

BEFORE THE NATIONAL GREEN TRIBUNAL, KOLKATA

M. A. No. 11/2022/EZ

In

O. A. No. 99/2016/EZ

Tribunal on its own motion Applicant(s)

Vs.

State of Jharkhand & Ors. Respondent(s)

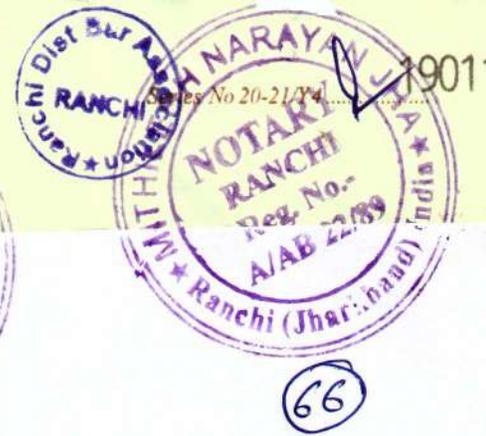
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Filed by: -

*Surendra*Surendra Kumar
Advocate

Jharkhand State Pollution Control Board



Authorised under Notaries Act 1956
& Notary Rules 1956 by Govt. of
Jharkhand, Ranchi (India)

BEFORE THE NATIONAL GREEN TRIBUNAL, KOLKATA

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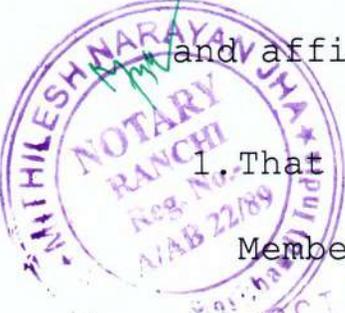
Counter Affidavit on behalf of Respondent No. - 03
Jharkhand State Pollution Control Board in
compliance of order dated 19.09.2022.

I, Yatindra Kumar Das, son of Late K. K. Das,
presently posted as the Member Secretary, Jharkhand
State Pollution Control Board, H.E.C, Dhurwa, Ranchi
and am duly authorized and here by solemnly state
and affirm as follows:-

1. That at present, I am working and posted as the
Member Secretary, Jharkhand State Pollution

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Control Board, H.E.C, Dhurwa, Ranchi and as such, I am well acquainted with all the facts and circumstances of this case.

2. That I have gone through the order dated 19.09.2022 passed by the Hon'ble NGT, EZB, Kolkata and has understood the contents therein.
3. That, I am authorized to swear this affidavit on behalf of the Respondent No - 3 Jharkhand State Pollution Control Board (JSPCB). Further it is stated that I have gone through the relevant files and records in present case.
4. That, it is humbly stated and submitted that the Board has directed the Regional Officer, JSPCB Regional Office - Cum - Laboratory, Hazaribagh to submit the point wise compliance report of the order / directions issued by the Hon'ble Tribunal in its order dated 25/09/2020 in the O.A. No. 99/2016/EZ vide Board's Ref. No. B - 2141 Ranchi, Dated 07/10/2022.

Photocopy of the Board's Ref. No. B - 2141 Ranchi,



Dated 07/10/2022 is annexed
and marked as **Annexure - A.**

5. That, it is humbly stated and submitted that the Regional Officer, JSPCB Regional Office - Cum - Laboratory, Hazaribagh had submitted the Inspection Report (Status of compliance) of Dhobia Talab & Jhinjhiria Nala, Hazaribagh in the light of the directions of Hon'ble NGT, EZB, Kolkata in M. A. No. 11/2022/EZ in O. A. No. 99/2016/EZ in the matter of Tribunal on its own motion Vs State of Jharkhand & Ors. vide Memo No. - 930 dated 10.10.2022. The relevant portion of which is as below for convenience: -

"During inspection it was found that -

i. Dhobia Talab is situated at sadar Block area near Ompuri Mohalla of Hazaribagh. One Nalla from South West Corner containing sewage from nearby houses and surface runoff of St. Columbus Groud and Well's Ground and some part of Ompuri Nalla from North West side meet into Dhobia Talab. Sewage of the nalla was going into Dhobia Talab as nalla is located at upper gradient with respect to Dhobia Talab.

ii. Water samples of Dhobia talab was collected on 05.10.2022 and analysed (Analysis report is enclosed) as annexure I.



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iii. From the perusal of water analysis reports of Dhobia Talab Dissolved Oxygen & BOD value does not conform to standard for class 'B', Designated Best use water quality Criteria notified by CPCB.

In the order dated 19.09.2022 of the Hon'ble NGT the compliance of directions given in the order dated 25.09.2020 has been asked. The status of compliance of directions are as follows:-

S.No.	Direction	Compliance
14.	Having regard to the above facts and circumstances, let the State complete the process of preparation of the DPR by 31.12.2020 and the tendering process be commenced with immediately after completion of the DPR and its approval. We expect the Government to consider and approve the DPR and its approval. We expect the Government to consider and approve the DPR expeditiously in order to enable the Municipal Corporation to adhere to the timelines set out in the action plan.	DPR has been prepared and sent to State Govt. for approval which has further been forwarded to Ministry of Housing & Urban Affairs (M, H & U, A), Govt. of India. Copy of DPR attached as Annexure II.
15.	The other aspect which requires to be dealt with, as pointed out by the learned Counsel of	The unauthorized structures on the southern side has been



the Applicant, is the unauthorized structures on the southern side of the Dhobia talab as reported by the Court Commissioner which we direct be acted against strictly in accordance with law. Next, the primary source of pollution as contained in the Gap Analysis Phase should be identified and remedial action taken for diversion of all the sewage and effluent away from the Jhinharia nalla / stream and the Dhobia talab. Pending the long term action of diversion of the sewage and the effluent to the STPs and the ETPs, the Municipal Corporation shall implement a short term measure of Phyto - remediation / Bioremediation, as may be advised by the experts in the field. It may be mentioned that Phyto - remediation / Bioremediation does not involve much expenditure. In this regard, the Urban Development and Housing Department State of Jharkhand, the State

freed and is under possession of the Dhobia Talab. Drain from Anandpuri Nala to Jhinhiria Nala for diverting all the sewage and effluent has been constructed. Cleaning of Dhobia Talab and work for increasing of Dissolved Oxygen is being done by Boat having screen and arrangement of water sprinkling into air. No Phyto - remediation / Bioremediation were seen in the Dhoba Talab.

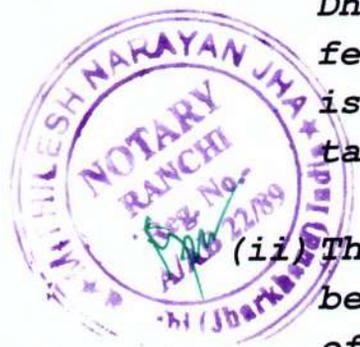


	Pollution Control Board and the Municipal Commissioner Hazaribagh, shall look into the compendium prepared by the CPCB with regard to Phyto remediation.	
16.	Let a revised action plan be prepared in terms of the observations made above. Revised action plan shall be more elaborate providing specific Information not as vague and nebulous as in the present action plan.	DPR has been prepared and sent for approval of State Government.
17.	On the basis of the action plan prepared by the State Government and the Urban Development and Housing Department and the Hazaribagh Municipal Corporation, shall ensure that the timelines prescribed shall not spill over beyond 31.12.2020.	DPR has been prepared and sent for approval of State Government.

Other Observation:-

(i) Boundary wall of approx 7 feet has been constructed along West & South side of the Dhobia Talab. Mohalla Road which is almost 8 feet above the water level of the talab. There is no Boundary wall along the North side of the talab.

(ii) The diversion structure (drain with cover) is being constructed for diversion of the sewage & effluent from Dhobia Talab. Almost 90 - 95 % of



OCT 2021

construction work has been completed and the drain is expected to be started by 31st October, 2022.

(iii) No construction work for STP / ETP has been started by Hazaribagh Municipal Corporation. However, DPR for the same has been prepared and sent to State Govt. for approval by HMC & which has further been forwarded to Ministry of Housing & Urban Affairs (M.H.U.A), Govt. of India vide letter no. 1103 dtd 07.09.2022. Copy enclosed Annexure III.

(iv) No Bioremediation / Phyto remediation measure has been implemented. However, cleaning of Dhobia talab and work for increasing of Dissolved Oxygen is being done by Boat having screen and arrangement of water sprinkling into air."

Photocopy of the Inspection Report submitted by the Regional Officer, JSPCB Regional Office - Cum - Laboratory, Hazaribagh vide Memo No. - 930, dated 10.10.2022 is annexed and marked as **Annexure - B.**



6. That the Hon'ble Court may be pleased to accept the compliance report of the order passed in M. A. No. 11/2022/EZ in O. A. No. 99/2016/EZ as submitted aforesaid on the basis of on-site field inspection and analysis of sample collected and analysed by the competent officers of JSPCB.

7. That, it is stated and submitted that this counter reply is being filed bonafide and in the interest of justice.

8. That the statement made in forgoing paragraphs are true to my knowledge in annexure are true copy of its original.

Yatin drakumar D

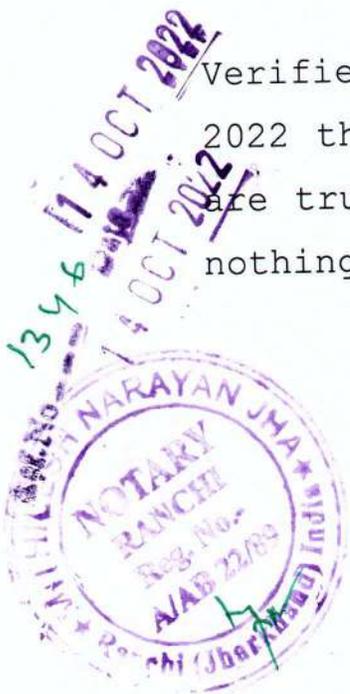
DEPONENT

VERIFICATION:

Verified at Ranchi on this the day of ^{14th} October, 2022 that the averments & facts stated herein above are true and correct to my knowledge and belief and nothing material has been concealed therefrom.

Yatin drakumar D

DEPONENT



M/S 14/10/2022
NOTARY PUBLIC
RANCHI.

14 OCT 2022



JHARKHAND STATE POLLUTION CONTROL BOARD

TOWNSHIP ADMINISTRATION BUILDING, HEC COMPLEX, DHURWA, RANCHI 834004

Telephone: 0651-2400850 (Fax)/ 2400851/2400852/2401847/2400979/2400139

By email

Hon'ble NGT Matter
Time Bound (Urgent)

Ref. No. B-2141

Ranchi, Dated. 07/10/2022

From,

Yatindra Kumar Das,
Member Secretary.

To,

The Regional Officer,
JSPCB Regional Office - Cum - Laboratory,
Hazaribagh.

Sub: - Compliance of the directions issued by the Hon'ble NGT, Eastern Zone Bench, Kolkata in its order dated 19.09.2022 in M. A. No. 11/2022/EZ in O. A. No. 99/2016/EZ in the matter of Tribunal on its own Motion Versus State of Jharkhand & Ors. - Regarding.

Sir,

In connection with the above subject matter - I am directed to inform that the Hon'ble NGT, Eastern Zone Bench, Kolkata in its order dated 19.09.2022 in M. A. No. 11/2022/EZ in O. A. No. 99/2016/EZ in the matter of Tribunal on its own Motion Versus State of Jharkhand & Ors. has given certain directions (Copy enclosed). The operative part of which is as follows: -

"12. We regret to say that the Jharkhand State Pollution Control Board, Respondent No.3 in the Original Application is the Regulatory Authority, but it has not filed its affidavit with regard to linking of the sewage system to the STPs and also on setting up of ETPs by the Hazaribagh Municipal Corporation. There is also no mention of Phyto-remediation/Bio-remediation measures to be taken up as a short term measure till the STP/ETP have been made functional. The Water Analysis Report has also not been filed.

13. Jharkhand State Pollution Control Board is granted two weeks for filing affidavit showing compliance of the order of the Tribunal dated 25.09.2020.

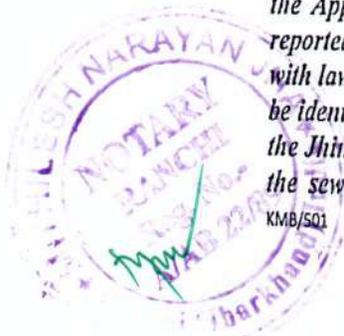
15. List on 17.10.2022."

The Hon'ble NGT, EZB, Kolkata in its order dated 25.09.2020 in O. A. No. 99/2016/EZ (copy enclosed) has given certain directions which is as follows: -

"14. Having regard to the above facts and circumstances, let the State complete the process of preparation of the DPR by 31.12.2020 and the tendering process be commenced with immediately after completion of the DPR and its approval. We expect the Government to consider and approve the DPR expeditiously in order to enable the Municipal Corporation to adhere to the timelines set out in the action plan.

15. The other aspect which requires to be dealt with, as pointed out by the learned Counsel of the Applicant, is the unauthorized structures on the southern side of the Dhubia talab as reported by the Court Commissioner which we direct be acted against strictly in accordance with law. Next, the primary source of pollution as contained in the Gap Analysis Phase should be identified and remedial action taken for diversion of all the sewage and effluent away from the Jhinjharia nalla/stream and the Dhubia talab. Pending the long term action of diversion of the sewage and the effluent to the STPs and the ETPs, the Municipal Corporation shall

KMB/501



implement a short term measure of Phyto-remediation/Bioremediation, as may be advised by the experts in the field. It may be mentioned that Phyto-remediation/Bioremediation does not involve much expenditure. In this regard, the Urban Development and Housing Department State of Jharkhand, the State Pollution Control Board and the Municipal Commissioner Hazaribagh, shall look into the compendium prepared by the CPCB with regard to Phyto-remediation.

16. Let a revised action plan be prepared in terms of the observations made above. Revised action plan shall be more elaborate providing specific information not as vague and nebulous as in the present action plan.

17. On the basis of the action plan prepared by the State Government and the Urban Development and Housing Department and the Hazaribagh Municipal Corporation, shall ensure that the timelines prescribed shall not spill over beyond 31.12.2020.

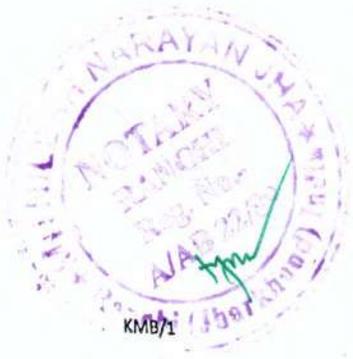
18. With the above directions, this O.A stands disposed off along with connected M.A. However, a report of compliance shall be filed on 31.01.2021 by the Urban Development Department and the Hazaribagh Municipal Corporation.

In light of the above, it is, hereby directed to submit the pointwise compliance report of the order / directions issued by the Hon'ble Tribunal in its order dated 25/09/2020 in the O.A. 99/2016/EZ with relevant documents / reports / photographs, if any, in support at an earliest so that the affidavit may be filed before the Hon'ble Tribunal in time.
Thanking you.

Encl: As above.

Yours sincerely,

(Yatindra Kumar Das)
Member Secretary
Yatindra Kumar Das





झारखण्ड राज्य प्रदूषण नियंत्रण पर्वद,

ANNEXURE - B¹

क्षेत्रीय कार्यालय-सह-प्रयोगशाला, पी0टी0सी0 चौक, मटवारी रोड, हजारीबाग।

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पत्रांक.....

दिनांक.....

Inspection report of Dhobia Talab & Jhinhiria Nala, Hazaribagh in the light of Hon'ble National Green Tribunal, Eastern Zone Bench, Kolkata, in M.A. No. 11/2022 EZ in O.A. No. 99/2016/EZ in the matter of tribunal on its own motion Vs State of Jharkhand & Ors.

In the light of order dated 19.09.2022 passed by Hon'ble National Green Tribunal, Eastern Zone Bench, Kolkata. M.A. No. 11/2022 EZ in O.A. No. 99/2016/EZ in the matter of tribunal on its own motion Vs State of Jharkhand & Ors., Dhobia Talab, Ompuri Nalla, Jhinhiria Nalla & surrounding areas were inspected on 06.10.2022 by Sri A. K. Yadav, Regional Officer, Regional Office, Jharkhand State Pollution Control Board, Hazaribagh and SriChandan Kumar Yadav, Assistant Scientific Officer, Regional Office, Jharkhand State Pollution Control Board, Hazaribagh.

During inspection it was found that -

- Dhobia Talab is situated at sadar Block area near Ompuri Mohalla of Hazaribagh. One Nalla from South West Corner containing sewage from nearby houses and surface runoff of St. Columbus Groud and Well's Ground and some part of Ompuri Nalla from North West side meet into Dhobia Talab. Sewage of the nalla was going into Dhobia Talab as nalla is located at upper gradient with respect to Dhobia Talab.
- Water samples of Dhobia talab was collected on 05.10.2022 and analysed (Analysis report is enclosed) as annexure I.
- From the perusal of water analysis reports of Dhobia Talab, PH, Dissolved Oxygen & BOD value does not conform to standard for class 'B'. Designated Best use water quality Criteria notified by CPCB.

In the order dated 19.09.2022 of the Hon'ble NGT the compliance of directions given in the order dated 25.09.2020 has been asked. The status of compliance of directions are as follows :-

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15.	The other aspect which requires to be dealt with, as pointed out by the learned Counsel of the Applicant, is the unauthorized structures on the southern side of the Dhobia talab as reported by the Court Commissioner which we direct be acted against strictly in accordance with law. Next, the primary source of pollution as contained in the Gap Analysis Phase should be identified and remedial action taken for diversion of all the sewage and effluent away	The unauthorized structures on the southern side has been freed and is under possession of the Dhobia Talab. Drain from Anandpuri Nala to Jhinhiria Nala for diverting all the sewage and effluent has been constructed. Cleaning of Dhobia Talab and work for increasing of Dissolved Oxygen is being done by

	from the Jhinharia nalla / stream and the Dhobia talab. Pending the long term action of diversion of the sewage and the effluent to the STPs and the ETPs, the Municipal Corporation shall implement a short term measure of Phyto - remediation / Bioremediation, as may be advised by the experts in the field. It may be mentioned that Phyto - remediation / Bioremediation does not involve much expenditure. In this regard, the Urban Development and Housing Department State of Jharkhand, the State Pollution Control Board and the Municipal Commissioner Hazaribagh, shall look into the compendium prepared by the CPCB with regard to Phyto remediation.	Boat having screen and arrangement of water sprinkling into air. No Phyto - remediation / Bioremediation were seen in the Dhoba Talab. (77)
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Other Observation :-

- (i) Boundary wall of approx 7 feet has been constructed along West & South side of the Dhobia Talab. Mohalla Road which is almost 8 feet above the water level of the talab. There is no Boundary wall along the North side of the talab.
- (ii) The diversion structure (drain with cover) is being constructed for diversion of the sewage & effluent from Dhobia Talab. Almost 90 - 95 % of construction work has been completed and the drain is expected to be started by 31st October, 2022.
- (iii) No construction work for STP / ETP has been started by Hazaribagh Municipal Corporation. However, DPR for the same has been prepared and sent to State Govt for approval by HMC & which has further been forwarded to Ministry of Housing & Urban Affairs (M.H.U.A), Govt. of India vide letter no. 1103 dtd 07.09.2022. Dopy enclosed Annexure III.
- (iv) No Bioremediation / Phyto remediation measure has been implemented. However, cleaning of Dhobia talab and work for increasing of Dissolved Oxygen is being done by Boat having screen and arrangement of water sprinkling into air.

sd/-
(C. K. Yadav)
A.S.O.

A
10/10/2022
(Ashok Kr. Yadav)
RO, Hazaribagh



Memo no.-

930

Hazaribag,

Date 10.10.2022

Copy to The Member Secretary, Jharkhand State Pollution Control Board, Ranchi for informations necessary action.

A
10/10/2022
(Ashok Kr. Yadav)
(Regional Officer)

Annexure-I



Jharkhand State Pollution Control Board Regional Office- Cum- Laboratory, Hazaribag

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R & D Cell

Lab. Ref. No. 423

Date- 08.10.2022

Analysis report of Physico Chemical Examination of Sewage/Trade Effluent.

- 1. Name & address of the Pond :- Dhobia Talab, Hazaribagh
- 2. Point of collection :- Dhobia Talab(Eastern Side)
- 4. Date & Time of collection: 05.10.2022 at 10.15 AM
- 5. Collected by: Regional Office, Hazaribagh
- 6. Sample Source:- Talab(Surface water)

S.No.	PARTICULARS	LIMITS	VALUE OBTAINED
1.	Temperature A/W. (°C)	-	26.0/24.0
2.	pH	6.5-8.5	6.8
3.	D.O. mg/Lt.	5.0 or more	3.0
4.	BOD, mg/Lt.	3.0 or less	10.2
5.	COD mg/Lt.	--	256.0
6.	Total solid mg/L	--	410
7.	Total Suspended solid mg/L	30	98.0
8.	Total Dissolved solid mg/L	--	312

REMARKS: - The value of Dissolve Oxygen Bio-Chemical Oxygen Demand & total suspended solid do not conformed to the prescribed limit as per classification of in land surface water body by CPCB for class 'B'

Chuman
08/10/2022
(C.K. Yadav)
A.S.O.

A
08/10/2022
(A.K. Yadav)
Regional Officer
Board Analyst



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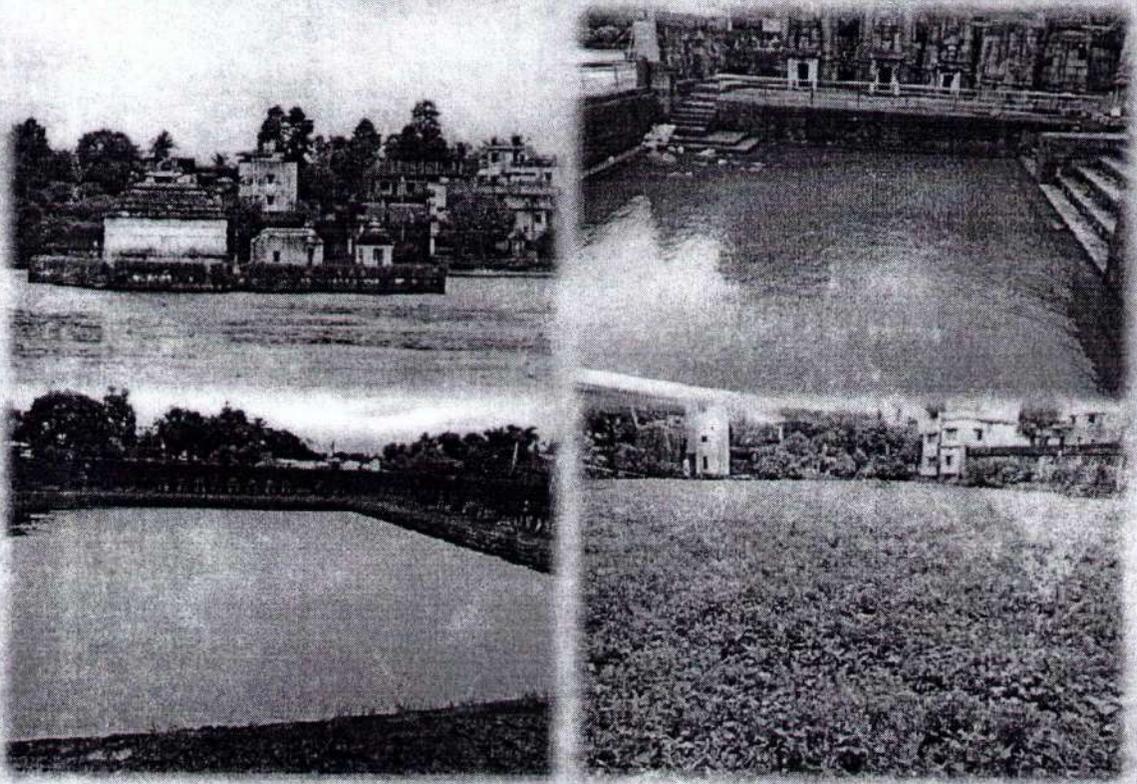


JUIDCO Limited

GOVT. OF JHARKHAND



Preparation of Detailed Project Report for Rejuvenation of Water Bodies in NORTH CHHOTANAGPUR DIV. (Cluster IIA)



DHOBIA TALAB, HAZARIBAGH
(Ward no. 12)

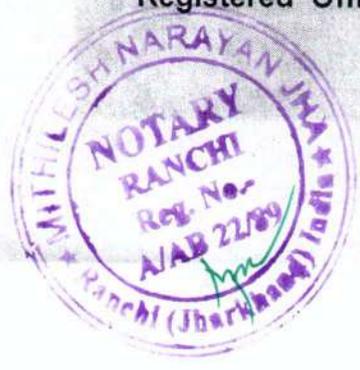
DETAILED PROJECT REPORT

SUBMITTED BY :



Corporate Office: 76-C, Sector-18, Gurgaon, Haryana - 122015, India
Registered Office: "KAILASH", 5th Floor, KG Marg, New Delhi-110 001, India

JULY 2022



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- 1.2 AUTHORITY FOR PREPARATION OF PROJECT
- 1.3 PROJECT AREA
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 - 1.4.1 GEOLOGY
 - 1.4.2 WATER BODIES
- 1.5 NEED OF THE PROJECT
- 1.6 OBJECTIVE OF THE ASSIGNMENT
- 1.7 SCOPE OF WORK
- 1.8 TIME FRAME
- 1.9 APPROACH & METHODOLOGY
- 1.10 THE DPR NEEDS TO PROVIDE INFORMATION COVERING THE FOLLOWING AREAS:
 - 1.11 ISSUES
 - 1.12 BACKGROUND AND LEGAL ASPECTS

CHAPTER-2: DESCRIPTION OF POND

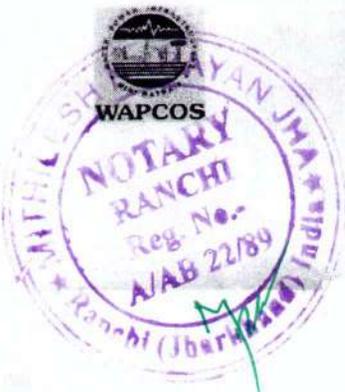
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REJUVENATION OF DHOBIA TALAB, HAZARIBAGH (WARD - 12)

**DPR &
ESTIMATE**



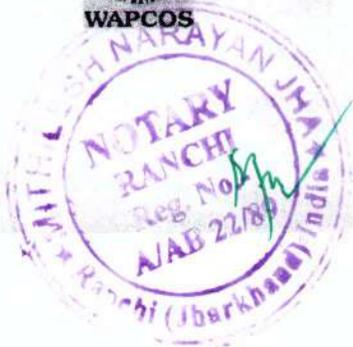
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CHAPTER-1

INTRODUCTION

1.1 About AMRUT:

AMRUT aims to develop a water – secure future under the vision of Aatm Nirbhar Bharat.

It target to get universal house hold coverage of Sewerage / Septage to house hold and build amenities in cities which will improve the quality of life for all, specially the poor and the disadvantage is a national priority.

AMRUT wishes to explore the idea of development of green spaces, parks and water bodies as a public recreations place or Amusement Park, located in a historically and culturally significant precinct with an opportunity to leverage the place making for tourism development in the city.

The water body and adjacent water front or Park area will boost the city’s social identity and people will feel a collective pride in associating themselves with the presence of a historically center public plaza in their city.

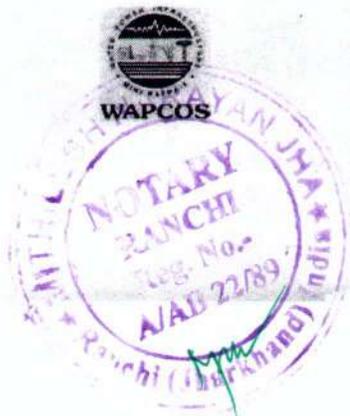
In line with the vision of AMRUT and presence of water body in Jharkhand and it’s socio-cultural, historic Environment significant in the context of Ranchi.

It was decided to leverage the idea of water body development and development of Green space along the water body.

Mission Components

The components of the AMRUT consist of capacity building, reform implementation, water supply, sewerage and Septage management, storm water drainage, urban transport and development of green spaces and parks. During the process of planning, the Urban Local Bodies (ULBs) will strive to include some smart features in the physical infrastructure components. The details of the Mission components are given below.

- Water supply systems including augmentation of existing water supply, water treatment plants and universal metering.
- Rehabilitation of old water supply systems, including treatment plants.
- Rejuvenation of water bodies specifically for drinking water supply and recharging of ground water.
- Special water supply arrangement for difficult areas, hill and coastal cities, including those having water quality problems (e.g. arsenic, fluoride).



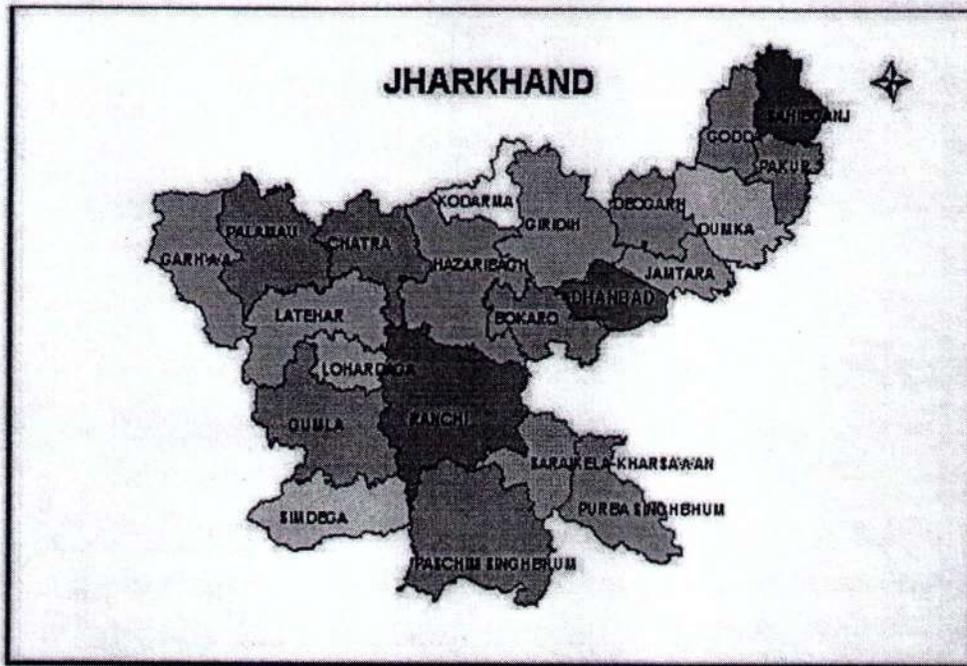
1.1.1 GENERAL

Ponds are an essential asset for our survival. They store rainwater and work as groundwater recharge points. They can also treat sewage to some extent. Not long back, ponds water was used for potable purposes. Since ancient time, they have been central to numerous cultural and economic activities. In fact, village communities had certain set of rules for the preservation of village ponds. But things seem to have changed drastically specially in urban areas in recent decades. The conservation and management of Dhoobia Talaab Hazaribagh is essential for sustenance of water body.

