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BEFORE THE NATIONAL GREEN TRIBUNAL, PRINCIPAL  
BENCH AT NEW DELHI  
O.A. No. 391/ 2022

IN THE MATTER OF:

Brigadier Paramjit Singh &Ors.

...Applicants

Versus

State of Haryana &Ors.

....Respondents

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Filed By:

Date: 16.03.2023

Place: New Delhi



Adv. Noopur Singhal  
Counsel for Respondent no.3

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**ADDITIONAL REPLY ON BEHALF OF RESPONDENT  
NO.3 – HARYANA SHEHRI VIKAS PRADHIKARAN**

**MOST RESPECTFULLY SHOWETH:**

I, Garima Mittal, aged about 38 years working as Administrator, HSVP, Gurugram, do hereby solemnly affirm and state as under:

1. That the present application under Section 14 of the National Green Tribunal Act, 2010 was filed by the Applicants seeking restoration of water body (Johad) in Sector 41, Gurugram and greenbelt area surrounding the water body and to set aside and declare the notification for E-auction initiated by respondent No. 3 as illegal.
2. That on the last date of hearing, it was submitted on behalf of answering Respondent that land bearing Khasra No. 26//26/2(24K-15M or 3.10 Acres) pond area situated in village Silokhra entered as *gairmumkinnallah* in <sup>er</sup> revenue record, has been acquired vide award No. 18 dated 30.08.11. The possession of the acquired land was taken by answering Respondent-HSVP vide rapat No. 479 dated 30.08.11.

3. That it was further informed the IISVP is committed to restore the water body.
4. That it was further submitted that answering Respondent had approached 'GURUJAL' on 09.01.2023 to guide/instruct or supply particular drawing/specification/DPR for developing of pond. GURUJAL is an integrated water management unit of District Administration Gurugram, which aims to address the various fields for improving water table of District such as restoration and rejuvenation of Pond, preparation of DPR for ponds and RWH, construction of RWH.
5. That further site was visited by the team of GURUJAL and vide letter dated 13.01.2023, it has been informed by GURUJAL that they would require atleast 15 days to prepare detailed project report and will submit it by January 28<sup>th</sup>, 2023. However, the final Detailed Project report was received from GURUJAL only on March 15<sup>th</sup>, 2023. A copy of DPR prepared by GURUJAL is attached herewith as **Annexure R-3/1**.
6. That it is submitted that total area for the development of pond is approximately 4.4 acres which will consist of green area and water body. The water body will spread across 6130 sq.m having a depth of approximate 3 meters. The capacity of water body will be 18390 cum.

A master layout plan of Pond as prepared by GURUJAL is attached herewith as **Annexure R-3/2.**

7. That it is submitted that to fill the water body, the rainwater will be diverted through the Major Storm Water Drain which is coming from HUDA City Metro Station and proposed approached road. Also the rainwater from remaining free area will also be diverted into the pond, which is approximately 4 acres of area.
8. That it is submitted that to maintain the water level into the pond a letter was written to Gurugram Metropolitan Development Authority was requested vide letter dated 27.02.2023 for its consent to divert a minimum of 150KL of water from the nearby treated waste water Pipeline. A copy of letter dated 27.02.2023 is attached herewith as **Annexure R-3/3.**
9. That the Gurugram Metropolitan Development Authority vide it's letter dated 13.03.2023 informed that the tertiary treated waste water is available for Sector 41 Gurugram.  The tertiary treated waste water is available for use in Non-potable purposes only. A copy of letter bearing Memo No. GMDA/SEW/2023/193 dated 13.03.2023 received from GMDA is attached herewith as **Annexure R-3/4.**
10. That it is submitted as per the DPR a revised estimate is provided for Rs. 2,59,45,899 (Rupees Two Crores Fifty

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Nine Lakhs Forty Five Thousand eight hundred and Ninety-Nine only). The same will now be sent for administrative approval and as soon as the administrative approval be received, the tender document will be prepared and approved and after that a three weeks tender will be floated and accordingly restoration work will be awarded.

11. That it is submitted that once the approval be received, it will take around 12 months to complete the project as mentioned in Annexure 4 of DPR.
12. In view of the above stated facts and circumstances mentioned herein-above it is humbly submitted that the further action for restoration will be taken after receiving the administrative approval of DPR/estimate.

Date

Place:

  
 Administrator  
 Haryana Shehri Vikas Pradhikaran  
 Gurugram  
 Respondent No.3  
**Administrator**  
**HSVP Gurugram**

**VERIFICATION**

Verified at Gurugram on \_\_\_ day of March, 2023 that the contents of the above reply are true and correct to my knowledge and belief derived from the official records.



  
 Administrator  
 Haryana Shehri Vikas Pradhikaran  
 Gurugram  
 Respondent No.3

**ATTESTED**

MAHENDER S. PUNIA,  
 ADVOCATE & NOTARY  
 D-11, Gurugram, (Haryana) India

**Administrator**  
**HSVP Gurugram**

16 MAR 2023

# DETAILED PROJECT REPORT

RESTORATION & REJUVENATION OF

SILOKHARA POND

CAPEX: 259.45 LAKHS



GURUJAL, MINI SECRETARIAT, RAJIV CHOWK, GURUGRAM

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## Abbreviation

BOD	Biochemical Oxygen Demand
CGWB	Central Ground Water Board
COD	Chemical Oxygen Demand
CPCB	Central Pollution
CPHEEO	Central Public Health and Environmental Engineering Organization
NGT	National Green Tribunal
GMDA	Gurugram Metropolitan Development Authority
GoI	Government of India
HPWWMA	Haryana Pond and Waste Water Management Authority
HSPCB	Haryana State Pollution Control Board
HSR	Haryana Schedule of Rates
IEC	Information, Education and Awareness
KLD	Kiloliter per Day
LPCD	Liter per capita per day
MCG	Municipal Corporation of Gurugram
O&M	Operation and Maintenance
SoI	Survey of India
SS	Settleable Solids
STP	Sewage Treatment Plant
TS	Total Solids

## 1. Project Background

Restoration and rejuvenation of ponds is one of the biggest challenges in urban and rural areas all over the world with India being no exception in this regard. Restoration and rejuvenation of ponds, though is an essential need for ecological and biodiversity balance point of view, however it has been given low priority compared to other civic amenities such as water supply. This coupled with a lack of financial resources, poor institutional capacity and rapid urbanization have increased the challenges for government agencies, thus creating serious environmental and health problems.

### 1.1 Restoration and Rejuvenation of Pond

Ponds can be natural or man-made water bodies, which are constructed to store rainwater during the rainy season. Ponds are constructed or naturally depressing area in the villages according to the slopes/gradient where water naturally flows into these, the main reason for the construction of the pond is to collect all the rainwater which falls in the village and use rainwater in the summer season for various purposes like bathing, washing of cloths, drinking water for animals and also for recreational and spiritual rituals of the village.

Restoration and rejuvenation of ponds is a complete process which includes identifying the type of water inflows into the pond, dewatering and desilting of pond, treatment of wastewater (if any) in a natural or a scientific manner with landscaping of pond.

### 1.2 Need of the Project

Gurugram is one of the fastest growing urban areas in India, the pace at which it is growing causes a lot of degradation to its natural resources. One of the major natural resources which degrade rapidly is its surface water source (lakes/ponds) and groundwater resources. In accordance with different sources, the number of water bodies reported varies from 647 as per Revenue Record of 1956 to 487 as per SoI Report of 1976 and further to 557 as per the World View satellite imagery of 2011-12; which

has drastically reduced to 123 by the year 2018 as per GMDA. The reason for this declining number of water bodies, is not natural. as large number of water bodies are encroached on by the public, in few pond site constructions take place and, in some areas, due to infrastructure development. In some areas, rainwater from the catchment area will not able to find its way to these water bodies and the remaining water bodies receive wastewater from the nearby areas which ultimately degrades the quality of the water body and the aesthetic of the area.

### 1.3 Aim of the Project

The aim of restoration and rejuvenation of pond is to prevent their further degradation and ensure their wise use for the benefit of environment and local communities for recreational purposes. Water bodies will function as spaces for development of open space greenery which provide for a range of micro natural habitats for flora and fauna.

### 1.4 Objective of the Project

- ✓ Restoration and rejuvenation of degraded pond for recharging aquifers of the area;
- ✓ Control of pollution of pond and uncontrolled discharge of wastewater and dumping of solid waste;
- ✓ Conservation of flora and fauna;
- ✓ Development of surrounding areas of pond with suitable flowering plants/medicinal plants/shrubs/ climbers;
- ✓ Enhancing natural beauty and providing a green space for enriching the spiritual, aesthetic and social life of villagers.

### 1.5 Project Deliverables

The project deliverables will include establishing project rationale, estimating project cost, financial structuring, phasing, O&M framework and planning, determining financially viable & suitable model and establishing institutional framework. These project deliverables will ultimately achieve the following goals:

- ✓ 100% treatment of wastewater falls into the pond;
- ✓ Creating and sustaining a supply chain for treated wastewater;
- ✓ Sustainable model and institutional framework;
- ✓ Measures for the involvement of all stakeholders;
- ✓ Information, Education and Communication (IEC) campaign models and enforcement plans.

## 1.6 CPCB Guidelines

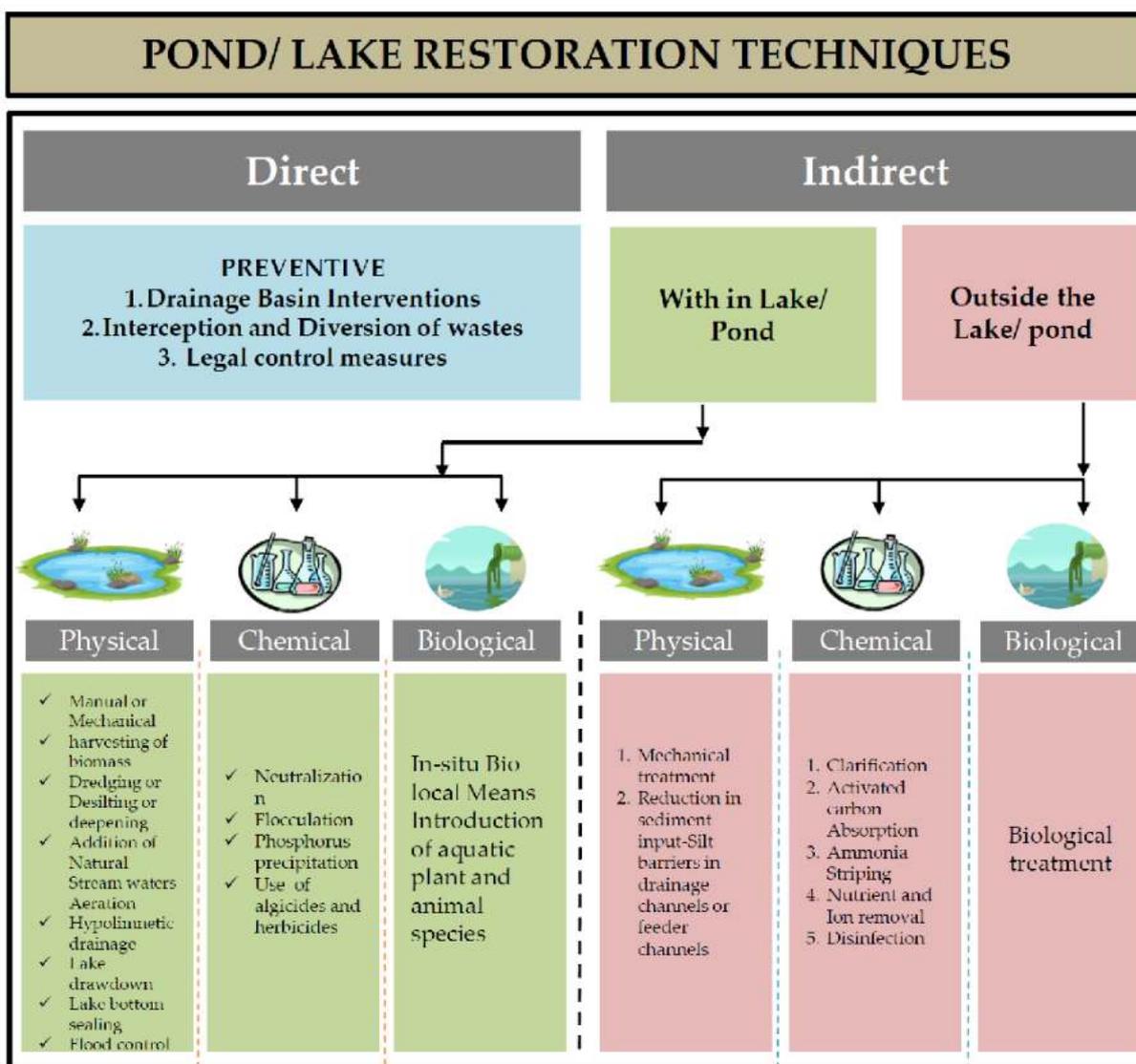


Figure 1: Process for restoration & rejuvenation of waterbody as per CPCB guidelines

