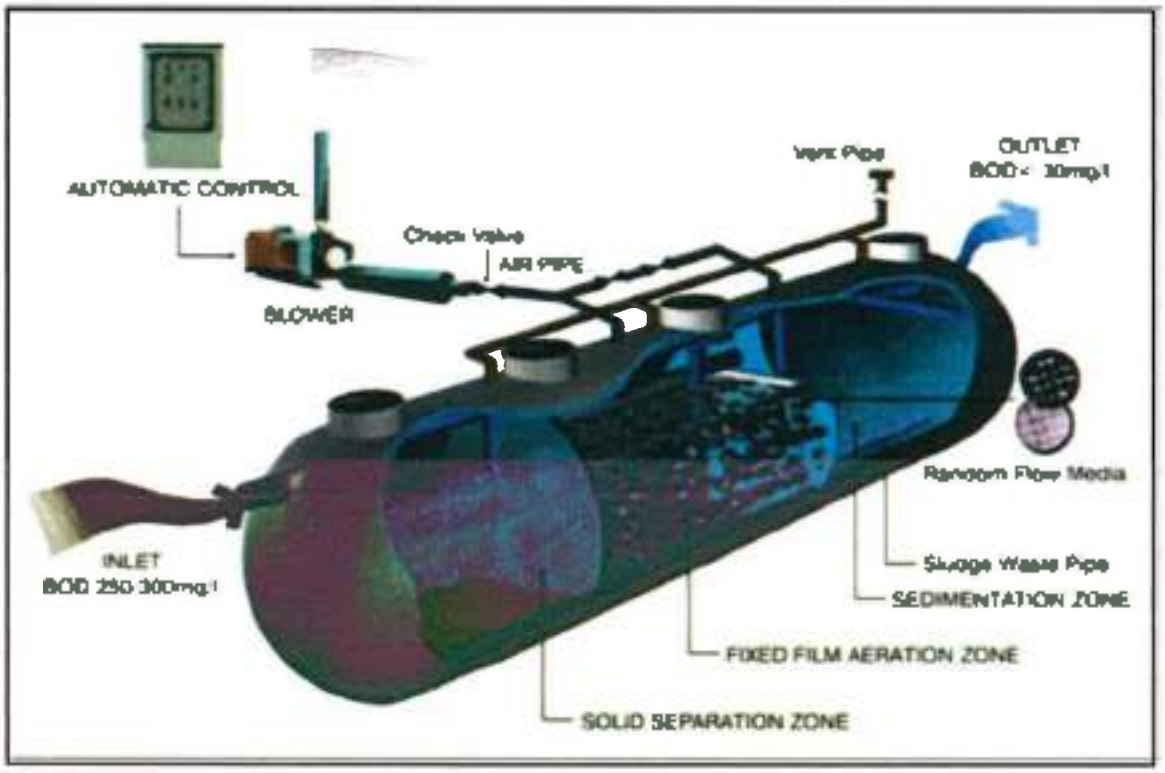


A. Typical Aeration System Extended

TYPICAL ACTIVATED SLUDGE TREATMENT SYSTEM



Typical MBBR Based Packaged Water Plant Cut Out Section



A Typical Picture Showing A Packaged Sewage Treatment Plant

8.12 WASTE STABILIZATION POND

Waste Stabilization Ponds (WSP) is often preferred in Urban Local Bodies (ULBs) due to their cost-effectiveness, simplicity, and ease of maintenance. They require less complex infrastructure, making them accessible for budget-constrained areas. WSPs effectively handle low sewage flows, are resilient to climate variability, and provide environmental benefits like creating green spaces. Overall, their practicality and adaptability make them a favorable choice over other treatment methods like STPs, constructed wetlands, and DEWATS. WSPS is a practical and sustainable choice for wastewater management in urban settings, aligning with both economic and environmental goals

Waste stabilization ponds (WSPs) are an effective, low-cost method for treating wastewater, particularly suitable for urban local bodies (ULBs) facing challenges in managing sewage and effluent. These ponds utilize natural processes involving algae, bacteria, and sunlight to break down organic matter and pathogens, making them an environmentally friendly solution for wastewater treatment.

8.12.1 Key Features

8.12.1.1 Design and Structure

- WSPs typically consist of a series of shallow ponds, designed in a series to optimize treatment efficiency.
- The ponds are lined to prevent seepage and are strategically sized based on the volume of wastewater generated by the ULB.

8.12.1.2 Natural Treatment Process

- The treatment relies on a combination of aerobic and anaerobic processes. Algae produce oxygen through photosynthesis, which supports aerobic bacteria in breaking down organic materials.
- Sedimentation occurs in the ponds, allowing heavier solids to settle and further purify the water.

8.12.1.3 Cost-Effective

- Compared to conventional treatment methods, WSPs require lower capital and operational costs, making them accessible for ULBs with limited budgets.
- Minimal energy inputs are needed, as the system relies on natural processes

8.12.1.4 Sustainability

- WSPs promote resource recovery by allowing the potential for biogas production and nutrient recycling.
- The use of native plant species can enhance biodiversity and contribute to local ecosystems.

8.12.1.5 Scalability and Flexibility

- WSPs can be easily scaled to accommodate varying volumes of wastewater, making them suitable for both small towns and larger urban areas.

- They can be integrated with other treatment methods to enhance overall efficiency.

8.12.1.6 Community Engagement

- Establishing WSPs can involve local communities in monitoring and maintenance, fostering a sense of ownership and awareness about wastewater management.

8.12.2 Implementation Considerations

- **Site Selection:** Careful selection of the site is crucial, considering factors such as land availability, hydrology, and proximity to residential areas.
- **Regulatory Compliance:** The design and operation must adhere to local regulations and standards for wastewater treatment.
- **Public Awareness:** Engaging the community through educational initiatives can enhance support and understanding of the benefits of WSPs.

8.12.3 Advantages of WSP

- Simplicity in design and construction
- Low production of biological sludge
- Low capital, operation and maintenance cost
- High treatment efficiency if properly designed
- Robust and relatively reliable
- Less sensitive to shock loading

8.12.4 Disadvantages of WSP

- Large land requirement for the ponds
- Sludge accumulation will be higher in cold climates due to reduced microbial activity
- Mosquitoes and other insects can breed if vegetation is not controlled

- If not designed properly may cause odor problem
- Difficult to control or predict ammonia levels in effluent

Write a best answer why only WSP is taken in ULB as compared to other methodology like STP, Constructed wetland & DEWATS.

8.12.5 Working of Wastewater Stabilization Ponds

The primary treatment stage is the anaerobic pond, which reduces the organic load in the wastewater. This relatively deep man-made lake is anaerobic throughout its entire depth. Solids and BOD are removed through sedimentation and subsequent anaerobic digestion within the accumulated sludge. Anaerobic bacteria convert organic carbon into methane, removing up to 60% of the BOD in the process.
The effluent from the anaerobic pond is transferred to the facultative pond via a series of WSPs, where additional BOD is removed. Natural diffusion, wind mixing, and algae-driven photosynthesis provide oxygen to the pond's top layer. Because the lower layer lacks oxygen, it becomes anoxic or anaerobic. On the pond's bottom, settle able solids accumulate and are digested. Aerobic and anaerobic organisms collaborate to achieve BOD reductions of up to 75%.

Anaerobic and facultative ponds are intended to remove BOD, whereas aerobic ponds are intended to remove pathogens. Because it is usually the last step in a series of ponds and provides the final level of treatment, an aerobic pond is also known as a maturation, polishing, or finishing pond. It is the shallowest of the ponds, allowing sunlight to penetrate to the bottom and allows photosynthesis to occur.

8.12.5.1 Anaerobic Ponds

BOD removal is the primary function of anaerobic ponds, which can be reduced by 40 to 85 percent. The anaerobic pond, as a whole, serves to:

- As bottom sludge, settle undigested material and non-biodegradable solids.
- Organic material should be dissolved.
- Biodegradable organic material should be broken down.

8.12.5.2 Facultative Treatment Ponds (FTPs)

Facultative Treatment Ponds are the most basic of all WSPs. with an aerobic zone near the surface and a deeper, anaerobic zone. They are intended for **BOD** removal and can treat water with **BOD** levels ranging from 100 to 400 kg/ha/day, which equales to 10 to 40 g/m^2/day at temperatures above 20°C

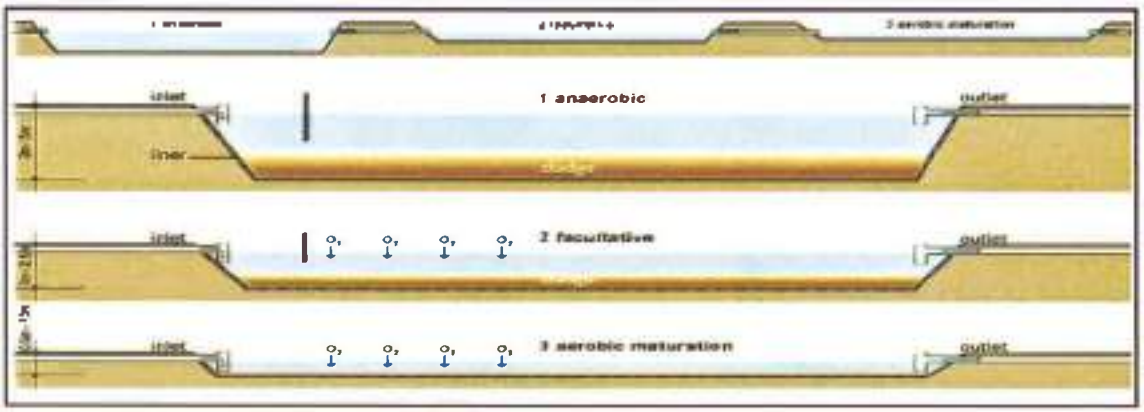
Wind can introduce additional oxygen into the water due to vertical mixing. If the pond is too deep and the color is too dark to allow light to penetrate completely, or if the BOD and COD in the lower layer exceed the supply, oxygen cannot be maintained at the lower layers. The concentration of dissolved oxygen varies throughout the day due to the photosynthetic activities of the pond algae. Because of algal activity, the pond will be mostly aerobic during peak sun radiation, while it will be mostly anaerobic at sunrise.

The purpose of the facultative pond is to.

- Further treat wastewater via sedimentation and aerobic oxidation of organic material
- To reduce odor and some disease-causing microorganisms if pH rises
- Residues should be stored as bottom sludge.

8.12 5.3 Aerobic / Maturation Ponds

Whereas anaerobic and facultative ponds are intended to remove **BOD**, maturation or polishing ponds are intended to remove pathogens and retain suspended stabilized solids The number and size of maturation ponds are determined by the bacteriological quality of the final effluent HRT, temperature, high pH (> 9), and high light intensity are the primary mechanisms for faecal bacterial removal in facultative and maturation ponds. Viruses and microorganisms are also eliminated. This type of pond, when combined with algae and/or fish harvesting, is also effective at removing the majority of nitrogen and phosphorus from effluent.



Waste stabilization is a conventional technology in which a series of ponds is developed for the treatment of wastewater through natural microbial processes. Treated water can be reused for agriculture or irrigation. Normally three ponds are adopted viz. anaerobic, facultative and aerobic. However, the number of ponds can be increased depending on the waste characteristics and concentration of waste. Under prevailing climatic conditions, stabilization ponds in India have shown an average reduction of waste matter ranging from 80 to 90 per cent of BOD at a loading rate of 150 to 325 kg/ha/day.

Source: Grey water Manual, 2021

8.12.6 Feasibility

8.12.6.1 Geographic Requirement

- **Site Identification:** The technology of waste stabilization pond can be taken up in all types of terrain. Space requirement appropriate to the quantity and characteristics of grey water to be treated is the most important prerequisite. Availability of continuous space due to undulations could be the most challenging part in hilly areas, making this technology unfit for those areas. Areas with cold climate may not be suitable for this technology as effective microbial processes may not take place for waste treatment.

  The following points should also be considered while selecting a site for waste stabilization ponds.

- The site should not be prone to flooding at any time of the year.
- The site should be at least 100 m away from residential areas.

- The site should be located near the disposal or reuse point.
- This technology may become cost-intensive in areas with black cotton and clay soil as it may need a permanent lining to prevent the collapsing of the ponds.

In homogeneous soils, no well should be within a distance of 15 m from the pond and should preferably be at a distance of 50 m.

It is not possible to indicate the safe distance between a waste stabilization pond and a ground water source located in areas of fissured rock formation, limestone or gravel deposits. In such situations, to avoid any health hazards or other undesirable conditions, a critical evaluation of ground water pollution should be made before selecting the site.

Waste stabilization ponds are preferred in relatively impervious soils to avoid percolation.

If excessive seepage loads (greater than 10 per cent) are anticipated, the pond bed should be lined it 300 mm puddle clay, polythene sheeting or any appropriate material.

8.12.7 Appropriateness of Technology

Advantages	Limitations
Capital cost requirements are very low compared to other village level treatment technologies	Requires large land area and suitable in warm climatic conditions
The effluent from maturation ponds can be suitable for irrigation, pisciculture, etc.	Requires expert design and construction, inappropriate design can lead to unhygienic conditions.
Can withstand hydraulic and organic shock loads	Sludge requires proper removal and treatment
Skill requirement for operation of the plant is low	Odor can become a nuisance with the anaerobic systems
High treatment efficiency if properly designed	Unless properly maintained, it can become a breeding area for mosquitoes and other insects
Low production of biological sludge & Low capital, operation and maintenance cost	Likelihood of groundwater contamination in porous and fractured strata if ponds are unlined

8.12.8 Technical Details

8.12.8.1 Design, Specification and Construction

Table 8-1. Allowable Organic Loading Rate for Facultative Ponds

Latitude(N) degree	Organic loading kg BOD/ had
36	150
32	175
28	200
24	225
20	250
16	275
12	300
8	325

Source: CPHEEO 1993

The values of Organic loading may be modified for elevations above sea levels by dividing by a factor of (1+0 003EL) where EL is the elevation of the pond site above MSL in hundred meters An increase in the pond area has to be made when the sky is clear for less than 75% of the days. For every 10% decrease in the sky clearance factor below 75%, the pond area may be increased by 3%.

The values are applicable to the areas at sea level where the sky is clear for nearly 75 per cent of the days in a year.

Table 8- 2: Depth and Retention Time for Stabilization Ponds

Pond details	Recommend depth	Recommended HRT – Hydraulic Retention Time (Days)
Anaerobic pond	2 to 3 ms	1–2 days
Facultative pond	1.2 to 1.8 m	3–6 days
Aerobic Pond	1.2 to 1.8 m	3–5 days

The criteria specified above are with respect to grey water without any faecal sludge (FS) contamination; in case of wastewater design, criteria as per the relevant BIS code should be followed. A waste stabilization pond designed to cater to 211 kld flow is. The assumed BOD at inlet is 150 mg/l. Dimensions, hydraulic retention time (HRT), applied organic loading, and other details for the design of all the ponds. All the ponds are trapezoidal in shape with a slope of 1:2 (V:H)

8.12.9 Operational Details

Stabilization ponds allow storage of water for a designated me and allow settlement of the solids at the bottom of the tank. Supernatants are taken forward through pipes connecting the remaining ponds and treatment of water takes place through natural processes Sett led solids are digested by microorganisms in the natural system. Typically, there are three tanks in a series. Each of these ponds is described in the sections below.

8.12.9.1 Anaerobic Pond

Anaerobic ponds mainly contribute to the settlement of solids and reduction on of BOD and therefore are placed first in the pond series. The decomposition and microbial

Action in this pond takes place in the absence of oxygen (i.e., anaerobically). It is one of the deepest ponds and the retention time for grey water in it is 1–2 days. The provision of the anaerobic pond can be omitted if the BOD of influent is less than 100 mg/l.13

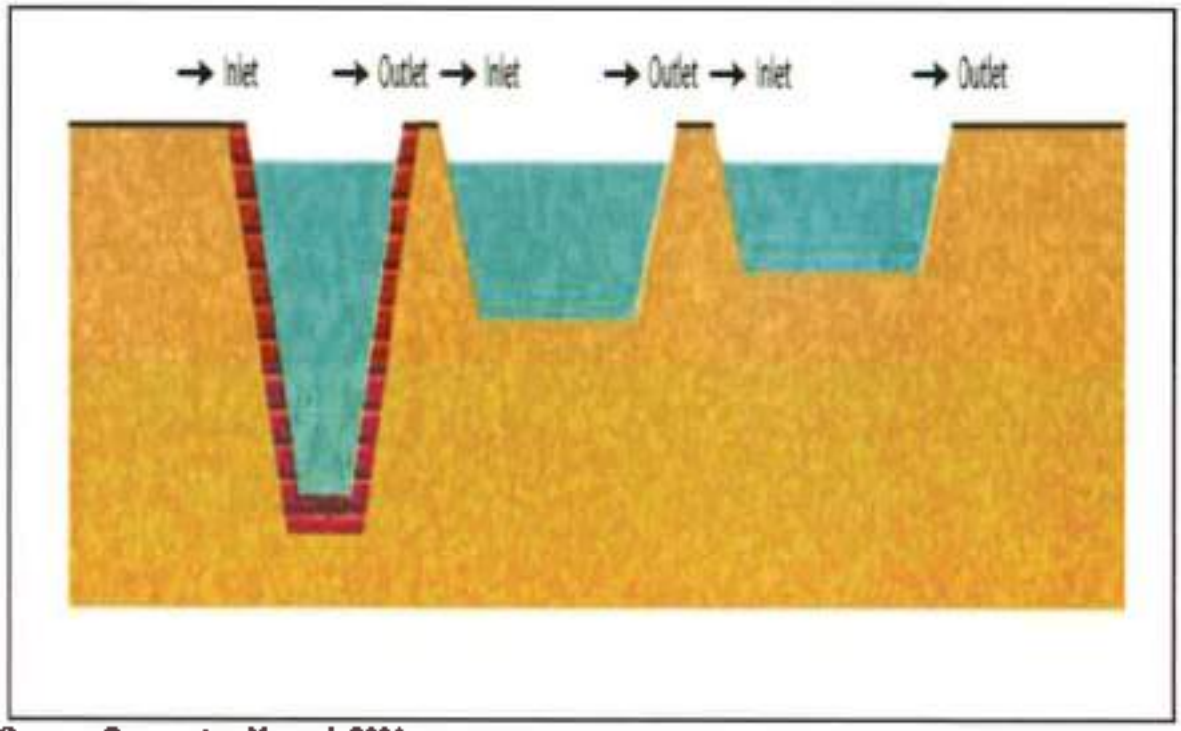
8.12.9.2 Facultative Pond

In this pond, the lower section on of the pond provides an anaerobic environment while the decomposition in the upper section is an aerobic activity. This pond is called the facultative pond since it uses a combination of both aerobic and anaerobic environments. The retention proposed for these tanks is 3–6 days and its depth is less than anaerobic ponds.

8.12.9.3 Aerobic Pond/Maturation Pond

This is a shallow pond where the microbial action takes place in the presence of oxygen and sunlight. The primary function of a maturation pond is to remove pathogens. These ponds are provided with retention on it me of 3–5 days and have a depth of up to 1 m. The depths and retention times of each pond are important design considerations for the stabilization ponds. The height/depth and retention ti me to be maintained for every pond varies, depending on the concentration of waste.

Schematic Diagram of the Cross-Section of a Waste Stabilization Pond



Source: Grey water Manual, 2021

9. ADOPTED TECHNOLOGY OF TREATMENT

A Techno-Economic comparative analysis of Waste Water treatment technologies under SBM 2.0 in India involves evaluating various treatment methods based on their technical performance economic feasibility, environmental impact, and suitability for different contexts. Below is an overview of the most common Waste Water treatment technologies used in India, followed by a comparative analysis.

Used Water Treatment Technologies in India

Technology	Description	Technical Performance	Capital and Operating Costs	Suitability
Electro-Mechanical Operated System				
Activated Sludge Process (ASP)	A biological treatment process that uses aeration and a biological floc composed of bacteria and protozoa to degrade organic matter.	Highly efficient in removing organic pollutants and nutrients.	Moderate to high initial investment; relatively high operating costs due to energy requirements for aeration.	Suitable for medium to large-scale urban sewage treatment plants (STPs).
Sequential Batch Reactor (SBR)	A fill-and-draw activated sludge system for wastewater treatment, where treatment occurs in a single reactor with all processes occurring in sequential steps.	Efficient in nutrient removal and handling variable loads.	Lower capital cost compared to ASP; moderate operating costs.	Suitable for small to medium-sized communities with fluctuating wastewater inflows
Fluidised Aerobic Bio-Reactor (FAB)	Fluidised Aerobic Bio-Reactor (FAB) as the name	FAB reactors are compact, energy efficient and	Reduced power and operating costs, No sludge recycle	Suitable for small to medium-sized communities

	indicates consists of floating media of cylindrical shapes and different sizes.	user friendly.	required hence no sludge recycle pumps.	with fluctuating wastewater inflows
Moving Bed Biofilm Reactor (MBBR)	Uses plastic carriers that provide a large surface area for biofilm growth. increasing the efficiency of biological treatment.	High treatment efficaency with a compact design.	Moderate capital and operating costs.	Suitable for upgrading existing plants or where space is limited.
Rotating Biological Contactors (RBC)	A fixed-film biological treatment process where discs are partially submerged in wastewater, supporting biofilm growth that degrades organic pollutants.	Moderate efficiency with low energy consumption.	Moderate capital cost; low operating costs.	Appropriate for small to medium-sized plants with stable wastewater flows
Upflow Anaerobic Sludge Blanket (UASB)	An anaerobic process where wastewater flows upwards through a blanket of sludge, treating the sewage by anaerobic digestion.	Effective in reducing organic load, especially in tropical climates like India.	Low capital and operating costs. minimal energy requirement.	Suitable for warm climates and regions with low to medium organic loads.

Technology	Description	Technical Performance	Capital and Operating Costs	Suitability
Nature Based Biological Treatment System				
Aerobic Lagoon	An aerobic lagoon treatment process where utilizes aerobic bacteria to degrade organic waste. It is an artificial lake: 1 – 1.2 M deep earthen basin.	Effective in removing organic matter, nutrients and suspended solids.	Cost- effective and low-maintenance options for communities	Suitable for Large area with ample land and favourable climates.
Anaerobic Lagoon	An aerobic lagoon treatment process where uses anaerobic microorganism to decomposed organic matter in the absence of oxygen. It is an artificial lake: 2 – 5 M deep earthen basin.	Effective in removing organic matter, nutrients removing and suspended solids	Low cost but regular Monitoring and Maintenance for achieving sustained performance.	Suitable for large area with ample land and favourable climates.
Waste Stabilization Ponds	WSP Treatment Process where treated by naturally occurring processes under the influence of sun light, wind, microorganisms and algae.	Effective in removing BOD and COD matter, nutrients removing and suspended solids	Low cost but regular Monitoring and Maintenance for achieving sustained performance.	Suitable for large area with ample land and favourable climates.

Constructed Wetlands	Engineered systems designed to use natural processes involving wetland vegetation, soils, and associated microbial assemblages to treat wastewater.	Efficient in nutrient removal and providing habitat for wildlife.	Low to moderate capital cost; low operating costs.	Ideal for small communities, rural areas, and decentralized treatment
Decentralized waste water treatment system (DEWATS)	Dewats system are based on modular technical configuration concept in which used water are treated by Settling tank , anaerobic baffle reactor and Horizontal flow planted filter.	Effective in removing organic matter, nutrients removing and suspended solids.	Low to moderate capital cost; low operating costs.	Ideal for small communities, rural areas, and decentralized treatment

On the basis of above techno Economical Comparative Analysis between **DEWATS** and **Waste Stabilization Ponds** is given below;

Technical Performance	
High Efficiency:	DEWATS>WSP
Flexibility in Handling Variable Loads:	DEWATS and Waste Stabilization Ponds are more adaptable to fluctuating loads compared to other technologies.
Capital and Operating Costs	
Low Cost	WSP<DEWATS

High Operating Costs:	Waste Stabilization Pond needregular Monitoring and Maintenance for achieving sustained performance.
Environmental Impact	
Lower Impact:	Waste Stabilization Pondare more environmentally friendly due to lower energy consumption and natural treatment processes.
Higher Impact:	DEWATS, while efficient, have higher energy demands and potential environmental impacts associated with energy use.
Suitability for Indian Context	
Urban Areas:	DEWATS are more suited for urban and industrial areas due to their high treatment efficiency and ability to handle large volumes.
Rural Areas:	Waste Stabilization Pondare better suited for rural and decentralized applications due to simplicity.
Land Requirement	
High Land Requirement:	Waste Stabilization Pondrequire significant land area, which may not be feasible in densely populated areas.
Low Land Requirement:	DEWATS are compact and suitable for areas with limited space.

From the above comparison it can be easily concluded that for small capacity plant the Waste Stabilization Pond is the most suitable technology especially in respect of the following parameter

The alternatives were evaluated on the following parameters.

1. Lower Capital and Operational Costs.
2. Simplicity and Low Maintenance.
3. WSPs can support biodiversity and integrate more effectively with the surrounding environment.
4. Waste Stablization Ponds(WSPs) requires less skilled labour.

Hence In view of the above we are of the considered opinion that Waste Stabilization Ponds(WSPs) will be most suitable alternative for treatment of Used Water Treatment.

10. SEPTAGE MANAGEMENT

In the ULB all the House hold has septic tanks and twin pit system. About 80% of the Population uses the septic tanks from which sludge removal will be required time to time by the ULB deployed vehicles on payment Bases.at present only one vehicle available in the ULB. Finally the collected sludge shall be treated at FSTP. After treatment water shall be sent to ponds and the treated waste shall be used for making compost cake which will provide the resource to ULB.

11. TREATED WATER DISPOSAL

After treatment from STP / FSTP, the available treated water shall be diverted to available ponds. From ponds about 25% of the treated water shall be used for irrigation from where resource generation will be made. After treatment, the water needs to be safely disposed of or reused. Common methods include.

Surface Water Discharge: Treated water is discharged into rivers, lakes, or oceans. It must meet regulatory standards to ensure it doesn't harm aquatic life or ecosystems.

Groundwater Recharge: Treated water can be used to replenish groundwater supplies, a method known as indirect potable reuse.

Reuse: Treated water can be used for non-potable purposes like irrigation, industrial processes, or cooling systems. In some cases, advanced treatment can make it suitable for potable (drinking) use, known as direct potable reuse.

Land Application: Treated water can be applied to soil for agricultural or landscape irrigation, providing water and nutrients to plants.

12. OPERATION AND MAINTENANCE

Maintenance is the action necessary for retaining or restoring a machine or equipment to a specified operational condition to achieve its maximum efficiency and maximum useful life. i e., keeping the machine in good working condition throughout its life period. Maintenance includes tasks such as lubricating, repairing and replacing different parts of the machine. It includes corrective maintenance and preventive maintenance.

Operation of STP/FSTP and Sludge collection vehicles will be required for effective management of used water. The details of expenditure are calculated in financial Chapter.

13. LAND DETAIL

As per designed capacity land required **is 2.066 Hectare.** The existing pond area is Sufficient for Waste Stabilization Pond(WSPs).

14. SCHEDULE OF RATE

This estimate is prepared on the basis of:

- CPWD Delhi Schedule Rate 2023 for Electrical and Mechanical Works
- DSR 2023
- Plinth area rate 2023 CPWD
- Schedule of rate UPPWD 2018
- CPWD Delhi Schedule Rate 2023 for Civil Works
- For mechanical item rate are taken on the basis of quotation taken from Gem Portal / relevant Manufacturer.

15. CONCLUSION

Detailed Project Report of Lar Nagar Panchayat for Used Water Management (UWM) amounting to **Rs 526.48 Lacs** proposed to be financed under "SBM 2.0 (U)" is hereby submitted for administrative, financial approval and subsequent allotment of funds.

अधिशासी अधिकारी
नगर पंचायत लार
देवरिया

TECHNICAL STATEMENT

NAGAR PANCHAYAT LAR USED WATER MANAGEMENT SYSTEM SCHEME

TECHNICAL STATEMENT

1. DESIGN PERIOD:

Used Water Management System for Nagar Panchayat Lar is being designed for 30 years as per Manual on Central Public Health and Environmental Engineering Organization issued by Govt Of India, Ministry of Urban Development, New Delhi assuming the execution period as 2 year base year, mid design year and ultimate design year will be 2026,2041 & 2056 respectively.

2. POPULATION:

The decade wise population available for Nagar Panchayat Lar Used Water Management System, the population of last 3 decades of Nagar Panchayat Lar Used Water Management System are given here as under : -

TABLE - 1

Year	Population	Population Growth Rate(%)
1991	22419	-
2001	25363	13.13
2011	28307	11.61

3. POPULATION PROJECTION - :

Table - 2

Year	Population	Increment	Incremental Increase	Percentage Increase
1991	22419			
2001	25363	2944		13.13
2011	28307	2944	0	11.61
TOTAL		5888	0	Product=152.428
AVERAGE		2944	0	Geometrical mean = 12.35

Assuming the execution period 2 years the initial year, mid year and ultimate design year will be 2026,2041 & 2056 respectively. The Population for the initial year 2026 year, middle of design period i.e. 2041 year and at the end of design period i.e. 2056 year has

been worked out as following:

(A) ARITHMETICAL INCREASE METHOD :-

The Population after n years is given by Pn = Po + n * 0.1 * d

Where Pn = Population after "n" years from Last Census year

Po = Base year Population

d = Mean decadal arithmetical increase.

n = Number of years passed after Last Census year (2011)

Thus

P 2024 = Po +(n x 0.1 x d)

= 28307+ (13 x 0.1 x 2944)

= 32134 2 **Say = 32135**

P 2026 = Po + (n x 0.1 x d)

= 28307+ (15 x 0 1 x 2944)

= 32723 **Say = 32725**

P2041 = Po + (n x 0.1 x d)

= 28307+ (30 x 0.1 x 2944)

= 37139 **Say = 37140**

P 2056 = Po + (n x 0.1 x d)

= 28307+ (45 x 0.1 x 2944)

= 41555 = **Say = 41555**

(B) GEOMTRICAL INCREASE METHOD -

The population after n year is given by: - Pn = $Po * (1+r)^{n*0.1}$

Where Pn = Population after 'n' years from Last Census year Po = Population of base year after Last Census year

r = Geometrical mean of percentage decadal increase

n = Number of decade after Last Census year (2011)

Thus

P 2024 = $Po * (1 + 0.1235)^{1.3}$

= 28307*1.16344270214943

= 32933 572569744 **Say = 32935**

P 2026 = $Po * (1 + 0.1235)^{1.5}$

= 28307*1.19085700353779

= 33709 5891991442 **Say = 33710**

P 2041 $= Po * (1 + 0.1235)^{3}$

= 28307*1.418140402875

= 40143.3003841826 **Say = 40145**

P 2056 $= Po * (1 + 0.1235)^{4.5}$

= 28307*1.688680243076359

= 47804.9304076251 **Say = 47805**

(C) INCREMENTAL INCREASE METHOD :-

Population after n years is given by

$$Pn = Po + (n * X) + \{n * (n+1) * Y * 0.5\}$$

Where Pn = Population after 'n' years from Last Census year

Po = Population of base year after Last Census year

X = Mean decadal arithmetical increase

n = Number of decade after Last Census year

Y = Mean decadal incremental increase

P 2024 $= Po + (n * X) + \{n * (n+1) * Y * 0.5\}$

=28307+(13 x 2944)+{ 13 x (13 +1) x 0 x 0.5}

= 32134.2 **Say = 32135**

P 2026 $= Po + (n * X) + \{n * (n+1) * Y * 0.5\}$

=28307+(15 x 2944)+{ 15 x (15 +1) x 0 x 0.5}

= 32723 **Say = 32725**

P 2041 $= Po + (n * X) + \{n * (n+1) * Y * 0.5\}$

=28307+(30 x 2944)+{ 30 x (30 +1) x 0 x 0.5}

= 37139 **Say = 37140**

P 2056 $= Po + (n * X) + \{n * (n+1) * Y * 0.5\}$

=28307+(45 x 2944)+{ 45 x (45 +1) x 0 x 0.5}

= 41555 **Say = 41555**

(D) SIMPLE GRAPH METHOD :-

A simple graph is drawn using census year on 'X' axis and population on 'Y' axis. The prints are joined by using best fit curve method. The population for different years from this graph works out as follows:-

2024 = 28730

2026 = 31500
2041 = 34000
2056 = 37000

(E) SEMI LOG GRAPH METHOD :-

A graph is drawn using census year on 'X' axis and log of population on 'Y' axis is. The points are joined using best-fit straight-line method. The population for different years from this graphworks out as follows .Population in year -

2024 = 28870
2026 = 32500
2041 = 37500
2056 = 42500

Population calculated by various conventional methods at various stages is tabulated as below:

Table - 3

S.NO.	Method of Forecasting population	At Present Year 2024	At initial stage 2026	At mid stage 2041	At Ultimate Stage 2056
1	Arithmetical Method	32135	32725	37140	41555
2	Geometrical Method	32935	33710	40145	47805
3	Incremental Method	32135	32725	37140	41555
4	Semi Log Graph Method	28870	32500	37500	42500
5	Simple Graph Method	28730	31500	34000	37000

A perusal of above figures reveals that the population forecasted by Geometrical Increase Method is on higher side and Simple Graph Method is on lower side Population forecasted by Incremental Increase Method is second lowest. Population figure forecasted by Incremental Increase Method is almost in midway realistic to observing growth pattern of Nagar Panchayat Lar and hence it will be reasonably justified to adopt the population figure derived by **Incremental Increase Method** and same is adopted for years. Hence Population forecast on the basis of Incremental Increase Method for the year 2026 - 32725 and for the year 2041 - 37140 and for the year 2056 - 41555 is adopted for design purpose in this project.

