Directorate of Town & Country Planning, Haryana

Plot No. 3, Nagar Yojna Bhawan, A-wing, Madhya Marg, Sector-18 Chandigarh,
Website: tcpharyana.gov.in; Phone: 0172-2548475, 2707175; email:
tcpharyana7@gmail.com

Regd.

To

Sonika Properties Pvt. Ltd & Others.
Suncity Business Tower, 2nd Floor,
Golf Course Road, Sector-54, Gurugram – 122002
Email id – info@suncityprojects.com

Memo No. LC-1606 Vol-III/JE(MK)-2022/ 28320 Dated: 16-09-2022

Subject: **Approval of revised Service Plan/Estimates for residential plotted colony over an area measuring 76.806 acres falling under Licence No. 9 of 2009 dated 19.05.2009 in the revenue estate of Village Para & Rohtak, Sector –36-A, Rohtak.**

Please refer your application on the matter as subject cited above.

The revised service plan/ estimates of residential plotted colony over an area measuring 76.806 acres falling under Licence No. 9 of 2009 dated 19.05.2009 in the revenue estate of Village Para & Rohtak, Sector –36-A, Rohtak has been checked and corrected, wherever necessary by the Chief Administrator, HSVP and are hereby approved subject to the following terms and conditions: -

1. You will have to pay the proportionate cost of external development charges for setting up of residential plotted colony for the services like water supply, sewerage, storm water drainage, roads, bridges, community buildings, street lighting, horticulture etc. on gross acreage basis as and when determined by HSVP/Director. These charges are modifiable and modified charges will be binding upon you.
2. The maintenance charges for various services like water supply, sewerage, storm water drainage, Horticulture, roads, street lighting and resurfacing of roads etc. have been included in the estimate as per detail given in it and the total cost of maintenance charges are works out to **Rs.452.05 lacs** as you are liable to maintain the estate developed by yourself as per norms as determined by the Govt. /Govt. agency.
3. The category wise area shown on the plans and proposed density of population thereof has been treated to be correct for the purpose of services only.
4. All technical notes and comments incorporated in the estimates in two sheets will also apply. A copy of these is also appended as **Annexure-A**, alongwith recommendation of HSVP dated 03.11.2021 **Annexure-A.**
5. The wiring system of street lighting will be under ground and the specifications of the street lighting, fixture etc. will be as per relevant standard of HVPNL.

6. The appropriate provision for firefighting arrangement as required in the NBC/ISI should also be provided by you and fire safety certificate should also be obtained by you from the Competent Authority before undertaking any construction. You will be responsible for fire safety arrangement.
7. You shall be fully responsible for making arrangement of disposal of sewerage and storm water drainage till such time these are made available by HSVP/State Govt. and all link connections with the external system shall be made by you at your own cost. The owner will have to ensure that sewer/storm water drainage to be laid by you will be connected by gravity with the master services to be laid/laid by HSVP/State Govt. in this area as per scheme.
8. The correctness of the levels of the colony will be sole responsibility of the owner for integrating the internal sewer/storm water drainage of the colony by gravity with the master services. In case pumping is required the same will be provided by you.
9. Roof top rain harvesting system shall be provided by you as per norms and the same shall be kept operational/maintained all the time. Arrangement for seggration of first rain not to be entered into the system shall also be made by you.
10. The estimates do not include the provision of electrification of the colony. However, it is clear that the supervision charges and O&M charges shall be paid by you directly to the HVPN.
11. You shall be sole responsible for the construction of various structures such as RCC underground tank etc. according to the standard specification good quality and its workmanship. The structural responsibility will entirely rest upon you.
12. In case some additional structures are required to be constructed and decided by HSVP at a later stage, the same will be binding upon you.
13. You will not make the connection with the master services i.e. water supply, sewerage and storm water drainage without getting its approval from the competent authority.
14. This estimate does not include the common services like water supply, storage tank on the top of the building blocks, lifts, ramps, fire fighting arrangements, plumbing etc. and will be part of the building works.
15. In case some additional structures are required to be constructed and decided by the Competent Authority at a later stage, the same will be binding upon you. Flow control valves will be installed preferably automatic type, on water supply connection with external water supply line.
16. You shall get the electrical service plan estimates approved from the concerned authority regarding power utility within a period of 60 days and submit the same in this office for approval.

17. You shall get the permission of competent Authority, before laying services through Panchayat/ HSVP/ Government land.

Note :-

a. That you shall implement the directions given by National Green Tribunal O.A. No. 21 of 2014 and no. 95 of 2014 (in the matter of Vardhman Kaushik V/s Union of India & Others) and instructions have been issued by HSVP time to time may be implementation of these instructions at site.

b. That you shall execute the development works as per Environmental Clearance and comply with the provisions of Environment Protection Act, 1986, Air (Prevention and Control of Pollution of Act 1981) and Water (Prevention and Control of Pollution of 1974). In case of any violation of the provisions of said statutes, you shall be liable for penal action by Haryana State Pollution Controlled Board or any other Authority Administering the said Acts.

A copy of the approved service plan/estimates is enclosed herewith. You are requested to supply three additional copies of the approved service plan/ estimates to the Chief Administrator, HSVP, Panchkula under intimation to this office.

DA/As above

(Babita Gupta)
District Town Planner (HQ)
For Director, Town & Country Planning
Haryana, Chandigarh

Endst. No. LC-1606- Vol-III/JE(MK)-2022/ Dated:

A copy is forwarded to the Chief Engineer-1, HSVP, Panchkula with reference to memo No. CE-I/ACE(HQ) / SDE(R/F) / HDM(R) / 2021 / 189516 dated 03.11.2021 for information and necessary action please.

(Babita Gupta)
District Town Planner (HQ)
For Director, Town & Country Planning
Haryana, Chandigarh

REVISE SERVICE ESTIMATE, DESIGN REPORT AND CALCULATION OF

INTERNAL DEVELOPMENT WORKS

FOR

SUN CITY TOWNSHIP

76.806 ACRES

AT SECTOR 36 A ROHTAK

DEVELOPED BY

M/S Sonika Properties Pvt. Ltd. & Others
LGF-10, Vasant Square Mall, Plot-A, Sector-B,
Pocket-V, Community Centre, Vasant Kunj
New Delhi-110070

For Sonika Properties Private Limited

Director / Authorized Signatory

RKG Consulting Engineering Services New Delhi

REVISED SERVICE ESTIMATE, DESIGN REPORT AND CALCULATION OF INTERNAL DEVELOPMENT WORKS

SUNCITY PROJECTS ~~ADDED~~ New & Revised Area (7.35 Acres) AT SECTOR 36 A ROHTAK HARYANA

M/S Sonika Properties Pvt. Ltd. & Others LGF-10, Vasant Square Mall, Plot-A, Sector-B, Pocket-V, Community Centre, Vasant Kunj New Delhi-110070

Report

Rohtak town is one of the eight priority towns of National Capital region (N.C.R.) Rohtak Town is situated at a distance of 75 Kilometers from Delhi towards its North- West on National highway Number 10 (delhi - hisar Sulemanki road) and falls within the N.C.R. region. for balance development of the National Capital region, planning Board prepared a regional Plan 2001 with inter state cooperation. The concept of NCR is inextricably linked with the goal of decongesting Delhi and at the same time bringing about harmonious and qualitative development in the NCR.

This Revise report and ~~re estimate is for~~ revised estimate is submitted for 76.806 Acres SUNCITY PROJECTS SECTOR 36 A ROHTAK HARYANA approval of

WATER SUPPLY

At present the source of water supply in this area is HSVP and optional bore well. As the underground water is potable, provision for Five numbers of Bore wells have been made in ~~the~~ estimate. It has been proposed to construct underground tanks of capacity as per attached details and at location for domestic purpose and for fire protection. The underground tanks will be fed from the bore wells and HSVP supply, from there water will be supplied by set of variable frequency pump to each plot which is now a days universally adopted. The water supply system has been designed as per the Hazen William formula. The 100 mm i/d (K-7) & 150 mm & 200 mm i/d (K-9) DI pipe provision have been taken.

DESIGN

The scheme has been designed for population of **7673** persons considering 13.5 & 9 person for each Flat . The rate of water supply per head/day has been taken as (135+15%) i.e 155 liters per head per day.

PUMPING EQUIPMENTS

It has been proposed to install pumping set as described with standby of equal capacity. Standby electric power requirement is added to the main DG Sets in case of electricity failure.

SEWERAGE SCHEME

Sewer line from proposed development will be connecting to a centralized Sewage treatment plant with a bypass to HSVP sewer to dispose excess sewage. The sewerage system has been marked on the respective plans.

Sewer lines have been designed for three times average D.W.F in relation to water supply demand. It has been assumed that about 80% of the domestic water supply shall find its way into the proposed sewer. Sewer lines shall be laid to a gradient maintaining minimum 2.46 ft./sec self-cleaning velocity. Sewer line up to 200mm dia has been designed to run half full and above 200mm dia has been designed to run three fourth full at peak flow. Necessary provision for laying S.W/~~RCC~~ pipe sewer line, construction of required number of manholes etc., has been made in the estimate.

Necessary design statement for entire sewerage system has been prepared and attached with estimate. Manning's formula has been used on the design of sewerage system.

STORM WATER DRAINAGE

NP-3 (450 mm i/d) & 600 to 900 mm for existing

We proposed to lay underground R.C.C. pipe ~~drains~~ with required number of catch basins, manholes and rainwater recharge pits with over flow to the Proposed HSVP storm drain on sector Road. The intensity of rain fall has been taken as ¼" per hour. A minimum size of 400 mm dia RCC storm water line will be provided and designed as per manning's formula.

SPECIFICATIONS

The work will be carried out in accordance with the standard specifications of P.H as laid down by the Haryana Govt./HSVP

ROADS

RKG Consulting Engineering Services New Delhi

Report

The previous layout plan has been approved of area 76.812 acres (bearing drg. No. DTCP 1828 dated 06.03.2019 of license colony, Sec-36A, Rohtak & revised layout plan approved for area 76.806 acres (bearing drg. No. DTCP 6779 dated 24.01.2019) due to planning change of 2.35 acre & added of new 5.00 acre land. Accordingly, provision of 66 plots (EWS/NPNL) in 2.35 acre land & 34 plots in new 5.00 acre land have been approved. As per revised layout plan, number of plots have been increased from 526 to 609 but some plots also deleted. The Superintending Engineer, HSVP, Circle Rohtak vide his memo no. 181135 dated 21.10.2021 has intimated that water requirement will be met out from existing 1000mm i/d master water supply pipe line of HSVP.

The part compeletion certificate measuring 62.65 acre part of license no. 9 of 2009, has already been issued by DTCP, Haryana vide letter no. 18858 dated 06.09.2016. (Copy attached)

The fresh estimate of said plotted colony was approved for Rs. 3009.90 Lacs including 3% contingencies & 4% deptt. charges. Accordingly, cost was Approved @ Rs. 39.18 lacs per Acre (Copy attached)

Roads have been provided to above zones and estimate is prepared as per revised specifications adopted by HSVP

STREET LIGHITING
Provision for streets also has been made

HORTICULTURE
Estimates of plantation, landscaping, signage, etc., have been included

RATES
The estimate has been prepared based on the present market rates

COST
The total cost of the scheme, including cost of all services works out to be Rs. ~~31,790,618.09~~ 458.05 Lacs
Including 3% Contigencies @ 49% Departmental

Say ~~Three crore Seventeen lakh ninety nine thousand six hundred eighteen only~~ Four crore, fifty two lacs, & five thousand only /—

For: **M/S Sonika Properties Pvt. Ltd. & Others LGF-10, Vasant Square Mall, Plot-A, Sector-B, Pocket-V, Community Centre. Vasant Kuni New Delhi-110070**

Authorized Signatory

RKG Consulting Engineering Services New Delhi

For Sonika Properties Private Limited

Director / Authorized Signatory

Residential Plotted colony, 36-A, Rohtak (Area - 76.506 acre)

DAILY WATER DEMAND & PUMPING SYSTEM (Annexure - 1)

S No.	Plots/Building	Already approved: approved Unit (Plots)	Population @13.5 Person/Plot	Water Req. @ 155 lpcd In LPD	Water Req. In KLD	Flushing 33% In KLD	Domestic 67% In KLD	Revised plan (New plan): Unit (Plots)	Population @13.5 Person/Plot	Water Req. @ 155 lpcd In LPD	Water Req. In KLD	Flushing 33% In KLD	Domestic 67% In KLD
1	Plot Type-I	20	270	41850	41.85	14	28	0	0.00	0	0.00	0	0
2	Plot Type-II	65	878	136013	136.01	45	91	~~10.00~~	~~135.00~~	~~20925~~	~~20.93~~	~~7~~	~~14~~
3	Plot Type-II' & II''	44	594	92070	92.07	30	62	15.00	202.50	31388	31.39	10	21
4	Plot Type-III	87	1175	182048	182.05	60	122	2.00	27.00	4185	4.19	1	3
5	Plot Type-III'	46	621	96255	96.26	32	64	8.00	108.00	16740	16.74	6	11
6	Plot Type-IV	15	203	31388	31.39	10	21	5.00	67.50	10463	10.46	3	7
7	Plot Type-V	11	149	23018	23.02	8	15	8.00	108.00	16740	16.74	6	11
8	Plot Type-VI	132	1782	276210	276.21	91	185	0.00	0.00	0	0.00	0	0
9	Plot Type-VI'	0	0	0	0.00	0	0	46.00	621.00	96255	96.26	32	64
10	Plot Type-VII @135LPCD & 9 Person/Plot	106	954	128790	128.79	42	86	16.00	144.00	19440	19.44	6	13
11	commercial area (2,72 acr)	As per approved documents		68000	68.00	22	46	As per approved documents		~~68000~~	~~68.00~~	~~22~~	~~46~~
12	Nursining home			12350	12.35	4	8			~~12350~~	~~12.35~~	~~4~~	~~8~~
13	clinic			50000	50.00	17	34			~~50000~~	~~50.00~~	~~17~~	~~34~~
14	PRIMARY SCHOOL			50000	50.00	17	34			~~50000~~	~~50.00~~	~~17~~	~~34~~
15	NURSRY SCHOOL			20000	20.00	7	13			~~20000~~	~~20.00~~	~~7~~	~~13~~
16	COMMUNITY CENTER/misc.			50000	50.00	16	34			~~50000~~	~~50.00~~	~~17~~	~~34~~
17	TAXI STAND			5000	5.00	2	3			~~5000~~	~~5.00~~	~~2~~	~~3~~
18	UNDETERMIND USE			128875	128.88	42	85			~~128875~~	~~128.88~~	~~42~~	~~85~~
	Total			1389869	1390	459	931						
~~19~~ 1	GREAN AREA			257725	257.73	~~[illegible]~~	~~[illegible]~~						
~~20~~ 2	AREA UNDER GREAN BELT			105000	105.00	~~35~~	~~70~~			~~105000~~	~~105.00~~	~~35~~	~~70~~
~~21~~ 3	AREA UNDER ROADS			65330	65.33	~~22~~	~~44~~			~~65330~~	~~65.33~~	~~22~~	~~44~~
	Total	526	8624	~~1847920.0~~ 423800	~~1847.9~~ 424	~~609.9~~ 429	~~1238.0~~	~~140.0~~ 140	1413.00	~~768000.00~~ 195311	~~768.00~~ 196	~~253.87~~ 65	~~514.02~~ 131

Note:- Some plots have been deleted out of 526 plots.