### 1.7 Project Methodology

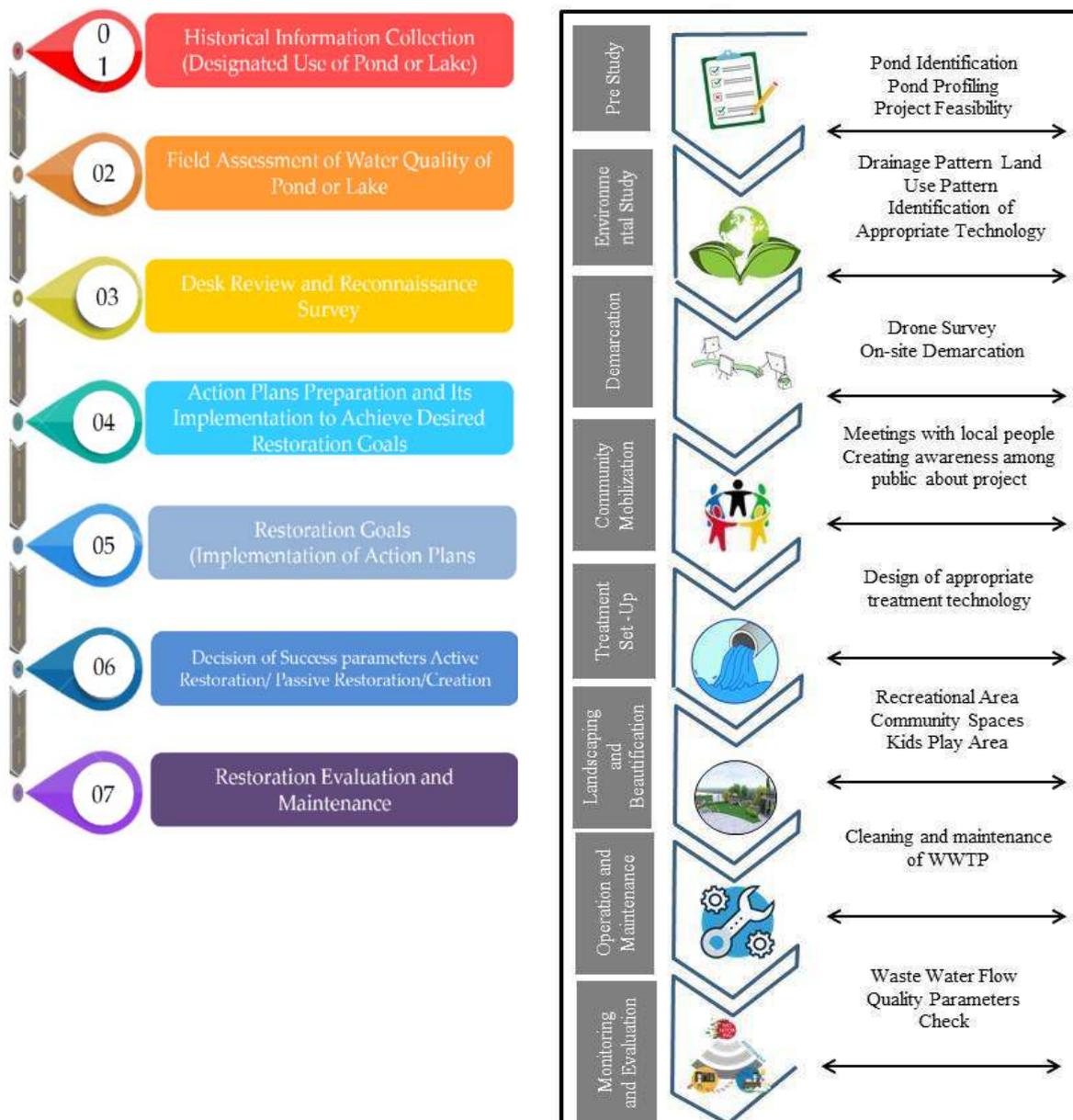


Figure 2: Methodology adopted for Silokhra pond

## 2. Introduction to Project

### 2.1 District at a glance

Gurugram district is in the Indian state of Haryana. Gurugram district is adjacent to the National Capital Delhi surrounded by Faridabad, Rewari, Mevat, Jhajjar and Palwal districts of Haryana. It lies between 27°39'00" North and 28°32'25" North latitudes and between 76°39'30" East and 77°20'45" East longitudes. It has a geographical area of 1258.00 square kilometres containing 976.65 square kilometres of rural areas and 281.35 square kilometres of urban areas as per Census 2011.

The district is located in the south-eastern bulge of the State and is having common borders with Delhi State in the North. Jhajjar district lies to its West, Rewari district to its South-West, Mevat district in South, Palwal district in South-East and Faridabad district makes Eastern boundary with the district. Gurugram district is divided into the four administrative blocks namely Gurugram, Sohna, Farrukh Nagar and Pataudi.

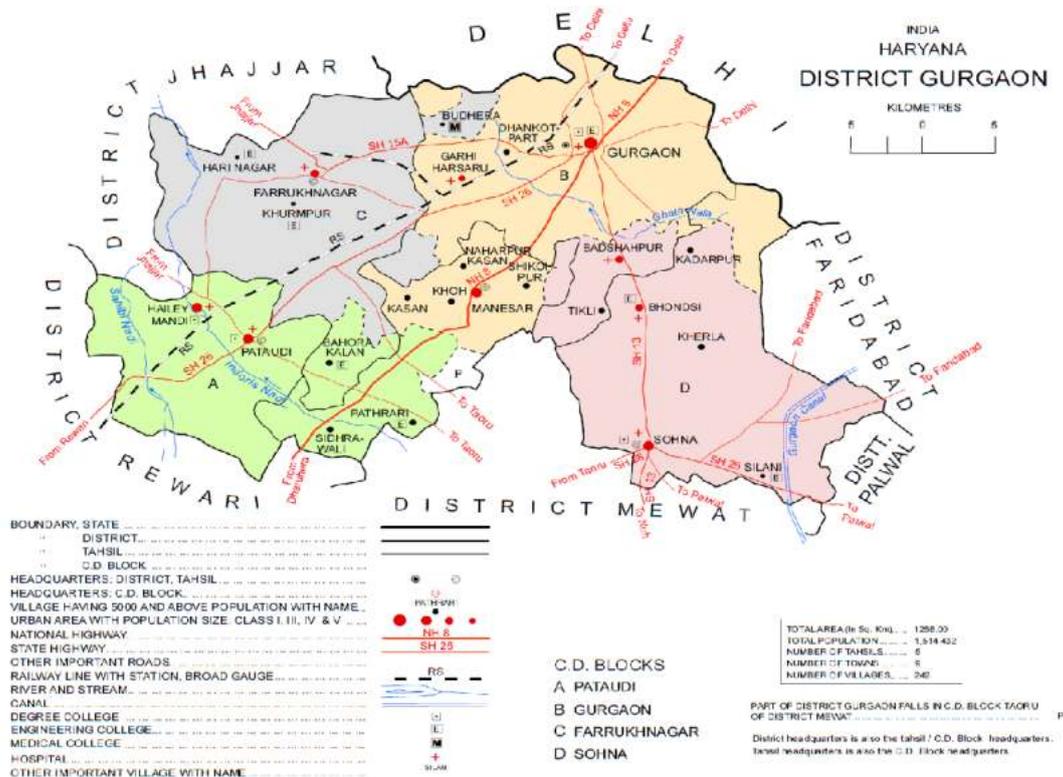


Figure 3: Gurugram District Map

There is a total of 6 urban areas in the district which consists of 2 Municipal Corporations (Gurugram and Manesar), 1 Municipal Council (Municipal Council Sohna) and 3 Municipal Committees i.e., Hailey Mandi, Pataudi and Farrukh Nagar and a total 158 Gram Panchayats. Gurugram is conveniently located with boundaries touching Delhi, Rajasthan and Uttar Pradesh, and enjoys excellent connectivity with other states via Delhi-Jaipur-Ahmedabad broad gauge rail network and National Highway-8 (Delhi-Jaipur Highway). Gurugram is one of the fastest growing urban area in the State, due to its phenomenal growth in all sectors of developments specially in industry and urbanization. Today, it has become hub of multinational companies, industries giants, helpline centres, software companies, shopping malls and skyscrapers. Gurugram is also the home of India's largest to automobile companies namely Maruti Suzuki and Hero Moto Corp. Due to rapid urbanization, industrial development and growing population lead to pressure on the natural resources and existing infrastructure of the district.

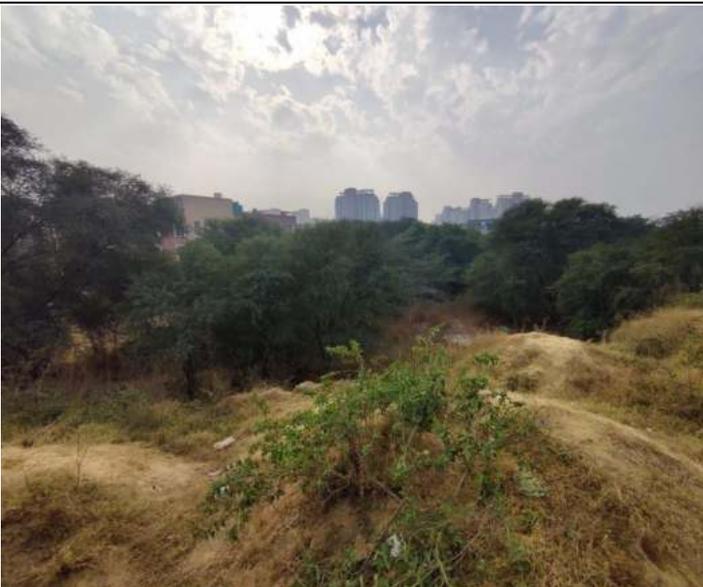
To meet the water demand of the people of Gurugram and its floating population new infrastructure has been developed quite significantly, which is very good in term of economic opportunities and revenue generation. But in terms of natural environment most of its green cover, ridges and water bodies of the district decreased drastically. In Gurugram district there is no perennial river, only two seasonal rivers flowing in the district namely Sahibi and Indori river. Both the rivers receive the water during the monsoon from the Aravalli Hills. But in current scenario both these rivers have been diminished due to encroachment by residence living in the catchment area of the river. As no fresh water source for water supply in Gurugram, Gurugram is totally depends on groundwater and Yamuna Canal for fresh water supply.