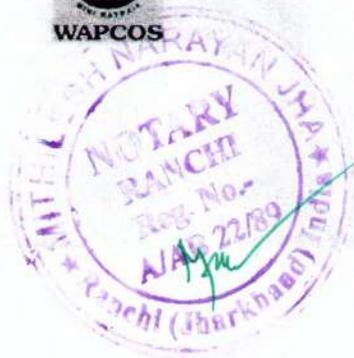
1.2 Authority for Preparation of Project

The Managing Director, JUIDCO has awarded the work after selection through competitive bidding for "Selection of Consultant for preparation of Detailed Project Report for Rejuvenation of Water Bodies in various cluster's in Jharkhand- North Chhotanagpur (Cluster IIA)", to M/s WAPCOS. Ltd. Delhi.

1.3 PROJECT AREA



The State of Jharkhand was created as 28th State of the Indian Union by the Jharkhand Reorganization Act on 15th November 2000. The state was formed on by carving out the Bihar divisions of Chota



REJUVENATION OF DHOBIA TALAB, HAZARIBAGH (WARD - 12)

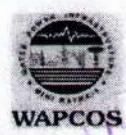
Nagpur and Santhal Parganas. It is bounded by Bihar on the North, Orissa on the South, Chhattisgarh on the west and West Bengal on the East. Topography of the State is mostly undulating, hilly and sloping with mountains, forests, river basins and valleys. The state profile of the Jharkhand state is given below in Table 1-1.

Table 1-1

State Profile	
State	Jharkhand
State Capital	Ranchi
Total Area (Census 2011)	79,710 sq.km
Population Density (Census 2011)	414 persons per sq.km
Number of Districts	24
Number of Sub-division / CD Blocks Subdivision	38 / CD Blocks - 260
Important Urban Centers / Towns	Jamshedpur, Ranchi, Hazaribag, Giridih, Dhanbad, Deoghar
Total Population (Census 2011)	32,988,134 (about 2.73% of the country's population)
Sex Ratio (Census 2011)	948
Literacy Rate (Census 2011)	66.40%

1.3.1 History

Hazaribagh is a very old district of the year 1833 while British rule was in the country. It is the divisional Head Quarter of North Chotanagpur division. Etymologically, the word Hazaribagh is made of two urdu words, 'Hazar' meaning thousand and 'Bagh' meaning Garden. Hence the literal meaning of Hazaribagh is 'city of Thousand Gardens'. It may be named like that also due to 'Hazari' a small village nearby in the past. It was also meant for a camping ground for troops and travelers marching along 'New Military Road' from Kolkata to Varanasi constructed in 1782 and the following years. 'The Grand Trunk' road subsequently replaced the military road in the mid eighteen hundreds. A



REJUVENATION OF DHOBIA TALAB, HAZARIBAGH (WARD - 12)

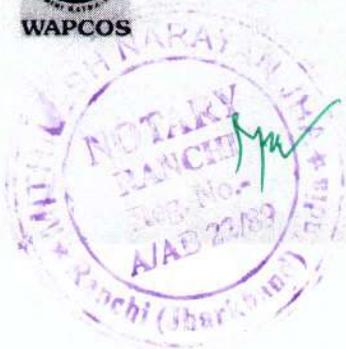
DPR & ESTIMATE

dilapidated watch tower meant to guard the military road is still visible on tower hill, near Silwar. Hazaribagh municipality notified in the year 1886 is located in the eastern part of the country between 23 59' 28.85'' N and 85 21' 29.78'' E. Two new districts namely Giridih and Koderma were made out of Hazaribagh district area in 1972 and 1994 respectively. One more Chatra district was made out of Hazaribagh later on. Hazaribagh partly lies in Damodar basin and partly in Barakar sub-basin. Important River of this district are Damodar, Barakar, Bhairvi, Gorhi and Tandwa. It is rich in minerals namely Fire-clay, Feldspar, Gasset, Iron to some extent, Coal. Lime Stone, Mica, Quartz, Piorite, Building purposed star etc. Industrial base of the district are Bankara, Giddi, Hazaribagh, Patratu, Ramgarh, Sirra, Rajrapple where mostly Coal, Coke, Ash Firebricks are produced. There are three sub-divisions namely Ramgarh, Hazaribagh, Barhi and numbers of blocks and fifteen Ramgarh is also famous for containment town 50 km from Hazaribagh district is on national highway connecting Ranchi-Patna, Hazaribagh Road Railway Station lies on the Delhi- Howrah route. Hazaribagh central jail housed many leaders of the Indian Freedom Movement including Dr. Rajendra Prasad, Later the first President of India.

All these areas together form the Hazaribagh Urban Agglomeration, for which the CDP has to be formulated. The City Development Plan for Hazaribagh deals with in a comprehensive, cohesive and concise manner, all the important elements of governance in the form of themes: Urban Growth Management / Development Planning, Urban Infrastructure Management, Urban Poor and Slums, Urban Environment, Social Development, Urban Governance and Management and Urban Finance and Management apart from Demographic Trends, Economy Pattern, etc with a long term strategic vision. The integrated development plan of the corporation envisages identifying infrastructural projects viz, preservation of water bodies, water supply, sewerage, drainage, solid waste management etc. with a vision goal for a planning horizon of 20-25 years to tide over the present situation aiming at overall development of the city. River front & Ponds / Lakes development and conservation (Preservation of water bodies) for the project areas is one of the identified project for which corporation sought Consultancy Services for preparation of DPR. WAPCOS has been assigned the job after selection through competitive bidding.

1.4 Geographical Location

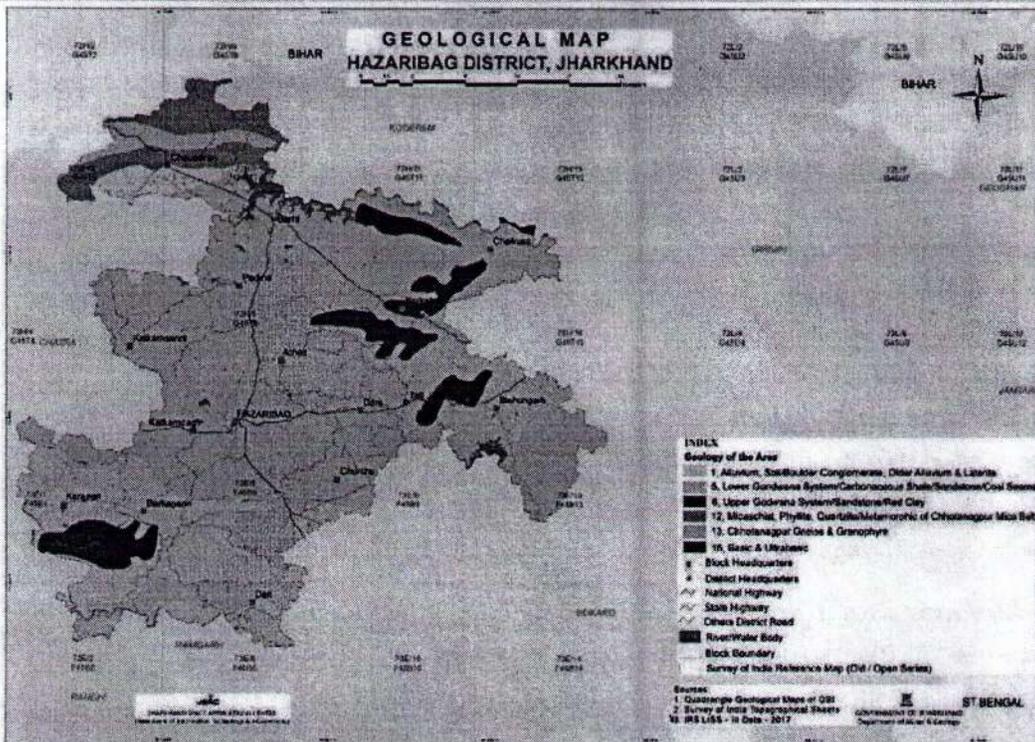
Hazaribagh lies at 23 59' 28.85'' N and 85 21' 29.78'' E longitude. The average elevation is 610 m (2001 feet) above sea level



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REJUVENATION OF DHOBIA TALAB, HAZARIBAGH (WARD - 12)

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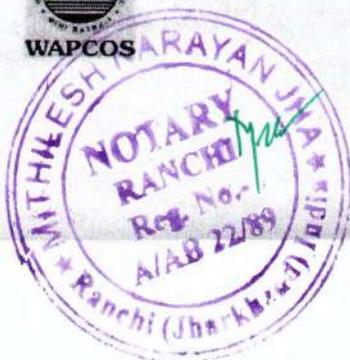


1.4.1 Geology

The area forms part of the Chhotanagpur plateau. A broad spectrum of Achaean to Quaternary formations comprising crystalline, sedimentary and metamorphic rocks occur in the area. The unclassified metamorphic, gneissic complex and Proterozoic intrusive rocks suffered strong folding deformation and medium grade metamorphism. Most of the faults and shear zones in the gneissic and metamorphic and Gondwanas are mainly E-W, NW-SE and NE-SW trending. The crystalines are foliated, lineated and jointed. The foliation is moderate to steeply dipping, with varied trends. The most dominant being E-W. Bedding preserved in Gondwana is horizontal or low dipping. Unclassified metamorphics are represented by epidiorite, amphibolite, Hornblende schist /gneiss, Quartzite, felspathic/micaceous quartz schist, crystalline limestone, calc silicate, phyllites and mica schist. Chhotanagpur granite gneiss is represented by biotite granite gneiss, migmatites augen gneiss, hornblende granite gneiss, and Epidote granitegneiss the rocks have been profusely intruded by dolerites, met dolerites, pegmatite, intrusive granite etc.



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Rocks of Gondwana Super Group present in Hazaribagh and Ramgarh district are represented by boulder bed, sandstone, shale and coal seams. Broadly, the Geological formation found in the Hazaribagh District may be grouped into two

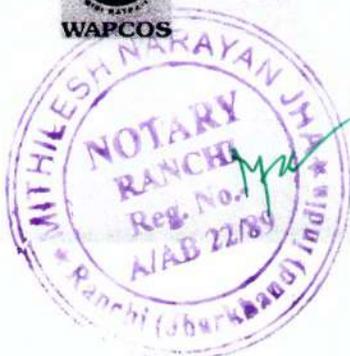
Chief Divisions:

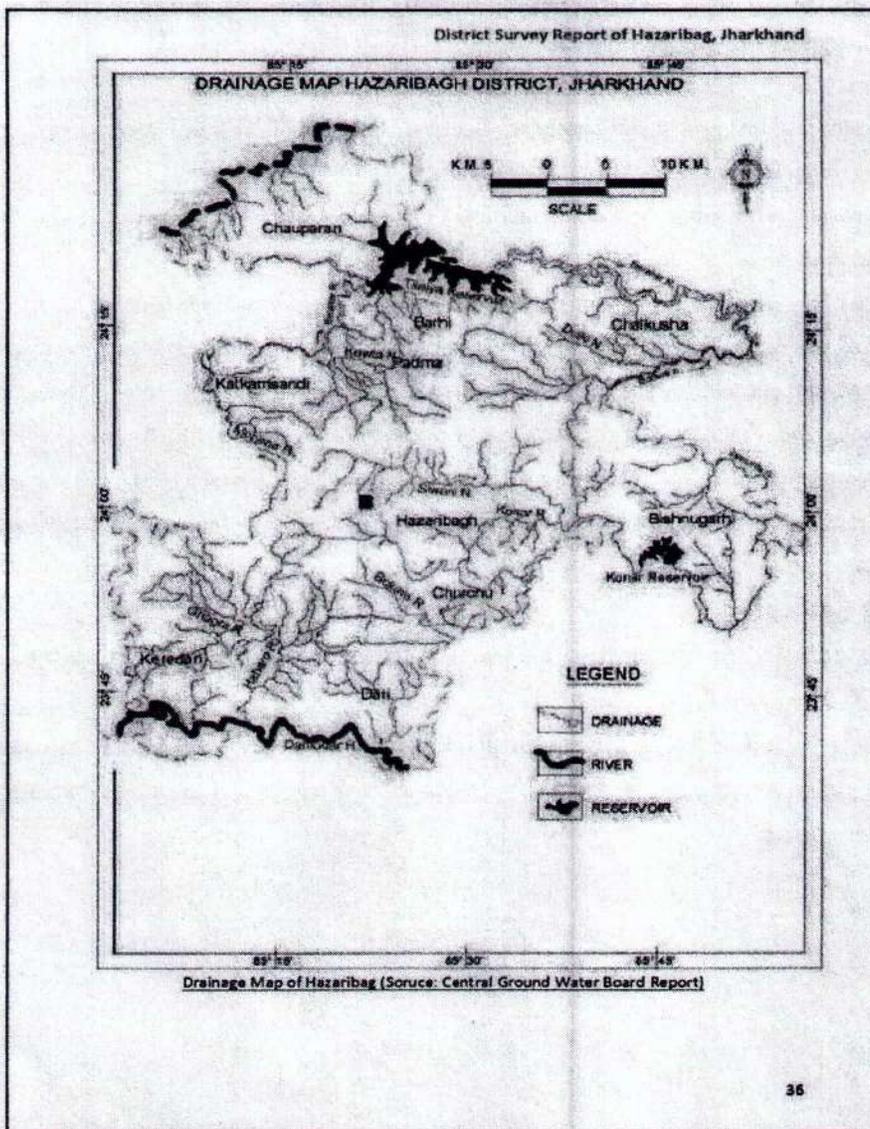
1. Pre-Cambrian comprising a great variety of Gneisses, Schists and Granites and occupying the greater portion of the District.
2. The Gondwana division having three important Coal Fields, namely, South Karanpura, North Karanpura and Ramgarh.

The district is a part of Pre-Cambrian Formation whose age goes back to 3500 Million Years of the early history of the earth. However, the belts of Coal Bearing Gondwana Formations evolved in a continental environment in Late carboniferous to Early Cretaceous Time. (290-150 Million Years). Both Exogenous and Endogenous processes act as agents in carving outland forms. The former includes destructive processes of weathering and erosion by several external agents. The Gondwana Basins were initiated in the late Carboniferous and developed in to down faulted half garden with a very thick pile of sediments.

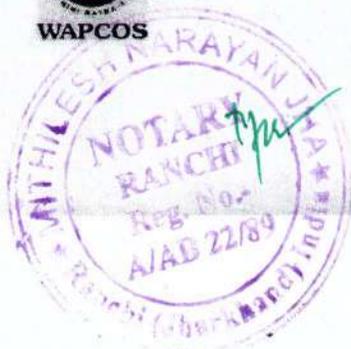
1.4.2 Water Bodies

The district is drained by two major rivers, the Damodar and the Barakar with a few minor tributaries like Konar, Siwane, Keso, Barsot, Chandwara etc. These rivers are annual and rain fed. The general flow direction is South East to East. It is structurally controlled in the coalfield area and in general has sub-dendritic pattern due to geomorphic controls. Detail drainage pattern and stream orders are shown in the map given below.





The district has very little irrigation facilities. Irrigation is done mostly from dug wells, tanks and ponds. The cultivatable land is divided into two categories, namely, the upland and the lowland. Uplands are suitable for dry crops whereas paddy is grown in low land. As per 2012 land use pattern, district has 4302 sq. km. area. Forest area is 2560 sq. km (42.3%). Land put to non-agricultural use is 376 sq. km. (6.21%). Barren and uncultivable land is 541 sq. km. (8.9%). Current fallow is 730 sq. km.



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and land other than current fallow is 560 sq. km. (9.2%). Net area sown is 1061 sq. km. (17.5%). Kharif and Rabi are the two seasons for agriculture. Kharif extends from the end of June to the end of October when Paddy, maize, cereals and millets are grown. Rabi starts at the end of October and continues up to the end of March. Wheat, Barley, maize grams and vegetables are grown during this season. The district has very little irrigation facilities. Irrigation is done mostly from dug wells, tanks and talabs. The Culturable land is divided into two categories, namely, the upland and the lowland. Uplands are suitable for dry crops whereas paddy is grown in low land.

1.5 NEED OF THE PROJECT

Visualizing the future growth of population, industrial activities and other development and environmental needs of the City the District and Municipal authorities have stressed on the importance of preparation of Project Report for River Front Development and development and conservation of Lakes / Ponds. It may be mentioned that once the Detailed Project Report is ready and works on Rejuvenation of Water Bodies are taken up for execution giving priority as required the existing scenario will undergo changes thereby creating a sense of awareness among the public for better environment.

Land use and management of water bodies with following aspects will prove beneficial to the city people.

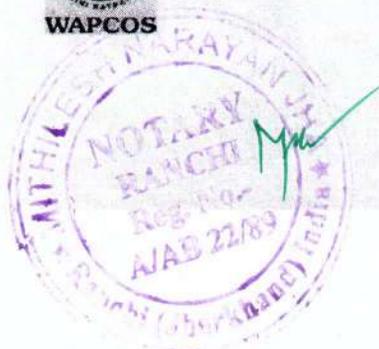
- (i) Land use change
- (ii) Land development by plantation of herbal trees
- (iii) Public land management by beautifying it and making Kiosk and outdoor recreation point.

The amount of natural or self-purification that occurs in the receiving water depends on its flow or volume, its oxygen content and its ability to re-oxygenate itself.

The proportion of this self-purification capacity sometimes called assimilative capacity that can be safely utilized in rivers, lakes or estuaries depends on the uses of which water is subjected elsewhere, the efforts of the people and the total economy of the receiving water system. Water pollution control should be programmed to maintain / restore the natural water bodies to various designated best use.

For the purpose of water bodies pollution monitoring the fresh water has been classified into five categories and ambient standard for each of the categories have been established. These are:-

- Drinking water source without conventional treatment but after disinfection.
- Bathing, swimming and recreation.



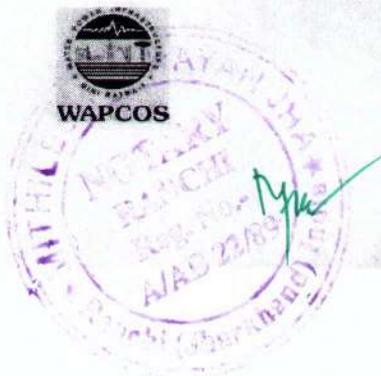
- Drinking water source after conventional treatment.
- Propagation of wild life, fisheries etc.
- Irrigation and industrial cooling and controlled waste disposal.

The parameters used for classifying water are coli form, turbidity, color, B.O.D., C.O.D. etc and any stretch not conforming to classification for designated use is considered to be polluted and therefore, stringent pollution abatement measures are desirable in such stretches. Any stretches or reach of river is subjected to multiple uses. A quality criterion is to be attached to every use. The classification and zoning of river at various reaches help in identifying the water quality objective of these various reaches of river which when compared against the water quality status indicates the extent of cleaning required for various reaches of the river. With a view to evaluate pollution potential in the river basin, it is necessary to have a complete inventory of pollution, sources and their quantities and qualitative contribution to pollution.

1.6 OBJECTIVE OF THE ASSIGNMENT

The objective of the consultancy service is to prepare Detailed Project Report for Rejuvenation of Water Bodies in various ULBs of Jharkhand State by incorporating the provisions not limited to the following in such a way that it should be Divyang Friendly campus:

- Desilting of Pond
- Strengthening the embankments, and stone packing
- Increasing the catchment area wherever feasible
- Water & Sewerage Treatment through economic and eco-friendly technology (If needed).
- Diverting the polluting drains to treatment plants
- Harvesting the rain water through storm water drains into water body (which is not receiving sewage/ effluent)
- Creation /Strengthening of storm water drains around water body
- Strengthening / Rejuvenation of the aquifers/community wells.
- Boating Facility



1.7 SCOPE OF WORK

- A comprehensive study of various social, economic, and physical problem confronting the water bodies bans
- To identify the process, procedure and methodology of containing such problems and prepare a Concept Plan
- To prepare Land use plans along the water bodies and compile them in form of Preliminary project report
- To prepare detailed project reports containing detailed consideration on hydrological data, sanitary conditions of the project area, topography of the project lands, legal data of lands and public opinions, engineering schemes, landscaping plans, their calculation of quantities and estimates of costs, a CPM-PERT chart for conducting the programme successfully
- The DPR must deliberate on and evaluate the economic and technical soundness, financial viability including project cost recovery and user charges et al. Social and environmental impact assessment may done and the DPR must come up with recommendations concerning implementation of the project
- To explore public-Private-Partnership for implementation of the projects

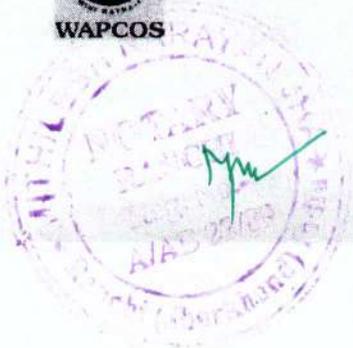
1.8 TIME FRAME

- The study shall be completed in a time frame of Six Months from the date of signing of Agreement.

1.9 Approach & Methodology

- The DPR is to be prepared carefully and with sufficient details to ensure appraisal approval and subsequent project implementation in a timely an efficient manner. This document provides a reference format for preparing DPRs / Project Reports across sectors. The major sections covered are as follows:

- I. Sector background context & broad project rationale
- II. Project definition concept and scope
- III. Project cost



REJUVENATION OF DHOBIA TALAB, HAZARIBAGH (WARD - 12)

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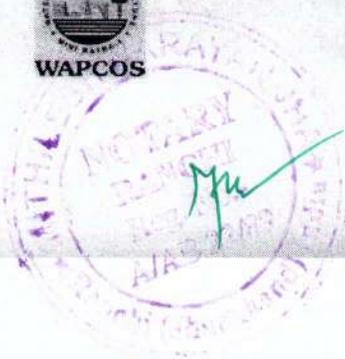
- IV. Project institution framework
- V. Project financial structuring
- VI. Project phasing
- VII. Project O&M framework and planning
- VIII. Project financial viability/sustainability
- IX. Project benefits assessments

1.10 The DPR needs to provide information covering the following areas:

- Existing status of the physical infrastructure (brief description)
- Base line information in terms of user coverage & access (by different user categories/segments including urban poor)
- List of various projects propose for the sector in the City Development Plan (CDP) an confirmation /explanation of how this project is aligned with state
- CDP priorities
- List of other capital expenditure projects supported by other schemes for the sector (sanctioned projects that have yet to commence as well as ongoing projects)
- Existing tariff an cost recovery methods an extent of cost recovery
- Past five year trends
- Existing per unit cost; existing per unit service delivery price (in absolute terms an also on per capita basis) (The basis, assumptions and method of calculations in regard to the above are also to be provided)
- Existing areas of private sector/community participation in the sector for design construction project management and /or O&M services (including billing & collection)
- Any other qualitative information (e.g. list of key issues that are of importance to this sector an project; importance of the project to the sector extent to which the project would address key issues/problems of the sector etc.)

1.12 ISSUES

- Key Issues



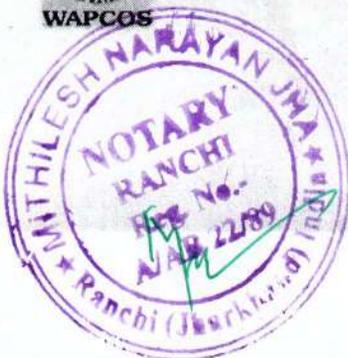
REJUVENATION OF DHOBIA TALAB, HAZARIBAGH (WARD - 12)

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- a. Low level of Utilization of Water Bodies. More than 20 water bodies available with in Municipal Corporation jurisdiction, which are not utilized in a productive manner. Presently, the water bodies are in dilapidated condition and are only being used for recharge purpose. Misuse of Water Bodies is also noticed in terms of uncontrolled solid waste dumping in some places.
- b. Pollution of Water Bodies. Chemical waste from industries and domestic sewers flows directly in to ponds/lakes which lead to polluting the water bodies in the city.
- c. Lack of Institutional set. Due to the lack of institutional framework and funds to maintain the water bodies.
- d. Encroachments on Lake/ponds. In the absence of proper fencing/compound wall around water bodies, most of the lakes/ponds are encroached by the inhabitant

1.13 Background and legal aspects

- Introduction of domestic or industrial waste to a stream or lake in large quantities, not only affect the environment to a great extent but also adversely affects the aquatic communities. All the industrial concerns should know the extent up to which their effluent should be treated so that they can discharge the treated effluent either on land for irrigation or to river or lakes or in estuaries depending upon the location. The Central Board for the Prevention and Control of Water pollution, New Delhi has assumed the responsibility of evolving industry specific Minimal National Standard (MINAS).
- The Indian constitution gives explicit recognition to the need for environmental protection by incorporating it in its Directive principle of state policy. Article 48A states that "The state shall endeavor to protect and improve the environment and to safeguard the forest and wild life of the country."
- Further article 55A (g) relating to fundamental duties states that "It shall be the duty of every citizen of India to protect and improve the natural environment including forests, lakes, rivers and wild life and to have compassion for living creatures". In pursuance of this policy decision, measures are to be taken for protection and maintenance of the environmental needs of nature. Schemes for River Front Development and Construction of Lake / Pond / Water it properly
- Implemented and executed will contribute immensely towards improvement and preservation of environment.



CHAPTER-2

DESCRIPTION OF POND:-

2.1 INTRODUCTION

As a part of the scope of work of rejuvenation/restoration of the following water bodies are proposed to be covered.

SN	Name of Pond	Ward	Area in Acres
1	Dhobia Talab	Ward-12	5.264

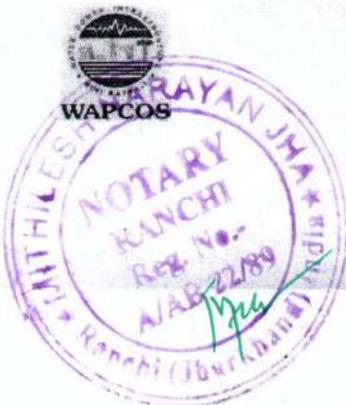
The above referred WATER BODY are briefly described in the following sections:

Figure-2.1: Location of Ponds



2.2

(A) Dhobia Talab



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REJUVENATION OF DHOBI TALAB, HAZARIBAGH (WARD - 12)

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Dhobia talab is one of the heritage and old Talab in Ward -12, Hazaribagh City. Covering an area of about 5.264 acer, the tank is located in the heart of the old city, and is surrounded by many temples and monuments of cultural significance.

The salient features of the Pond are:

Total Area: 5.264 acres

Water Spread Area: 4.5 acres

Average Water Depth

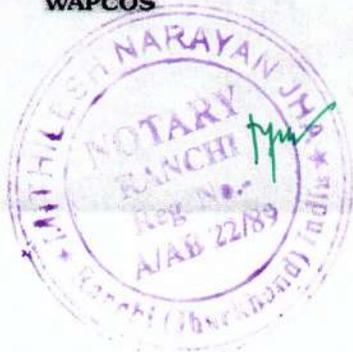
Rainy season: 4m

Dry Season: 2M

Inlet: Two.

Outlet: One

Water Source: Rain water from upper catchment. The natural inflow of ground water has been stopped due to intensive construction activities



CHAPTER-3

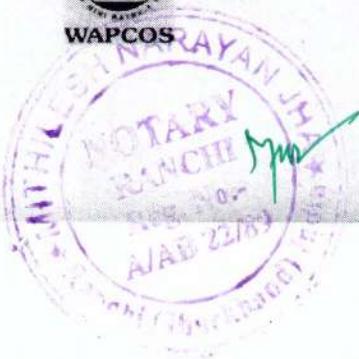
Major Finding & SWOT Analysis

3.1 Observation

- **Dhobia talab** is a 5.264acres property of Hazaribagh Nagar Nigam which is currently in a bad state and needs to immediate attention for Rejuvenation.
- The Talab crowded with dairy cattle and there is unchecked growth of water hyacinth.
- Idol immersion and various other rituals takes place at the site resulting in dumping of waste which is not removed eighter and leading to further degradation of pond condition.
- There is presence of open urination and defection at certain places.
- The site is unsafe during evening and early hours as there is lack of light and dilapidated condition of site results in presence of anti-social activities within the property.
- The site lack of public conveniences and infrastructure like seating, green, land scape trees.
- There is critical lack of lighting and security measures, thus public safety is an issue



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CHAPTER-4

DEMAND ANALYSIS AND RECOMMENDATIONS

4.0 GENERAL

Key Issues

- i) Non Attention towards the Cleaning of Ponds/Water Bodies
- ii) Fall of dirty water through Sewer lines, Nallas etc.
- iii) Dirty physical appearance
- iv) Foul Smelling of water
- v) Non -management of water bodies
- vi) Non healthy environment for fishes, frogs and other living beings
- vii) Non availability of water throughout the years
- viii) Non availability of proper inlet and outlet channels
- ix) Breeding of health hazardous insects.
- x) Receptive of solid waste etc.

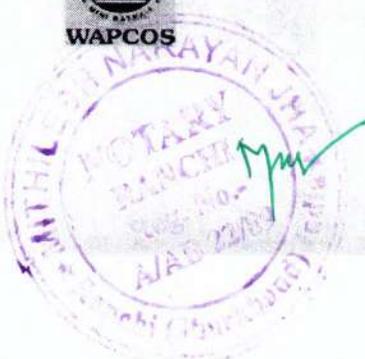
By considering the above mentioned key issues, religious importance, degradation of water bodies, demand of localities for the amusement etc. it has become the prime time to entertain the key issues, conserve and develop the Important Ponds/Lakes/River front

The DPR is prepared in such a manner as to achieve the objective in terms of abatement of pollution from various sources of pollution and of environmental improvement. Relevant required data have been collected during survey work for designing the system components. Field survey has been done of water bodies viz. pond / lake and river.