~~ii~~	~~HortiCulture Total area of 10.309 acres @ 25000 / Acre from STP~~	~~257,725~~			~~258~~		~~KL~~
iv	STP capacity 80% of daily domestic and flushing water	614.95			1,470	KLD	
2	Under ground water tank		Req.	OHSR	UGT	Provided	
i	Daily fresh water demand		515	500	778	1,278	KL
ii	Daily flushing water demand		254		511	900	KL
iv	Total under ground Tank Capacity		769			2,178	KL
			Say	500	1,289	2,178	KL
	Therefore it is proposed to construct under ground water tank of						
	Raw Water Tank	375X 1	375	KL			
	Domestic Tank	375X 1	375	KL			
	Flushing & Irrigation Tank	450X 2	900	KL			
	Total		1650	KL			
	CENTRLIZED OHSR (OVER HEAD WATER STORAGE TANK)	500	500	KL			
3A	Fresh Water Transfer Pumpset						
a)	Pump Capacity						
i	Total Domestic Demand for Main (i)		515		KLD		
i	Daily Working Hrs for pumping		8		Hrs		

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FINAL ABSTRACT OF COST (New & revised area = 7.35 acre)

scription	Total of sub work	3% Contigencies	TOTAL	49% departmental	Grand Total
Sub Work-1 Water Supply	3922000 – ~~1,821,144~~	117660 – ~~54,634~~	4039660 – ~~1,875,778~~	1979433 – ~~919,131~~	6019093 – ~~2,794,909~~
Sub Work-2 Sewerage	3065858 – ~~735,858~~	91976 – ~~22,076~~	3157834 – ~~757,934~~	1547838 – ~~371,388~~	4705172 – ~~1,129,321~~
Sub Work-3 SWD Drainage	4098400 – ~~3,098,400~~	122952 – ~~92,952~~	4221352 – ~~3,191,352~~	2068462 – ~~1,563,762~~	6289814 – ~~4,755,114~~
Sub Work-4 Road Works	51,00,000 – ~~3,816,012~~	153000 – ~~108,480~~	5253000 – ~~3,724,492~~	2573970 – ~~1,825,001~~	7826970 – ~~5,548,493~~
Sub Work-5 Street Lighiting	1838000 – ~~344,000~~	55140 – ~~10,320~~	1893140 – ~~354,320~~	927634 – ~~173,617~~	2820774 – ~~527,937~~
Sub Work-6 horticuture	1325860 – ~~780,000~~	39776 – ~~23,400~~	1365636 – ~~803,400~~	669162 – ~~393,666~~	2034798 – ~~1,197,066~~
Sub Work-7 Services & Resurfacing of road	101,03,000 – ~~10,325,000~~	303090 – ~~309,750~~	10406090 ~~10,634,750~~	5098984 – ~~5,211,028~~	15505074 – ~~15,845,778~~
TOTALS	Rs. ~~20,720,413.17~~	Rs. ~~621,612.40~~	Rs. ~~21,342,025.56~~	Rs. ~~10,457,592.53~~	Rs. ~~31,799,618.09~~

Rs.-29453118 – Rs. 883594- Rs.-30336712 – Rs-14864988- Rs.452,01.700 –

Total Cost — Say ~~Three crore Seventeen lakh ninety nine thousand six hundred eighteen one Rupees only~~ Four Crore. fifty two lacs & five thousand only — say = 45205 lacs

~~Amount per acre~~ ~~Rs. 4,326,478.65~~

Cost per acres → = 452.05/7.35 = 61.503 Lacs per acre.

For: M/S Sonika Properties Pvt. Ltd. & Others

Authorized Signatory

RKG Consulting Engineering Services New Delhi

Executive Engineer
H.S.V.P. Division No. 1
ROHTAK

Checked subject to comments in forwarding letter No. 1691516 Dt. 3/11/2021 and notes attached with the estimate

Additional Chief Engineer (HQ) for Chief Engineer-I, HSVP Panchkula
03/11/21

Director Town & Country Planning Haryana Chandigarh

Superintendent Engineer
HSVP Circle, Rohtak

SUB WORK No. 1 WATER SUPPLY

S No.	Heads	Description	Amount
1.	Sub head-01	Head works	Rs. 13.63 lacs
2.	Sub Head 2	~~HUDA~~ HSVP Rising Mains	Rs. 0.00
3.	Sub Head 03	Pumping and Machinery	Rs. 0.00
4.	Sub Head 04	Water Supply and distribution	14.17 lacs Rs. ~~1,385,374.00~~
5.	Sub Head 05	Irrigation Water Supply System	11.42 lacs Rs. ~~455,769.62~~
		TOTAL CO to Grand Summary	39.22 lacs Rs. ~~1,021,143.62~~

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SUB WORK No. 1
Sub Head 2

HSVP WATER SUPPLY
~~HUDA~~ Rising Mains

S No.	Description	Amount
1	1. Providing, laying, jointing and testing ~~CILA~~ DI pipe lines Including cost of excavation etc. complete in all respects.	
a)	150 mm D.I dia pipe 0 Mtr. @ Rs. 1,372	Rs. 0.00
2	Providing and fixing sluice valve including cost of surface boxes and masonary chambers etc. complete in all respects	
a)	150 mm dia 0 Nos. @ Rs. 14,375	Rs. 0.00
3	Providing and fixing indicating plates for sluice valve and air valves	
a)	0 Nos. @ Rs. 1,000 each	Rs. 0.00
4	Provision for aire release valve	
a)	0 Nos. @ Rs. 7,500 each	Rs. 0.00
5	Provision for carriage for materials and other unforeseen items (L/S)	Rs. 0.00
6	Provision for cutting of roads and making good to its original conditions (L/S)	Rs. 0.00
7	Provision for making connection with ~~HUDA~~ HSVP (L/S)	Rs. 0.00
8	Provision for cutting making road (L/S)	Rs. 0.00
9	Construction of UG Tank 778 KL @ Rs. 3,000 /-KL	Rs. 0.00
10	Construction of OHSR OF 500KL with 25m staging hieght icliding cost of inlet outlet and overflow pipes 500 kl 12000 Rs. Per KL	Rs. 0.00
	Total CO to Sub work - 1	**Rs. 0.00**

Sub Head no. 01

1. Head Worked (New & revised area 7.35 acres)

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① Provision for additional DG Set for stand by arrangements.
200 - 120 = 80 KVA ——— 8.00 lacs

2. Const of additional 92 KLD UGT.
(870 - 778) = 92 KL = Say 100 KLD)
@ Rs. 4500 per KLD ——— 4.50 lacs

3. Prov. for carriage of material & other unforseen items —— 1.13 lacs

13.63 lacs

SUB WORK No. 1
Sub Head 3

WATER SUPPLY
Pumping and machinery

S No.	Description	Amount
1	Providing & installing following capacity for Water supply Booster Pumps	
a)	already approved	Rs. 0.00
2	Providing & installing pumping set of following capacity for Irrigation Pumps	
a)	already approved	Rs. 0.00
3	Provisions for chlorination plant complete 0 Nos @ Rs. 100,000.00 each	Rs. 0.00
4	Provision for making foundations and erection of pumping machinery L/S	Rs. 0.00
5	Provision for pipes, valves and specials inside the boosting chamber L/S	Rs. 0.00
6	Provision for electric service connection including electrical fittings for bore well and boosting etc. 0 Set	Rs. 0.00
7	Provision for carriage of material and other unforeseen items etc. L/S	Rs. 0.00
8	Provision for diesel engine Gen set each for standby arrangements for T.W. & booster pump complete with gear head arrangements of 93 KVA capacities – 1 No. Already	Rs. 0.00
	TOTAL CO to SUB WORK - 1	Rs. 0.00

SUB WORK No. 1
Sub Head 4

WATER SUPPLY
Water supply and distribution

S No.	Description				Amount
1	Providing , Laying, jointing and testing DI pipe line including Fittings, valves, cost of excavation etc. complete in all respect. (K=2) 940+156=1096 2.64.1				
a)	100 mm D.I Pipe	653 Mtr @	Rs. ~~1,060~~	HSR (~~20.63.1~~)	Rs. ~~692,180~~ 715688
b)	150 mm D.I Pipe 106 ~~0~~ Mtr @		Rs. 1,537+156=1693	HSR (20.63.2)	~~Rs. 0~~ 179458
c)	200 mm D.I Pipe (K=2) 130 Mtr @		Rs. 2,088+156=2244	HSR (20.63.3)	Rs. ~~271,440~~ 291720
d)	~~250 mm D.I Pipe~~	~~62 Mtr @~~	~~Rs. 2,783~~	~~HSR(20.63.4)~~	Rs. ~~172,946~~
e)	300 mm D.I Pipe	0 Mtr @	Rs. 3,444	HSR (20.63.5)	Rs. 0
2	Providing and fixing sluice valve including cost of surface boxes and masonry chambers etc. complete in all respects.				
a)	100 mm dia	6 Mtr @	Rs. 11,378	(22.162.1.1+22.174.1)	Rs. 68,268
b)	150 mm dia	4 Mtr @	Rs. 14,375	(22.162.3.1+22.174.1)	Rs. 57,500
c)	200 mm dia	2 Mtr @	Rs. 23,316	HSR (22.162.4.1+22.175.	Rs. 46,632
d)	250 mm dia	0 Mtr @	Rs. 30,934	(22.162.5.1+22.175.1)	Rs. 0
e)	300 mm dia	0 Mtr @	Rs. 39,108	(22.162.6.1+22.176.1)	Rs. 0
3	Providing and fixing air release valve and scover valve				
	4 Nos @ Rs. 702			(RA-3)	Rs. 2,808
4	Provision for carriage of materials and other unforeseen items				Rs. 50,000
5	Providing and fixing indicating plate for sluice valve & air release valve and scover valve				
	4 Nos @ Rs. 1,000				Rs. 4,000
	TOTAL CO to SUB WORK - 1				Rs. ~~1,365,374.00~~ 1416074

MATERIAL STATEMENT OF DWS AND FWS REFERS TO ANNEXURE 3

Say = 14.17 lacs

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SUB WORK No. 8
Sub Head 6

WATER SUPPLY
Irrigation System

S No.	Description					Amount
1	Providing, laying, jointing and testing pipes lines conforming to IS: ~~4985 (uPVC)~~ including cost of excavation etc. complete in all respects.					
a)	~~160~~ 100 mm Pipe	193 Mtr @	RS	~~552.63~~ 900/-	~~R.A(2)~~	Rs. ~~106,657~~ 173,700
b)	~~110~~ 80 mm Pipe	691 Mtr @	RS	Rs. ~~357~~ 750/-	~~R.A(1)~~	Rs. ~~246,612~~ 518250
2	Providing and fixing Garden Hydrant Chamber					50,000
	15 Nos. @ Rs. 3,500 each					Rs. ~~52,500.00~~ 35,000
3	Provision for carriage of materials and other unforeseen items					Rs. ~~50,000.00~~ 50,000
	TOTAL CO to SUB WORK - 1					Rs. 455,769.62 1141,950

40 mm pipe 125 mtr @ Rs 400/- mtr

MATERIAL STATEMENT OF IRRIGATION SUPPLY REFERS TO ANNEXURE 6

Say 77.42 lacs

RKG Consulting Engineering Services New Delhi

SUB WORK No. 2 **SEWERAGE SCHEME**

Sub Head 7 (New & Revised are 7.35 acre)

S No.	Description							Amount	
1	~~Providing , jointing , cutting and testing SW pipe and lowering into trenches including cost~~								
2	Providing, laying,cutting, jointing and testing SW pipe and lowering into trenches including cost of Excavation, ~~bed concrete, cost of manhole etc.~~ complete As per HSR 2194.3,4 5								
a)	200 mm dia	756	Mtr.	@	Rs. ~~504~~ 424	~~HSR(22.163.3)~~		Rs. ~~382,032.00~~	320634-
b)	250 mm dia	135	Mtr.	@	Rs. ~~742~~ 570	~~HSR(22.163.4)~~		Rs. ~~100,170.00~~	76950-
c)	300 mm dia	92	Mtr.	@	Rs. ~~1,010~~ 754	~~HSR(22.163.5)~~		Rs. ~~92,920.00~~	69368-
d)	400 mm dia		Mtr.	@	Rs. 1,800			Rs. 0.00	
e)	500 mm dia	0	Mtr.	@	Rs. 2,000			Rs. 0.00	
3	150mm Dia ~~GILA~~ DI (K-9) Class (Bye Pass Li	0	Mtr.	@	Rs. 1,372			Rs. 0.00	
4	Provision for carriage of material (L.S) Provision for const. of MH & conc. cover of 200 pipe.							Rs. ~~100,000.00~~ 50,000-	
5	Provision for making connection with ~~HUDA sewer~~ Existing sewer.							Rs. 50,000.00 418906-	
6	~~Provision for temporary disposal arrangement till such time existing services are made available~~							~~Rs. 10,000.00~~	
7	Providing STP of ~~0~~ 1290-1140 = 150 KLD ~~Rs. 8,000~~ 13,450 per KLD ~~per KLD~~ already approved							Rs. 0.00 2017500-	
	TOTAL CO to FINAL ABSTRACT OF COST							Rs. ~~736,858.00~~	B = 3065858-

MATERIAL STATEMENT OF SEWERAGE SCHEME REFERS TO ANNEXURE 1

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SUB WORK No. 3 STORM WATER DRAINAGE

Sub Head 7 (New & revised area = 7.35 Acre)

S No.	Description				Amount
1	Providing, laying, RCC pipe class NP-3 manholes etc. complete in all respects				
a)	450 mm dia	840.00 Mtr.	@ ~~Rs. 2,260~~ 1757 + 186 = 1943/-	HSR ~~(22.169.1)~~ 21.95.3 + 4.19.13	~~Rs. 1,898,400.00~~ 16,38,860
b)	600 mm dia	0 Mtr.	@ Rs. 3,226		Rs. 0.00
b)	700 mm dia	0 Mtr.	@ Rs. 3,500		Rs. 0.00
b)	800 mm dia	0 Mtr.	@ Rs. 4,000		Rs. 0.00
c)	900 mm dia	0 Mtr.	@ Rs. 5,136		Rs. 0.00
2	Provision for lighting and watching				~~Rs. 50,000.00~~ 64,603
3	Provision for road gullies & connecting pipe L.S.				Rs. 150,000.00
4	Provision for rainwater harvesting arrangements				
	Rs. ~~150,000.00~~ per ~~acre~~ RWH Recharge Pit (Size 3 m dia with single bor			5 Nos.	~~Rs. 750,000.00~~ 2,00,000
5	Provision for timbering & shoring (L.S.)				Rs. 100,000.00
6	Provision for lighting, watering and timbering drains & other unforeseen charges				Rs. 100,000.00
7	Provision for making connection with ~~HUDA Mains~~ existing SWD lines				Rs. 50,000.00
	TOTAL CO to FINAL ABSTRACT OF QUANTITY				~~Rs. 3,098,400.00~~
	in Lakhs				~~Rs. 30.98~~

MATERIAL STATEMENT OF STORM WATER DRAINAGE REFERS TO ANNEXURE 2 40,98,400

Sub work – 4

Construction of 12 Mtr. wide roads

(New & revised area = 7.35 Acre)

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Total length = 600 mtr.