## 2.2 Importance of Ponds

Ponds are natural and man-made water bodies, which are constructed to store the rainwater during the rainy season. ponds are constructed or naturally depressing area in the villages according the slopes/gradient where water naturally flows into these,



PHYSICAL DESCRIPTION	
Name of Pond	Silokhra pond
Location & Landmark	Near Peer Baba ki Mazar
Block	Gurugram
Tehsil	Gurugram
Distance from Gurugram	Approx. 7 KM
Latitude & Longitude	28.461870 & 77.062546
Area of Pond in acres	Approx. 4.07 acres
Area of free space in acres	Nil (Area is plain)
Mean depth in meter	Nil
Type of pond a) Wastewater b) Freshwater	None
Current status of pond a) Polluted b) Dry c) Encroached	a) Backfilled
Source of water (inflow) a) Rain fall / Runoff b) River / Canal c) Wastewater drains d) Treated water from WWTP	a) Rainfall / Runoff Recycled water from GMDA
Is there any outflow from the pond (Yes/No.? If yes, describe)	No
Groundwater Level	Approx. 35 mbgl
Are there any river/canal/ major open drain passes within a radius of 2-5 km of the water	No
Does pond dry out completely? (frequency) a) Throughout the year b) During summer season only c) Rarely/Never	a) Throughout the year
Catchment area of the pond in sq.km. a) Hilly area	a) Plain (approx. 0.5 sq.km.)

b) Plain	
Land use of the catchment area a) Residential b) Agriculture c) Commercial d) Industry e) Forest f) Mining	a) Residential b) Commercial
Total Population (as per Census and if possible, provide current population of village)	7715 +
No. of household whose waste water goes to the pond	Nil
Is the pond used by animals for drinking and bathing?	No
Type of flora and fauna around the pond	Keekar, Bargad, Neem
Picture of the pond from different angles (to cover entire pond)	
Ownership of the land a) MCG b) MCM c) HSVP d) Panchayat e) Private	a) HSVP
Khasra number covered in the land	0//26
Source of water at village/nearby of settlement a) Tube well / Submersible b) Wells c) Canal water d) Piped water supply	a) Piped water supply b) Water Supply Tanker

e) Water Supply Tanker	
Landscaping around the pond	Currently, there is no landscaping around the pond
Can pond be used as active urban and public space? (Yes/No. If yes, describe)	Yes, after restoration and rejuvenation
Are there any construction activities going on near the pond	No
<b>FUNCTIONS OF THE POND</b>	
Is the pond used for any of these? a) Agriculture b) Horticulture c) Water for construction activities d) Fisheries e) No use	a) No use
Function of the pond a) Groundwater recharge b) Flood mitigation c) Tourism d) Support biodiversity e) Influence micro – climate f) Socio – cultural g) Aesthetic	a) Groundwater recharge b) Support biodiversity c) Socio – cultural d) Aesthetic
<b>SOURCE OF POLLUTION &amp; PROBLEM</b>	
Does solid waste dumping take place near the pond? Yes/No. If yes, a) Biodegradable b) Non-Biodegradable c) Construction and Demolition Waste d) Electronic waste e) Hazardous Waste f) Religious idols	a) Non – Biodegradable b) Construction and Demolition waste c) religious idols
Source of pollution in the pond a) Domestic sewage b) Industrial effluent c) Agriculture runoff d) Open defecation e) Cattle wading	Currently there is no source of pollution
Major Problems	a) Encroachment

<ul style="list-style-type: none"> <li>a) Reduction in area</li> <li>b) Encroachment</li> <li>c) Deposition of silt</li> <li>d) Solid waste</li> <li>e) Aquatic weeds</li> <li>f) Decline or loss of fisheries</li> <li>g) Eutrophication</li> <li>h) Organic pollution</li> <li>i) Toxic pollution</li> </ul>	b) Solid waste
<b>REMEDIAL MEASURES</b>	
Are local communities aware of the problems of the pond?	Yes
Are local communities interested in the restoration of the pond?	Yes
Are there active local conservation groups or NGOs that are interested in the pond?	No
Any measures taken in the past to restore the pond?	No
Is it possible to source good quantum of rainwater/treated water throughout the year?	Yes
Restoration activities required <ul style="list-style-type: none"> <li>a) Improvement of water quality by in- situ treatment</li> <li>b) Diversion and treatment of sewage</li> <li>c) De-siltation for removal of organic/toxic sediments</li> <li>d) Weed removal (Water hyacinth)</li> <li>e) Catchment area treatment for runoff</li> </ul>	b) Catchment area treatment for runoff

## 2.4 Current Situation of Pond

During the primary site visit at the pond site, it was observed that currently there is no water body present at that particular area, i.e. pond is completely backfilled by construction and demolition waste or by filling of sand. Currently, pond area is flat land, and lot of invasive species of plants surrounding the area. There are three

worship place which falls under the site area. Also, there is small pond excavated near the temple for worship which is being filled by fresh water; currently there is no water in it.



Figure 5: Current situation of pond



Figure 6: Worship place within the boundary



Figure 7: Solid waste dumping within the boundary



Figure 8: Invasive species within the boundary



Figure 9: Creation of small pond for worship

## 2.5 Source of water

There will be the treated water from GMDA recycled wastewater supply pipeline. For the revival of the pond water will be diverted from external sources to maintain the water in the pond.

### 3. Project Proposal

For restoration and rejuvenation of pond at Silokhara village, it is important to divert the rainwater from the surrounding areas in addition to this treated water from GMDA recycled water network will also be needed to maintain the water balance of the pond.

#### 3.1 Proposed Intervention

For restoration & rejuvenation of water body in Silokhara village, first parameter will be the identifying the source of water for the pond which will be rainwater and treated water. Rainwater from the catchment will be diverted to the pond but it will not be sufficient for the entire year as it will percolate into the ground which will be helpful in recharging the aquifers of the areas. To make the water in pond perennial treated water from the GMDA water supply line. Treated water will be flowing through the 3 consecutive bio swales which will act as natural ways to treat the water.

The water flow scheme has briefly been outlined below-

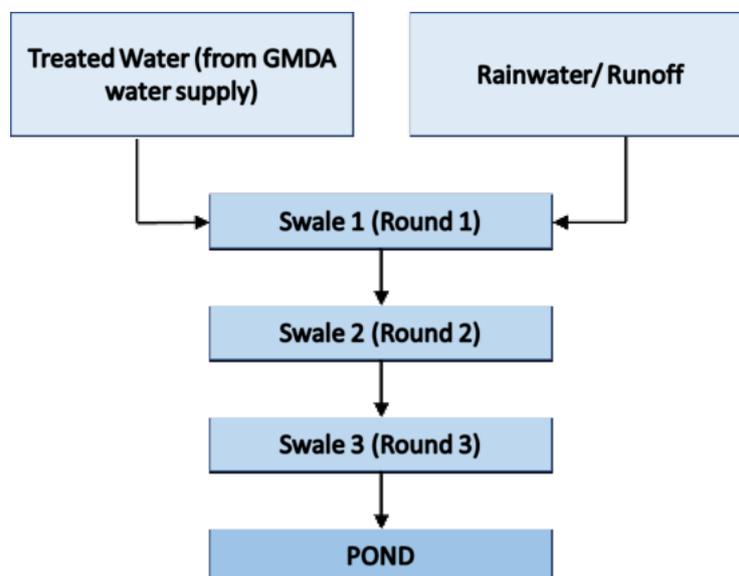


Figure 10: Water Flow Diagram

Continuous monitoring will be carried out on a periodic basis to check the quality of inlet and outlet water that it will be meeting the designed guidelines. Before discharging the treated water, pond will be excavated and invasive species will be

removed from the site and native species will be secured on sites. To avoid the soil erosion at site majorly the pond embankment area, geo coir will be placed on the embankment. This will help in reducing the soil erosion and maintain the aquatic life in the pond. In addition to this fountain will be proposed for proper aeration into the pond which will avoid the eutrophication into the pond. After this fencing will be done to secure the pond area and avoid further encroachment at site.

### 3.2 Landscaping of the Pond

Landscaping and beautification are the last work which must be executed on the ground under the restoration and rejuvenation of pond. Landscaping and beautification are not only planting the flora but is also creating a Biodiversity zone around the pond area. Major reason of biodiversity loss in any area is Habitat destruction, overexploitation of natural resources like water, Climate Change, Pollution and invasive species. So, to maintain the biodiversity/species richness we must focus on these issues.

In pond site we leave as many native plants undisturbed as possible, and landscape using native trees and vegetation. Native plants are well adapted to local conditions and provide a low maintenance and have positive impact on fauna population. Landscape and garden planning were the most essential features of the town planning of ancient Indians. Our ancestors were worshippers of nature. Water and trees, therefore, had unique importance in ancient Indian architecture. A well laid out garden formed an inseparable aspect of a temple since Hindu Gods loved the proximity of water and flower-bearing trees/plants. Several varieties were held sacred because of their aesthetic and sanitary potential. One of the design team's main goals was to connect the life of the village to the growing recreational use of the pond itself and to revive the importance of water and nature from ancient India to the present and future.

The main purpose of landscaping is to create a joyful environment around the pond and give the residents a healthy atmosphere, good appearance, and natural beauty but also adopting the sustainable measures to use our resources efficiently, to maximize the rainwater retention and to reduce the heat island effect further reducing the overall energy consumption plays an important role. Another important goal of the landscape is to rejuvenate the spaces, or water bodies which were then treated as a dump yard or an unsafe site to transform into socially active public spaces.

### 3.2.1 Aim of the Landscaping

- ✓ To create a biodiversity zone around the pond area to sustain local natural life.
- ✓ To maintain the Cultural and Aesthetic values of villages.
- ✓ To improve the quality of water by using natural ways like a plantation, aeration can be done or by channelizing the water to increase the retention time of water.
- ✓ To educate or provide knowledge to the local community.

### 3.2.2 Benefits of the Landscaping

- ✓ It decreases the concretization of the land.
- ✓ Decrease soil erosion.
- ✓ Capture the suspended solid present in the atmosphere.
- ✓ It reduces the noise level.
- ✓ A good landscaping of an area improves the micro-climatic condition of that area; during the summer season the temperature of the area where large number of trees are planted have cooler temperature than the ambient temperature of that area.

### 3.3 Work Execution Plan

The design started with the background research about the site, surrounding of the pond, local activities, kind of open spaces already present. Rejuvenation of the pond started with the idea of providing different kind of spaces to host all kind of people

and also having flexible spaces which can be transformed for festival fairs, events etc. In our country, water has always been a social space and the prime focus was to provide the walkway and cycle path to maintain the healthy lifestyle and create play areas for the kids. The project focuses on perfecting functions with a limited cost. It mainly solves those problem existing contradictions between people and pond, reducing the dust and noise and activating the potential charm of the venue.

Through the design method of landscape natural creation, the site will be open, active, ecological, and healthy. It conveys the message of human care, which is both a practical place to stay and to encourage dialogue and healing space to help patients recover. The aim of Silokhara pond landscaping design has been to transform an anonymous pond into a place of significance, a place in which, and from which, to enjoy the grandeur of the surrounding landscape. It is a place to gaze at the pond and enjoy its flow and reflections through the variations of all four seasons.