5.0 ADOPTED POPULATION

Table - 4

S. No.	Year	Total Population	Growth Rate(from census 2011)
1.	In Present Year 2024	32135	1.135%
2.	In the base year 2026	32725	1.156%
3.	In the middle year 2041	37140	1.312%
4.	In the design year 2056	41555	1.468%

6.0 Ward Wise Projected Population

Table - 5

S. No.	Ward Name	Ward No.	Population				
			2011	2024	2026	2041	2056
1	Harijan Basti	1	1515	1720	1751	1988	2224
2	Pipra	2	1763	2001	2038	2313	2588
3	Ghari	3	2128	2415	2460	2792	3124
4	Indiranagar	4	2429	2757	2808	3187	3566
5	Gayagir	5	2028	2302	2344	2661	2977
6	Vaishkarni	6	1878	2132	2171	2464	2757
7	Dhawariya	7	2028	2302	2344	2661	2977
8	Chauk	8	1261	1431	1458	1654	1851
9	Bauli	9	1725	1958	1994	2263	2532
10	Shastrinagar	10	1059	1202	1224	1389	1555
11	Koiritola	11	2302	2613	2661	3020	3379
12	Bajar	12	1696	1925	1961	2225	2490
13	Bhartoliya	13	1706	1936	1972	2238	2504
14	Math	14	1989	2258	2299	2610	2920
15	Tiwaritola	15	1503	1706	1737	1972	2206
16	Fattehnagar	16	1297	1477	1503	1703	1905
		Total	28307	32135	32725	37140	41555

Population & Sewerage Generation

Sr No	Description	At Present Year 2024	At initial Year 2026	At mid Year 2041	At Ultimate 2056
1	Population	12639	14611	16582	18557
1.1	Floating Population @ 5%	632	731	829	928
1.2	Total Poputaion	13271	15342	17411	19485
1.3	Core Sanitation Zone Population as per SBM 2.0 on page 62 Para4 **@70% of total population**	9290	10739	12188	13639
2	Rate of Water Supply (In LPCD)	135	135	135	135
3	Sewage Generation (In MLD)@ of 80% as per manual on CPHEEO	1.00	1.16	1 32	1.47
	Say In (MLD)	**0.82**	**1.16**	**1.32**	**1.47**

WARD WISE DENSITY

Sr No	Ward Name	Population as per census 2011	Area (in Sq kml)	Area (in Hectare)	Density in 2011	Projection							
						Populationla hon 2024 at the growth rate 1.135	Density in Hectare	Population 2026 at the growth rate 1 156	Density in Hectare	Population 2041 at the growth rate 1 312	Density in Hectare	Population 2056 at the growth rate 1.468	Density in Hectare
1	Harijan Basti	1515	0.56	56.00	27 05	1720	30 71	1751	31.27	1988	35.50	2224	39.71
2	Pipra	1763	0 46	46 00	38.33	2001	43 50	2038	44 30	2313	50.28	2588	56 26
3	Ghan	2128	0.43	43 00	49 49	2415	56 17	2460	57.21	2792	64.93	3124	72.65
4	Indiranagar	2429	0 56	56.00	43.38	2757	49 23	2808	50 14	3187	56.91	3566	63 68
5	Gayagir	2028	0 83	83.00	24.43	2302	27 73	2344	28.24	2661	32.06	2977	35 87
6	Vaishkarni	1878	1 25	124.71	15.06	2132	17.09	1458	11 69	2464	19.76	2757	22 11
7	Dhawariya	2028	0 44	44 00	46.09	2302	52 31	2344	53.27	2661	60 48	2977	67 66
8	Chauk	1261	1 04	104 04	12 12	1431	13.76	1458	14.01	1654	15 90	1851	17 79
9	Bauli	1725	0 51	51 00	33 82	1958	38.39	1994	39.10	2263	44 37	2532	49 65
10	Shashinagar	1059	0 60	59.73	17.73	1202	20 12	1224	20.49	1389	23.26	1555	26.03
11	Koritola	2302	0 45	45 00	51 16	2613	58.06	2661	59 13	3020	67 11	3379	75 09
12	Bajar	1696	0 66	66.37	25 56	1925	29 01	1961	29 55	2225	33 53	2490	37 52
13	Bhartoliya	1706	0 83	82.76	20.61	1936	23 40	1972	23.83	2238	27 04	2504	30 26
14	Math	1989	0 39	39.00	51 00	2258	57.89	2299	58 95	2610	66 92	2920	74 87
15	Tiwari Tola	1503	0.65	65.00	23 12	1706	26 24	1737	26 72	1972	30.34	2206	33 94
16	Faltehnagar	1297	0.34	34.00	38 15	1477	43 44	1503	44.21	1703	50.09	1905	56 03
	Total	28307	10.00	1000		32133		32012		37140		41556	

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S.NO.	Method of forecasting population	At Present Year	At initial stage	At mid stage	At Ultimate stage
		2024	2026	2041	2056
1	Arithmetical Increase	32135	32725	37140	41555
2	Geomethrical Increase	32935	33710	40145	47805
3	Incremental Increase	32135	32725	37140	41555
4	Semilog Graph Method	28870	32500	37500	42500
5	Simple Graph Method	28730	31500	34000	37000

As Per Manual of Water Supply & Treatment, Population Forecasted by Semilog graph Method and Geoethrical Increase Method is on higher Side and Arithmetical Increase and Incremental Increase Method is on lower side. Hence Population forcast on the basis Simple Graph Method for the year

Adopted Population At Present Year 2024 - 32135
Adopted Population At initial stage 2026 - 32725
Adopted Population At mid stage 2041 .- 37140
Adopted Population At Ultimate stage 2056 .- 41555

NP Lar Ward Wise Population						
Sl No.	Ward Number	Population as per census (2011)	Population as per census (2024)	Population as per census (2026)	Population as per census (2041)	Population as per census (2056)
1	Harijan Basti	1515	1720	1751	1988	2224
2	Pipra	1763	2001	2038	2313	2588
3	Ghari	2128	2415	2460	2792	3124
4	Indira Nagar	2429	2757	2808	3187	3566
5	Gayagir	2028	2302	2344	2661	2977
6	Vaishkarni	1878	2132	2171	2464	2757
7	Dhawariya	2028	2302	2344	2661	2977
8	chauk	1261	1431	1458	1654	1851
9	Bauli	1059	1958	1994	2263	2532
10	Shastrinagar	1059	1202	1224	1389	1555
11	Koritola	2302	2613	2661	3020	3379
12	Bajar	1696	1925	1961	2225	2490
13	Bhartoliya	1706	1936	1972	2238	2504
14	Math	1989	2258	2299	2610	2920
15	Tiwaritola	1503	1706	1737	1972	2206
16	Fattehnagar	1297	1477	1503	1703	1905
	Total	28307	32135	32725	37140	41555

WARD WISE POPULATION CORE SANITATION ZONE

Zone No.	Sewerage Zone	Ward Covered						Population of Core Area		
		Word No	Total Area	Total Area under Core Sanitation Zone	Total Population Year 2011	Percentage of Population Covered	Total Population Year 2011 under Core Sanitation Zone	Population 2026 @ growth rate 1.156%	Population 2041 @ growth rate 1.312%	Population 2056 @ growth rate 1.468%
1	CORE SANITATION ZONE	2	46.00	100.00	1763	100	1763	2038	2313	2588
		3	43.00	100.00	2128	100	2128	2460	2792	3124
		4	56.00	100.00	2429	100	2429	2808	3187	3566
		7	44.00	100.00	2028	100	2028	2344	2661	2978
		11	45.00	100.00	2302	100	2302	2661	3020	3380
		14	39.00	100.00	1969	100	1969	2799	2610	2920
		Total Area Covered Under Core Sanitation		600.00			Population	14611	16582	18557
							Floating Population @5%	731	829	928
							Total population of zone	15341	17411	19484

WARD WISE POPULATION OUTSKIRTS ZONE

Zone No.	Sewerage Zone	Word No	Total Area	Total Area under Core Sanitation Zone	Total Population Year 2011	Percentage of Population Covered	Total Population Year 2011 under Core Sanitation Zone	Population 2026 @ growth rate 1.156%	Population 2041 @ growth rate 1.312%	Population 2056 @ growth rate 1.468%
2	OUTSKIRTS ZONE	1	46.00	100.00	1763	100	1763	2038	2313	2586
		5	83.00	100.00	2028	100	2028	2344	2661	2977
		6	124.71	100.00	1878	100	1878	2171	2464	2757
		8	104.04	100.00	1261	100	1261	1458	1654	1851
		10	60.00	100.00	1059	100	1059	1224	1389	1555
		9	51.00	100.00	1725	100	1725	1994	2263	2532
		12	66.67	100.00	1696	100	1696	1961	2225	2490
		13	82.76	100.00	1706	100	1706	1972	2238	2504
		15	65.00	100.00	1503	100	1503	1737	1972	2206
		16	34.00	100.00	1297	100	1297	1499	1702	1555
		Total Area Covered Under Outskirts Zone		1000.00	Population			18399	20881	23016
							Floating Population @5%	920	1044	1151
							Total population of zone	19319	21925	24167

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Population & Sewerage Generation for core Sanitation zone		
Sr No	**Description**	**At initial Year 2026**
1	Population	15342
1.1	Floating Population @ 5%	767
1.2	Total Pooutaion	16109
1.3	Total Poputaion@ 70%	11276
2	Rate of Water Supply (In LPCD)	135
3	Sewage Generation@80% (In MLD)	1 16
	Say In (MLD)	**1.16**

CALCULATION OF SEPTAGE CAPACITY			
Population in Outer Area	=	19319	
Population with Existing Twin Pit System	=	0.10	
Hence Population For Co-Treatment	=	17387	
Sludge accumulation Rate(Per Capita/Day)	=	0.000021	
Fecal Sludge Generation (0.00021x7635) (In KLD)	=	3.65	
Co-Treatment Rate	=	1.15	KLD
Required Capacity of Co-Treatment (1.15x.0.73) (In KLD)	=	4.20	KLD
Say In	=	4.20	KLD

Flow Measurement at Drain

Sr No	Drain No	Drain Location	Construction Type	Area of Catchment (Sqkm)	Length (M)	Width (M)	Depth (M)	Time (Sec)	Discharge (Cum/Sec)	Peack Hours
1	1	भरटोलिया वार्ड पोखरा से लेकर नफीस आलम के घर तक	cc	0.23	256	0.90	1.00	800	0.29	8
2	2	विष्णु के घर से नवरीन कुरैशी के घर तक	cc	0.03	90	0.30	0.30	600	0.01	6
3	3	असलम के घर से पोखरा तक (तिवारी टोला)	cc	0.03	95	0.30	0.50	1065	0.01	8
4	4	सगीता देवी के घर से विष्णु के घर तक	Brick	0.03	116	0.30	0.35	900	0.01	5
5	5	लल्लन के घर से नेहाल सगीर के घर तक	Brick	0.08	138	0.60	0.50	800	0.05	8
6	6	एम0ए0 लारी के घर से पोखर तक	cc	0.04	100	0 35	0.50	300	0.06	7
7	7	हानिश के घर से खुदैजा बीबी गर्ल्स स्कूल तक	cc	0.06	185	0 30	0 40	500	0.04	5
8	8	लल्लन प्रसाद के घर से शमसाद हासमी के घर तक	Brick	0.03	88.5	0.35	0.40	400	0.03	4
9	9	शमसाद हासमी के घर से एम0ए0 लारी के घर तक	Brick	0.03	88	0.35	0.30	400	0.02	4
10	10	एम0ए0 लारी के घर से राम कमल के घर तक	cc	0.03	103	0.30	0.30	600	0.02	8
11	11	मुन्ना सिंह के घर से जगदम्बा के घर होते हुए शहीद मजार वाले पोखरा तक	Brick	0.21	301	0.70	0.90	900	0.21	9
12	12	एस0जे0एन0 स्कूल से जेपी गंज भण्डार तक	Brick	0.11	375	0 30	0 35	900	0.04	6
13	13	महमूद के घर से दानिश मेडिकल स्टोर तक	Brick	0.11	375	0.30	0.35	850	0.05	8
14	14	राम मन्दिर से कब्रिस्तान तक	cc	0 44	365	1.20	1.70	900	0.58	9
15	15	कब्रिस्तान से नगर पंचायत पोखरा तक	cc	0.21	411	0.50	0.60	980	0.13	7
16	16	दीपक पान भण्डार से गांधी रोड तक	cc	0.44	550	0.80	0.55	1100	0 22	4

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17	17	जेपी पान भण्डार से हज्जिन मस्जिद तक	Brick	0.28	460	0.60	0.85	1000	0.23	6
18	18	हज्जिन मस्जिद से लार शॉपिंग मॉल तक	Brick	0.13	257	0.50	0.90	500	0.23	9
19	19	रफीक पान शॉप से जनता मेडिकल हॉल तक	cc	0.08	257	0.30	0.70	460	0.12	6
20	20	रईनी मेडिकल स्टोर से पोस्ट ऑफिस तक	cc	0.51	571	0.90	1.50	1200	0.64	7
21	21	लारी शॉपिंग मॉल से राज फोटो कापियर्स तक	cc	0.23	571	0.40	1.30	1200	0.25	8
22	22	लारी शॉपिंग मॉल से सन्तम मद्धेशिया के घर तक	cc	0.76	253	3.00	0.05	370	0.10	9
23	23	पोस्ट ऑफिस से कुम्हार के घर तक	cc	0.12	237	0.50	0.70	390	0.21	5
24	24	राज फोटो कापियर्स से कुम्हार के घर तक	cc	0.09	237	0.40	0.50	390	0.12	7
25	25	रेशमा मैरेज लॉन से तिगरा चौराहा तक	cc	1.11	1106	1.00	1.00	1200	0.92	8
26	26	मनोज सिंह के घर से राम पानल के घर तक	cc	0.21	421	0.50	0.70	400	0.37	9
27	27	चन्दन के घर से नारियल तर तिराहा तक	cc	0.16	405	0.40	0.60	460	0.21	8
28	28	नारियल तर तिराहा से पंक्चर तक	cc	0.11	105	1.00	1.00	300	0.35	6

Design of Coarse Screen Chamber (Design as per Draft manual Sewerage and Sewage Treatment System Issued by Central Public Health and Environmental Engineering Organization (CPHEEO) published Ministry of Urban Development, Govt. of India, New Delhi				
S. No.	**Description**		**Unit**	**Value**
1	Average Flow	=	MLD	1.16
2	**Average Flow**	=	m^3/sec	**0.013425926**
3	Peak Factor (As per manual on CPHEEO table no 3.2)	=		3
4	Peak Flow	=	MLD	3.48
	Peak Flow	=	m^3/sec	0.0403
5	Minmun Flow Factor (As per manual on CPHEEO table of 3.5)	=		0.50
6	Minimum Flow	=	m^3/sec	0.00671
7	Peak Flow for Coarse Screen Design	=	m^3/sec	0.04028
7	Design of Coarse Screen			
8	Coarse Screen Opening (As per Manual on CPHEEO clause 5.6.1.1) it is usual to provide a bar screen with relatively large opening of 25mm	=	mm	25.00
9	Depth of Water in screen(Assumed)	=	mm	300
10	Velocity through the screen (As per Manual on CPHEEO clause 5.6.1.8 .) velocities of 0.60 to 1.2 m/s through the open area for the peak flows have been used satisfactorily.Higher trial velocity may be used if the resultant velocity and head loss donot correspond to the limits especified in CPHEEO manual	=	m/s	0.70
11	Area of the Screen	=	m^2	0.0575
12	Angle of inclination with the horizontal as per manual on CPHEEO clause 5.6.1.1. hand cleaned racks are set usually at an angle of 45-60^0 to the horizontal to increase the effective cleaning surface and facilitate the ranking operations.In the present study manual rack are assumed with an angle of 45^0 In order designs angle may be varied upto 60^0 or mechanical racks may be used,which are generally erected almost vertically.	=	Degree	45.00
13	Sin (45^{0}Angle of inclination)	=		0.70739
14	Vertical area of the screen	=	m^2	0.040702996
15	Free Board(Assumed)	=	m	0.300
16	Length of the Screen	=	m	0.848

S. No.	Description		Unit	Value
17	Vertical Width of the Opening	=	m	0.14
18	Inclined width of the opening	=	m	0.19
19	No. of opening	=	Nos.	6
20	No of bars	=	Nos.	5
21	Width of each bar (As per manual on CPHEEO clause 5.6.1.1)	=	mm	10.00
22	Width of the screen	=	mm	180.00
23	Assume the width of each side wall of screen	=	mm	50.00
24	Total width of the screen chamber	=	mm	280.00
	Say	=	**mm**	**280**
25	Length of the Screen chamber	=	m	1.96
26	Provided length of the coarse screen chamber	=	m	2.00
27	Approach Velocity in the channel on the upside of the screen 0.35 m/s is greater than 0.30 m/s Hence,O.K.	=	m/s	0.48
28	Velocity through the screen (As per Manual on CPHEEO clause 5.6.1.8) velocities though the lies between 0.60 to 1.20 m/s hence ok.	=	m/s	1.07

DESIGN OF GRIT CHAMBER		
GRIT REMOVAL SYSTEM		
Two grit removal tank (1 w +1 S) each capable of handling peak flow, will be provided. They are designed to		
$Q/A=V_s \times \eta/(1-\eta)^{n}-1$		
Where-η-Desired efficiency of removal of grit particle		
V_s -settling velocity of minimum size of grit particle to be removed		
Q/A--Design surface overflow rate applicable for grit chamber to be designed		
n-an index which a measure of the basin performance		
Here η value taken	75	%
Say	0.75	
Here V_s value taken	1225	$m^3/m^2/day$
Here n value taken-1/8(for very good performance)	0.125	
Hence surface over flow rate(Q/A)=(Vs*η)/(|(1-η|^-	809 30	$m^3/m^2/day$
Say	810	$m^3/m^2/day$
This Q/A value has to be reduced to allow for deposition of sand	10.00%	%
Then design overflow rate	729	$m^3/m^2/day$
Average Flow	1 16	MLD
Peak flow(m^3/day)	3480	(m^3/day)
Hence area required for peak flow	4.77	m^2
Each side of square grit chamber	2.18	mtr.
L/B Ratio	1 : 1	
Length	2.18	mtr.
Width	2.18	mtr.
Detention time taken is	1.00	minute
Volume of Flow	2.42	Cum
Depth of tank will be	0.51	mtr.
However in order to provide adequate depth for the grit scraping mechanism, increase to	0.55	mtr.
Provide size of grit removal chamber is	2.20x 2.20 x 0.55	

Design of Waste Stablisation Pond (Design as per Draft manual Sewerage and Sewage Treatment System issued by Central Public Health and Environmental Engineering Organization (CPHEEO) published Ministry of Urban Development, Govt. of India, New Delhi)

S. No.	Discription		Unit	Value
1	Capacity of the STP	=	M^3/Day	1160
2	Capacity of the STP	=	M^3/Sec	0.0134
3	Per Capita Water Supply as per Manual on CPHEEO	=	LPCD	135.00
4	Influent BOD5 as per Table No. 5.40 as per Manual on CPHEEO	=	gm/capita/ day	27.00
5	Influent BOD5 of Anaerobic Pond	=	mg/l	250.00
6	Effullent BOD5 for Anaerobic Pond	=	mg/l	30 00
7	Latitude of the ULB	=	Degree	28.00
8	Average Temprature	=	OC	12 00
9	Altitude of the ULB	=	m	270.00
10	Permissible pond Loading Rate (according to latitude as per Table 5.14 as per Manual on CPHEEO)	=	Kg/hac/day	200 00
11	Correction of pond loading rate for altitude	=	m	1.81
12	Corrected pond loading rate	=	Kg/hac/day	110 50
13	Pond loading rate based on Temperature (20T-120)	=	Kg/hac/day	120.00
14	Adopt the average and design pond loading rate	=	Kg/hac/day	115.25
	Say	=	Kg/hac/day	116 00
15	BOD loading rate from the town	=	Kg/hac/day	290.00
16	Pond area required	=	hac	2.50
17	Depth of Pond	=	m	1.50
18	Pond Volume	=	m^3	37500.00
19	Pond Detention Time	=	days	32.33
	Say	=	days	33.00
20	No of Pond in parallel (As per clause 5.8.4.5.4 as per Manual on CPHEEO)	=	Nos	2.00
21	No of Pond in series (As per clause 5.8.4.5 4 as per Manual on CPHEEO)	=	Nos.	1.00
22	Total no of Ponds	=	Nos.	3.00
23	BOD reaction rate constant K1 (As per clause 5 8.4.4.2 as per Manual on CPHEEO)	=	per day	0 20

Design of Waste Stabilisation Pond (Design as per Draft manual Sewerage and Sewage Treatment System issued by Central Public Health and Environmental Engineering Organization (CPHEEO) published Ministry of Urban Development, Govt. of India, New Delhi)

S. No.	Discription		Unit	Value
24	% reduction of BOD required	=		89.20
25	Population Equivalent	=	Nos.	15344
26	Area per person net	=	m^2	1.63
27	Rate of Sludge accumulation (As per clause 5.8.4.4.4 as per Manual on CPHEEO)	=	m^3/person/day	0.07
28	Sludge Volume in one year	=	m^3	1074.07
29	Depth of first cell to accommodate the sludge	=	m	2.00
30	No of first cells accumulation	=	Nos.	2.00
31	Depth of sludge in th first two cells	=	m	0.50
32	Volume of sludge in the first 2 cells	=	m^3	5431.03
33	Duration of sludge cleaning	=	years	5.06
34	Area of each point	=	hac	0.54
35	L/B ratio (As per Table 5 13 as per Manual on CPHEEO)	=		4:1
36	Length (L)	=	m	147.39
	Say	=	m	148.00
37	Breadth (B)	=	m	37.00
38	First 2 tank LXBXD (Mid - Depth)	=	m	148.0 x 37.0 x 2.0
39	Subsequent tank size	=	m	148.0 x 37.0 x 1.5
40	Length at mid-depth	=	m	146.00
41	Width at mid-depth	=	m	37.00
42	Side slope of pond (1V : 2 H)	=	m	2.00
43	Top of embankment above mid depth of primary Tank	=	m	2.00
44	Tank bottom below mid depth in primary tank	=	m	1.00
45	Top of embankment above mid depth of secondary Tank	=	m	1.75
46	Tank bottom below mid depth in secondary tank	=	m	0.75
47	Top length in primary tank	=	m	156.00
48	Top width of primary Tank	=	m	45.00

Design of Waste Stablisation Pond (Design as per Draft manual Sewerage and Sewage Treatment System Issued by Central Public Health and Environmental Engineering Organization (CPHEEO) published Ministry of Urban Development, Govt. of India, New Delhi)

S. No.	Discription		Unit	Value
49	Bottom Length of primary tank	=	m	140.00
50	Bottom width of primary tank	=	m	29.00
51	Top length in secondary tank	=	m	155.00
52	Top width of secondary Tank	=	m	44.00
53	Bottom Length of primary tank	=	m	145.00
54	Bottom width of secondary tank	=	m	34.00

FINANCIAL STATEMENT

GENERAL ABSTRACT OF COST

S. No.	Description	Total Amount in Lacs
1	2	3
1	**Civil Work**	
1	Coarse Screen Chamber	**0.36**
2	Grit Chamber	**3.05**
3	Anaerobic Pond	**22.59**
4	Facultative Pond	**16.17**
5	Aerobic Maturation Pond	**16.17**
6	**Sump Well Including Inlet Chamber**	
6.1	Ram Temple (Ward -10)	**15.67**
7	**Rising Main**	
8	Guard Room (2.10M x 3.00M)	**1.84**
9	Drain -1 (455M x 1.2M x 1.2M)	**106.51**
10	Drain -2 (725 M x 0..90M x 1.2M)	**49.77**
11	Drain -3 (1500 M x 0.60M x 0.90M)	**24.17**
12	Drain -4 (88.5 M x 0.35M x .40M)	**2.3**
13	Drain -5 (301 M x 0.75M x .90M)	**15.52**
14	Drain -6 (550 M x .70M x .90M)	**19.8**
15	Drain -7(257 M x 0.35M x .40M)	**10.79**
16	Drain -8 (571 M x 0.90M x 1.5M)	**44.99**
17	Drain -9 (571 M x 0.40M x 1.3M)	**36.6**
18	Drain -10 (421 M x 0.50M x .70M)	**26.18**
18	Drain -11 (405 M x 0.40M x .60M)	**24.89**
19	Drain -12 (253 M x 3M x 4M)	**60.47**
14.00	**Electrical & Mechanical Work**	
14.10	Ram Temple (Ward -10)	**10.94**
	Total	**508.68**

3	Contengency @ 2%	10.17
4	Consultancy Fee for Preparation of DPR as Per Work Order @ 1.5 %	7.63
	Grand Total	526.48

अधिशासी अधिकारी
नगर पंचायत लार
देवरिया

ABSTRACT OF ECONOMIC

S. No.	Description	Base Year 2026	Mid Year 2041	Ultimate Year 2056
1	2	3	4	5
1	Population of Core Sanitation Zone	15341	17411	19485
2	No. of families (Taking 5 person / family)	3068	3482	3897
3	Annual income Rs. In Lacs	6.14	6.86	7.59
4	Annual Expenditure Rs. In Lacs	2.22	2.97	3.73
5	Per capita annual Maintenance Cost in Rs.	14.47	17.04	19 12
6	Annual Profit (+) / Loss (-) in Rs. In Lacs	3.92	3.90	3.86

30 YEARS OPERATION AND MAINTENANCE COST		
S. No.	Description	Amount in Lacs
1	2	3
1	1st Year Operation and Maintenance Cost	2.22
2	2nd Year Operation and Maintenance Cost	2.30
3	3rd Year Operation and Maintenance Cost	2.37
4	4th Year Operation and Maintenance Cost	2.44
5	5th Year Operation and Maintenance Cost	2.52
6	6th Year Operation and Maintenance Cost	2.59
7	7th Year Operation and Maintenance Cost	2.67
8	8th Year Operation and Maintenance Cost	2.74
9	9th Year Operation and Maintenance Cost	2.82
10	10th Year Operation and Maintenance Cost	2.89
11	11th Year Operation and Maintenance Cost	2.97
12	12th Year Operation and Maintenance Cost	3.04
13	13th Year Operation and Maintenance Cost	3.12
14	14th Year Operation and Maintenance Cost	3.19
15	15th Year Operation and Maintenance Cost	3.26
16	16th Year Operation and Maintenance Cost	3.34
17	17th Year Operation and Maintenance Cost	3.41
18	18th Year Operation and Maintenance Cost	3.49
19	19th Year Operation and Maintenance Cost	3.56
20	20th Year Operation and Maintenance Cost	3.64
21	21st Year Operation and Maintenance Cost	3.71
22	22nd Year Operation and Maintenance Cost	3.79
23	23rd Year Operation and Maintenance Cost	3.86
24	24th Year Operation and Maintenance Cost	3.94
25	25th Year Operation and Maintenance Cost	4.01
26	26th Year Operation and Maintenance Cost	4.09
27	27th Year Operation and Maintenance Cost	4.16
28	28th Year Operation and Maintenance Cost	4.23
29	29th Year Operation and Maintenance Cost	4.31
30	30th Year Operation and Maintenance Cost	4.38
	Total Cost O & M	99.07

30 YEAR MAINTENANCE EXPENDITURE

S. No.	Description	Total Amount in Lacs
1	2	3
1	Maintenance on Used Water Management in the Year2026	2.22
2	Maintenance on Used Water Management in the Year2027	2.30
3	Maintenance on Used Water Management in the Year2028	2.37
4	Maintenance on Used Water Management in the Year2029	2.44
5	Maintenance on Used Water Management in the Year2030	2 52
6	Maintenance on Used Water Management in the Year2031	2.59
7	Maintenance on Used Water Management in the Year2032	2.67
8	Maintenance on Used Water Management in the Year2033	2 74
9	Maintenance on Used Water Management in the Year2034	2.82
10	Maintenance on Used Water Management in the Year2035	2.89
11	Maintenance on Used Water Management in the Year2036	2.97
12	Maintenance on Used Water Management in the Year2037	3.04
13	Maintenance on Used Water Management in the Year2038	3.12
14	Maintenance on Used Water Management in the Year2039	3.19
15	Maintenance on Used Water Management in the Year2040	3.26
16	Maintenance on Used Water Management in the Year2041	3.34
17	Maintenance on Used Water Management in the Year2042	3.41
18	Maintenance on Used Water Management in the Year2043	3.49
19	Maintenance on Used Water Management in the Year2044	3 56
20	Maintenance on Used Water Management in the Year2045	3.64
21	Maintenance on Used Water Management in the Year2046	3.71
22	Maintenance on Used Water Management in the Year2047	3.79
23	Maintenance on Used Water Management in the Year2048	3.86
24	Maintenance on Used Water Management in the Year2049	3.94
25	Maintenance on Used Water Management in the Year2050	4.01
26	Maintenance on Used Water Management in the Year2051	4.09
27	Maintenance on Used Water Management in the Year2052	4.16
28	Maintenance on Used Water Management in the Year2053	4 23
29	Maintenance on Used Water Management in the Year2054	4.31
30	Maintenance on Used Water Management in the Year2055	4.38
	Total	99.07