Total area = 600 X 5.50 = 3300 + 31. = 3400 Sq.m.

1) Earth filling under roads (L.S.) - 3.00 Lacs

2.) Const. of 12 mtr. wide road with 200 mm thick GSB, 250 mm thick WMM, primer coat & tack coat, 50 mm thick DBM & 30 mm thick B.C.

Amt = 3400 X 1250 = 4250000 = 42.50 Lacs

3) Prov. for curve & Channel = 3.00

4) Prov. for carriage at med. & other = 2.50 unforseen items.

51.00 Lacs

-Work No. ~~VI~~ 6 Plantation and Road side Trees

Sl.No.	Description	Unit	Qty.	Rate	Amount in Rs.
1	Development of lawn areas	~~Acre~~	~~7.350~~	~~100000~~	~~735.000~~
a)	Trenching the ordinary soil up to dept of 60cm including removal and stacking of serviceable materials and disposing of by spreading and levelling within a lead to 50m and making up the trenches area of proper leads by filling with earth mixed with manure before and after flooding trench with water including cost of imported earth and manure	Acre	7.35	150,000	1102500-00 -
b)	Rough dressing of turfed area				-
c)	Grassing with "Doob Grass" including watering and maintenance of lawns for 30 days till the grass forms a thick lawn free weeds and fit for moving in rows 7.5m apart in either direction including provision for hedges and barbed wire fencing around park				-
2	Provisions trees, guards and planting trees along road at 12mt interval	No.s	~~128~~ 60	~~1745~~ 750	8,23360-00 ~~45,000~~
	525 X 2 = 1050/9 = 128 No.				
	Total				~~780.000~~ 1325560-00

Sub work -5 (Street lighting)

1) Providing street lighting at surrounding men as per std. Specification of HVPN with CFL Comb. in all respect.

Area = 7.35 acres @ 2.50 men/per acre = 18.38 days

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Sub-Work No. VII **Maintenance Charges & Re-surfacing of Roads**

Sl.No.	Description	Unit	Qty.	Rate	Amount in Rs.
1	Providing of maintenance charges for water supply , storm water drainage, sewerage, Road, Street lighting, Horticulture etc. complete in all aspect, including Operational and establishment charges as per ~~HUDA~~ HSVP norms for 10 years completion	Acre	7.350	~~500000~~ 7.50 lacs	~~3,675,000~~ 55.13 lac
					-
2	Providing of resurfacing of roads after Ist 5 years of maintenance with 50 mm thick B.M.layer & 25 mm thick premix carpet with seal cost	Sq.m	~~9500~~ 3400	~~350~~ 600/-	~~3,325,000~~ 20.40 lac
					-
3	Providing of resurfacing of roads after 10 years with 50 mm thick BM with 25 mm thick premix carpet with seal coat	Sq.m	~~9500~~ 3400	~~350~~ 750/-	~~3,325,000~~ 25.50 lac
	Total				~~10,325,000~~ 101.03 lacs

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HYDRAULIC CALCULATION FOR WATER SUPPLY SYSTEM

SLNo	From	To	Line No.	Length of Line	Size of Main	No.of Genral Plots	No.of EWS Plots	Water Requirement for Plots	Green	Other areas	UD	Water Requirement for green	Water Requirement for UD	Water Requirement for other areas	Water Requirements			Total Water Requirements	Head Loss per M	Total Head Loss	Head Loss Progressive	Velocity	Terminal Head	Ground Level		Hydraulic Level	
									18630						self	previous	Total	20KLS								
				Mtr.	MM			KLD	SQ.M		SQ.M	KLD	KLD	KLD	KLD	KLD	KLD	LPM	Mtr.	Mtr.	Mtr.	M/SEC	Mtr.	Start	End	Start	End
1	T4A	V1	T4A-V1	217	100	20		41.85		NS			0.00		31.88	0.00	31.88	86.41	0.0005	0.037	0.037	0.141	24.96	221.48	221.5	246	246.45
2	T3B	T3B'	T3B-T3B'	37	100	1		2.09																			
3	T3	V	T3-V	115	100	14		29.30					0.00		80.14	278.13	358.27	746.39	0.0064	1.301	1.301	0.704	23.7	223.50	221.5	245	245.23
4	R3	S1	R3-S1	62	250	10		20.93				0.00	0.00		29.39	0.00	29.39	61.22	0.0005	0.044	4.138	0.130	20.86	221.51	221.5	242	242.38
5	H1	H2	H1-H2	31	100	20		41.85				0.00	0.00		14.01	0.00	14.01	29.19	0.0001	0.015	6.466	0.062	18.53	221.57	221.6	240	240.08
6	L1'	L'	L1'-L'	123	100	23		48.1275																			
7	M	M1	M-M1	130	200	11		23.02				0.00	0.00		14.01	0.00	14.01	29.19	0.0000	0.000	6.452	0.015	18.55	221.58	221.6	240	240.14
8	L	L1	L-L1	130	200	22		46.04																			
	TOTAL			845		78	113	153.22	914.4	1107	6129	0.00	37.80	68													

RKG Consulting Engineering Services ★ New Delhi

MATARIAL OF WATER SUPPLY SYSTEM

Sl.No	From	To	Line No.	Length of Line	Size of Main	LENGTH OF LINE					SLUICE VALVE				
				Mtr.	MM	100MM	150MM	200MM	250MM	300MM	100MM	150MM	200MM	250MM	300MM
1	T4A	V1	T4A-V1	217	100	217									
2	T3B	T3B'	T3B-T3B'	37	100	37									
3	T3	V	T3-V	115	100	115									
4	R3	S1	R3-S1	62	250				62						
5	H1	H2	H1-H2	31	100	31									
6	L1'	L'	L1'-L'	123	100	123									
7	M	M1	M-M1	130	100	130									
8	L	L1	L-L1	130	200			130							
	TOTAL			845		653		130	62	0					

RKG Consulting Engineering Services ★ New Delhi

RECYCLING WASTE WATER SYSTEM

Design Statement

Sl.No	Upper end Node	Lower end Node	Name of (Upper Node-Lower Node)	Total Length of Water Line	Area of park		Requirement from park land in Kl.@20000 Ltrs/Acr	Water Requirment of Road side Plantation	Total Water Requirment		Net Water Requirment		Design Discharge at 250% of Net Quantity of Treated	Pumping hours for discharge	Pipe Size in mm id	Velocity	Friction at Head Loss per 1000 m	Other Losses H1	Total loss per 1000 mrt.	Fall	Hydraulic level Up Stream	Hydraulic level Down Stream	Average Value	Formation Level	Head Available	Pipe Size 100 mm id	Pipe Size 150 mm id
				Mtrs.	Sq. m	Acre	Kls.		Kls.	Mld	Mld	Mld	Mld	Hrs.		Mtr/Sec	Mtr.	Mtr.	Mtr.	Mtr.	Mtr.	Mtr.	Mtr.	Mtr.	Mtr.		
1	T4A	T4A	T4A-T4A	213			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	460	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	T3	T3A	T3-T3A	108											110			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	TB	TB'	TB-TB'	38			0.00	0	0	0	0	0	0	0.00	110	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	R3	S1	R3-S1	62											160	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	H2	H1	H2-H1	29			0.00	0	0	0	0	0	0	0.00	110	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	H1	H1'	H1-H1'	40			0.00	0	0	0	0	0	0	0.00	110	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7	L1	L	L1-L	131											160	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8	L1'	L'	L1'-L'	123											110												
9	M1	M	M1-M	140											110						0.00	0.00	0.00	0.00	0.00	0.00	0.00
				884																							

RKG Consulting Engineering Services New Delhi

MATARIAL SHEET OF WASTE WATER IRRIGATION SYSTEM

Design Statement

Sl.No	Upper end Node	Lower end Node	Name of (Upper Node-Lower Node)	Total Length of Water Line	Pipe Size in mm id	Pipe Size 110 mm id	Pipe Size 160 mm id
				Mtrs.			
1	T4A	T4A	T4A-T4A	213	110	213	
2	T3	T3A	T3-T3A	108	110	108	
3	TB	TB'	TB-TB'	38	110	38	
4	R3	S1	R3-S1	62	160		62
5	H2	H1	H2-H1	29	110	29	
6	H1	H1'	H1-H1'	40	110	40	
7	L1	L	L1-L	131	160		131
8	L1'	L'	L1'-L'	123	110	123	
9	M1	M	M1-M	140	110	140	
				884		**691**	**193**

RKG Consulting Engineering Services New Delhi

SUNCITY TOWNSHIP ROHTAK SECTOR 36-A

DESIGN STATEMENT OF SEWERAGE LINE

S No	Line No		Length	Unit	Total Plots		Total Population 13.5 Person /plot & for		Daily water @156 ltr/Person for main & 135Ltr/ Person for EWS		Total Water	Daily waste water (80%) of water consumption	Total Waste water (peak=average *3)	Total Waste water (peak =aver	Dia Proposed	Gradient	Velocity	Design discharge	Check for carrying capacity	Fall in (m)	G Level Upper	G Level Lower	Invert Level Upper	Invert Level Lower	Depth Start	Depth End	REMARKS
	From	To	Mtr		Main	EWS	Self	Cum.	Self	Cum.	LPD	LPD	LPD	LPS	mm	1/	m/Sec	LPS		Mtr.	Mtr	Mtr	Mtr	Mtr	Mtr	Mtr	
1	T8	T7	83	4 Plots + NS	4		54	216	18370	49655	49655	39724	119172	1.38	200	190	0.66	10.31	OK	0.44	221.51	221.51	219.815	219.378	1.69	2.13	
2	T7'	T7	49	1 Plots	1		14	81	2093	12555	12555	10044	30132	0.35	200	190	0.66	10.31	OK	0.26	221.51	221.51	220.084	219.826	1.43	1.68	
3	T7	T6	67	6 Plots	6		81	378	12555	74765	74765	59812	179436	2.08	250	400	0.52	12.89	OK	0.17	221.51	221.51	219.826	219.658	1.68	1.85	
4	T6'	T6	43	8 Plots	8		108	108	16740	16740	16740	13392	40176	0.47	200	190	0.66	10.31	OK	0.23	221.51	221.51	220.310	220.084	1.20	1.43	
5	T5	T4	65	0			0	527	0	97783	97783	78226	234678	2.72	250	400	0.52	12.89	OK	0.16	221.51	221.51	219.521	219.358	1.99	2.15	
6	T3'	T3	88	14 Plots	14		189	189	29295	29295	29295	23436	70308	0.81	200	190	0.66	10.31	OK	0.46	221.53	221.53	220.330	219.867	1.20	1.66	
7	R3	R2	83	10 Plots	10		135	135	20925	20925	20925	16740	50220	0.58	200	190	0.66	10.31	OK	0.44	221.53	221.53	220.330	219.893	1.20	1.64	
8	M3	M2	89	11 Plots	11		149	149	23018	23018	23018	18414	55242	0.64	200	190	0.66	10.31	OK	0.47	221.59	221.59	220.390	219.922	1.20	1.67	
9	M2	M	46	0			0	3834	0	610445	610445	488356	1E+06	16.96	300	700	0.45	15.84	xxxx	0.07	221.59	221.59	218.143	218.076	3.45	3.51	
10	M1	M	103	23 Plots	23		311	311	48128	48128	48128	38502	115506	1.34	200	190	0.66	10.31	OK	0.54	221.57	221.59	220.370	219.828	1.20	1.76	
11	M	L1A	46	0			0	4145	0	658573	658573	526858	2E+06	18.29	300	700	0.45	15.84	xxxx	0.07	221.59	221.59	218.078	218.012	3.51	3.58	
12	L1B	L1A	100	12 Plots	12		162	162	25110	25110	25110	20088	60264	0.70	200	190	0.66	10.31	OK	0.53	221.59	221.59	220.390	219.864	1.20	1.73	
13	H5	H3	34	10 Plots	0	10	90	90	12150	12150	12150	9720	29160	0.34	200	190	0.66	10.31	OK	0.18	221.55	221.55	220.350	220.171	1.20	1.38	
14	H4	H3	25	6 Plots	0	6	54	54	7290	7290	7290	5832	17496	0.20	200	190	0.66	10.31	OK	0.13	221.55	221.55	220.350	220.218	1.20	1.33	
15	H3	H2	23	3 Plots	3		41	185	6278	25718	25718	20574	61722	0.71	200	190	0.66	10.31	OK	0.12	221.55	221.55	220.171	220.050	1.38	1.50	
16	H2	H1	38	1 Plot	1		14	198	2093	27810	27810	22248	66744	0.77	200	190	0.66	10.31	OK	0.20	221.55	221.54	220.050	219.850	1.50	1.69	

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SUNCITY TOWNSHIP ROHTAK SECTOR 36-A									
Material statement for Sewerage (Annexure-7)									
S No.	Line No		Length	Pipe Dia	200 mm	250 mm	300 mm	400 mm	500 mm
			Mtr	mm	Mtr.	Mtr.	Mtr.	Mtr.	Mtr.
1	T8	T7	83	200	83	-	-	-	-
2	T7'	T7	49	200	49	-	-	-	-
3	T7	T6	67	250	-	67	-	-	-
4	T6'	T6	43	200	43	-	-	-	-
5	T5	T4	65	250	-	65	-	-	-
6	T3'	T3	88	200	88	-	-	-	-
7	R3	R2	83	200	83	-	-	-	-
8	M3	M2	89	200	89	-	-	-	-
9	M2	M	46	300	-	-	46	-	-
10	M1	M	103	200	103	-	-	-	-
11	M	L1A	46	300	-	-	46	-	-
12	L1B	L1A	100	200	100	-	-	-	-
13	H5	H3	34	200	34	-	-	-	-
14	H4	H3	25	200	25	-	-	-	-
15	H3	H2	23	200	23	-	-	-	-
16	H2	H1	38	200	38	-	-	-	-
TOTAL					758	135	92	0	0
STP Bye pass		1085 Mtr		CILA PIPE					
STP	KLD	(Refer to Anne 1)							