Aim is to provide spaces for different kind of users, like social and cultural space, Kids play area, to attract more and more people choose to stay here. It has become a place to provide emotional, social, and practical support for neighbourhood. It is like an open park for everyone. Let people improve emotional discomfort, get maximum relaxation, and cure.

For some it's a space to play, for some a place to contemplate, a place to find solitude or a place to be in community. For others it's a means of access or a place to exercise. A new market, concerts, yoga classes, boot camps, meeting friends to eat together, all occupy this space. Sitting down in the park and overhearing both young and old as they discover it for the first time is a real joy. As an architect, these projects built for the pleasure and enjoyment of the public, prove especially satisfying to contribute to the society and nature.

Fauna population is not in any area is majorly depends on what type of plants is present in a particular area like, in case of butterflies for their survival they need two

types of plants first, in which they lay their egg and second any flowering plant from which they take nectar (food). we have also tried to make pond an important focal point, and an amalgamation of different activities including social, cultural and play zone. Where the pond becomes the social piazza as a multi-functional space which is able to host local fairs, markets, and events, to the enclosed green cultural space with seating leading to the kids play area and open gym.

Flora of any area play is also playing an important role to improve the environment quality of the particular area and even the adjoining areas. Flora not only gives us the pleasant and aesthetic pleasure but also removes the particulate and suspended matters present in the atmosphere and gives us the fresh air free from pollutants. Flora also attracts directly and in directly many species of the birds and reptiles even the native as well as the migratory species. Master plan layout of Silokhara is shown in the figure and detailed drawings along with list of plants are attached.

### **3.4 Information, Education and Communication**

Information, education and communication is an approach which attempts to change or reinforce a set of behaviour in a target audience regarding a specific problem in a predefined period of time.

Community participation is the one of the major tasks for the success of any project, through the community participation any project can be successes and without their participation it will fail.

In Silokhara pond IEC activities have been planned for the villagers to educate them about water and wastewater management, importance of rainwater harvesting, impact of solid waste dumping in the water body, impact of ground water extraction, importance of pond and their function in the surrounding areas.

### 3.4.1 Process

- ✓ Select any topic of interest in water management, solid waste management, or any environment related by the community and nearby school college according to their age.
- ✓ Form a small group and make a small presentation or any innovative video.
- ✓ Coordination with HSVP, MCG and GuruJal, regarding any further suggestion.
- ✓ Coordination with teachers and RWA with respect to time and topic of the planned activities.

### 3.4.2 Topics

- ✓ Water conservation
- ✓ Where the water comes
- ✓ Solid waste management
- ✓ WASH
- ✓ Story telling
- ✓ Environment conservation
- ✓ Case study
- ✓ Saving water on day to day basis
- ✓ Water chart (use of water in the entire day)

## 3.5 Project Sustainability

In India treated sewage is being used for a variety of applications such as farm forestry, horticulture, toilet flushing, industrial use as in non-human contact cooling towers, fish culture and indirect and incidental uses (CPHEEO manual).

Sustainability of the restoration and rejuvenation of pond project is very big task. Because of budget constraints, O&M of the project is quite difficult to overcome this project should be self-sustainable so that O&M cost can be easily recovered by the project itself. The project can be self-sustainable in many ways depends upon which type of technology is used for the treatment of wastewater and also overall maintenance of green area. In this case, we are taking treated wastewater and

continuous monitoring will be done to oversee the quality of incoming water and water in the pond. Beside the technical intervention all the restoration and rejuvenation of pond project must prepare a water utilisation plan of the pond.

### 3.5.1 Water Utilisation Pond

At present pond does not receive any runoff during the monsoon season and waste water from the surrounding catchment area (pond is backfilled). After analysing the current situation and interview with locals to restore the pond following points needs to considered:

- ✓ **Creation of the pond:** Excavation will be done at pond site within an area of 6130 sq.m. Capacity of the pond will be approx. 18,390 cum.
- ✓ **Levelling of the Pond:** Levelling will be required at the pond site and also drainage system will be preparing along the pond to carry the runoff from the catchment to the pond.
- ✓ **Creation of Bio-Swales:** The treated water will flow through the 3 consecutive rounds along the pond which will increase the travel time of water and make the impurities settle down when it flow through gravels/ boulders.
- ✓ **Diversion of Treated Wastewater:** Minimum 150 KLD of treated wastewater will be diverted to the pond to maintain the pond ecology.

Pond water utilisation plan is prepared to highlight the quantum of treated water that can be utilised in different-different ways:

- ✓ Quantum of water percolated into the ground (helps in increasing the ground water table of the area);
- ✓ Evaporation loss;
- ✓ Usage of pond water in other activities (like horticulture, construction, industrial purpose etc.)

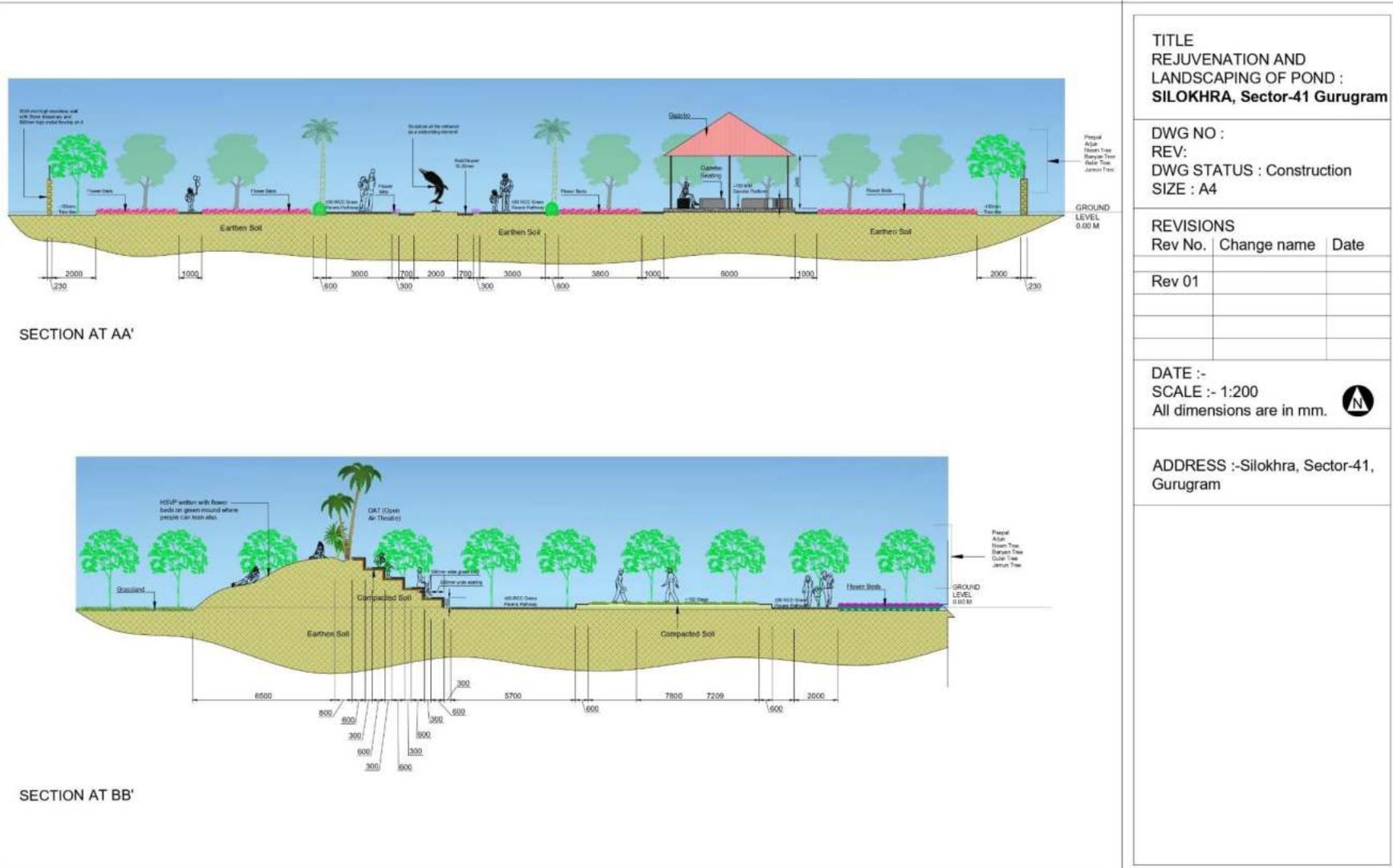
- ✓ The importance of water utilisation plan is that it gives an idea of how much revenue can be generated by selling the treated water in various streams of water usage.

#### **4. ESTIMATE**

Estimate is prepared for restoration and rejuvenation of pond as per HSR 2021. Detailed bill of quantities for restoration and rejuvenation of pond are attached in *Annexure-III*.



Annexure 2 : Cross Sections



TITLE  
REJUVENATION AND  
LANDSCAPING OF POND :  
**SILOKHARA, Sector-41 Gurugram**