30 YEAR REVENUE GENERATION

S. No.	Description	Total Amount in Lacs
1	2	3
1	Maintenance on Used Water Management in the Year2026	5.26
2	Maintenance on Used Water Management in the Year2027	5.32
3	Maintenance on Used Water Management in the Year2028	5.39
4	Maintenance on Used Water Management in the Year2029	5.45
5	Maintenance on Used Water Management in the Year2030	5.51
6	Maintenance on Used Water Management in the Year2031	5.57
7	Maintenance on Used Water Management in the Year2032	5.63
8	Maintenance on Used Water Management in the Year2033	5.70
9	Maintenance on Used Water Management in the Year2034	5.76
10	Maintenance on Used Water Management in the Year2035	5.82
11	Maintenance on Used Water Management in the Year2036	5.88
12	Maintenance on Used Water Management in the Year2037	5.94
13	Maintenance on Used Water Management in the Year2038	6.01
14	Maintenance on Used Water Management in the Year2039	6.07
15	Maintenance on Used Water Management in the Year2040	6.13
16	Maintenance on Used Water Management in the Year2041	6.19
17	Maintenance on Used Water Management in the Year2042	6.25
18	Maintenance on Used Water Management in the Year2043	6.32
19	Maintenance on Used Water Management in the Year2044	6.38
20	Maintenance on Used Water Management in the Year2045	6.44
21	Maintenance on Used Water Management in the Year2046	6.50
22	Maintenance on Used Water Management in the Year2047	6.56
23	Maintenance on Used Water Management in the Year2048	6.63
24	Maintenance on Used Water Management in the Year2049	6.69
25	Maintenance on Used Water Management in the Year2050	6.75
26	Maintenance on Used Water Management in the Year2051	6.81
27	Maintenance on Used Water Management in the Year2052	7.40
28	Maintenance on Used Water Management in the Year2053	7.46
29	Maintenance on Used Water Management in the Year2054	7.53
30	Maintenance on Used Water Management in the Year2055	7.59
	Total	186.95

ANNUAL INCOME AND PROFIT / LOSS

S. No.	Description	Base Year 2026	Mid Year 2041	Ultimate Year 2056
1	2	3	4	5
1	Population of Core Sanitation Zone	15341	17411	19485
2	No. of families (Taking 5 person / family)	3068	3482	3897
3	Total Expenditure in Rs in Lacs	2.22	2.97	3.73
4	**Annual incomme from Beneficiaries**			
6	80 % Sale of Total Duck 210 Annual income (Rs. In Lacs) @ Rs 150/kg in base year 2026, Rs. 160/Kg in mid year 2041 and Rs. 170/kg in design year 2056	0.25	0.27	0 29
7.2	Sale of Total Duck Egg 3500 Annual income (Rs. In Lacs) @ Rs. 5/ Egg in base year 2026, Rs. 6/ Egg in mid year 2041 and Rs. 7/ Egg in design year 2056.	0.18	0 21	0.25
8	80 % Sale of Total Fish Annual income (Rs In Lacs) @ Rs. 170/kg in base year 2026, Rs 190/kg in mid year 2041 and Rs 210/kg in design year 2056.	5.71	6 38	7.06
	Total	**6.14**	**6.86**	**7.59**
9	Annual Profit (+) / Loss (-) in Rs. In Lacs	**3.92**	**3.90**	**3.86**

CRITERIA OF REVENUE GENERATION			
S. No.	**Description of Fish**	**Criteria**	**Design**
1	Area of Pond-2	1000 Sqm	5904 Sqm
2	Stocking density	600 Nos/Year	3600
3	Cartla	240	1440
4	Rohu	180	1080
5	Mrigal	180	1080
S. No.	**Description of Duck**	**Criteria**	**Design**
1	Area of Pond-3	1000 Sqm	5904 Sqm
2	Stocking density	30 Nos/Year	180
S. No.	**Description of Duck Egg**	**Criteria**	**Design**
1	Area of Pond-3	1000 Sqm	5904 Sqm
2	Stocking density	500 Nos/Year	3000
Source- *Integrated fish-Duck Farming By S.D. Tripathi And B.K. Sharma*			

TOTAL ANNUAL EXPENDITURE

S. No.	Description	Base Year 2026	Mid Year 2041	Ultimate Year 2056
1	2	3	4	5
1	ANNUAL EXPENDITURE ON CIVIL WORK REPAIR & MAINTENANCE CHARGES	0.99	1.49	1.88
2	ANNUAL EXPENDITURE ON MAINTENANCE STAFF	1.23	1.48	1.85
	Say In Lakhs	**2.22**	**2.97**	**3.73**

ANNUAL EXPENDITURE ON MAINTENANCE STAFF

S. No.	Description	Nos of Staff	Approved Rate of UP Govt. March 2024	No of Month	Base Year 2026	Mid Year 2041	Ultimate Year 2056
1	2		6	7	8	9	10
1	Watch Man cum Sweeper	1	10275	12	123300 00	147960.00	184950.00
Total					123300.00	147960.00	184950.00
Say in Lakhs					1.23	1.48	1.85

ANNUAL EXPENDITURE ON REPAIR & MAINTENANCE CHARGES

S. No.	Description	Base Year 2026	Mid Year 2041	Ultimate Year 2056
1	2	3	4	5
1	Cost of Repair and Maintenance of Civil Work in Rs. 75.75 Lacs @ 1% in base year, 1.5 % in mid year and 2% in Ultimate Year	0.76	1 14	1 52
2	Cost of Repair and Maintenance of Pipe Line Work in Rs. 7.31 Lacs @ 0 25% in base year, 0.5% in mid year and 0 75% in Ultimate Year	0 01	0.02	0 03
3	Cost of Repair and Maintenance of Electrical and Mechanical Work in Rs. 33.84 Lacs@ 2% in base year, 3% in mid year and 4% in Ultimate Year	0.22	0.33	0.33
	Total in Lakhs	**0.99**	**1.49**	**1.88**

BREAK - UP OF COST OF WORK

LAR ,Deoria NP

S. No.	Description	Project Cost in Lacs				
		Pipe Line	Mechanical & Electrical	Civil Construction Work	Miscellaneous	Total
1	2	3	4	5	6	7
1.0	Coarse Screen Chamber			0.36		0.36
2.0	Grit Chamber			3.05		3.05
3.0	Anaerobic Pond			22.59		22.59
4.0	Facultative Pond			16.17		16.17
5.0	Aerobic Maturation Pond			16.17		16.17
6.0	**Sump Well Including Inlet Chamber**					
6.1	Ram Temple (Ward 10)			15.57		15.57
7.0	**Rising Main**					
7.1	Ram Temple (Ward10) to Near Interception of Drain	4.50				2.81
8.0	Guard Room (2.10M x 3.00M)			1.84		
9.0	Drain -1 (1500M x 1.2M x 1.2M)				106.51	106.51
10.0	Drain -2 (725 M x 0 .90M x 1.2M)				49.77	49.77
11.0	Drain -3 (1500 M x 0.60M x 0.50M)				24.17	24.17
12.0	Drain -4 (88.5 M x 0.35M x .40M)				2.30	2.30
13.0	Drain -5 (301 M x 0.35M x .40M)				15.52	15.52
14.0	Drain -6 (550 M x .70M x .90M)				19.80	19.80
15.0	Drain -7(257 M x 0.35M x .40M)				10.79	10.79
16.0	Drain -8 (571 M x 0.90M x 1.5M)				44.99	44.99
17.0	Drain -9 (571 M x 0.40M x 1.3M)				36.60	36.60
18.0	Drain -10 (421 M x 0.50M x .70M)				26.18	26.18
19.0	Drain -11 (405 M x 0.40M x .60M)				24.89	24.89
20.0	Drain -12 (253 M x 3M x 4M)				60.47	60.47
21.0	**Electrical & Mechanical Work**					
21.1	Ram Temple (Ward -10)		10.94			10.94
Total		4.5	10.94	75.75	421.9827418	508.67

ESTIMATE

SUMMARY OF COST		
WASTE STABILIZATION POND UNDER USED WATER MANAGEMENT LAR DISTRICT DEORIA		
Sl.No.	**Particulars**	**Cost in Rs**
1	Estimate of Screen Chamber	20591.30
2	Estimate of Grit Chamber	133743.99
	Total [A]	**154335.29**
CPWD Delhi Schedule of Rate 2023 (-1)% Labour Cess, (-) 21.27% GST Factor included in Rates , (-)10% (+) revailing District Cost Index Issued by UPPWD = 0 735 ,For Base Cost Index-107 For Civil work and Electrical Work. **0.735 x Total [A]** **[B]**		98301.83
Cost at Badaun/Cost Index -106 (B x 1.06/1.07) **[C]**		97363 13
Add 18 % GST of Total (C)		17528.96
Add Labour Cess 1% of Total (C)		973.63
Grand Total [C]		**115885.92**
SAY IN LACS		**1.16**

USED WATER MANAGEMENT OF LAR DISTRICT DEORIA										
ESTIMATE OF COARSE SCREEN CHAMBER										
Sl. No.	DSR 2023	Description	No.	L	B	H	Qty.	Unit	Rate (in Rs)	Amount (in Rs.)
1	2	3	4	5	6	7	8	9	10	11
1	DSR/ 2023/ 2.8	Earth work in excavation by mechanical means (Hydraulic excavator) / manual means in foundation trenches or drains (not exceeding 1.5 m in width or 10 sqm on plan), including dressing of sides and ramming of bottoms, for all lift, including getting out the excavated soil and disposal of surplus excavated soil as directed, within a lead of 50 m.								
	2.8.1	All kinds of soil.	1	1.95	0.28	0.60	0.33	cum	260.30	86.71
2	DSR/ 2023/ 2.25	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 ramming and watering, lead up to 50 and for all lift.	4	1.95	0.28	0.6	1.32	cum	196.00	256.16
3	DSR/ 2023/ 4.1.8	1:4:8 (1 Cement : 4 coarse sand (zone-II) derived from natural sources : 8 graded stone aggregate 40 mm nominal size derived from natural sources)	1	1.95	0.28	0.6	0.33	cum	6812.00	2243.00
4	DSR/ 2023/ 4.1.3	1:2:4 (1 cement : 2 coarse sand (zone-III) derived from natural sources : 4 graded stone aggregate 20 mm nominal size derived from natural sources)	1	1.95	0.26	0.1	0.05	cum	7578.50	432.37
5	DSR/ 2023/ 6.1.1	Brick work with common burnt clay F.P.S. (non-modular) bricks of class designation 7.5 in foundation and plinth in Cement mortar 1:4 (1 cement : 4 coarse sand)	1	1.95	0.23	1	0.45	cum	7370.05	3322.69
6	DSR/ 2023/ 6.1.1	12 mm cement plaster finished with a floating coat of neat cement of mix 1:4 (1 cement : 4 fine sand)	1	1.95		1.2	2.35	sqm	425.55	1000.69
7	DSR/ 2023/ 19.19.1	Providing and fixing in position pre-cast R.C.C. manhole cover and frame of required shape and approved quality. Rectangular shape 600 x 450 mm internal dimensions	1	0.60	0.45		0.27	Each	1437.65	388.17
8	DSR/ 2023/ 5.1.2	Providing and laying in position specified grade of reinforced cement concrete, excluding the cost of centering shuttering finishing and reinforcement - All work up to plinth level 1:1.5:3 (1 cement : 1.5 coarse sand (zone-III) derived from natural sources : 3 graded stone aggregate 20 mm nominal size derived from natural sources)	1	0.00	1.66	0.1	0.00			

USED WATER MANAGEMENT OF LAR DISTRICT DEORIA										
ESTIMATE OF COARSE SCREEN CHAMBER										
Sl. No.	DSR 2023	Description	No.	L	B	H	Qty.	Unit	Rate (In Rs)	Amount (In Rs.)
1	2	3	4	5	6	7	8	9	10	11
		Less	1	0.60	0.4	0.10	-0.02			
							0.02	Cum	9045.75	217.10
9	DSR/ 2023/ 5.22.6	Steel reinforcement for R.C.C. work including straightening, cutting, ending placing in position and binding all complete upto plinth level.Thermo-Mechanically Treated bars of grade Fe-500D or more.	0.30 x 1.5 % x 7850				2.63	kg	107.85	304.76
10	DSR/ 2023/ 5.9.3	Centering and shuttering including strutting propping etc and removal of form for Suspended floors, roofs landings, balconies and access platform								
		Base	1	1.00	1.00		1.00			
		Side	4	1.46		0.1	0.58			
							1.58	Sqm	927.25	1458.76
11	DSR/ 2023/ 10.25	Steel work welded in built up sections/ framed work, including cutting, fixing in position and applying a priming coat of approved steel primer using structural steel								
	10.25.2	In gratings, frames, guard bar, ladder railings brackets, gales and similar works			Kg/M					
		Horizontal F at 40 x 6 mm @ 1.9 Kg/	1	1	1.9		1.90	Kg		
		12 mm Vertical Bars Placed at 50 mm C/C	21	1			21.00	m		
		120 mm Horizantal bars	21	1			21.00	m		
		@1.13 Kg/M = 42.0 x 1.13			Kg/M		47.40	Kg		
		Outer Frame 50 x50x5 mm MS angle @ 4.5 Kg/m	2	2	4.5		18.00	Kg		
		Inner Frame 40x40x6mm MS Angle	2	2	3.5		14.00	Kg		
				Total in Kg			81.36	Kg	172.6	14042.74
									Total	23764.42
CPWD Delhi Schedule of Rate 2023 (-1)% Labour Cess, (-) 21.27% GST Factor included in Rates , (-)10% (+) revailing District Cost Index Issued by UPPWD = 0.735 .For Base Cost Index-107 For Civil work and Electrical Work 0.735 x Total (A) (B)										17466.85
Cost at Badaun/Cost Index -106 (B x 1.06/1.07) [C]										17303.61
Add 18 % GST of Total (C)										3114.65
Add Labour Cess 1% of Total (C)										173.04
Grand Total (C)										20591.30
SAY IN LACS										0.21

USED WATER MANAGEMENT LAR DISTRICT DEORIA										
ESTIMATE OF GRIT CHAMBER										
Sl. No.	DSR 2023	Description	No.	L	B	H	Qty.	Unit	Rate (in Rs)	Amount (in Rs.)
1	2	3	4	5	6	7	8	9	10	11
.	DSR/ 2023/ 2.9	Earth work in excavation by mechanical means (Hydraulic excavator) / manual means in foundation trenches or drains (not exceeding 1.5 m in width or 10 sqm on plan), including dressing of sides and ramming of bottoms, for all lift, including getting out the excavated soil and disposal of surplus excavated soil as directed, within a lead of 50 m.								
	DSR/ 2023/	All kinds of soil.	1	2.2	2.20	0.55	8.60	cum	260.30	2290.64
2	DSR/ 2023/ 2.25	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 ramming and watering lead up to 50 and for all lift	2	13.15	0.08	0.75	1.48	cum	190.00	289.96
3	DSR/ 2023/ 4.1.8	1:4:8 (1 Cement : 4 coarse sand (zone III) derived from natural sources: 8 graded stone aggregate 40 mm nominal size derived from natural sources)	1	12	0.75	0.1	0.90	cum	6812.00	6130.80
4	DSR/ 2023/ 4.1.3	1:2:4 (1 cement : 2 coarse sand (zone-II) derived from natural sources : 4 graded stone aggregate 20 mm nominal size derived from natural sources)	1	12	0.75	0.1	0.90	cum	7878.50	7090.65
5	DSR/ 2023/ 6.1	Brick work with common burnt clay F.P.S. (non modular) bricks of class designation 7.5 in foundation and plinth in:								
	DSR/ 2023/ 6.1.2	Cement mortar 1:6 (1 cement : 6 coarse sand)	2	12.6	0.23	0.75	4.35	cum	7132.25	31000.60
6	DSR/ 2023/ 6.1.1	12 mm cement plaster finished with a floating coat of neat cement of mix 1:4 (1 cement : 4 fine sand):	2x(l+B)							
		Internal Plaster	1	25.20		0.75	18.90	sqm	425.65	8042.90

USED WATER MANAGEMENT LAR DISTRICT DEORIA										
ESTIMATE OF GRIT CHAMBER										
Sl. No.	DSR 2023	Description	No.	L	B	H	Qty.	Unit	Rate (In Rs)	Amount (In Rs.)
1	2	3	4	5	6	7	8	9	10	11
7	DSR/ 2023/ 5.36	Providing and placing in position precast reinforced cement concrete waffle units, square or rectangular, as per design and shape for floors and roofs in 1 1% 3 (1 Cement . 1½ coarse sand (zone-III) derived from natural sources 3 graded stone aggregate 10 mm nominal size derived from natural sources), including flush or deep ruled pointing at joints in Cement mortar 1 2 (1 Cement : 2 Fine sand), making necessary holes nf required sizes for carrying through service lines etc , providing steel hooks for lifting etc, form work in precasting, handing, hoisting centering and erection complete for all floor evels but, excluding the cost of reinforcement	1	12 00	1 06	0 1	1 27	Cum	33018 8	41969 65
8	DSR/ 2023/ 5.22.6	Steel reinforcement for R C C work including straightening, cutting, bending, placing in position and binding all complete upto plinth level.Thermo-Mechanically Treated bars of grade Fe-500D or more	1 75x 1 5 % x 7850				145 78	kg	107.85	16153.56
9	DSR/ 2023/ 23.5	Supplying, filling, spreading & leveling stone boulders of size range 5 cm to 20 cm, in recharge pit, in the required thickness, for all leads & lifts, all complete as per direction of Engineer-in-charge	1	12	0.6	0.2	1 44	Cum	1509 8	2174 11
10	DSR/ 2023/ 23.6	Supplying filling, spreading & leveling gravels of size range 6 mm to 10 mm in the recharge pit over the existing layer nf boulders, in required thickness, for all leads & lifts all complete as per direction of Engineer-in-charge	1	12	1	0 2	2 40	Cum	1538 25	2691 60
11	DSR/ 2023/ 23.7	Supplying filing spreading & leveling coarse sand of size range 1.5 mm to 2 mm in recharge pit in required thickness over grave layer, for all leads & lifts all complete as per direction of Engineer incharge.	1	12	1	0 15	1.80	Cum	1538 25	2766.85
12	DSR/ 2023/ 18.9	Providing and fixing Chlorinated Polyvinyl Chloride (CPVC) pipes, having thermal stability for hot & cold water supply including all CPVC plain & brass threaded fittings This includes jointing of pipes & fittings with one step CPVC solvent cement, trenching, refilling & testing of joints complete as per direction of Engineer in Charge								
	18.9.9	100 mm nominal dia Pipes	meter	10			10 00	Meter	3271 7	32717.00

USED WATER MANAGEMENT LAR DISTRICT DEORIA										
ESTIMATE OF GRIT CHAMBER										
Sl. No.	DSR 2023	Description	No.	L	B	H	Qty.	Unit	Rate (In Rs)	Amount (In Rs.)
1	2	3	4	5	6	7	8	9	10	11
									Total[A]	154364.00
CPWD Delhi Schedule of Rate 2023 (-1)% Labour Cess, (-) 21 27% GST Factor included in Rates , (-)10% (+) revailing Distnct Cost Index Issued by UPPWD = 0.735 ,For Base Cost Index-107 For Civil work and Electrical Work 0.735 x Total [A]									[B]	113450 19
Cost at Badaun/Cost Index -106 (B x 1.06/1.07)									[C]	112389.91
									Add 18 % GST of Total (C)	20230.18
									Add Labour Cess 1% of Total (C)	1123.90
									Grand Total [C]	133743.99
									SAY IN LACS	1.34

WASTE STABILIZATION POND UNDER USED WATER MANAGEMENT DISTRICT DEORIA		
Sl.No.	Particulars	Cost In Lacs
1	Estimate of Pond 1	20.04
2	Estimate of Pond 2	16.28
3	Estimate of Pond 3	16 28
	Total [A]	52.61

WASTE STABILIZATION POND UNDER USED WATER MANAGEMENT DISTRICT DEORIA

ABSTRACT OF COST - POND 1

Sl. No.	DSR 2023	Description	Qty.	Unit	Rate (In Rs)	Amount (In Rs.)
1	2	3	4	6	7	8
1	DSR/ 2023/ 2.6	Earth work in excavation by mechanical means (Hydraulic excavator)/manual means over areas (exceeding 30 cm in depth, 1.5 m in width as well as 10 sqm on plan) including getting out and disposal of excavated earth lead upto 50 m and for all lift, as directed by Engineer-in-charge				
	2.6.1	All kinds of soil.	10952 00	Cum	177.50	1943980.00
2	DSR/ 2023/ 2.26	Extra for every additional lift of 1.5 m or part thereof in excavation / banking excavated or stacked materials.				
	2.26.1	All kinds of soil	2738.00	Cum	126.80	347178.40
3	DSR/ 2023/ 2.28	Surface dressing of the ground including removing vegetation and inequalities not exceeding 15 cm deep and disposal of rubbish, lead up to 50 m and lift up to 1 5 m	9130 00	Sqm	34.15	
					Total[A]	2291158.40
CPWD Delhi Schedule of Rate 2023 (-1)% Labour Cess, (-) 21 27% GST Factor included in Rates , (-)10% (+) revaling District Cost Index Issued by UPPWD = 0.735 .For Base Cost Index-107 For Civil work and Electrical Work. 0.735 x Total [A]				[B]		1684001.42
Cost at Deoria/Cost Index -107 (B x 1.07/1.07)					[C]	1684001.42

WASTE STABILIZATION POND UNDER USED WATER MANAGEMENT DISTRICT DEORIA

ESTIMATE OF ANAEROBIC POND - POND 1

Sl. No.	DSR 2023	Description	No.	L	B	H	Qty.	Unit
1	2	3	4	5	6	7	8	9
1	DSR/ 2023/ 2.6	Earth work in excavation by mechanical means (Hydraulic excavator)/manual means over areas (exceeding 30 cm in depth, 1.5 m in width as well as 10 sqm on plan) including getting out and disposal of excavated earth lead upto 50 m and for all lift, as directed by Engineer-in-charge.						
	2.6.1	All kinds of soil. (Depth 0.0 to 1.5 m)	1	148.00	37.00	1.50	8214.00	Cum
		(Depth 1.5 to 2.0 m)	1	148.00	37.00	0.50	2738.00	Cum
					Total		10952.00	Cum
2	DSR/ 2023/ 2.25	Extra for every additional lift of 1.5 m or part thereof in excavator / banking excavated or stacked materials						
	2.25.1	All kinds of soil (Depth 1.5 to 2.0 m)	1	148.00	37.00	0.50	2738.00	Cum
3	DSR/ 2023/ 2.28	Surface dressing of the ground including removing vegetation and inequalities not exceeding 15 cm deep and disposal of rubbish, lead up to 50 m and lift up to 1.5 m.						
	2.28.1	All kinds of soil	1	166.00	55.00		9130.00	Sqm

WASTE STABILIZATION POND UNDER USED WATER MANAGEMENT DISTRICT DEORIA								
ESTIMATE OF FACULTATIVE POND - POND 2								
Sl. No.	DSR 2023	Description	No.	L	B	H	Qty.	Unit
1	2	3	4	5	6	7	8	9
1	DSR/ 2023/ 2.6	Earth work in excavation by echanical means (Hydraulic excavator)/manual means over areas (exceeding 30 cm in depth, 1 5 m in width as well as 10 sqm on plan) including getting out and disposal of excavated earth lead upto 50 m and for all lift, as directed by Engineer-in-charge.						
	2.6.1	All kinds of soil.	1	150 00	39.00	1.5	8775 00	Cum
2	DSR/ 2023/ 2.28	Surface dressing of the ground including removing vegetation and inequalities not exceeding 15 cm deep and disposal of rubbish, lead up to 50 m and lift up to 1 5 m.						
	2.3.1	All kinds of soil	1	165.00	54.00		8910.00	Sqm

WASTE STABILIZATION POND UNDER USED WATER MANAGEMENT DISTRICT DEORIA						
ABSTRACT OF COST - POND 2						
Sl. No.	DSR 2023	Description	Qty.	Unit	Rate (In Rs)	Amount (In Rs.)
1	2	3	4	5	6	7
1	DSR/ 2023/ 2.5	Earth work in excavatinn hy mechanical means (Hydraulic excavator)/manual means over areas (exceeding 30 cm in depth, 1.5 m in width as well as 10 sqm on plan) including getting out and disposal of excavated earth lead upto 50 m and for all lift as directed by Engineer in charge				
	2.6.1	All kinds of soil	8775.00	156	177.50	1557562.50
2	DSR/ 2023/ 2.28	Surface dressing of the ground including removing vegetation and inequalities not exceeding 15 cm deep and disposal of rubbish, lead up to 50 m and lift upto 1.5 m				
	2.3.1	All kinds of soil	8910.00	156	34.15	304276.50
					Total[A]	1861839.00
CPWD Delhi Schedule of Rate 2023 (+)% Labour Cess, ( ) 27.27% GST Factor included in Rates , (-)10% (+) revaling Distrct Cost Index Issued by UPPWD - 0.735 ,For Base Cost Index-107 For Civil work and Electrical Work 0.735 x Total [A] [B]						1368451.07
Tal Deoria Cost Index -107 (B x 1.07/1.07)						1368451.67
					Add 18 % GST of Total (C)	246321.30
					Add Labour Cess 1% of Total (C)	13684.52
					Grand Total [C]	1628457.48
					SAY IN LACS	16.28

WASTE STABILIZATION POND UNDER USED WATER MANAGEMENT LAR DISTRICT DEORIA						
ABSTRACT OF COST - POND 3						
Sl. No.	DSR 2023	Description	Qty.	Unit	Rate (In Rs)	Amount (In Rs.)
1	2	3	4	5	6	7
1	DSR/ 2023/ 2.6	Earth work in excavation by mechanical means (Hydraulic excavator)/manual means over areas (exceeding 30 cm in depth, 1.5 m in width as well as 10 sqm on plan) including getting out and disposal of excavated earth lead upto 50 m and for all lift, as directed by Engineer-in-charge				
	2.6.1	All kinds of soil.	8775.00	Cum	177.50	**1557562.50**
2	DSR/ 2023/ 2.28	Surface dressing of the ground including removing vegetation and inequalities not exceeding 15 cm deep and disposal of rubbish lead up to 50 m and lift up to 1.5 m.				
	2.28.1	All kinds of soil	8910.00	Sqm	34.15	**304276.50**
					Total[A]	**1861839.00**
CPWD Delhi Schedule of Rate 2023 (-1)% Labour Cess, (-) 21.27% GST Factor included in Rates , (+)10% (+) revailing District Cost Index Issued by UPPWD = 0.735 For Base Cost Index-107 For Civil work and Electrical Work. **0.735 x Total [A]** **[B]**						1368451.67
Deoria/Cost Index -107 **(B x 1.07/1.07)**						1368451.67
					Add 18 % GST of Total (C)	246321.30
					Add Labour Cess 1% of Total (C)	13684.52
					Grand Total (C)	**1628457.48**
					SAY IN LACS	**16.28**

WASTE STABILIZATION POND UNDER USED WATER MANAGEMENT DISTRICT DEORIA								
ESTIMATE OF AEROBIC MATURCRTION POND - POND 3								
Sl. No.	DSR 2023	Description	No.	L	B	H	Qty.	Unit
1	2	3	4	5	6	7	8	9
1	DSR/ 2023/ 2.6	Earth work in excavation by echanical means (Hydraulic excavator)/manual means over areas (exceeding 30 cm in depth, 1.5 m in width as well as 10 sqm on plan) including getting out and disposal of excavated earth lead upto 50 m and for all lift, as directed by Engineer-in-charge.						
	2.6.1	All kinds of soil.	1	150.00	39.00	1.5	8775.00	Cum
2	DSR/ 2023/ 2.28	Surface dressing of the ground including removing vegetation and inequalities not exceeding 15 cm deep and disposal of rubbish, lead up to 50 m and lift up to 1.5 m.						
	2.3.1	All kinds of soil	1	165.00	54.00	1.5	8910.00	Sqm

Detailed Estimate of Drain-1 (Section 1.2 x 1.2)

S.No	DSR 2023	Description of Item	Unit	Nos	Length	Width	Depth	Quantity	Rate	Amount
1	DSR 2.8	Earth work in excavation by mechanical means (Hydraulic excavator) / manual means in foundation trenches or drains (not exceeding 1.5 m in width or 10 sqm on plan), including dressing of sides and ramming of bottoms, lift upto 1.5 m, including getting out the excavated soil and disposal of surplus excavated soil as directed, within a lead of 50 m								
	2.8.1	All kinds of soil	Cum	1	1500.00	1.860	1.300	3627.00	260.30	944106.10
2	DSR 2.25	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 ramming and watering, lead up to 50 m and lift upto 1.5 m								
		Qty of Earth work in excavation	Cum.	1				3627.00		
		Less qty Of PCC	Cum	1				-279.00		
		less channel	Cum	1	1500.00	1.200	1.200	-2160.00		
		Net Filling Available	Cum					**1188.00**	196.00	232848.00
3	DSR 4.1	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level								
a	4.1.8	1:4:8 (1 Cement : 4 coarse sand (zone- II) derived from natural sources : 8 graded stone aggregate 40 mm nominal size derived from natural sources)								
		Under Drain	Cum	1	1500.00	1.860	0.100	279.00	5572.00	1554538.00
b	4.1.3	1:2:4 (1 cement : 2 coarse sand (zone-III) derived from natural sources : 4 graded stone aggregate 20 mm nominal size derived from natural sources)								
		CC Bedding	Cum	1	1500.00	1.200	0.075	135.00	7878.50	1063597.50
4	DSR 6.1	Brick work with common burnt clay (non modular) bricks of class-150 in foundation and plinth in :								
	6.1.1	Cement mortar 1:4 (1 cement : 4 coarse sand)								
		Side Wall	Cum	2	1500.00	0.230	1.200	828.00		
						Total		828.00	7370.65	6102899.20
5	DSR 13.7	12 mm cement plaster finished with a floating coat of neat cement of mix :								
	13.1.1	1:3 (1 cement: 3 fine sand)								
		Inner Side	Sqm	2	1500.00		1.200	3600.00		
		Outer Side	Sqm.	2	1500.00		0.300	900.00		
		Top	Sqm	2	1500.00	0.230		690.00		
						Total		5190.00	439.25	2279707.50

Detailed Estimate of Drain-1 (Section 1.2 x 1.2)

S.No	DSR 2023	Description of Item	Unit	Nos	Length	Width	Depth	Quantity	Rate	Amount
									Total [A]	12177747.30
CPWD Delhi Schedule of Rate 2023 (-1)% Labour Cess, (-) 21 27% GST Factor included in Rates , (-)10% (+) revaling District Cost Index Issued by UPPWD = 0.735 .For Base Cost Index-107 For Civil work and Electrical Work 0 735 x Total [A]										8950644 27
Cost at Deoria/Cost Index -107 (B x 1 07/1.07)									**[C]**	8950644 27
									Add 18 % GST of Total (C)	1611115.97
									Add Labour Cess 1% of Total (C)	89506.44
									Total in Rs.	10651266.68
									Say in Lacs	106.51

Detailed Estimate of Drain - 2 (Section 0.90 x 1.2)