The DPR has been prepared so as to meet the requirement and needs of the AMRUT-2.0 as mentioned below

Existing status of the physical infrastructure (brief description)

- Rejuvenation of wetlands, water bodies by desilting, strengthening the embankments, and stone packing.
- Diverting the polluting drains to treatment plants
- Harvesting the rain water through storm water drains into water body (which is not receiving sewage/ effluent)



REJUVENATION OF DHOBIA TALAB, HAZARIBAGH (WARD - 12)

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- Strengthening/ rejuvenation of the aquifers/ community wells
- Creation/ strengthening of storm water drains around water body
- Provision of STP to treat inflow into water body.
- Development of the community green spaces linked to a clean water body
- Funds for the projects of this sector shall not exceed 5% of total project allocation (4% for rejuvenation of water bodies and 1% for development of green spaces & parks)

4.1 RECOMMENDATIONS

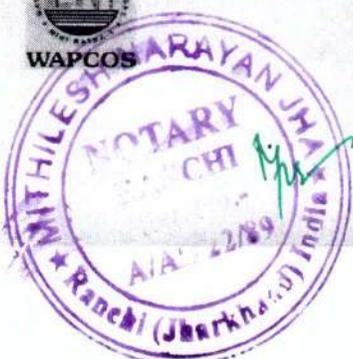
The consultants have considered the various schemes and systems to improve the environment of the city. This DPR is concerned of the sub-system or schemes that relate to

- Sewerage collection, treatment, reuse / disposal
- Low cost sanitation
- Electric crematoria
- Other non-point sources of pollution
- River front development works
- Watershed / Catchment Area Treatment
- Municipal Solid waste (Provision of Litterbins)
- Bio-medical waste
- Human resource development
- Institutional strengthening

4.2 PROPOSAL OF VARIOUS SYSTEMS FOR WATER BODIES

By considering the socio-economic profile and other related stuffs the consultants have proposed various systems for individual water bodies which are listed below:

- 1) Entry Gate
- 2) Desiltation of pond
- 3) Boundary / Fencing
- 4) Green Park
- 5) Mosquitoes control unit
- 6) Flush Light
- 7) Lotus and lily Farming in the water bodies
- 8) Brick Soling
- 9) Grass turfing
- 10) Walking Path



- 11) Plantation -.
- 12) Inlet & Outlet facility for water
- 13) Seating arrangement (Benches and Chairs) -.
- 14) Litterbins -.
- 15) Lighting -
- 16) Provision of Recharge Pits and Road Top Water Harvesting -
- 17) Polythene sheet for preventing seepage of water
- 18) Air diffusion system (Aeration) -

4.3 TO IMPROVE AESTHETIC AND REDUCE POLLUTION & BANK EROSION

Water Environment

It is due to introduction of substances into water which reduces its offensive to senses of sight, taste, smell or touch and its usefulness on surface as well as underground.

The project is aimed at to improve the aesthetic value of the river / water bodies and also to reduce pollution related to these. Few decades before these water bodies had glorious past and now at present on the contrary these water bodies provide water woe to the uses.

Woody, brushy and her haceous plants to a great extent protect water streams and bodies from pollution. Now we know how to design water conservation zones to completely prevent pollutants from entering the water body. Under the condition of intensive agricultural chemization and environment pollution wider use must be made of the properties of a biotic component. Measures should be taken to create geochemical barriers and to impede the transportation of harmful substances.

Though "biological" amelioration it is possible to improve the microclimate of irrigation and drainage system, to reduce the application of pesticides thanks to insectivorous animals, to increase the role of organisms responsible for regulation of physical and chemical processes.

All biological elements should be extensively introduced into reclamation planning practices if geo-system is concerned. However, the results will not be good enough if all the elements are not integrated. One should plan the natural ecosystem of reclaimed areas as a whole, taking into account the project proper and its adjacent areas. The matter of primary importance is the comprehensive assessment of all diverse useful functions of particular types of plants, species of animals and microorganism in definite "morphological sections" of a given area. The proper assessment shall minimize the travel of substances and energy; promote the accumulation of useful properties of a landscape.



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The problems considered in this paper have proved once again that it is necessary to include the assessment of environmental impact of water engineering developments into the series of the most important scientific studies in the field of land reclamation. Permission for discharge of treated effluents into river from industries along its fellow the prescribed effluent standard.

Water Pollution:

- (i) Several low capacity water treatments that can be established as per units waste water generating capacity.
- (ii) Construction of new sewerage treatment facilities.
- (iii) Implementation of River Water Quality, improvement programme to upgrade Subarnrekha, Kharkai and other river water qualities to meet the requirements of designated usage.
- (iv) Improvement of assimilative / dilution capacity of river water by increasing the water release from Upstream reservoir, wherever feasible.

In absence of dense forest/ open forest, O₂ Production rate is excessively low and as such this plantation in our project area though a drop in the ocean but certainly produce SPM holding capacity on the basis of 1.44-5.35 g/m² of green leaf surface.

That is why local species of tree viz Nim (Scientific name *Azadirachta indica*), Anwale, Karang Mahua (*Madhuca indica*) with following hurbal plant are aimed (*emblica officinalis*) to introduce and presence in our project area.

Herbal Plants:-

- 1) *Eclipta alba*
- 2) *Issues quadrarguris*
- 3) *Solanum indicum*
- 4) *Amranthus spinosus*
- 5) *Bacopa Monnieri*



CHAPTER - 5

INVESTIGATIONS FOR DPR PREPARATION

5.0 DEDICATED FIELD UNITS

The consultants carried out the consultancy assignment for all the two parts namely Part - I - Preparation of Concept Plan, Part-II - Preparation of Final DPR through the dedicated field units located at Ranchi. The WAPCOS Head Quarter Units at Gurgaon supported the field unit. Senior WAPCOS officials visited the project area from time to time and provided guidance to the field unit at crucial stages such as but not limited to

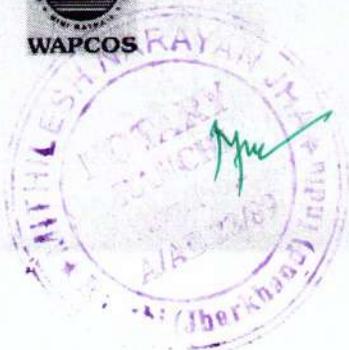
- Identification and finalization of priority lists for the ponds/lakes
- Review of secondary data and identification of primary data requirement. Methodology of data collection
- Field identification of sites for various structures
- Nature and extent of surveys to be carried out
- Design criteria and design conditions to be considered.
- Preparation of DPR
- Review of draft tender documents

Field units comprising engineers with skills and experience in design and construction with supporting staff was set up immediately on award of work.

5.1 METHODOLOGY

Figurative representation of the Methodology for the consultancy assignment is given in the following page

Step 1: Meetings, Discussions, Identification of Regions & Sites (Water Bodies) and Survey Parties



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REJUVENATION OF DHOBIA TALAB, HAZARIBAGH (WARD - 12)

**DPR &
ESTIMATE**

Step 2: Prioritizations of ponds/lakes & river stretch Comprehensive Field visits, Reconnaissance Survey.

Step 3: Data Collection, Information, Topographical Surveys and Investigations

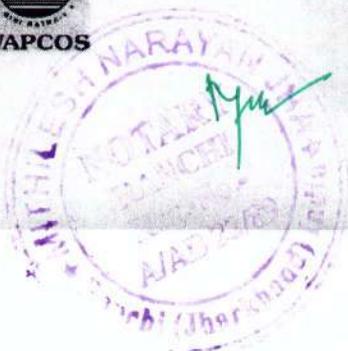
Step 4: Preparation of Survey Sheets & Various Proposals.

Step 5: Public Consultation (Stakeholder Meetings) over Proposals & Viability, Presentation to officials.

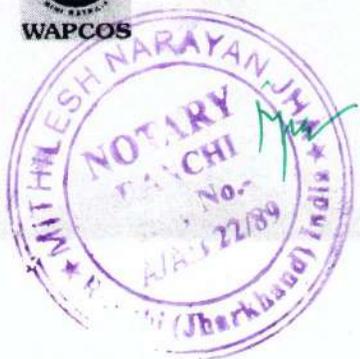
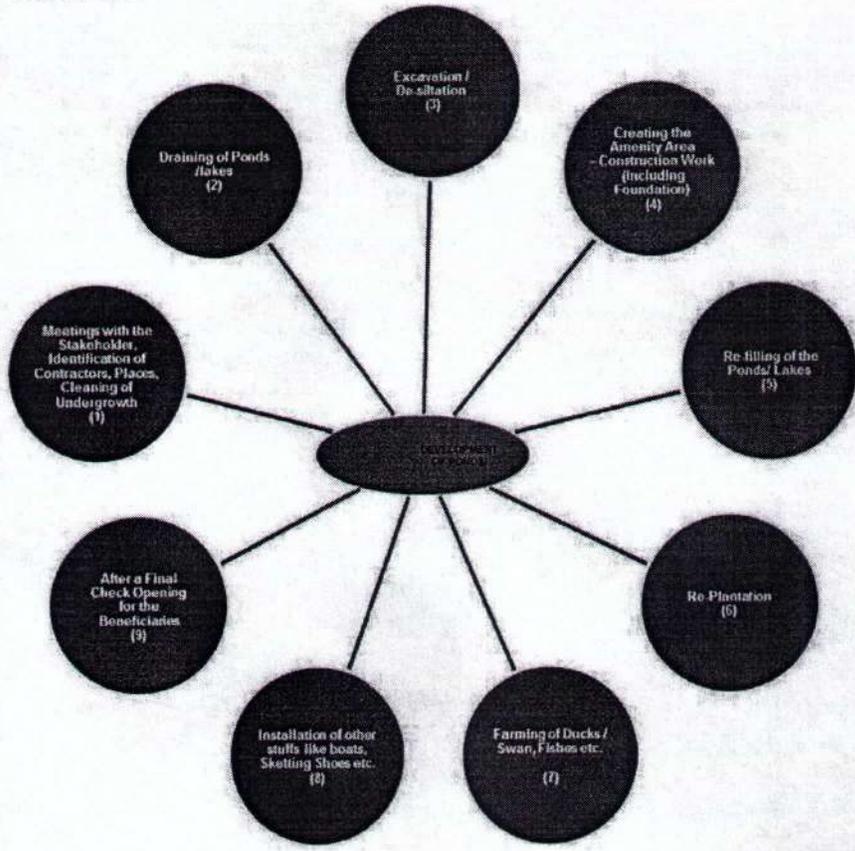
Step 6: Preparation of Designs/Drawings.

Step 7: Preparation of BOQ and Cost Estimates.

Step 8: Preparation of DPR & Submission



DEVELOPMENT OF PONDS / LAKES - FLOW DIAGRAM

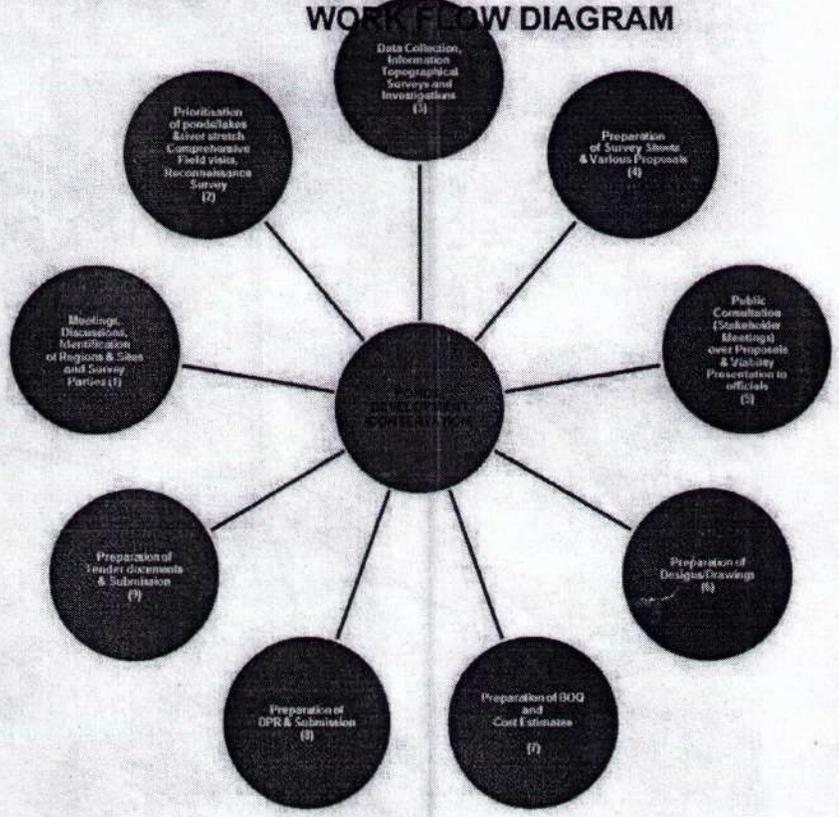


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REJUVENATION OF DHOBIA TALAB, HAZARIBAGH (WARD - 12)

DPR & ESTIMATE

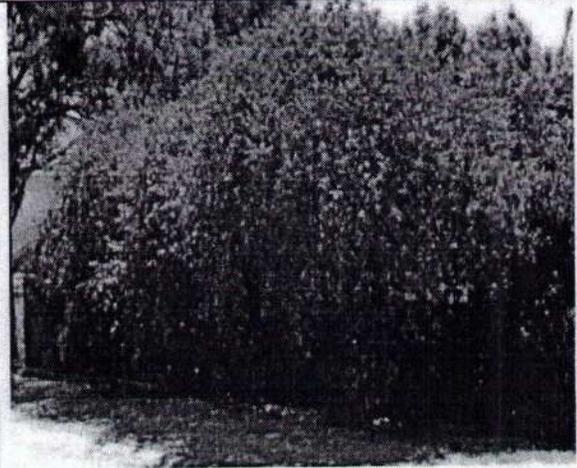
WORK FLOW DIAGRAM



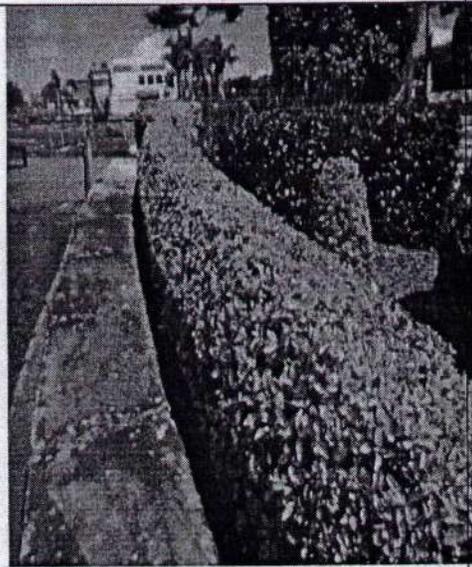
REJUVENATION OF WATER BODIES IN VARIOUS URBAN LOCAL AUTHORITIES



FICUS REGINALD



Hamelia Patens



Golden Duranta Shrub



Asparagus Fern Sprengeri

Figure: Plants and Bushes for Pond area Landscape Development



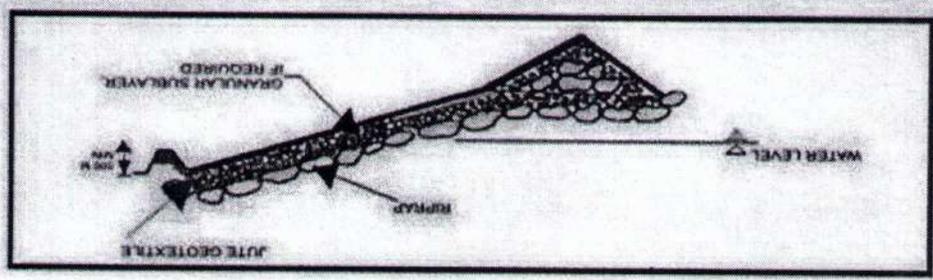
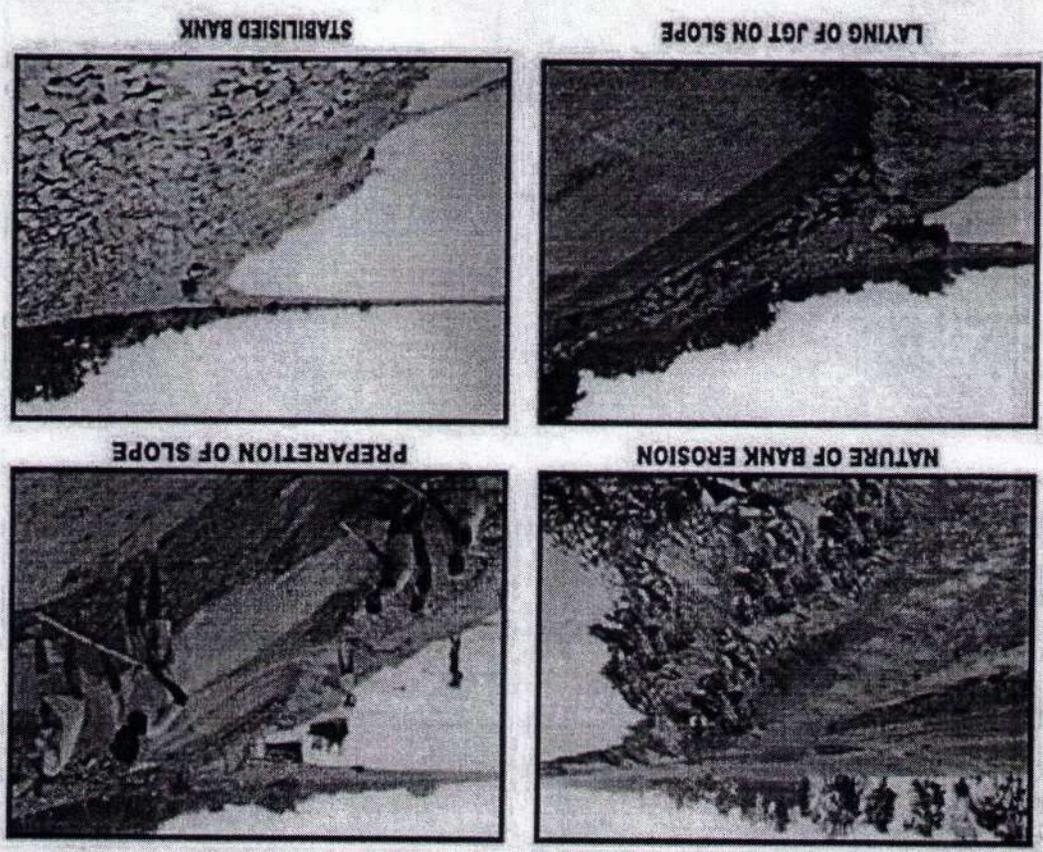
Figure: Important signage to be placed around water bodies/lakes/
ponds for safety precautions



REJUVENATION OF WATER BODIES IN VARIOUS URBAN LOCAL AUTHORITIES



Figure: Images of Proposed Water Bodies Bank Protection work to make Stabilized Bank



REJUVENATION OF WATER BODIES IN VARIOUS URBAN LOCAL AUTHORITIES

NOTARY
 RAJCHIT
 Reg. No.-
 A/AB 22/09
 (Barkhanda) Jharkhand

REJUVENATION OF WATER BODIES IN VARIOUS URBAN LOCAL AUTHORITIES

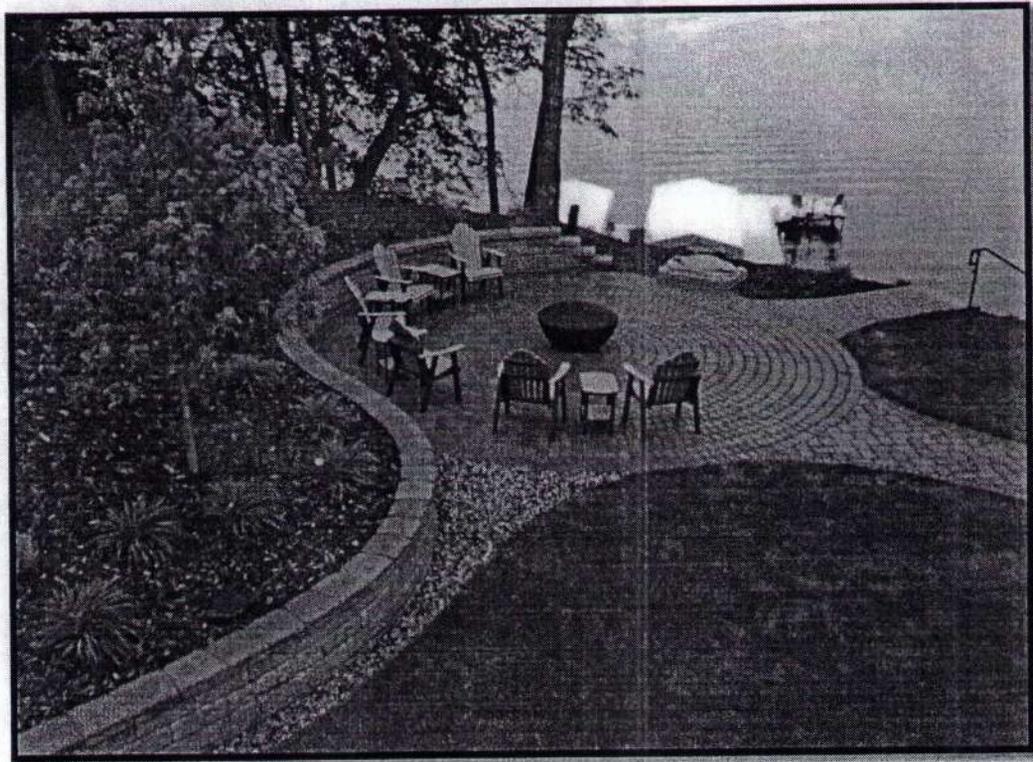
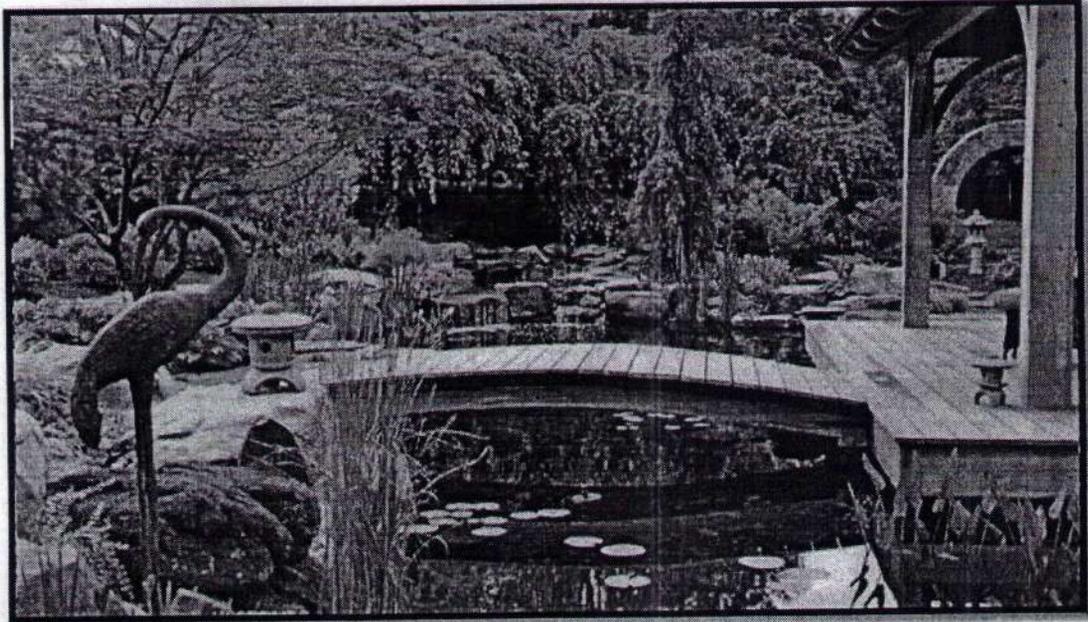


Figure: Water bodies Landscaping Images with seating area.

NOTARIAL JMA
REGD. No. -
A/AB 22/09
INDIA
(Charkhand)

