



CHAROTAR UNIVERSITY OF SCIENCE & TECHNOLOGY

Formed under Gujarat State Act No. : 8 of 2009

CHARUSAT Campus, Changa, ANAND District-388 421 (Gujarat) India. Ph. # =91-2697-247500, 248133

CHARUSAT

Fax # +91-2697-247100 Email : info@charusat.ac.in Web : www.charusat.ac.in

REF: CHA/ADM/IDMS/16/08/1058

03rd August, 2016

WORK ORDER

To,

RE-DEAL SOLUTIONS

B/12, Silvercoin Appt.,

Near Jaydeep Tower, Nr. Shreyas Crossing,

Paldi, Ahmedabad – 380 007

Subject: Installation of 100 KLD STP Plant by IWT (Intergrated Wetland Technology) at Charusat campus.

REF: Your Offer dated 31/05/2016 Annexure-1).

Dear Sir,

With above mentioned reference, we are pleased to place a Work Order for Installation of 100 KLD STP Plant by IWT (Intergrated Wetland Technology) at Charusat campus for Charusat Girls' Hostel – 4 site as per details mentioned in Annexure-1 attached herewith.

The approximate total work value shall be Rs. 8,00,000/- (Rupees Eight Lacs only).

Terms & Conditions

1. Scope of Work : Designing, Providing specific plants and gravel, Commissioning of Plant
2. Work completion period : 01 Month from the date of receipt of this order.
3. Taxes : Inclusive
4. FOR : Charusat.
5. Warranty : 05 Year from the date of installation.
6. Payment condition : 100% within 15 days after completion of satisfactory work.

You are requested to return the duplicate copy of this order and Annexure-1 as token of your acceptance at the earliest.

Looking forward for your association,

Yours Truly,

Devang Joshi

Registrar

Management Aegis : Shri Charotar Moti Sattavis Patidar Kelavni Mandal

RE-DEAL SOLUTIONS

RENEWABLE ENERGY FOR DEVELOPMENT OF ENVIRONMENT AND AGRO LANDS

Date : 31/05/2016.

To,
Mr. C. A. Patel,
Shri Charotar Moti Sattavis Patidar Kelavani Mandal,
Changa, Anand.

Sub : Offer for 100 KLD STP Plant by IWT Technology.

Sir,

In the meeting held at your Office and have a discussion for STP Plant for Hostel site, herewith we have given our offer as per discussions and technical data explained to you as mentioned below :-

STP Type : IWT (Integrated Wetland Technology)
Advantage of IWT : Odor free, No chemicals, Economical, No O&M Energy, Simple Design, Sustainable
Lower Footprint
Technical Data : Output from IWT – TSS < 10
BOD < 10
Nitrogen removal – 80 – 90%
Oil and grease < 10
Out come quantity > 90%

Capacity of Plant : 100 KLD

Area required : 110m²

Scope of our services : Designing, providing specific plants & gravel, commissioning of plant

Cost of Technology : Rs.8 Lacs

Clients scope of work : Clear site, drainage lines to and from the plant, construction of tank

Sir, please go through our given earlier detailed proposal with this offer and give us a chance for establish a renewable, natural, low maintenance STP Plant.

Thanking you,

Yours,
FOR, RE-DEAL SOLUTIONS


AUTHORISED SIGNATORY

(Pranav shah)

94260 80294

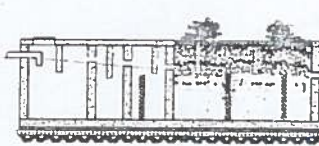
**Proposal for
Sewage Treatment Plant (STP)**

Executive Summary

Capacity of Plant	500 P.D.	200 P.D.	100 P.D.
Technology Used	Integrated Wetland Technology (IWT)	Integrated Wetland Technology (IWT)	Integrated Wetland Technology (IWT)
Total Area Required	550 m ²	220 m ²	110 m ²
Effective Area Overground	50 m ²	20 m ²	10 m ²
Volume of Tank	1350 m ³	540 m ³	270 m ³
Scope of Services	Designing, Providing Specific Plans & Gravel, Commissioning of Plant	Designing, Providing Specific Plans & Gravel, Commissioning of Plant	Designing, Providing Specific Plans & Gravel, Commissioning of Plant
Cost of Technology	18 Lacs	13 Lacs	8 Lacs