S.No	SOR No.	Description of Item	Unit	Nos	Length	Width	Depth	Quantity	Rate	Amount
1	DSR 2.9	Earth work in excavation by mechanical means (Hydraulic excavator) / manual means in foundation trenches or drains (not exceeding 1.5 m in width or 10 sqm on plan), including dressing of sides and ramming of bottoms, lift upto 1.5 m, including getting out the excavated soil and disposal of surplus excavated soil as directed, within a lead of 50 m								
	2.9.1	All kinds of soil.	Cum	1	725.00	1.500	1.300	1470.30	260.30	382719.09
2	DSR 2.25	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 ramming and watering, lead up to 50 m and lift upto 1.5 m.								
		Qty of Earth work in excavation	Cum	1				1470.30		
		Less qty Of PCC	Cum	1				-1[illegible]3.10		
		less channel	Cum	1	725.00	0.900	1.200	-783.00		
								574.20	195.00	112543.2
3	DSR 4.1	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level								
a	4.1.5	1:4:8 (1 Cement : 4 coarse sand (zone-III) derived from natural sources : 8 graded stone aggregate 40 mm nominal size derived from natural sources)								
		Under Drain	Cum	1	725.00	1.560	0.100	113.10	5572.00	630193.2
b	4.1.3	1:2:4 (1 cement : 2 coarse sand (zone-III) derived from natural sources : 4 graded stone aggregate 20 mm nominal size derived from natural sources)								
		CC Bedding	Cum	1	725.00	0.900	0.075	48.94	7876.50	385554.09
4	DSR 6.1	Brick work with common burnt clay (non modular) bricks of class-150 in foundation and plinth in								
	6.1.1	Cement mortar 1:4 (1 cement : 4 coarse sand)								
		Side Wall	Cum	2	725.00	0.230	1.200	400.20		
								400.20	7370.85	2949734.13
5	DSR 13.7	12 mm cement plaster finished with a floating coat of neat cement of mix								
	13.1.1	1:3 (1 cement: 3 fine sand)								
		Inner Side	Sqm.	2	725.00		1.200	1740.00		
		Outer Side	Sqm.	2	725.00		0.500	725.00		
		Top	Sqm.	2	725.00	0.230		333.50		
								2798.50	439.25	1229241.13
									Total [A]	5689984.839

Detailed Estimate of Drain - 2 (Section 0.90 x 1.2)

S.No	SOR No.	Description of Item	Unit	Nos	Length	Width	Depth	Quantity	Rate	Amount
CPWD Delhi Schedule of Rate 2023 (-1)% Labour Cess, (-) 21.27% GST Factor included in Rates . (-)10% (+) prevailing District Cost Index Issued by UPPWD = 0.735 ,For Base Cost Index-107 For Civil work and Electrical Work 0.735 x Total [A]								[B]		4182138.86
Cost at Deoria/Cost Index -107 (8 x 1.07/1.07)									[C]	4182138.86
									Add 18 % GST of Total (C)	752784.99
									Add Labour Cess 1% of Total (C)	41821.39
									Total in Rs.	**4976745.24**
									Say in Lacs	**49.77**

Detailed Estimate of Drain - 3 (Section 0.60 x 0.90)

S.No	SOR No.	Description of Item	Unit	Nos	Length	Width	Depth	Quantity	Rate	Amount
1	DSR 2 B	Earth work in excavation by mechanical means (Hydraulic excavator) / manual means in foundation trenches or drains (not exceeding 1.5 m in width or 10 sqm on plan), excluding dressing of sides and ramming of bottoms, lift upto 1.5 m, including getting out the excavated soil and disposal of surplus excavated soil as directed, within a lead of 50 m.								
	2.B.1	All kinds of soil.	Cum	1	455.00	1.260	1.000	573.30	260.30	149229.99
2	DSR 2.25	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 ramming and watering, lead up to 50 m and lift upto 1.5 m.								
		Qty of Earth work in excavation	Cum.	1				573.30		
		Less qty Of PCC	Cum	1				-57.33		
		less channel	Cum	1	455.00	0.600	0.900	-245.70		
								270.27	196.00	52972.92
3	DSR 4.1	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level								
a	4.1.6	1:4:8 (1 Cement : 4 coarse sand (zone-III) derived from natural sources : 8 graded stone aggregate 40 mm nominal size derived from natural sources)								
		Under Drain	Cum	1	455.00	1.260	0.100	57.33	5572.00	319442.76
b	4.1.3	1:2:4 (1 cement : 2 coarse sand (zone-III) derived from natural sources : 4 graded stone aggregate 20 mm nominal size derived from natural sources)								
		CC Bedding	Cum	1	455.00	0.600	0.075	20.48	7878.50	161312.29
4	DSR 6.1	Brick work with common burnt clay (non modular) bricks of class-150 in foundation and plinth in :								
	6.1.1	Cement mortar 1:4 (1 cement : 4 coarse sand)								
		Side Wall	Cum	2	455.00	0.230	0.900	188.37		
								188.37	7370.00	1386409.341
5	DSR 13.7	12 mm cement plaster finished with a floating coat of neat cement of mix :								
	13.1.1	1:3 (1 cement: 3 fine sand)								
		Inner Side	Sqm.	2	455.00		1.000	910.00		
		Outer Side	Sqm.	2	455.00		0.500	455.00		
		Top	Sqm.	2	455.00	0.230		209.30		
								1574.30	439.25	691511.28

Detailed Estimate of Drain - 3 (Section 0.60 x 0.90)

S.No	SOR No.	Description of Item	Unit	Nos	Length	Width	Depth	Quantity	Rate	Amount
									Total [A]	**2782879.573**
CPWD Delhi Schedule of Rate 2023 (-1)% Labour Cess, (-) 21.27% GST Factor included in Rates , (-)10% (+) evailing District Cost Index Issued by UPPWD = 0.735 ,For Base Cost Index-107 For Civil work and Electrical Work 0.735 x Total [A]									**[B]**	2030715.75
Cost at Deoria/Cost Index -107 (B x 1.07/1.07)									[C]	2030715.75
									Add 18 % GST of Total (C)	365528.84
									Add Labour Cess 1% of Total (C)	20307.16
									Total in Rs.	**2416551.74**
									Say in Lacs	**24.17**

Detailed Estimate of Drain- 4 (Section 0.35x .40)

S.No	DSR 2023	Description of Item	Unit	Nos	Length	Width	Depth	Quantity	Rate	Amount
1	DSR 2.8	Earth work in excavation by mechanical means (Hydraulic excavator) / manual means in foundation trenches or drains (not exceeding 1.5 m in width or 10 sqm on plan) including dressing of sides and ramming of bottoms, lift upto 1.5 m including getting out the excavated soil and disposal of surplus excavated soil as directed, within a lead of 50 m								
	2.8.1	All kinds of soil.	Cum	1	88.50	1.010	0.500	44.69	260.30	11633.46
2	DSR 2.25	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 ramming and watering, lead up to 50 m and lift upto 1.5 m.								
		Qty of Earth work in excavation	Cum.	1				44.69		
		Less qty Of PCC	Cum	1				-8.94		
		less channel	Cum	1	88.50	0.350	0.400	-12.39		
		Net Filling Available	Cum					23.36	196.00	4579.34
3	DSR 4.1	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level :								
a	4.1.6	1:4:8 (1 Cement : 4 coarse sand (zone-III) derived from natural sources : 8 graded stone aggregate 40 mm nomina size derived from natural sources)								
		Under Drain	Cum	1	88.50	1.010	0.100	8.94	5572.00	49805.37
b	4.1.3	1:2:4 (1 cement : 2 coarse sand (zone-III) derived from natural sources : 4 graded stone aggregate 20 mm nominal size derived from natural sources)								
		CC Bedding	Cum	1	88.50	0.350	0.075	2.32	7875.50	18302.74
4	DSR 6.1	Brick work with common burnt clay (non modular) bricks of class-150 in foundation and plinth in :								
	6.1.1	Cement mortar 1:4 (1 cement : 4 coarse sand)								
		Side Wall	Cum	2	88.50	0.230	0.400	16.28		
							Total	16.28	7370.65	120023.66
5	DSR 13.7	12 mm cement plaster finished with a floating coat of neat cement of mix								
	13.1.1	1:3 (1 cement : 3 fine sand)								
		Inner Side	Sqm.	2	88.50		0.400	70.80		
		Outer Side	Sqm.	2	88.50		0.150	26.55		
		Top	Sqm.	2	88.50	0.230		40.71		
							Total	138.06	439.25	60642.86

Detailed Estimate of Drain- 4 (Section 0.35x .40)

S.No	DSR 2023	Description of Item	Unit	Nos	Length	Width	Depth	Quantity	Rate	Amount
									Total [A]	**264987.38**
CPWD Delhi Schedule of Rate 2023 (-1)% Labour Cess, (-) 21.27% GST Factor included in Rates , (-)10% (+) revailing District Cost Index Issued by UPPWD = 0.735 .For Base Cost Index-107 For Civil work and Electrical Work 0 735 x Total [A]										194765.73
Cost at Badaun/Cost Index -106 (B x 1.06/1.07)									[C]	192945.45
									Add 18 % GST of Total (C)	34730.19
									Add Labour Cess 1% of Total (C)	1929.45
									Total In Rs.	**229605.13**
									Say In Lacs	2.30

Detailed Estimate of Drain- 5 (Section 0.70 x .90)

S.No	DSR 2023	Description of Item	Unit	Nos	Length	Width	Depth	Quantity	Rate	Amount
1	DSR 2.8	Earth work in excavation by mechanical means (Hydraulic excavator) / manual means in foundation trenches or drains (not exceeding 1.5 m in width or 10 sqm on plan), including cressing of sides and ramming of bottoms, lift upto 1.5 m, including getting out the excavated soil and disposal of surplus excavated soil as directed within a lead of 50 m.								
	2.8.1	All kinds of soil.(0 m to 1.5m)	Cum	1	301.00	1.360	1.000	409.36		
						Total		409.36	260.30	106556.41
2	DSR 2.25	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 ramming and watering, lead up to 50 m and lift upto 1.5 m								
		Qty of Earth work in excavation	Cum.	1				409.36		
		Less qty Of PCC	Cum	1				-40.94		
		less channel	Cum	1	301.00	0.700	0.900	-189.63		
		Net Filling Available	Cum					178.79	196.00	35043.62
3	DSR 4.1	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level :								
	4.1.6	1:4:8 (1 Cement : 4 coarse sand (zone-III) derived from natural sources : 8 graded stone aggregate 40 mm nominal size derived from natural sources)								
		Under Drain	Cum	1	301.00	1.360	0.100	40.94	5572.00	228095.39
4	4.1.3	1:2:4 (1 cement : 2 coarse sand (zone-II) derived from natural sources : 4 graded stone aggregate 20 mm nominal size derived from natural sources)								
		CC Bedding	Cum	1	301.00	0.700	0.075	15.80	7878.50	124500.00
5	DSR 6.1	Brick work with common burnt clay (non modular) bricks of class-150 in foundation and plinth in								
	6.1.1	Cement mortar 1:4 (1 cement : 4 coarse sand)								
		Side Wall	Cum	2	301.00	0.230	0.900	124.61		
						Total		124.61	7370.66	918486.18
7	DSR 13.7	12 mm cement plaster finished with a floating coat of neat cement of mix								
	13.1.1	1:3 (1 cement : 3 fine sand)								
		Inner Side	Sqm	2	301.00		0.900	541.80		
		Outer Side	Sqm	2	301.00		0.300	180.60		
		Top	Sqm	2	301.00	0.230		138.46		

Detailed Estimate of Drain- 5 (Section 0.70 x .90)

S.No	DSR 2023	Description of Item	Unit	Nos	Length	Width	Depth	Quantity	Rate	Amount
						Total		860.86	439.25	378132.76
									Total [A]	**1790814.35**
CPWD Delhi Schedule of Rate 2023 (-1)% Labour Cess, (-) 21.27% GST Factor included in Rates , (-)10% (+) revailing District Cost Index issued by UPPWD = 0.735 ,For Base Cost Index-107 For Civil work and Electrical Work 0.735 x Total [A]										1316248.55
Cost at Badaun/Cost Index -106 (B x 1.06/1.07)									[C]	1303947.16
									Add 18 % GST of Total (C)	234710.49
									Add Labour Cess 1% of Total (C)	13039.47
									Total in Rs.	**1551697.12**
									Say in Lacs	15.52

Detailed Estimate of Drain- 6 (Section 0.80 x .0.55)

S.No	DSR 2023	Description of Item	Unit	Nos	Length	Width	Depth	Quantity	Rate	Amount
1	DSR 2.8	Earth work in excavation by mechanical means (Hydraulic excavator) / manual means in foundation trenches or drains (not exceeding 1 5 m in width or 10 sqm on plan), including dressing of sides and ramming of bottoms, lift upto 1.5 m, including getting out the excavated soil and disposal of surplus excavated soil as directed, within a lead of 50 m								
	2 8 1	All kinds of soil.(0 m to 1 5m)	Cum	1	550.00	1 460	0.650	521.95		
						Total		521 95	260 30	135862 59
2	DSR 2.25	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 ramming and watering, lead up to 50 m and lift upto 1.5 m								
		Qty of Earth work in excavation	Cum	1				521 95		
		Less qty Of PCC	Cum	1				-80 30		
		less channel	Cum	1	550.00	0 800	0 550	-242.00		
		Net Filling Available	Cum					199.65	190.00	39131 40
3	DSR 4 1	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level :								
a	4.1 8	1 4 8 (1 Cement 4 coarse sand (zone-II) derived from natural sources . 8 graced stone aggregate 40 mm nominal size derived from natural sources)								
		Under Drain	Cum	1	550 00	1 460	0.100	80.30	5572 00	447431 60
b	4 1.3	1 2 4 (1 cement : 2 coarse sand (zone-III) derived from natural sources : 4 graded stone aggregate 20 mm nominal size denved from natural sources)								
		CC Bedding	Cum	1	550 00	0.800	0 075	33 00	7878 50	259990.50
4	DSR 6	Brick work with common burnt clay (non modular) bricks of class-150 in foundation and plinth in :								
	6.1 1	Cement mortar 1:4 (1 cement 4 coarse sand)								
		Side Wall	Cum	2	550.00	0.230	0.550	139 15		
						Total		139 15	7370.65	1025625 95
5	DSR 13.7	12 mm cement plaster finished with a floating coat of neat cement of mix								
	13.1 1	1 3 (1 cement: 3 fine sand)								
		Inner Side	Sqm	2	550 00		0.550	605 00		
		Outer Side	Sqm	2	550 00		0.300			
		Top	Sqm	2	550 00	0 230		253.00		

Detailed Estimate of Drain- 6 (Section 0.80 x .0.55)

S.No	OSR 2023	Description of Item	Unit	Nos	Length	Width	Depth	Quantity	Rate	Amount
						Total		858.00	439.25	376876.50
									Total [A]	**2284919.53**
CPWD Delhi Schedule of Rate 2023 (-1)% Labour Cess, (-) 21.27% GST Factor included in Rates , (-)10% (+) revailing District Cost Index Issued by UPPWD = 0.735 For Base Cost Index-107 For Civil work and Electrical Work 0.735 x Total [A]										1679415.86
Cost at Badaun/Cost Index -106 (B x 1.06/1.07)									[C]	1663720.38
									Add 18 % GST of Total (C)	299469.67
									Add Labour Cess 1% of Total (C)	16637.20
									Total In Rs.	**1979827.25**
									Say In Lacs	**19.80**

Detailed Estimate of Drain- 7(Section 0.30 x .0.70)

S.No	DSR 2023	Description of Item	Unit	Nos	Length	Width	Depth	Quantity	Rate	Amount
1	DSR 2.8	Earth work in excavation by mechanical means (Hydraulic excavator) / manual means in foundation trenches or drains (not exceeding 1.5 m in width or 10 sqm on plan), including dressing of sides and ramming of bottoms lift upto 1.5 m, including getting out the excavated soil and disposal of surplus excavated soil as directed within a lead of 50 m.								
	2.8.1	All kinds of soil (0 m to 1.5m)	Cum	1	257.00	0.960	0.800	197.38		
						Total		197.38	260.30	51375.97
3	DSR 2.25	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 ramming and watering, lead up to 50 m and lift upto 1.5 m.								
		Qty of Earth work in excavation	Cum.	1				197.38		
		Less qty Of PCC	Cum	1				-24.67		
		less channel	Cum	1	257.00	0.300	0.700	-53.97		
		Net Filling Available	Cum					118.73	196.00	23271.86
4	DSR 4.1	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level								
a	4.1.8	1:4:8 (1 Cement : 4 coarse sand (zone- II) derived from natural sources : 8 graded stone aggregate 40 mm nominal size derived from natural sources;								
		Under Drain	Cum	1	257.00	0.960	0.100	24.67	5572.00	137472.36
b	4.1.3	1:2:4 (1 cement : 2 coarse sand (zone-II) derived from natural sources : 4 graded stone aggregate 20 mm nominal size derived from natural sources)								
		CC Bedding	Cum	1	257.00	0.960	0.075	18.50	7878.50	145783.76
c	DSR 6.1	Brick work with common burnt clay (non modular) bricks of class-150 in foundation and plinth in								
	6.1.1	Cement mortar 1:4 (1 cement : 4 coarse sand)								
		Side Wall	Cum	2	257.00	0.230	0.700	82.75		
						Total		82.75	7370.65	609950.77
6	DSR 13.7	12 mm cement plaster finished with a floating coat of neat cement of mix .								
	13.1.1	1:3 (1 cement: 3 fine sand)								
		Inner Side	Sqm.	2	257.00		0.700	359.80		
		Outer Side	Sqm.	2	257.00		0.300	154.20		
		Top	Sqm.	2	257.00	0.230		118.22		

Detailed Estimate of Drain- 7(Section 0.30 x .0.70)

S.No	DSR 2023	Description of Item	Unit	Nos	Length	Width	Depth	Quantity	Rate	Amount
						Total		632.22	439.25	277702.64
									Total [A]	**1245558.19**
CPWD Delhi Schedule of Rate 2023 (-)1)% Labour Cess, (-) 21.27% GST Factor included in Rates . (-)10% (+) revaling District Cost Index Issued by UPPWD = 0.735 .For Base Cost Index-107 For Civil work and Electrical Work 0 735 x Total [A]										915485.42
Cost at Badaun/Cost Index -105 (B x 1 06/1.07)									**[C]**	906929.48
									Add 18 % GST of Total (C)	163247.31
									Add Labour Cess 1% of Total (C)	9069.29
									Total in Rs.	**1079246.08**
									Say in Lacs	10.79

Detailed Estimate of Drain- 8 (Section 0.90 x .1.5)

S.No	DSR 2023	Description of Item	Unit	Nos	Length	Width	Depth	Quantity	Rate	Amount
1	DSR 2.8	Earth work in excavation by mechanical means (Hydraulic excavator) / manual means in foundation trenches or drains (not exceeding 1.5 m in width or 10 sqm on plan), including dressing of sides and ramming of bottoms, lift upto 1.5 m, including getting out the excavated soil and disposal of surplus excavated soil as directed within a lead of 50 m								
	2.8.1	All kinds of soil (0 m to 1.5m)	Cum	1	571.00	1.560	1.500	1336.14		
		(1.5m to 1.9m)	Cum	1	571.00	1.560	0.100	89.08		
						Total		1425.22	260.30	347757.24
2	DSR 2.26.1	Extra for every additional lift of 1.5 m or part thereof in excavation /banking excavated or stacked materials All kinds of soil								
		Extra Depth (1.5m to 1.9m)	Cum	1	571.00	1.560	0.100	89.08	126.80	11294.84
3	DSR 2.25	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 ramming and watering, lead up to 50 m and lift upto 1.5 m								
		Qty of Earth work in excavation	Cum.	1				1425.22		
		Less qty Of PCC	Cum	1				89.08		
		less channel	Cum	1	571.00	0.900	1.500	-770.85		
		Net Filling Available	Cum					565.29	196.00	110796.84
4	DSR 4.1	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level :								
a	4.1.8	1:4:8 (1 Cement : 4 coarse sand (zone-III) derived from natural sources : 8 graded stone aggregate 40 mm nominal size derived from natural sources)								
		Under Drain	Cum	1	571.00	1.560	0.100	89.08	5572.00	496331.47
b	4.1.3	1:2:4 (1 cement : 2 coarse sand (zone-III) derived from natural sources : 4 graded stone aggregate 20 mm nominal size derived from natural sources)								
		CC Bedding	Cum	1	571.00	0.900	0.075	38.54	7878.50	303657.09
5	DSR 6.1	Brick work with common burnt clay (non modular) bricks of class-150 in foundation and plinth in :								
	6.1.1	Cement mortar 1:4 (1 cement : 4 coarse sand)								
		Side Wall	Cum	2	571.00	0.230	1.500	393.99		
						Total		393.99	7370.65	2903962.39
6	DSR 13.7	12 mm cement plaster finished with a floating coat of neat cement of mix								

Detailed Estimate of Drain- 8 (Section 0.90 x .1.5)

S.No	DSR 2023	Description of Item	Unit	Nos	Length	Width	Depth	Quantity	Rate	Amount
	13.1 1	1:3 (1 cement: 3 fine sand)								
		Inner Side	Sqm.	2	571.00		1.500	1713.00		
		Outer Side	Sqm.	2	571.00		0.300	342.60		
		Top	Sqm.	2	571.00	0.230		262 65		
						Total		2318.26	439.25	1018295 71
									Total [A]	5192135.58
CPWD Delhi Schedule of Rate 2023 (+)1% Labour Cess, (-) 21 27% GST Factor included in Rates , (-) 10% (+) revaiing District Cost Index Issuec by UPPWD = 0 735 For Base Cost Index-107 For C vil work and Electrical Work 0.735 x Total [A]										38 5219 65
Cost at Badaun/Cost Index -106 (3 x 1.06/1 07)									[C]	3780554 04
									Add 18 % GST of Total (C)	680499 73
									Add Labour Cess 1% of Total (C)	37805 54
									Total in Rs.	4498859.31
									Say in Lacs	44.99

Detailed Estimate of Drain- 9 (Section 0.40 x .1.3)

S.No	DSR 2023	Description of Item	Unit	Nos	Length	Width	Depth	Quantity	Rate	Amount
1	DSR 2.8	Earth work in excavation by mechanical means (Hydraulic excavator) / manual means in foundation trenches or drains (not exceeding 1.5 m in width or 10 sqm on plan), including dressing of sides and ramming of bottoms, lift upto 1.5 m, including getting out the excavated soil and disposal of surplus excavated soil as directed, within a lead of 50 m.								
	2.8.1	All kinds of soil (0 m to 1.5m)	Cum	1	571.00	1.060	1.400	847.36		
						Total		847.36	260.30	220568.85
2	DSR 2.25	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 ramming and watering, lead up to 50 m and lift upto 1.5 m								
		Qty of Earth work in excavation	Cum.	1				847.36		
		Less qty Of PCC	Cum	1				-60.53		
		less channel	Cum	1	571.00	0.400	1.300	-296.92		
		Net Filling Available	Cum					489.92	196.00	96023.93
3	DSR 4.1	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level.								
a	4.1.8	1:4:8 (1 Cement : 4 coarse sand (zone-III) derived from natural sources : 8 graded stone aggregate 40 mm nominal size derived from natural sources)								
		Under Drain	Cum	1	571.00	1.060	0.100	60.53	5572.00	337250.87
b	4.1.3	1:2:4 (1 cement : 2 coarse sand (zone-I); derived from natural sources : 4 graded stone aggregate 20 mm nominal size derived from natural sources)								
		CC Bedding	Cum	1	571.00	0.400	0.075	17.13	7878.50	134958.71
4	DSR 6.1	Brick work with common burnt clay (non modular) bricks of class-150 in foundation and plinth in .								
	6.1.1	Cement mortar 1:4 (1 cement : 4 coarse sand)								
		Side Wall	Cum	2	571.00	0.230	1.300	341.46		
						Total		341.46	7370.65	2516767.41
5	DSR 13.7	12 mm cement plaster finished with a floating coat of neat cement of mix								
	13.1.1	1:3 (1 cement: 3 fine sand)								
		Inner Side	Sqm.	2	571.00		1.300	1484.60		
		Outer Side	Sqm.	2	571.00		0.300	342.60		
		Top	Sqm	2	571.00	0.230		262.66		

Detailed Estimate of Drain- 9 (Section 0.40 x .1.3)

S.No	DSR 2023	Description of Item	Unit	Nos	Length	Width	Depth	Quantity	Rate	Amount
						Total		2089 86	439.25	917971.01
									Total [A]	4223540.77
CPWD Delhi Schecule of Rate 2023 (+11% Labour Cess, (-) 21 27% GST Factor included in Rates , (-)10% (+) revising District Cost Index Issuec by UPPWD = 0 735 ,For Base Cost Index-107 For Civil work and Electrical Work 0 735 x Total [A]										3104302 46
Cost at Badaun/Cost Index -106 (B x 1.06/1 07)									[C]	3075290 29
									Add 18 % GST of Total (C)	553552 25
									Add Labour Cess 1% of Total (C)	30752 90
									Total In Rs.	3659595.45
									Say In Lacs	36.60

Detailed Estimate of Drain- 10 (Section 0.50 x .70)

S.No	DSR 2023	Description of Item	Unit	Nos	Length	Width	Depth	Quantity	Rate	Amount
1	DSR 2.8	Earth work in excavation by mechanical means (Hydraulic excavator) / manual means in foundation trenches or drains (not exceeding 1.5 m in width or 10 sqm on plan), including dressing of sides and ramming of bottoms, lift upto 1.5 m, including getting out the excavated soil and disposal of surplus excavated soil as directed, within a lead of 50 m.								
	2.8.1	All kinds of soil.(0 m to 1.5m)	Cum	1	421.00	1.160	0.800	390.69		
						Total		390.69	260.30	101699.09
2	DSR 2.25	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 ramming and watering, lead up to 50 m and lift upto 1.5 m								
		Qty of Earth work in excavation	Cum	1				390.69		
		Less qty Of PCC	Cum	1				44.63		
		less channel	Cum	1	421.00	0.600	0.700	-147.35		
		Net Filling Available	Cum					198.71	196.00	38947.55
3	DSR 4.1	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level .								
a	4.1.8	1:4:8 (1 Cement : 4 coarse sand (zone-III) derived from natural sources : 8 graded stone aggregate 40 mm nominal size derived from natural sources)								
		Under Drain	Cum	1	421.00	1.060	0.100	44.62	5572.00	248686.07
b	4.1.3	1:2:4 (1 cement : 2 coarse sand (zone-III) derived from natural sources : 4 graded stone aggregate 20 mm nominal size derived from natural sources)								
		CC Bedding	Cum	1	421.00	0.400	0.075	12.63	7878.50	99505.46
4	DSR 6.1	Brick work with common burnt clay (non modular) bricks of class-150 in foundation and plinth in :								
	6.1.1	Cement mortar 1:4 (1 cement : 4 coarse sand)								
		Side Wall	Cum	2	421.00	0.230	1.300	251.76		
						Total		251.76	7370.65	1855620.10
5	DSR 13.7	12 mm thm cement plaster finished with a floating coat of neat cement of mix :								

Detailed Estimate of Drain- 10 (Section 0 50 x .70)

S.No	DSR 2023	Description of Item	Unit	Nos	Length	Width	Depth	Quantity	Rate	Amount
	13 1 1	1 3 (1 cement 3 fine sand)								
		Inner Side	Sqm	2	42' 00		1 300	1094.60		
		Outer Side	Sqm	2	42'.00		0 300	252 60		
		Top	Sqm	2	42' 00	0 230		193 66		
						Total		1540.86	439 25	676522.76
									Total [A]	3021248.02
CPWD Delhi Schedule of Rate 2023 (-1)% Labour Cess (-) 21 27% GST Factor includec in Rates (-)10% (+) revaling District Cost Index Issued by UPPWD = 0.735 .For Base Cost Index-107 For Civil work and Electrical Work 0.735 x Total [A]										2220617.30
Cost at Badaun/Cost Index -106 (B x 1.05/1.07)									[C	2199663 [6]
									Add 18 % GST of Total (C)	395975 60
									Add Labour Cess 1% of Total (C)	21998 64
									Total In Rs.	2617638.00
									Say in Lacs	26.18

Detailed Estimate of Drain- 11 (Section 0.40 x .70)

S.No	DSR 2023	Description of Item	Unit	Nos	Length	Width	Depth	Quantity	Rate	Amount
1	DSR 2.8	Earth work in excavation by mechanical means (Hydraulic excavator) / manual means in foundation trenches or drains (not exceeding 1.5 m in width or 10 sqm on plan), including dressing of sides and ramming of bottoms, lift upto 1.5 m, including getting out the excavated soil and disposal of surplus excavated soil as directed, within a lead of 50 m.								
	2.8.1	All kinds of soil (0 m to 1.5m)	Cum	1	405.00	1.060	0.700	300.51		
						Total		300.51	260.30	78222.75
2	DSR 2.25	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 ramming and watering, lead up to 50 m and lift upto 1.5 m.								
		Qty of Earth work in excavation	Cum.	1				300.51		
		Less qty Of PCC	Cum	1				-42.93		
		less channel	Cum	1	405.00	0.500	0.700	-141.75		
		Net Filling Availebe	Cum					**115.83**	196.00	22702.68
3	DSR 4.1	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level :								
a	4.1.8	1:2:4 (1 Cement : 2 coarse sand (zone-III) derived from natural sources : 4 graded stone aggregate 40 mm nominal size derived from natural sources)								
		Under Drain	Cum	1	405.00	1.060	0.100	42.93	5572.00	239203.96
b	4.1.3	1:2:4 (1 cement : 2 coarse sand (zone-III) derived from natural sources : 4 graded stone aggregate 20 mm nominal size derived from natural sources)								
		CC Bedding	Cum	1	405.00	0.400	0.075	12.15	7875.50	95722.78
4	DSR 6.1	Brick work with common burnt clay (non modular) bricks of class-150 in foundation and plinth in :								
	6.1.1	Cement mortar 1:4 (1 cement : 4 coarse sand)								
		Side Wall	Cum	2	405.00	0.230	1.300	242.19		
						Total		242.19	7370.65	1785097.72
5	DSR 13.7	12 mm cement plaster finished with a floating coat of neat cement of mix								

Detailed Estimate of Drain- 11 (Section 0.40 x .70)

S.No	DSR 2023	Description of Item	Unit	Nos	Length	Width	Depth	Quantity	Rate	Amount
	13 1 1	1.3 (1 cement: 3 fine sand)								
		Inner Side	Sqm.	2	405.00		1 300	1053.00		
		Outer Side	Sqm.	2	405.00		0.300	243.00		
		Top	Sqm.	2	405 00	0 230		186 30		
						Total		1482 30	439 25	651100 28
									Total [A]	2872053 17
CPWD Delhi Schedule of Rate 2023 (-1)% Labour Cess (-) 21 27% GST Factor included in Rates , (-)10% (+) revailing District Cost Index Issued by UPPWD = 0 735 For Base Cost Index-107 For Civil work and Electrical Work 0.735 x Total [A]										2110959 08
Cost at Badaun/Cost Index -106 (B x 1.06/1 07)									[C]	2091230 49
									Add 18 % GST of Total (C)	376421 49
									Add Labour Cess 1 % of Total (C)	20912 30
									Total In Rs.	2488564.28
									Say In Lacs	24.89

Detailed Estimate of Drain- 12 (Section 3 x 5)