Dhobia Talab, Hazaribagh

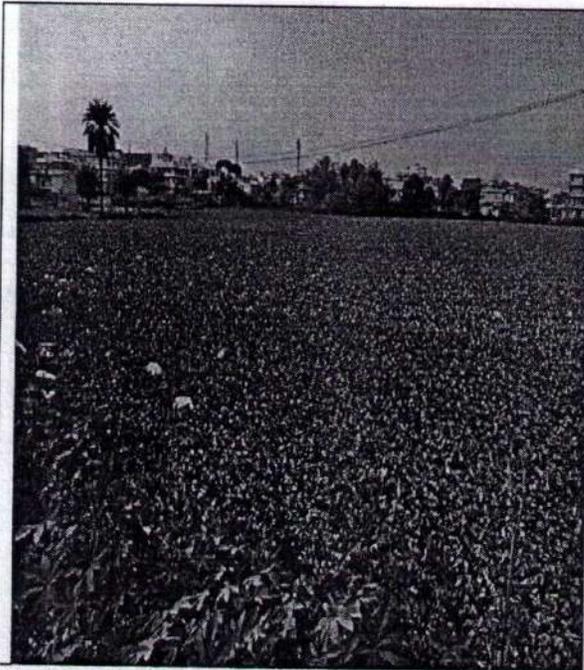


Fig.1 Bush in the Pond

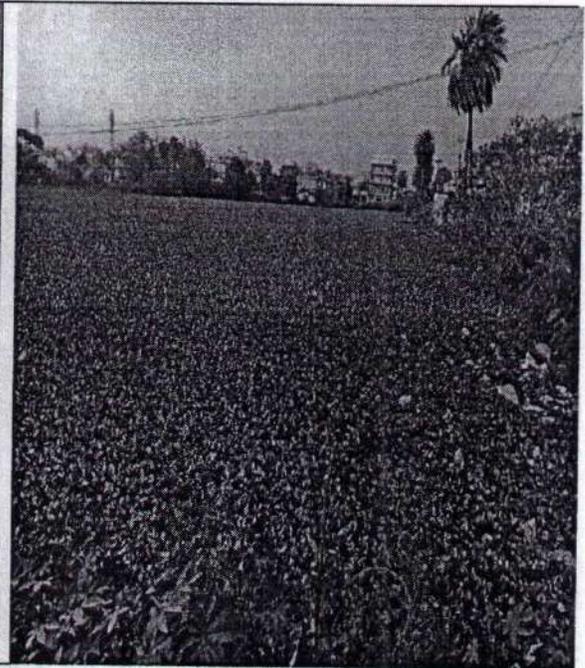


Fig.2 Present Condition of Dhobia Pond

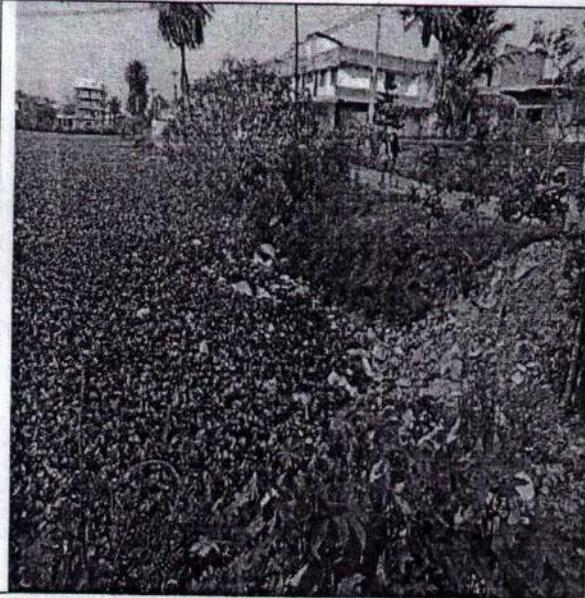


Fig.3 Road along Pond

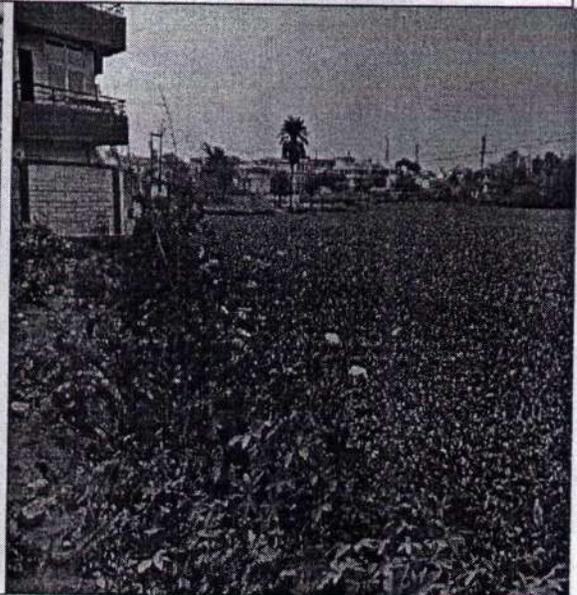


Fig.4 Residential Building beside Pond



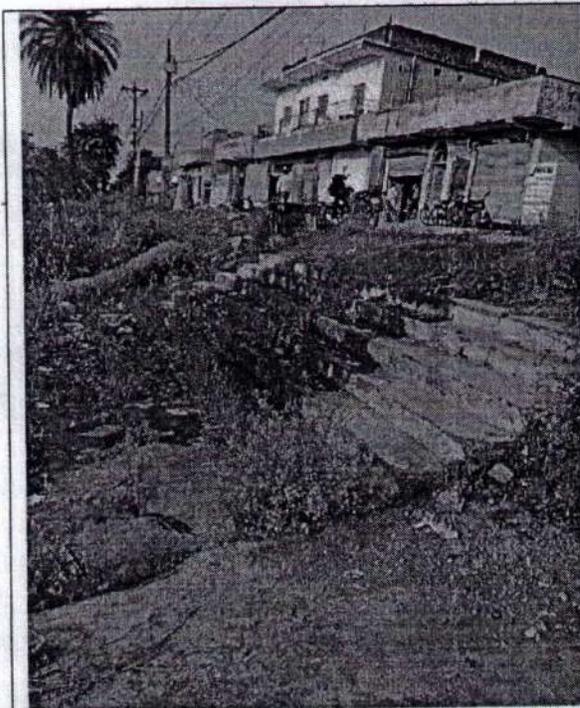


Fig.5 Residential near Pond

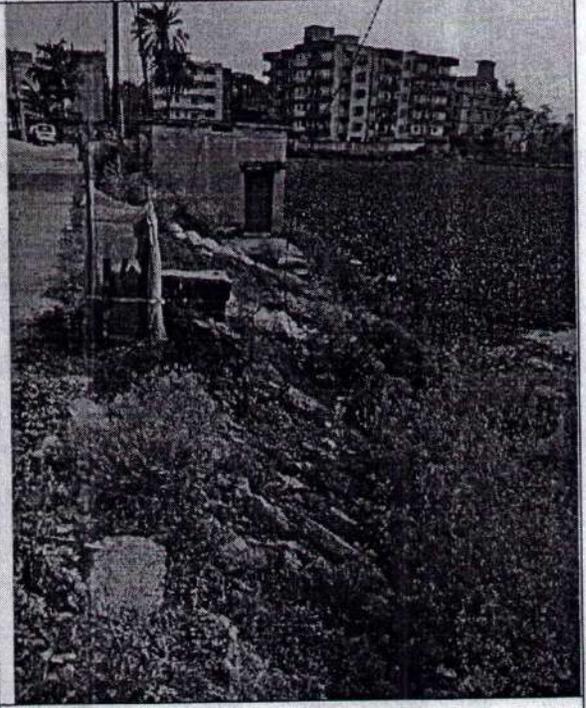
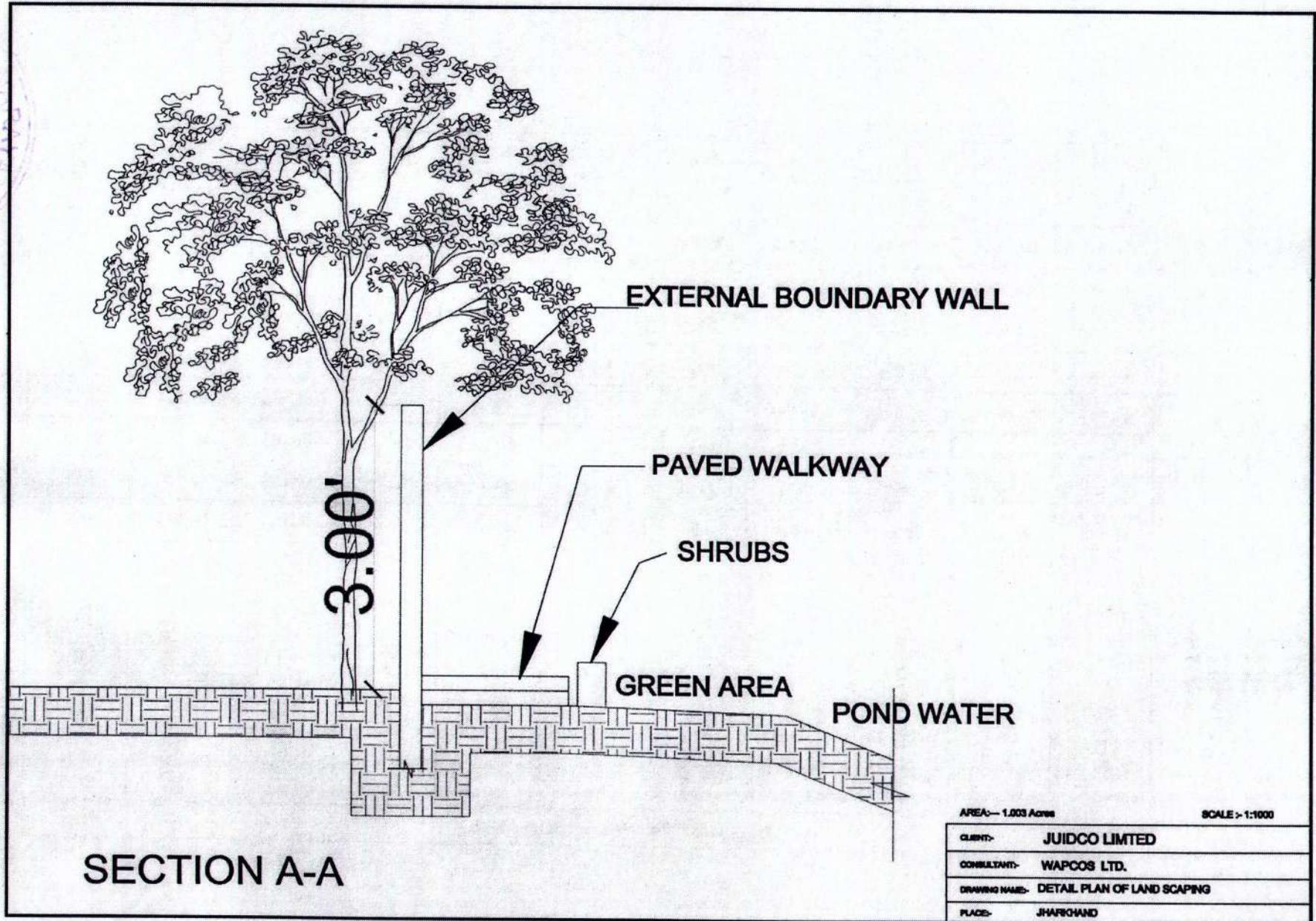
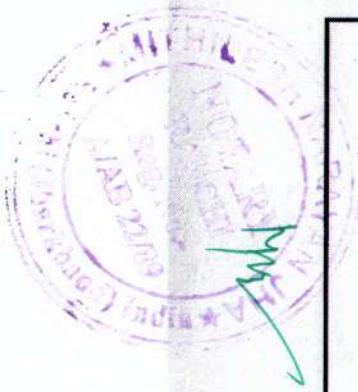


Fig.6 Road along Pond

MITHILESH CHANDRAN JHA
NOTARY
BANCHI
Reg. No-
A/AL-22/89
1/1/berhanspur



SECTION A-A

AREA-- 1.003 Acres	SCALE > 1:1000
CLIENT--	JUIDCO LIMITED
CONSULTANT--	WAPCOS LTD.
DRAWING NAME--	DETAIL PLAN OF LAND SCAPING
PLACE--	JHARSHAND





Rates of DI K-9 Pipes as per WPI of Pig Iron

Dia of Pipe	WPI of Pig Iron in June 2019 (Current SoR)	Current WPI of Pig Iron (Sep 2020)	Difference in WPI of Pig Iron	%age Difference	%age Difference	Rate of DI Pipe per M as per MJP w.e.f. 01.06.2019	Increase/Decrease in rate of DI pipe as per current WPI	Contractor's Profit 10%	Grand Total	Carriage (290 km)	Rate of pipe including Carriage per m
1	2	3	4	5	6	7	8	9	10	11	12
100	113.50	110.80	-2.70	-2.38	-1.31	952	939.53	93.95	1033.48	454.24	1487.72
150	113.50	110.80	-2.70	-2.38	-1.31	1383	1364.88	136.49	1501.37	454.24	1955.61
200	113.50	110.80	-2.70	-2.38	-1.31	1870	1845.50	184.55	2030.05	454.24	2484.29
250	113.50	110.80	-2.70	-2.38	-1.31	2485	2452.45	245.25	2697.70	454.24	3151.94
300	113.50	110.80	-2.70	-2.38	-1.31	3106	3065.31	306.53	3371.84	454.24	3826.08
350	113.50	110.80	-2.70	-2.38	-1.31	3919	3867.66	386.77	4254.43	454.24	4708.67
400	113.50	110.80	-2.70	-2.38	-1.31	4558	4498.29	449.83	4948.12	454.24	5402.36
450	113.50	110.80	-2.70	-2.38	-1.31	4848.3	4784.79	478.48	5263.27	454.24	5717.51
500	113.50	110.80	-2.70	-2.38	-1.31	6405	6321.09	632.11	6953.20	454.24	7407.44
600	113.50	110.80	-2.70	-2.38	-1.31	8175	8067.91	806.79	8874.70	454.24	9328.94

Design of Sewage Treatment Plant

The tentative sewerage generation worked out to be 0.400 MLD (Million liters per day) through Inlet 1 (Northern drain) & Inlet 2 (Western Drain) coming towards drain, considering 80% of water supply as waste return to the Dhobia Pond, the calculation for which is as follows:

S.No.	PARTICULARS	Nos	Persons per Unit / Area	Total person/ area	@ LPCD	SEWAGE GENERATION (LITRES/DAY)
A)	Residential Building					
	No. of Units	700	5 nos.	3500	108	3,78,000
B)	Non Residential Building					
	Estate management office	5	40 nos.	200	36	7,200
	STP Staff	3	8 nos.	24	36	864
D)	Design Capacity (Lit / day)				Total	3,86,064
	Design Capacity (Lit / sec)					4.47
	Design Capacity MLD					0.386
	Say Design capacity of STP in KLD					500 KLD or 0.500 MLD

OBJECTIVE

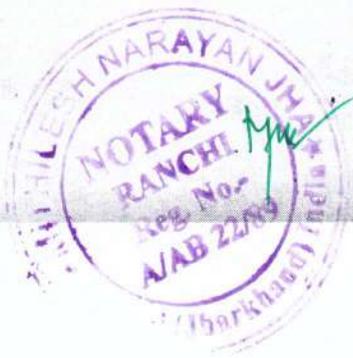
The objective is as far as possible to degrade the C, N and P compounds contained in the waste water, remove them from the waste water (by adsorption and absorption) or to convert them into simpler, less harmful compounds in the sewage treatment plant. Treated waste water should be optically clear and no longer contain any substances which are harmful to pond or people.



COMPONENTS OF SEWAGE TREATMENT PROCESS

The description of various processes involved in sewage treatment plant is mentioned as follows:

S. No.	Tank	Receives from	Discharges To	Function
1.	Flash mixer	Collection tank	Settler	Mixing of chemicals, dosed by agitation Removal of oil & grease
2.	Settler	Flash mixer	Equalization tank	Separation of sludge & supernatant waste water by sedimentation
3.	Reactor tanks	Equalization tank	Secondary settler	Main process tank for biological treatment contains bio-media & shall be suitably aerated.
4.	Secondary Settler	Reactor	Balance tank	Separates biological reactive sludge from waste water by sedimentation using tube deck media for increased surface overloading rate.
5.	Air blower	-	-	Equipment used for passing air into wastewater to result in oxygen dissolution
6.	Pressure Sand Filter	Balance tank	Activated Carbon Filter	Reduction of escaped suspended matter from secondary settler.
7.	Activated Carbon Filter	Pressure Sand Filter	Treated Water	Reduction of balance organic matter escaped from process & to bring down parameter to the desired value.
8.	Chlorine dosing	-	-	Disinfection for keeping bacterial count & coliform within desired level.



STAGE ONE: SCREENING

Screening is first stage of the sewage treatment process. Screening removes suspended and floating solids from raw sewage. It involves flash mixer tank in which chemicals are mixed by agitation to sewage and then it moves to settler tank, where separation of sludge & supernatant waste water by sedimentation takes place.

STAGE TWO: PRIMARY TREATMENT

This involves the separation of organic solid matter from the wastewater. This is done by putting the wastewater into large settlement tanks for the solids to sink to the bottom of the tank. The settled solids are called 'sludge'. At the bottom of these circular tanks, large scrappers continuously scrape the floor of the tank and push the sludge towards the center where it is pumped away for further treatment. The rest of the water is then moved to the Secondary treatment. Sewage coming from settler tank moves to the following tanks for further treatment:

- **Equalization tank:** To prevent flow rate, temperature, and contaminant concentrations from varying widely
- **Reactor tanks:** Main process tank for biological treatment contains bio-media & shall be suitably aerated.

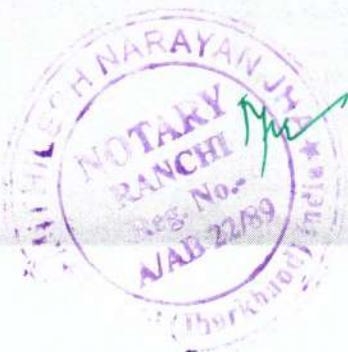
STAGE THREE: SECONDARY TREATMENT

The water, at this stage is put into large rectangular tanks. These are called aeration lanes. Air is pumped into the water to encourage bacteria to breakdown the tiny bits of sludge that escaped the sludge scrapping process. Sewage coming from settler tank moves to the following tanks for further treatment:

- **Secondary Settler:** Separates biological reactive sludge from waste water by sedimentation using tube deck media for increased surface overloading rate and air blower is used to pass air into wastewater to result in oxygen dissolution.
- **Balancing tank:** incorporates controls which measure the level within the tank to determine the optimum flow the treatment plant will receive.

STAGE FOUR: FINAL TREATMENT

Next the 'almost' treated wastewater is passed through a settlement tank. Here, more sludge is formed



at the bottom of the tank from the settling of the bacterial action. Again, the sludge is scrapped and collected for treatment. The water at this stage is almost free from harmless substances and chemicals. The water is allowed to flow over a wall where it is filtered through a bed of sand to remove any additional particles. Sewage coming from balancing tank moves to the following tanks for further treatment:

- **Pressure Sand Filter:** reduction of escaped suspended matter from secondary settler.
- **Activated Carbon Filter:** Reduction of balance organic matter escaped from process & to bring down parameter to the desired value and then Chlorine dosing is given to keep bacterial count & coli form within desired level.

The treated water is then released into the Dhobia Pond, Hazaribag (Ward 12).

Design of STP – 500 KLD

Design Capacity 0.50 MLD
 Bar Screen Chamber 500 m³/day
 Average daily flow = 500 m³/day Quantity of sewage to be handled by the STP on daily basis

Average hourly flow = 20.81 m³/hr
 0.00666 m³/sec

Peak hourly flow = 3 x Avg. hourly flow
 62.43 m³/hr
 0.01998 m³/sec

Design flow velocity = 0.3 m/sec
 Sewage flowing at a higher velocity will forcibly push the debris through the screen.
 At a lower velocity will leave an excessive amount of sedimentation on the floor of the screen chamber.

Cross-sectional area of screen channel= 0.0666 m²
 Adjusted area (considering the area blocked by bars)
 W 5 mm (Width of a bar)
 G 10 mm (Gap between two bars of the screen)

Extended area 0.08658 m²
 Required min dimensions 0.45 x 0.45

Equalization Tank
 Average daily flow = 500 m³/hr
 Average hourly flow = 20.81 m³/hr
 0.00666 m³/sec
 Tank is designed to hold 8 hours of avg flow
 Equalization tank volume 166.48 m³
 Water depth in tank 2.0 m (2 to 2.5 m)
 Freeboard 0.3 m (0.3 to 0.5 m)



Tank area 83.24 m²
Maximum air flux rate per coarse bubble diffuser of 90 OD x 80 OL

5 m³/hr

Select size and number to suit the dimensions of the tank Typically, a pair of diffusers must fit within the width of the tank. If the tank is not wide enough, the pair may be placed at an angle. Several such pairs of diffusers are placed along the length of the tank.

Air requirement for mixing = 166.48 x 0.9 = 149.83

Diffusers required 4.162 (Say) 5 Nos.

Raw Sewage Lift Pumps

Pump capacity 30 m³/hr for 20 hours

Selected a pump that has a little higher capacity, so that a little quantity can be bypassed to achieve the desired net flow rate.

If the pump capacity is too high, a lot of sewage will have to be bypassed, resulting in waste of energy.

"Suction head (m) Difference in floor level of the equalization tank and suction level of pump. The sewage level in the equalization tank fluctuates throughout the day. The worst-case suction condition exists at late night/ dawn, when the equalization tank is almost empty just before the peak morning inflow starts. That is why the pump must be selected to take care of this suction head"

"Delivery head (m) The difference in top level of aeration tank and delivery level of pump Select a pump that has the rated capacity at this delivery head"

Total head (m) = Suction Head + Delivery Head (maybe considered minimum as 10m)

Aeration Tank

Quantity of sewage to be handled by the STP on daily basis = 500 KLD

BOD in sewage= 250 mg/l

It would demand (absorb) 250 mg of Oxygen from the surrounding air/water for every liter of sewage

0.00025 kg/l

BOD load/day 125 kg/day supply 960 kg of Oxygen every day
F/M ratio 0.12 (ranges from 0.10 to 0.12)
M (Biomass) 3125 kg of bacterial flocs to digest the sewage

This figure does not include the mass of bacteria that is in the clarifier tank.

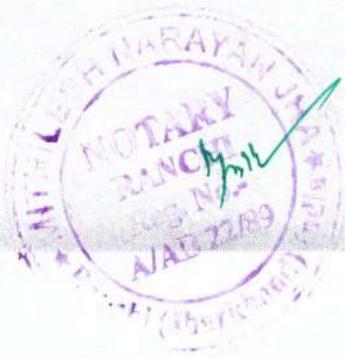
Design MLSS level 3500 mg/l Acceptable MLSS range is 3500-4500
3.5 kg/m³

F/M = BOD (KG/DAY) X 1000/ (MLVSS (MG/L) X (VOL. (M³))

Aeration tank volume 297.619 m³ Biomass / MLSS

Average retention time 14.29 hrs time taken by sewage to exit the aeration tank

Preferred: 16 to 18 hours



Annexure

Maintaining a higher population of biomass in the system is a desirable feature, in order to overcome temporary hiccups in the aeration tank performance (which may be caused by loss of power, equipment malfunction/breakdown, and even a huge surge of sewage)

Therefore, we choose to introduce a 20 % safety margin & increase the biomass from 10208.33 kg

M (Biomass) 3750 kg
Aeration tank volume 356.68 m³
Average retention time 17.14 Hrs.

Depth of aeration tank 3.78 m (A good practical working depth)

If area is severely constrained, the depth may be increased up to 4.0 m.

Area of aeration tank 89.17 m²
Width of aeration tank 4.0 m to accommodate set of 5 nos. diffusers

Length of aeration tank 22.29 m
BOD load per hour 170.45 kg/hr (BOD load per day) / (no. of aeration hours)

Assuming 22 hrs. of aeration

Oxygen requirement = 2 Kg O₂/Kg BOD/day = 2x 125 Kg/day =250 Kg/day Oxygen transfer efficiency of diffusers= 18 g/m³

Wastewater coefficient = 0.6

(1) Air requirement in m³/hr = (250)/(0.6)(0.018)(5)(20) = 231.48 m³/hr

(2) Air requirement for mixing = tank volume x 0.9 = 356.68 x 0.9m³ = 321.00 m³

The process air requirement will be governed by the mixing requirement. Total air requirement = 321+149.83 = 470.83 m³/hr ... Blower capacity provided = 475m³/hrhence OK

Air requirement for BOD 475 m³/hr

Air requirement for mixing 475 m³/hr requirement is @1.0-1.2 m³/m³ of tank volume

Air to be supplied 475 m³/hr

No. of diffusers 60 nos. (Air to be supplied) / (minimum air flux rating)

Range of air flux rate of 8-12 m³/Hr

Placement of diffusers 61 nos.

Rows 16 nos. (set apart by 1.37m)

4 nos. diffusers in each row

Rows are distributed evenly along the length of the tank

Diffuser configuration

Each pair is separate, with its own air hose, nylon tie rope and ballast

Clarifier Tank

Design throughput flow 500 KLD
Max. Hourly throughput 25 m³/hr for 20 hours operation



Design overflow rate	16	m ³ /m ² /day	for extended aeration biological processes
	0.67	m ³ /m ² /hr	
Cross-sectional area of square tank	37.313	m ²	
Dimensions	4.0	m	
Depth of tank	2.5	m	(2.5 m to 3.0 m Selected by convention)
Solids load	87.50	kg/hr	Hourly throughput x MLSS
This is the volume of bacteria that gets added to the tank			
Solids loading rate	2.34	kg/hr / m ²	(Solids load) / (Cross-sectional area of tank)
(max 3 kg/hr/m ²)			
Weir length in clarifier	14.13	RM	For a square tank with launder on two sides
Weir loading rate	11.80	m ³ /day/RM	(Sewage flow rate) / (length of weir)
Volume of tank	93.2825	m ³	Area x depth
Hydraulic detention time	3.73	hours	(Tank Volume) / (throughput rate)

This result is slightly on high side. This cannot be avoided in small plants due to minimum depth requirement

Airlift Pump

The airlift pump returns the active sludge to the aeration pump air-flow is adjusted till we achieve the exact sludge flow rate.

Sludge-holding sump

This tank is needed if the designer does not prefer the airlift pumps or the direct-suction sludge-return methods.

Design throughput flow	500	m ³ /day
Maximum rate of sludge recirculation	100%	of throughput sewage flow

Typically Recirculation rate varies from 60 – 100 % of throughput flow to maintain desired MLSS levels

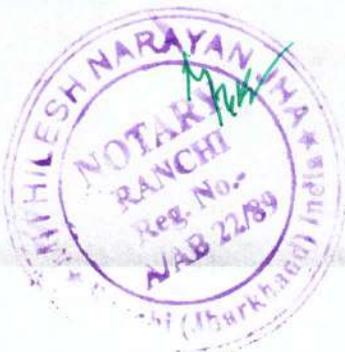
Therefore the pump must be capable of handling the highest flow rate

Sludge sump capacity	125	m ³	Minimum
(8.66m x 5.77m x 2.5m)			

The sump should be capable of buffering the return flow for 30 minutes

Pressure Sand Filter

Design throughput flow	500	m ³ /day	
Design filtration hours	20	hours	(Allow 4 hours for rest, backwash)
Filtration rate	25	m ³ /hr	(water quantity to be filtered) / (operation hours)
Loading rate on filter	12	m ³ /m ² /hr	(to achieve filtration efficiency at minimum size of filter)
Filter cross-sectional area required (min)	2.08	m ²	(Filtration rate) / (Loading rate)



Diameter of filter (min)	1.62	m	
Height of filter	1.5	m	1.5 – 1.8 m Selected by convention
Depth of sand layer	0.6	m	0.6 – 0.75 m Selected by convention

Activated Carbon Filter

Design throughput flow	500	m3/day	
Design filtration hours	20	hours	(Allow 4 hours for rest, backwash)
Filtration rate	25	m3/hr	(water quantity to be filtered) / (operation hours)
Loading rate on filter	10	m3/m2/hr	(to achieve filtration efficiency at min size of filter)
Filter cross-sectional area required (min)	2.5	m2	(Flow rate) / (loading rate)
Diameter of filter (min)	1.78	m	
Height of filter	1.5	m	1.5 – 1.8 m Selected by convention
Depth of sand layer	0.6	m	(0.6 – 0.75 m Selected by convention)

Sodium Hypo Dosing System

Design throughput flow	500	m3/day	
Design Max. Chlorine dose	5	PPM	
	0.005	kg/m3	
Chlorine dose per day	2.5	kg	
Hypo dose per day	25	kg	Hypo is available at 10 % strength
Select Hypo tank capacity	700	liter	
Dosing pump rating	0-100	liter/hr	

Sludge Dewatering System

Wet sludge coming out of the bottom of the clarifier is in slurry form. This slurry is dewatered to create "cakes" (small bricks).

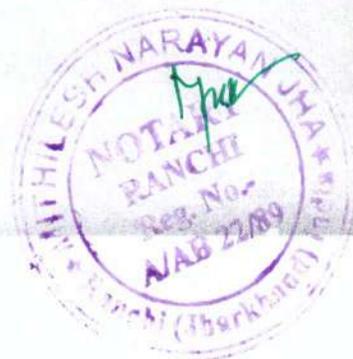
Design throughput flow	500	m3/day	
Design BOD removal	375	kg/day	
Excess Sludge produced	93.75	kg/day	0.25 kg of excess sludge per kg of BOD

Slurry consistency 0.8 - 1 % (Typical thickening achieved in a clarifier with 2.5– 3.0 water depth)

Slurry volume 3906.17 Liter

240 kg of excess sludge is contained in 30000 L of liquid mix that settles at the bottom of the clarifier tank

Filter press operation	1	batch per day	
Each batch takes	4	Hrs	
Filter press feed pump	25	m3/cycle	at 5 kg delivery pressure



Capable of delivering up to 60 m³ in 4 hours of operation

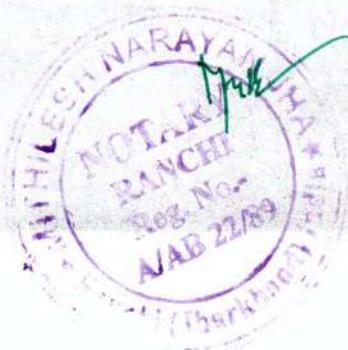
Proportion of solids in the cake 25% as a fraction Sludge cake has 75% moisture
Sludge cake volume 375 liter (Excess sludge produced) / (Proportion of solids)

Cake-holding capacity of the filter press 1225 liter
Select filter press size 630 x 630 Standard plate size, easy to handle

Cake thickness in chamber 30-32 mm achievable cake thickness

Volume of each chamber 0.55 x 0.55 x 0.03
9.075 liter

Required No. of chambers 1116
To give 1050 L total cake-holding capacity (a little above the minimum requirement)



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Dhobiya Talab (Ward No 12) SUMMARY COST - WATER BODY AREA			
REJUVENATION OF WATER BODIES			
Sl No	PARTICULARS		Amount in Rs.
	Civil Work		
1	Dismantallig works		130810.1726
2	Pond Rejuvenation work		9379997.323
3	Boundary Wall		1991431.051
4	Ghat		4247688.56
5	Guard Room/ Duty Room for STP		896367.00
6	Aeration & Oxidation		2322094.67
7	STP & Construction of Inlet Drain		3985715.72
7	Carriage of Material		583062.08
		Cost of Civil work =	23537166.57
	Landscapping & horticulture work		
8	Landscapping work		52110.01
9	Horticulture work & Pathway		1275765.576
		Sub total	24865042.16
		GST 12%	2983805.059
	Non Schedule Item (Inclusive GST)		
	Electrical works	As per quotation	917879.7316
	Dust bin & bench	As per Analysis of rate	176904
	Aeration & Oxidation(Mech)	As per quotation	301500
	Cost of construction		29245130.95
	Contingency @ 1%		100000
	Contingency @ .5%		96225.65475
	Labour cess @ 1%		292451.3095
	Add, Operation and Maintanance cost for 5 Years	5 Yrs	5466373.16
	Total cost of work with 5 Yrs O&M		35200181.07



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Civil and Architecture work

DISMANTLING WORK OLD EXISTING GHAT STEPS

Sl No	BCD_SOR_2021	ITEM OF WORK	Nos	L	B	H/D	Qty	Unit	Rate (Rs)	Amount (in Rs)
1	BCD 5.10.1	Dismantling Pucca brick or lime work including stacking serviceable materials in countable stacks within 15M lead and disposal of unserviceable materials wit all leads all complete as per direction of E/I								
		Ghat steps	6	30	0.6	0.3	32.4			
		In rectangular structure wall	1	18	0.25	3	13.5			
		Existing wall	1	80	0.25	2.1	42			
							87.9	cum	497.98	43772.442
2	BCD 5.10.2	Dismantling plain cement or lime concrete work including stacking serviceable materials in countable stacks within 15M lead and disposal of unserviceable material with all leads all complete as per direction of E/I								
		Ghat steps	8	30	0.6	0.1	14.4			
		In rectangular structure floor	1	7.32	3.66	0.1	2.67912			
							17.07912	cum	878.79	15008.95986
3	BCD 5.10.3	Dismantling RCC work including stacking serviceable materials in countable stacks within 15M lead and disposal of unserviceable material with all leads all complete as per direction of E/I								
		RCC works in boundary wall column	40	0.25	0.25	2.1	5.25			
		Foundation	40	1.2	1.32	0.3	19.008			
		In rectangular structure roof	1	7.32	3.66	0.125	3.3489			
							27.6069	cum	1832.28	50583.57073
4	SOR-C 1st June page-35, 2.6	Dismantling Cement concrete pavement by mechanical means using pneumatic tools, breaking to pieces not exceeding 0.02 cum in volume and stock piling at designated locations and disposal of dismantled materials upto lead of 1km, stacking serviceable and unserviceable material separately								
		Cement concrete pavement in existing pathway	1	115	1.8	0.1	20.7			
							20.7	CUM	1036	21445.2
							Total cost of Dismantling work =			130810.1726



Civil and Architecture work										
POND REJUVENATION WORK										
Sl No	BCD_SOR_2021	ITEM OF WORK	Nos	L	B	H/D	Qty	Unit	Rate (Rs)	Amount (In Rs)
JUNGLE CLEARING										
1	DSR-2021-2.31_Vol-1, page-115	Clearing jungle including uprooting of rank vegetation, grass, brush wood, trees and saplings of girth up to 30cm measured at a height of 1m above ground level and removal of rubbish up to a distance of 50m outside the periphery of area cleared			AREA					
		Pond area 26344 sqm from clearing jungle	1		26344			26344		
								26344 cum	12.82	337730.08
POND DESILTING WORK										
2	WRD-B 1st march _Page-116 7.1.20	Earthwork in bed clearance or desilting of canals carrying F.S. discharge between 8.5 cumecs and 0.14 cumecs disposal of excavated earth etc in ordinary soil including rough dressing with initial lead of 10M and lift of 1.5 M as per specification and direction of E/I								
		Pond area 3M from edge of pond	1		26344	0.75		19758		
								19758 cum	110.83	2189779.14
3	WRD-B 1st march _Page-117 7.1.22	Extra for wet earth all complete as per specification and direction of E/I								
								19758 cum	12.19	240850.02
POND DEEPENING										
4	WRD-B 1st march _Page-117 7.1.21	Earth work in lip cutting in side slopes and bed of canal in ordinary soil with initial lead of 30M and lift of 1.5M including the cost of formation of sub grade of canal lining, profiling, leveling controlling of slopes and fine dressing with disposal of excavated earth and nominal dewatering if any all complete as per approved design, specification and direction of E/I			Pond Area					
		Pond deepening by 0.6M average	1		26344	1.5		39516		
								39516 CUM	138.90	5488772.4
DRESSING OF SIDE SLOPE										
5	WRD-Cm 1st June _Page-29 5.1.98	Trimming & dressing the side slope of dam to proper section with all leads and lifts as per drawing, specification and direction of E/I								
		Pond side edge on which boulder pitching and rip rap to be done	1		178	3		534		
								5.34 per 100 sqm	3588.29	19161.4686
LABOUR FOR COMPACTING THE EARTH										
6	WRD-Cm 1st June _Page-29 5.1.31	Labour for rolling and compacting the earth in layers of 225mm thick at O.M.C. by sheep foot roller driven by tractor to achieve minimum 95% of maximum dry density including sprinkling the required quantity of water making arrangement for supply and carriage of water with all leads and lifts finishing the surface with proper camber, grade super elevation including hire charge of compaction machine and other tools and plants etc all complete as per direction of E/I (Mode of measurement sectional measurement of compacted earth								
		Pond side edge on which boulder pitching and rip rap to be done	1		148	3	1.5	666		
								666 cum	24.13	16070.58
SUPPLYING AND LAYING OF HUMOUS LAYER										
7	WRD-Cm 1st June _Page-29 5.1.37	Supplying and laying 300mm thick humous layer on slopes of dam with manual compaction and turfing the surface with approved dub grass with 1km lead including watering and ramming till growth of the grass all complete as per specification nd direction of E/I								
		Pond side on which dub grass to be done	1		178	1		178		
								5.52 per 100 sqm	11935.66	65884.8432