RKG Consulting Engineering Services New Delhi

SUNCITY TOWNSHIP ROHTAK SECTOR 36-A

HYDRAULLIC DESIGN CALCULATION OF STORM WATER DRAINAGE SYSTEM

S NO	LINE NO		LENGTH	AREA IN Sqm			DISCHARGE IN CUM/SEC RAIN FALL=6.25 mm	DISCHARGE	Pipe Dia	SLOPE	VELOCITY	DISCHARGE CAPACITY	Check	GROUND LEVEL AT START	GROUND LEVEL AT END	FALL	INVERT LEVEL AT START	INVERT LEVEL AT END	DEPTH AT START	DEPTH AT END	REMARKS
	FROM	TO	MTR	Self	Previous	Total		IN LPS	MM	1 IN	(m/sec)	IN LPS		MTR	MTR	MTR	MTR.	MTR	MTR.	MTR	
1	L	L1	128	11123	24702	35825	0.056	55.98	450	570	0.651	103.53	OK	221.580	221.580	0.22	219.93	129.70	1.65	91.88	
2	H4	H3	56	934	0	934	0.001	1.46	450	570	0.651	103.53	OK	221.550	221.540	0.10	220.65	220.59	0.90	0.95	
3	H2	H1	45	2179	1641	3820	0.006	5.97	450	570	0.651	103.53	OK	221.550	221.540	0.08	220.65	220.59	0.90	0.95	
4	L3	L2	103	6420	0	6420	0.010	10.03	450	570	0.651	103.53	OK	221.590	221.550	0.18	219.61	219.49	1.98	2.06	
5	M1	M	99	6443	0	6443	0.010	10.07	450	570	0.651	103.53	OK	221.570	221.550	0.17	220.67	220.50	0.90	1.05	
6	H1	H1'	32	1146	0	1146	0.002	1.79	450	588	0.641	101.94	OK	221.570	221.550	0.05	220.67	220.50	0.90	1.05	
7	R3	R2	27	3779	0	3779	0.006	5.90	450	570	0.651	103.53	OK	221.530	221.530	0.05	220.630	220.58	0.90	0.95	
8	T3'	T4	71	5939	6054	11993	0.019	18.74	450	570	0.651	103.53	OK	221.530	221.52	0.12	220.47	220.34	1.06	1.18	
9	T4'	T4	41	1577	0	1577	0.002	2.46	450	570	0.651	103.53	OK	221.530	221.52	0.07	220.63	220.48	0.90	1.04	
10	T5A	T5	51	1992	0	1992	0.003	3.11	450	570	0.651	103.53	OK	221.510	221.510	0.09	220.610	220.52	0.90	0.99	
11	T5B	T5	40	2819	0	2819	0.004	4.40	450	570	0.651	103.53	OK	221.510	221.510	0.07	220.61	220.54	0.90	0.97	
12	T5	T6	68	2874	4811	7685	0.012	12.01	450	570	0.651	103.53	OK	221.510	221.510	0.12	220.52	220.40	0.99	1.11	
13	T6A	T6	47	636	8856	9492	0.015	14.83	450	570	0.651	103.53	OK	221.510	221.510	0.08	220.338	220.26	1.17	1.25	
14	T6	T7	32	2631	17177	19808	0.031	30.95	450	570	0.651	103.53	OK	221.510	221.510	0.06	220.256	220.20	1.25	1.31	
	Total Area in Sq.M			311157	or 77 Acres																

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SUNCITY TOWNSHIP ROHTAK SECTOR 36-A											
MATERIAL STATEMENT FOR STORM WATER DRAINAGE SYSTEM (ANNEXURE-8)											
SL NO	NAME OF LINE		LENGTH	PIPE DIA	400MM	450MM	500MM	600MM	700MM	800MM	900MM
	From	To	MTR	MM	MTR	MTR	MTR	MTR	MTR	MTR	MTR
1	L	L1	128	450		128.00					
2	H4	H3	56	450		56.00					
3	H2	H1	45	450		45.00					
4	L3	L2	103	450		103.00					
5	M1	M	99	450		99.00					
6	H1	H1'	32	450		32.00					
7	R3	R2	27	450		27.00					
8	T3'	T4	71	450		71.00					
9	T4'	T4	41	450		41.00					
10	T5A	T5	51	450		51.00					
11	T5B	T5	40	450		40.00					
12	T5	T6	68	450		68.00					
13	T6A	T6	47	450		47.00					
14	T6	T7	32	450		32.00					
	TOTAL				0.00	840.00	0.00	0.00	0.00	0.00	0.00

DETAILED PROJECT REPORT

Water Supply, Sewerage System, Storm Water Drainage System, Road Net Work & Horticulture

For

SUN CITY PROJECTS
SECTOR 36 A ROHTAK

SUN CITY PROJECTS PVT LTD
N 49, 1ST FLOOR, CANNUGHT PLACE
NEW DELHI

SUNCITY PROJECTS

Prepared by

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Rohtak town is one of the eight priority towns of National Capital Region (N.C.R.)

Rohtak Town is situated at a distance of 75 kilometers from Delhi towards its North- West on National Highway Number 10 (Delhi-Hisar-Sulemanki road) and falls within the N.C.R. region. For balance development of the National Capital Region, Planning Board prepared a Regional Plan 2001 with inter state cooperation. The concept of NCR is inextricably linked with the goal of decongesting Delhi and at the same time bringing about harmonious and qualitative development in the NCR.

Population Growth of town since 1981 is as under

1	1981	1.66
2	1991	2.35
3	2001	3.11

Initially low population growth was anticipated with Population Density @110 Persons/Hectare to accommodate population 5Lacs by 2021 in Development Plan

Revised Development Plan was prepared with Population Density @150 Persons/Hectare to accomdate7 Lacs Population by 2025

During last few years sharp increase in population growth is observed.
The reasons for this change may be attributed to,

Major changes in State Government Polices.

Overall trend of rapid urbanization in and around National Capital Region (N.C.R.)

Participation of Private Colnisers/Developers in urban development in addition to Haryana Urban Development Authority, Haryana State Industrial Development Corporation, Public Works Departments.

Keeping in the above-mentioned facts Department of Town & Country planning, Government of Haryana has prepared a Draft Development Plan, which is under active consideration of Government of Haryana.

The total area of Draft Development Plan is 6400 Hectares

The existing town covers area of 1804 Hectares

4596 hectares area is proposed aroound for various land use.

The existing town is being controlled and developed by Municipal Corporation of Rohtak.

For Ky Consultants Pvt. Ltd.

(Director)

The development of balance Urban Areas was entrusted to Haryana Urban Development Authority (HUDA) and Haryana State Industrial Development Corporation (HSIDC).

To accelerate the implementation programme it has been decided by Govt. of Haryana that Private colonizers / Developers / Builders may also be entrusted the work of Development of area. Accordingly to reputed colonizers have shown keen interest in development proposal.

Haryana Urban Development Authority will act as Nodal agency for providing External Development facilities.

Development of sector 34,35,36,36 A,27 has been entrusted to Sun City Projects.

Sun City Rohtak is coming up in Sector 36A as residential sector with part as commercial use.

For detailed planning purpose the assumptions are as under:

a). 13 % persons per plot comprising of 3 storeys development in plotted area.

b]. 9 persons per plot for EWS

Floating population may be assumed 10 % of present population in commercial / institutional areas.

Rohtak town has been developed in the shape of saucer

The lowest area is around Canal Rest House with a level of 217.32 mtrs. (713.0 ft)

The existing by-pass road acts as Ring Bundh with formation level varying from 222.39mtrs (729 ft) to 221.58 mtrs (727 ft)

The rainwater of existing town is pumped in multistage pumping (3 stages)

The proposed area of Secroe 36-A falls outside of bye-pass

It has been observed during period in mansoon when heavy rain is experienced in the area, the nearby drains i.e. Jasia Drain & Makroli Drain are unable to take flood water resulting in spreading of sheet of water in area where sector36 A is proposed to be developed. The last time flood was experienced in 1996.

Hence it is essential that proposed outer by-pass may be kept above max flood level of Jasia & Makroli drain.

Maximum Flood Level of Makroli drain in 1983 was 730.50(222.65)

The ultimate disposal of floodwater of Rohtak town is carried by existing Drain No. 8 which ultimately gets connected to Nazafgarh drain

Part of flood water of Rohtak town (near Tylar Lake) will be disposed off in Gandhra Drain which outfalls in West Juan drain which ultimately get connected to Nazafgarh drain for ultimate disposal in river Yamuna.

KCB Drain which ultimately get connected to Nazafgarh drain for ultimate disposal in river Yamuna, also takes part load of Rohtak Town.

Total Area 76.812						
Sr.No.	Description				Area	
	Residential (Plotted)		Area of each unit			
1	Plot Type	Size		Plots		
		mxm	Sq.m	Nos.	Sq.m	Acres
1.10	I	18.0 X 45.0	810	20 ✓	16200	4.003
1.11	II	14.0 X 30.0	420	65 ✓	27300	6.746
1.12	II'	14.39 X 27.79	399.89	44 ✓	17595.16	4.348
1.13	III	12.0 X 28.0	336	87 ✓	29232	7.223
1.14	III'	12.0 X 26.0	312	46 ✓	14352	3.547
1.15	IV	10.5 X 26.0	273	15 ✓	4095	1.012
1.16	V	10.5 X 22.0	231	11 ✓	2541	0.628
1.17	VI	9.0 X 18.5	166.5	132 ✓	21978	5.431
1.18	VII	4.0 X 12.5	50	106 ✓	5300	1.310
				526 ✓	138593.16	34.248
	Commercial Area					
2.0	Commercial		2.72	1	11007	2.72 ✓
2.1	Nursing Home		0.247	2 ✓	1999	0.494
2.2	Clinic			2 ✓		
2.3	ATM Bank			2 ✓		
2.4	Beauty Par lour			2 ✓		
2.5	Milk / Veg Booth			2 ✓		
2.6	Multipurpose Booth			2 ✓		
					13006	3.214
3	Utility Area					
3.1	Primary School		1	1 ✓	4046.8	1
3.2	Nursery School		0.2	2 ✓	1619	0.4
3.3	Community Centre		2	1 ✓	8094	2
3.4	Taxi Stand		0.5	1 ✓	2023.4	0.5
						3.9
4.0	Undetermined use				20538	5.075 ✓
5.0	Green Area			29	41718	10.309
5.1	Area under Green Belt				28328	7 ✓
5.2	Area under Roads				147635	13.1
	Total Area					76.812

12m wide road = 5156 m X 5.50m = 28358 Sqm.

18 m wide road = 195 m X 7.50 m = 1462 Sqm

24 m wide road 725 X 14 m = 10150 Sqm

39970 Sqm

Say 39970 Sqm

Length of Kerb & Channel both side

@(5156 + 195 + 725) = 12152 Rmt

Cum for footpath on 18 m & 24 m wide road

@(195 + 725) X 1.50 m = 2760 Sqm

@ Rs. 350/ P.Sqm = Rs 9.66 Lacs

On the basis of above description the formation level of Main roads is proposed as under:

Formation level of road at sector 36A & junction of Gohana Rly. Track is 221.75mtrs

Formation Level of Junction of Ladot Road & 60 M wide Road is 221.63 mtrs

Formation Level of Ladot Road at junction of 60 m wide Road is 221.45 mtrs with existing road level as 220.87 mtrs.

Formation level of existing by-pass road near sector 1 is 222.19 mtrs

Formation level of existing by-pass road at junction of existing by pass & Sonepat road is 221.58 mtrs

Proposed formation level near Railway line & Sector 36-A at point "A" is 221.6 mtrs

Proposed formation level at point "B6" is :221.95 mtrs(VIS A VIS Natural Surface Level is :220.99

Difference in level at B6" : 0.97 mtrs

Depth of Earth Work : 0.97 -0.395 =0.575 Mtrs

Proposed formation at point W :221.45 mtrs(VIS A VIS Natural Surface Level:220.83)

Difference in Level at B6" : 0.62 mtrs

Depth of Earth Work : 0.0.62 -0.0.395=0.225 Mtrs

This way road will be approx. 2 to 3 ft higher than Natural Surface level

A plan showing Natural Surface Level & proposed Formation Level is shown in Annexure A

Length of 24 m wide Road =686 m Say 690 mtr + 5% for Curves = 725 mtr

Length of 18 m wide Road =184 m Say 184 mtr + 5% " " = 193 mtr

Length of 12 m wide Road =4909 m Say 4910 mtr + 5% " " = 5156 mtr

Total Length =5779 m

Average Filling of Earth Work on 24 m wide Road is 0.60 m.

Average Filling of Earth Work on 18 m wide Road is 0.54 m.

Average Filling of Earth Work on 24 m wide Road is 0.66 m.

Over all filling of Earth Work is 0.60 m.

Net filling of Earth Work after deducting the quantity of Road Metal =50370-13584=36786 Cum

Road Cross Sections proposed are to be adopted as per prevailing practice in HUDA in Rohtak are as under

	Left Berm	Main Road	Right Berm
	Mtrs	Mtrs	Mtrs
24 m wide Road	5	14	5
18 m wide Road	5.25	7.5	5.25
12 m wide Road	2.5	5.5	4.0

	Thickness in mm	Thickness in mm	Thickness in mm
Cleaning of jungle, preparation of sub grade supplying & laying of granular sub base	150	150	150
Supplying Laying to WBM 100 MM Thick90-45N/S Graded Stone Aggregate)) specification .as per specification complete in all respects.	100	100	100
Supplying Laying to WBM 75 MM Thick63-45 N/S Graded Stone Aggregate)) specification .as per specification complete in all respects.	75	75	75
Supplying & Laying Bitumen's Macadam mixing with 60/70 grade bitumen	50		
20mm thick premix carpet	20	20	20
Total	395	345	345

Length in Mtrs

12Mtre. Road 4909 Mtrs.

18 Mtre. Road 184 Mtrs.

24 Mtre. Road 686 Mtrs

24 Mtre. Road
18 Mtre. Road
12Mtre. Road

0 1000 2000 3000 4000 5000

24 mtr wide Road 686

18 mtr wide Road 184

12 mtr wide Road 4909

Details shown in Design Statement

Road Width	Road Cross Section			Depth of earth work		Average Depth	Quantity of Earth Work	Quantity of Road metal	Net Earth Work
	Left Berm	Main Road	Right Berm	upper end	Lower node				
Mtrs	Mtrs	Mtrs	Mtrs	Mtrs	Mtrs	Mtrs	Cum	Cum	Cum
24	5	14	5	0.58	0.63	0.60	10019	3795	6224
18	5.25	7.5	5.25	0.61	0.50	0.54	1828	475	1353
12	2.5	5.5	4	0.71	0.72	0.66	38524	9314	29210
				0.63	0.61	0.60	50371	13584	36786

12Mtre. Road
29210
79%

24 Mtre. Road
6224
17%

18 Mtre. Road
1353
4%

The water supply of Rohtak town is based on canal water. The canal water is treated by HUDA at the water works. Treated potable water is supplied by HUDA to sectors.