- Advantages of STP**
- The method of wastewater disposal is hygienic since the sewage is treated underground resulting in no accumulation of disease carriers in the village.
 - 90% of the wastewater can be reused for domestic purposes such as cleaning utensils, washing clothes and sanitary uses. Additional layers of charcoal filters and Aquaguard/RO/UV plants can make the water fit for drinking purposes as well
 - Chemicals which could have contaminated the soil are captured in the plant thereby preventing the degradation of agricultural lands.
 - It is an odor free and aesthetically pleasant method for sewage disposal

Integrated Wetland Technology (IWT)
Natural Wastewater Treatment System



Odor Free

No Chemicals

Economical

No O&M Energy

Simple Design

Sustainable

Lower Footprint

Technical Features:

Treatment Parameters

Water Parameter	Pre-Treatment (mg/L)	Post-Treatment (mg/L)
pH	6.8	7.6
TSS	245-475	4.18
BOD	218-458	4.18
COD	318-625	38-70
Nitrogen	18-28	1-3
Phosphorus	8-7	1-3

Construction: Submersible flow
Management: Facilities and associated bottom out
Water HCl: Microbial, sedimentation
Removal of solids: Microbial/Sedimentation, Plant uptake, transmission
Microbial: Microbial, sedimentation, Plant uptake
Pre- & Post: Adsorption, sedimentation
Flow to plants: Adsorption, sedimentation
Management: Microbial during, treatment, sedimentation

WWT efficiency

Why IWT?

Some pictures from our sites

Past projects of IWT Technology

No.	Location/Project	Capacity (m³/day)	Year
1	St. Louis Water	100,000	1978
2	Birmingham at Alabama	100,000	1978
3	Phoenix Development	100,000	1978
4	California Municipal Authority	100,000	1978
5	Houston	100,000	1978
6	Hotel at South Africa	100,000	1978
7	Sydney (Australia)	100,000	1978
8	Small Scale	100,000	1978

Past Projects of Physical Treatment

No.	Location/Project	Capacity (m³/day)	Year
1	London (England)	100,000	1978
2	London (England)	100,000	1978
3	London (England)	100,000	1978
4	London (England)	100,000	1978
5	London (England)	100,000	1978
6	London (England)	100,000	1978
7	London (England)	100,000	1978
8	London (England)	100,000	1978
9	London (England)	100,000	1978
10	London (England)	100,000	1978
11	London (England)	100,000	1978
12	London (England)	100,000	1978
13	London (England)	100,000	1978
14	London (England)	100,000	1978
15	London (England)	100,000	1978
16	London (England)	100,000	1978
17	London (England)	100,000	1978
18	London (England)	100,000	1978
19	London (England)	100,000	1978
20	London (England)	100,000	1978

Service Provider's Scope of Work

Component	Scope of Work
Designing	Details of the following would be provided based on the PSAT based STP: Conceptual Drawing; Engineering Drawings; Hydraulics
Plant Species & Gravel	Selection of plant species based on the output quality and quantity as well as their plantation would be performed. Gravel of particular size for the plant would also be provided
Maintenance & Bio-media Application	Bio Media application will be performed for the acclimatization of the plant species.
Commissioning	Complete supervision of the project till commissioning that will include 3 visits

Client's Scope of Work

1. Client shall provide the Service Provider a clear site
2. Earthing (if any electrical component needed) shall be in client's scope
3. Site security for equipment shall be arranged by the client
4. Drainage lines to and from the plant site has to be taken care by the client.
5. Operations & Maintenance after the commissioning of the plant is the Client's responsibility.
6. Client shall carry forward construction on their own.