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EARTH WORK IN EMBANKMENT									
8	WRD-Cm 1st June_Page-36 7.1.26.4	Earthwork in flood embankment canal banks as well as special repair of embankment in canal bank in grade A& B types of soil (vide soil A and B) in proper profile excavation by hydraulic m/c and carriage by tipper truck obtained from borrow area or any other sources free from logs, roots or any other ingredients with all lifts including breaking clods to maximum 60mm size, placing earth in layers not exceeding 225mm thick all complete as per specification and direction of E/I, lead beyond 2km but up to 3km							
		Pond side edge on which boulder pitching and rip rap to be done	1	178	4	1.5	1068		
							1068 cum	223.06	238228.08
9	WRD-Cm 1st June_Page-	Extra for earth work in marshy, slushy and daldal soil (vide classification of soil item-F) all complete as per specification and direction of E/I							
							1068 cum	26.32	28109.76
10	WRD-Cm 1st June_Page-36 7.1.32	Earth work in filling in foundation trenches and backfilling of structure-do-with semi previous or suitable earth obtained after cutting of borrow pits within a lead of 30M and lift of 1.5 M complete Job as per specification and direction of E/I							
							356		
							356 cum	115.82	41231.92
CUT OFF TRENCH									
11	WRD-B 1st march_Page-80 5.1.9.2	Earth work in cut off trenches by hydraulic M/C in grade A&B type of soil including size and disposal of the same beyond 1/2 km upto 1km from centre of the trench with all lifts by tipper including construction and maintenance of haul road all complete as per specification and direction of E/I							
		Cut off trench	1	178	0.6	0.9	96.12		
							96.12 cum	124.26	11943.8712
SAND FILTER BLANKETING									
12	SOR-C 1st June_page-46 6.1	Supplying and laying sand filter blanketing in horizontal portion of the dam as per design drawing with watering, compaction including cost of sand, royalty all taxes etc but excluding the cost of carriage all complete as per specification and direction of E/I							
		Pond side edge on which boulder pitching and rip rap to be done	1	178	4	0.01	7.12		
							7.12 cum	873.05	6216.116
BOULDER PITCHING WORK									
13	SOR-C 1st June_page-46 6.4	Supplying and laying boulder in rock toe, heel trenches of the dam as per design drawings including the cost of material royalty and all taxes etc but excluding the cost of carriage all complete as per specification and direction of E/I							
		Boulder pitching work	1	178	4	0.45	320.4		
							320.4 cum	1195.13	382919.652
RIP-RAP WORK									
14	SOR-C 1st June_page-46 6.8	Supplying and laying properly as per design and drawing rip-rap with good quality of boulders duly packed including the cost of material, royalty all taxes etc but excluding the cost of carriage all complete as per specification and direction of E/I							
		Rip-Rap work	1	178	2	0.45	160.2		
							160.2 cum	1438.96	230521.392
15	SOR-C 1st June_page-46 6.9	Providing of weep hole with dry graded stone filter of 20mm to 40mm size in abutment and wing wall all complete as per specification and drawing of E/I							
		Weep holes	600				600 each	137.63	82578
Cost of Pond Rejuvenation work =									9379997.323



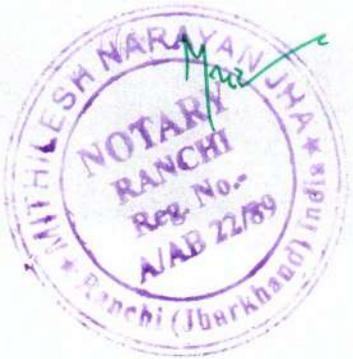
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Civil and Architecture work
 CIVIL WORKS BOUNDARY WALL

Sl No	JH-SOR 2021	ITEM OF WORK	Noe	L	B	H/D	Qty	Unit	Rate (Rs)	Amount (In Rs)
EARTH WORK										
EARTH WORK EXCAVATION										
1	JH_SOR_2021 5.1.1	Earthwork in excavation in foundation trenches in ordinary soil (vide classification of soil item-A) and disposal of excavated earth as obtained to a distance upto 50M including all lifts, levelling, ramming the foundation trenches, removing roots of trees, shrubs all complete as per approved design, building specification and direction of E/I								
		2.8.1 All kinds of soil								
		Foundation								
		F1	95	1.3	1.2	1.58	216.144			
							216.144	cum	139.58	30169.37952
2	JH_SOR_2021 5.1.2	Extra for earth work in hard soil as per specification and direction of E/I (vide classification of soil item_b)								
		Total					216.144	cum	14.26	3082.71344
TOTAL EARTH FILLING										
3	JH_SOR_2021 5.1.7	Filling available excavated earth (excluding rock) in trenches plinth sills of foundation etc in layers not exceeding 20 cm in depth, consolidating each deposited layer by ramming and watering lead.								
		2/3rd of excavated earth from foundation					144.096			
		Total					144.096	cum	50.82	7322.95872
CONCRETE WORK										
PCC WORK										
4	JH_BCD_2021 5.3.1	Providing and laying in position cement concrete of specified grade excluding the cost of centring and shuttering all work upto plinth level								
	JH_BCD_2021 5.3.1.4	1:3:6 (1 cement: 3 coarse sand : 6 graded stone aggregate 20mm nominal size in foundation work								
		F1	95	1.2	1.2	0.1	13.68			
							13.68	cum	3985.04	54515.3472
PROVIDING CLEAN COARSE SAND FILLING										
5	JH_SOR_2021 5.1.10	Providing coarse clean sand in filling in foundation trenches or in plinth including ramming and watering in layers not exceeding 150mm thick with all leads ad lifts including cost of all materials, labour royalty taxes all complete as per building specification and direction of E/I (Mode of measurement completed volume.								
		Foundation								
		F1	95	1.2	1.2	0.1	19.87			
		below plinth beam	1	326	0.25	0.1	13.8			
		Total					33.67	cum	415.58	257.65
PROVIDING BRICK FLAT SOILING										
6	JH_SOR_2021 5.6.1	Providing designation 75 A one brick flat soiling joints filled with local sand including cost of watering taxes royalty all complete as per building specification and direction of E/I								
		Foundation								
		F1	95	1.2	1.2		136.8			
		below plinth beam	1	326	0.25		81.5			
		Total					218.3	sqm	328.83	72001.889
REINFORCED CEMENT CONCRETE WORK										
Centring and Shuttering - Column										
7	JH_BCD_2021 5.3.17	Centring and shuttering including strutting propping etc and removal of form for								
	5.3.17.1	columns, pillars, piers Abutment , posts struts								
		C1	85			1	0.85			
							72.25			
							72.25	sqm	184.61	13338.0725
Centring and Shuttering - Beams										
8	5.3.17.1	Lintels, beams, plinth, beams, girders, bressumers and cantilevers								
		Plinth beam								
		tie beam	1	326	0.5		163			
							163	sqm	184.61	30091.43

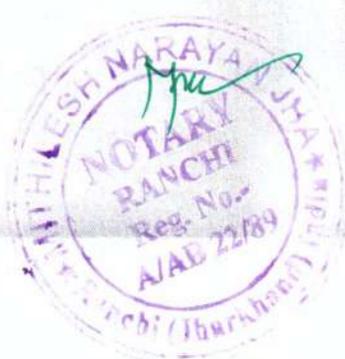


RCC WORK FOUNDATION									
9	JH_BCD_2021_5.3.9.1	Providing and laying in position specified grade of reinforced cement concrete excluding the cost of centring, shuttering, finishing and reinforcement all work upto plinth level 1:1.5:3 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm normal size)							
All works upto plinth level									
	F1		85	1.05	1.09	0.3	28.11375		
		Trapezoidal area							
			85	0.202	1.05		18.0285	18.0285	
	Tie beam		1	326	0.25	0.25	20.375		
							66.51725 cum	5094.36	338862.8177
RCC IN COLUMNS									
10	JH_BCD_2021_5.3.10	Reinforced cement concrete work min wall (any thickness), including attached plasters, buttress plinth and string courses, fillets, column, pillars, piers, abutment, posts and struts etc above plinth level upto floor five level, excluding cost of centring, shuttering, finishing and reinforcement 1:1.5:3 (1 cement : 1.5 coarse sand (zone-III):3 grade stone aggregate 20mm normal size)							
	C1		85	0.25	0.25	0.85	4.515625		
							4.515625 cum	5891.97	26605.92703
11	JH_BCD_5.5.4)_2021	Providing TMT reinforcement of following dia rods as per approved design and drawing including carriage of M.S. rods of (straight or in coils) to work site, cutting, bending and binding with annealed wire with cost of wire removal of rust placing the rods in position all complete as per building specification and direction of E/L.							
Thermo-Mechanically Treated bars TMTC-500-8mm									
RCC work in foundation			28.11375	M3	72	kg/M3	2.02419		
Column			4.515625	M3	90	kg/M3	0.40640625		
beams of all types			20.375	M3	90	kg/M3	1.83975		
Total							4.2643625	MT	79086.94
Providing 25mm water proof plaster in external surfaces									
12	JH_SOR_2021_5.7.16	Providing 25mm thick water proof cement plaster -do-							
	Wall top		1	326	0.75		244.5		
	Column		85	1	0.1		8.5		
							253	sqm	259.21
Providing M.S. grill									
13	JH_SOR_2021_5.5.12	Supplying, fitting and fixing M.S. grill made of 20*6mm M.S. flat as per approved design and drawing, properly fabricated with joints continuous fillet welded and finished smooth, carriage of grill to work site, hoisting as per building specification and direction of E/L (where materials is not supplied by the deptt.)							
	grill in new wall						kg/sqm		
			1	326	1.3	30	12714		
	Iron chain work in old iron frame		1	0	1.3	10	0		
							12714	kg	73.46
Color washing over new surface exterior									
14	JH_SOR_2021_5.8.24	Providing two coats of snowcem of approved shade and make over a coat of cement primer on new surface including preparing the plastered surface smooth with sand paper, scaffolding, curing and taxes all complete as per building specification and direction of E/L.							
Total quantity of									
		External wall surfaces=					253		
		Total					253	sqm	102.42
Providing two coats of synthetic paint over steel surfaces									
15	JH_SOR_2021_5.8.45	Providing two coats of synthetic enamel paint of approved shade and make over steel surface including cleaning the surface thoroughly, scaffolding and taxes all complete as per building specification and direction of E/L.							
	In wall grill						times		
	area		1	326	1.3	2	847.6		
							847.6	sqm	61.9
		Total cost of boundary wall =							1991431.051



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Civil and Architectural work										
Rejuvenation of Dhobla Talab, Hazaribagh Jharkhand										
S. No.	JH-SOR2021/DSR 2021	ITEM OF WORK	No.s	L	B	H/D	Qty	Unit	Rate(In Rs.)	Amount (In Rs.)
Development of GHAT										
1	5.1.1	EARTH WORK IN EXCAVATION IN FOUNDATION TRENCHES in ordinary soil (vide classification of soil Rem-A) and disposal of excavated earth as obtained to a distance upto 50 M including all lift, leveling ramming the foundation trenches, removing roots of tree shrubs all complete as per approved design, building specification and direction of E/I.								
		EXCAVATION								
		FOR stone boulder FOUNDATION-	1	90	2.4	1.5	324			
		FOR TOE-	1	90	0.6	0.45	24.3			
							348.3	CU.M	139.58	48615.714
2	5.1.8	FILLING IN FOUNDATION TRENCHES AND PLINTH in layers not exceeding 150 mm thick well watered, rammed, fully compacted and fine dressed with earth obtained after cutting within a lead of 50 M and lift of 1.5 M all complete as per building specification and direction of E/I. (mode of measurement compacted volume)								
		COMPACTED EARTH FILLING (BASE OF STEPS)					1/3 rd of excavated earth			
							116.1	CU.M	118.49	13756.689
3	5.1.10	Providing coarse clean SAND IN FILLING in foundation trenches or in plinth including ramming and watering in layer not exceeding 150 mm thick with all leads and 1.5 M lifts including cost of all materials, labour, royalty and taxes all complete as per building specification and direction of Engineer Incharge. (Mode of measurement compacted volume)								
		IN TOP OF steps-	1	90	0.6	0.075	4.05			
							4.05	CU.M	415.58	1683.099
4	5.3.2.2	1:2:4 (1 cement : 2 coarse sand [zone -III] : 4 grad stone aggregate 20mm nominal size).								
		BASE OF STEPS-	1	90	2.4	0.1	21.6			
							21.6	CU.M	5444.32	117597.312
6	12.41.1/D.S.R	Providing and Fixing on wall face unplasticised - Rigid P.V.C.rain water pipes conforming to IS: 13592 Type A including jointing with seal ring conforming to IS: 5382 leaving 10mm gap for thermal expansion. Single socket ed pipes. 75 mm dia for weep hole.								
		75 MM RAIN DIAMETER								
		3" WEEP HOLE @ 3" C/C	68	3			204			
							48	M	188.29	9037.92
FLOORINGS WORKS										
7	11.26/D.S.R	Kota stone slab flooring over 20 mm (average) thick base laid over and jointed with grey cement slurry mixed with pigment to match the shade of the slab, including rubbing and polishing complete with base of cement mortar 1 : 4 (1 cement : 4 coarse sand)								
	11.26.1	25 mm thick								
		STEPS-	5	90	0.6		270			
		RISER-	5	90		0.3	135			
		STEPS-	5	1.5	0.3		2.25			
		RISER-	5	1.5		0.15	1.125			
							408.375	SQM	139.1	56804.5625
8	11.31/D.S.R	Extra for pre finished nosing to treads of steps of Kota stone/hard stone slab								
		STEPS-	5	90			450			
		STEPS-	5	1.5			7.5			
							457.5	M	139.1	63638.25
9	16.95/D.S.R	Providing and making gabion structure with Mechanically Woven Double Twisted Hexagonal Shaped Wire mesh Gabion Boxes as per IS 16014:2012, MORTH Clause 2500, of required size, Mesh Type 10*12 (D=100 mm with tolerance of +/- 2%) Zinc +PVC coated, Mesh wire diameter 2.7/3.7 mm, mechanically edged/selvedged with partitions at every 1m interval and shall have minimum 10 numbers of openings per meter of mesh perpendicular to twist, tying with lacing wire of diameter 2.2/3.2 mm (ID/OD), supplied @ 3% by weight of Gabion boxes, filled with boulders with least dimension of 200 mm, as per drawing, all complete as per directions of Engineer in-charge.								
		BASE OF STEPS-	1	90	2.4	1.5	324			
							324	cum	3409.76	1104762.24
										Cost of Work of one ghat of length 90M = 1415896.187
										Total cost of ghats = 3 4247688.56



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Rejuvenation of Dhobia Talab, Hazaribagh Jharkhand											
Material Statement											
S. No.	Item of Works	QTY.		Cement		Sand		Chips		Bricks	
		M3/M2	Rate	Qty.	Rate	Qty.	Rate	Qty.	Rate	Qty.	
1	Sand filling	261.07	0			1	261.0662	0		0	
2	PCC (1:3:6)	45.16	0.225	10.16094	0.45	10.16094	0.9	40.64978		0	
3	Brick flat soling	218.3	0			0.016	5.39	0		32.26	7042.958
4	Brick Work	22.29986	0.036			0.22	0	0		406	
5	RCC (1:1:5:3)	43.76	0.285	12.47169	0.428	18.72941	0.856	37.45883		0	
6	D.P.C		0.225			0.45	0	0.9		0	
7	Tiles in flooring & Skirting	865.875	0.0041	9.550088	0.014	12.12225	0			0	
8	12 mm plaster 1:3 work (Internal)	28.294	0.073564		0.452704	0	0	0		0	
9	6 mm plaster 1:4 work (Ceiling)		0.0019		0.0073	0	0	0		0	
10	25 mm plaster 1:3 (External)	253	0.0052	1.3156	0.016	4.048	0			0	
				27.49832		311.5168		78.1026		7042.958	
		907.4446	Bags		M3		M3			Nos	
		4.264346	MT								



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Rejuvenation of Dhoibia Talab, Hazaribagh Jharkhand						
S.No.	JH-SOR2021	ITEM OF WORK	QTY.	Unit	Rate (In Rs.)	Amount (In RS.)
1		Bricks = 10 km	7042.358	per 1000 nos	603	4246.541874
2		Stone Boulders = 35 km	648	cum	688.44	446109.12
3		Coarse Sand = 10 km	311.5168	cum	262.6	81804.31037
4		Stone chips = 30 km	78.1026	cum	521.8	40753.93798
5		Cement (5 km)	27.49832	MT	319.5	8785.71334
6		Steel (5 km)	4.264346	MT	319.5	1362.458627
7		RCC hume Pipe NP3(25 km)	330	RMT	454.24	149899.2
					Total =	583062.0822



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Rejuvenation of Dhobia Talab, Hazaribagh Jharkhand											
Civil and Architectural work											
S.No.	JH-SOR2021/DS R2021	ITEM OF WORK	No.s	L	B	H/D	Qty	Unit	Rate(In Rs.)	Amount(In Rs.)	
Providing and laying Kerb Stone											
1	CPWD_2021_16.69/78	Providing and laying at or near ground level factory made kerb stone of M-25 grade cement concrete in position to the required line, level and curvature, jointed with cement mortar 1:3 (1 cement : 3 coarse sand), including making joints with or without grooves (thickness of joints except at sharp curve shall not to more than 5 mm), including making drainage opening wherever required complete etc. as per direction of Engineer-in-charge (length of finished kerb edging shall be measured for payment). (Precast C.C. kerb stone shall be approved by Engineer-in-charge).									
		Along planter bed	3	30	0.125	0.3	3.375				
		Along footpath trail	3	30	0.125	0.3	3.375				
							6.75	cum	7614.38	51397.065	
Providing Grass pavers Block											
2	CPWD_2021_11.45/255	Providing and laying 500*500*40 mm thick Turf paver (Turf pave XD) on 150mm thick sub grade of compacted bed of 20 mm thick nominal size stone aggregate and base course and filling with 150 mm thick jamuna sand, including spreading, well ramming, consolidating and finishing smooth etc. all complete as per direction of Engineer-in-charge.									
		Grass Paver Block	2	0.125	2		0.5				
							0.5	sqm	1425.89	712.945	
									Total cost =	52110.01	



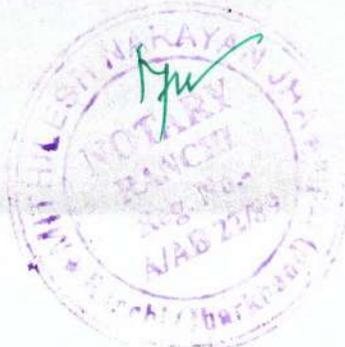
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Rejuvenation of Dhoobin Talab, Hazaribagh Jharkhand						
Horticulture works						
S. No.	H&L_DSR2020	ITEM OF WORK	QTY.	Unit	Rate(In Rs.)	Amount(In Rs.)
1	BCD_2021_5.1.7	Filling in foundation trenches and plinth in layers not exceeding 150mm, thick well water rammed fully compacted and fine dressed with earth obtained from excavation of foundation trenches within a lead of 50m and lift of 1.5m all complete as per building specification and direction of E/I (Mode of Measurement compacted Volume)	landscape area			
		Levelling of the site = 178* M* 1 M * 6 M	106.8	cum	50.82	5427.576
2	H&L_DSR_2020_2.1/p g_95	Trenching in ordinary soil up to a depth of 60 cm including removal and stacking serviceable materials and then disposing of surplus soil, by spreading and neatly levelling within a lead of 50 m and making up the trenched area to proper levels by filling with earth or earth mud with sludge or / and manure before and after flooding trench with water (excluding cost of imported earth, sludge or manure).	106.8	cum	68.7	7337.16
3	JH_SOR_2021_5.1.10	Providing coarse clean sand in filling in foundation trenches or in plinth including ramming and watering in layers not exceeding 150mm thick with all leads and lifts including cost of all materials, labour royalty taxes all complete as per building specification and direction of E/I (Mode of measurement compacted volume).	160	Cum	415.58	66492.8
5	DSR VOL 2 16.91 pg 342	Providing and laying factory made chamfered edge Cement Concrete paver blocks in footpath, parks, lawns, drive ways or light traffic parking etc. of required strength, thickness & size/ shape, made by table vibratory method using PU mould, laid in required colour & pattern over 50mm thick compacted bed of sand, compacting and proper embedding/laying of interlocking paver blocks into the sand bedding layer through vibratory compaction by using plate vibrator, filling the joints with sand and cutting of paver blocks as per required size and pattern, finishing and sweeping extra sand, complete all as per direction of Engineer-in-Charge				
		18.91.1 60mm thick cement concrete paver block of M-35 grade with approved colour, design & pattern.	1200	sqm	824.2	989040
3	H&L_DSR_2020_2.2/p g_95	Supplying and stacking of good earth at site including royalty and carriage upto 5 km complete (earth measured in stacks will be reduced by 20% for payment).	213.6	cum	469.5	100285.2
4	H&L_DSR_2020_2.3/p g_95	Supplying and stacking sludge at site including royalty and carriage upto 5 km complete (sludge measured in stacks will be reduced by 8% for payment).	106.8	cum	276.9	29572.92
5	H&L_DSR_2020_2.4_2 .4.3/pg_95	Supplying and stacking at site dump manure from approved source, including carriage upto 5 km complete (manure measured in stacks will be reduced by 8% for payment) : 2.4.3 Screened through sieve of I.S. designation 4.75 mm	106.8	cum	287.75	30731.7
6	H&L_DSR_2020_2.6/p g_95	Uprooting weeds from the trenched area after 10 to 15 days of its flooding with water including disposal of uprooted vegetation.	600	sqm	4.3	2580
7	H&L_DSR_2020_2.8/p g_95	Spreading of sludge, dump manure and / or good earth in required thickness as per direction of Officer-in-charge (cost of sludge, dump manure and / or good earth to be paid separately).	106.8	cum	46.15	4928.82
8	H&L_DSR_2020_2.9/p 5	Mixing earth and sludge or manure in the required proportion specified or directed by the Officer-in-charge	106.8	cum	32.1	3428.28



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9	H&L_DSR_2020_2.13/ 97	Preparation of beds for hedging and shrubbery by excavating 60 cm deep and trenching the excavated base to a further depth of 30 cm, refilling the excavated earth after breaking clods and mixing with sludge or manure in the ratio of 8:1 (8 parts of stacked volume of earth after reduction by 20% : one part of stacked volume of sludge or manure after reduction by 8%), flooding with water, filling with earth if necessary, watering and finally finedressing, leveling etc. including stacking and disposal of materials declared unus serviceable and surplus earth by spreading and leveling as directed, within a lead of 50 m, lift up to 1.5 m complete (cost of sludge, manure or extra earth to be paid for separately)	106.8	cum	195.9	20922.12
Tree plants						
10	H&L_DSR_2020_7.24/ 180	Supplying and stacking of Delonix regia (Gulmohar) plant of height 150-165 cm. in big poly bags of size 25 cm as per direction of the Officer-in-charge	33	each	60	1980
11	H&L_DSR_2020_3.74/ 132	Providing and displaying of Phoenix palm having ht. 75 cm to 90 cm with 10 to 13 or more leaves, well developed, fresh and healthy in 23 cm size of Earthen pot/Plastic pot & as per direction of the Officer-in-charge.	28	each	215.25	6027
12	H&L_DSR_2020_7.60/ 184	Supply and stacking of Neuclea cadamba (Kadam) plant of height 150-165 cm. in big poly bag of size 25 cm as per direction of the Officer-in-charge.	35	each	65	2275
13	H&L_DSR_2020_7.75/ 188	Providing and stacking of Polyalthia longifolia (Ashok) of height 180-195 cm. in gunny bag of size 30 cm as per direction of the Officer-in-charge.	45	each	100	4500
Garden maintenance for 1 years						
14	H&L_DSR_2020_2.40/ 6/107	Complete maintenance of the entire garden features having as per yard stick in the garden area i.e. lawn trees, shrubs, hedge, flower beds, foliages, creepers etc. including hoeing, weeding, pruning, replacement of plants, gap filling, watering, mowing of lawn, grass cutting by lawn mover and brush cutter, removal of garden waste, applying insecticide, pesticide & fertilizers (whenever required) top dressing of lawn with good earth and manure and maintenance of other garden related works as directed by Office-in-charge (Cost of Good Earth, Manure, Fertilizer, Insecticide, Pesticide will be provided by the Department & lawn mover and brush cutter with fuel, other T & P material/articles shall be provided by the contractor.) Open spaces (as per yard stick 1 mail = 3.00 Acre).	158	per sqm per month 12 Month	1.5	237
Total cost of Horticulture works =			1275765.576			



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Rejuvenation of Dhobia Talab, Hazaribagh Jharkhand						
S.No.	Market Rate (as per quotations)	ITEM OF WORK	QTY.	Unit	Rate (In Rs.)	Amount (In RS.)
Cast Iron Benches and FRP Dustbins						
1	TPS-02-BN	MS Strip Cast Iron Bench	9	each	12450	112050
2	TPS-17-DB	Dolphin/Other FRP Dustbin	9	each	5100	45900
	feeting charges:-	Total Items-	18			157950
					Inclusive of GST 12% =	18954
					Total Cost	176904



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Rejuvenation of Dhobie Talab, Hazaribagh Jharkhand						
Electrical works						
S. No.	&L_DSR203	ITEM OF WORK	QTY.	Unit	Rate(in Rs.)	Amount(in Rs.)
1	JH_SOR_2 021_5.1.1	Earthwork in excavation in foundation trenches in ordinary soil (vide classification of soil item-A) and disposal of excavated earth as obtained to a distance upto 50M including all lifts, levelling, ramming the foundation trenches, removing roots of trees, shrubs all complete as per approved design, building specification and direction of E/I	232.375	cum	139.58	32434.9025
2	JH_SOR_2 021_5.1.7	Filling available excavated earth (excluding rock) in trenches plinth slides of foundation etc in layers not exceeding 20 cm in depth , consolidating each deposited layer by ramming and watering lead.	0.111375	cum	50.82	5.6600775
3	JH_SOR_2 021_5.1.1 0	Providing coarse clean sand in filling in foundation trenches or in plinth including ramming and watering in layers not exceeding 150mm thick with all leads ad lifts including cost of all materials; labour royalty taxes all complete as per building specification and direction of E/I (Mode of measurement completed volume.	0.03025		415.58	12.571295
4	JH_BCD_2 021_5.3.1	Providing and laying in position cement concrete of specified grade excluding the cost of centring and shuttering all work upto plinth level				
	JH_BCD_2 021_5.3.1 4	1:3:6 (1 cement: 3 coarse sand : 6 graded stone aggregate 20mm nominal size	0.111375		3985.04	443.83383
5	JH_BCD_2 021_5.3.1 7 5.3.17.1	Centring and shuttering including strutting propping etc and removal of form for	0.99		184.61	182.7639
6	Quotation	Solar Light with all accessories	1		44240	
			20			884800
Total						917879.7316





SUB-ESTIMATE: ANNUAL REPAIR AND MAINTENANCE FOR FIVE YEARS						
Sl.No.	Descriptions	Quantity	Unit	Rate (Rs.)	Amount (Rs.)	SOR
1	Annual energy charges	Annual energy charges to be Rembursh by Departement				
b)	Maintenance cost of civil works					
i)	Pond Rejuvenation work	9379997.32				
ii)	Boundary Wall	1991431.05				
iii)	Ghat	4247688.56				
i)	STP & Drain Diversion	3985715.72				
ii)	GUARD Room	896367.00				
iii)	Aeration and Oxydation	2322094.67				
i)	Landscapping & horticulture work	1327875.59				
	Total	24151169.90		0.25%	60377.92	
2	Cost of Chemicals					
	(i) Bleaching powder : Assuming 6 kg /day Bleaching Powder to be spread sorrounding the pond land scaping area	5	MT	21000.00	105000.00	MJP Item 45
3	Annual Establishment charges expected expenditure of work charged staff.					JSOR 2021
a)	Gardensar cum Sweeper	5	Each	730000.00	730000.00	
	Total				895377.92	
					Says	Rs. 895378.00
					Hence operation & maintenance cost for 1st year =	895378.00
					And operation & maintenance cost for 2nd year (due to increase of rate of material & labour rate.)	984916.00
					And operation & maintenance cost for 3rd year (due to increase of rate of material & labour rate.)	1083407.60
					And operation & maintenance cost for 4th year (due to increase of rate of material & labour rate.)	1191748.36
					And operation & maintenance cost for 5th year (due to increase of rate of material & labour rate.)	1310923.20
					Hence operation & maintenance cost for initial five years =	5466373.16

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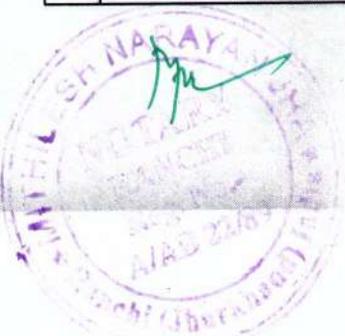
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ESTIMATE FOR CONSTRUCTION OF GAURD ROOM										
Plinth area-64.54 m ²					Carpet area-34.96 m ²					
Sl. No.	Particulars				Quantity	Unit	Rate (Rs)	Amount		
1	2				3	4	5	6		
1	E/W in excavation in foundation trenches in ordinary soil (vide classification of soil Item-A) & disposal of excavated earth obtained to a distance upto 50 M including all lift levelling, returning the foundation trenches removing root of trees, scrubs all complete as per approved design (BCD BOR. Item No. 5.1.1 Page No-76)									
	(A) For 250 mm thick wall C/C	No	Length			45.81	m ³			
		1	50.90	1.0	0.9					
	(B) For 125 mm thick wall	No	Length (in mm)			1.18	m ³			
Quantity of Earth Work-	1	1.75	0.75	0.9						
Total Quantity of Earth Work					46.99125	m ³	P/m ³	139.58	6559.04	
2	Providing, coarse clean sand in filling in foundation trenches/plinth including ramming & watering in layers not exceeding 150 mm thick with all levelling, including cost of materials, labour, royalty & taxes all complete as per building specification & direction of E.(Mode of measurement compacted volume) (BCD BOR. Item No. 5.1.10 Pg No -76)									
		No	L	W	T	3.82	m ³			
	For 250 mm thick wall Foundation n-		50.90	1.0	0.075					
	For 125 mm thick wall Foundation n-		1.75	0.75	0.075	0.10	m ³			
Total Quantity					3.915938	m ³	P/m ³	415.58	1627.30	
3	Providing P.C.C M - 100 in nominal mix of (1:3:6) in foundation with approved quantity of stone meta grade-II(50mm lam 25mm) clean coarse sand of F.M. (2.5 to 3) including screening, shuttering, making cement concrete in mixer & placing in position, vibrating, striking, curing taxes & royalty all complete as per building specification & direction of E/I (BCD BOR. Item No. 5.3.3 Pg No -101)									
		No	L	W	T	6.87	m ³			
	For 250 mm thick wall Foundation n-		50.90	0.9	0.15					
	For 125 mm thick wall Foundation n-		1.75	0.75	0.15	0.20	m ³			
Total Quantity					7.068375	m ³	P/m ³	4858.76	34343.54	