To meet the requirement of water of Sector 36-A, treated water will be supplied by HUDA from proposed water works in sector 34.

It is proposed to lay down rising main from water works to sector 34 and to be stored in UG tank proposed to be constructed in green area in central portion of Secroe 36-A.

The water will be distributed through distribution network system.

It is anticipated that HUDA take some times to supply the water from proposed As a stop gap arrangement it is proposed shallow tube wells may be drilled in green areas

Domestic Demand is.....173 ltrs./capita/day

Crèches (with no hostel facilities)..... 10,000 ltrs./day

Primary School (with no hostel facilities)..... 50,000 ltrs./day

High School (with no hostel facilities)..... 1, 50,000 ltrs./day

Colleges (with no hostel facilities)..... 3,00,000 ltrs./day

Dispensary..... 50,000 ltrs./day

Hospital

(upto 100 Beds).....3,50,000 ltrs./day

(Beyond 100 Beds) ..... 4,50,000 ltrs./day

@ Irrigation demand..... 20,000 ltrs./day

Police Post.....5,000 ltrs./day

Police Station..... 50,000 ltrs./day

Religious Buildings..... 25,000 ltrs./gross acre/day

Community Buildings..... 25,000 ltrs./gross acre/day

Convenient Shopping Centers..... 25,000 ltrs./gross acre/day

Cinemas..... 50,000 ltrs./day

Water requirement of Buildings which is not covered above may be taken as per norms laid in Water Supply Manual by Ministry of Works &Housing ,Govt. of India, or Bureau of Indian Standards. And in addition to that20,000 ltrs.per gross acre for Irrigation.

Commercial Areas.....25,000 ltrs./ plot table acre/day

Open Areas & Areas under Parks..... 25,000 ltrs./gross acre/day

Area under Roads..... 5,000 ltrs./gross acre/day

Area not yet planned .....25,000 ltrs./gross Acre/day

Fire Demand = $(P)^{1/2}$ 100 P is Population in thousands

Industrial Demand if not worked in detail may be taken as 25,000 ltrs./gross Acre/day

Wastage & leakages; 15% of total demand for development of source and Boosting Stations only

Sr.No.	Description		Area of each unit	Plots	Area		Total Persons	Water Allowance	Water Requirement
	Residential (Plotted)								
1	Plot Type	Size							
		mxm	Sqm	Nos.	Sq.m	Acres	Nos.	lpcd	Ltrs./Day
1.1	I	18.0 X 45.0	810	20	16200	4.003	270	173	46710
1.2	II	14.0 X 30.0	420	65	27300	6.746	878	173	151800
1.3	II'	14.39 X 27.79	399.89	44	17595.16	4.348	594	173	102762
1.4	III	12.0 X 28.0	336	87	29232	7.223	1175	173	203189
1.5	III'	12.0 X 26.0	312	46	14352	3.547	621	173	107435
1.6	IV	10.5 X 26.0	273	15	4095	1.012	203	173	35019
1.7	V	10.5 X 22.0	231	11	2541	0.628	149	173	25693
1.8	VI	9.0 X 18.5	166.5	132	21978	5.431	1782	173	308286
1.9	VII	4.0 X 12.5	50	106	5300	1.310	954	135	128790
				526	138593.2	34.248	6624		1109208

Sr.No.	Description				Area		Water Allowance	Water Requirement
	Commercial Area				sqmt	Acre	Ltrs	Ltrs
2.0	Commercial	2.72	1	11007	2.72		25000	68000
2.1	Nursing Home		0.247	2	1999	0.494	25000	12350
2.2	Clinic			2			25000	50000
2.3	ATM Bank			2			5000	10000
2.4	Beauty Parlour			2			5000	10000
2.5	Milk/Veg Booth			2			5000	10000
2.6	Multipurpose Booth			2			5000	10000
					13006	3.214		170350

T.W. Assuming working hrs of T.W. 16 hrs.

Discharge 24 KL/hr

Total domestic demand 1920 KLD

1920/16x24 5 NOS

Add 10% for standby 0.50

5.50 Nos

say 6 Nos

Pumping machinery for T.well

Gross working Head = 45 mtr

Av. fall in spring level 3.50 m

Depression Head 6.15 m

Friction loss in main 2.50 m

= 56.65 m

say 60 mtr

BHP of motor $\frac{24000 \times 60 \times 1}{60 \times 60 \times 75 \times 0.60}$ = 8.90 BHP

say 10 HP

3	Utility Area						
3.1	Primary School	1	1	4046.8	1	50000	50000
3.2	Nursery School	0.2	2	1619	0.8	10000	20000
3.3	Community Centre	2	1	8094	2	25000	50000
3.4	Taxi Stand	0.5	1	2023	0.5	5000	5000
					3.9		125000
4.0	Undetermined use			20538	5.075	25000	126875
5.0	Green Area		29	41718	10.309	25000	257725
5.1	Area under Green Belt			28328	7	15000	105000
5.2	Area under Roads			147635	13.066	5000	65330
	Total Area				26.812		1950080
	Water Requirement per person total Requirement/No. of Persons			105098 0/6624		296	

Fire Demand in Ltrs.=(Population in Thousands)$^{0.5}$X100x1000

=(6.624)^0.5*100*1000=257373 Ltrs

Total Demand is 2.0 mld

30% of waste water will be treated upto tertiary level to meet water demand of the Horticulture & Road side plantation

The initial demand of water is 0.5 mld

The yield of a shallow tube well estimated to be 5000 to 6000 ltr per /hr

Assuming 16 hrs running of tube well the yield of shallow tube well will be around 100000 ltr

Hence it is proposed to drill 5 Nos. tube well in initial stage & later on the number of tube well is increased, if there is delay getting the supply from HUDA.

100% Power back up arrangement may be provided by installing 5 No. generating sets of 20 k VA Capacity each.

As explained above the Tube wells upto 30m to 40 m depth are required to be drilled at suitable places in the local area.

The drilling may be done in 18" diameter upto 50 m depth.

The strainer depth will be provided in 10m-12m depth.

To avail maximum yield it is recommended to provide stainer of Vertical steel wires 0.75 mm c/c instead of conventional strainers.

Gravel size of size 1.00 -1.25 mm is recommended to be poured in well

The water so collected may be processed through Treatment & Chlorination etc for the purpose of drinking.

The water supply of Rohtak town is based on canal water. The canal water is treated by HUDA at the water works. Treated potable water is supplied by HUDA to sectors.

To meet the requirement of water of sector 36A, the treated water will be supplied by HUDA from proposed water works in sector 34.

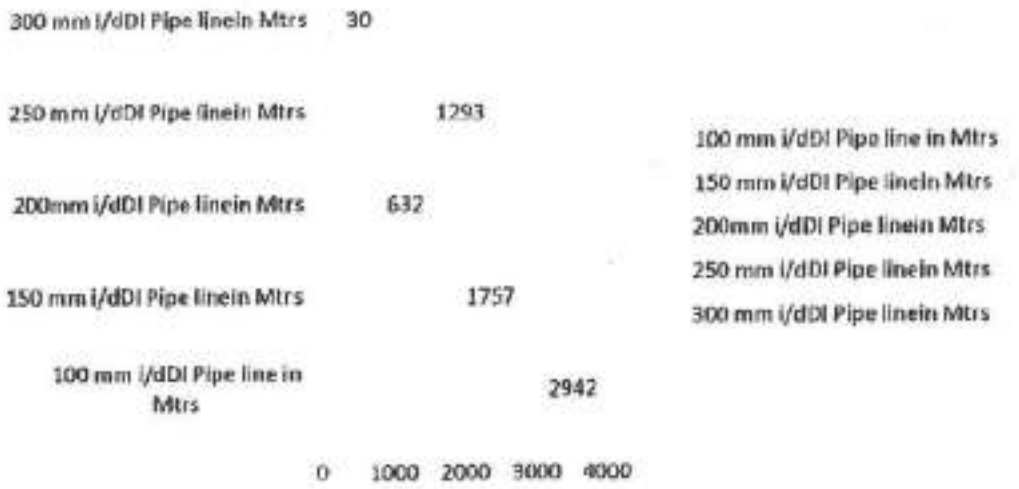
It is proposed to lay down rising main from water works sector 34 and stored in UG tank proposed to be constructed in Green belt in central portion of each sector.

The water will be distributed for these pumping stations to all the plots through distribution network system.
As a short term measure it is proposed water supply may be provided with the help of shallow tube wells

Rising mains shall be designed for minimum carrying capacity of 150% of the Pumping capacity

Distribution mains shall be designed for minimum carrying capacity of 250% of the average rate of supply
A plan showing Water Supply Distribution System & location of Boosting Station is shown in Annexure II

Details of Water Supply DI Pipe Line



Sr. No.	Description of Rising Main	Discharge	Size of Pipe	Length of Rising Main	No . Of Sluice Valves including Required at T.W.	Nos. OF Air Valve
		Litres	mm	Mtrs.	Nos.	Nos.
2	Tube wells No.1 to Tube well No.2	100000	150	705	5	1
3	Tube wells No.2 to Tube well No.3	200000	150	201	4	0
4	Tube wells No.3 to Boosting Station	300000	150	342	4	0
5	Tube wells No.4 to Boosting Station	100000	150	50	3	0
6	Tube wells No.5 to Boosting Station	100000	150	306	4	0
	Tube wells in Green Belt to Rising Main		150	250		
	Sub Total			1854	20	1

150mm = 705+306+342+250 = 1311
200mm = 201
250mm = 342

Capacity of OHSR for Sector – 36A
Net Water Requirement 1960-429=1531 kl
1/4th of net daily demand = ¼ * 1531 = 382.75 Kld

Hence Provide one No. Overhead Service Reservoir cum Balancing Reservoir of 500 Kltr capacity, 35 mtr high and full supply level & 25 mtrs level staging height in Sector. Overall 1 Nos. OHSR is proposed to be constructed

B.7 Under Ground Tank

Capacity of CWT @ 1/3rd of Daily Demand = 1531 /3 =510.33 Kltr
Fire Fighting Demand = 257.37Kltr
7 Total = 767.7 Kltr
8 It is proposed to construct Under Ground Tank of 778 Kltr capacities in two compartments, first compartments for firefighting & another compartment for balance requirement. The Under Ground Tank will be partly underground and partly above Ground Level.

Sr. No.	Name of Sector	Net Water Requirement (Total Water Requirement - Irrigation Water Demand)	Fire Fighting Demand	capacity of OHSR@1/4 of Demand	capacity of OHSR Provided	Balance Qty. to be carried to UGT	Capacity of UGT @1/3 of Demand +Fire Fighting Demand +Balance capacity of OHSR	Provided UGT in 2 compartments (One to cater fire fighting demand & 1 no for balance requirement)
		K.Litres	K.Litres	K.Litres	K.Litres	K.Litres	K.Litres	
1	Sector 36A	1499 4533	257.37	382.75 312.75	500	-	One to cater fire fighting demand =12*8*2.7=259 kl Two no for balance requirement12*16*2.7=519kl each Capacity Provided =259+519=778kl>767	

- Water table is 217.80 mtr & foundation Level is 221.00 i.e. Water column is 3.20 m below formation level.
- Hence 2.4 m deep storage tanks may be proposed to be constructed in three compartments.

Total Daily Water Demand = Net Water Demand = 1960kltr 1920

Daily Pumping Hours = 8

Hourly demand = 1960/8=245 ltr/ 240

Nos. of pumps proposed 3 Nos for average demand+ 1No. for Stand bye

Machinery for Average Demand 240 80

Hourly pumping by one pump = 245/ 3 = 81.66 Kltr

or 37.80 Ltr PS , Say 45 lps
21.02 25

25 30.96 Say 35 BHP
(45x 60) / (75 x 0.6) = 60 BHP.

Hence it is proposed to install 4 Nos. pumping set Horizontal Centrifugal / submersible type

Capacity of Generating Set to run one no. Pump = 35 x 0.746
= 33.57 KVA
It is proposed to provide & install 3 No. Generating set of 120 KVA capacities to run3 Nos. Motors

Master Sewerage lines are not laid by HUDA around Sector 36-A

Haryana Water Supply & Sanitation Deptt has constructed Waste Water collection System along Gohana Road near Pir Bahudi.

9..2

In the Master proposal for treatment of waste water, it is proposed that waste water generated from urban development in the area, bound by Gohana Railway line and Gohana Road will be collected at Pir Bahudi and will be disposed off in Najhaffgarh drain after proper treatment.

Available Ground Level does not permit laying of branch sewer lines with slopes required to attain Self Cleansing Velocity .

Hence to attain velocity a slope @0.6m/second has been adopted.

HUDA as and when necessity arises will develop the Master proposal as briefly explained in above paragraph.

The system will be designed as per Guide lines laid by Manual of Water Supply published by Ministry of Water Supply & Sanitation, Govt. of India .

It is assumed that 75% of water supplied will find its way into sewerage system excluding horticulture demand.

Peak Flow during morning & evening hrs. will be 3 times the average flow.

Peak Flow in main sewers will be 2.25 times the average flow.

Normally infiltration of ground water is taken @10% of average flow

up to 300 mm i/d dia. of Sewers.....30 mtrs.

more than 300 mm i/d dia. of Sewers...75 mtrs

Sr. No.	Pipe Size	Sewer Pipe Line in Mtrs.
1	200 mm i/d	3089
2	250 mm i/d	747
3	300 mm i/d	1027
4	400 mm i/d	950

Recycling of Waste Water

30% of waste water generated will be treated up to tertiary level and re circulated through PVC pipe line to contribute to Horticulture & Road Side Plantation demand.

It is mandatory to reuse the part of the Waste Water for Horticulture as per Guidelines laid by Haryana Govt.

2 Mld of Waste Water is required to be treated up to tertiary level as per details shown in the Sewerage System.

The treated waste water is required to be pumped back to the area where open space and parks have been provided

The boosting Station is proposed to be constructed at suitable point where treatment units are located.

PVC Pipe Line System may be laid from the proposed boosting station to various ends to use the recycled water.

150 mm i/d treated PVC water pipe	1744
300 mm i/d sewer line treated PVC water pipe	2746

Storm Water Drainage scheme is required to be designed as per Guide lines laid in Manual of Sewerage issued by Ministry of Works & Housing ,Govt of India

In absence of Data following assumptions may be made for designing the system

(a) Residential area Rain fall intensity @ ¾ " per Hr.