DWG NO :  
REV:  
DWG STATUS : Construction  
SIZE : A4

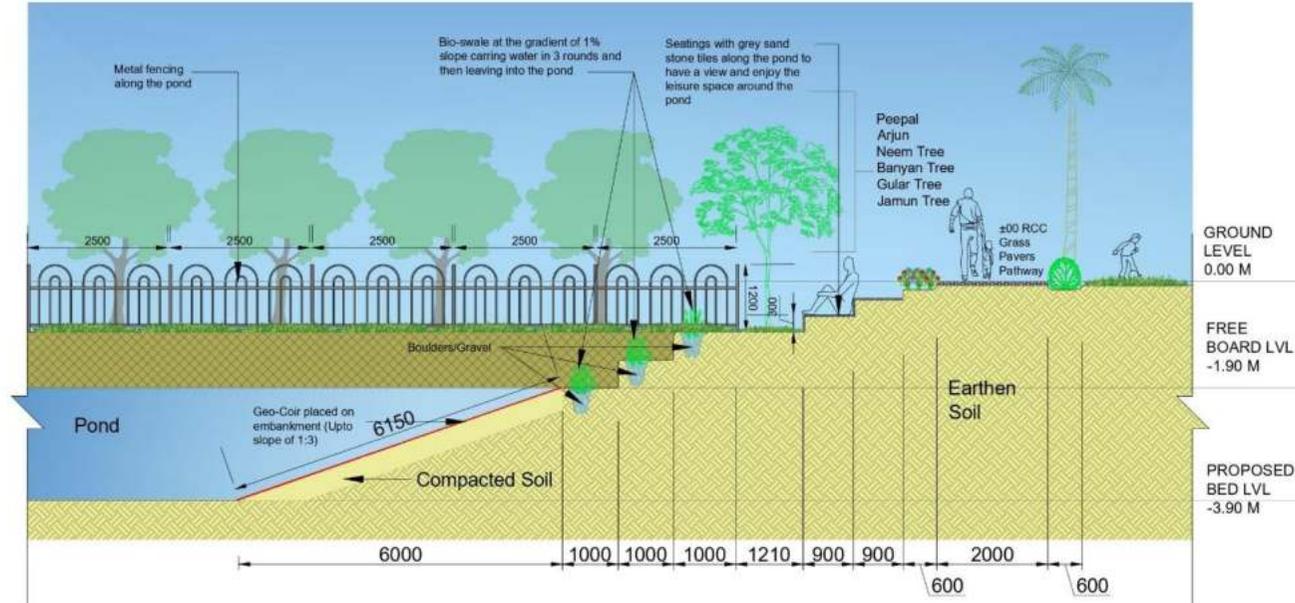
REVISIONS

Rev No.	Change name	Date
Rev 01		

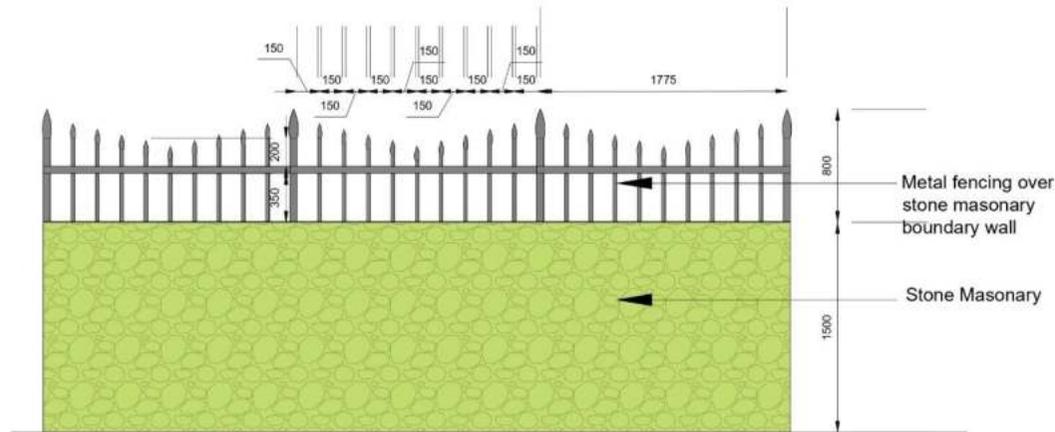
DATE :-  
SCALE :- 1:200  
All dimensions are in mm.



ADDRESS :-Silokhra, Sector-41,  
Gurugram



SECTION AT CC'  
Scale- 1:100



Boundary Wall Detail  
Scale- 1:40

TITLE  
REJUVENATION AND  
LANDSCAPING OF POND :  
**SILOKHRA, Sector-41 Gurugram**

DWG NO :  
REV:  
DWG STATUS : Construction  
SIZE : A4

REVISIONS  
Rev No. Change name Date

Rev No.	Change name	Date
Rev 01		

DATE :-  
SCALE :- 1:100  
All dimensions are in mm.



ADDRESS :-Silokhra, Sector-41,  
Gurugram

### Annexure 3: Detailed Estimate

S.No.	HSR Item No.	DESCRIPTION OF ITEMS	Nos.	AMOUNT
1	4.4.1	<p>Surface dressing of the ground including removing vegetation and in-equalities not exceeding 15 cm deep and disposal of rubbish, lead up to 50 m and lift up to 1.5 m. All kinds of soil.</p> <p>Area of Grassland = 2800 Sqm            Area of flower bed = 1610 Sqm            Area of pathway = 540m x 2m = 1080 sqm            Area of pond = 6130 sqm            Total = 11620 sqm            11620 sqm @ 12 per sqm</p>		139440
2	4.32	<p>Filling available excavated earth (excluding rock) in trenches, cum 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 up to 1.5 m.</p> <p>Area for Green Grassland = 2800 Sqm            Proposed filling of Grassland area = 0.5 m            Volume of filling = 2800 x 0.5 m = 1400 Cum            1400 cum @ 52 per Cum</p>		72800
3	4.12.1	<p>Earth work in excavation by mechanical means (Hydraulic excavator)/manual means over areas (exceeding 30 cm in depth, 1.5 m in width as well as 10 sqm on plan) including getting out and disposal of</p>		1945581

		<p>excavated earth lead up to 50 m and lift up to 1.5 m, as directed by Engineer-in-charge.</p> <p><b>Pond -</b>  Area of Water body as per Architect Drawing - 6130 Sqm  Proposed Depth of water Body - 3.5 meters      Volume  of Excavated Earth = 6130 x 3.5 m = 21455</p> <p><b>Inner Pond fencing</b>  Perimeter of Pond - 310 meters  Volume of excavated earth = 310m x 0.46m x 0.5m = 71.3 cum</p> <p><b>Outer Boundary wall</b>  760 x 1.10 x 1 = 836  Total = 22362.3 cum  Say 22363 cum @ Rs. 87/- per cum</p>		
4	6.1.6	<p>1 :4: 8 ( 1 Cement : 4 coarse sand (zone-III) : 8 graded cum stone aggregate 40 mm nominal size)</p> <p><b>For fencing</b>  1 x 310 x 0.34 x 0.15 = 15.81</p> <p><b>For Ramp –</b>  30 x 5 x 0.15 = 22.5 cum</p> <p><b>For Boundary wall –</b>  760 x 0.91 x 0.15 = 103.74  Total = 142 cum  Say 142 cum @ Rs.2735 /- per cum</p>		388086
5	6.33.3	<p>Steel reinforcement for R.C.C. work, where not included in the complete rate of RCC, including straightening,</p>		1159808

		<p>cutting, bending, placing in position, binding, wastage, overlaps, welded joints, spacer bars, chairs, stays, hangers and annealed steel wire etc. complete in all respect below plinth level</p> <p><b>Pond –</b>  Column 12mm dia = <math>103 \times 4 \times 2 \times 0.89 = 734 \text{ Kg}</math>  Beam 12 mm Dia = <math>310 \times 6 \times 0.89 = 1656 \text{ Kg}</math>  Rings 8 mm dia = <math>103 \times 14 \times 0.90 \times 0.358 = 1298 \text{ Kg}</math>  Rings 8 mm dia = <math>2067 \times 0.90 \times 0.358 = 666 \text{ Kg}</math></p> <p><b>For Ramp</b>  12 mm dia = <math>200 \times 8 \times 0.89 = 1424 \text{ kg}</math>  10 mm dia = <math>54 \times 31 \times 0.62 = 1037.88 \text{ kg}</math></p> <p>For Boundary wall  Column 12mm dia = <math>306 \times 4 \times 2.5 \times 0.89 = 2723.4 \text{ Kg}</math>  Beam 12 mm Dia = <math>780 \times 6 \times 0.89 = 4165.2 \text{ Kg}</math>  Rings 8 mm dia = <math>5200 \times 0.90 \times 0.358 = 1675.40 \text{ Kg}</math>  Rings 8 mm dia = <math>306 \times 17 \times 0.9 \times .358 = 1676 \text{ kg}</math>  Total = 17055.8 Kg  Say 17056 Kg @ 68/- per Kg</p>		
6		<p>Providing and laying in position machine batched and machine mixed design mix M-25 grade cement concrete for reinforced cement concrete work, using cement content as per approved design mix, including pumping of concrete to site of laying but excluding the cost of centering, shuttering, finishing and reinforcement, including admixtures in recommended proportions as per IS: 9103 to accelerate, retard setting of concrete, improve</p>		3509649

		<p>workability without impairing strength and durability as per direction of Engineer-in-charge.</p> <p>Column = <math>103 \times 2 \times 0.23 \times 0.23 = 10.89 \text{ cum}</math></p> <p>Beam = <math>310 \times 0.34 \times 0.34 = 35.83 \text{ cum}</math></p> <p><b>For Ramp</b></p> <p><math>30 \times 5 \times 0.15 = 22.5 \text{ cum}</math></p> <p><math>2 \times 1.5 \times 30 \times 0.2 = 18 \text{ cum}</math></p> <p>For outer Boundary</p> <p>Beam = <math>760 \times 0.34 \times 0.34 = 87.8 \text{ cum}</math></p> <p>Coloumn = <math>306 \times 2.5 \times 0.23 = 175.9 \text{ cum}</math></p> <p>Total = 350.9 cum</p> <p>Say 351 cum @ Rs.4999/- per cum</p>		
7	7.20.2	<p>Brick work with common burnt clay non- modular bricks of class designation 7.5 in foundation and plinth in:</p> <p>Pond inner fencing –</p> <p><math>310 \times 0.34 \times 0.34 \times 0.4 = 14.33 \text{ cum}</math></p> <p>Say 15 cum @ Rs. 4183/- per cum</p>		62745
8	13.29.2	<p>Steel work welded in built up sections/ framed work, including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer using structural steel etc. as required</p> <p>Railing fencing of Pond</p> <p>Angle = <math>50 \times 50 \times 6 \text{ mm}</math></p> <p><math>124 \times 2.5 \times 2 \times 4.5 = 2790 \text{ kg}</math></p> <p>16 mm square bars</p>		2196753

		<p> <math>124 \times 3 \times 6 \times 2.2 = 4910.4 \text{ Kg}</math>            Hold fast –  <math>124 \times 4 \times 0.25 \times 2.4 = 298 \text{ kg}</math>            Outer Boundary wall            Angle 50x50x6mm  <math>2 \times 760 \times 0.8 \times 4.5 = 5472</math>            16mm square bar  <math>5066 \times 0.8 \times 2.40 = 9726.72</math>            Main Gate 2 Nos.            Angle = 50x50x6mm  <math>2 \times 2 \times 2.40 \times 4.5 = 43.2</math>  <math>2 \times 2 \times 1.80 \times 4.5 = 32.4</math>  <math>50 \times 6 \text{ flat} = 2 \times 1 \times 2.40 \times 2.40 = 11.52 \text{ Kg}</math>  <math>2 \times 32 \times 1.80 \times 2.40 = 276.48 \text{ kg}</math>            Hold fast , kundi etc (L.S)= 60 kg            Total = 23620.72            Say 23621 kg @ Rs. 93/- per kg         </p>		
9	6.30.1	<p>           Centering and shuttering including strutting, propping etc. and removal of form for Foundations, footings, bases of columns, etc. for sqm mass concrete.            For column = <math>103 \times 2 \times 0.92 = 189.52 \text{ sqm}</math>            For Beam = <math>310 \times 0.68 = 210.8 \text{ sqm}</math>            For ramp = <math>4 \times 1.8 \times 30 = 216 \text{ sqm}</math>            For Outer wall  <math>= 306 \times 0.92 \times 2.5 = 703.8 \text{ Sqm}</math>  <math>= 760 \times 2 = 1520 \text{ Sqm}</math> </p>		897756