Retail Invoice

(Not an consignee) UNIVERSITY OF SCIENCE TECHNOLOGY Campus 388421	Invoice No. RDS/RI-02/17-18	Date : 24/06/2017
	Delivery Challan No.	Mode/Terms of Payment
	Supplier's Ref.	Brand
	Buyer's Order No. CHA/ADM/DMS/ 16/08/1058	Date : 03.08.2016
	Despatch Document No.	Date :
Despatched through	Destination	
Terms of Delivery		

Description of Goods	Quantity	Rate	per	Amount
Installation of Sewage Treatment Plant <i>Project Site</i>	01 Set	571429.00		571,429.00
Sub Total Vat @ 4% Add. Tax @ 1%				571,429.00 22,857.00 5,714.00
Total				600,000.00

50% Payment Release

50% 3,00,000

Chargeable (in words)	<i>Rs Per Department Note.</i>
LAXH ONLY.	
Buyer's VAT TIN: 24074002339	
Seller's VAT TIN:	
Detail:	
Name: The Bhagyodaya Co-op. Bank Ltd.	
Address: Nav Vikas Grah Road, Paldi, Ahmedabad.	
Account No. 134004101002329	
Branch Code: HDFCOCTBCBL	
	FOR RE-DEAL SOLUTIONS Authorised Signatory

This is a Computer Generated Invoice

Make Payment as per tender 50% now. 24/6/17



D/m

CHAROTAR MOTI SATTAVIS PATIDAR KELAVANI MANDAL

June 2016.

NOTE

100 KLD STP Plant by IWT Technology for Charusat Girls' Hostel - 4 at Charusat campus

Director of President, we have received proposal for 100 KLD STP Plant by IWT (Intergrated Wetland Technology) for Charusat Girls' Hostel - 4 site from RE-DEAL SOLUTIONS (B/12, Silvercoin Appt., Near Jaydeep Crossing, Paldi, Ahmedabad - 380 007). The representative of RE-DEAL SOLUTIONS, Ahmedabad was invited on 07th June, 2016 for techno-commercial discussion and negotiation with Building Committee.

After deliberations and negotiations the committee resolved,

To give order to RE-DEAL SOLUTIONS, Ahmedabad for 100 KLD STP Plant by IWT (Intergrated Wetland Technology) for Charusat Girls' Hostel - 4 site at Charusat campus @ Rs. 8,00,000.00 (Rupees Eight Lacs only) inclusive of all applicable Taxes and Charges.

The proposal from RE-DEAL SOLUTIONS, Ahmedabad is attached herewith.

Request for Approval:

Sr. No.	Name of Member	Signature
01.	Shri C. A. Patel - Vice President; Chairman (Building Committee).	
02.	Nayanbhai Patel - Member (Building Committee).	
03.	Devang Joshi - Registrar (Charusat).	
04.	H. S. Patel - Dy. Registrar (Charusat).	
05.	Jaymin Desai - Dy. Engineer (Charusat).	

For Provost Approval:

P. P. Patel before F/C

13/6/16

H.S. Patel,
for needful
DF 14/6.


RE-DEAL SOLUTIONS

RENEWABLE ENERGY FOR DEVELOPMENT OF ENVIRONMENT AND AGRO LANDS

Term and Conditions :