(b) Industrial area Rain fall intensity @ ¾" per Hr.

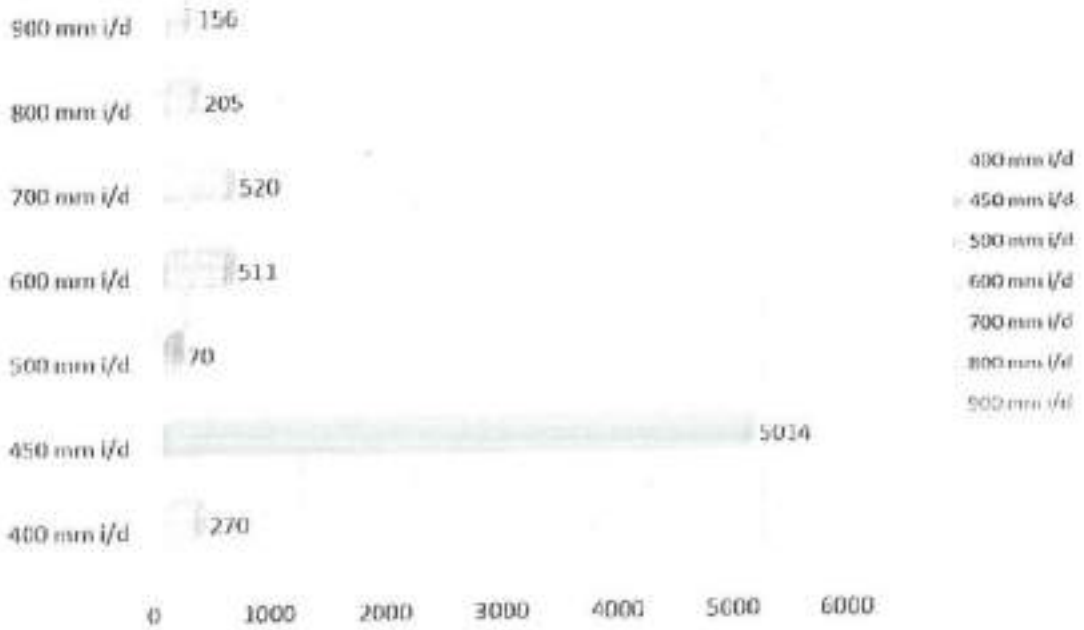
(c) Commercial area Rain fall intensity @ 1 " per Hr.

At present Master Storm Water Drainage arrangement are not available in near vicinity of Sector 36 A.

As per Master proposal for Storm Water Drainage the storm runoff from the area will be collected

It is proposed that outfall storm water drain will be constructed across the proposed outer bye pass road by HUDA authorities.

The proposed out fall drain will be connected to existing Jasia/Makroli drain for ultimate disposal in Drain no 8.



Sr. No	Size of Plot	Connected load
1	Below 220 Sq.M	16 KW
2	From 220 to 285 Sq. M.	20 KW
3	From 286 to 419 Sq. M.	25 KW
4	From 420 to 650 Sq. M.	30 KW
5	Above 650 Sq. M.	40 KW

ELECTRICAL LOAD FOR SECTOR-36A, ROHTAK

CATEGORY	PLOT NOS.	SIZE		Norms	TOTAL	DF 0.5	PF 0.9
	No.	Mts.	Sq. Yds.	kW	kW	kW	kVA
I	20	810	964	40	800	400	444
II	67	420	500	30	2010	1005	1117
II'	38	400	476	25	950	475	528
III	88	336	400	25	2200	1100	1222
III'	46	312	371	25	1150	575	639
IV	15	223	325	20	300	150	167
V	11	231	275	20	220	110	122
VI	130	166.5	198	16	2080	1040	1156
VII	[illegible]	50	60	16	1664	832	924
TOTAL	519				11374	5687	6319
EXTERNAL LIGHTING	LS				100	100	111
PRIMARY SCHOOL	1				50	50	56
NURSERY SCHOOL	2				100	100	111
NURSING HOME	2				100	100	111
CLINIC	2				100	100	111
ATM	2				20	20	22
BEAUTY PARLOUR	2				20	20	22
MILK BOOTH	2				20	20	22
MULTIPURPOSE	2				20	20	22
TAXI STAND	1				10	10	11
TOTAL					11914	6227	6919

11.1 [illegible]

The load expected in the next 10 years is detailed as under.

Year	Expected load (k Watts)
2010-11	1000
2011-12	500
2012-13	500
2013-14	500
2014-15	500
2015-16	500
2016-17	500
2017-18	500
2018-19	1000
2019-20	1000
Sub Total	6500

11.2 [illegible]

It is proposed to lay the Electrical system through 11 kV underground cables with 630//1000 kVA Distribution Transformers.

a. As per latest instructions issued by Govt. of Haryana energy efficient street lighting is to be provided in Govt. buildings, Boards, Corporations and public places.

b. Therefore, CFL lights have been proposed on street lights consisting of 2 units of CFL of 28 Watts each.

c. 150Watt sodium vapor lamps have been proposed on 24 m road on both sides at 40 m distance in a staggered manner i.e 20 m centre to centre.

d. 150Watt sodium vapor lamps have been proposed on 18 m road on one side at 25m distance.

e. At road junctions also 150 Watt sodium vapor lamps have been proposed.

f. Height of tubular pole for 24 m, 18 m wide roads and road junctions will be 6.75 m above ground level and 1.25 m below ground level.

g. Height of tubular pole for 12 m wide roads will be 5.75 m above ground level and 1.25 m below ground level.

h. Minimum lux level will be achieved with the above proposed arrangements.

- As per Haryana Government instructions energy efficient lighting is to be provided in Haryana Boards/Corporations
- It is proposed to provide CFL Lamp /Lights 40 W at 12 m wide roads on one side @25 m c/c
- The height of poll above road level is 5.75 m. & 1 with 1.5 m projection.
- The distance of poll from metalled edge is 1.40 m.
- Street Lights have been proposed at a spacing of 40mts. on both sides of the 24 mts. wide roads i.e., these shall be located alternately for proper lighting on both sides. The actual spacing would thus be 20mts.
- Street lights have been proposed at a spacing of 25mts,for 18 mts. & 12 mts. Roads.

Details of Street Light Poles & Fittings

Description	Length of Road	No of Poles	No of Fittings with 10% extra Fittings.
	Mtrs.	Nos	Nos.
			Sodium Vapour Lamps (HPSV) Of 150 Watt
24 Mtre. Road	686	33	36
18 Mtre. Road	184	7	8
Inter section of Roads			66
Sub Total			110
			Energy efficient CFL lights
12Mtre. Road	4909	196	432
Total			598

High Pressure Sodium Vapour Lamps (HPSV) of 150 Watt rating has been proposed on 24 m & 18 m wide roads and road intersections. The Street light points shall be supplied power through 25 sq. mm PVC Cables.

All street lighting shall be serviced with underground wiring placed in ducts, between poles Ducts shall be flexible non-metallic, suitable for direct burial, sized to suit wire sizes, with a minimum of 50 mm diameter. Road crossings shall be indirect burial conduit.

Earthing rods to be provided at the end of each circuit feeder and every fifth pole in between. Up to 4 streetlights may be serviced from one (1) circuit.

Phase wise circuits shall be maintained from pole to pole to ensure energy conservation i.e.1/3rd of illumination can be switched off at a time.

Electric Supply to Street lights shall be fed through different Distribution transformers being installed for giving supply to Residences. The Streetlight points shall be segregated accordingly.

Green area acts in the similar manner as lungs performs in human body. Hence its development is important for eco friendly development.

Lane grassing is proposed in all the parks.

Shrubs and creepers will be provided at suitable places.

Water body will also be provided at suitable points.

Road side plantation will be carried out as per norms i.e at 12 m c/c on foot paths.

The different variety of plants will be used as per requirements i.e. for parking area, road side, commercial area etc.

Details of Road Side Plants & Shrubs

Description	Length of Road	No of Plants at 12 m c/c	No of Plants at 12 m c/c with 10% extra Fittings.	No of Shrubs at 9 m c/c	No of Shrubs at 9 m c/c with 10% extra Fittings.
	Mtrs.	Nos.	Nos.	Nos.	Nos.
24 Mtr. Road	686	57	63	76	84
18 Mtr. Road	184	15	17	20	22
12Mtr. Road	4909	409	450	545	600
Sub Total	5779	482	1059	642	1413

15.0 Specification

The Work will be carried out in accordance with the MORTH & Haryana PWD specifications for Roads & Public Health Works. The specifications laid down by DHBVN / HVPN shall be followed for electrification & Street Lighting works

15.0 Rates

The estimates for providing services in the Project area are based on market rates. The Electrification & street lighting works are based on DHBVN /HVPN rates.

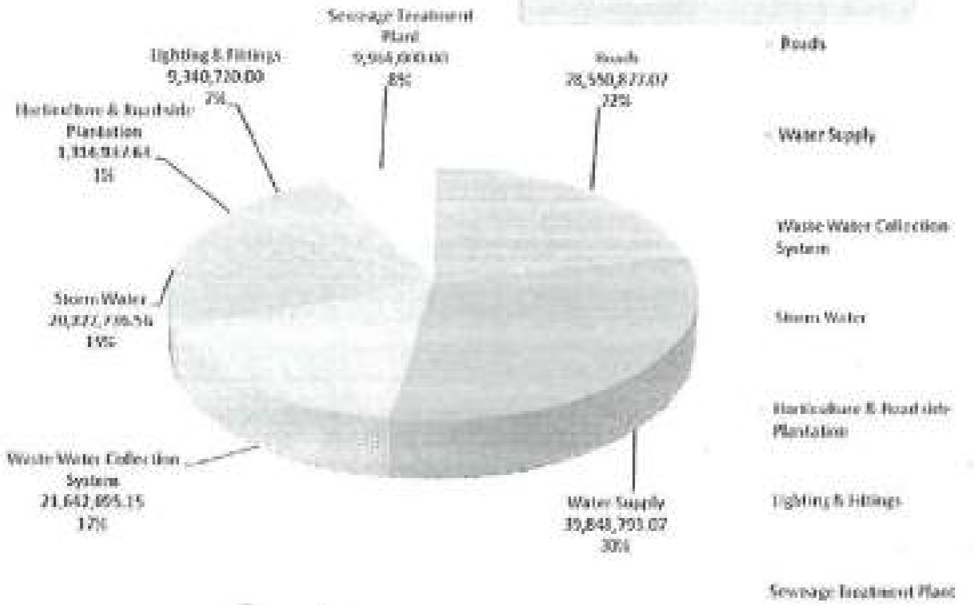
16.0 Cost

The total cost of development in this Project including various PH & B&R services works out to Rs. 1200 Lacs which include 3% contingency charges, 3% Designing Charges, 1% Quality Control & Quality Assurance Charges and 3% Advertisement & Audit Charges.

The cost per gross acre for this phase works out to Rs.15.96 lacs / acre which covers the provision of services like water supply, Sewerage, storm water drainage, roads, street lighting and plantation including plantation maintenance thereof as well as future expansion what so ever.

Final Abstract of Cost		
Sr. No.	Description	Total Cost in Rs.
1	Sub Work No. 1 (WATER SUPPLY)	Rs. [illegible] lacs
2	Sub Work No. 2 SEWERAGE SCHEME	Rs. 327.58 lacs
3	Sub Work No. 3 STORM WATER DRAINAGE	Rs. 254.02 lacs
4	Sub Work No. 4 ROADS AND FOOTPATH	Rs. 707.78 lacs
5	Sub Work No. 5 STREET LIGHT	Rs. 100.20 lacs
6	Sub Work No. 6 HORTICULTURE	Rs. 111.92 lacs
	SUB WORK No. 7- MTC CHARGES INCL. RESURFACING OF ROAD WITHIN 5 YEARS [illegible] 10 YEAR OF MAINT. AS PER HUDA NORMS	988.12 lacs
		Rs. 3009.90 lacs
	Roads @ [illegible] capital cost /yr Say Rs. 3009.90 lacs	6691128.00
	Water Supply @ 2.5% capital cost / yr	6580898.00
	Waste Water Collection System @ [illegible] capital cost / yr	3809978.00
	Storm Water @ [illegible] capital cost /yr DEV Cost Per acre	3745133.00
	Horticulture & Road Side Plantation @ [illegible] capital cost / yr 3009.90 lacs	284596.00
	Light & Fittings @ [illegible] capital cost / yr	1312488.00
	Total Cost 76.81 Acs. Rs. 39.19 lacs	21179611[illegible]

Total



XEN-I RTK

Checked subject to comments in forwarding letter No. 11562 Dt. 31/8/10 and notes attached

Restricted to [illegible] 3119.90 lacs

For KR Consultants Pvt. Ltd (Electrical)

M/s KR Consultants Pvt. Ltd.