		Total = 2840.12 sqm Say 2841 sqm @ Rs. 316/- per sqm		
10	11.6.1	15 mm cement plaster on the rough side of single or half brick wall of mix : Fencing wall - 310 x 0.4 x 2 = 248 sqm 248 sqm @Rs. 114/- per Sqm		28272
11	6.8.2	Providing and laying damp-proof course with cement concrete 1 :2:4 (1 cement : 2 coarse sand (zone-III): 4 graded stone aggregate 12.5mm nominal size) 282 x 0.34= 95.88 sqm Say 96 Sqm @Rs. 149/- per sqm		14304
12	11.94.1	Finishing walls with textured exterior paint of required shade new work (Two or more coats applied @ 3.28 liter/1 O sqm) over. 2 x 310 x 0.7 = 434 sqm 434 sqm @ Rs.152/- per sqm		65968
13	11.68.3 + 11.82.1	Applying priming coat: & painting the wooden I metal surface with synthetic enamel paint of approved brand and manufacture to give an even shade 2 x 124 x 3 x 1.2 = 892.8 sqm Say 893 sqm @Rs. 77/- per sqm (22 per sqm + 55 Per sqm)		68761
14	4.16.1.3	Excavating trenches of required width for pipes, cables, etc including excavation for sockets, and dressing of sides,		86400

		ramming of bottoms, depth up to 1.5 m, including getting out the excavated soil, and then returning the soil as required, in layers not exceeding 20 cm in depth, including consolidating each deposited layer by ramming, watering, etc. and disposing of surplus excavated soil as directed, within a lead of 50 m. Pipes, cables etc. exceeding 300 mm metre dia but not exceeding 600 mm. For 400mm i/d Rcc pipe total length = 900 mtr 900 mtr @Rs. 96/-per meter		
15	21.89.1.2	Construction of rectangular standard brick masonry manhole chambers to standard drawings on new. egg-shaped sewers up to the required depth in 1 :5 cement sand mortar, lime concrete 40 percent lime mortar with 19-20 mm gauge brick ballast in haunches above the arch ring where the depth of cover in traffic streets is less than 1.5 metres, 12mm thick water tight 1 :2 cement sand plaster with a floating coat of neat cement and finished with two coats of sodium silicate on interior surface where required, reinforced cement concrete slab 180mm thick fixing 560 mm internal diameter C.I. manhole frame and cover weight not less than 2.5 quintal painted with 3 coats of black bitumen paint, fixing galvanised malleable iron steps embedded in 1 :2 cement sand mortar etc., complete. the rate also covers the cost of M.S. steel for R.C.C. slab labour for fixing and carriage of C.I. manhole frame and cover and malleable iron steps from the stores of the	35 nos.	451465

		<p>engineer-in-charge of the works to site of works. The rate further includes cost of accurately planned and fitted centring, supports for all works, as well as for all curves and specials work cleaning out their beds, etc. sodium silicate shall be supplied free of cost at the stores of Engineer-incharge.</p> <p>For pipeline – 35 Nos. of manhole for pipeline 35 Nos. @ Rs.12899 /- per Manholes</p>		
16	22.169.1	<p>Providing lowering cutting jointing and testing RCC pipe class NP 3 as per 18-458-2003 with spigot &amp; socketed joints manufactured with ISi marked sulphate resistance cement as per ISi 12330 with rubber rings ISi marked antitermite as required at site in to trenches for all depths and laying out the same to correct alignment gradients and levels including dressing and trimming and cutting of concrete beds and side of trenches, if required jointing with rubber rings in trenches and jointing with 1 :3/2 cement sand mortar and with end dowels filled with 1 :3/2. cement sand mortar and finishing the joints at an angle of 45 degree with faces of spigot of socket joints cutting and finishing the cut surface to a uniform finish etc. as fully described in item No . 21.38, item 21.44, item 21.45, &amp; item 21.46 including cartage loading and unloading complete in all respects.</p> <p>the internal diametric of the sewer being 400 mm i/d RCC pipe = 900 meters Length = 900 Rnmtr</p>		1274400

		900 runmtr @ Rs.1416/- per meter		
17	7.87.1	<p>Coursed rubble masonry with hard stone (first or second sort) in superstructure above plinth level and up to floor four level.</p> <p>7.89.1 Masonry work (first sort), in cement mortar 1 :6 ( 1 cement : 6 coarse sand)</p> <p><math>760 \times 0.46 \times 0.75 = 262.2</math> Cum Say 263 cum @Rs. 4339/- per cum</p>		1141157
18	7.88.1	<p>Coursed rubble masonry with hard stone (first or second sort) in superstructure above plinth level Masonry work (second sort), in cement mortar 1:6 (1 cement: 6 coarse sand)</p> <p><math>760 \times 0.34 \times 0.75 = 193.8</math> Cum Say 194 cum @Rs. 4106 /- per cum</p>		796564
19	33.12	<p>Supplying, filling, spreading &amp; levelling stone boulders of size cum range 5 cm to 20 cm, in recharge pit, in the required thickness, for all leads &amp; lifts, all complete as per direction of Engineer-incharge</p> <p>Swales = <math>894 \times 0.3 \times 0.3 = 80.46</math> cum 81 cum @ Rs. 1164/- per cum</p>		94284

20	33.13	<p>Supplying, filling, spreading &amp; levelling gravels of size range 5 cum mm to 1 O mm, in the recharge pit, over the existing layer of boulders, in required thickness, for all leads &amp; lifts, all complete as per direction of Engineer-in-charge</p> <p>Swales = <math>894 \times 0.3 \times 0.2 = 53.64</math> cum</p> <p>54 cum @ Rs. 1164/- per cum</p>		62856
21	N.S Item	<p>Supplying and planting all type of plants, in filter bed (constructed wetland) plants till completion of project , plantation includes (Red canna,phagmities,typha angustifolia,lily &amp; cyperus species )with all complete work as per engineer in charge</p> <p>268 x 9 = 2415 Nos.</p> <p>2415 Nos. @ Rs. 65/- per plant</p>	2415 Nos.	156975
22	10.98	<p>Providing and fixing Grass paver block of required strength and thickness on 25 mm thick compacted bed of sand and filling the joint with sand complete in all respect.</p> <p><math>540 \times 2 = 1080</math> Sqm</p> <p>1080 sqm @ Rs. 1342/- per sqm</p>		1449360
23	6.3.1	<p>Cast in Situ .Cement Concrete M20 Kerb Construction of cement concrete kerb with top and bottom width 115 and 165 mm respectively, 250 mm high in M 20 grade PCC on</p>		263520

		M-1 O grade foundation 150 mm thick, foundation having 50 mm projection beyond kerb stone, kerb stone laid with kerb laying machine, foundation concrete laid manually, all complete as per clause 408 Pathway = 2x 540 = 1080 meters 1080 meters @ Rs.244/- per meter		
24	26.52	Preparation of mounds of various size and shapes including supply of cum good earth, in layers not exceeding 20 cm in depth, breaking of clods, watering each layer, dressing etc, lead up to 50 m and lift up to 1.5 m complete as per directions (excluding cost of good earth and manure which will be supplied separately.) Mounds 1 = 7.2 x 10 x 3.8 = 273 .6 cum Mounds 2 = 8 x 10 x 3.8 = 304 cum Mound = 6 x 5x 8 x 1.2 = 288 cum Total = 865.6 cum Say 866 cum @ Rs. 220/- per cum		190520
25	26.9.4	Turfing lawns with fine grassing ( selection no.1/ Bermuda and Mexican/Neelgiri grass )including ploughing, dressing including breaking of clods, removal of rubbish, dressing and supplying of selection no. 1 / Bermuda doob grass and Mexican/Neelgiri grass roots, including supplying and spreading of farmyard manure at the rate of 0.60 cum per 100 sqm, maintenance till weed free turf is formed. Total area of grass = 2800 sqm 2800 sqm @ Rs. 112/- per Sqm		313600

26	<b>N.S Item</b>	Supplying and planting all type of plants, in pit of appropriate depth with manure and watering plants atleast 3 months from plantation includes (Neem,champa,ashok ,hibiscus,jamun,banyan , flower includes marigold,bogan villa , native species)with all complete work as per engineer in charge 524 Nos. of Plant 524 Nos. @ Rs.220/- each plant	524 Nos.	115280
27	<b>26.63.6</b>	M.S. Flat iron tree guard 45 cm square and 0.8 metres. each height above ground level formed of 4 Nos. of angle irons of 25 x 25 x 3 mm 1.1 m long, 2 Nos. 25mm x 3mm horizontal MS flats welded to verticals on each side. Tree guard in two halves bolted together with 8mm dia & 30 mm long bolts, fixed in ground with 1 :2:4 cement concrete, complete in all respects. Minimum weight 7.63 kg. 524 Nos. 524 no. @ 778	524 Nos.	407672
28	<b>26.70.5</b>	Supply and installation of drip irrigation lines with external emitters/ micro-sprinklers/bubblers Total length = 650 meters 650 meter @ Rs.167/- per meter		108550
29	<b>26.72.1</b>	Rain Gun of Aluminium with brass inlet size 32mm each 26.72.2 26.72.3 internal diameter with throw radius of 14-22 m, with interchangeable nozzles and arc adjustment and all accessories complete as per BIS standards	10 nos.	109170

		10 Nos. @ Rs 10917/- each		
30	26.32	Planting permanent edging plants around beds, lawn or along paths metre including of digging of trench 45 cm wide to 15 cm depth, refilling the excavated earth, mixed with farm-yard manure, supplied at the rate of 0.9 cum per sqm and supplying and planting hedge/ edge at 20 cm apart in one or two rows @11 no. well trimmed bushy ,multi branched ,30 cm to 45 cm in height plants to be supplied in 15 cm x 15 cm poly bags per sqm Along inner fencing = 2 x 310 = 620 meter Along pathway = 2 x 540 = 1080 meter Total = 1700 meters 1700 meters @Rs. 109/- per meters		185300
31	26.33	Maintaining the permanent edging plants for the one year including metre application of FYM @ 0.0289 cum ,chlorpyriphos 9ml, urea and DAP 40gm each per year ,watering, hoeing weeding trimming and shaping ,replacement of casualty as and when noticed 1700 meters @ Rs.73/- per meter		124100
32	35.11	Laying of a geotextile filter between pitching and embankment slopes on which pitching is laid to prevent escape of the embankment material through the voids of the stone pitching/cement concrete blocks as well as to allow free movement of water without creating any uplift head on the pitching. On slope of pond = 310 x 25 = 7750 sqm 7750 sqm @Rs. 151 per sqm		1170250

33	10.37.1	<p>Providing and fixing of 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) : 25 mm thick</p> <p>5 x 0.9 x 0.45x 317 = 634 sqm  11x .15x .3 x 317 = 156.9 Sqm  2 x 0.9 x0.3 x 330 = 178.2 Sqm  Total = 969.1 Sqm  Say 970 Sqm @</p>		858450
34	26.76	<p>Providing and fixing pair of Plastic dustbins 100 litre volume each, of each set two different colours, for dry and wet waste, made of virgin plastic to be mounted on MS rectangular hollow section 50 x 25 x 3 mm frames pivoted on 3 MS square hollow section verticals, 1 m above ground, one 35 cm RHS welded to each vertical member at base and grouted in 180 x 40 x 30 cm 1 :2:4 cement concrete.</p> <p>6 Nos. of Garden benches  6 Nos. @ Rs.11944</p>	6 nos.	71664
35	26.58.1	<p>Chair type garden bench with L-shaped sides made of each 57 5334 5391 reinforced concrete (M30), thickness 100 mm, overall height 1000 mm, base width 620 mm. Back and seat shall consist of 5 Nos. reinforced concrete planks</p>	8 nos.	43128

		1500 mm x 100 mm x 50 mm one plank 1500 mm x 200 mm x 50 mm. Seating height of the bench shall be 450 mm. The bench shall be fixed with nuts on concrete mount, all holes sealed after assembly and installation. All materials required to be as per BIS specifications. 8 Nos. of Garden benches 8 Nos. @ Rs.5391/- each		
36	26.58.2	Rectangular garden bench with h-shaped sides made of each 84 3943 4027 reinforced concrete (M30), thickness 100 mm, back height 750 mm, base width 450 mm. Back and seat shall consist of rectangular reinforced concrete planks 1500 mm x 350 mm x 50 mm. Seating height of the bench shall be 450 mm. The bench shall be fixed with nuts on concrete mount, all holes sealed after assembly and installation. All materials required to be as per BIS specifications 8 Nos. of Garden benches 8 Nos. @ Rs.4027 /-	8 nos.	32216
37	N.S Item	Providing Installation of LED litium ion Street lights 25-30 watt includes MS pole of minimum 15 ft height above G.L and foundation for fixing the light . 12 Nos. of Street light 12 nos. @ Rs.35000/- per piece	12 nos.	420000
39		Seated chest press: Providing designing and fixing of seated chest press in a pair of size 1800 x 700 x2000 mm fabricated with main post of 114mm dia and 2.5mm thick and rest of the pipes 40mm dia and 2.5 mm thick. All	1 nos.	49000