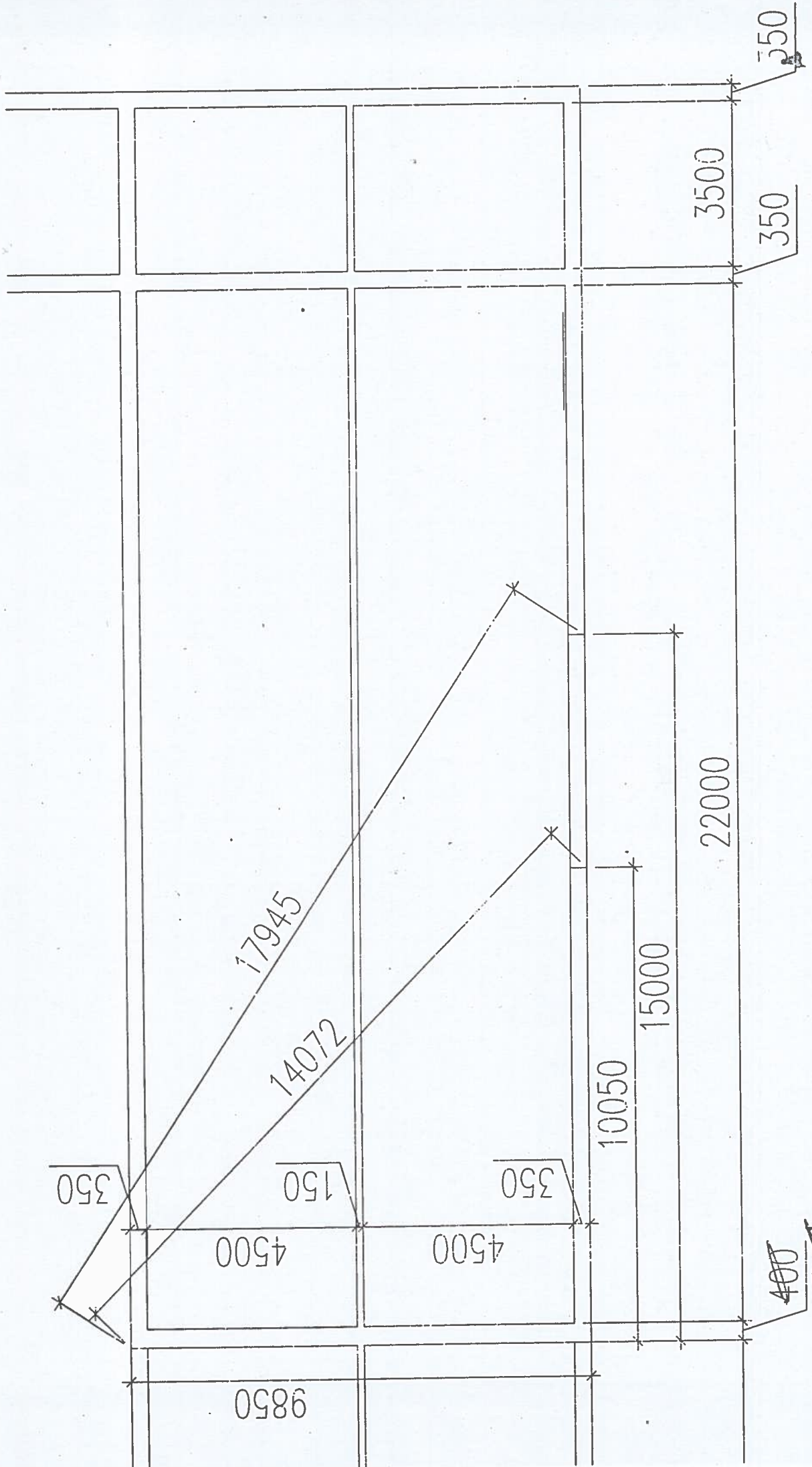
1	Scope of Work	Designing, Providing Specific Plants (<i>Canna indica</i>) and Media, Commissioning of Plant
2	Work Completion Period by <i>Charotar University of Science & Technology</i>	1 month
3	Construction	Will be done by <i>Charotar University of Science & Technology</i>
4	For	Charusat Campus, Changa, Anand, Gujarat
5	Operation and Maintenance (O&M) of plant	Will be done by <i>Charotar University of Science & Technology</i> . Typically in a period of two months, the CW gets thickly populated by <i>Canna indica</i> plants. The vegetation needs to be harvested every eight to ten weeks so that the surface of media does not get clogged.
6	Payment Condition	100% within 15 days after completion of satisfactory work

Thanking you,



RE-DEAL SOLUTIONS
B/12, Silvercoin Appt.,
Near Jaydeep Tower, Nr. Shreyas Crossing,
Paladi, Ahmedabad 380 007

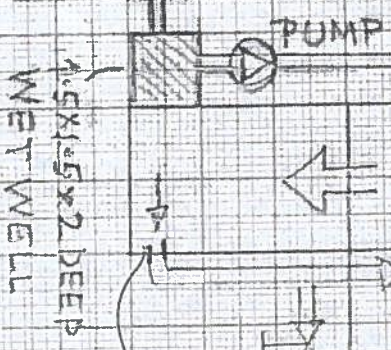
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CIVIL ENGINEERING DEPARTMENT