S.No	DSR 2023	Description of Item	Unit	Nos	Length	Width	Depth	Quantity	Rate	Amount
1	DSR 2.8	Earth work in excavation by mechanical means (Hydraulic excavator) / manual means in foundation trenches or drains (not exceeding 1.5 m in width or 10 sqm on plan), including dressing of sides and ramming of bottoms, lift upto 1.5 m, including getting out the excavated soil and disposal of surplus excavated soil as directed, within a lead of 50 m.								
	2.8.1	All kinds of soil (0 m to 1.5m)	Cum	1	252.00	3.660	5.010	4639.16		
						Total		4639.16	260.30	1207573.35
2	DSR 2.25	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 ramming and watering, lead up to 50 m and lift upto 1.5 m								
		Qty of Earth work in excavation	Cum	1				4639.16		
		Less qty Of PCC	Cum	1				-26.62		
		less channel	Cum	1	253.00	0.500	5.000	-632.50		
		Net Filling Available	Cum					3979.84	196.00	780048.99
3	DSR 4.1	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level								
a	4.1.8	1:4:8 (1 Cement : 4 coarse sand (zone-III) derived from natural sources : 8 graded stone aggregate 40 mm nominal size derived from natural sources)								
		Under Drain	Cum	1	253.00	1.060	0.100	26.82	5572.00	149429.00
b	4.1.3	1:2:4 (1 cement : 2 coarse sand (zone-III) derived from natural sources : 4 graded stone aggregate 20 mm nominal size derived from natural sources)								
		CC Bedding	Cum	1	253.00	0.400	0.075	7.59	7878.50	59797.82
4	DSR 5.1	Brick work with common burnt clay (non modular) bricks of class-'150 in foundation and plinth in								
	5.1.1	Cement mortar 1:4 (1 cement : 4 coarse sand)								
		Side Wall	Cum	2	253.00	0.230	5.100	593.54		
						Total		593.54	7370.65	4374760.81
5	DSR 13.7	12 mm cement plaster finished with a floating coat of neat cement of mix :								

Detailed Estimate of Drain- 12 (Section 3 x 5)

S.No	DSR 2023	Description of Item	Unit	Nos	Length	Width	Depth	Quantity	Rate	Amount
	13.1.1	1:3 (1 cement 3 fine sand)								
		Inner Side	Sqm.	2	253.00		1.300	657.80		
		Outer Side	Sqm.	2	255.00		0.300	151.80		
		Top	Sqm.	2	253.00	0.230		116.38		
						Total		525.98	435.25	406736.72
									Total [A]	6978347.57
CPWD Delhi Schedule of Rate 2023 (-1)% Labour Cess, (-) 21.27% GST Factor included in Rates . (-)10% (+) rovailing District Cost Index Issued by UPPWD = 0.735 .For Base Cost Index-107 For Civil work and Electrical Work 0.735 x Total [A]										5129085.47
Cost at Badaun/Cost Index -105 (B x 1.06/1.07)									[C	5061150.09
									Add 18 % GST of Total (C)	911607.02
									Add Labour Cess 1% of Total (C)	50611.50
									Total In Rs.	6046568.61
									Say in Lacs	60.47

अधिशासी अधिकारी
नगर पंचायत लार
देवरिया

USED WATER MANAGEMENT LAR DISTRICT DEORIA

Detail Estimate of Sump Well At MPS (WARD - 10)

Sl. No.	DSR 2023	Description of Work	No.	L	B	H	Qty.	Unit	Rate (In Rs)	Amount (In Rs.)
1	2	3	4	5	6	7	8	9	10	11
1	DSR/ 2023/ 2.6	Earth work in excavation by mechanical means (Hydraulic excavator)/manual means over areas (exceeding 30 cm in depth, 1.5 m in width as well as 10 sqm on plan) including getting out and disposal of excavated earth lead upto 50 m and for all lift, as directed by Engineer in charge								
	2.6.1	All kinds of soil								
		Sump Well :Depth up to 1.5m)	1	0.785 x 7.00 x 7.00 x 1.50			57.70			
		Sump Well :Depth beyond 1.5 to 3.0m)	1	0.785 x 7.00 x 7.00 x 1.50			57.70			
		Sump Well :Depth beyond 3.0 to 4.5m)	1	0.785 x 7.00 x 7.00 x 1.50			57.70			
		Sump Well :Depth beyond 4.5 to 5.15 m)	1	0.785 x 7.00 x 7.00 x 0.65			25.00			
		Screen Chamber	1	2.70 X 3.30 X 1.10			9.80			
						Total	**207.90**	cum	177.50	**36901.60**
2	DSR/ 2023/ 2.26	Extra for every additional lift of 1.5 m or part thereof in excavation /banking excavated or stacked materials.								
	2.26.1	All kinds of soil								
			2	0.785 x 7.00 x 7.00 x 1.50			115.40			
			3	0.785 X 7.00 X 7.00 x 0.65			75.01			
						Total	190.40	cum	126.80	14632.09
3	DSR/ 2023/ 2.21	Open timbering in case of shafts wells, cesspits, manholes and the like including strutting and shoring complete (Measurements to be taken of the face area timbered)								
	2.21.1	Depth not Exe. 1.5 m	-	3.14 x 7.00 X 1.50			32.97	sqm	66.40	2189.21
	2.21.2	Depth Exe. 1.5 m but not Exe. 3.0m	-	3.14 x 7.00 x 1.50			32.97	sqm	81.65	2692.00
	2.21.3	Depth Exe. 3.0 m but not Exe. 4.5m	-	3.14 x 7.00 x 0.65			14.29	sqm	101.85	1455.13
4	DSR/ 2023/ 4.1.8 A	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level 1:4:8 (1 cement :4 manufactured sand derived from Recycled Concrete Aggregate (RCA) : 8 graded stone aggregate 40 mm nominal size Recycled Aggregate (RA)								
		Sump well Base	1	0.785 x 7.00 x 7.00 x 0.20			7.69	Cum		
		Screen Chamber Base	1	2.70 x 3.30 x 0.20			1.78	Cum		
						Total	9.48	Cum	5205.25	49319.74

USED WATER MANAGEMENT LAR DISTRICT DEORIA

Detail Estimate of Sump Well At MPS (WARD - 10)

Sl. No.	DSR 2023	Description of Work	No.	L	B	H	Qty.	Unit	Rate (In Rs)	Amount (In Rs.)
1	2	3	4	5	6	7	8	9	10	11
6	DSR/ 2023/ 5.1.2	Providing and laying in position specified grade of reinforced cement concrete, excluding the cost of centering, shuttering finishing and reinforcement - All work up to plinth level :1:1.5:3 (1 cement : 1.5 coarse sand (zone-III) derived from natural sources : 3 graded stone aggregate 20 mm nominal size derived from natural sources) Schamber								
		Pump Pedestal	1	3.CX C.45 X 0.30			0.41	Cum		
		RCC Raft for Screen Chamber	1	1 x 3.40 x 2.50 x 0.30			2.48	Cum		
		RCC Raft for Sump Wel	1	0.785 x 6.60 x 6.00 x 0.5			15.54	Cum		
						Total	18.42	Cum	9045.75	166649.85
6	DSR/ 2023/ 5.2.2	Reinforced cement concrete work in walls (any thickness), including attached pilasters, buttresses, plinth and string courses, fillets, columns, pillars, piers abutments, posts and struts etc. above plinth level up to floor five level excluding cost of centering, shuttering, finishing and reinforcement 1:1.5:3 (1 cement : 1.5 coarse sand(zone-III) derived from natural sources : 3 graded stone aggregate 20 mm nominal size derived from natura sources)								
		Screen Chamber Wall	2	3.15 x 0.30 x 1.1			2.08	cum		
		Screen Chamber Wall	2	1.50 x 0.30 x 1.1			0.99	cum		
		Sump Well Wall	1	3.14 x 5.30 x 0.30 x 4.90			24.46	cum		
		Sump well Corner Chamfer	1	3.14 x 5.60 x 1/2 x 0.5 x 0.50			2.08	cum		
		Column up to Screen Chamber Slab	4	0.30 x 0.30 x1.10			0.40	cum		
		Column up to Girder Beam	4	0.30 x 0.30 x 2.1			0.76	cum		
						Total	30.76	cum	10852.05	333890.90
7	DSR/ 2023/ 5.3.A	Reinforced cement concrete work in beams, suspended floors, roofs having slope up to 15° landings, balconies, shelves, chajjas, inrels, hards, plain window sills, staircases and spiral staircases above plinth level up to floor five level excluding the cost of centering, shuttering, finishing and reinforcement with 1:1.5:3 (1 cement :1.5 coarse sand nconding manufactured sand derived from Recycled Concrete Aggregate (RCA) upto 20%. 3 graded stone aggregate 20 mm nominal size including Recycled Concrete Aggregate (RCA) upto 20%)								
		Sump Well	1	0.785 x 1/2 x 5.60 x 5.60 x 0.20			2.40			
		Screen Chamber	1	3.15 x 2.10 x 0.200			1.32			
						Total	3.76	cum	11334.70	42899.12

USED WATER MANAGEMENT LAR DISTRICT DEORIA

Detail Estimate of Sump Well At MPS (WARD - 10)

Sl. No.	DSR 2023	Description of Work	No.	L	B	H	Qty.	Unit	Rate (In Rs)	Amount (In Rs.)
1	2	3	4	5	6	7	8	9	10	11
8	DSR/ 2023/ 5.9	Centering and shuttering including strutting, propping etc and removal of form for								
a	DSR/ 2023/ 5.9.1	Foundations, toolings, bases of columns, etc for mass concrete								
		Formwork for Foundation	1	3.14 x 6.50 x 0.50			10.36	sqm		
		Inlet & Screen Chamber	2	3.45 X 0.30			2.07	sqm		
			2	2.70 X 0.30			1.62	sqm		
						Total	14.05	sqm	392.15	$510.49
b	DSR/ 2023/ 5.9.2	Walls (any thickness) including attached pilasters, buttresses, plinth and string courses etc:								
		Outer Side	1	3.14 x 5.60 x 4.90			85.16			
		Inner Side	1	3.14 x 5.00 x 4.90			76.93			
		Inlet & Screen Chamber Outer	2	3.15 x 1.10			6.93			
			2 x 2	1.50 x 1.10			6.60			
						Total	175.62	sqm	842.50	148803.70
c	DSR/ 2023/ 5.9.6	Columns, Pillars, Piers, Abutments, Posts and Struts								
		Column up to Girder Beam	4 x 4	0.30 x 2.1			10.08			
		Column up to Screen Chamber Slab	4 x 4	0.30 x 1.10			5.28			
						Total	15.36	sqm	961.30	14765.57
d	DSR/ 2023/ 5.9.3	Suspended floors, roofs, landings, balconies and access platform								
		Shuttering For Screen Chamber Slab	1	3.40 x 2.10			7.14	sqm		
		Shuttering For Sump Well	1	1/2 x 0.785x 5.60 x 5.60			12.31	sqm		
						Total	19.45	sqm	927.25	18033.90
9	DSR/ 2023/ 5.22.6	Steel reinforcement for R.C.C work including straightening, cutting bending, placing in position and binding all complete.Thermo-Mechanically Treated bars of grade Fe 500D or more		Total Qty of RCC x 1.5% x 7850			62.97			
		Steel Reinforcement	1	62.97 x 1.5% x7850			6237.64	Kg	107.85	672718.83
10	DSR/ 2023/ 13.39.1	Colour washing such as green blue or buff to give an even shade . New work (two or more coats) with a base coat of white washing with lime								
		Screen Chamber	2	3.40 x 1.10			7.48	Sqm		
			1	2.10 x 1.10			2.31	Sqm		
						Total	9.79	Sqm	53.30	521.81
11	DSR/ 2023/ 2.25	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 ramming and watering, lead up to 50 and lift up to all lift								
		20 % of Qty of Sl No. 1		207.90 x 20 %			41.58	Cum	196.00	8149.51

USED WATER MANAGEMENT LAR DISTRICT DEORIA

Detail Estimate of Sump Well At MPS (WARD - 10)

Sl. No.	DSR 2023	Description of Work	No.	L	B	H	Qty.	Unit	Rate (In Rs)	Amount (In Rs.)
1	2	3	4	5	6	7	8	9	10	11
12	DSR/ 2023/ 10.25	Steel work welded in built up sections/ framed work, including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer using structural steel etc. as required.								
	10.25.2	In gratings, frames guard bar, ladder railings brackets, gates and similar works								
		MH Cover MS Jali	2	0.6	0.45		0.54	Sqm		
		Manual Screen	1	0.5	0.7		0.35	Sqm		
		MS Gri Jali	1/2	C 7.85 x 5.6 x 5.60			12.31	Sqm		
					Total in Sqm		13.20	Sqm		
		@ 50 Kg/Sqm			Total In Kg		659.94	Kg	172.60	113905.64
13	DSR/20 23/ 10.1	Structural steel work in single section, fixed without connecting plate including cutting hoisting, fixing in position and applying a priming coat of approved steel primer all complete								
		ISMB 250-5.60Mt @ 37.30kg/m	1				208.88			
		ISMB 150 - 3Mtr 14.90 kg/m	1				44.70			
						Total	253.58	kg	117.35	29757.61
14	DSR/20 23/ 19.72.A	Providing, laying, jointing and testing S&S centrifugally cast Ductile Iron double chamber class K-9 Pressure pipes conforming to IS 8329:2000 with restrained joints (bell less), all Complete								
	19.72.A. 9	500 mm nominal dia Pipe	1	10			10.00	Rm	11628.30	116283.00
15	DSR/20 23/ 19.16	Providing orange colour safety foot rest of minimum 6 mm thick plastic encapsulated as per IS 10910, on 12 mm dia steel bar conforming to IS 1786 having minimum cross section as 23 mmx25 mm and over all minimum length 263 mm and width as 165 mm with minimum 112 mm space between protruded legs having 2 mm tread on top surface by ribbing or checquering besides necessary and adequate anchoring projections on tail length on 138 mm as per standard drawing and suitable to with stand the bend test and chemical resistance test as per specifications and having								
		Foot Rest	32				32.00	Nos	553.70	17718.40
									Total [A]	1796798.00
CPWD Delhi Schedule of Rate 2023 (-1)% Labour Cess, ( ) 21.27% GST Factor included in Rates, (-)10% (+) revaling District Cost Index issued by UPPWD = 0.735 (For Base Cost Index-107 For Civil work and Electrical Work 0.735 x Total [A]									[B]	1320646.53
Cost at Badaun/Cost Index -106 (B x 1.06/1.07)									[C]	1306304.04

USED WATER MANAGEMENT LAR DISTRICT DEORIA

Detail Estimate of Sump Well At MPS (WARD - 10)

Sl. No.	DSR 2023	Description of Work	No.	L	B	H	Qty.	Unit	Rate (In Rs)	Amount (In Rs.)
1	2	3	4	5	6	7	8	9	10	11
									Add 18 % GST of Total (C)	235494 73
									Add Labour Cess 1% of Total (C)	13083 04
									Grand Total (C)	**1556981.81**
									SAY IN LACS	**15.57**

Design of Sump well in Ward 10 (Ram Mandir)

Ground Level of Pumping station	=	95.610 m
Plinth Level of Pumping station	=	95.610 +0.45 m
	=	96.060 m
Invert Level of Drain	=	94.96 m
Pumping Capacity at Peak Flow (as per Network Design)	=	95.00 LPS
i.e. Discharge (Q)	=	4.200 Cum/Min
Adopted Detention time (T)	=	15.00 Min
The Required capacity of Sump well	=	63 Cum.
Possible Depth below invert of Drain	=	3.50 m
Surface area of the sump well	=	18.00 Sqm.
Diameter Needed	=	5.00 m
Assuming Floor Clearance as	=	0.30 m
Total depth required	=	3.80 m
R.L. of sump well at floor level	=	91.16 m
Overall depth of sump well	=	**5.00 m**

Design of Pumping Plant for Lar Nagar Panchayat

Discharge in LPM	=	4200.00	LPM
Total Head in M.	=	5.00	M
Efficiency of Pumping Plant	=	70%	
Efficiency of Motor	=	87%	
Combined Efficiency	=	87% x 70%	
	=	0.609	
B.H.P.	=	$\frac{Q \times H}{4500 \times 0.609}$	
	=	$\frac{4200 \times 5}{4500 \times 0.609}$	
	=	7.66	
Adopted H.P.		**10.00**	

Provide 2 nos pump (1 Working + 1 Standby)

K.V.A Required for Sump Well

Total BHP consumed at Sump Well

1 No of Pumping Plant	=	1	
2 For Pumping Plant for Sump Well	=	10	BHP
in KW	=	7.46	
3 For Lighting Arrangement	=	2	KWh
Total BHP(KWh)	=	9.46	KWh

KVA	=	11.83
say		12 KVA
Taking 50% extra as Safety factor	=	18
Total KVA	=	18

Hence, next range of tranformer is of **25 KVA**

DESIGN FOR ECONOMIC SIZE OF RISING MAIN FROM SUMP WELL- RAM TEMPLE (Ward 10) TO NEAR INTERCEPTION OF DRAIN

1	Sewerage System to be pumped				
		Year	Peak Discharge		Population
	Initial	2025	6.084	MLD	
	Intermediate	2041	6.084	MLD	
	Ultimate	2056	6.084	MLD	
2	Length of Rising main			50	meter
3	Static head including residual head			4.50	meter
4	Design Period			30	Years
5	Combined efficiency of Pumping set			60	%
6	Cost of Pumping Unit Rs			15874	Per KW
7	Interest rate			10	%
8	Life of electrical motor & Pump			15	Years
9	Energy charges			6	Rs.per unit
10	Hours of Pumping			Average	
				18	Hours
11	Stand by KW 1st Stage			100.00%	%
12	Stand by KW 2nd Stage			100.00%	%

Input Data for Pipe

Dia of pipe (mm)	Pipe Material	/	Inside Lining in mm	C.C. Guniting	C" value of pipe	Cost of pipe (Rs.)
200	DI K-7				140	2326.15
250	DI K-7				140	2880.70
300	DI K-7				140	3518.25
350	DI K-7				140	4186.50
400	DI K-7				140	5084.55
450	DI K-7				140	6183.35

Solution

				1st 15 year	2nd15 years	
1)	Discharge at installation MLD			6.084	6.084	Mld
2)	Discharge at the end of 15 years			6.084	6.084	Mld
3)	Average discharge (MLD)			6.084	6.084	Mld
4)	Hours of pumping for discharge at the end of 15 years			18	18	hrs
5)	Average hours for pumping for average discharge			18.00	18.00	hrs
	Discharge in pumping hours			6.11	6.11	Mld
6)	KW required	1.53	H1		1.53	H2
7)	Annual cost of electrical energy	52594.56	KW1		52594.55	KW2
	=	80607.01	H1		80587.01	H2

Table1 showing velocity and loss of head for diff pipe size

Sr no	Pipe size in mm	Frictional head loss per 1000 meter		Velocity in m/sec		1st stage flow			2nd stage flow		
		1st stage flow 8.11 MLD	2nd stage 8.11 MLD	1st stage	2nd stage	Frictional loss (in mt.)	Other losses 10% of friction loss	Total losses H1 including static head 45 (in mt.)	Frictional (in mt.)	Other 10% of friction	Total 45 (in mt.)
1	200	35.93	35.93	2.99	2.99	1.80	0.18	0.46	1.80	0.18	5.48
2	250	12.12	12.12	1.91	1.91	0.61	0.06	5.17	0.61	0.06	5.17
3	300	4.99	4.99	1.33	1.33	0.25	0.02	4.77	0.25	0.02	4.77
4	350	2.35	2.35	0.98	0.98	0.12	0.01	4.63	0.12	0.01	4.63
5	400	1.23	1.23	0.75	0.75	0.06	0.01	4.57	0.06	0.01	4.57
6	450	0.69	0.69	0.59	0.59	0.03	0.00	4.54	0.03	0.00	4.54

TABLE 2 SHOWING KILOWATTS REQUIRED AND COST OF PUMP SETS FOR DIFFERENT PIPE

Sr no	Pipe size in mm	1st stage flow			2nd stage flow		
		H1 total head loss (in m)	Kw required with stand by	Cost of Pump (Rs. in thousand)	H2 total head loss (in m)	Kw required with stand by	Cost of Pump (Rs. in thousand)
1	200	5.48	19.87	315	5.48	19.87	315
2	250	5.17	15.85	252	5.17	15.85	252
3	300	4.77	14.65	233	4.77	14.65	233
4	350	4.63	14.20	225	4.63	14.20	225
5	400	4.57	14.01	222	4.57	14.01	222
6	450	4.54	13.92	221	4.54	13.92	221

TABLE 3 SHOWING COMPARATIVE STATEMENT OF OVER ALL COST STRUCTURE OF PUMPING MAIN FOR DIFF. PIPE SIZES

Sr no	Pipe size in mm	Total head in (mt)		Cost of Pipeline of length mts. 50	Cost of Pump	Annual cost of energy charges	Energy charges capitalized	Total capitalized cost	Cost of Pump	Annual cost of energy charges	Energy charges capitalized	Initial capital investment for pumpset & annual electrical	Grand total of capitalized cost for 30 years
		1st stage	2nd stage										
1	200	6	6	116	315	523	3978	4409	315	523	3978	1028	5437
2	250	5	5	144	252	417	3172	3567	252	417	3172	820	4387
3	300	5	5	176	233	385	2928	3337	233	385	2928	757	4094
4	350	5	5	209	225	374	2845	3279	225	374	2845	735	4014
5	400	5	5	254	222	369	2807	3281	222	369	2807	725	4008
6	450	5	5	308	221	366	2784	3313	221	366	2784	719	4032

Table 3 shows that the most economical size of Main is 400 mm casing Capitalised Rs. 4008263.60

Dia of economical size of rising main 450 mm

SBP
DESIGN FOR ECONOMIC SIZE OF PUMPING MAIN
Pipe Dia in mm
Total Cost

Estimate of Gaurd Room

S.No	DSR No.	Description of Item	Unit	No.	Length	Width	Height	Quantity	Rate	Amount in Rs.
1	DSR 2023 2.8	Earth work in excavation by mechanical means (Hydraulic excavator) / manual means in foundation trenches or drains (not exceeding 1.5 m in width or 10 sqm on plan), including dressing of sides and ramming of bottoms, lift upto 1.5 m, including getting out the excavated soil and disposal of surplus excavated soil as directed, within a lead of 50 m								
	2.8.1	All kinds of soil.								
		230 mm wall (L= (2.33+3.23)X2=11.12 M	cum.	1	11.12	0.85	0.80	7.56		
						Total		7.56	260.30	1968.28
2	DSR 2023 2.25	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 ramming and watering, lead up to 50 m and lift upto 1.5 m								
		Filling available excavated earth / Total qty of Excavated earth	cum.					7.56		
		Less PCC	cum.					-0.95		
						Total		6.62	196	1296.81
3	DSR 2023 4.17	Making plinth protection 50mm thick of cement concrete 1:3:6 (1 cement : 3 coarse sand (zone-III) derived from natural sources : 6 graded stone aggregate 20 mm nominal size derived from natural sources) over 75mm thick bed of dry brick ballast 40 mm nominal size, well rammed and consolidated and grouted with fine sand, including necessary excavation, levelling & dressing & finishing the top smooth.								
		Area	Sqm	1	12.04		0.450	5.42		
							Total	5.42	749.3	4059.71

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S.No	DSR No.	Description of Item	Unit	No.	Length	Width	Height	Quantity	Rate	Amount in Rs.
4	DSR 2023 2.27	Supplying and filling in plinth with sand under floors, including watering, ramming, consolidating and dressing complete								
		Guard Room	Cum.	1	2.10	3.00	0 10	0.63		
							Total	0.63	2123.75	1337.96
5	DSR 2023 4.1	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level								
	4.1.8	1 4·8 (1 Cement : 4 coarse sand (zone-III) derived from natural sources . 8 graded stone aggregate 40 mm nominal size derived from natural sources								
		. 230 mm wall foundation base	cum.	1	11 12	0 85	0.10	0.95		
		PCC under Floor	Cum.	1	2 10	3.00	0.10	0.63		
							Total	1.58	6812	10730.26
6	DSR 2023 4.10	Providing and laying damp-proof course 40mm thick with cement concrete 1:2·4 (1 cement : 2 coarse sand (zone-III) derived from natural sources 4 graded stone aggregate 12 5mm nominal size derived from natural sources)								
		DPC 40 mm thick	Sqm	1	11.12	0.23		2.56		
							Total	2.56	410.85	1050 79
7	DSR 2023 5.3	Reinforced cement concrete work in beams, suspended floors, roofs having slope up to 15° landings, balconies, shelves, chajjas, lintels, bands, plain window sills, staircases and spiral stair cases above plinth level up to floor five level, excluding the cost of centering, shuttering, finishing and reinforcement with 1 1 5·3 (1 cement : 1 5 coarse sand(zone-III) derived from natural sources : 3 graded stone aggregate 20 mm nominal size derived from natural sources)								

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S.No	DSR No.	Description of Item	Unit	No.	Length	Width	Height	Quantity	Rate	Amount in Rs.
		Lintel Band for door and Window								
		D1	Cum	1	1 00	0 23	0.150	0.03		
		W	Cum	1	1 30	0 23	0.150	0.04		
		Slab	Cum	1	4.00	4.67	0 11	2 05		
							Total	**2.13**	11505.5	24554.46
8	DSR 2023 5.9	**FORM WORK** Centering and shuttering including strutting, propping etc. and removal of form for								
a	5.9.5	Lintels, beams, plinth beams, girders, bressumers and cantilevers					**b+2d**			
		For Lintel Band	Sqm	1	1.00		0 530	0.53		
		W	Sqm	1	1.30		0 530	0 69		
							Total	**1.22**	736 4	897.67
b	5.9.3	Suspended floors, roofs, landings, balconies and access platform								
		For Slab	Sqm	1	4.00	4.67		**18.68**		
		For Slab Sides	Sqm	2	8.67		0.11	**1.91**		
		Less for Wall	Sqm	2	6.02		0.23	**2.77**		
							Total	**17.82**	927 25	16521.93
9	DSR 2023 5.22	Steel reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete upto plinth level								
	5.22.6	Thermo-Mechanically Treated bars of grade Fe-500D or more.								
		Total QTY of RCC	Cum					2.13		
		@1% Of Qty of Rcc						0.0213		
			Kg				**Total**	**167.53**	107.85	18068 19

763

S.No	DSR No.	Description of Item	Unit	No.	Length	Width	Height	Quantity	Rate	Amount in Rs.
10	DSR 2023 6.1	Brick work with common burnt clay F P.S (non modular) bricks of class designation 7.5 in foundation and plinth in:								
	6.1.1	Cement mortar 1.4 (1 cement : 4 coarse sand)								
	(a)	In 230 mm wall								
		1st footing	cum.	1	11.12	0.69	0.15	1.15		
		2nd footing	cum.	1	11.12	0.58	0.15	0.96		
		3rd footing	cum.	1	11.12	0.46	0.15	0.77		
		4th footing	cum.	1	11.12	0.35	0.15	0.58		
		5th up to plinth beam	cum.	1	11.12	0.23	0.15	0.38		
							Total	3.84	7370.65	28276.76
11	DSR 2023 6.4.2	Brick work with common burnt clay F P.S. (non modular) bricks of class esignation 7.5 in superstructure above plinth level up to floor V level in all shapes and sizes in Cement mortar 1:6 (1 cement 6 coarse sand)								
		230 mm wall	cum.	1	11.12	0.23	2.70	6.91		
		Deduction for door & Window								
		D1	cum.	1	0.90	0.23	2.10	-0.43		
		W	cum.	1	1.20	0.23	1.20	-0.33		
		V	cum.	1	0.60	0.23	1.20	-0.17		
							Total	5.97	9105.95	54399.13
12	DSR 2023 13.1.2	12 mm cement plaster of mix : 1.6 (1 cement: 6 fine sand)								
		Internal plaster: Cement Plaster - 1: 6			2x(L+B)					
		Guard Room	Sqm.	1	10.20		2.70	27.54		
		Deduction								
		Door- D1	Sqm.	1	1.20		2.10	-2.52		
		Window- W	Sqm.	1	1.20		1.20	-1.44		
							Total	23.58	333.35	7860.39

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S.No	DSR No.	Description of Item	Unit	No.	Length	Width	Height	Quantity	Rate	Amount in Rs.
13	DSR 2023 13.2.2	15 mm cement plaster on the rough side of single or half brick wall of mix : 1:6 (1 cement. 6 fine sand)								
		External plaster: Cement Plaster - 1: 6			2x(L+B)					
		Out Side	Sqm.	1	12.04		2.85	34.31		
						Total		34.31	383	13142.26
14	DSR 2023 13.16.1	6 mm cement plaster of mix :1.3 (1 cement : 3 fine sand)								
		Ceiling plaster : **Cement Plaster - 1: 3**								
		Pump Room	Sqm.	1	2.10	3.00		6.30		
						Total		6.30	300.45	1892.84
15	DSR 2023 10.11	Providing and fixing factory made ISI marked steel glazed doors, windows and ventilators, side /top /centre hung. with beading and all members such as F7D,F4B, K11 Band K12 B etc. complete of standard rolled steel sections, joints mitred and flash butt welded and sash bars tenoned and riveted. including providing and fixing of hinges, pivots, priming coat of approved steel primer, but excluding the cost of other fittings.glass panes complete all as per approved design. (sectional weight of only steel members shall be measured for payment)								
	10.11.1	Fixing with 15x3 mm lugs 10 cm long embedded in cement concrete block 15x10x10 cm of C.C. 1.3.6 (1 Cement : 3 coarse sand 6 graded stone aggregate 20 mm nominal size)								
		Windows	kg	1	1.20	1.20		1.44	20	28.80
		1.44 sqm @ 20kg/m^2								
		W	Rm.	1	1.20			1.20		
						Total (kg)		28.80	131.05	3774.24

S.No	DSR No.	Description of Item	Unit	No.	Length	Width	Height	Quantity	Rate	Amount in Rs.
16	DSR 9.20	Providing and fixing ISI marked flush door shutters conforming to IS : 2202 (Part I) decorative type, core of block board construction with frame of 1st class hard wood and well matched teak 3 ply veneering with vertical grains or cross bands and face veneers on both faces of shutters								
	9.20.2	30 mm thick including ISI marked Stainless Steel butt hinges with necessary screws								
		Door -D	Sqm.	1	0.90		2.10	1.89		
						Total		1.89	3167.95	5987.43
17	DSR 10.13	Providing and fixing T-iron frames for doors, windows and ventilators of mild steel Tee-sections, joints mitred and welded, including fixing of necessary butt hinges and screws and applying a priming coat of approved steel primer.								
	10.13.1	Fixing with 15x3 mm lugs 10 cm long embedded in cement concrete block 15x10x10 cm of C.C. 1:3:6 (1 Cement : 3 coarse sand : 6 graded stone aggregate 20 mm nominal size). @ 3.00 kg/m	Kg			5.10		15.30	141.70	2168.01
18	DSR 10.30	Providing & fixing glass panes with putty and glazing clips in steel doors,windows, clerestory windows, all complete with :								
	10.30.1	4.0 mm thick glass panes	sqm		1.20		1.20	1.44	1064.65	1533.10
19	DSR 9.70	Providing and fixing IS : 12817 marked stainless steel butt hinges with stainless steel screws etc complete :								
	9.70.1	125x64x1.90 mm	Each	4				4.00	118.20	472.80
20	DSR 9.96	Providing and fixing aluminium sliding door bolts, ISI marked anodised (anodic coating not less than grade AC 10 as per IS 1868), transparent or dyed to required colour or shade, with nuts and screws etc. complete :								
	9.96.1	300x16 mm	Each	1				1.00	303.25	303.25

S.No	DSR No.	Description of Item	Unit	No.	Length	Width	Height	Quantity	Rate	Amount in Rs.
21	DSR 9.97	Providing and fixing aluminium tower bolts, ISi marked, anodised (anodic coating not less than grade AC 10 as per IS : 1868) transparent or dyed to required colour or shade, with necessary screws etc. complete :								
	9.97.3	200x10 mm	Each	2				2.00	99.70	199 40
22	DSR 9.100	Providing and fixing aluminium handles, ISi marked, anodised (anodic coating not less than grade AC 10 as per IS : 1868) transparent or dyed to required colour or shade, with necessary screws etc. complete :								
	9.100.1	125 mm	Each	2				2.00	66.25	132.50
23	DSR 9.101	Providing and fixing aluminium hanging floor door stopper, ISi marked, anodised (anodic coating not less than grade AC 10 as per IS : 1868) transparent or dyed to required colour and shade, with necessary screws etc. complete.								
	9.101.1	Single rubber stopper	Each	1				1 00	39.60	39.60
24	DSR 13.50	Applying priming coat:								
	13.50.2	With ready mixed aluminium primer of approved brand and manufacture on resinous wood and plywood								
		D1 (Front & back)	SQM	2	1.10		2.10	4.62		
		W (For Both Side)	SQM	1	1.20		1.20	1.44		
							Total	6.06	74.65	452.38
25	DSR 2023 13.37	White washing with lime to give an even shade :								
	13.37.1	New work (three or more coats)								
		Same as Outer side plaster	sqm.	1	34.31			34.31		
		Same as Ceilling plaster	sqm.	1	6.30			6.30		
								40.61	39.05	1585 98