		<p>pipes made up of hot rolled tubular steel and hot dipped galvanized and powder coated using Akzo Nobel or equivalent of 80-120 micron thick. All joints of pipe are robotic welded with joints scalloped as necessary and dressed off removing sharp edges and burrs. Zinc primer paint to be applied at all welding points prior to finishing. Handle bars are to be provided with high quality grip rubber. Pedals shall be made up of Nylon alloy with rounded edges to prevent any impact or injury. Seats and base plate cover to be made up from virgin LLDPE manufactured by rotational moulding with minimum thickness of plastic as 3mm colorful and UV resistant and environmental friendly. Bearing used shall be maintenance free, duly oil sealed and self lubricated made by reputed company to be approved by Engineer in charge. Equipment to be fitted with inbuilt limiters to prevent unwanted movement. All open ends of pipe to be closed by GI/ LLDPE caps for user safety. The equipment to be fixed on ground with concrete or minimum strength M-25 and J shape welded bolt and once</p> <p>1 Nos. 1 Nos. @ Rs. 49000/- each</p>		
40		<p>Leg Press: Providing designing and fixing of leg press of size 2000x550x1600 mm fabricated with main post of 114mm dia and 2.5mm thick and rest of the pipes 40mm dia and 2.5mm thick. All pipes made up of hot rolled</p>	1 nos.	30100

		<p>tubular steel and hot dipped galvanized and powder coated using Akzo Nobel or equivalent of 80-120 micror thick. All joints of pipe are robotic welded with joints scalloped as necessary and dressed off removing sharp edges and burrs. Zinc primer paint to be applied at all welding points prior to finishing. Handle bars to be provided with high quality grip rubber on top end Pedals shall be made up of Nylon alloy with rounded edges to prevent any impact of injury Seat and base plate cover to be made up from virgin LLDPE manufactured by rotational moulding with minimum thickness of plastic as 3mm colorful and UV resistant and environmental friendly. Bearing used shall be maintenance free duly oil sealed and selt lubricated made by reputed company to be approved by Engineer in charge. Equipment to be fitted with inbuilt limiters to prevent unwanted movements. All open ends of pipe to be closed by GI/ LLDPE caps for user safety. The equipments to be fixed on ground with concrete of minimum strength M-25 and J shape welded bolts and once the concrete is set fi</p> <p>1 Nos. 1 Nos. @ Rs. 30100/- each</p>		
41		<p>Elliptica exerciser: Providing designing and fixing elliptical exercise of size 1200 x 540 x 1600 mm fabricated with main post of 114mm dia and 2.5mm thick and rest of the pipes 40mm dia and 2.5 mm thick. All pipes made up of hot rolled tubular steel and hot dipped galvanized and</p>	1 nos.	38000

		<p>powder coated using Akzo Nobel or equivalent of 80-120 micron thick. All joints of pipe are robotic welded with joints scalloped as necessary and dressed off removing sharp edges and burrs. Zinc primer paint to be applied at all welding points prior to finishing. Handle bars are to be provided with high quality grip rubber. Pedals shall be made up of Nylon alloy with rounded edges to prevent any impact or injury. Seats and base plate cover to be made up from virgin LLDPE manufactured by rotational moulding with minimum thickness of plastic as 3mm colorful and UV resistant and environmental friendly. Bearing used shall be maintenance free, duly oil sealed and self lubricated made by reputed company to be approved by Engineer in charge. Equipment to be fitted with inbuilt limiters to prevent unwanted movement. All open ends of pipe to be closed by GI/ LLDPE caps for user safety. The equipment to be fixed on ground with concrete or minimum strength M-25 and J shape welded bolt and once</p> <p>1 Nos. 1 Nos. @ Rs.38000/- each</p>		
42		<p>Double Cross Walker/ Cross trainer double:- Providing, and fixing Double Cross Walker of size 1600 X600 X 1600 mm make of Green Gym or Equivalent fabricated with main post of 140 mm dia and 3.0 mm thick rest of the pipes are 40 mm dia</p>	1 nos.	32400

		<p>and 2.5 mm thick all pipes made up of hot rolled tubular steel and hot dipped galvanized, and powder coated using Akzo Nobel or equivalent of 80-120 micron thick. All welding joints of pipe are robotic welded with joints scalloped as necessary and dressed off removing sharp edges and burrs. Zinc primer paint to be applied at all welding points prior to finishing. Padals shall be made up of Nylon alloy with rounded edge</p> <p>of prevent any impact of injury and seat to be made from virgin LLDPE manufactured by rotational moulding with minimum thickness of plastic 4.00mm, colourful and U V resistant environmental friendly. Bearing used shall be maintenance free, duly oiled sealed and self lubricated made by reputed company to be approved by Officer -in-Charge. Equipment to be fitted within built limiters to prevent unwanted movements. All open ends of pipe to be coloured by GI/LLDPE caps for user safety. The equipment to be fixed on ground with concrete of minimum strength N425 and J shaped welded bolts and once the concrete is set, fix the equipment on to it and cover nuts and bolts with the base plate cover, all complete as per direction and approval of Engineer-in-Charge regarding material, shape of equipment, colour on metal, seat and base cover plate and fixing of equipment etc.</p>		
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		1 Nos. 1 Nos. @ Rs.32400/- each		
43		Sea-Saw (4 seater): 8' L x 5'.5 W x 15" high. Frame is of m.s pipe 2" x 12gauge. Sitting planks is of m.s pipe 2" x 12 gauge and its cantilever & handles is of m.s pipe 3/4" x 12 Guage .Sitting seats-4nos is of molded FRP material in 3mm thick with suitable PU Primer & PU Paints. Complete item with GST, Transportation, Installation with C.C & labor at site. (Including fixing at site and supervision & transportation & all type taxes)  1 Nos. 1 Nos. @ Rs.12700/- each	1 nos.	12700
44		Wave Slide: 9'.5 L x 5'H. Wave slide is of molded Fiberglass Reinforced Plastic (FRP) of 6mm thick and climbing ladder is of m.s pipe 1" x 12 gauge & m.s rectangular pipe 65 x 25 mm box X 16 gauge as climbing steps which support with 1".25 sq. pipe x 14 Guage with suitable PU Primer & PU Paints. Complete item with GST, Transportation, Installation with C.C & labor at site. 1 Nos. 1 Nos. @ Rs.27300/- each	1 nos.	27300
45		Bridge Ladder: 10'L x 2'W x 6'H. Horizontal ladder is of m.s pipe 2", 3/4" & vertical ladder is of same material of 12 gauge ISI mark with suitable PU Primer & PU Paints.	1 nos.	23800

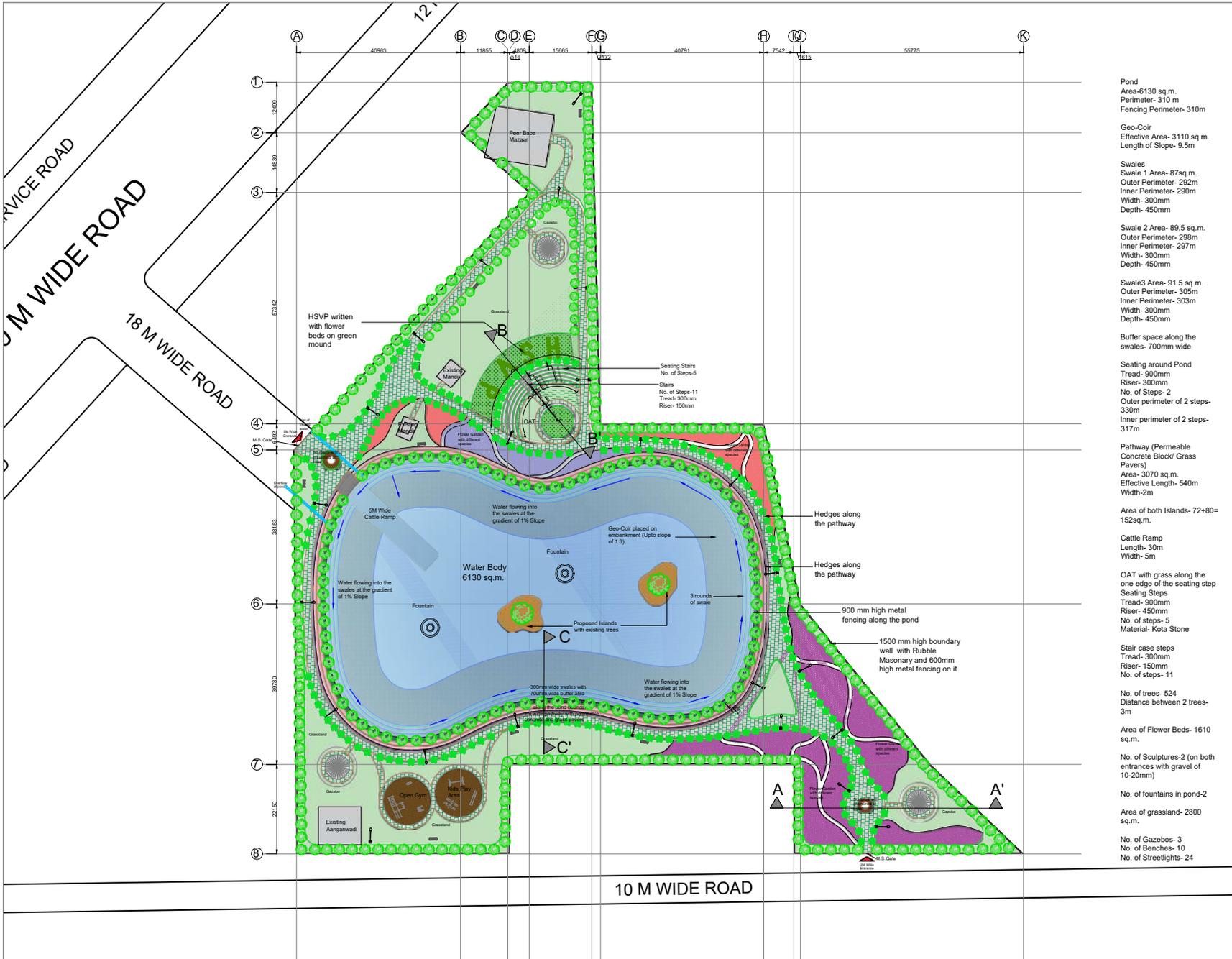
		Complete item with GST, Transportation, Installation with C.C & labor at site. 1 Nos. 1 Nos. @ Rs.23800/- each		
46	<b>Market Rates</b>	Gazebos 3X3 meters with MS structure along with foundation, with flooring and mangalore roof tiles (As per Architect's Design) 3 Nos. of Gazebos 3nos. @ Rs.155000 lakhs Each Gazzebo	3 Nos.	465000
47	<b>N.S item</b>	Maintenance of over Pond with One chowkidar and Gardener with over all maintenance trimming of grass , watering tree and maintenance of overall Chowkidar = 14900 x 12 = 178800 for one year Gardener = 2 x 1500 x 12 = 360000 for one year Total = 538800 For Three yaer @ 538800/ each year	3 years	1616400
48	<b>26.22.1</b>	26.22.2 Planting flower beds including digging 30 cm deep bed sqm and refilling of beds with excavated soil and FYM 0.0508 cum per sqm , Fertilizer DAP 50 gms and insecticides chlorpyriphos 10ml per sqm , planting of F1 hybrid well bloomed flower saplings to be supplied in polybags at 25cm distance from plant to plant and row to row minimum 15 no . plants per sqm  Total area = 1610 Sqm 1610 sqm @ Rs.238 / per sq		383180