SEWAGE

From Soak Pit

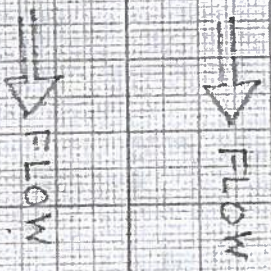


4.5 m 4.5 m

3.5 m

22 m

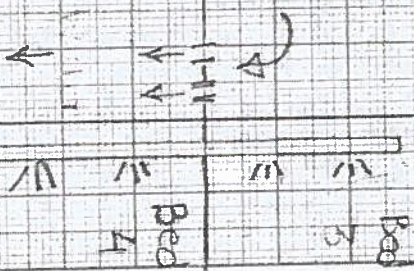
Bed 1
Bed 2



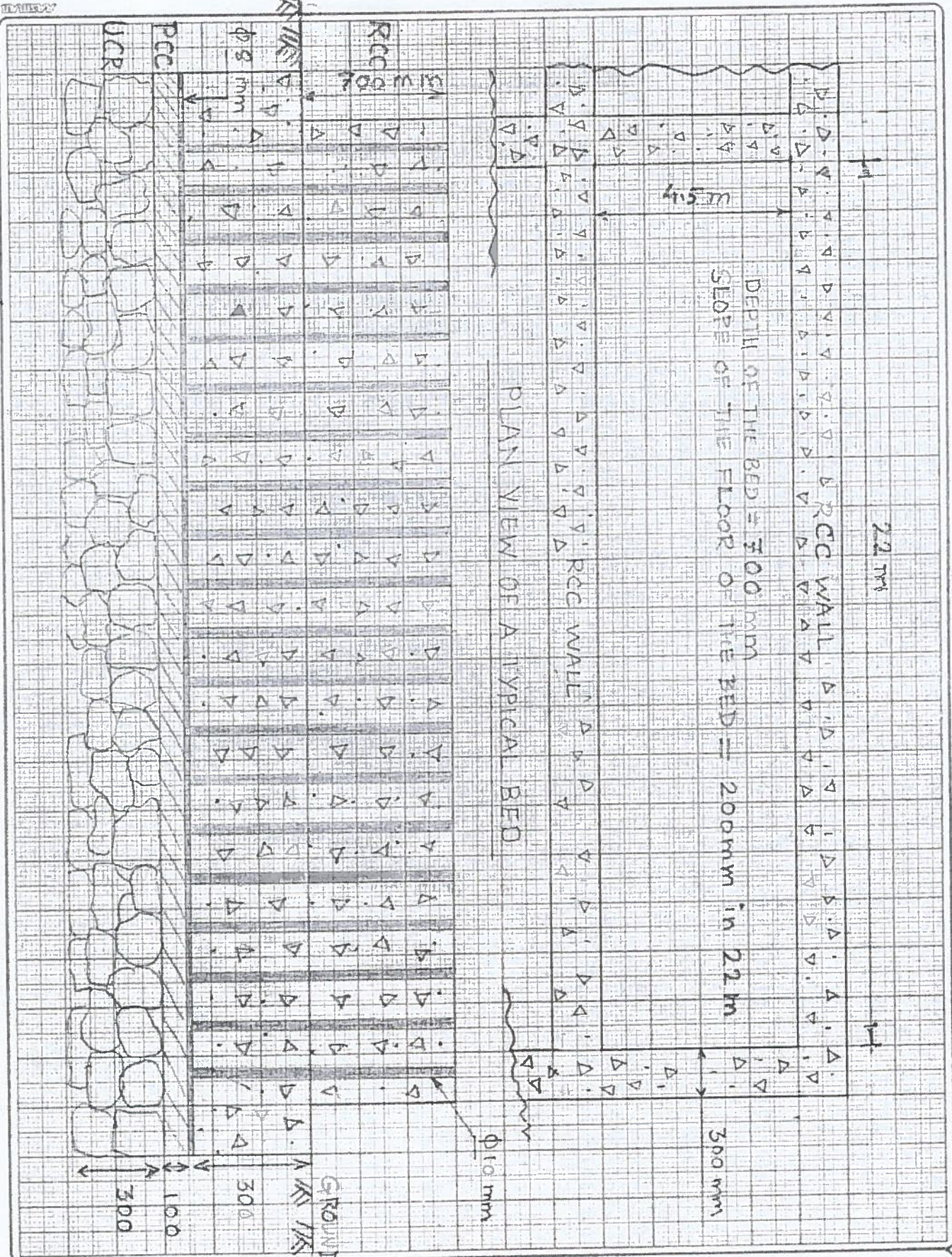
Underflow
2m dia + 1.25
above C.C. Bed

TREATED
COLLECTION
TANK

TO Retention Pond



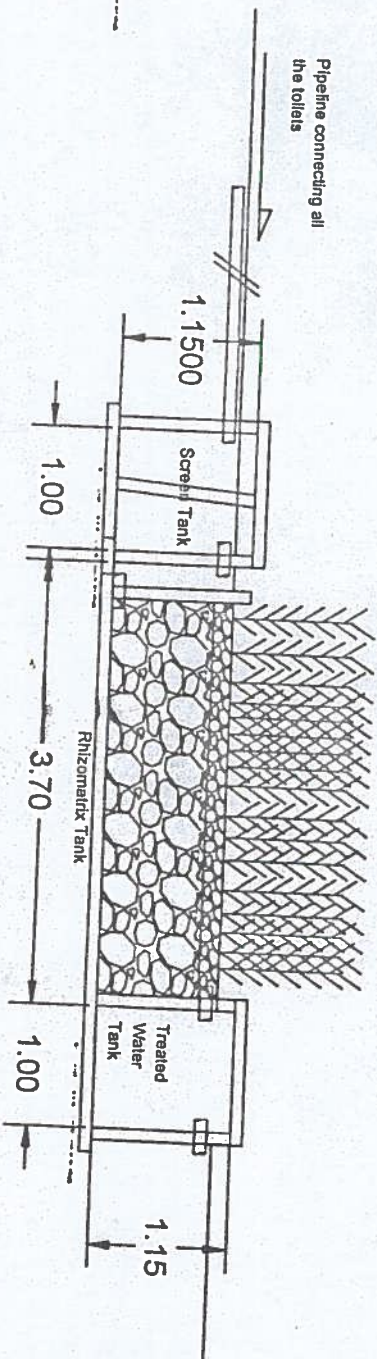
SCALE :