Municipal Corporation Gurgaon

Sheet No. 1

Executive Engineer (MP) for Chief Engineer HUDA Panchkula 27/8/10

Superintending Engineer, H.U.D.A. CIRCLE, ROHTAK

Deputy General Town & Country Planning Haryana, Chandigarh

FINAL ABSTRACT OF COST :		
		Amount (Rupees in Lacs)
SUB WORK NO. I	WATER SUPPLY & FIRE FIGHTING SCHEME	570.61
SUB WORK NO. II	SEWERAGE SCHEME	277.58
SUB WORK NO. III	STORM WATER DRAINAGE	234.78 254.02
SUB WORK NO. IV	ROADS & FOOT PATHS	707.23
SUB WORK NO. V	STREET LIGHTING	100.20
SUB WORK NO. VI	HORTICULTURE	111.97
SUB WORK NO. VII 10	MTC CHARGES INCL RESURFACING OF ROADS AFTER 1ST 5 YEARS AND 2nd YEAR OF MTC(AS HUDA NORMS)	988.17
	TOTAL	2990.66
		3009.90
	Say =	2990.66
	So, Cost Per Acre =	38.93 39.18
	SAY , Lacs	38.93 Lacs

SUB WORK NO. 1 (Abstract of Cost) — Water Supply & Fire Fighting

			Amount in Rs.
1	Sub Head No. 01	Head Works	179.87
2	Sub Head No. 02	Pumping Machinary	26.10
3	Sub Head No. 03	Rising Main from HUDA	5.36
4	Sub Head No. 04	Distribution System	109.93
5	Sub Head No. 05	Fire FIGHTING	18.10
		TOTAL	Rs 339.36 lacs
		Add 3% contingencies & PH Charges	Rs 10.18 lacs
		TOTAL	Rs 349.54 lacs
		Add 49% Department Charges, Price, escalation, enforsegt/Admn.	Rs 171.27 lacs
		TOTAL	Rs 520.81 lacs
		Say (Rupees in Lacs)	Rs 520.81

Sub Work No. 1					Water Supply
Sub Head No. 01					Head Works
		Unit	Qty.	Rate	Amount in Rs.
1	Boring and installing 510mm tubewell with reverse rotary rig complete with pipe and strainer to a about 120 metre in all respect	Each	5.00	500000.00	2500000.00
2	Provision for rising mains, connecting tubewells with water main and By-pass arrangements				
	a) 150mm dia -	Rmtr.	1311.00	1350.00	1769850.00
	b) 200mm dia -	Rmtr.	201.00	1900.00	381900.00
	b) 250mm dia -	Rmtr.	342.00	2400.00	820800.00
3	Providing Tubewell Submersible Pumps : Capacity 2400 lph at 60 M head,	Each	5.00	100000.00	500000.00
4	Provision for carriage for materials and other unforseen items	L.S.			50000.00
5	Construction of U.G. tanks 778 Kl.	Kl.	778.00	3000.00	2334000.00
6	Provision for construction of Tubewell chambers of standard Size 4.9mx4.25m for Housing tubewell -	Each	5.00	250000.00	1250000.00
7	Construction of RCC OHSR of 500Kl Capacity with 25 M Staging Height including cost of inlet, out let overflow complete in all respect.	Kl.	500.00	12000.00	6000000.00
8	Providing and fixing Non Returning valve including cost of surface box and masonary etc. complete in all respects.	Ech	4.00	7500.00	30000.00
9	Provision for Staff Quarter of Maintenance				
	2 No. 350 Sq/Ft Area Hopuses @Rs 1000/-per Sft.	Sq-Ft	700.00	1000.00	700000.00
	2 No. 440 Sq/Ft Area Hopuses @Rs 1000/-per Sft	Sq-Ft	880.00	1000.00	880000.00
	1 No. 770 Sq/Ft Area Hopuses @Rs 1000/-per Sft	Sq-Ft	770.00	1000.00	770000.00
	TOTAL				17986550.00
	(C/O To Abstract of Cost for Subwork No. - 1)				
	Say (In Lacs)				179.87

Sub Work No. 1			Water Supply		
Sub Head No. 02			Pumping Machinary		
		Unit	Qty.	Rate	Amount in Rs.
1	Providing and installing electricity driven pumping set capable of delivering about 1335 LPM of water against a total head of 25 M complete with motor and other accessories 4 of (35 HP)	Each	4.00	275000.00	1100000.00
2	Provision for diesel engine Genset each for standby arrangements for Pumpy complete with gear head arrangements of following capacities	L.S			1000000.00
3	Provision for chlorination plant complete	Each	1.00	80000.00	80000.00
4	Provision for making foundations and erection of Pumping Machinary :	L.S.			100000.00
5	Provision for pipes, valves and specials inside boosting chamber :	L.S.			300000.00
6	Provision for electric service connection including electrical Fittings for tubewell and boosting chamber etc including cost of Transformer.	L.S.			25000.00
7	Provision for carriage of material and other unforseen items etc.	L.S.			5000.00
	TOTAL				2610000.00
	(C/O To Abstract of Cost for Subwork No. - 1)				
	Say (in Lacs)				26.10

Sub Work No. 1					Water Supply
Sub Head No. 03					Rising Main from HUDA
		Unit	Qty.	Rate	Amount in Rs.
1	Providing, laying, jointing and testing pipe lines including cost excavation etc. complete in all respects.				
	150 mm dia. D.I.	Metre	271.00	1350.00	365850.00
2	Providing and fixing sluice valve including cost of surface box and masonry etc. complete in all respects.				
	150 mm	Each	1.00	12000.00	12000.00
3	Providing and fixing indicating plates for sluice valve and air valve	Each	1.00	1000.00	1000.00
4	Providing and fixing air release valve.	Each	1.00	7500.00	7500.00
5	Provision for carriage for materials and other unforeseen items	L.S.			50000.00
6	Making Water Supply Connection with HUDA main	L.S.			50000.00
7	Provision for cutting of roads and making good to its original conditions	L.S.			50000.00
	TOTAL				536350.00
	(C/O To Abstract of Cost for Subwork No. - 1)				
	Say (in Lacs)				5.36

Material Statement					
Line	HUDA-HE Tank				
Daily Domestic Demand (in KL)	2880 KL 1491 × 1.50 = 2237 KLD or 49.331 gpm				
Total Length (Meter)	271				
Dia. (MM)	150 mm				
Velocity	5.13'/1000' or 1.56 m/1000				

Loss in line 0.42 m

Sub Work No. I					Water Supply
Sub Head No. 04					Distribution System
		Unit	Qty.	Rate	Amount in Rs.
1	Providing, laying, jointing and testing D.I pipe K 9 lines including Fitting, Valves, cost of excavation etc. complete in all respects.				
	D.I pipe 100 mm,	Rmtrs.	2942.00	950.00	2794900.00
	D.I pipe 150 mm,	Rmtrs.	1757.00	1350.00	2371950.00
	D.I pipe 200 mm,	Rmtrs.	632.00	1900.00	1200800.00
	D.I pipe 250 mm,	Rmtrs.	1293.00	2500.00	3232500.00
	D.I pipe 300 mm,	Rmtrs.	30.00	2800.00	84000.00
2	Provision for carriage of materials and other unforeseen items	L.S.			50000.00
3	Providing and fixing Sluice valves :-				
	100 mm dia	Each	37.00	10000.00	370000.00
	150 mm dia	Each	22.00	12000.00	264000.00
	200 mm dia	Each	12.00	15000.00	180000.00
	250 mm dia	Each	12.00	16000.00	192000.00
	300 mm dia	Each	1.00	18000.00	18000.00
4	Providing and fixing air release valve and scover valve .	Each	20.00	7500.00	150000.00
5	Providing and fixing indicating plates for sluice valve,scover valve and air release valve	Each	85.00	1000.00	85000.00
	TOTAL				10993150.00
	(C/O To Abstract of Cost for Subwork No. - 1)				
	Say (in Lacs)				109.93

Sub Work No. 1					Water Supply
Sub Head No. 05					External Fire Hydrant Fire FIGHTING
		Unit	Qty.	Rate	Amount In Rs.
1	Providing and fixing Fire Hydrant	Each	207.00	7500.00	1552500.00
2	Providing for carriage of material (L.S.)	L.S.		50000.00	50000.00
3	Providing for indication Plates	Each	207.00	1000.00	207000.00
				TOTAL	1809500.00
	(C/O To Abstract of Cost for Subwork No. - 1)				
		Say (in Lacs)			18.10

Material statement for Water Supply System

Sl. No	From	To	Line No.	Length Of Line	Size Of Main	Length Of Line					No. Of Sluice Valves				
						100	150	200	250	300	100	150	200	250	300
				Mtr	MM										
1	OHT	X	OHT X	30	300					30					1
2	X	V	X-V	205	250				205					1	
3	V	V1	V-V1	71	100	71					1				
4	V	U	V-U	154	250		250		154					1	
5	U	T1	U-T1	252	150		202					1			
6	U	U1	U-U1	79	250				79					1	
7	U1	U2	U1-U2	56	100	56					1				
8	U1	S	U1-S	128	250				128					2	
9	S	S1	S-S1	97	100	97					1				
10	S	R	S-R	68	250				68					1	
11	R	R1	R-R1	185	100	185					1				
12	R1	R2	R1-R2	67	150		67					1			
13	R2	R3	R2-R3	22	100	22					1				
14	R2	T1	R2-T1	68	150		68					1			
15	T1	T2	T1-T2	64	150		64					1			
16	T2	T3	T2-T3	86	100	86					1				
17	T2	T4	T2-T4	82	150		82					1			
18	T4	T5	T4-T5	166	150		166					1			
19	T5	T6	T5-T6	95	100	95					1				
20	T5	W	T5-W	100	150		100					1			
21	W	X	W-X	85	150		85					1			
22	R1	P1	R1-P1	60	100	60					1				
23	P2	P1	P2-P1	33	100	33					1				
24	P1	P	P1-P	64	100	64					1				
25	P	Q	P-Q	245	250				245					1	
26	R	Q	R-Q	64	250				64					1	
27	Q	Q1	Q-Q1	112	100	112					1				
28	Q1	Q2	Q1-Q2	85	100	85					1				
29	Q2	Q3	Q2-Q3	49	100	49					1				
30	Q3	Q4	Q3-Q4	28	100	28					1				
31	Q2	Q5	Q2-Q5	79	100	79					1				
32	M	M1	M-M1	127	100	127					1				
33	P	O	P-O	97	250				97					1	
34	O	M1	O-M1	75	250				75					1	
35	O	N	O-N	128	100	128					1				
36	N	M	N-M	28	100	28					1				
37	M1	L1	M1-L1	108	250				108					1	
38	M	L	M-L	102	100	100					1				
39	L	L1	L-L1	127	200			127					1		
40	L1	N	L1-N	70	250				70					1	
41	N	N1	N-N1	108	100	108					1				
42	N1	N2	N1-N2	53	100	53					1				
43	N	G	N-G	64	200			64					1		
44	G	G'	G-G'	150	150		150					1			
45	G'	F1	G'-F1'	64	150		64					1			
46	F1	F	F1-F	185	150		185					1			
47	G	F	G-F	73	200			73					1		
48	F	E	F-E	39	200			39					1		
49	E	D	E-D	33	200			33					1		

Sl. No	From	To	Line No.	Length Of Line	Size Of Main	Length Of Line					NO. OF Sluice Valves				
						100	150	200	250	300	100	150	200	250	300
50	D	D1	D-D1	214	100	214					1				
51	F1	D1	F1-D1	68	150		68					1			
52	D1	B4	D1-B4	72	150		72					1			
53	D	C	D-C	16	200			16					1		
54	C	B	C-B	45	200			45					1		
55	B	B1	B-B1	62	200			62					1		
56	B1	B1'	B1-B1'	90	100	90					1				
57	B1	B2	B1-B2	49	200			49					1		
58	B2	B2'	B2-B2'	75	100	75					1				
59	B2	B3	B2-B3	49	200			49					1		
60	B3	B3'	B3-B3'	59	100	59					1				
61	B3	B4	B3-B4	75	200			75					1		
62	B4	B5	B4-B5	104	150		104					1			
63	B5	B6	B5-B6	125	100	125					1				
64	B6	B6'	B6-B6'	49	100	49					1				
65	B6'	B6''	B6'-B6''	15	100	15					1				
66	B6'	B5'	B6'-B5'	112	100	112					1				
67	B5''	B5'	B5''-B5'	16	100	16					1				
68	B5'	B5	B5'-B5	51	100	51					1				
69	L	K	L-K	37	150		37					1			
70	K1	K	K1-K	49	100	49					1				
71	K	J	K-J	37	150		37					1			
72	J1	J	J1-J	69	100	69					1				
73	J	I	J-I	37	150		37					1			
74	I1	I	I1-I	69	100	69					1				
75	I	E1	I-E1	37	150		37					1			
76	E1	E	E1-E	84	100	84					1				
77	E1	C1	E1-C1	37	150		37					1			
78	C1	C	C1-C	47	100	47					1				
79	C1	A	C1-A	53	150		53					1			
80	A	B	A-B	26	150		26					1			
81	A	A'	A-A'	88	100	88					1				
	TOTAL			6654		2942	1757	632	1293	30	37	21	11	11	1

Sub Work No. II					Sewerage System
		Unit	Qty.	Rate	Amount in Rs.
1	Providing, Joining, cutting and testing SW pipe class "A" and lowering into trenches including cost of excavation, bed concrete, cost of manholes etc. complete				
	a) SW pipe 200 mm i/d avg. depth 0-2 M	Rmtrs	3089.00	1250.00	3861250.00
	c) SW pipe 250 mm i/d avg. depth 2-4 M	Rmtrs	747.00	1500.00	1120500.00
	d) SW pipe 300 mm i/d avg. depth 2-4 M	Rmtrs	1027.00	1600.00	1643200.00
	f) SW pipe 400 mm i/d avg. depth 4-6 M	Rmtrs	950.00	1600.00	1520000.00
2	Provision of carriage of material	L.S.			50000.00
3	Provision for lighting and watching	L.S.			50000.00
4	Provision for making HUDA Connection	L.S.			150000.00
5	Providing for temporary fencing	L.S.			250000.00
6	Providing for Temporary Disposal arrangment / STP	L.S.			12000000.00
7	Provision for Vent shafts at suitable places as per Public Health requirements.	L.S.			500000.00
8	Provision for cutting of roads & making good to its original conditions	L.S.			200000.00
	TOTAL				21344950.00
	Add 3% Contingencies & PH charges				640348.50
	TOTAL				21985298.50
	Add 49% Department charges, price, escalation, unforseen, Admin charges				10772796.27
	TOTAL				32758094.77
	Say (in Lacs)				327.58 Lacs