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S.No	DSR No.	Description of Item	Unit	No.	Length	Width	Height	Quantity	Rate	Amount in Rs.
26	DSR 2023 13.41	Distempering with oil bound washable distemper of approved brand and manufacture to give an even shade :								
	13.41.1	New work (two or more coats) over and including water thinnable priming coat with cement primer								
		Same as Inner plaster	sqm.	1	23.38			23.38	185.65	4340.50
27	DSR 2023 11.3	Cement concrete flooring 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate) finished with a floating coat of neat cement, including cement slurry, but excluding the cost of nosing of steps etc. complete.								
	11.3.1	40 mm thick with 20 mm nominal size stone aggregate	Sqm.	1	2.10	3		6.30		
							Total	6.30	614.2	3869.46
28	DSR 2023 13.62	Painting with synthetic enamel paint of approved brand and manufacture of required colour to give an even shade :								
	13.62.1	Two or more coats on new work over an under coat of suitable shade with ordinary paint of approved brand and manufacture								
		Door- D1	Sqm.	2	1.20		2.10	4.20		
		Window	Sqm	1	1.20		1.20	1.44		
						Total		5.64	226.25	1276.05
								Total In Rs [A]		212220.94
CPWD Delhi Schedule of Rate 2023 (-1)% Labour Cess. (-) 21.27% GST Factor included in Rates , (-)10% (+) revailing District Cost Index Issued by UPPWD = 0.735 ,For Base Cost Index-107 For Civil work and Electrical Work 0.735 x Total [A]								[B]		155982.39
Cost at Badaun/Cost Index -106 (B x 1.06/1.07)								[C]		154524.61
								Add 18 % GST of Total (C)		27814.43
								Add Labour Cess 1% of Total (C)		1545.25
								Grand Total [C]		183884.29

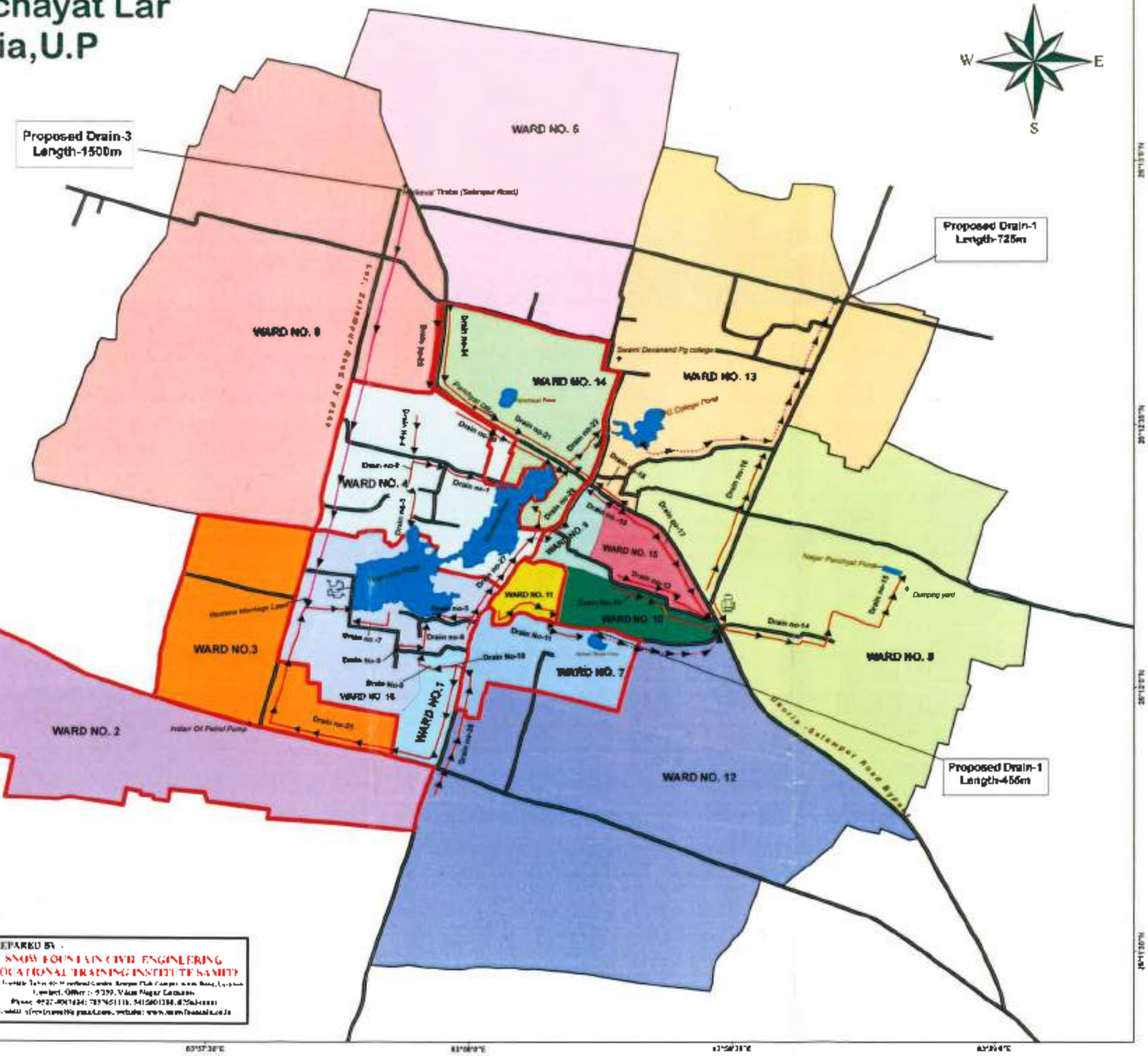
S.No	OSR No.	Description of Item	Unit	No.	Length	Width	Height	Quantity	Rate	Amount in Rs.
									Say in Lacs	1.84

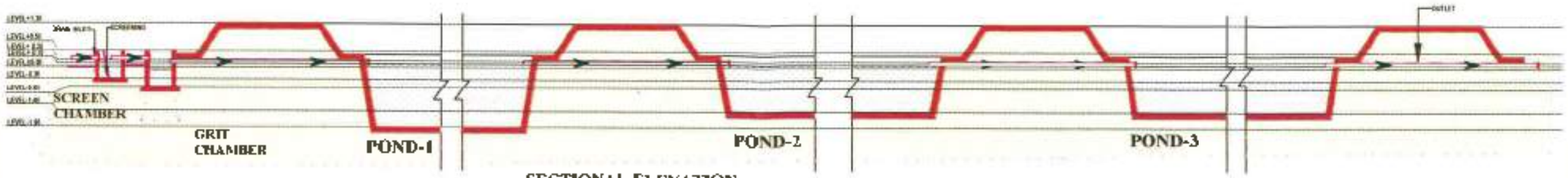
Estimate of External Electrical Work for Waste (Transformer Street Light ,LT Line , DG Sets) Ram Temple (Ward 10)						
S.No.	SOR No.	Description	Unit	Qty	Rate	Amount
1	DSR 11 1.4	Supply and Erection of RCC/PCC pole of Having Solar Pannel Monocrystalline 55 watt 11 1V LED, 30 WATT, LUMEN Along With Battery LI - ION 20AH Pole Of 8 meter Hite	Each	5	17000	85000
2	MES ITEM NO 365	LT CABLE: Supply and laying and testing cable XLPE insulated, screened, PVC bedded, galvanized steel strip or wire armoured, electric power cables (heavy duty) 1100 Volts grade with stranded aluminium conductor of size 50 sq mm 3½ core	Mtr	20	879	17580
3	UPPWD 506 e	HT CABLE: Supply and laying of 3 core standered aluminiumconductor XLPE (Cross linked polyethylene) insulatedPVC bedded, Galvanisedflat steel strip armoured cables confirmingto I S 7098 (Part-II with latest amendments) II KV grade at a depth of 900 mm below ground level over a cushion of 100 mm thick fine river sand all around and protected with well burnt bricks on sides and on top put across. The armouringof cable shall be properly connected with earth conductor by clamps etc	Mtr	100	1263	126300
4	MES ITEM NO 32	Transformer Supplying and Installation, testing and commissing of 33 kvi or 11kv/0 433 kv substation equipment comprising HT panel , transformers, HT cable, bus trunking from transformer to LT Panel , L I Panels , automatic power factor correction pannel active harmonic filters, TVSS (transient voltage suppression system)), SPD (surge protection system), essential panel earthing required inter-connections, substation safety equipments including I T cabling from substation to the buildings led by the substation.	25 KVA	2	128025	256050
5	MES ITEM NO 24	DG Set Supplying, installation, testing and commissioning of silent type 25 KVA Capacity DG sets, with AMF panel, bus coching/cables from DG set to essential panel, synchronizing panel where required, DG set enclosure room sound insulation/ventilation/smoke exhaust as required, earthing of DG set system, control cabling fuel tank/piping, DG set exhaust piping/exhaust chimney as per CPCB norms, civil works connected with DG sets including foundation as required.	25 KVA	1	345125	345125
6	DSR 5 4	Earthing: supply and laying Earthing complete with galvanised steel earth plate electrode 60×60cm × 6mm thick, buried directly in ground (earth pit not less than 2.25 metres deep below ground level) with top edge of the plate not less than 1 5 metres below normal ground level, connected to galvanised earth lead wire 4 0mm dia by means of bolts, nuts, check nuts and washers of galvanised iron or steel all as shown in electrical plate No. 3 connected to earthing test point all as specified or indicated including testing on completion with using galvanished iron strip 32 x 6 mm as earthing lead(4 for DG set+4 for Transformer+2 for APFC Panel)	Each	10	7472	74720
7	MES ITEM NO 1052	Pump: Submersible pump, electric driven 415 V, TP suitable for 200/250 mm dia bore well (Casing pipe size 200/250 mm) supply and Insall complete in all respect of 25 HP inclusive of 40 meter long submersible cable and Duel starter	HP	2	15874	31748
					Total	936523
					Says In Lakhs	9.37

अधिशासी अधिकारी
नगर पंचायत लार
देवरिया

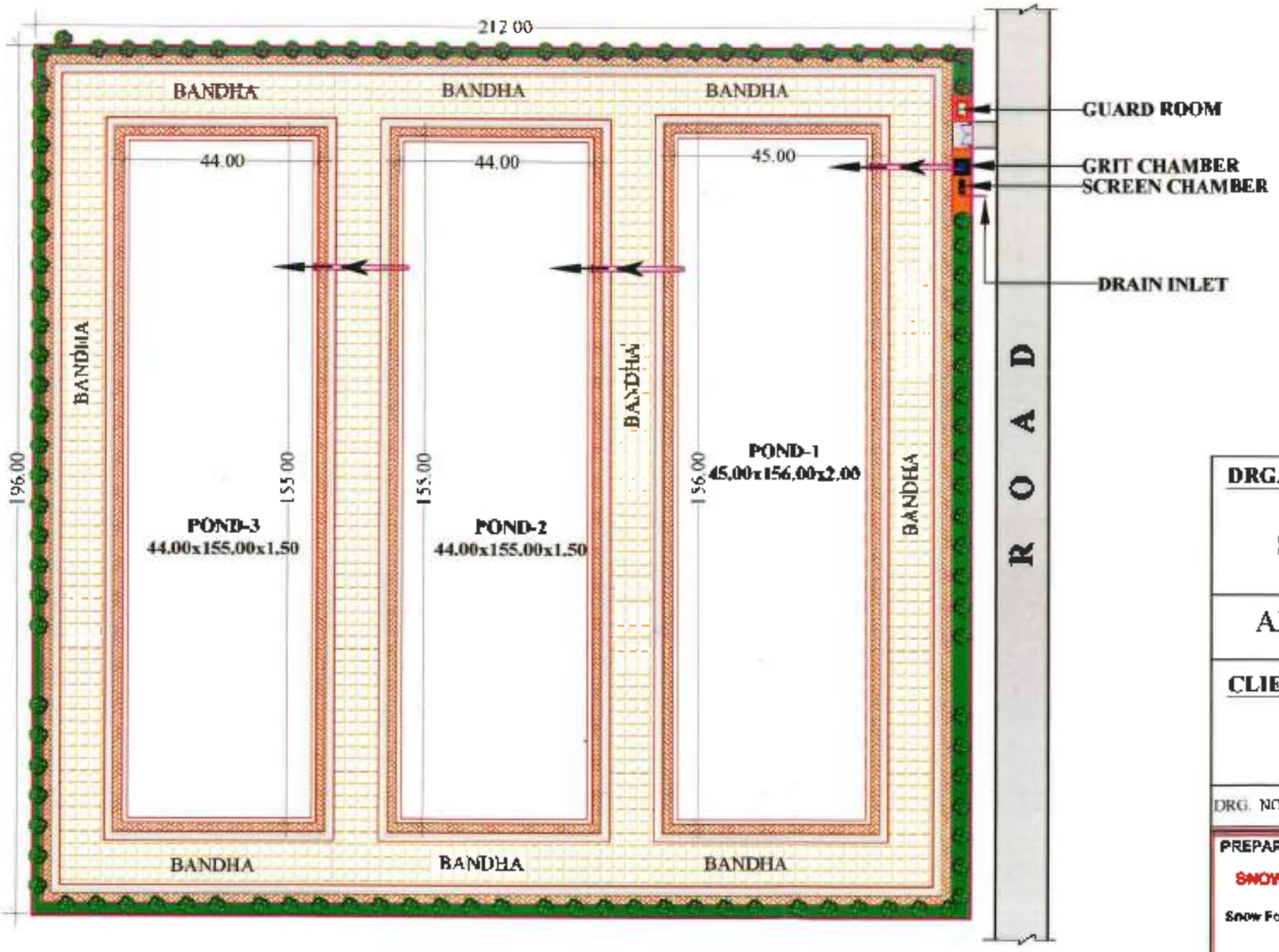
DRAWINGS

Map of Nagar Panchayat Lar
District - Deoria,U.P





SECTIONAL ELEVATION



DRG. TITLE

LAYOUT PLAN AND SECTIONAL ELEVATION

AREA = 41649.22 SQMT.

CLIENT:

EXECUTIVE OFFICER.
NAGAR PANCHAYAT- LAR
DISTRICT- DEORIA

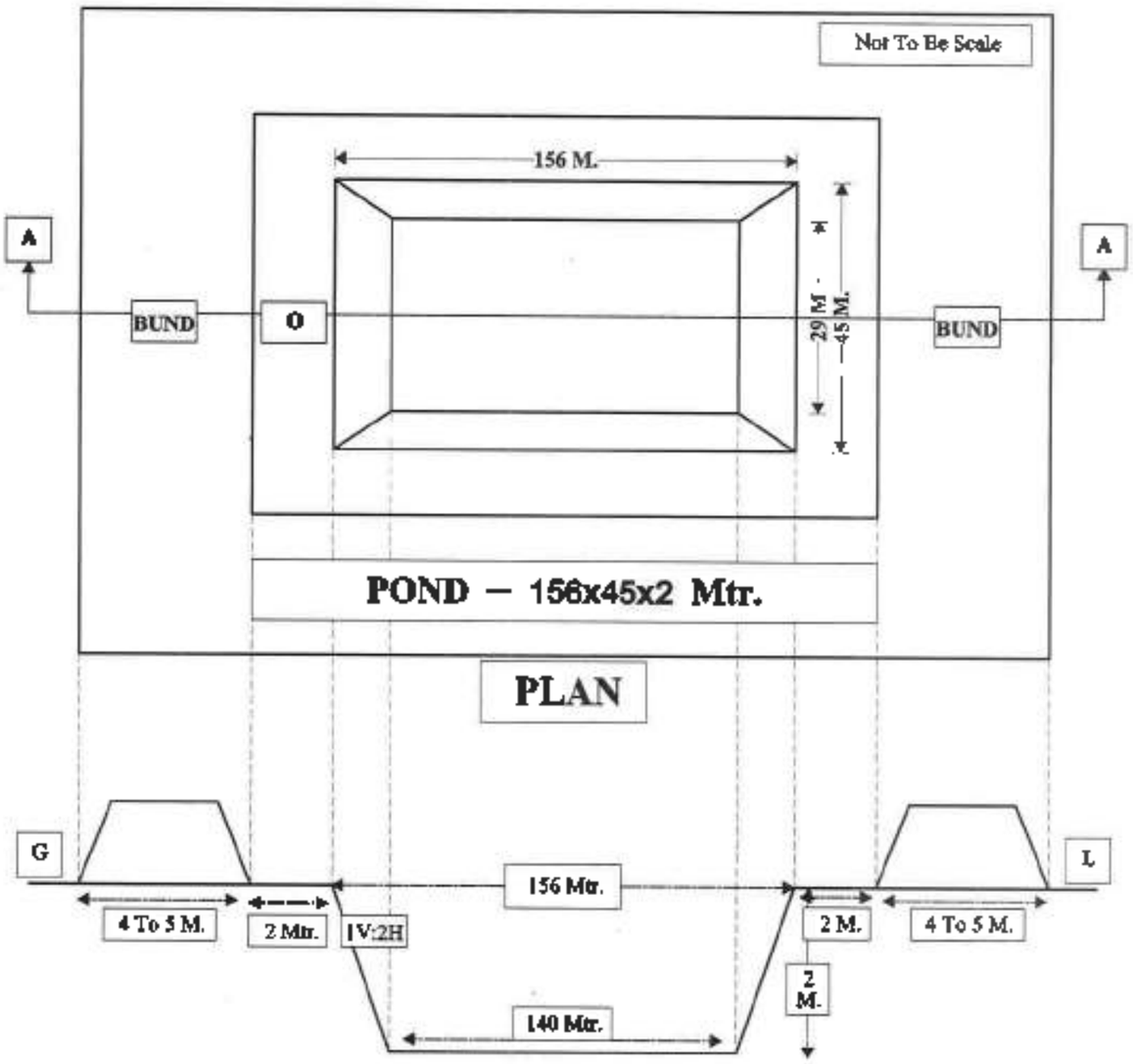
DRG. NO -LAYOUT PLAN.SECTION	DATE: NOV. - 2024	A3

PREPARED BY:-

SNOW FOUNTAIN CIVIL ENGINEERING VOCATIONAL TRAINING INSTITUTE SAMITI
Snow Fountain Tower 46- Woodland Garden, Scorpio Club Campus, Kursi Road, Lucknow
Contact, Office :- 5/260, Vikas Nagar Lucknow
Phone: 0522-4047624; 7897651111, 9415009208, 8765341111
E-mail: sfcevtisamiti@gmail.com; website: www.snowfountain.co.in

NAGAR PANCHAYAT- LAR
DISTRICT- DEORIA

POND-1
Anaerobic Pond



SECTIONAL ELEVATION ON AA

CLIENT:

EXECUTIVE OFFICER,
NAGAR PANCHAYAT- LAR
DISTRICT- DEORIA

DRG. NO.-CROSS SECTION	DATE: NOV. - 2024	A3, A4

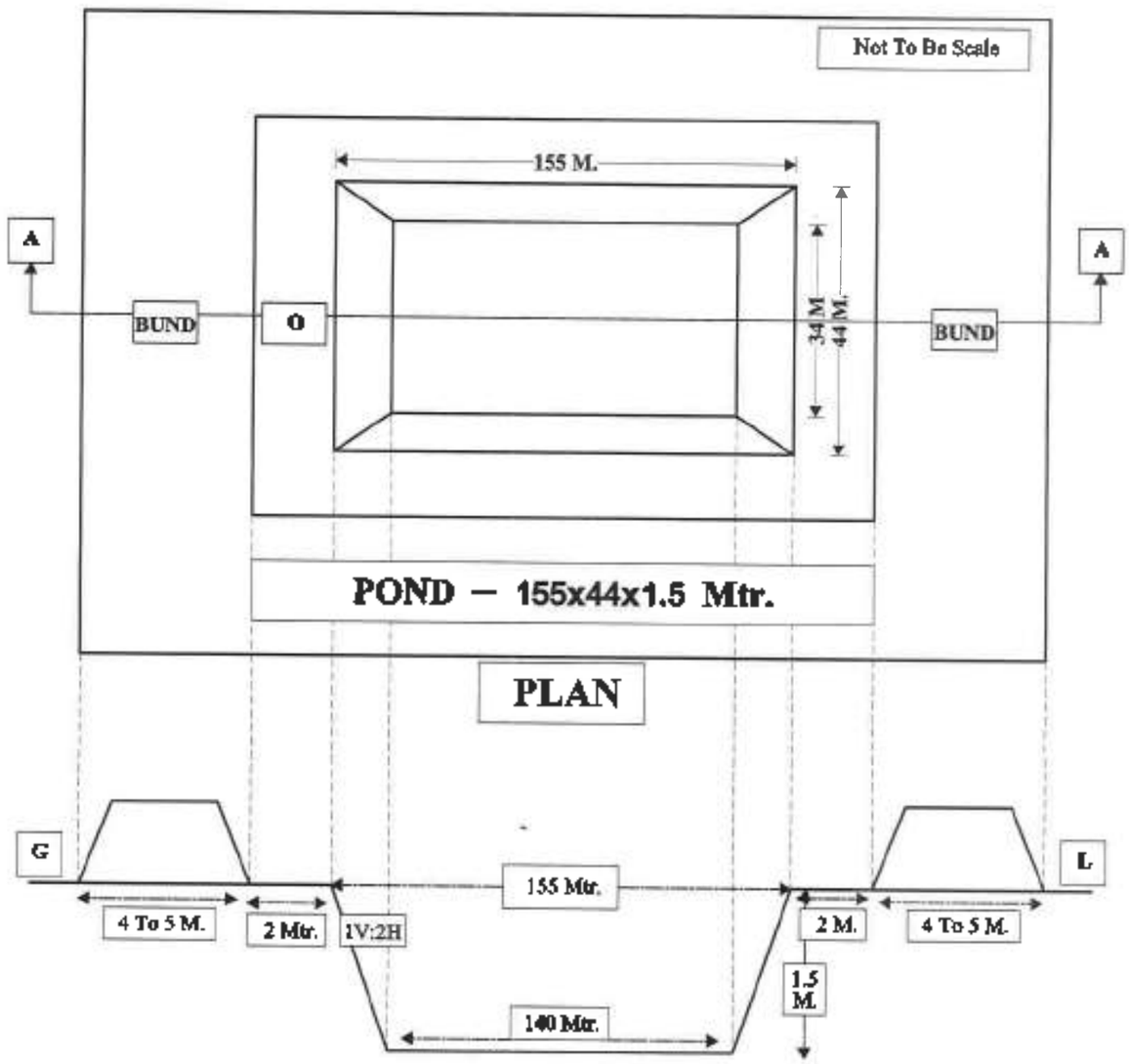
PREPARED BY:-

SNOW FOUNTAIN CIVIL ENGINEERING VOCATIONAL TRAINING INSTITUTE SAMITI

Snow Fountain Tower 48- Woodland Garden, Scorpio Club Campus, Kursi Road, Lucknow
Contact, Office :- 5/259, Vikas Nagar Lucknow
Phone: 0522-4047624; 7897651111, 9415001206, 8765341111
E-mail: sfcevtisamiti@gmail.com; website: www.snowfountain.co.in

NAGAR PANCHAYAT- LAR
DISTRICT- DEORIA

POND-2
Aerobic Pond



CLIENT:

EXECUTIVE OFFICER,
NAGAR PANCHAYAT- LAR
DISTRICT- DEORIA

DRG. NO.-CROSS SECTION	DATE: NOV. - 2024	A3, A4

PREPARED BY:-

SNOW FOUNTAIN CIVIL ENGINEERING VOCATIONAL TRAINING INSTITUTE SAMITI

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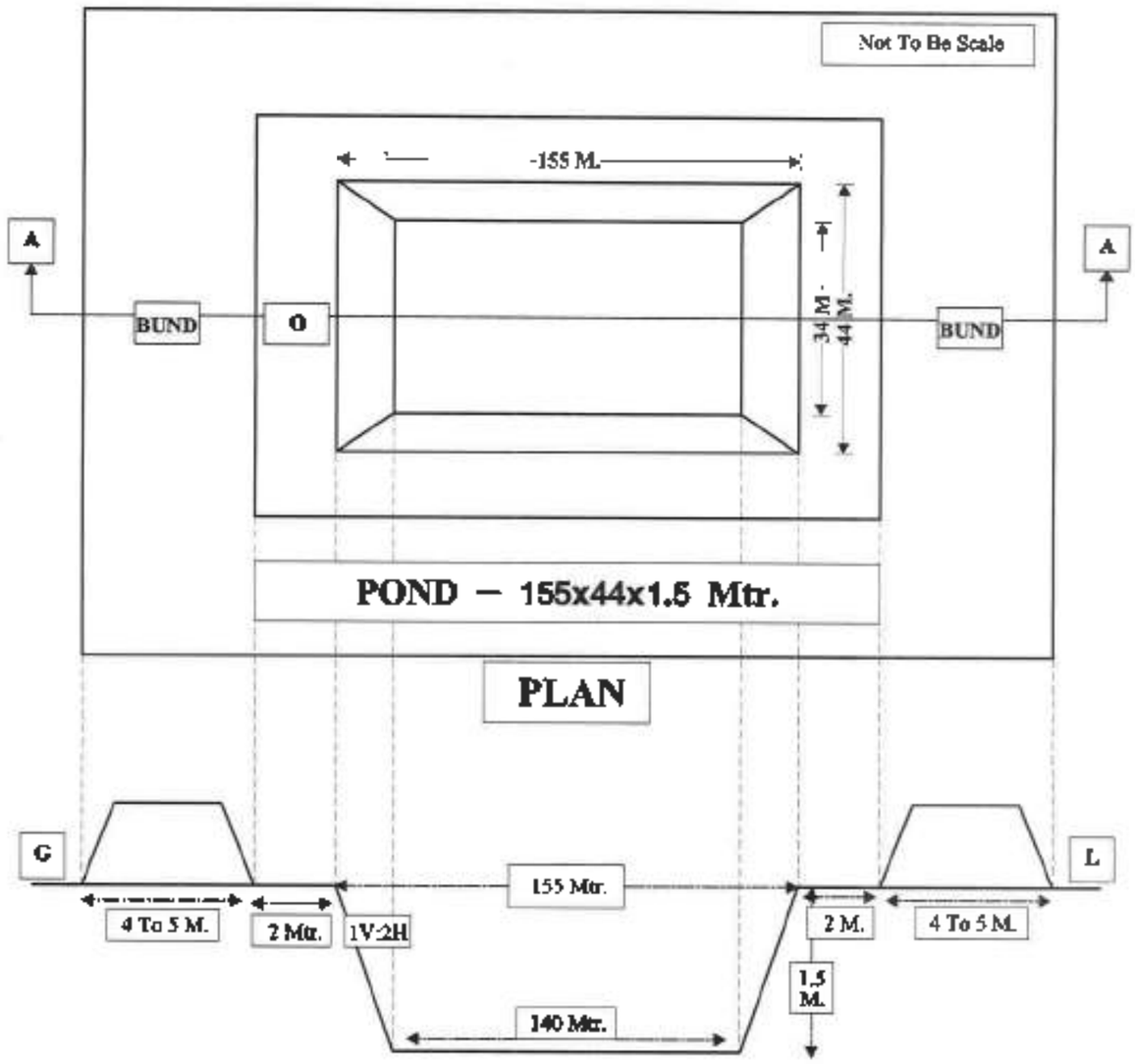
E-mail: sfcevtisamiti@gmail.com; website: www.snowfountain.co.in

NAGAR PANCHAYAT- LAR
DISTRICT- DEORIA

POND-3
Facultative Pond



CLIENT:

EXECUTIVE OFFICER,
NAGAR PANCHAYAT- LAR
DISTRICT- DEORIA

DRG. NO.-CROSS SECTION	DATE: NOV. - 2024	A3, A4

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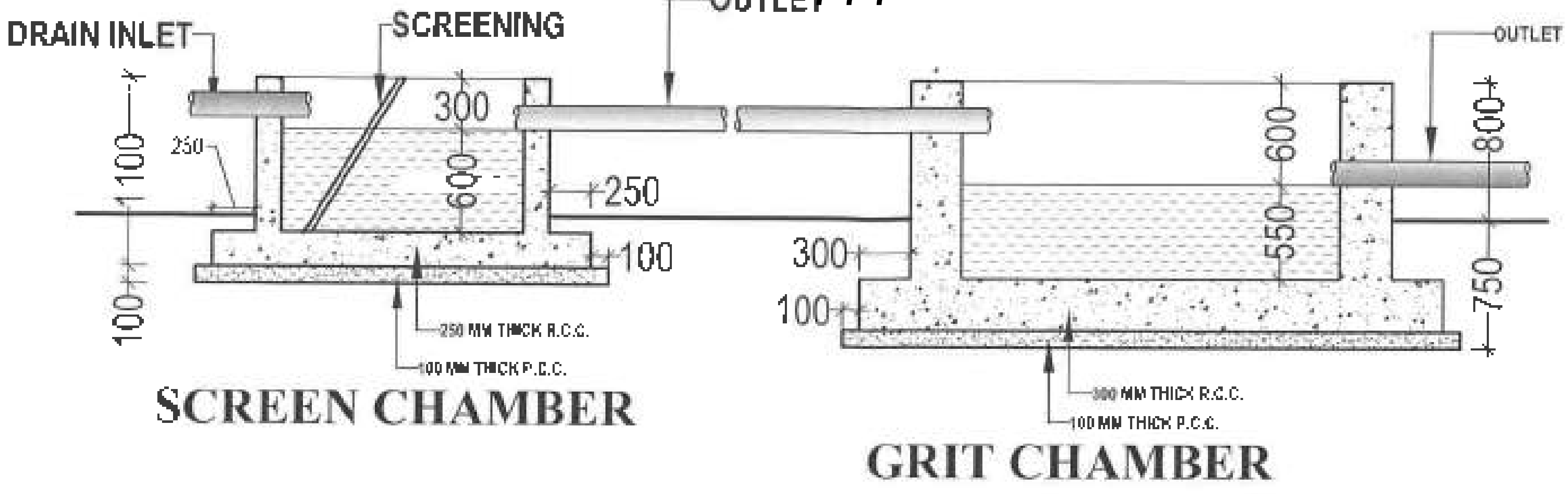
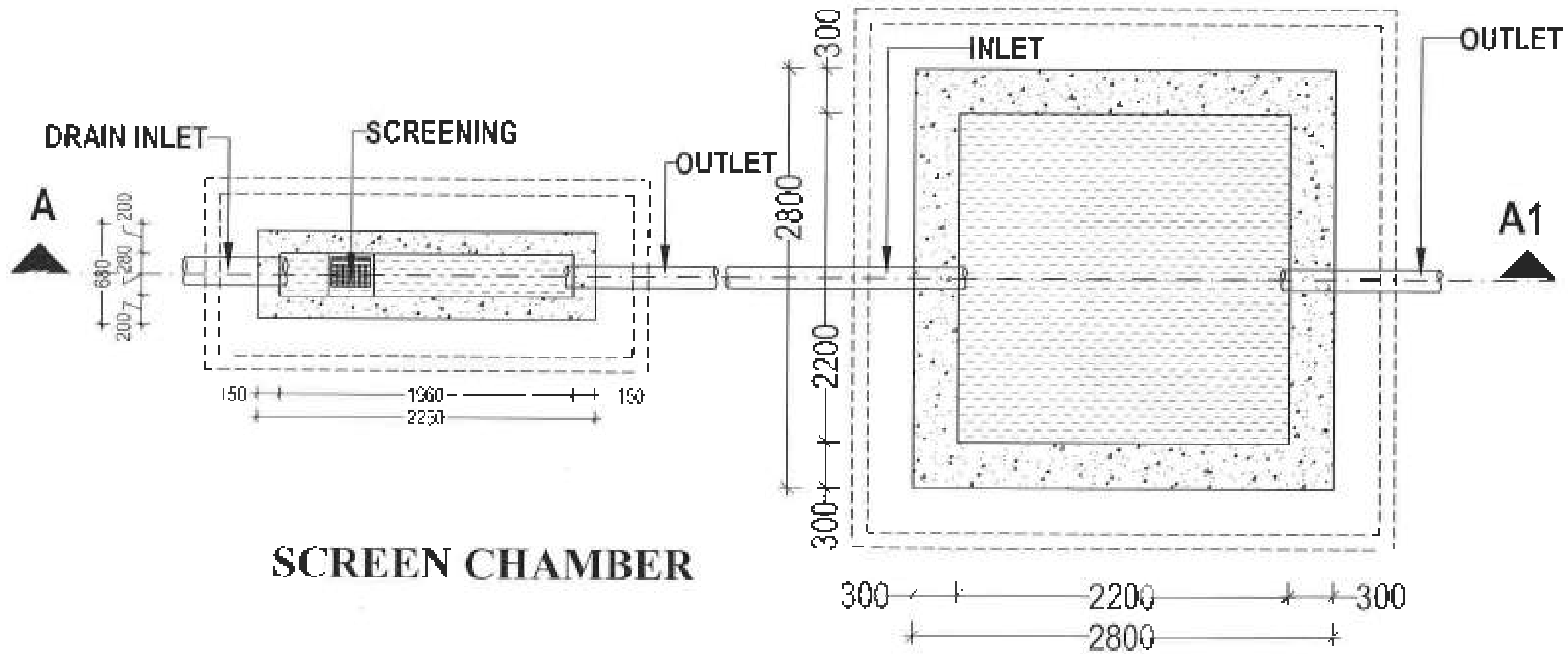