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4	Providing designation 75 A brick work in C.M. (1:6) in foundation & plinth with approved quality of clean coarse sand of F.M. (2 to 2.5) including providing 10 mm thick mortar joints, cost of screening, materials, raking out joints to 15 mm depth curing, taxes & royalty all complete as per building specification & direction of EA (BCD JSOR, Item No. 8.2.3) Pg No -77									
	(i) First footing -	No	L	W	H	Q				
	(A) For 250 mm thick wall Foundation -									
		1	52.08	0.425	0.15	4.478				
		1	56.00	0.50	0.15	4.200				
		1	57.61	0.375	0.30	6.483				
		1	52.08	0.25	0.45	5.853				
	(B) For 125 mm thick wall Foundation -	No	L	W	H	Q				
		1	1.75	0.425	0.15	0.164				
		1	1.75	0.50	0.15	0.131				
		1	1.75	0.375	0.30	0.197				
		2	1.75	0.25	0.45	0.394				
	Total Quantity						22.300 m ³	P/m ³	5065.99	113000.08
	5	Providing 60 mm thick damp proof course with cement concrete M - 150 with nominal mix of (1:2:4) (1 cement : 2 coarse sand (Zone-II) : 4 graded stone aggregate 20mm nominal size) (BCD JSOR, Item No. 8.3.8)								
(a) For 250 mm thick wall		No	L	W	Q					
		1	54.03	0.25	13.51 m ³					
(b) For 125 mm thick wall		No	L	W	Q					
	1	1.75	0.125	0.22 m ³						
Total						13.73 m ³	P/m ³	269.23	3685.18	
6	Providing designation 75 A brick work in C.M. (1:6) in superstructure with approved quality of clean coarse sand of F.M. 2 to 2.5 including providing 10 mm thick mortar joints, cost of screening, materials, scaffolding, raking out joints to 15 mm depth curing, taxes & royalty all complete as per building specification & direction of EA (BCD JSOR, Item No. 8.2.11) Pg No -77									
	(A) For 250 mm thick wall	No	L	W	D					
	Quantity	1	55.08	0.25	2.90	39.929 m ³				
	(B) For 125 mm thick wall	No	L	W	D					
	Quantity	1	1.75	0.125	2.90	0.634 m ³				
	Total Quantity						40.564 m ³			
	Deduction									
	Door & windows									
	D1-2 No.	2	1.00	0.25	2.10	1.050 m ³				
	D2-1 No.	1	0.9	0.25	2.10	0.473 m ³				
	D2-1 No.	1	0.9	0.125	2.10	0.236 m ³				
	W1-4 No.	4	1.2	0.25	1.2	1.440 m ³				
	V1-1 No.	1	0.6	0.25	0.6	0.090 m ³				
	Verandah Wall-1 No.		7.25	0.25	2.10	3.806 m ³				
	For Lintel:									
	Lintel Beam	No	L	W	T					
		1	50.60	0.25	0.15	1.898 m ³				
		1	1.75	0.125	0.15	0.033 m ³				
	Total Deduction =						9.025 m ³			
	Net B/W in super structure :						31.538 m ³	P/m ³	5193.02	162778.74
7	Providing and laying cement concrete in retaining walls, return walls, walls (any thickness) including attached piers, columns, piers, abutments, pillars, posts, struts, buttresses, string or lacing courses, parapets, coping, bed block, anchor block, plain window sills, fillets, sunken floor etc., up to floor five level, excluding the cost of centering, shuttering and finishing. (1:1.5:3) (1 cement : 1.5 coarse sand (zone-II) : 3 graded stone aggregate 20mm nominal size) (BCD JSOR, Item No. 8.3.2.1) Pg No -84									
	Lintel Beam	No	L	W	T					
		1	50.60	0.25	0.15	1.898 m ³				
		1	1.75	0.125	0.15	0.033 m ³				
Total -						1.93 m ³	P/m ³	3610.71	11216.40	



8	Making Plinth protection 50mm thick of cement concrete 1:3:8 (1 cement : 3 coarse sand : 6 graded stone aggregate 20mm nominal size) over 75mm thick bed of dry brick ballast 40mm nominal size, well rammed and consolidation and grouted with fine sand, including necessary excavation, leveling & dressing & finishing the top smooth. (BCD JSOR, Item No. 5.3.8)							
	Plinth Level -	No	L	B				
	W1	3	1.50	0.60	2.70	m ³		
	Total				2.70	m ³	P/m ³	329.97 890.02
9	Reinforced cement concrete work in beams, suspended floors, roofs having slope upto 15° landings, balconies, shelves, chajjas, brisls, bands, plain window sills, staircase and spiral stair case above plinth level upto floor level, excluding the cost of centering, shuttering, finishing and reinforcement, with 1:1.5:3 (1 cement : 1.5 coarse sand (zone-II) : 3 graded stone aggregate 20mm nominal size) (BCD JSOR, Item No. 5.3.11) Pg No -38						ROOF SLAB	
	No	L	B	T				
	1	10.80	5.050	0.10	5.454	m ³		
	Total R.C.C. slab				5.454	m ³	P/m ³	6092.63 33229.20
9.1	Centering and shuttering including strutting, propping etc. and removal of form for Lintels, beams, plinth beams, girders, trusses and cantilevers. (BCD JSOR, Item No. 5.3.17.8) Pg No -37				5.454	m ³	P/m ³	337.71 1841.87
10	Supplying fitting & fixing good quality, well dressed & well seasoned sal wood work in choubhat in doors, windows, skylights, fan light and C/W celestial windows openings, including wedge over clamps all complete including application of two coats of wood preservative of approved quality on the surface butting wets & joints all complete as per building specification & direction of the E/I (BCD JSOR, Item No. 5.4.1 Page No.-88)							
	No	L	B	T				
	D1-	2	5.20	0.1	0.075	0.078	m ³	
	D2-	2	5.10	0.1	0.075	0.077	m ³	
	W1-	4	6.00	0.1	0.075	0.180	m ³	
	V1-	1	2.40	0.1	0.075	0.018	m ³	
	Total				0.353	m ³	P/m ³	61811.77 21788.65
11	Supplying fitting & fixing 250*20*6 mm L-type M.S. Clamp properly fish tailed including making holes and setting the same in 375*125*75 mm cement concrete block (1:2:4) with cost of all labour and materials and taxes as per building specification & direction of E/I (BCD JSOR, Item No. 5.5.8 Page No.- 94) @ 6 for each door & 4 for each window and 2 for each Ventilator. Total Quantity - (2*3*4+2*2*4+2*1*1) = 42 Nos.							
	For 4 No. Doors @ 6 for each door:-		4*6 No	24	Nos			
	For 4 No. Windows @ 4 for each windows:-		4*4 No	16	Nos			
	For 1 No. Ventilator @ 2 for each ventilator:-		1*2 No	2	Nos			
	Total				42	Nos	Each	80.72 3390.24
12	Supplying, fitting & fixing 38 mm thick well seasoned sal wood battened shutter hinged & rased in door and windows with coldred iron fitting such as hinges, sliding door bolts, tower bolts, handles or rings, hooks and eyes, cleats, sand block as per schedule, taxes & royalty all complete as per building specification & direction of Engineer - in - Charge (BCD JSOR, Item No. 5.4.8 Page No.- 88)							
	No	L	T					
	D1-	2	1.0	2.10	4.20	m ³		
	D2-	2	0.9	2.10	3.78	m ³		
	W1-	4	1.2	1.2	5.76	m ³		
	V1-	1	0.6	0.6	0.36	m ³		
	Total				14.10	m ³	P/m ³	4586.50 64669.65
13	Supplying, fitting & fixing M.S./Grill made of 20*6 mm M.S. Flat as per approved design & drawing properly fabricated with joints continuous fillet welded and finished smooth, carriage of grill to work site, hoisting as per the building specification and direction of E/I. (where materials is not supplied by the Dept.) (BCD JSOR, Item No. 5.5.12 Page No.-95)							
	W1-	4 x 1.2 x 1.2		5.76	m ²			
	V1-	1 x 0.6 x 0.6		0.36	m ²			
	Total				6.12	m ²		
	@ 40 kg/sq. meter	6.12 m ²		244.80	P/kg	73.46	17983.01	
14	Providing and fixing fan hook of 16 mm dia M.S. bar 1 meter long bent to required size and shape placed in position and fixing in R.C.C. slab/beam at the time of casting all complete as per building specification and direction of E/I (BCD JSOR, Item No. 5.5.13 Page No.-95)							
	In room - 2 no & in verandah - 1no.				3	Each	138.8	416.40



15	Providing 6 mm thick cement plaster (1:4) in ceiling with approved quality of coarse sand of F.M. 1.5 including screening, curing with all leads & lifts of water, scaffolding, taxes & royalty all complete as per building specification & direction of EA. (BCD JSOR, Item No. 8.7.4) Pg No -104						
	No	L	W				
	Room	1	3.30	4.53	14.949	m ²	
		1	4.50	3.30	14.850	m ²	
	Toilet	1	1.50	2.25	3.375	m ²	
		1	1.50	0.925	1.388	m ²	
	Verandah	1	6.80	1.23	8.364	m ²	
Total				42.926	m ²		
16	Providing 12 mm thick cement plaster (1:6) with approved quality of clean coarse sand of F.M. 1.5 including screening, curing with all leads & lifts of water, scaffolding, taxes & royalty all complete as per building specification & direction of EA. (BCD JSOR, Item No. 8.7.3) Pg No -104						
	No	L	H	Q			
	(A) Inside Plaster :-						
	Room	1	15.60	2.90	45.24	m ²	
		1	15.66	2.90	45.41	m ²	
	Toilet	1	10.10	2.90	29.29	m ²	
	Verandah	1	8.030	2.90	23.29	m ²	
		1	8.030	0.50	4.02	m ²	
	Quantity				147.25	m ²	
	Deduction						
	No	L	H	Q			
	D1	2	1.0	2.10	4.20	m ²	
	D2	2	0.9	2.10	3.78	m ²	
	W1	4	1.20	1.20	5.76	m ²	
	Quantity				13.74	m ²	
	Total of A				133.51	m ²	
	(B) Outside Plaster :-						
	No	L	H	Q			
	Quantity	1	31.70	4.95	156.92	m ²	
	Net Plaster Work :- (A-B)				290.42	m ²	
17	1. Providing 12mm cement plaster (1:3) with clean coarse sand of F.M.(1.5) including screening, curing with all leads and lift of water, scaffolding taxes and royalty all complete as per specification and direction of EA (BCD JSOR, Item No. 8.7.1) Pg No -104						
	2. Providing 1.5mm cement punning including curing, carriage of water withall leads and lifts as per building specification and direction of EA (BCD JSOR, Item No. 8.7.11) Pg No -104						
	(using cement mortar (1:3) clean coarse sand finishing with neat punning a dedo 6" (150 mm) high a side room)						
	No	L	H				
	Plinth	1	31.70	0.45	14.265	m ²	
	Room	1	15.60	0.10	1.56	m ²	
		1	15.66	0.10	1.566	m ²	
	Toilet	1	10.10	1.00	10.1	m ²	
	Verandah	1	8.030	0.10	0.803	m ²	
	Total Quantity				28.294	m ²	



18	Providing average 115 mm thick lime rendering (24 lime:36 shukhi: 100 brick khwa) well beaten and compacted including maintaining proper level & slope, making ghundi with finishing treatment, cost of labour, curing, royalty & taxes as complete as per specification & direction of EA/ (BCD JSOR, Item No. 5.8.1 Page No.-110)							
	No	L	W					
	1	10.80	5.050	54.54	m ²			
Total Quantity				54.54	m ²	P/m ²	921.71	60270.06
19	Filling in foundation trenches & plinth in layers not exceeding 150 mm thick well watered, rammed, fully compacted & fine dressed with earth obtained from excavation of foundation trenches within a lead of 50 m & lift of 1.5 m as complete as per building specification & direction of EA/ (Mode of measurement compacted volume) (BCD JSOR, Item No. 5.1.7) Pg No -78							
	No	L	W	T				
	In foundation trenches 20% of earth work quantity item - 1							
	Room	1	3.30	4.53	0.325	4.858	m ³	
		1	4.50	3.30	0.325	4.826	m ³	
	Toilet	1	1.50	3.30	0.325	1.609	m ³	
	Verandah	1	6.80	1.00	0.325	2.210	m ³	
Net Quantity				11.50	m ³	P/m ³	50.82	686.24
20	Providing average 150 mm thick dry rammed khaa bastan to 112 mm (compacted with water) made of well burnt of jama bricks including ramming properly till compacted thickness is achieved, curing & carriage of water with all leads making proper slope & blending the top with cement mortar (1:10) as complete as per building specification & direction of EA/ (BCD JSOR, Item No. 5.8.8 Page No. -99)							
	No	L	W					
	Room	1	3.30	4.53	14.95	m ²		
		1	4.50	3.30	14.85	m ²		
	Toilet	1	1.50	3.30	4.95	m ²		
	Verandah	1	6.80	1.00	6.80	m ²		
Total Quantity				41.549	m ²	P/m ²	174.25	7239.81
21	Providing 25 mm thick first class patent stone flooring (1:2:4) with stone chips in two layers, bottom layer 10 mm thick (1:2:4) with 12 mm to 6 mm size graded stone chips and top layer 6 mm thick (1:2) with 6 mm down stone chips in panels including cost of curing, finishing the surface smooth by rubbing with carborandum stone tames & royalty with as complete as per building specification & direction of EA/ (BCD JSOR, Item No. 5.8.7 Page No. -99)							
	No	L	W					
	Room	1	3.30	4.53	14.95	m ²		
		1	4.50	3.30	14.85	m ²		
	Toilet	1	1.50	3.30	4.95	m ²		
	Verandah	1	6.80	1.00	6.80	m ²		
Total Quantity				41.549	m ²	P/m ²	312.37	12078.86
22	White washing 3 (three) coats over old surface with approved quality of lime including the cost of cleaning surface thoroughly and removing the scales of smoke & mosh marks with jama rubbing, scaffolding washing of floor sand taxes as complete as per building specification & direction of EA/ (BCD JSOR, Item No. 5.8.3 Page No. 108)							
	Same as Ceiling plaster + inner				324.251	m ²		
Total Quantity				324.251	m ²	P/m ²	15.81	6410.99
23	Colour washing two coats over a coat of white wash over new surface with approved quality of lime including the cost of cleaning surface thoroughly and removing the scales of smoke & mosh marks with jama rubbing, scaffolding washing of floor sand taxes as complete as per building specification & direction of EA/ (BCD JSOR, Item No. 5.8.3 Page No. -108)							
	Same as inner plaster + outer				290.961	m ²		
Total Quantity				290.961	m ²	P/m ²	22.32	6484.25



24	Providing 2 (two) coats of synthetic enamel paint over a coat of approved shade and make over new wooden surface including cleaning the surface after removing dirt scales, smokes, grease and sand papering, including cost of scaffolding and taxes all complete as per building specification & direction of EA. (BCD JSOR, Item No. 5.8.32 Page No. -108)									
	No	L	H	Quantity						
	D1 -	2	1.0	2.10						4.20 m ³
	D2 -	2	0.9	2.10						3.78 m ³
	W1 -	4	1.20	1.20						5.76 m ³
V1 -	1	0.60	0.60	0.36 m ³						
Total Quantity				14.10 m ³	P/m ³	198.38	2787.18			
25	Providing primer one coat of red lead paint of approved make over new steel surface including preparing the surface after cleaning, removing dust, dirt, scales, smokes, grease and cleaning the surface thoroughly including cost of scaffolding and taxes all complete as per building specification & direction of EA. (Mode of measurement area shall be multiplied by the coefficient as indicated in building specification) (BCD JSOR, Item No. 5.8.41 Page No. -108)									
	L	H	Q							
	W1 -	4	1.20	1.20						5.76 m ³
	V1 -	1	0.60	0.60						0.36 m ³
	Total Quantity									6.12 m ³
@ 2.25	2.25	6.12	13.77	m ³	P/m ³	53.49	736.58			
26	Providing 2 (two) coats of painting with ready mixed paints of approved shade & make over steel surface including cleaning the surface thoroughly, scaffolding and taxes all complete as per building specification & direction of EA. (BCD JSOR, Item No. 5.8.43 Page No. -109)									
	L	H	Q							
	W1 -	4	1.20	1.20						5.76 m ³
	V1 -	1	0.60	0.60						0.36 m ³
	Total Quantity									6.12 m ³
@ 2.25	2.25	6.12	13.77	m ³	P/m ³	65.37	800.14			
27	Providing for steel reinforcement of 10mm, 12mm, 16mm dia bars as per approved design and drawing excluding carriage of bars to work site, cutting, bending and binding with annealed wire with coat of wire, removal of rust, placing the rods in position all complete as per building specification and direction of EA. (a) 10mm (TMT coil Fe 500) (only yield for Tata (Tisco))									
	Lintel	1.933 m ³								
	Roof Slab	5.454 m ³								
	Chajja & Selves	0.17 m ³								
	Total RCC work	7.557 m ³								
Quantity of MS Tor rod	7.557 x 1.2% x 7.85			0.712	MT	P/MT	77259.94	54888.99		
Total								579068.84		
28	12% for Water supply and sanitation work								81487.90	
29	10% for internal electrification								87906.58	
30	Carriage of materials from divisional store or bin site or quarry site to work site including contract profit, loading, unloading, transportation, etc. all complete @ 10%.								87906.58	
Grand Total								896388.91		
Say								896387.00		
Grand Total in (Lakhs)								8.96		



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Name of Project :-		REJUVINATION AND BEAUTIFICATION OF DHOBIA TALAB, Hazaribagh				
Name of Component		AERATION WORK (civil work for construction Control room) (civil work below plinth)				
Abstract of Cost						
					All Amount in Rs.	
S.No.	DSR 2021 ITEM NO./MR/RA	Description Of Item	Unit	Quantity	Rate (WITHOUT TAX)	Amount
1	2	3	4	5	6	9
1	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.	cum	21.99	286.85	6,308.18
2	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)	CUM	1.93	6,326.05	12,216.87
3	5.1	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 :				
	5.1.2	1:1.5:3 (1 cement : 1.5 coarse sand (zone-III) derived from natural sources : 3 graded stone aggregate 20 mm nominal size de rived from natural sources)	CUM	8.27	8,364.20	69,155.21
4	5.5.5	Supplying, fitting and placing HYSD bar reinforcement complete as per drawing and technical specifications				
		High yield deform bars	MT	0.86	77,259.94	66,738.68
5	5.9	Centering and shuttering including strutting, propping etc. and removal of form for				
A	5.9.1	Foundations, footings, bases of columns, etc. for mass concrete	SQM	10.80	307.95	3,325.86
B	5.9.5	Lintels, beams, plinth beams, girders, bressumers and cantilevers	SQM	25.84	608.35	15,719.76
C	5.9.6	Columns, Pillars, Piers, Abutments, Posts and Struts	SQM	4.58	804.25	3,667.38
6	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.	CUM	11.79	253.95	2,994.58
SUB TOTAL						180,126.513



REJUVINATION AND BEAUTIFICATION OF DHOBIA TALAB, Hazaribagh									
AERATION WORK (civil work for construction Control room) (civil work below plinth)									
Quantity Sheet									
S.No.	DSR 2021 ITEM NO./MR/RA	Description Of Item	Unit	Nos	Length L	Breadth B	Depth D	Quantity	Remark
1		3	4	5	6	7	8	9	10
1	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.							
		ALL KIND OF SOIL							
		COLUMN FOOTING							
		AERATION ROOM (INSIDE SIZE - 5.0 M X 7.0 M) F1 (SIZE = 1.5 X 1.5) (PIT SIZE - 1.7 X 1.7)	CUM	4	1.70	1.70	1.50	17.34	
		PLINTH BEAM							
		AERATION ROOM (INSIDE SIZE - 5.0 M X 7.0 M)							
		SHORTER SIDE	CUM	2	5.46	0.30	0.60	1.97	
		LONGER SIDE	CUM	2	7.46	0.30	0.60	2.89	
			CUM				TOTAL	21.99	
2	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-II) derived from natural sources : 8 graded stone aggregate 40 mm nominal size derived from natural sources)							
		PCC							
		PCC BELOW COLUMN FOOTING							
		AERATION ROOM (INSIDE SIZE - 5.0 M X 7.0 M) F1 (SIZE = 1.5 X 1.5) (PIT SIZE - 1.7 X 1.7)	CUM	4	1.7	1.7	0.10	1.16	
		PCC BELOW PLINTH BEAM							
		AERATION ROOM (INSIDE SIZE - 5.0 M X 7.0 M)							
		SHORTER SIDE	CUM	2.00	5.46	0.30	0.10	0.33	
		LONGER SIDE	CUM	2.00	7.46	0.30	0.10	0.45	
			CUM				TOTAL	1.93	
3	5.1	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 :							
	5.1.2	1:1.5:3 (1 cement : 1.5 coarse sand (zone-II) derived from natural sources : 3 graded stone aggregate 20 mm nominal size derived from natural sources)							
		RCC - COLUMN FOOTING							
		AERATION ROOM (INSIDE SIZE - 5.0 M X 7.0 M) F1 (SIZE = 1.5 X 1.5) (PIT SIZE - 1.7 X 1.7)	CUM	4	1.5	1.5	0.45	4.05	
							TOTAL	4.05	
		RCC - COLUMN							
		AERATION ROOM (INSIDE SIZE - 5.0 M X 7.0 M) F1 (SIZE = 1.5 X 1.5) (PIT SIZE - 1.7 X 1.7)	CUM	4	0.30	0.30	0.95	0.34	
			CUM				TOTAL	0.34	
		RCC - PLINTH BEAM							
		AERATION ROOM (INSIDE SIZE - 5.0 M X 7.0 M)							
		SHORTER SIDE	CUM	2.00	6.46	0.30	0.50	1.64	
		LONGER SIDE	CUM	2.00	7.46	0.30	0.50	2.24	
			CUM				TOTAL	3.88	
			CUM				GRAND TOTAL	8.27	

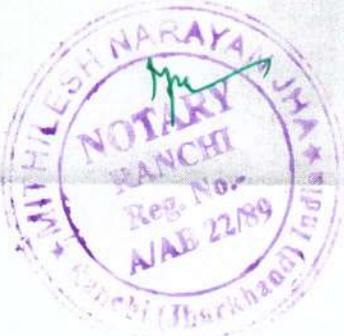


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4	MR	Supplying, fitting and placing HYSD bar reinforcement complete as per drawing and technical specifications							
		High yield deform bars							4.05
		COLUMN FOOTING	CUM						0.34
		column	CUM						3.88
		PLINTH BEAM+ CURTAIN WALL	CUM						
		KG @ 90KG / CUM for column footing	kg	90					364.80
		KG @ 100KG / CUM for column	kg	100					34.20
		KG @ 120 kg/cum for plinth beam	kg	120					465.12
								TOTAL	863.82
			MT				GRAND	TOTAL	0.88
5	5.9	Centering and shuttering including strutting, propping etc. and removal of form for							
A	5.9.1	Foundations, footings, bases of columns, etc. for mass concrete							
		COLUMN FOOTING							
		AERATION ROOM	SQM	16	1.50			0.45	10.80
		F1 (SIZE = 1.5 X 1.5) (PIT SIZE - 1.7 X 1.7)	SQM					TOTAL	10.80
B	5.9.5	Lintels, beams, plinth beams, girders, bressumers and cantilevers							
		PLINTH BEAM							
		AERATION ROOM (INSIDE SIZE - 5.0 M X 7.0 M)	SQM	4	5.46			0.50	10.92
		SHORTER SIDE	SQM	4	7.46			0.50	14.92
		LONGER SIDE	SQM					TOTAL	25.84
C	5.9.6	Columns, Pillars, Piers, Abutments, Posts and Struts							
		COLUMN							
		AERATION ROOM (INSIDE SIZE - 5.0 M X 7.0 M)	SQM	16	0.30			0.95	4.56
		F1 (SIZE = 1.5 X 1.5) (PIT SIZE - 1.7 X 1.7)	SQM					TOTAL	4.56
6	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.	CUM	1				11.79	11.79
			CUM					TOTAL	11.79



Name of Project :-		REJUVINATION AND BEAUTIFICATION OF DHOBIA TALAB, Hazaribagh				
Name of Component :-		AERATION WORK (civil work for construction Control room) (civil work above plinth)				
Abstract of Cost						All Amount in Rs.
S.No.	DSR 2021 ITEM NO./MR/RA	Description Of Item	Unit	Quantity	Rate (WITHOUT TAX)	Amount
1	2	3	4	5	6	9
1	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).	CUM	16.41	10,719.30	175,899.85
2	5.5.5	Supplying, fitting and placing HYSD bar reinforcement complete as per drawing and technical specifications				
		High yield deform bars	MT	2.05	77,259.00	158,474.05
3	5.9	Centering and shuttering including strutting, propping etc. and removal of form for				
A	5.9.1	Foundations, footings, bases of columns, etc. for mass concrete	sqm	14.40	307.95	4,434.48
B	5.9.5	Lintels, beams, plinth beams, girders, bressumers and Cantilevers	sqm	30.37	608.35	18,474.13
C	5.9.3	Suspended floors, roofs, landings, balconies and accessplatform	SQM	48.84	766.55	37,441.06
4	6.3	Block work with common both clay machine moulded perforated bricks or class				
	6.3.1	With F.P.S. (non modular) bricks	CUM	16.57	8,030.80	133,042.15
5	13.6	20 mm cement plaster of mix :				
	13.6.2	1:6 (1 cement: 6 coarse sand)	SQM	196.78	401.35	78,978.46
6	13.16	6 mm cement plaster of mix :				
	13.16.1	1:3 (1 cement : 3 fine sand)	SQM	66.84	253.05	16,814.77
7	9.48	Providing and fixing M.S. grids of required pattern in frames of windows etc. with M.S. flats, square or round bars etc. including priming coat with approved steel primer all complete.	kg	86.40	197.70	17,081.28
	9.48.2	Fixed to openings wooden frames with rawl plugs screws etc.				
8	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)	cum	4.48	6,326.05	28,315.40
9	11.26	Kota stone slab flooring over 20 mm (average) thick base laid over and jointed with grey cement slurry mixed with pigment to match the shade of the slab, including rubbing and polishing complete with base of cement mortar 1 : 4 (1 cement : 4 coarse sand) :	sqm	51.67	1,706.60	88,175.93
10	11.27	Kota stone slab flooring over 20 mm (average) thick base laid over and jointed with grey cement slurry mixed with pigment to match the shade of the slab, including rubbing and polishing complete with base of cement mortar 1 : 4 (1 cement : 4 coarse sand) :	sqm	4.05	2,038.55	8,256.13
11	22.11	Providing and laying six courses water proofing treatment with bitumen felt over roofs consisting of first, third and fifth courses of blown or / and residual bitumen applied hot at 1.45, 1.20 and 1.70 kg per square metre of area respectively, second and fourth courses of roofing felt type 2 grade II (glass fibre base self finished bitumen felt) and sixth and final course of stone grit 6 mm and down size or pea sized gravel spread at 6 cubic decimeter per sqm including preparation of surface but excluding grading, complete.	SQM	48.84	773.95	37,802.50
12	10.5	Providing and fixing 1mm thick M.S. sheet door with frame of 40x40x6 mm angle iron and 3 mm M.S. gusset plates at the junctions and corners, all necessary fittings complete, including applying a priming coat of approved steel primer.				
	10.5.1	Using M.S. angels 40x40x6 mm for diagonal braces	kg	255.50	4,781.15	1,221,563.83
13	13.28	Providing and applying plaster of paris putty of 2 mm thickness over plastered surface to prepare the surface even and smooth complete.	sqm	263.63	214.30	56,494.97
14	13.43	Priming one coat with any approved primer on plastered surfaceApplying one coat of water thinnable cement primer of approved brand and manufacture on wall surface :				
	13.43.1	Water thinnable cement primer	sqm	263.63	64.45	16,990.67
15	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	sqm	263.63	162.55	42,852.34
16	13.5	Applying priming coat:				
	13.50.3	With ready mixed red oxide zinc chromate primer of approved brand and manufacture on steel galvanized iron/ steel works	SQM	2.94	55.50	163.17
17	13.52	Finishing with Epoxy paint (two or more coats) at all locations prepared and applied as per manufacturer's specifications including appropriate priming coat, preparation of surface, etc. complete.	SQM	2.94	201.70	593.00
SUB TOTAL.						2,141,968.166