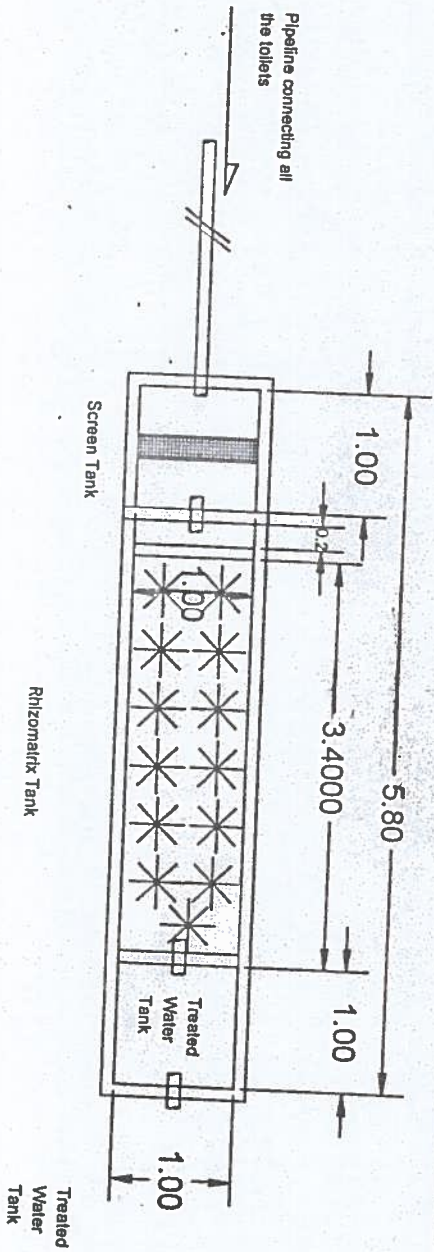
PLAN VIEW OF A TYPICAL BED

SCALE :-

Section View of
Kamodhar Pt. Sch.
Rhizomatix STP



Plan View of
Kamodhar Pt. Sch.
Rhizomatix STP



Rhizomatix STP layout
Design Capacity: 700 PE
Volume per Day: 10000 litre
All Dimensions are in meters
Approximate Pipeline connecting
all the Toilets to STP is 75 meters