SECTION AT A-A1



PLAN

DRG. TITLE

SCREEN CHAMBER AND GRIT CHAMBER PLAN , SECTION

CLIENT: EXECUTIVE OFFICER, NAGAR PANCHAYAT LAR, DISTRICT DEORIA

DRAWN BY

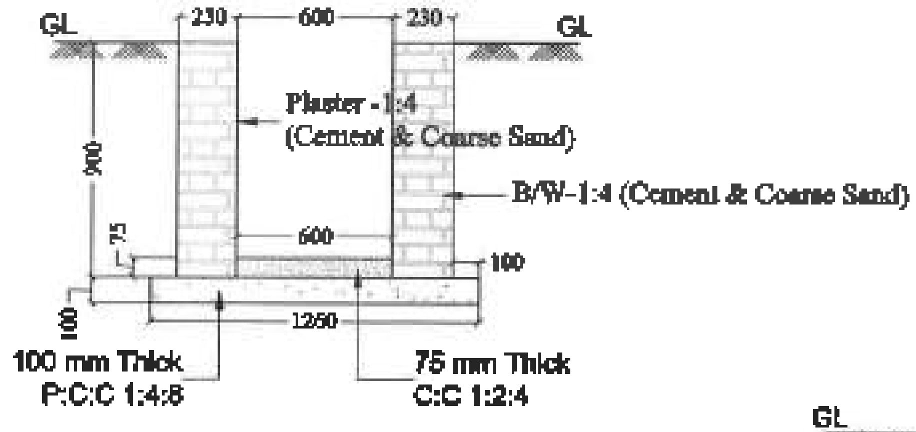
DRG. NO. | DATE NOV. 2024

PREPARED BY :

SNOW FOUNTAIN CIVIL ENGINEERING VOCATIONAL TRAINING INSTITUTE SAMITI

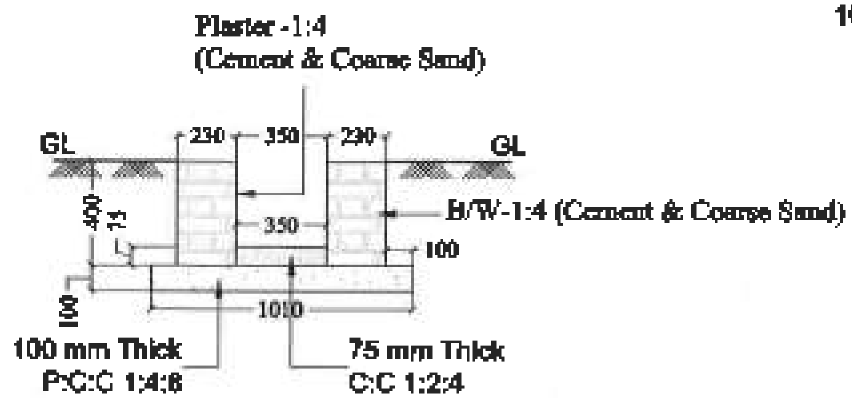
SHEET-2

NAGAR PANCHAYAT- LAR
DISTRICT- DEORIA



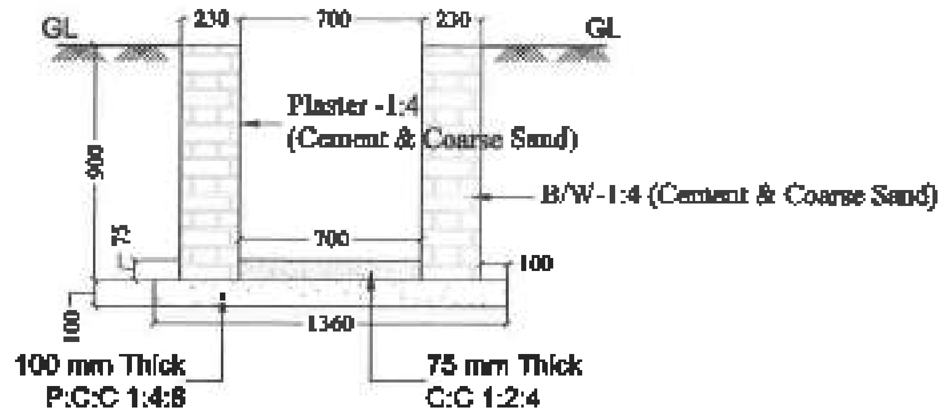
TYPICAL CROSS SECTION OF PROPOSED DRAIN (SIZE 600X900 MM)

LOCATION- HARI KEVAL TO RESHMA MARRIAGE LAWN



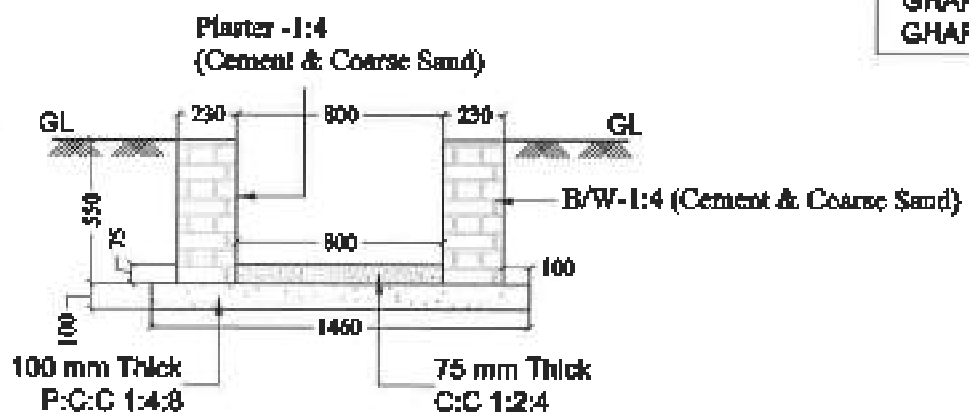
TYPICAL CROSS SECTION OF PROPOSED DRAIN (SIZE 350X400 MM)

LOCATION- LALAN PRASAD KE GHAR SE SHAMSHAD HASHMI KE GHAR TAK



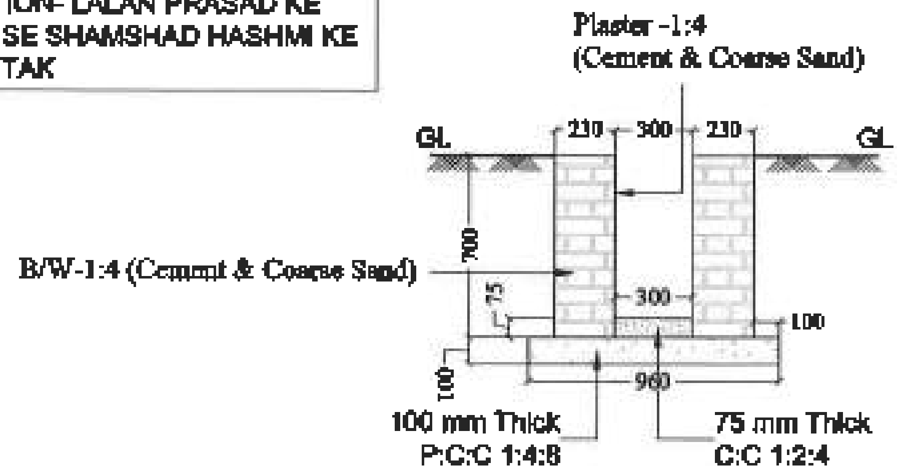
TYPICAL CROSS SECTION OF PROPOSED DRAIN (SIZE 700X900 MM)

LOCATION- MUNNA SINGH KE GHAR SE JAGRNATH KE GHAR HOTE HUE SHAHID MAZAR WALA POKHRA TAK



TYPICAL CROSS SECTION OF PROPOSED DRAIN (SIZE 800X550 MM)

LOCATION- YADAV PAAN BHANDAR SE GANDHI MODE TAK



TYPICAL CROSS SECTION OF PROPOSED DRAIN (SIZE 300X700 MM)

LOCATION- RAFIQ PAAN SHOP SE JANTA MEDICAL HALL TAK

DRG. TITLE

CROSS SECTIONS OF DRAINS

CLIENT:

EXECUTIVE OFFICER,
NAGAR PANCHAYAT- LAR
DISTRICT- DEORIA

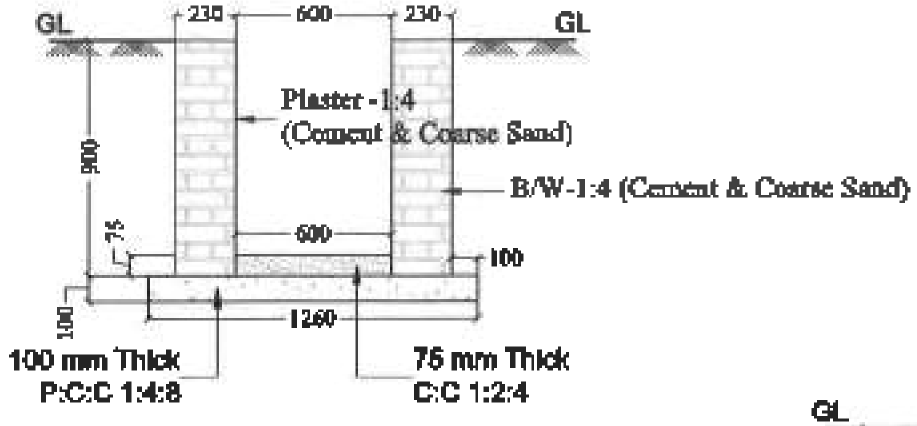
DRG. NO.-CROSS SECTION	DATE: NOV. - 2024	A3, A4

PREPARED BY:-

SNOW FOUNTAIN CIVIL ENGINEERING VOCATIONAL TRAINING INSTITUTE SAMITI

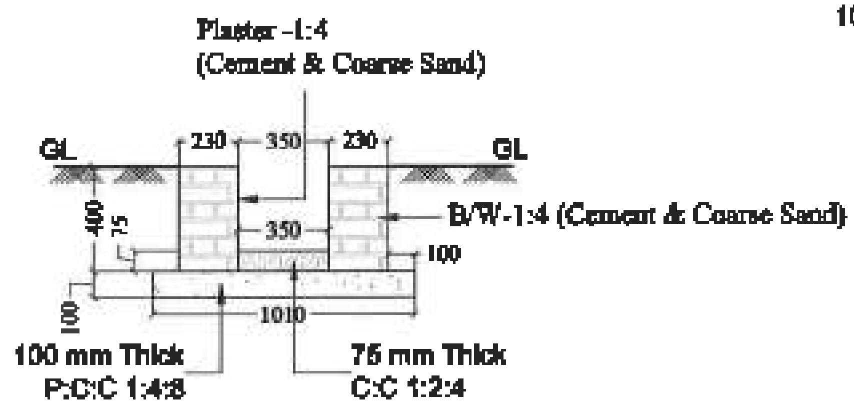
SHEET-2

NAGAR PANCHAYAT- LAR
DISTRICT- DEORIA



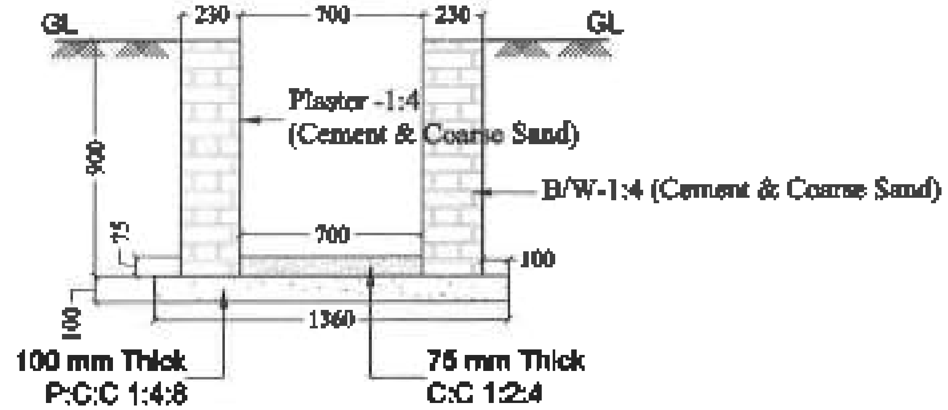
TYPICAL CROSS SECTION OF PROPOSED DRAIN (SIZE 600X900 MM)

LOCATION- HARI KEVAL TO RESHMA MARRIAGE LAWN



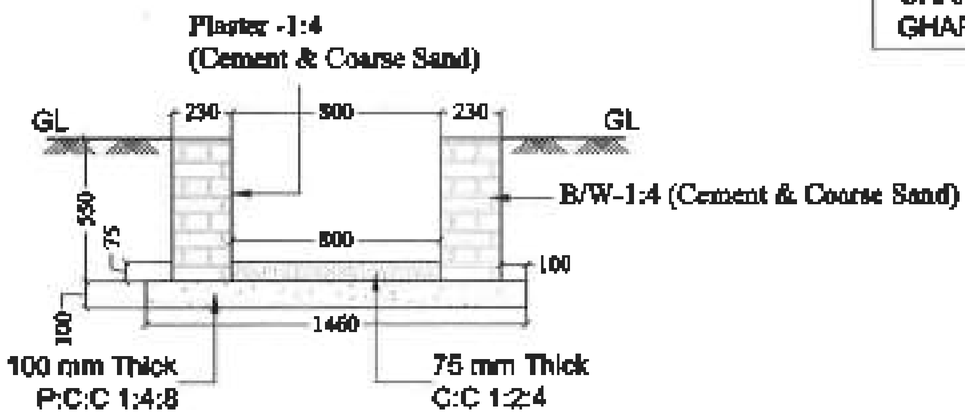
TYPICAL CROSS SECTION OF PROPOSED DRAIN (SIZE 350X400 MM)

LOCATION- LALAN PRASAD KE GHAR SE SHAMSHAD HASHMI KE GHAR TAK



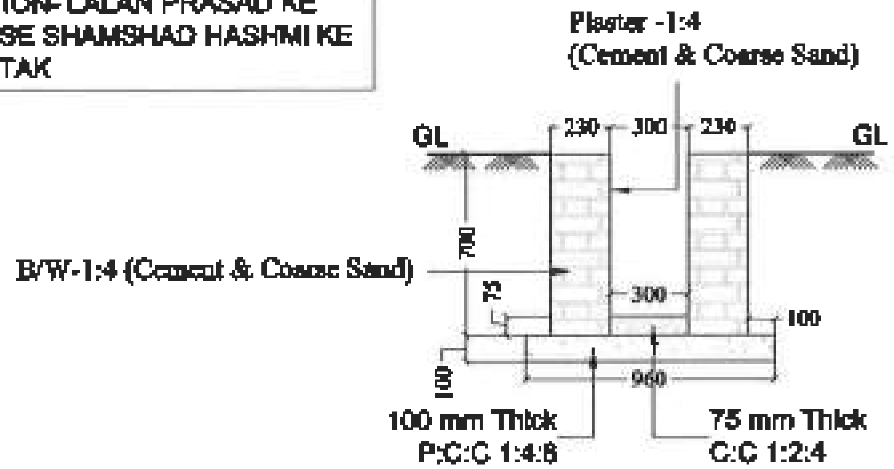
TYPICAL CROSS SECTION OF PROPOSED DRAIN (SIZE 700X900 MM)

LOCATION- MUNNA SINGH KE GHAR SE JAGRNATH KE GHAR HOTE HUE SHAHID MAZAR WALA POKHRA TAK



TYPICAL CROSS SECTION OF PROPOSED DRAIN (SIZE 800X550 MM)

LOCATION- YADAV PAAN BHANDAR SE GANDHI MODE TAK



TYPICAL CROSS SECTION OF PROPOSED DRAIN (SIZE 300X700 MM)

LOCATION- RAFIQ PAAN SHOP SE JANTA MEDICAL HALL TAK

DRG. TITLE

CROSS SECTIONS OF DRAINS

CLIENT:

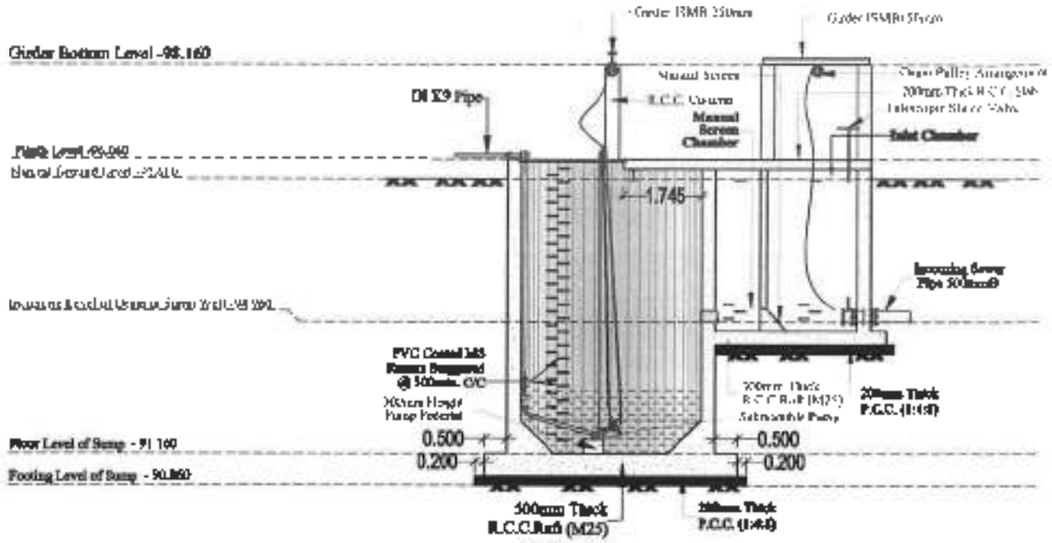
EXECUTIVE OFFICER,
NAGAR PANCHAYAT- LAR
DISTRICT- DEORIA

DRG. NO.-CROSS SECTION	DATE: NOV. - 2024	A3, A4

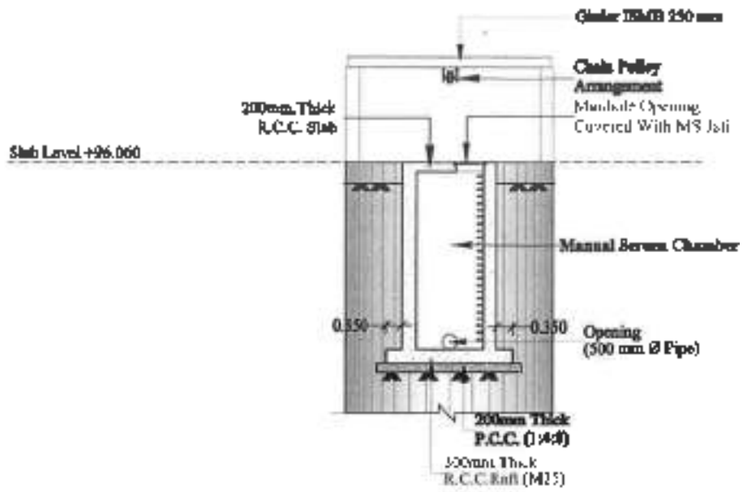
PREPARED BY:-

SNOW FOUNTAIN CIVIL ENGINEERING VOCATIONAL TRAINING INSTITUTE SAMITI

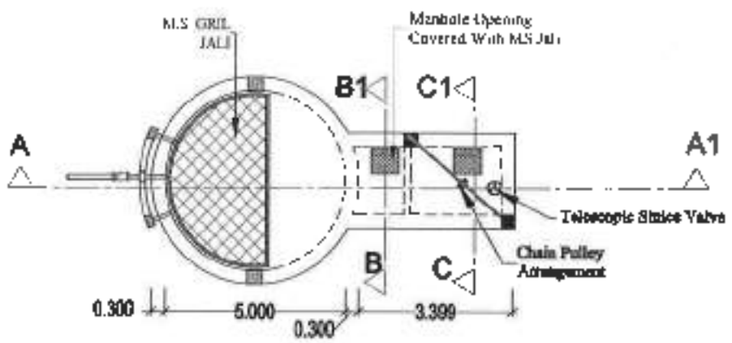
TYPICAL DRAWING OF I.P.S. IN WARD-10



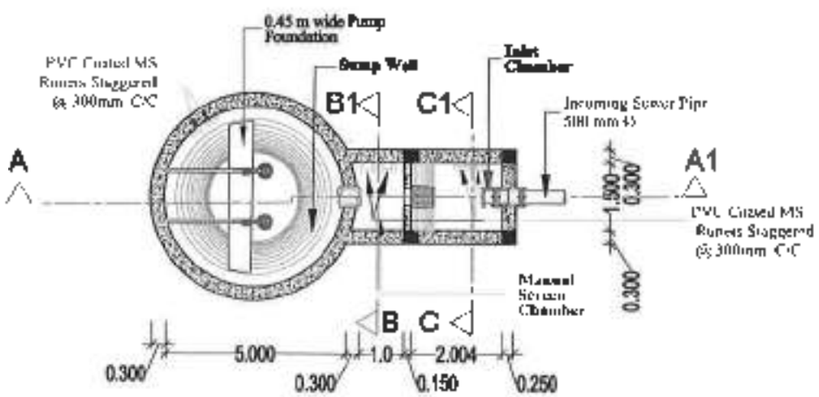
SECTION AT A- A1



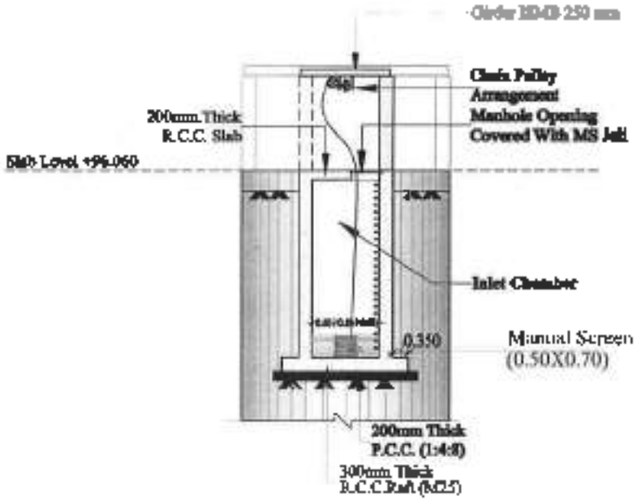
SECTION AT B- B1



PLAN AT PLINTH LEVEL



PLAN AT PLINTH LEVEL BELOW



SECTION AT C- C1

TITLE:-

TYPICAL DRAWING OF SUMP WELL CUM PUMP HOUSE

CLIENT:

EXECUTIVE OFFICER,
NAGAR PANCHAYAT- LAR
DISTRICT- DEORIA

SCALE:	DATE:
N.T.S.	Nov. - 2024
SURVEYED BY:	**DRAWN BY:**
Ajay Verma	Lalitap

DRG. No.- SUMP WELL	TEXT HT.- 350 DIM -350	A3

PREPARED BY:-

SNOW FOUNTAIN CIVIL ENGINEERING VOCATIONAL TRAINING INSTITUTE SAMITI
Snow Fountain Tower 46- Woodland Garden, Sarpin Club Campus, Kursi Road, Lucknow
Contact, Office :- 5/259, Vikas Nagar Lucknow
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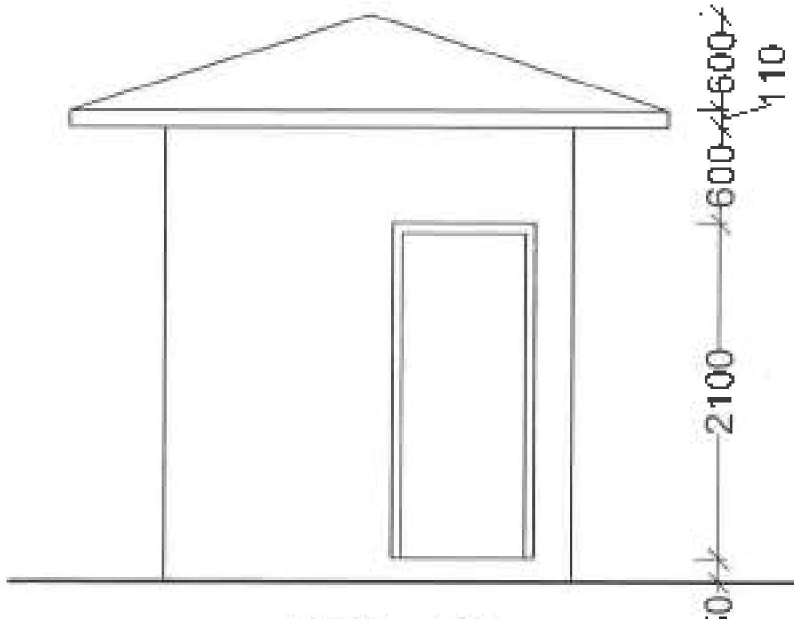
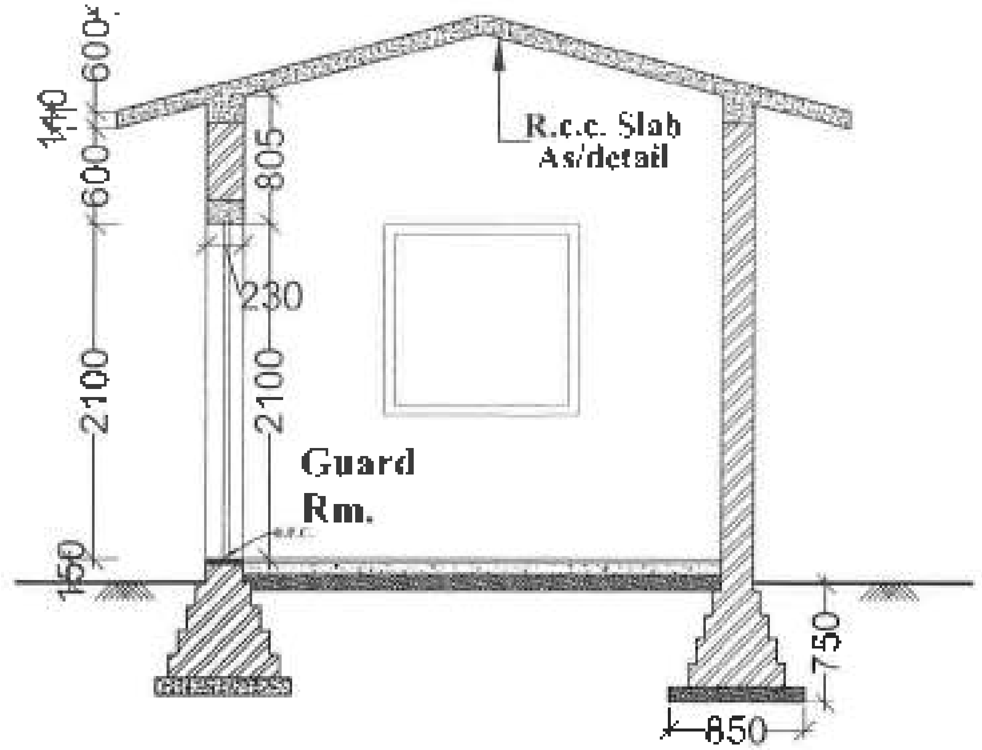
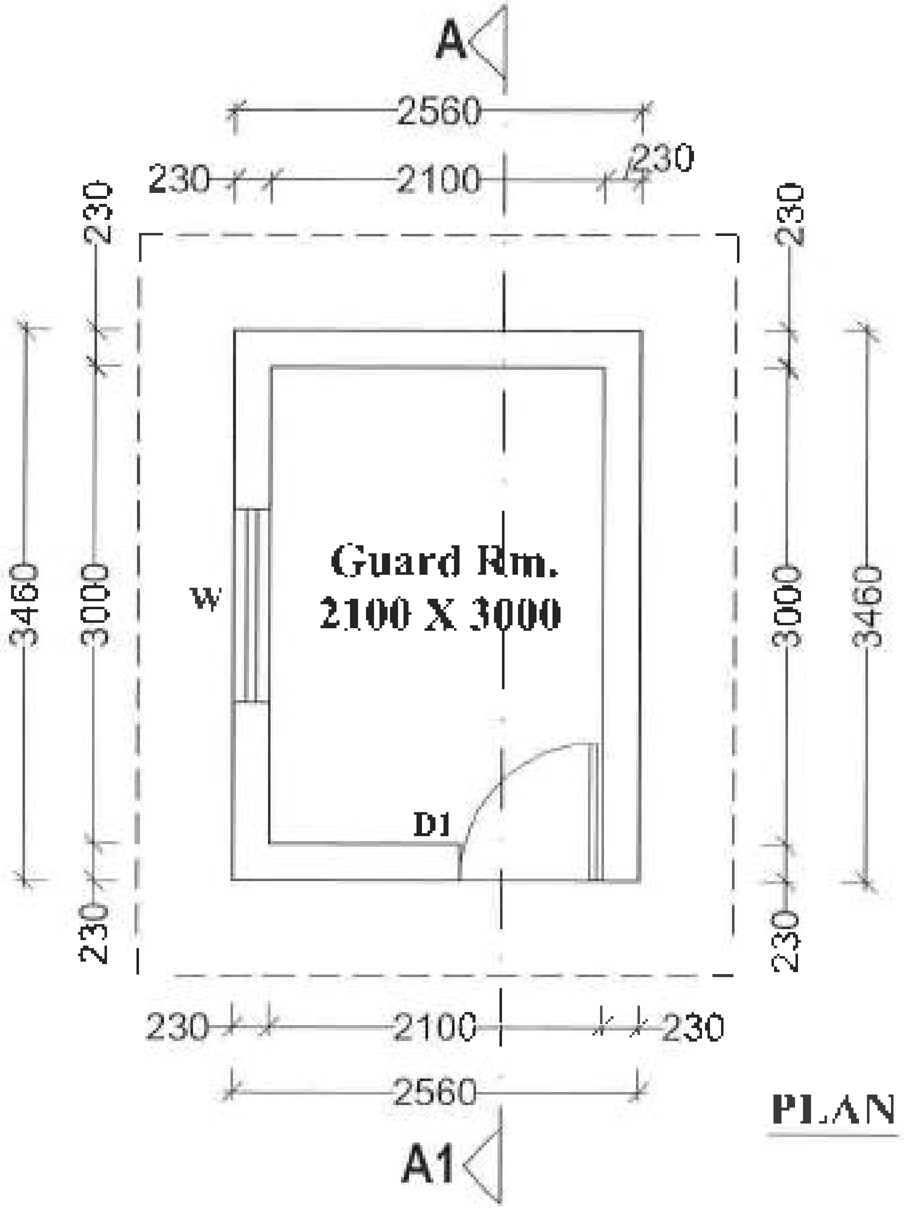


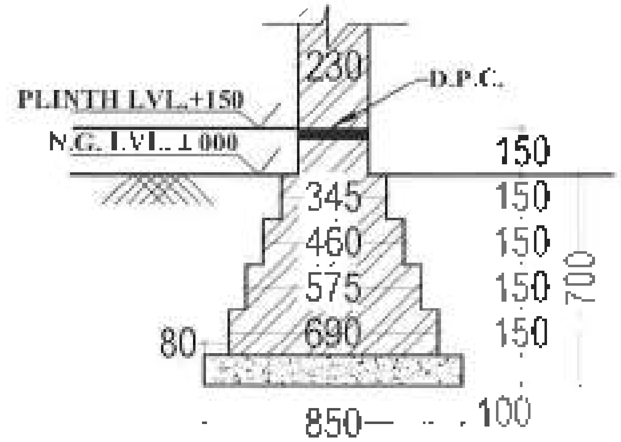
ELEVATION



SECTION AT A-A1



PLAN



FOUNDATION DETAILS
FOR 230mm TH. WALL

SCHEDULE OF OPENINGS

SL NO	CODE	WIDTH (IN MM)	HEIGHT (IN MM)	SILL (IN MM)	NOS
1	D1	900	2100	-	1
2	D2	750	2100	-	-
3	W	1200	1200	900	-
4	V	600	600	1500	-

TITLE:
GAURD ROOM
PLAN,ELEVATION AND SECTION

CLIENT:
EXECUTIVE OFFICER,
NAGAR PANCHAYAT- [illegible]
DISTRICT- [illegible]

PREPARED BY:
[illegible]

ANNEXURE
(QUOTATIONS)

कार्यालय नगर पंचायत लार, देवरिया

पत्रांक–193 /न0प0लार/2024–25 दिनाँक–15.10.2024

कार्यादेश

SNOW FOUNTAIN CIVIN ENGINEERING VOCATIONAL
TRAINING INSTITUTE SAMITI,
ADD-WOODLAND GARDAN KURSI ROAD LUCKNOW.