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Name of Project -		RENOVATION AND BEAUTIFICATION OF GHORA TALAB, Meerut/gh									
Name of Component -		AERATION WORK (and work for non-aeration Control room) (and work above ponds)									
S.No.	SAB ITEM NO./REVISION	Description of Item	Quantity Unit					Quantity	Amount		
			1	2	3	4	5				
1	5.1	Handapred cement concrete work in beams, suspended floor, with facing layer up to 10' including, battens, shelves, angles, brack, bands, plate vibrator ribs, maximum and upper 1000 mm above plinth level up to floor level, including the cost of casting, shuttering, binding and reinforcement with 1:1.5:3 (1 cement : 1.5 coarse sandstone-4) mixed from natural source : 3 graded stone aggregate 20 mm nominal size washed free organic material.									
		IN-20 GRADE CONCRETE									
		GROUND FLOOR									
		ACC - COLUMN									
		AERATION ROOM (INSIDE SIZE - 5.0 M X 7.0 M) P1 (SIZE = 1.5 X 1.8) (PIT SIZE - 1.7 X 1.7)	sqm	4	0.30	0.30	3.8	1.30			
		BEAMS AND SLABS									
		AERATION ROOM (INSIDE SIZE - 5.0 M X 7.0 M)									
		SHORTER SIDE	CUM	2.00	0.48	0.30	0.45	1.47			
		LONGER SIDE	CUM	2.00	7.48	0.30	0.45	2.61			
		SLAB (150 MM)	CUM	1	0.08	0.08	0.15	0.23			
		TOTAL						1.38			
		LINTELS									
		AERATION ROOM - VENTILATOR	CUM	1	1.5	0.25	0.25	3.18			
		AERATION ROOM - DOOR	CUM	1	1.5	0.25	0.25	3.18			
		TOTAL						6.36			
		S.TOTAL						18.41			
2	MR	Supply, fixing and plaster HYDRO for reinforcement complete as per drawing and technical specifications									
		HYDRO FORM WORK									
		TOTAL CONCRETE WORK						18.41			
		STEEL-12MM/6CM	kg	128				2661.21			
			BT					3.26			
		S.TOTAL						2679.67			
3	5.2	Casting and shuttering including shuttering, propping etc. and removal of form for Foundations, beams, bases of columns, etc. for ITEM 5.0.2.0.2									
A	5.2.1	AERATION ROOM (INSIDE SIZE - 5.0 M X 7.0 M) P1 (SIZE = 1.5 X 1.8) (PIT SIZE - 1.7 X 1.7)	sqm	18	0.30		5.00	14.40			
			sqm					14.40			
B	5.2.2	Lintels, beams, plinth beams, girders, beams and castings									
		AERATION ROOM (INSIDE SIZE - 5.0 M X 7.0 M)									
		SHORTER SIDE	sqm	4	0.48		0.45	6.83			
		LONGER SIDE	sqm	4	7.48		0.45	13.28			
		TOTAL						19.11			
		LINTELS									
		AERATION ROOM - VENTILATOR	sqm	2	1.5		0.25	6.36			
		AERATION ROOM - DOOR	sqm	2	1.5		0.25	6.36			
			sqm	2	1.5		0.25	6.36			
			sqm	2	0.25		0.25	7.87			
		TOTAL						30.37			
C	5.2.3	Suspended floor, roof, ceilings, balconies and access walkways									
		AERATION ROOM (INSIDE SIZE - 5.0 M X 7.0 M)	sqm	1	0.08	0.08		46.634			
			sqm					46.634			
		TOTAL						46.634			
4	5.3	Brick work with common burnt clay masonry masonry performed below of class designation 12.5 conforming to IS 2222 in superstructure above plinth level up to floor level in cement mortar 1:6 (1 cement : 6 coarse sand)									
		IN-20 GRADE CONCRETE									
		GROUND FLOOR									
		ACC - COLUMN									
		AERATION ROOM (INSIDE SIZE - 5.0 M X 7.0 M)									
		SHORTER SIDE	CUM	2.00	0.48	0.25	3.00	7.65			
		LONGER SIDE	CUM	2.00	7.48	0.25	3.00	10.36			
		DEDUCT									
		LINTEL									
		AERATION ROOM - VENTILATOR	CUM	-1	1.5	0.25	0.25	-2.08			
		AERATION ROOM - DOOR	CUM	-1	1.5	0.25	0.25	-2.08			
		OPENING									
		AERATION ROOM - VENTILATOR	CUM	-1	1.2	0.25	1.88	-6.43			
		AERATION ROOM - DOOR	CUM	-1	1.2	0.25	2.43	-6.98			
			CUM					6.704			
		TOTAL						19.87			
5	13.6	20 mm cement plaster of mix									
		1:6 (1 cement : 6 coarse sand)									
		AERATION ROOM (INSIDE SIZE - 5.0 M X 7.0 M)									
		INTERNAL PLASTER									
		SHORTER SIDE	sqm	2.00	0.48		3.00	32.78			
		LONGER SIDE	sqm	2.00	7.48		3.00	44.78			
		DEDUCT									
		OPENING									
		AERATION ROOM - VENTILATOR	sqm	-1	1.2		1.88	-1.88			
		AERATION ROOM - DOOR	sqm	-1	1.2		2.43	-2.94			
		EXTERNAL PLASTER									
		SHORTER SIDE	sqm	2.00	0.48		4.00	44.23			
		LONGER SIDE	sqm	2.00	7.48		4.00	60.43			
		DEDUCT									
		OPENING									
		AERATION ROOM - VENTILATOR	sqm	-1	1.2		1.88	-1.88			
		AERATION ROOM - DOOR	sqm	-1	1.2		2.43	-2.94			
		PLASTER ON CHAJJA									
		AERATION ROOM - VENTILATOR	sqm	1	1.5		0.25	5.11			
		TOP	sqm	1	1.5		0.25	5.99			
		AERATION ROOM - DOOR	sqm	1	1.5		0.25	5.11			
		SIDES	sqm	1	1.5		0.25	5.11			
		TOP	sqm	1	1.5		0.25	5.99			
		TOTAL						194.79			

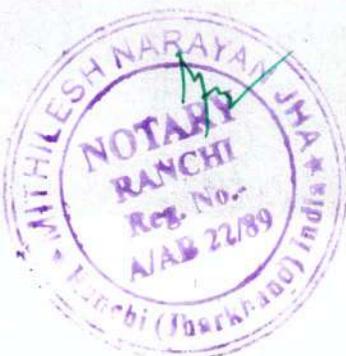


6	13.18	8 mm cement plaster of one							
	13.18.1	1:3 (1 cement, 3 dry sand)							
		VENTILATION ROOM (INSIDE SIZE - 5.0 M X 7.0 M)							
		CEILING	SQM	1	0.08	0.08		48.84	
		PLASTER ON CHAJJA	SQM	1	1.5	1.5		9.08	
		VENTILATION ROOM - VENTILATOR							
		BOTTOM	SQM	1	1.5	1.5		9.08	
		VENTILATION ROOM - DOOR							
		BOTTOM	SQM	1	1.5	1.5		9.08	
			SQM					0. TOTAL	66.84
7	8.48	Providing and fixing M.S. grids of required pattern in frames of windows etc. with M.S. flats, squares or round bars etc. including priming coat with approved primer as concrete							
	8.48.2	Fixed to openings according to code with steel plate across etc.							
		VENTILATION ROOM - VENTILATOR	SQM	1	1.2	1.2		1.98	
		VENTILATION ROOM - DOOR	SQM	1	1.2	1.2		2.45	2.84
		at 150 gauge	kg	13				1.58	
			kg					0. TOTAL	65.48
8	4.1	Providing and laying in position current concrete of specified grade including the cost of watering and churning - Ad work up to 100 mm							
	4.1.8	1:4:8 (1 Cement : 4 coarse sand (Zone-II) derived from natural sources : 8 gravel) above aggregate 40 mm nominal size derived from natural sources							
		VENTILATION ROOM (INSIDE SIZE - 5.0 M X 7.0 M)	SQM	1	20.84	0.78	0.2	4.48	
			SQM					0. TOTAL	4.48
9	11.28	Make stone slab flooring over 20 mm (average) thick base laid over and jointed with grey cement slurry mixed with pigment to finish the shade of the slab, including rubbing and polishing complete with base of cement							
		ROOF 1 - 4 (1 cement : 4 coarse sand)							
		VENTILATION ROOM (INSIDE SIZE - 5.0 M X 7.0 M)							
		PLASTERING	SQM	1	0.08	0.08		48.84	
		Stone slab flooring (100 mm height)	SQM	1	20.24		0.1	2.82	
			SQM					0. TOTAL	51.67
10	11.27	Make stone slab flooring over 20 mm (average) thick base laid over and jointed with grey cement slurry mixed with pigment to finish the shade of the slab, including rubbing and polishing complete with base of cement							
		ROOF 1 - 4 (1 cement : 4 coarse sand)							
		VENTILATION ROOM (INSIDE SIZE - 5.0 M X 7.0 M)							
		STEPS	SQM	2	1.5	0.45		1.96	
		ROOF	SQM	4	1.8			0.48	2.70
			SQM					0. TOTAL	4.88
11	22.11	Providing and laying six courses water proofing treatment with bitumen hot over rosin consisting of 2nd, 3rd and 4th courses of bitumen or 1 and 2nd courses bitumen applied hot at 1.45, 1.20 and 1.70 kg per square meter of area respectively, second one fourth course of building bitumen 2 grade if given then base and finished bitumen hot and cold and final course of same bit 2 mm and above bit or one coat of gravel spread at 4 cubic decimeter per sqm including preparation of surface but excluding grading, finishing.							
		VENTILATION ROOM (INSIDE SIZE - 5.0 M X 7.0 M)							
		SLAB TOP SIZE	SQM	1	0.08	0.08		48.84	
			SQM					0. TOTAL	48.84
12	10.5	Providing and fixing 8mm M.S. sheet over with frame of 40x40mm steel angle iron and 3 mm M.S. gasket plates at the junctions and corners, all necessary fittings, including working a vertical joint of approved steel joint							
	10.5.1	Using M.S. angles 40x40mm for diagonal bracing							
		VENTILATION ROOM (INSIDE SIZE - 5.0 M X 7.0 M)							
		VENTILATION ROOM - DOOR	sq	1	1.2	2.45		2.84	
			sq					0. TOTAL	284.38
13	13.26	Providing and applying plaster of pure putty of 2 mm thickness over plastered surface to prepare the finished work and smooth appearance							
		8 mm cement plaster of one	SQM					106.78	
		8 mm cement plaster of one	SQM					66.84	
		TOTAL QUANTITY AS PER PLASTER	SQM					0. TOTAL	263.62
14	13.43	Priming one coat with any approved primer on plastered surface-applying one coat of water treatment cement primer of approved brand							
	13.43.1	Water treatment cement primer							
		SAME AS TOTAL QUANTITY AS PER ABOVE PLASTER	SQM					0. TOTAL	263.62
15	13.41	Contouring with oil bound vermicular dampener of approved brand							
	13.41.1	Not manufactured in situ at work site. New work done or more coats over and including base							
		INSURANCE PREMIUM paid with contract value							
		SAME AS TOTAL FINISHING PLASTERED SURFACE QUANTITY	SQM					0. TOTAL	263.62
16	13.50	Applying priming coat							
	13.50.3	With ready mixed red oxide iron chromate primer of approved brand and manufacturer as steel galvanizer's list and code							
		VENTILATION ROOM - DOOR	SQM	1	1.2	2.45		2.84	
			SQM					0. TOTAL	2.84
17	13.52	Finishing with Epoxy paint (two or more coats) as all junctions prepared and applied as per manufacturer's specifications including appropriate priming coat, preparation of surface, etc. complete							
	13.52.1	On steel work							
		VENTILATION ROOM - DOOR	SQM	1	1.2	2.45		2.84	
			SQM					0. TOTAL	2.84



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Name of Project:- REJUVINATION AND BEAUTIFICATION OF DHOBIYA TALAB, Hazaribagh						
S.No. of Project Sub Aeration work (specialized job, equipments, Complete)						
ABSTRACT OF QUANTITIES						
S.No.	DSR / MR/ RA	Description Of Item	Unit	Quantity	Rate	Amount
1	2	3	4	5	6	9
1	MR	Providing material and labour and equipment for installation of complete mechanism for Aeration and oxidation of talab, complete.				
	1.1	Supply of 2ft Water Arial Fountain with 1 nos. AC powered motor and 1 nos nozzle system	set	1	15,750.00	15,750.00
	1.2	Supply of 6ft Water Arial Fountain with 1 nos. AC powered motor and 1 nos nozzle system	set	1	35,750.00	35,750.00
	1.3	Supply of 20ft Water Arial Fountain with 1 nos. AC powered motor and 1 nos nozzle system	set	1	250,000.00	250,000.00
SUB TOTAL						301,500.00



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Name of Project:-		REJUVINATION AND BEAUTIFICATION OF DHOBIYA TALAB, Hazaribagh								
S.No. of Project Sub Head :-		Miscellaneous								
Quantity Sheet										
S.No.	DSR 2021 / MR/ RA	Description Of Item	Unit	Nos	Length L	Breadth B	Depth D	Quantity	Remark	
1	2	3	4	5	6	7	8	9	10	
1	MR	Providing material and labour and equipment for installation of complete mechanism for Aeration and oxidation of talab, complete.								
	1.1	Supply of 2ft Water Arial Fountain with 1 nos. AC powered motor and 1 nos nozzle system	set	1				1		
	1.2	Supply of 6ft Water Arial Fountain with 1 nos. AC powered motor and 1 nos nozzle system	set	1				1		
	1.3	Supply of 20ft Water Arial Fountain with 1 nos. AC powered motor and 1 nos nozzle system	set	1				1		



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Bidding of Double Trench, Haverhill, Massachusetts						
Sl. No.	Shortest Item (as per specifications)	ITEM OF WORK	QTY.	UNIT	Rate (in Rs.)	Amount (in Rs.)
1	M/P 2019-2022 Section 1-(XVII)-W.T.P. / S.T.P. PG 177	A) Designing (architecturally), providing, and constructing and giving satisfactory trial of underground Sewage Treatment Plant consisting of receiving chamber, screen chamber, grit chamber, measuring flume, distribution chamber with primary and secondary treatment, etc. as detailed below, administration block of suitable size including allied units for waste disposal with all civil and mechanical works involved, etc. complete (Turn key job).	1	M.L.D	2018000	
		0.5M.L.D	0.5	M.L.D		2506500
2	IN DWSD 1.1.1 pg 111	Earthwork in excavation of laying of different types and sizes of R.C.C. open pipes with disposal of excavated earth within initial lead and lift as per specification and direction of E/I (I) For Classification of soil item-1	475.20	cum	254.84	121099.968
3	ABCD corr 2021 1.1.10 pg 28	Providing coarse clean sand in filling in foundation trenches or in plinth including ramming and watering in layers not exceeding 150 mm thick with all leads and lift including cost of all material, labour, royalty and taxes all complete as per building specification and direction of E/I. without carriage cost (Mode of measurement compacted volume)	59.40	Cum	418.56	24685.432
4	IN DWSD 1.1.1 pg 111	Earthwork in back filling and trench after laying different types and sizes of R.C.C. open pipes with earth removed during excavation within initial lead and super specification and direction of E/I.	376.06	Cum	86.33	32461.44525
5	IN WRD 2021 SN 11.2 pg 71	Supply of (NPS) R.C.C. house pipe as per I.S.S. 458-1971				
		1050mm	130	RMT	1720.4	547732



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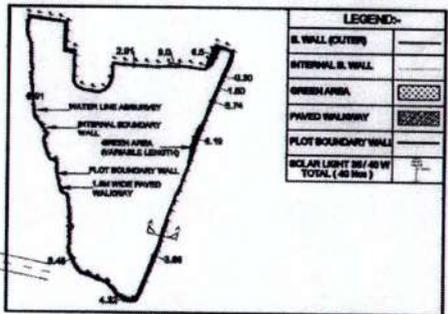
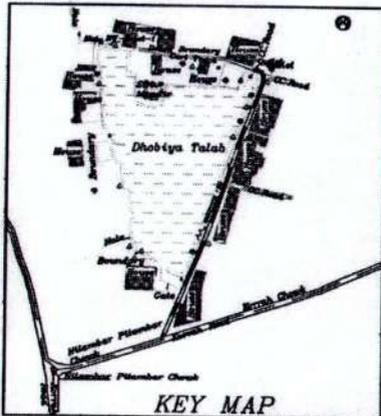
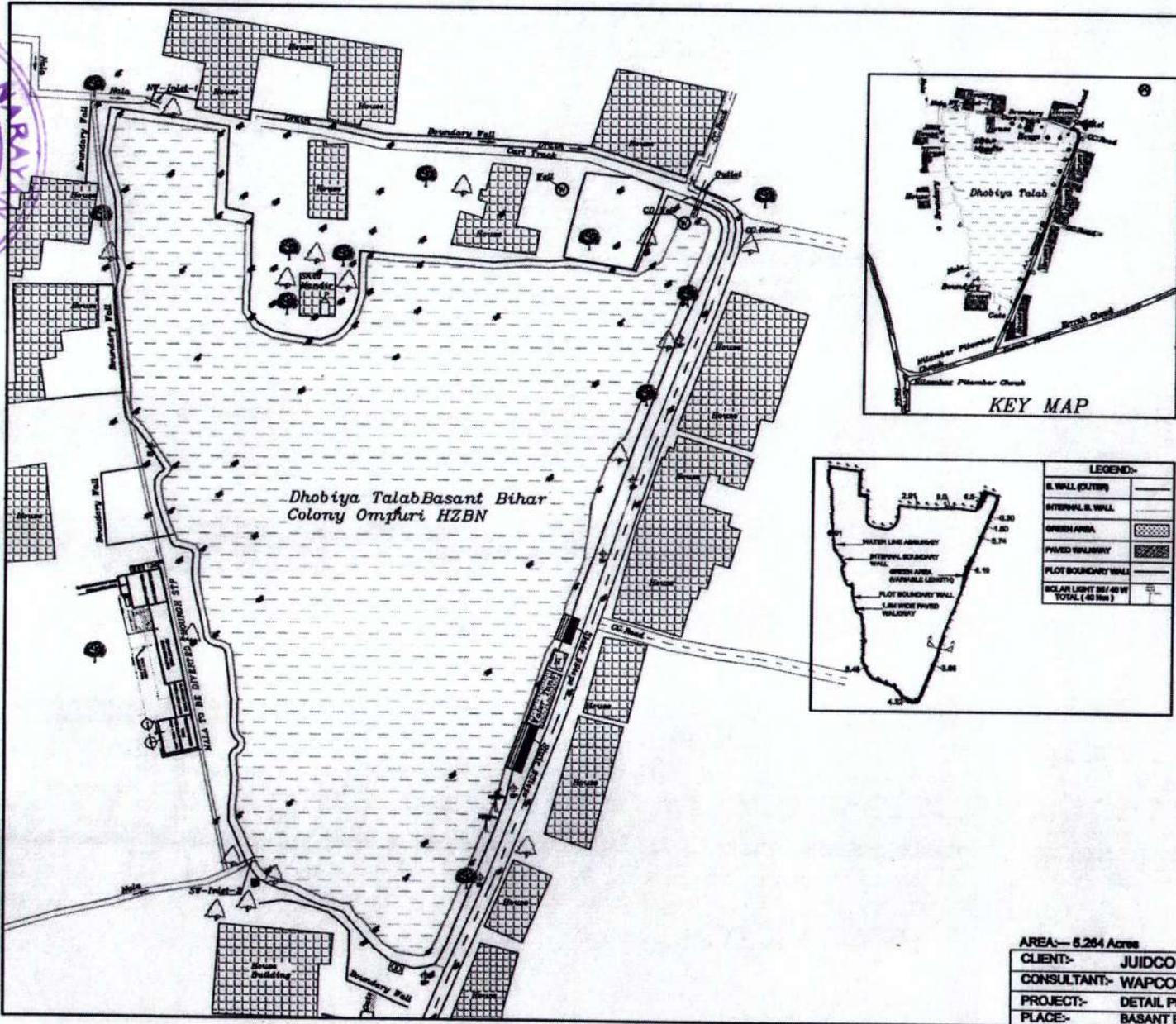
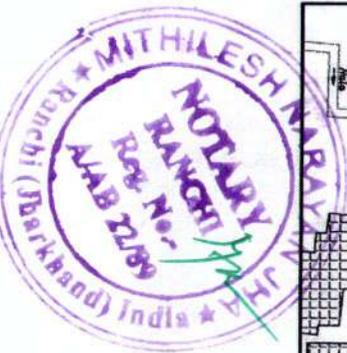
6	IN WRD 2021 7&J.1 to 42	Labour for laying, fitting and fixing NP3, hump pipe in line, levels and grade and providing approved jointing material and joint properly filled to make them leak proof, all complete as per specification and direction of E/I	330	met	534.32	173055.6
7	Dikar (DCD) 2021 19.11 pg 294	Constructing brick masonry circular manhole 1.22 m internal dia at bottom and 0.56 m dia at top in cement mortar 1:4 (1 cement : 4 coarse sand) inside cement plaster 12 mm thick with cement mortar 1:3 (1 cement : 3 coarse sand) finished with a finishing coat of neat cement. Foundation concrete 1:3:6 (1 cement : 3 coarse sand : 6 graded stone aggregate 40 mm nominal size) and making necessary channel in cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size) finished with a finishing coat of neat cement, all complete as per standard design.				
8	19.11.1	1.68 m deep with SFRC Cover and frame (heavy duty HD30 grade designation) 360 mm internal diameter conforming to IS 12592, total weight of cover and frame to be not less than 182 kg. Fixed in cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size) including centering, shuttering all complete. (Excavation, foot rails and 12 mm thick cement plaster at the external surface shall be paid for separately).				
9	19.11.1.2	With Sewer bricks conforming IS : 4885	1	Each		13927
9	19.16	Providing orange colour safety foot rest of minimum 6 mm thick plastic encapsulated as per IS : 10919, on 12 mm dia steel bar conforming to IS : 786, having minimum cross section as 23 mm x 23 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 chisquoring. Bonds necessary and adequate anchoring projections on tail length on 138 mm as per standard drawing and suitable to with stand the load test and chemical resistance test as per specifications and having manufacturer's permanent identification mark to be visible even after fixing, including fixing in masonry with 30x20x15 mm cement concrete block 1:3:6 (1 cement : 3 coarse sand : 6 graded stone aggregate 20 mm nominal size) complete as per design.	5	Each	310.9	1554.5
10	MJP19-20 Section L pg 253	Valve Chamber with Precast RCC Covers Providing and constructing B.B. masonry valve chamber with 15 cm thick 1:3:6 proportion FCC bedding, excluding excavation, B.B. masonry in CM 1:3 proportion precast RCC frame and cover, etc. complete as directed by Engineer-in-charge.				
11	c	As above of 90 x 60 cm internal size and depth upto 1.2 M with precast R.C.C slab cover.	2	Each	982	18764
11	WB water supply CHAPTER - VIII SUPPLYING OF MATERIALS pg 46	Ductile iron double flanged manually operated sluice valve generally conforming to IS : 14846, having body, door, dome, gland in graded ductile iron to IS 1805, four faces and spindles out of gun metal to IS 118, inside screw non-rising stainless steel AISI-410 spindle valves suitable for maximum working pressure of 10/16 kg/cm ² and body tested 15/24 kg/cm ² . Flanges drilled to IS 1538 table 4 B. C. Valves tested by closed end method only. BCDraw and above valves are complete with airclosed gear box with anti friction device.	2	Each	191514	383028
13	ISOR 2021 DWSO Item No M1026, Pk. 43	DI Pipe: Providing and supplying ISI mark Cast-iron (cast pipe) Ductile Iron Pipe of 300 mm and above all diameter for water works with socket & spigot ends conforming to IS 8329/2000 to the standard working length of 4.5, 5.5 & 6m suitable for classification 0.7 & 0.9 suitable for push-on-joint (rubber gasket) jointing with cement mortar being inside the pipes with outside zinc and bituminous coating. Rates are ex factory including transportation, taxes & duties, contractor profit & overhead charges etc.				
		DI 8.8 ductile Ø 450 mm dia	25	met	5717.51	142937.25
Total Cost						965715.715



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Name of Project		RENOVATION AND BEAUTIFICATION OF DHORA TALAB, HAZARBAH						
Name of Component		RTF & Construction of Drain						
S.No.	QSR 2021 ITEM NO./MARA	Description Of Item	Quantity Sheet					Quantity
			Unit	Length L	Breadth B	Depth D		
1	A DWSD 3.3.1 pg 111	Earthwork in excavation of laying of different types and sizes of R.C.C. upon pipes with deposit of excavated earth within initial level and SR as per specification and direction of E/I (1) For Classification of soil Item-8	Cum	130	1.2	1.2		475.20
2	B/RCD 2021 3.1.10 pg 10	Providing coarse clean sand in filling in foundation trenches or in pits including remaining and watering in layers not exceeding 150 mm thick with all loads and SR including cost of all material, labour, supply and taxes all complete as per building specification and direction of E/I without carriage cost (Mode of measurement compacted volume)	Cum	130	1.2	0.15		99.40
3	A DWSD 3.3.2 pg 111	Earthwork in back filling and trench after laying different types and sizes of R.C.C. upon pipes with earth removed during excavation within initial level and as per specification and direction of E/I	Cum					276.08
4	M WRD 2021 M 11.3 pg 71	Supply of NP3 R.C.C. house pipe as per L.S.S. 450-1973	M/FT	130				130
5	M WRD 2021 7.6.2.1 pg 42	Labour for laying, fitting and fixing NP3 house pipe in line, level and grade and providing approved jointing material around joint properly fitted to make them leak proof, all complete as per specification and direction of E/I	M/FT	130				250
6	Bhar RCD 2021 19.11 pg 294	Constructing brick masonry structure (width 1.22 m interval dia structure and 0.50 m dia in top in cement mortar 1:1 (1 cement : 4 coarse sand) inside cement plaster 12 mm thick with cement mortar 1:1 (1 cement : 2 coarse sand) finished with a floating coat of neat cement foundation concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size) and making necessary channel in cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size) finished with a floating coat of neat cement, all complete as per standard design						
7	19.11.1	1.80 m deep with S.P.C. Cover and frame heavy duty 10230 grade designation) 540 mm internal diameter conforming to IS 12392, total weight of cover and frame to be not less than 182 kg. Road in cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size) including cartoning, shuttering all complete. (Data vector, heat tests and 12 mm thick concrete plaster at the internal surface shall be paid for separately)						
8	19.11.2	with Sewer inlets conforming to 4883	each	1				1
9	19.15	Providing orange colour safety foot rest of minimum 6 mm thick plastic incorporated as per IS 13095, on 15 mm dia steel bar conforming to IS 1786, having minimum cross section as 23 mm x 25 mm and over all minimum length 242 mm and width as 185 mm with minimum 112 mm space between provided legs having 2 mm tread on top surface by ribbing or chamfering besides necessary and adequate anchoring projections on top length on 136 mm as per standard drawing and suitable to with stand the load test and chemical resistance test as per specifications and having manufacturer's permanent identification mark to be visible even after being, including fitting in masonry with 30:20:15 one cement concrete block 1:1:6 (1 cement : 1 coarse sand : 6 graded stone aggregate 20 mm nominal size) complete as per design.	each	5				5



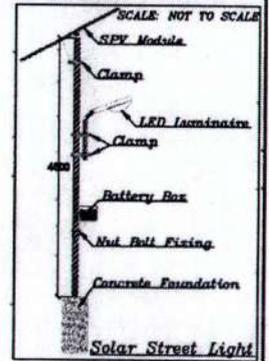


LEGEND:-

POND WATER LINE	---
POND OUTER	---
CC ROAD	---
CART TRACK	---
BLACK TOP ROAD	---
OUTLET INLET	---
NALA / DRAIN	---
POND	---
AABADI AREA	---
TREE	---
BOUNDARY WALL	---
CONT-MAJ	---
CONT-MIN	---
CULVERT	---
ELECTRIC POLE	---
STAIR	---
ENTRY GATE	---
TEMPLE	---
HAND PUMP/WELL	---
PILLAR	---
TRANSFORMER	---

LEGEND:-

S. WALL (EXTER)	---
INTERVAL S. WALL	---
GREEN AREA	---
PAVED WALKWAY	---
PLOT BOUNDARY WALL	---
SOLAR LIGHT 2W/40 W TOTAL (40 Nos)	---



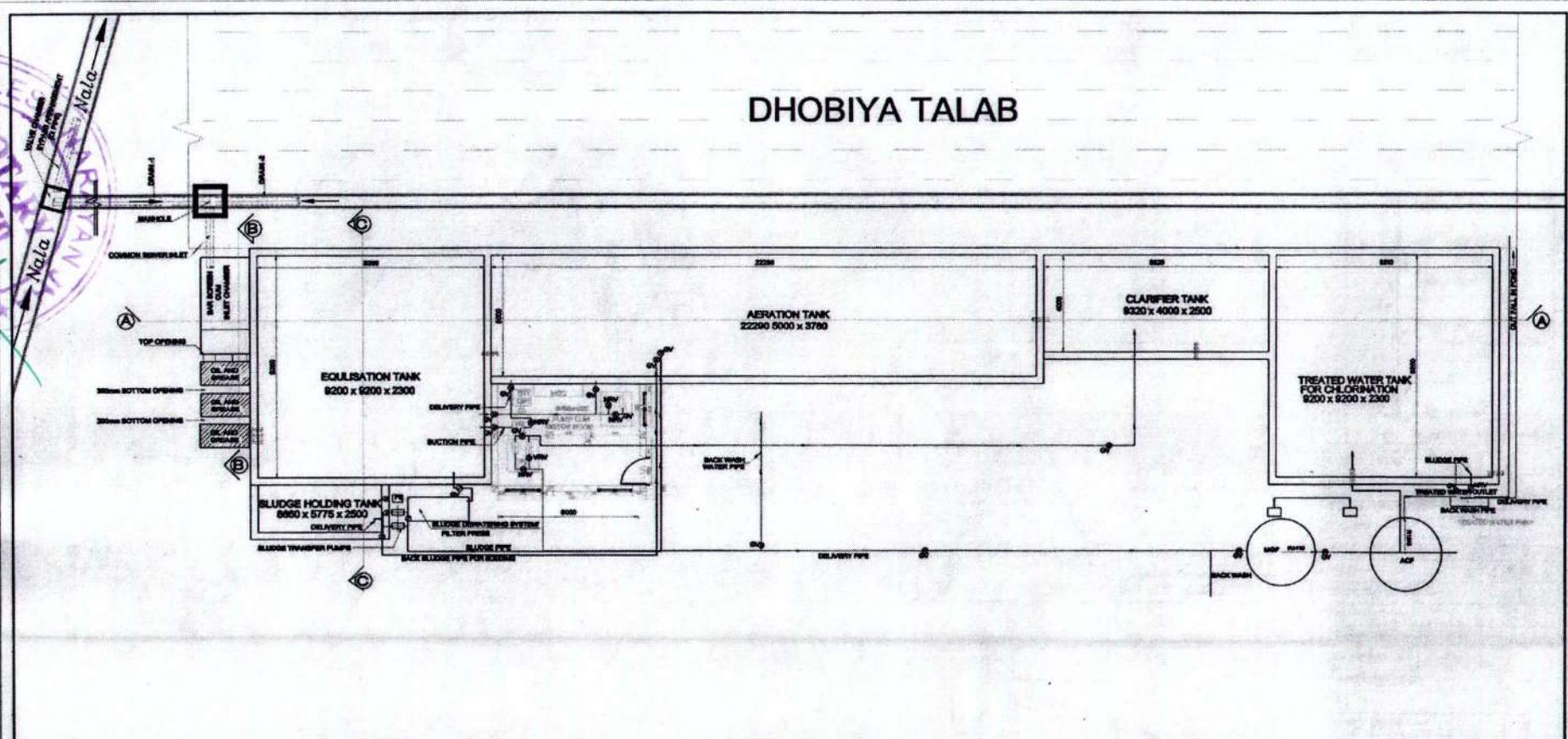
AREA:- 5.264 Acres
 CLIENT:- JUIDCO LIMITED
 CONSULTANT:- WAPCOS LTD.
 PROJECT:- DETAIL PLAN OF DHOBIYA TALAB AT HAZARIBAGH
 PLACE:- BASANT BIHAR COLONY, OMPURI, HZBN, JHARRIGHAND

SCALE :- 1:1000

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DHOBIYA TALAB



STP COMPONENT LIST					STP COMPONENT LIST				
MARK	DESCRIPTION	SIZE / CAPACITY	NOB	WORKING WT. IN KGS.	MARK	DESCRIPTION	SIZE / CAPACITY	NOB	WORKING WT. IN KGS.
P1	FMR FEED PUMP	21.0 m ³ / hr @ 10 mm	2	300 EACH	SHT	SLUDGE HOLDING TANK	8660 L x 5775 W x 2500 HT.	1	
BSC	BAR SCREEN CHAMBER	480 L x 480 W x 2000 HT	1	-	PS	FILTER PRESS FEED PUMP	3.0 m ³ / hr @ 20 mm	2	
EQT	EQUALISATION TANK	8000 L x 8000 W x 2500 HT.	1	-	FP	FILTER PRESS	OPTIONAL SUPPLY	1	
B1	AIR BLOWER	475.0 m ³ / hr @ 0.37 kg/cm ²	2	300 EACH	TWT	TREATED WATER TANK	9200 L x 9200 W x 2300 HT.	1	
DT1	NaOCl DOSING TANK	200 Litres CAPACITY	1						
DP1	NaOCl DOSING TANK	18.00 LPH @ 3.5 kg/cm ²	1	225					
P2	MGF FEED WATER PUMP	21.0 m ³ / hr @ 20 mm	1	100					
MGF	PRESSURE SAND FILTER	1620 DIA x 1800 HOS	1	3000					
ACF	ACTIVATED CARBON FILTER	1780 DIA x 1800 HOS	1	2500					

NOTE :-

1. ALL DIMENSIONS ARE IN MILLIMETRES, UNLESS OTHERWISE SPECIFIED.
2. NO DIMENSIONS SHALL BE MEASURED FROM THE DRAWING. ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED.
3. PIPING DETAILS NOT SHOWN.