<b>Total</b>	<b>23374684</b>
<b>Add 10 % price escalation charges</b>	<b>2337468</b>
<b>Add 1 % Contingency</b>	<b>233747</b>
<b>Grand Total</b>	<b>Rs. 25945899</b>

### Annexure 4: Project Timeline

S.No.	Activity Name	Month 1	Month 2	Month 3	Month 4	Month 5	Month 6	Month 7	Month 8	Month 9	Month 10	Month 11	Month 12
1	Draft DPR Submission	■											
2	Final DPR Submission	■											
3	Flotation of Tender		■										
4	Tender Allotment		■	■									
5	Cleaning & Removal of Rank Vegetation				■								
6	Excavation of Pond				■								
7	Excavation for WWTP					■							
8	WWTP RCC Work					■							
9	Waste water drain inlet					■							
10	Installation of WWTP						■	■	■				
11	Electrical work										■		
12	Levelling, compaction of land surface								■	■			
13	Geo coir at embankment										■		
14	Development of Pavement									■	■		
15	Development of Bio Swales										■	■	

16	Development of Open space and sitting area												
17	Installation of AWLR												
18	Development of Kids Play Area												
19	Fencing and boundary wall												
20	Plantation												
21	Miscellaneous and last finish												
22	IEC Activities												



- Pond  
Area-6130 sq.m.  
Perimeter- 310 m  
Fencing Perimeter- 310m
- Geo-Coir  
Effective Area- 3110 sq.m.  
Length of Slope- 9.5m
- Swales  
Swale 1 Area- 67sq.m.  
Outer Perimeter- 292m  
Inner Perimeter- 290m  
Width- 300mm  
Depth- 450mm
- Swale 2 Area- 89.5 sq.m.  
Outer Perimeter- 298m  
Inner Perimeter- 297m  
Width- 300mm  
Depth- 450mm
- Swale3 Area- 91.5 sq.m.  
Outer Perimeter- 305m  
Inner Perimeter- 303m  
Width- 300mm  
Depth- 450mm
- Buffer space along the swales- 700mm wide
- Seating around Pond  
Tread- 900mm  
Riser- 300mm  
No. of Steps- 2  
Outer perimeter of 2 steps- 330m  
Inner perimeter of 2 steps- 317m
- Pathway (Permeable Concrete Block/ Grass Pavers)  
Area- 3070 sq.m.  
Effective Length- 540m  
Width- 2m
- Area of both islands- 72+80= 152sq.m.
- Cattle Ramp  
Length- 30m  
Width- 5m
- OAT with grass along the one edge of the seating step  
Seating Steps  
Tread- 900mm  
Riser- 450mm  
No. of steps- 5  
Material- Kota Stone
- Stair case steps  
Tread- 300mm  
Riser- 150mm  
No. of steps- 11
- No. of trees- 524  
Distance between 2 trees- 3m
- Area of Flower Beds- 1610 sq.m.
- No. of Sculptures- 2 (on both entrances with gravel of 10-20mm)
- No. of fountains in pond- 2
- Area of grassland- 2800 sq.m.
- No. of Gazebos- 3  
No. of Benches- 10  
No. of Streetlights- 24

**TITLE**  
REJUVENATION AND  
LANDSCAPING OF POND :  
**SILOKHRA, Sector-41 Gurugram**

**DWG NO :**  
**REV:**  
**DWG STATUS :** Construction  
**SIZE :** A4

**REVISIONS**

Rev No.	Change name	Date
Rev 01		

**DATE :-**  
**SCALE :- 1:1200**  
All dimensions are in mm.



**ADDRESS :-** Silokhra, Sector-41,  
Gurugram

195

OFFICE OF THE EXECUTIVE ENGINEER HSVP, DIVISION NO- VI, GURUGRAM  
 Primary School Building, M-Block, South City-I, Near Plot No-M-217  
 E-mail: xenhsvp6ggm@gmail.com

By E-Mail/Dak/Courier

To.

The Executive Engineer,  
 Infra-II, Division S&S, GMDA,  
 Gurugram.

Memo No: 452

Dated: 27/2/23

Subject: - Providing the recycling water connection for pond site/area in Sector-41, Gurugram.  
 Ref: - The Case held at the National Green Tribunal, Principal Bench at New Delhi O.A No. 391/2022 in the matter of Brigadier Paramjit Singh & Ors. V/s State of Haryana & Ors.

In this regard, it is intimated that the pond is to be developed/constructed by this office in Sector-41, Gurugram as per direction by NGT & the next date of hearing in the said matter is 17.03.2023. Hence, the affidavit in the said matter is to be filled before 17.03.2023. Therefore, it is requested to give the consent for recycling water connection for development/filling of pond site in Sector-41 Gurugram.

This for your kind information & necessary action please

Endst. No:

453-56

Executive Engineer,  
 HSVP, Division No-VI,  
 Gurugram.

Dated: 27/2/23

A copy of the above is forwarded to the following for information and further necessary action please: -

1. The Administrator HSVP, Gurugram.
2. The Chief Engineer-I, HSVP, Panchkula.
3. The Superintending Engineer HSVP, Circle No-II, Gurugram.
4. Noopor Singhal, Panel Advocate, Haryana #298, Lawer Chamber, Block-II, Delhi High Court, New Delhi-110003. (Email id: noopor4@gmail.com)

Executive Engineer,  
 HSVP, Division No-VI,  
 Gurugram.

CERTIFIED

EXECUTIVE ENGINEER  
 HSVP, DIVISION NO. VI  
 GURUGRAM



GURUGRAM METROPOLITAN DEVELOPMENT AUTHORITY  
Plot No.3, Sector-44, Gurugram, Haryana

To

Through e-mail only

The Executive Engineer,  
HSVP, Division No. VI,  
Gurugram.

Memo no. GMDA/SEW/2023/193

Dated. 13-03-2023

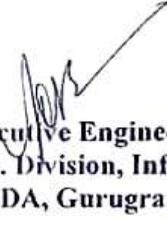
Sub: - Providing the recycling water connection for pond site/area in sec-41,  
Gurugram.

Ref: - Your letter vides memo no. 452 dt.27.02.2023 received on dt.13.03.2023.

It is submitted that major distribution pipe line for supply of tertiary treated water from STP Behrampur to the various sectors has been completed and functional. The layout plan showing the location of availability of Tertiary treated waste water pipe line is enclosed herewith. The tertiary treated waste water is available for sector 41 Gurugram. The tertiary treated waste water is available for use in Non-potable purposes only. It is therefore requested to apply on the Portal of GMDA for Online services for making the connection with pipe line.

This is for your kind information and necessary action please.

D.A/Plan

  
Executive Engineer-V,  
Sew. Division, Infra-II,  
GMDA, Gurugram

CC: -

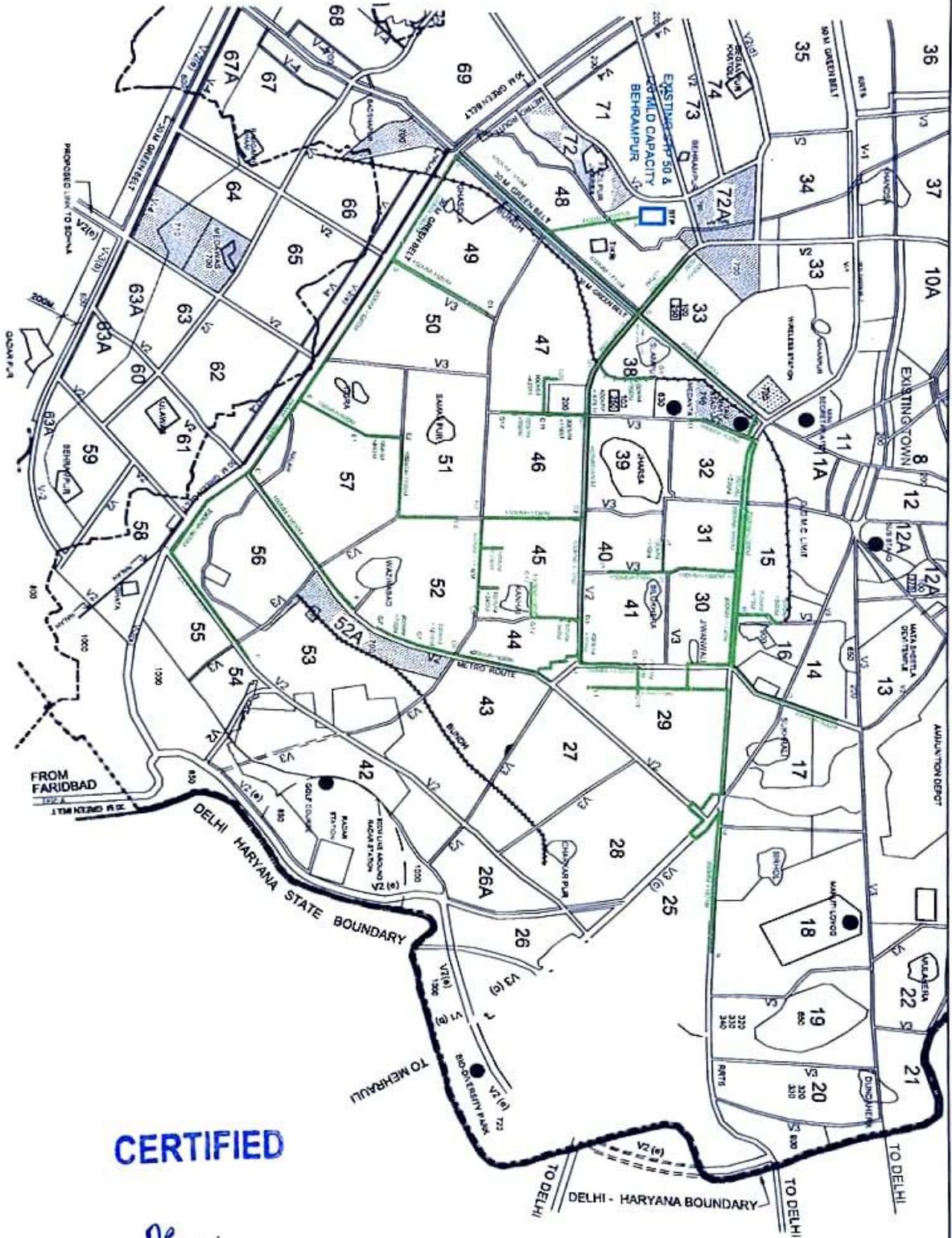
1. Administrator, HSVP, Gurugram.
2. Chief Engineer-I, HSVP, Panchkula.
3. Chief Engineer, Infra-II, GMDA, Gurugram.
4. Superintending Engineer, HSVP Circle-II, Gurugram.
5. Sh. Noopor Singh, Advocate, #298, Lawyer Chamber, Block-II, Delhi High Court, New Delhi. (noopor4@gmail.com)

**CERTIFIED**

  
EXECUTIVE ENGINEER  
HSVP, DIVISION NO. VI  
GURUGRAM

RECYCLE PIPE LINE FROM SECTOR 1 TO 57, GURUGRAM

UPDATED ON 02.09.2021



CERTIFIED

  
 EXECUTIVE ENGINEER  
 HSVP, DIVISION NO. VI  
 GURUGRAM