नगर पंचायत लार (देवरिया) का यूज्ड वॉटर मैनेजमेंट (UWM) के प्लान्ट के कार्य किये जाने हेतु डी0पी0आर0 बनाने का कार्य करने हेतु दिनांक 17.10.2024 को प्राप्त कोटेशनों में सबसे **न्यूनतम** दरों का कोटेशन आपका प्राप्त हुआ है जो कि अध्यक्ष महोदया द्वारा स्वीकृत कर लिया गया है।

अतः आपको इस आदेश द्वारा निर्देशित किया जाता है आप स्वीकृत दरों के आधार पर 01 माह में डी0पी0आर0 बनाने का कार्य पूर्ण करें। डी0पी0आर0 बनाने का कार्य संतोषजनक होना चाहिए।

कार्य का नाम–यूज्ड वॉटर मैनेजमेंट (UWM) के प्लान्ट के कार्य किये जाने हेतु डी0पी0आर0 बनाया जाना कार्य।

स्वीकृत दरें

UP TO 2Cr.	2% Project cost
2 Crore to 5Cr.	1.75% Project Cost
Above 5 Crore	1.5

अधिशासी अधिकारी
नगर पंचायत लार,
देवरिया।

कार्यालय नगर पंचायत लार, जनपद–देवरिया

सेप्टिक टैंक से जुडे अवासीय घरों/कामर्शियल प्रतिष्ठान एवं सामुदायिक शौचालय का विवरण

क्र0 सं0	वार्ड का नाम	वार्ड संख्या	अवासीय घरों की संख्या	कामर्शियल प्रतिष्ठान	सार्वजनिक शौचालय	समुदायिक शौचालय
1	हरिजन बस्ती वार्ड	1	257	10	1	0
2	पिपरा वार्ड	2	225	30	0	1
3	गयागिर वार्ड	3	332	10	1	0
4	वैशकरनी वार्ड	4	280	12	0	0
5	घवरिया वार्ड	5	355	20	0	0
6	घारी वार्ड	6	379	25	0	1
7	घौक वार्ड	7	224	15	0	0
8	इन्दिरानगर वार्ड	8	350	10	1	0
9	बाजार वार्ड	9	264	180	0	0
10	कोईरीटोला वार्ड	10	317	20	0	0
11	शास्त्रीनगर वार्ड	11	240	15	0	0
12	बौली वार्ड	12	367	22	0	0
13	मठ वार्ड	13	323	27	0	2
14	मरटोलिया वार्ड	14	318	125	1	0
15	फत्तेहनगर वार्ड	15	246	6	0	0
16	तिवारी टोला वार्ड	16	209	12	0	0
		कुल	4686	539	4	4

अधिशासी अधिकारी
नगर पंचायत लार
देवरिया

भारत की जनगणना 2021

नगरीय वार्ड रजिस्टर

प्रपत्र-2

(1) नगर निकाय का नाम (हिन्दी में)–नगर पंचायत लार
(अंग्रेजी में) N.P.LAR /MDDS कोड 7553

(2) तहसील का नाम–सलेमपुर /MDDS कोड–004

(3) जनपद का नाम–देवरिया /MDDS कोड –059

भाग-I

	बिन्दु	जनगणना 2011 के अनुसार	वर्तमान में
a)	नगर निकाय का क्षेत्रफल (वर्ग किमी में)	10 वर्ग कि०मी०	10 वर्ग कि०मी०
b)	सिविक स्टेटस	नगर पंचायत लार	नगर पंचायत लार
c)	वार्डों की संख्या	16	16
d)	जनगणना 2011 के पश्चात वार्डों का पुनर्गठन हुआ है (हाँ/नहीं)	नहीं	नहीं

भाग-II

क्रम संख्या	वार्ड संख्या (जनगणना 2011 के अनुसार)	वार्ड का नाम		वार्डवार कुल जनसंख्या (जनगणना 2011 के अनुसार)	पुनर्गठित वार्ड संख्या (वर्तमान में)	पुनर्गठित वार्ड का नाम		वर्तमान में पुनर्गठित वार्ड की अनुमानित जनसंख्या (जनगणना 2011 के अनुसार)	टिप्पणी
		हिन्दी वर्तनी	अंग्रेजी वर्तनी			हिन्दी वर्तनी	अंग्रेजी वर्तनी		
	1	2	3	4	5	6	7	8	9
1	1	हरिजन बस्ती	Harijan Basti	1515	-	-	-	-	-
2	2	पिपरा	Pipra	1763	-	-	-	-	-
3	3	घारी	Ghari	2128	-	-	-	-	-
4	4	इन्दिरानगर	Indiranagar	2429	-	-	-	-	-
5	5	गयागिर	Gayagir	2028	-	-	-	-	-
6	6	वैशकरनी	Vaishkarni	1878	-	-	-	-	-
7	7	धवरिया	Dhawariya	2028	-	-	-	-	-
8	8	चौक	Chauk	1761	-	-	-	-	-
9	9	बौली	Baull	1725	-	-	-	-	-
10	10	शास्त्रीनगर	Shastrinagar	1059	-	-	-	-	-
11	11	कोइरीटोला	Koiritola	2302	-	-	-	-	-
12	12	बाजार	Bajar	1696	-	-	-	-	-
13	13	भरटोलिया	Bhartoliya	1706	-	-	-	-	-
14	14	मठ	Math	1989	-	-	-	-	-
15	15	तिवारी टोला	TiwariTola	1503	-	-	-	-	-
16	16	फतेहनगर	Fatehnagar	1797	-	-	-	-	-

785

अधिशासी अधिकारी का नाम.....

हस्ताक्षर दिनांक सहित.....

मुहर.....

अधिशासी अधिकारी
नगर पंचायत लार
देवरिया

नगर पंचायत लार, जनपद –देवरिया।

नगर निकाय क्षेत्र में प्रवाहित हो रहे नालों की संख्या व नाम

क्रम सं0	नालों के नाम	लम्बाई	चौड़ाई	गहराई	प्रकार	स्थिति
1	भरतौलिया पक्का पोखरा से लेकर नसीरा आलम के घर तक	256m	90cm	150cm	CC	80% Good
2	रिंकू के घर से नजलैन खुरैजी के घर तक	90m	30cm	30cm	CC	70% Good
3	अरुण्म के घर से पोखरा तक (तिवारी टोला)	95 m	30cm	50cm	CC	70% Good
4	संगीता देवी के घर से रिंकू के घर तक	115m	30cm	35cm	Brick	60% Good
5	नन्दन के घर से नेहाल सगीर के घर तक	135m	60cm	50cm	Brick	80% Good
6	एम0ए0 लारी के घर से पोखर तक	100m	35cm	50cm	CC	90% Good
7	दानिश के घर से खुर्दजा वीसी गर्ल्स स्कूल तक	385m	30cm	40cm	CC	80% Good
8	लल्लन प्रसाद के घर से शम्साद हारुनी के घर तक	89.5m	35cm	40cm	Brick	40% Good
9	रमसाद हारुनी के घर से एम0ए0 लारी के घर तक	80m	35cm	30cm	Brick	80% Good
10	एन0आर0 लारी के घर से राम जगत के घर तक	103m	30cm	30cm	CC	90% Good
11	मुन्ना सिंह के घर से जगरनाथ के घर होते हुये शहीद मजार वाला पोखरा तक	300m	70cm	90cm	Brick	30% Good
12	एस0जे0ए0 स्कूल से जेपी पान भण्डार तक	375m	30cm	35cm	Brick	70% Good
13	मसूद के घर से दानिश मेडिकल स्टोर तक	375m	30cm	35cm	Brick	70% Good
14	राम मंदिर से कब्रिस्तान तक	365m	120cm	120cm	CC	90% Good
15	कब्रिस्तान से नगर पंचायत पोखरा तक	421m	50cm	60cm	CC	100% Good
16	यादव पान भण्डार से गौड़ी मोड तक	350m	80cm	55cm	CC	10% Good
17	जेपी पान भण्डार से हजिजन मस्जिद तक	460m	60cm	85cm	Brick	60% Good
18	हजिजन मस्जिद से लार शॉपिंग मॉल तक	257m	50cm	90cm	Brick	70% Good
19	रफीक पान शॉप से जगता मेडिकल हॉल तक	357m	30cm	70cm	CC	30% Good

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20	बड़ेनी मेडिकल स्टोर से पोस्ट ऑफिस तक	571m	90cm	150cm	CC	30% Good
21	लारी शॉपिंग मॉल से राज फोटो कॉपियर्स तक	571m	40cm	130cm	CC	30% Good
22	लारी शॉपिंग मॉल से उत्तम महेशिया के घर तक	253m	3m	5m	CC	30% Good
23	पोस्ट ऑफिस से कुम्हार के घर तक	237m	50cm	70cm	CC	80% Good
24	राज फोटो कापियर्स से कुम्हार के घर तक	237m	40cm	50cm	CC	80% Good
25	रेशमा मैरेज जोन से गिपरा चौराहा तक	1106m	1m	1m	CC	60% Good
26	मनोज पोद्दार के घर से राम कमल के घर तक	421m	50cm	70cm	CC	40% Good
27	चन्दन के घर से नारियल तर तिराहा तक	405m	40cm	60cm	CC	30% Good
28	नारियल तर तिराहा से पोखर तक	105m	1m	1m	CC	80% Good

ULB Population (2011)	28507	Slum Population	0	Slum Area(Sqkm)	0	ULB Area (Sqkm)

ANNEX 5B: CITY SANITATION ACTION PLAN (CSAP): FOR USED WATER MANAGEMENT

(As referred in Chapters 2 and 7)

(To be filled in only for Cities below 2 Lakh Population, as referred in Chapters 2 and 6)

S.No	Description	Particulars	Detailed description			Remarks
A	GENERAL INFORMATION					
1	Location and Physical aspects					
1.a	Location	Name of the City, District, State	Nagar Panchayat Lar (NP), Deoria, UP			
1.b	Physical Aspects	Municipal Area in sq. km and Class of Town	10 and Class IV			
		Number of Wards	16			
		Geographical description - Hilly area, river, Environmental sensitive areas etc.	Plane Area			
1.c	Maps	Map depicting administrative boundaries, roads and railways, water bodies, important landmarks etc. (If not available to be prepared)	Under Process			
		Toposheet (of Survey of India, Scale - 1:50000) (If not readily available, get it)	Not Available			
2	Demography and Growth pattern		Population			
2.a	Population	Census data - Latest census data and previous census data (population projection for 2025, 2040 and 2055)	2025	2040	2055	
			389.8	54738	76988	
		Slum population	2025	2040	2055	
		• Population	0	0	0	
		• Households	0	0	0	
		• Density	0	0	0	
		Non slum population	2025	2040	2055	
		• Population	38918	54738	76988	
		• Households	7784	10948	15398	
		• Density	3892	5474	7699	
		Floating population - Population per day (If available from tourism department)	1946	2737	3849	
		Decadal Population growth rate (in %)	25%			
3	Land Use information and Development					
3.a	Land Use classification	Land use classification in the city - Area under residential, commercial, institutional, open areas, slums (available / not available)	Not Available			

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	Land use pattern					
		Details of Population and projected growth	23%			
3.b	Maps	Map depicting the existing land use - residential, commercial, institutional, slums, green cover, open land etc. (Available / not available)	Not Available			
B	TECHNICAL INFROMATION: Information regarding Used water infrastructure facilities					
4	Details of existing sewage infrastructure					
4.a		Brief description of existing sewage infrastructure in the town:				
		(i) STPs	Not Available			
		(ii) FSTPs	Not Available			
		(iii) Existing sewers	Not Available			
		(iv) Drains	Not Available			
		(v) Number of cesspool/desludging] suckers (govt./private)	2 (By ULB)			
		Funding Agencies & amount	0			
5	Sewage Management					
5.a	Sewage Generation	Estimated sewage generation (in MLD for 2025, 2040, 2055)	2025	2040	2055	
			4.26	5.91	8.31	
		NETWORK COVERAGE				
		• Present population covered with sewerage network	0			
		• Present population uncovered with sewerage network	34417			
		SEPTAGE				
		• Status of scheduled desludging (by ULB/Licensed operator)	By ULB			
		Drainage				
5.b	Collection and Conveyance	• Number of drains with length & material of construction etc. (width more than 75 cm) carrying sewage into the surface water body or open land	9			
		• Status of drains with or above 75 cm width (covered/uncovered)	All drains covered			
		• Number of outfall locations along with estimated quantity of sewage (dry weather) being discharged into surface water body or open land	NA			

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		Outfall location - Number the location of outfall points (river, natural drain/ canal, low water body/ open land)	NA			
5.c	Treatment (Septage, Used water)	Used water treatment (including recycle/reuse) - Are the used water treatment facility available (yes/no)	No			
		If 'yes'				
		Treatment technology and Capacity (MLD)				
		• Current capacity utilization–under/over (MLD)				
		• Quantity of used water treated (MLD)				
		• Quantity of septage co-treated (KLD)				
		• Reuse (treated used water, sludge, biogas) information along with respective quantity				
		Septage treatment Are the septage treatment facilities available (yes/No)	No			
		If yes				
		• Quantity of septage to be treated (KLD)				
		• Treatment technology and Capacity (KLD)				
		• Current utilization - under/over (KLD)				
		• Reuse (treated used water, sludge, biogas) information along with respective quantity				
5.d	Operation and Maintenance	**For existing used (waste) water collection, conveyance and treatment facility**				
		• Responsible agency	0			
		• Household sewerage tariff - Monthly (Rs)	0			
		• Conservancy tax as part of property tax	0			
		• O&M cost for the conveyance and treatment facility (Rs)	0			
		• Cost recovery (%)	0			
		For existing septage (faecal sludge) collection, conveyance and treatment facility				
		• Responsible agency	By ULB			
		• User charges for desludging, conveyance and disposal per household (Rs)	2500			
		• O&M cost for the treatment facility (Rs)	0			
		• Cost recovery (%)	0			
5.e	Service Level Benchmark - Present	Indicators	Benchmark	Before implementation of project	After implementation of project	
		Coverage of Sewerage Network	100%	0	100%	
		Collection efficiency of Sewerage Network	100%	0	100%	
		Adequacy of Sewage Treatment Capacity	100%	0	100%	
		Quality of sewage treatment	100%	0	100%	
		Extent of Reuse and Recycling of Sewage	20%	0	20%	
		Extent of cost recovery in sewage/ used water management	100%	0	100%	
		Efficiency in redressal of customer complaints	80%	40%	50%	
		Efficiency in Collection of sewage / used water Charges	90%	0	95%	
		Access to toilets	100%	100%	100%	

5.f	Maps	Scheduled desludging	100%	100%	100%	
		Notified tariff for desludging		Yes	Yes	
		Map depicting the coverage of existing sewer network coverage and onsite system				
		Access to toilets	Yes			
		Scheduled desludging	Yes			
		Notified tariff for desludging	Yes			
C	INSTITUTIONAL AND GOVERNANCE					
6	Institutional framework					
6.a	Regulatory Framework	Whether Municipal Sanitation Bye Laws notify tariff for sanitation/sewage services (details)	Notified And Implemented			
		State Sanitation Strategy (available / not available)	Available			
6.b	Institutional Arrangement	Roles and Responsibilities for dealing with sanitation/ sewage services.	Rajan Nath Tiwari (Executive Officer)			
6.c	Governance and Reforms -	Implementation of e-governance in ULBs (available / not available)	Available			
D	Capacity Enhancement					
7	Capacity Management					
7.a	Human Resource Development	Details of the personnel engaged in sanitation services along with roles and responsibilities.	66			
		Outsourcing of staff and services (available / not available)	Available			
E	GAP ANALYSIS:					
8.a		Analyse the projected requirement of used water infrastructure/facilities in 2025	For 100% Treat Used Water Generation In ULB Required 2.29 MLD Capacity Of The STP Cum FSTP Plant, I&D Work And Digital Monitoring System, 1 Cesspool Tanker			
8.b		Identify the available infrastructure in good condition	Partially Good Condition Strengthing Required			
8.c		Analyze the gap in various areas and suitably club as part of a project/DPR				
		•Sewer network	No Sewer Exist In ULB and about 100% sewage generated in ULB is disposed in the river and required to covered who lived in core regulation zone as per SBM 2.0 guideline			
		•Septage conveyance	For 100% covered desludging in Outskirt and Isolated Pockets required 1 cesspool tanker as per CPHEEO Manual existing 2 cesspool tanker in ULB.			
		•STP cum FSTP	For 100% total used water generation in ULB required 2.29MLD Capacity of the STP cum FSTP Plant, existing 0MLD capacity STP cum FSTP plant			
		Recycle and reuse potential	Agriculture, Horticulture and Gardening and Water Body recharge etc			
		On above lines identify various DPRs/ plan for projects related to				
		•I&D and STP cum FSTP	for full fledged run the project required work on I&D, Strengthening the existing drainage network and set STP Cum FSTP plant of 2.29MLD Capacity.			अधिशासी अधिकारी नगर पंचायत [illegible]

F	CONCLUSION	•Sewer network	No Sewer Network Exist in ULB as per the SBM 2.0 guideline required to covered Core Nagarpalika Zone with sewer network.	
		•Storm water drainage system	Need to strengthening the existing storm water drainage system	
		•Recycle and reuse projects	No projects runs in the ULB regarding Recycle and Reuse projects. After implementation of the projects ULB have potential Reuse of treated Recycled water	
		Gap in human resources for sanitation and O&M etc.	0	

Funding requirement

Total fund required (In cr)	Central share (In cr)	State share (In cr)	ULB share (In cr)	Others (pl specify)
56.614	28.307	18.68262	9.624938	0

Roadmap for achieving Mission outcomes

Target/Year	2021-22	2022-23	2023-24	2024-25	2025-26	Remarks
Cities ODF++				ODF++		
Cities Water+					Water+	

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नगर पंचायत लार
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कार्यालय नगर पंचायत लार, जनपद–देवरिया

रूप पत्र–2 (नगरीय)

जनपद का नाम	देवरिया	जनपद का कोड	
तहसील का नाम	सलेमपुर	तहसील का कोड	

दिनांक 30.03.2024 की स्थिति के अनुसार

नगर का नाम (नगर पंचायत, नगर पालिका परिषद, नगर निगम, सेन्सस टाउन, रेलवे सेटलमेन्ट एवं छावनी परिसर)	नगर का कोड	वार्ड क्रमांक	कुल अनुमानित परिवारों की संख्या	कुल अनुमानित जनसंख्या
1	2	3	4	5
नगर पंचायत लार, जनपद–देवरिया	801181	01, हरिजनबस्ती वार्ड	336	1820
		02, पिपरा वार्ड	350	2081
		03, गयागिर वार्ड	450	2397
		04, वैश्करनी वार्ड	365	2397
		05, धवरिया वार्ड	465	2397
		06, घारी वार्ड	495	2289
		07, चौक वार्ड	305	1795
		08, इन्द्रानगर वार्ड	503	2290
		09, बाजार वार्ड	385	2005
		10, कोईरीटोला वार्ड	365	1833
		11, शास्त्रीनगर वार्ड	236	1825
		12, बौली वार्ड	421	2026
		13, मठ वार्ड	320	2258
		14, भरटोलिया वार्ड	257	2028
		15, फत्तेहनगर वार्ड	268	2210
		16, तिवारी टोला वार्ड	369	1751
		योग–	5890	33402

(मृदुल कुमार सिंह)

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नगर पंचायत लार
देवरिया

GSTIN:09AARFG5353K1ZS

Global Environmental Consultancy And Research Centre

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Mob:+91- 7607377997, 8299682829, 9454278891 E-mail:infogecrc@gmail.com

TEST REPORT
(Waste Water)

Report No: GECRC/N/WW/24/12/10/001 **Date:** 10.12.2024

Issued To	**M/s-Executive Officer** Nagar Panchayat Lar Deoria	**Sampled By**	GECRC
Date of Received Sample	04.12.2024	**Method of Sampling**	APHA
Work Order No. Date	NA	**Date of Sampling**	05.12.2024
Nature of Sample	Waste Water	**Sample Description**	ChunakiMod Drain Drain (Inlet)
Sample Condition	OK	**Period of Analysis**	05.12.2024 to 10.12.2024
Environmental Condition a. Room Temperature(°C) b. Relative Humidity (%)			25 ±2 °C 55 ± 10%

RESULTS

S. No.	Parameter	Unit	Method	Result
1	pH	-	IS:3025(Part-11)	7.70
2	Total Suspended Solid	mg/l	IS:3025(Part-17)	172.2
3	Chemical Oxygen Demand	mg/l	IS:3025(Part-58)	312.0
4	Biochemical Oxygen Demand	mg/l	IS:3025(Part-44)	93.6
5.	Fecal Coliform	MPN/100ml	IS:1622:1981	820.0
6.	Total Coliform	MPN/100ml	IS:1622:1981	1120.0

Checked by:

Authorized Signatory:
Raj Kumar
G.E.C.
Name: Raj Kumar
Designation: Technical Manager

*****End of the Report*****

NOTE:
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2. The sample will be destroyed after 15 days from the date of issue of test certificate unless otherwise specified.
3. Any discrepancy in test result should be reported within 15 Days.
4. The above Results are related to the tested sample only.

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TEST REPORT
(Waste Water)

Report No: GECRC/N/WW/24/12/10/002 Date: 10.12.2024

Issued To	**M/s-Executive Officer** Nagar Panchayat Lar Deoria	**Sampled By**	GECRC
Date of Received Sample	04.12.2024	**Method of Sampling**	APHA
Work Order No. Date	NA	**Date of Sampling**	05.12.2024
Nature of Sample	Waste Water	**Sample Description**	Chunaki Mod Drain Drain (Outlet)
Sample Condition	OK	**Period of Analysis**	05.12.2024 to 10.12.2024
Environmental Condition a. Room Temperature(°C) b. Relative Humidity (%)			25 ±2 °C 55 ± 10%

RESULTS

S. No.	Parameter	Unit	Method	Result
1	pH	--	IS:3025(Part-11)	7.63
2	Total Suspended Solid	mg/l	IS:3025(Part-17)	54.4
3	Chemical Oxygen Demand	mg/l	IS : 3025 (Part-58)	112.0
4	Biochemical Oxygen Demand	mg/l	IS : 3025 (Part-44)	24.6
5	Fecal Coliform	MPN/100ml	IS:1622:1981	240.0
6	Total Coliform	MPN/100ml	IS:1622:1981	380.0

Checked by:

Authorized Signatory:
Raj Kumar
Name: Raj Kumar
Designation: Technical Manager

G.E.C.

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TEST REPORT
(Waste Water)

Report No: GECRC/N/WW/25/01/10/001 **Date:** 10.01.2025

Issued To	**M/s-Executive Officer** Nagar Panchayat Lar Deoria	**Sampled By**	GECRC
Date of Received Sample	04.01.2025	**Method of Sampling**	APHA
Work Order No. Date	NA	**Date of Sampling**	05.01.2025
Nature of Sample	Waste Water	**Sample Description**	ChunakiMod Drain Drain (Inlet)
Sample Condition	OK	**Period of Analysis**	05.01.2025 to 10.01.2025
Environmental Condition a. Room Temperature(°C) b. Relative Humidity (%)			25 ±2 °C 55 ± 10%

RESULTS

S. No.	Parameter	Unit	Method	Result
1	pH	-	IS:3025(Part-11)	7.62
2	Total Suspended Solid	mg/l	IS:3025(Part-17)	154.8
3	Chemical Oxygen Demand	mg/l	IS:3025(Part-58)	304.0
4	Biochemical Oxygen Demand	mg/l	IS:3025(Part-44)	92.4
5.	Fecal Coliform	MPN/100ml	IS:1622:1981	760.0
6.	Total Coliform	MPN/100ml	IS:1622:1981	1260.0

Checked by:

Authorized Signatory:

Name: Raj Kumar
Designation: Technical Manager

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TEST REPORT
(Waste Water)

Report No: GECRC/N/WW/25/01/10/002 Date: 10.01.2025

Issued To	M/s-Executive Officer Nagar Panchayat Lar Deoria	Sampled By	GECRC
Date of Received Sample	04.01.2025	Method of Sampling	APHA
Work Order No. Date	NA	Date of Sampling	05.01.2025
Nature of Sample	Waste Water	Sample Description	Chunaki Mod Drain Drain (Outlet)
Sample Condition	OK	Period of Analysis	05.01.2025 to 10.01.2025
Environmental Condition a. Room Temperature(°C) b. Relative Humidity (%)			25 ±2 °C 55 ± 10%

RESULTS

S. No.	Parameter	Unit	Method	Result
1	pH	--	IS:3025(Part-11)	7.56
2	Total Suspended Solid	mg/l	IS:3025(Part-17)	56.8
3	Chemical Oxygen Demand	mg/l	IS : 3025 (Part-58)	108.0
4	Biochemical Oxygen Demand	mg/l	IS : 3025 (Part-44)	25.4
5	Fecal Coliform	MPN/100ml	IS:1622:1981	220.0
6	Total Coliform	MPN/100ml	IS:1622:1981	380.0

Checked by:

Authorized Signatory:

Name: Raj Kumar
Designation: Technical Manager

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TEST REPORT
(Waste Water)

Report No: GECRC/N/WW/25/02/11/002 Date: 11.02.2025

Issued To	**M/s-Executive Officer** Nagar Panchayat Lar Deoria	**Sampled By**	GECRC
Date of Received Sample	04.02.2025	**Method of Sampling**	APHA
Work Order No. Date	NA	**Date of Sampling**	05.02.2025
Nature of Sample	Waste Water	**Sample Description**	Chunaki Mod Drain Drain (Outlet)
Sample Condition	OK	**Period of Analysis**	05.02.2025 to 10.02.2025
Environmental Condition	a. Room Temperature(°C) b. Relative Humidity (%)		25 ±2 °C 55 ± 10%

RESULTS

S. No.	Parameter	Unit	Method	Result
1	pH	--	IS:3025(Part-11)	7.49
2	Total Suspended Solid	mg/l	IS:3025(Part-17)	48.4
3	Chemical Oxygen Demand	mg/l	IS : 3025 (Part-58)	100.0
4	Biochemical Oxygen Demand	mg/l	IS : 3025 (Part-44)	23.8
5	Fecal Coliform	MPN/100ml	IS:1622:1981	200.0
6	Total Coliform	MPN/100ml	IS:1622:1981	360.0

Checked by:

Authorized Signatory:
Raj Kumar
Name: Raj Kumar
Designation: Technical Manager

*****End of the Report*****

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TEST REPORT
(Waste Water)

Report No: GECRC/N/WW/25/02/11/001 **Date:** 11.02.2025

Issued To	**M/s-Executive Officer** Nagar Panchayat Lar Deoria	**Sampled By**	GECRC
Date of Received Sample	04.02.2025	**Method of Sampling**	APHA
Work Order No. Date	NA	**Date of Sampling**	05.02.2025
Nature of Sample	Waste Water	**Sample Description**	Chunaki Mod Drain Drain (Inlet)
Sample Condition	OK	**Period of Analysis**	05.02.2025 to 10.02.2025
Environmental Condition a. Room Temperature(°C) b. Relative Humidity (%)			25 ±2 °C 55 ± 10%

RESULTS

S. No.	Parameter	Unit	Method	Result
1	pH	-	IS:3025(Part-11)	7.82
2	Total Suspended Solid	mg/l	IS:3025(Part-17)	136.4
3	Chemical Oxygen Demand	mg/l	IS:3025(Part-58)	296.0
4	Biochemical Oxygen Demand	mg/l	IS:3025(Part-44)	88.4
5.	Fecal Coliform	MPN/100ml	IS:1622:1981	700.0
6.	Total Coliform	MPN/100ml	IS:1622:1981	1060.0

Checked by:

Authorized Signatory:
Raj Kumar
Name: Raj Kumar
Designation: Technical Manager

*****End of the Report*****

NOTE:

1. This report is not to be reproduced wholly or in part and cannot be used as evidence in the court of law and Should not be used in any advertising media without our special permission in writing.
2. The sample will be destroyed after 15 days from the date of issue of test certificate unless otherwise specified.
3. Any discrepancy in test result should be reported within 15 Days.
4. The above Results are related to the tested sample only.