SHEET 1 OF 1

CLIENT:-	JUIDCO LIMITED
CONSULTANTS:-	WAPCOS LTD.
PROJECT:-	REARWATER OF DHOBIYA TALAB AT WARDHANA
SEWERAGE TREATMENT PLANT EQUIPMENT LAYOUT PLAN	
JULY-2002	SHEET NO. 1/1

FOR DPR PURPOSE ONLY

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वाष्कोस लिमिटेड
WAPCOS LIMITED

(भारत सरकार का उपक्रम - वात चक्रान, परी विचार और गैर वाष्कोस क्षेत्र)
(A Government of India Undertaking - Ministry of Water Resources, River Development & Gangas Rejuvenation)

वाष्कोस लिमिटेड

(भारत सरकार का उपक्रम)

76 सी, सेक्टर 18, गुरुग्राम - 122015, हरियाणा, भारत

दूरभाष. +91-124-2397396,

ईमेल : environment@wapcos.co.in





Annexure-III

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Government of Jharkhand
Urban Development & Housing Department
4th Floor Project Building, HEC, Dhurwa-834004, Phone: 0651-2400962,
Email: ud.secy@gmail.com

Letter No.: 06A/नॉवि० / AMRUT-07/2015/...1103

07 September 2022

From,

Vinay Kumar Choubey, IAS
Secretary to Government.

To,

D. Thara, I.A.S.
Additional Secretary cum National Mission Director,
Ministry of Housing & Urban Affairs (MoHUA),
Government of India, Nirman Bhawan, New Delhi-110011.
Email: tharad@ias.nic.in

Subject: Regarding submission of Special State Water Action Plan (SWAP) of Waterbody Rejuvenation Projects under AMRUT 2.0 Mission.

Ref.: D.O. No. K-16011/5/2022-AMRUT-1B, dated: 17.05.2022.

Madam,

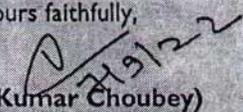
As directed vide D.O. No. K-16011/5/2022-AMRUT-1B, dated: 17.05.2022 to submit the special SWAP of waterbody rejuvenation projects, the State of Jharkhand is pleased to submit SWAP of 45 waterbodies worth Rs. 88.65 crore (enclosed) for your kind consideration and approval of APEX committee.

This is for your kind information and necessary action.

With profound regards,

Encl.: As above.

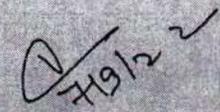
Yours faithfully,


(Vinay Kumar Choubey)
Secretary to Government

Memo No.: 06A/नॉवि० / AMRUT-07/2015/...1103

Ranchi, Date... 07/09/2022

Copy to: Shri Vinay Pratap Singh, Director, Ministry of Housing & Urban Affairs (MoHUA), Govt. of India for kind information.


Secretary to Government





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Government of Jharkhand

Urban Development & Housing Department

**Special State Water Action Plan (SWAP) under Atal
Mission for Rejuvenation & Urban Transformation
(AMRUT 2.0)**





Ministry of Housing and Urban Affairs
Government of India

JHARKHAND SWAP Special Tranche



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Total Projects	45	Estimated Project Cost (in Cr.)	88.646	Total Number of ULBs covered as part of this Tranche	34/52 (65.38 %)
CAPEX (in Cr.)	81.761	O&M Cost (in Cr.)	6.885	PPP Projects submitted by million+ cities	0(0 Cr.)

Estimated Fund Allocation (in Cr.)

Central Assistance	State Share	ULB Share	XV FC	PPP	Other sources
31,448	33,056	0	24,142	0	0

Category	Water Supply	Sewerage & Septage Management	Water Body Rejuvenation	Parks & Green Spaces Development
Total No. of Projects	0	0	45	0
Estimated Project Cost (in Cr.)	0	0	88.646	0
(a) Central Assistance (in Cr.)	0	0	31,448	0
(b) State funds (in Cr.)	0	0	33,055,999,999	0
(c) ULB funds (in Cr.)	0	0	0	0
(d) XV FC funds (in Cr.)	0	0	24,1418	0
(e) PPP (in Cr.)	0	0	0	0
(f) Other sources (in Cr.)	0	0	0	0

Key outcomes expected

0	Number of water tap connections to be provided	0	Number of sewer connections to be provided in slum
0	Number of water tap connections to be augmented	0 MLD	Quantity of source water to be augmented
0	Number of connections to be provided with 24*7 water supply	0 MLD	Capacity of water treatment plant to be added or augmented
0	Number of water tap connections to be provided in slum	0 MLD	Quantity of water to be recycled or reused
0	Number of sewer connections to be provided	0	Capacity of Sewage treatment plant added or augmented



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List of Water Body Rejuvenation Projects

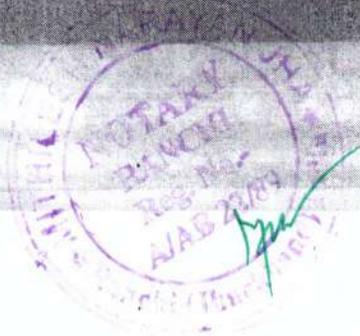
S. No.	Project	ULB Name	Est. Project Cost (₹ Cr.)	Name of water body	Area (in sq. km.)	Public space proposed	Diversion of drain(s)/ sewer(s) planned
1	Rejuvenation of Raja talab (Marwadi muhalla) in Chatra Nagar Parishad under North Chota Nagpur Division	Chatra	1.125	Raja talab	0.004	No	NA
2	Rejuvenation of Dukhani Ahar pond (ward no 02), Koderma Nagar Panchayat, KODERMA, NORTH CHHOTANAGPUR DIVISION	Koderma (NP)	1.327	Dukhani Ahar pond	0.004	Yes	NA
3	Rejuvenation of Mahto Aahar Pond (Ward No 20, N.H 031), Jhumritilaya Nagar Parishad, KODERMA, NORTH CHHOTANAGPUR DIVISION	Jhumri Tilaya	1.447	Mahto Aahar Pond	0.004	Yes	NA
4	Rejuvenation of Budwa Aahar Talab, Mauja Andudih in Giridih Municipal Corporation under North Chota Nagpur Division	Giridih	3.159	Budwa Aahar Talab	0.054	No	NA
5	Rejuvenation of Sona Aahar talab, mauja Mandardih in Giridih Municipal Corporation under North Chota Nagpur Division	Giridih	1.695	Sona Aahar talab	0.012	No	NA
6	Rejuvenation of Kunda Badaka Bandh (Ward 36) in Deoghar Municipal Corporation under Santhal Pragana Division	Deoghar	2.142	Kunda Badaka Bandh	0.014	No	NA
7	Rejuvenation of Ghangaur Talab (Ward-33) in Deoghar Municipal Corporation under Santhal Pragana Division	Deoghar	1.001	Ghangaur Talab	0.01	No	NA
8	Rejuvenation of Talab in Lalgadh (Ward no 10, Thana no 369, Plot No 12) in Madhupur Nagar Parishad under Santhal Pragana Division	Madhupur (NAGAR PARISHAD)	1.133	Talab in Lalgadh	0.008	No	NA
9	Rejuvenation of Rajkachhari Pokhar in Godda Nagar Parishad under Santhal Pragana Division	Godda	1.264	Rajkachhari Pokhar	0.016	No	NA
10	Rejuvenation of Sakrogarh Tank Bhag 2 under Sahibganj Nagar Parishad in Santhal Pragana Division	Sahibganj	1.527	Sakrogarh Tank Bhag 2	0.024	No	NA



S. No.	Project	ULB Name	Est. Project Cost (Cr)	Name of water body	Area (in sq. km)	Public space proposed	Diversion of drains/ sewer(s) planned
11	Rejuvenation of Pond near Kali Mandir (Ward no 7) in Rajmahal Nagar Panchayat under Santhal Pragana Division	Rajmahal	0.614	Pond near Kali Mandir	0.004	No	NA
12	Rejuvenation of Rani Dighi Talab under Pakur Nagar Parishad in Santhal Pragana Division	Pakur (TP)	1.849	Rani Dighi Talab	0.037	No	NA
13	Rejuvenation of Raja Talab, Dhanbad Municipal Corporation, DHANBAD, NORTH CHHOTANAGPUR DIVISION	Dhanbad	2.41	Raja Talab	0.022	Yes	NA
14	Rejuvenation of Loko Talab, Dhanbad Municipal Corporation, DHANBAD, NORTH CHHOTANAGPUR DIVISION	Dhanbad	11.58	Loko Talab	0.058	Yes	NA
15	Rejuvenation of Barmasiya Talab, Dhanbad Municipal Corporation, DHANBAD, NORTH CHHOTANAGPUR DIVISION	Dhanbad	2.133	Barmasiya Talab	0.017	Yes	NA
16	Rejuvenation of Pampu Talab (Ward No 10), Chirkunda Nagar Panchayat, DHANBAD, NORTH CHHOTANAGPUR DIVISION	Chirkunda	0.924	Rejuvenation of Pampu Talab	0.006	Yes	NA
17	Rejuvenation of Solagidih talab (Ward No 6), Chas Municipal Corporation, BOKARO, NORTH CHHOTANAGPUR DIVISION	Chas	3.185	Solagidih talab	0.024	No	NA
18	Rejuvenation of Jamgodia bandh (Ward No 5), Chas Municipal Corporation, BOKARO, NORTH CHHOTANAGPUR DIVISION	Chas	1.153	Jamgodia bandh	0.006	Yes	NA
19	Rejuvenation of Kallash Sarovar (Sonari) in Jamshedpur NAC under Kolhan Division	Jamshedpur	0.983	Kallash Sarovar	0.01	No	NA
20	Rejuvenation of Birsa Nagar Zone 1 B Talab (Shishu Vidya Mandir) in Jamshedpur NAC under Kolhan Division	Jamshedpur	0.98	Birsa Nagar Zone 1 B Talab	0.013	No	NA
21	Rejuvenation of Jharna Talab in Ward No. 18 of Medininagar Municipal Corporation in Palamu division	Medininagar (DALTONGANJ)	1.173	Jharna Talab	0.016	No	NA

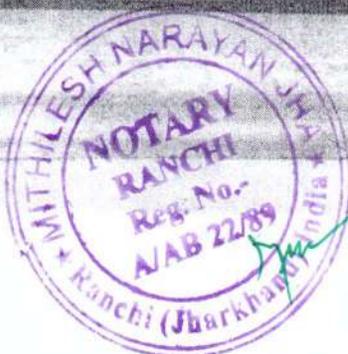


S. No.	Project	ULB Name	Est. Project Cost (₹ Cr.)	Name of water body	Area (in sq. km.)	Public space proposed	Diversion of drain(s)/ sewer(s) planned
22	Rejuvenation of Kachrwa Dam under Medininagar Municipal Corporation in Palamu Division	Medininagar (DALTONGANJ)	8.838	Kachrwa Dam	0.248	No	NA
23	Rejuvenation of Dhobi Muhalla Talab (Ward no 4) in Latehar Nagar Panchayat under Palamu Division	Latehar	1.461	Dhobi Muhalla Talab	0.004	No	NA
24	Rejuvenation of Khajanchi Talab under Hazaribag Municipal Corporation in North Chota Nagpur Division	Hazaribag	1.627	Khajanchi Talab	0.005	No	NA
25	Rejuvenation of Dhobiya Talab under Hazaribag Municipal Corporation in North Chotanagpur Division	Hazaribag	3.516	Dhobiya Talab	0.021	Yes	NA
26	Rejuvenation of Chattar Mandu Talab under Ramgarh Nagar Parishad in North Chota Nagpur Division	Ramgarh Nagar Parishad	1.327	Chattar Mandu Talab	0.019	No	NA
27	Rejuvenation of Dudhani handi Pokhar in Dumka Nagar Parishad under Santhal Pragana Division	Dumka	0.54	Dudhani handi Pokhar	0.008	No	NA
28	Rejuvenation of Bakul Talab under Jamtara Nagar Panchayat under Santhal Pragana Division	Jamtara	1.519	Bakul Talab	0.004	No	NA
29	Rejuvenation of Bhandari Talab (Ramnagar-ward-15) in Mihjam Nagar Panchayat under Santhal Pragana Division	Mihjam	1.006	Bhandari Talab	0.007	No	NA
30	Rejuvenation of Hunderu Basti Talab under Ranchi Municipal Corporation in North Chota Nagpur Division	Ranchi	1.04	Hunderu Basti Talab	0.01	No	NA
31	Rejuvenation of Adarsh Nagar Talab under Ranchi Municipal Corporation in North Chota Nagpur Division	Ranchi	0.706	Adarsh Nagar Talab	0.008	No	NA
32	Rejuvenation of Bhutia Talab (Ward No. 4) under Ranchi Municipal Corporation in South Chota Nagpur Division	Ranchi	0.559	Bhutia Talab	0.004	No	NA
33	Rejuvenation of Kamanta Jalashaya under Khunti Nagar Panchayat in South Chota Nagapur Division	Khunti (NP)	3.281	Kamanta Jalashaya	0.069	No	NA



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S. No	Project	U/B Name	Est. Proj. Cost (₹ Cr)	Water body	Area (in sq. km)	Public space proposed	Diversion of drain(s)/ sewer(s) planned
34	Rejuvenation of Bhatti Talab (Sisal Road) in Gumla Nagar Parishad under South Chota Nagpur Division	Gumla	0.628	Bhatti Talab sisal Road	0.009	No	NA
35	Rejuvenation of Potka Talab under Chakardharpur Nagar Parishad in Kolhan Division	Chakardharpur	1.404	Potka Talab	0.012	No	NA
36	Rejuvenation of Thansen Talab under Chaibasa Nagar Parishad in Kolhan Division	Chaibasa	1.883	Thansen Talab	0.014	No	NA
37	Rejuvenation of Mandir Tola Talab (ward 24) in Adityapur Municipal Corporation under Kolhan Division	Adityapur	0.795	Mandir Tola Talab	0.007	No	NA
38	Rejuvenation of Navkunj Maldan Talab (Ward No. 2) in Adityapur Municipal Corporation under Kolhan Division	Adityapur	0.809	Navkunj Maldan Talab	0.007	No	NA
39	Rejuvenation of Hanshahundi Talab in Saralkela Nagar Panchayat under Kulhan division	Saralkela	2.327	Henshahundi Talab	0.015	No	NA
40	Rejuvenation of BhabaniKhand dam in Sri Bansidhar Nagar Panchayat under Palamu division	Nagar Untari	3.948	Bhabanikhand Dam	0.272	No	NA
41	Rejuvenation of Munshi Pokhar in Barharwa Nagar Panchayat under Santhal Pragana Division	Barharwa	0.718	Munshi Pokhar	0.004	No	NA
42	Rejuvenation of Manager Talab in Barki Sariya Nagar Panchayat under North Chota Nagpur division	Barki Saralya	2.19	Manager Talab	0.016	No	NA
43	Rejuvenation of Naulakha dam in Dhanwar Nagar Panchayat under North Chota Nagpur division	Dhanwar	3.975	Naulakha dam	0.14	No	NA
44	Rejuvenation of Waterbody near Sita School under Hariharganj Nagar Panchayat in Palamu Division	Hariharganj	0.723	Waterbody near Sita School	0.005	No	NA
45	Rejuvenation of Talab adjacent to Durga Mandir (Ward No. 7) in Mahagama Nagar Panchayat under Santhal Pragana Division	Mahagama	1.022	Talab near Durga Mandir	0.007	No	NA



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Government of Jharkhand
Urban Development and Housing Department

Minutes of 2nd meeting of State High Powered Steering Committee (SHPS) of Atal Mission for Rejuvenation and Urban Transformation 2.0 (AMRUT 2.0) held on 26.08.2022 under the Chairmanship of Chief Secretary, Jharkhand.

Attendance: - As per the enclosed sheet.

Proceedings:

- 1.1 At the outset, The Chief Secretary welcomed the members of SHPS and other dignitaries.
- 1.2 Secretary, UD&HD informed the chair about agenda of the meeting. He briefed about the AMRUT 2.0 Mission and how Mission is being rolled out in the State of Jharkhand.
- 1.3 Secretary, UD&HD explained to the chair that the Ministry of Housing and Urban Affairs (MoHUA) has committed to providing Rs. 1178.00 crore as Central Assistance for the implementation of Water Supply Projects, Sewerage & Septage projects in 7 AMRUT ULBs, Waterbody rejuvenation and Green Space/Park development projects.
- 1.4 He informed that under AMRUT 2.0 Mission, the State had submitted its 1st tranche of State Water Action Plan (SWAP) consisting of 16 Water Supply Projects worth Rs. 1339.41 crore which was subsequently approved by MoHUA, Govt. of India on 16.03.2022.
- 1.5 He stated that Vide DO No. K-16011/5-2022-AMRUT-IB, dated: 17th May 2022, Ministry of Housing & Urban Affairs, Govt. of India directed States to submit special SWAP of Waterbody Rejuvenation Projects. Accordingly, 34 ULBs had prepared the DPR of 45 waterbody rejuvenation Projects with support of JUIDCO Limited & Consultants and submitted to the Department for approval from SHPS and MoHUA, Govt. of India.
- 1.6 The cost and fund distribution of 45 waterbody rejuvenation projects is enumerated below:

Sl. No.	Name of Waterbody	ULB	Area (in Acres)	Project Cost (Rs. Cr.)			Fund Distribution (CAPEX) (Rs. Cr.)		
				CAPEX	OPEX	Total Cost	Central Share	State Share	XV FC
1	Thansen talab (Ward No 11)	Chalbasa Nagar Parishad	3.36	1.79	0.10	1.88	0.89	0.36	0.54
2	Potka Talab	Chakradharpur Nagar Parishad	2.90	1.31	0.10	1.40	0.65	0.26	0.39
3	Solagidih talab (Ward No 6)	Chas Municipal Corporation	5.90	3.15	0.04	3.19	1.05	1.16	0.95
4	Jamgodia bandh (Ward No 5)		1.58	1.14	0.01	1.15	0.38	0.42	0.34
5	Pampu Talab (Ward No 10)	Chirkunda Nagar Panchayat	1.48	0.90	0.03	0.92	0.45	0.18	0.27
6	Raja Talab	Dhanbad Municipal Corporation	6.66	2.38	0.03	2.41	0.60	0.83	0.95
7	Loko Talab		26.89	11.44	0.14	11.58	2.86	4.00	4.58
8	Barmasiya Talab		4.30	2.11	0.02	2.13	0.53	0.74	0.84
9	Talab near Sita School	Hariharganj Nagar Panchayat	1.28	0.64	0.08	0.72	0.32	0.32	0
10	Khajanchi Talab (Ward No 27)	Hazaribag Municipal Corporation	1.15	1.54	0.09	1.63	0.51	0.57	0.46



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Sl. No.	Name of Waterbody	ULB	Area (In Acres)	Project Cost (Rs. Cr.)			Fund Distribution (CAPEX) (Rs. Cr.)		
				CAPEX	OPEX	Total Cost	Central Share	State Share	XV FC
11	Dhoblya Talab (Ward No 12)		5.26	2.97	0.55	3.52	0.99	1.09	0.89
12	Mahto Aahar (Ward No 20, N.H 031)	Jhumridlalya Nagar Parishad	1.20	1.40	0.05	1.45	0.70	0.28	0.42
13	Kamanta Jalashay (Ward No 19)	Khunti Nagar Panchayat	16.97	3.14	0.15	3.20	1.57	0.63	0.94
14	Dukhani Ahar (Ward No 2)	Koderma Nagar Panchayat	1.00	1.29	0.04	1.33	0.64	0.26	0.39
15	Kachrwa Dam (Ward No 5)	Medininagar Nagar Nigam	61.23	8.66	0.18	8.84	2.89	3.18	2.60
16	Jharna Talab (Ward No 18)		3.91	1.08	0.09	1.17	0.36	0.40	0.32
17	Rani Dighi Talab	Pakur Nagar Parishad	9.09	1.75	0.10	1.85	0.88	0.35	0.53
18	Chhatramandu Talab	Ramgarh Nagar Parishad	4.80	1.24	0.09	1.33	0.41	0.46	0.37
19	Hundaru Basti talab (Ward No 50)	Ranchi Municipal Corporation	2.36	0.88	0.16	1.04	0.22	0.31	0.35
20	Bhucia Talab (Ward No 4)		1.00	0.48	0.08	0.56	0.12	0.17	0.19
21	Adarsh nagar talab (Ward No 38)		1.89	0.62	0.08	0.71	0.16	0.22	0.25
22	Sakrogarh Tank Bhag 2	Sahibganj Nagar Parishad	6.00	1.43	0.09	1.53	0.72	0.29	0.43
23	Durga mandir ke samip (Ward No 7)	Mahagama Nagar Panchayat	2.69	0.86	0.16	1.02	0.43	0.43	0
24	Rajkachhari pokhar (Dg No. 155)	Godda Nagar Parishad	4.04	1.08	0.18	1.26	0.54	0.22	0.32
25	Bhatti Talab Sisal Road (Ward No 5)	Gumla Nagar Parishad	2.13	0.47	0.16	0.63	0.23	0.09	0.14
26	Navkunj Maldan Talab (Ward No 2)	Adityapur Municipal Corporation	1.61	0.65	0.16	0.81	0.22	0.24	0.19
27	Mandir Tola Talab (Ward No 24)		1.69	0.64	0.16	0.80	0.21	0.23	0.19
28	Kallash Sarovar (Sonari)	Jamshedpur NAC	3.36	0.82	0.16	0.98	0.27	0.30	0.25
29	Birsa Nagar Zone I B Talab (Shishu Vidya Mandir)		3.34	0.82	0.16	0.98	0.27	0.30	0.25
30	Bakul Talab	Jamtara Nagar Panchayat	2.64	1.18	0.34	1.52	0.59	0.24	0.35
31	Budwa Aahar Talab, Mauja Andudih	Giridih Municipal Corporation	13.33	2.80	0.35	3.16	0.93	1.03	0.84
32	Sona Aahar talab, mauja Mandardih		4.53	1.42	0.28	1.70	0.47	0.52	0.43
33	Raja talab Marwadi Muhalla	Chatra Nagar Parishad	2.15	0.94	0.18	1.13	0.47	0.19	0.28
34	Dudhani handi Pokhar (Dg No 416)	Dumka Nagar Parishad	1.04	0.51	0.03	0.54	0.26	0.10	0.15

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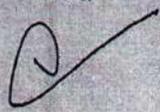
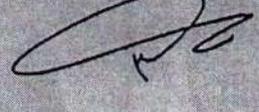
NOTARY
RANCHI
Reg. No.-
A/JAB 2289

Sl. No.	Name of Waterbody	ULB	Area (in Acres)	Project Cost (Rs. Cr.)			Fund Distribution (CAPEX) (Rs. Cr.)		
				CAPEX	OPEX	Total Cost	Central Share	State Share	XV FC
35	Bhandari talab ramnagar (Ward No 15)	Mihijam Nagar Panchayat	1.46	0.83	0.18	1.01	0.41	0.17	0.25
36	Ghangaur Talab (Ward No 33, Khesara No. 980)	Deoghar Municipal Corporation	2.90	0.83	0.17	1.00	0.28	0.31	0.25
37	Kunda Badaka bandh (Ward No 36, Khesara No. 262)		8.46	1.96	0.18	2.14	0.65	0.72	0.59
38	Kali Mandir ke paas (Ward No 7)	Rajmahal Nagar Panchayat	1.00	0.46	0.16	0.61	0.23	0.09	0.14
39	Munshi pokhar (Ward No 03)	Barharwa Nagar Panchayat	1.00	0.56	0.16	0.72	0.28	0.11	0.17
40	Naulakha Dam (Ward No 1)	Dhanwar Nagar Panchayat	34.59	3.67	0.31	3.98	1.83	1.83	0
41	Manager Talab (Ward Nno 10)	Barki sarlya Nagar Panchayat	3.95	2.09	0.10	2.19	1.05	1.05	0
42	Babhani Khand Dam (NayaKhand Ward No 5)	Sri Banshidhar Nagar Panchayat	67.15	3.65	0.30	3.95	1.82	0.73	1.09
43	Hansahundi (Ward no 8)	Sraikela Nagar Panchayat	3.59	2.04	0.29	2.33	1.02	0.41	0.61
44	Dhobi Muhalla (Ward No 4)	Latehar Nagar Panchayat	1.00	1.19	0.27	1.46	0.59	0.24	0.36
45	Lalgadh (Ward No 10, Thana no 369, Plot No 12)	Madhupur Nagar Parishad	1.98	0.95	0.18	1.13	0.48	0.19	0.29
Total			339.84	81.77	6.88	88.65	31.45	26.17	24.14

10-12
21/09/2021-7

As mentioned in the aforesaid table, the total CAPEX of 45 Waterbody rejuvenation Projects is Rs. 81.77 crore, and OPEX is Rs. 6.88 crore. As per the AMRUT 2.0 Mission funding pattern, the CAPEX of the projects, Rs. 81.77 crore would consist of Rs. 31.45 crore from Govt. of India (Central share), Rs. 26.17 crore from State Government (State share), and remaining Rs. 24.14 crore from XV Finance Commission Grants (ULB share).

- 1.8 As per clause no. 6.5.2 of AMRUT 2.0 Mission Guidelines, Project should have mandatory Operation & Maintenance (O&M) for a certain period. Accordingly, a total cost of Rs. 6.88 crore is provisioned for O&M of 45 Waterbody rejuvenation projects, which will be borne by respective ULBs from its own revenue and if required State Government will bear the expenses from appropriate budget head of UD&HD, Govt. of Jharkhand.
- 1.9 It was discussed that before starting the rejuvenation work, the area of waterbody should be measured and demarcated to preserve it from encroachment.
- 1.10 As advised by the Chair, while rejuvenating the waterbody, emphasis should be given to desilting, and de-weeding to improve the water retention capacity and water quality of the waterbody. He further expressed that during execution phase of the project, care should be taken to protect the catchment area and natural channel/source of the stormwater so that the quantity of discharge into the waterbody won't be reduced.



- 1.11 It was found that most of the waterbody rejuvenation projects not only consisted of rejuvenation work but also included horticulture works such as plantation of saplings, grass turfing, etc. with an intent to improve the greenspace around the waterbody. Hence, it was advised, ULBs to take care of saplings after completion of rejuvenation work.
 - 1.12 It was discussed that the photographs of waterbody before and after rejuvenation to be captured to evaluate the level of transformation achieved through waterbody rejuvenation.
 - 1.13 The chair advised that the DPR of remaining waterbody rejuvenation projects should be prepared expeditiously and submitted in next tranche (SWAP) of AMRUT 2.0 Mission for approval of SHPSC and MOHUA, Govt. of India.
2. Post due diligence on the aforementioned points, the committee approved the followings:
- 2.1 The committee approved the SWAP of 45 Waterbody rejuvenation Projects worth Rs. 88.65 crore (CAPEX- Rs. 81.77 crore & OPEX Rs. 6.88 crore) with fund distribution as per the clause nos. 1.6 & 1.7.
 - 2.2 Secretary, UD&HD cum State Mission Director, AMRUT 2.0, Govt. of Jharkhand authorized to submit the aforesaid proposals to MoHUA, Govt. of India for their consideration and approval.

The meeting postponed with vote of thanks to the chair.

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[Signature]
 (Sukhdev Singh)
 Chief Secretary,
 Government of Jharkhand

Memo no.- 06A/नॉटिफि /AMRUT-07/2015/..10.72

Ranchi/Date:..01.09.2022

Copy to: Ms. D Thara, Additional Secretary cum National Mission Director (AMRUT), MoHUA, Govt. of India/ Deputy Secretary to Chief Secretary office, Jharkhand/All members of SHPSC/ Secretary, Urban Development & Housing Department, Govt. of Jharkhand/ Director, SUDA for information.

[Signature]
 (Vinay Kumar Choubey)
 Secretary,
 Urban Development & Housing Department,
 Government of Jharkhand