				Material Detail of Waste Water												
Sl. No.	Node at Start	Node at End	Name of Line	Total Length of 200 mm I/d Pipe	Average Depth of 200 mm I/d Pipe	Total Length of 250mm id Pipe line	Average Depth of 250 mm I/d	Total Length of 300mm Id Pipe line	Average Depth of 300 mm I/d	Total Length of 400mm Id Pipe line	Average Depth of 400 mm I/d	Total No of Man Holes 200 mm I/d Pipe	Total No of Man Holes of 250mm Id Pipe line	Total No of Man Holes of 300mm Id Pipe line	Total No of Man Holes of 400mm Id Pipe line	Vivid Shaft
				M	M	M	M	M	M	M	M	M	M	M	M	
1	W1	V	W1-V	81.00	1.10	0.00		0.00		0.00		2	0	0	0	
2	V1	V	V1-V	45.00	1.30	0.00		0.00		0.00		2	0	0	0	
3	V	U	V-U	0.00		0.00		248.00	1.66	0.00		0	0	8	0	1
4	U	U	U'-U	43.00		0.00		0.00		0.00						
5	U	U2	U-U2	0.00		0.00		94.00	2.00	0.00						
6	U2	S	U2-S	0.00		0.00		67.00	2.13	0.00		0	0	2	0	
7	S1	S	S1-S	70.00	1.35	0.00		0.00		0.00		2	0	0	0	
8	S	R	S-R	0.00		0.00		67.00	2.26	0.00		0	0	2	0	1
9	C	R		57.00		0.00		0.00		0.00						
10	R	R1	R-R1	0.00		0.00		185.00	2.53	0.00		0	0	6	0	
11	W	T5	W-T5	51.00	1.05	0.00		0.00		0.00		2	0	0	0	
12	T6	T5	T6-T5	99.00	1.41	0.00		0.00		0.00		3	0	0	0	
13	T5	T4	T5-T4	177.00	2.10	0.00		0.00		0.00		6	0	0	0	1
14	T4	T2	T4-T2	0.00		89.00	2.71	0.00		0.00		0	3	0	0	
15	T3	T2	T3-T2	75.00	1.30	0.00		0.00		0.00		3	0	0	0	1
16	T2	T	T2-T	0.00		56.00	2.91	0.00		0.00		0	2	0	0	
17	T1	T	T1-T	185.00	1.70	0.00		0.00		0.00		6	0	0	0	
18	T	R2	T-R2	0.00		0.00		67.00	3.07	0.00		0	0	2	0	1
19	R3	R2	R3-R2	24.00	1.26	0.00		0.00		0.00		1	0	0	0	
20	R2	R1	R2-R1	0.00		0.00		68.00	3.21	0.00		0	0	2	0	
21	R3	P1	R3-P1	0.00		0.00		0.00		60.00	3.33	0	0	0	2	
22	P2	P1	P2-P1	10.00	1.22	0.00		0.00		0.00		0	0	0	0	1
23	P1	P	P1-P	0.00		0.00		0.00		65.00	3.42	0	0	0	2	
	Q5	Q2	Q5-Q2	81.00	1.38	0.00		0.00		0.00		3	0	0	0	
25	Q4	Q3	Q4-Q3	61.00	1.33	0.00		0.00		0.00		2	0	0	0	
26	Q3	Q2	Q3-Q2	48.00	1.57	0.00		0.00		0.00		2	0	0	0	1
27	Q2	Q1	Q2-Q1	75.00	1.84	0.00		0.00		0.00		3	0	0	0	
28	Q1	Q	Q1-Q	0.00		128.00	2.18	0.00		0.00		0	4	0	0	1
29	Q	P	Q-P	0.00		245.00	2.65	0.00		0.00		0	8	0	0	
30	P	O	P-O	0.00		0.00		0.00		93.00	3.54	0	0	0	3	1
31	N	O	N-O	51.00	1.33	0.00		0.00		0.00		2	0	0	0	
32	O	M	O-M	0.00		0.00		0.00		78.00	3.67	0	0	0	3	
33	M1	M	M1-M	103.00	1.46	0.00		0.00		0.00		3	0	0	0	
34	M	L1	M-L1	0.00		0.00		0.00		115.00	5.82	0	0	0	4	1
35	H2	H1	H2-H1	71.00	1.38	0.00		0.00		0.00		2	0	0	0	1
36	H1	H	H1-H	105.00	1.85	0.00		0.00		0.00		4	0	0	0	
37	H	L1	H-L1	61.00	2.31	0.00		0.00		0.00		2	0	0	0	
38	L1	L	L1-L	0.00		0.00		0.00		132.00	4.01	0	0	0	4	
39	L	K	L-K	0.00		0.00		0.00		35.00	4.12	0	0	0	1	
40	K1	K	K1-K	42.00	1.31	0.00		0.00		0.00		1	0	0	0	
41	K	J	K-J	0.00		0.00		0.00		37.00	4.17	0	0	0	1	
42	J1	J	J1-J	58.00	1.35	0.00		0.00		0.00		2	0	0	0	1
43	J	I	J-I	0.00		0.00		0.00		37.00	4.23	0	0	0	1	

Material Detail of Waste Water																
Sl. No.	Node at Start	Node at End	Name of Line	Total Length of 200 mm I/d Pipe	Average Depth of 200 mm I/d Pipe	Total Length of 250mm Id Pipe line	Average Depth of 250 mm I/d	Total Length of 300mm Id Pipe line	Average Depth of 300 mm I/d	Total Length of 400mm Id Pipe line	Average Depth of 400 mm I/d	Total No of Man Holes 200 mm I/d Pipe	Total No of Man Holes of 250mm Id Pipe line	Total No of Man Holes of 300mm Id Pipe line	Total No of Man Holes of 400mm Id Pipe line	Vent Shaft
				M	M	M	M	M	M	M	M	M	M	M	M	
1	W1	V	W1-V	81.00	1.10	0.00		0.00		0.00		3	0	0	0	
44	I1	I	I1-I	66.00	1.37	0.00		0.00		0.00		2	0	0	0	
45	I	E	I-E	0.00		0.00		0.00		37.00	4.29	0	0	0	1	
46	E1	E	E1-E	62.00	1.37	0.00		0.00		0.00		2	0	0	0	
47	E	C	E-C	0.00		0.00		0.00		37.00	4.35	0	0	0	1	1
48	C1	C	C1-C	34.00	1.28	0.00		0.00		0.00		1	0	0	0	
49	C	A	C-A	0.00		0.00		0.00		58.00	4.43	0	0	0	2	
50	G'	G	G'-G	135.00	1.52	0.00		0.00		0.00		5	0	0	0	1
51	G	F	G-F	72.00	2.02	0.00		0.00		0.00		2	0	0	0	1
52	F1	F	F1-F	159.00	1.56	0.00		0.00		0.00		5	0	0	0	
53	F	D	F-D	71.00	2.41	0.00		0.00		0.00		2	0	0	0	
54	D1	D	D1-D	181.00	1.61	0.00		0.00		0.00		6	0	0	0	1
55	D	B	D-B	0.00		0.00		64.00	2.72	0.00		0	0	2	0	
56	B6'	B6	B6'-B6	98.00	1.34	0.00		0.00		0.00		2	0	0	0	
57	B6	B5	B6-B5	128.00	1.76	0.00		0.00		0.00		4	0	0	0	
58	B7'	B7	B7'-B7	91.00	1.42	0.00		0.00		0.00		3	0	0	0	
59	B7	B5	B7-B5	51.00	1.73	0.00		0.00		0.00		2	0	0	0	
60	B5	B4	B5-B4	0.00		106.00	2.14	0.00		0.00		0	4	0	0	
61	B'4	B4	B'4-B4	169.00	1.72	0.00		0.00		0.00		5	0	0	0	
62	B4	B3	B4-B3	0.00		74.00	2.30	0.00		0.00						
63	B3'	B3	B3'-B3	43.00	1.33	0.00		0.00		0.00		1	0	0	0	1
64	B3	B2	B3-B2	0.00		49.00	2.41	0.00		0.00		0	1	0	0	
65	B2'	B2	B2'-B2	56.00	1.34	0.00		0.00		0.00		2	0	0	0	
66	B2	B1	B2-B1	0.00		0.00		49.00	2.48	0.00		0	0	2	0	
67	B1'	B1	B1'-B1	62.00	1.36	0.00		0.00		0.00		2	0	0	0	1
68	B1	B	B1-B	0.00		0.00		61.00	2.56	0.00		0	0	2	0	
69	B	A		0.00		0.00		57.00	2.89	0.00						
1	A	HUDA Sewer	A-HUDA Sewer	0.00		0.00		0.00		168.00	4.62					
				3089.00	1.52	747.00	2.42	1027.00	2.50	958.00	4.00	100	22	29	26	18

Sub Work No. III				Storm Water Scheme	
		Unit	Qty.	Rate	Amount in Rs.
1	Providing, lowering, jointing cutting R.C.C. NP-3 pipes and specials into Trencher including cost of excavation cost of manholes, ventilating chambers etc. complete in all respect.				
	a) 400 mm dia avg. depth 0-2 M	Rmtrs	5014.00	1450.00	7270300.00
	b) 450 mm dia avg. depth 0-2 - 4M	Rmtrs	270.00	1800.00	486000.00
	c)500 mm dia avg. depth 0-2 - 4M	Rmtrs	70.00	2100.00	147000.00
	d)600 mm dia avg. depth 0-2 - 4M	Rmtrs	511.00	2600.00	1328600.00
	e)700 mm dia avg. depth 0-2 - 4M	Rmtrs	520.00	3500.00	1820000.00
	f)800 mm dia avg. depth 0-2 - 4M	Rmtrs	205.00	4000.00	820000.00
	g)900 mm dia avg. depth 0-2 - 4M	Rmtrs	156.00	5000.00	780000.00
2	Provision of Road gullies with 300 mm dia Pipe Connection	L.S.			300000.00
3	Provision for Shoring & Timbering (L.S)	L.S.			500000.00
4	Provision for Lighting, Watching (L.S)	L.S.			250000.00
5	Provision for Carriage of Material (L.S)	L.S.			150000.00
6	Provision for Making Connection to HUDA Line (L.S)	L.S.			50000.00
7	Providing for temporary disposal arrangment (L.S.)	L.S.			2500000.00
8	Provision for cutting of roads & making good to its original conditions (L.S.)	L.S.			150000.00
	TOTAL				16551900.00
	Add 3% Contingencies & PE charges				496557.00
	TOTAL				17048457.00
	Add 49% Department charges, price, escalation unforseen, Admn charges				8353743.93
	TOTAL				25402200.93
	Say (in Lacs)				254.02

MATERIAL STATEMENT OF STORM WATER DRAINAGE SYSTEM.

Sl. No	Node at Start	Node at End	Name of Line	Length in mtr.		Pipe dia	Length in mtr.						
				Mtr	Sq.M	MM	400	450	500	600	700	800	900
1	B6'	B6	B6'-B6	64	2071.5	400	64						
2	B6	B5	B6-B5	127	4827.8	400	127						
3	B7'	B7	B7'-B7	112	4823.58	400	112						
4	B7"	B7	B7"-B7	16	305.5	400	16						
5	B7	B5	B7-B5	51	3590.1	400	51						
6	B5	B3	B5-B3	180	13820.97	400	180						
7	B3'	B3	B3'-B3	59	1931.7	400	59						
8	B3	B2	B3-B2	49	1707.8	400	49						
9	B2'	B2	B2'-B2	75	3167	400	75						
10	B2	B1	B2-B1	49	1745.9	400	49						
11	B1'	B1	B1'-B1	90	4779.5	400	90						
12	B1	D	B1-D	61	1718.5	400	61						
13	B	D	B-D	63		450		63					
14	D1	D	D1-D	208	14215.85	400	208						
15	D	F	D-F	71		450		71					
16	F1	F	F1-F	186	12268.93	400	186						
17	F	G	F-G	72		450		72					
18	B4	G'	B4-G'	200	14512.12	400	200						
19	G'	G	G'-G	158	8544.2	400	158						
20	G	H	G-H	64		450		64					
21	A'	A	A'-A	94	4653.5	400	94						
22	A	C	A-C	141	3952.4	400	141						
23	C1	C	C1-C	50	1218.26	400	50						
24	C	E	C-E	37		400	37						
25	E1	E	E1-E	84	3372	400	84						
26	E	I	E-I	40		400	40						
27	I1	I	I1-I	70	3362.3	400	70						
28	I	J	I-J	37		400	37						
29	J1	J	J1-J	69	2852.73	400	69						
30	J	K	J-K	37		400	37						
31	K1	K	K1-K	49	2606.85	400	49						
32	K	L	K-L	38		400	38						
33	L	L1	L-L1	128	9480.6	400	128						
34	H2	H1	H2-H1	32	4806.85	400	32						
35	H1	H	H1-H	107		400	107						
36	H	L1	H-L1	70	5302.75	500			70				
37	L1	M	L1-M	109	18714.5	600				109			
38	M1	M	M1-M	99	9395.4	400	99						
39	M	O	M-O	75	3700.25	600				75			
40	L'	N	L'-N	123		400	123						
41	N	O	N-O	56	5271.15	400	56						
42	O	P	O-P	97	6473	600				97			
43	P1	P	P1-P	33	1134.37	400	33						
44	P	R	P-R	230	15725.89	600				230			
45	Q5	Q2	Q5-Q2	99	2892.39	400	99						
46	Q4	Q3	Q4-Q3	78	3784	400	78						
47	Q3	Q2	Q3-Q2	49	726.57	400	49						
48	Q2	Q1	Q2-Q1	85	3728.47	400	85						
49	Q1	Q	Q1-Q	193	4383.8	400	193						
50	Q'	Q	Q'-Q	232	11541	400	232						
51	Q	R	Q-R	61	1385.6	400	61						
52	R	S	R-S	68	1358.2	700					68		
53	S1	S	S1-S	97	9062.42	400	97						
54	S	U1	S-U1	126	7179.7	700					126		
55	U2	U1	U2-U1	67	5247.3	400	67						
56	U1	U	U1-U	80	2451.57	700					80		
57	R1	R2	R1-R2	68	1624.53	400	68						
58	R3	R2	R3-R2	27	1467.64	400	27						
59	R2	T	R2-T	68	2002.43	400	68						
60	T	U	T-U	202	142278.8	400	202						
61	U	V	U-V	246	7875.9	700					246		
62	V1	V	V1-V	71	2666.6	400	71						
63	V	W	V-W	205	9329.5	800						205	
64	T1	T2	T1-T2	64	783	400	64						
65	T3	T2	T3-T2	86	5903.6	400	86						
66	T2	T4	T2-T4	87	8089.67	400	87						
67	T4	T5	T4-T5	169	15258.96	400	169						
68	T6	T5	T6-T5	97	3598.45	400	97						
69	T5	W	T5-W	105	5168.55	400	105						
70	W	X	W-X	156		900							156
				3749	[illegible]ement_storm water		9098	270	70	511	520	205	156
					109.8493								6746

Sub Work No. IV					Road Work
		Unit	Qty.	Rate	Amount in Rs.
1	Providing for leveling & earth filling as per site conditions.	Acre	76.81	100000.00	7681200.00
2	i) Construction of roads by providing granular sub-base 150 mm as per MORT & H Specifications conforming to clause 401 grading - II 400.1.				
	ii) Providing, laying, spreading & compacting hand broken / crushed stone aggregate to wet mix macadam conforming to physical requirement laid in 400 of MORT &H Specifications in two layers(compacted to 150mm) (0.75+0.75 mm)by taking material 1.32 times of the (thickness of the layer);including premixing of material with water in mechanical mixer.				
	iii) 50 mm thick B.M.				
	iv) 20 mm thick mix seal surfacing.				
		Sq-M	39970.00	800.00	31976000.00
3	Provision for kerbs & channels of CC 1:1½:3m	Rmtrs.	12152.00	400.00	4860800.00
4	Provision for Guide Maps and Indicator Boards / Demarcation Singh	L.S.			500000.00
5	Provision for Footpath on 18M and 24 M Wide Road (Both side)	Rmtrs			966000.00
6	Provision for Carriage of Material	L.S			100000.00
	TOTAL				46084000.00
	Add 3% Contingencies & PE charges				1382520.00
	TOTAL				47466520.00
	Add 49% Department charges, price, escalation unforseen, Admin charges				23258594.80
	TOTAL				70725114.80
	Say (in Lacs)				707.25

Design Statement & Formation Levels for Sec.36A - Rohtak

Sr. No.	Upper end Node	Lower end Node	Length of Road	Road Width	Length of 12 mtr. wide road	Length of 18 mtr. wide road	Length of 24 mtr. wide road	Length of Existing Road	Formation Level upper end	Formation Level Lower node	Natural Surface Level upper end	Natural Surface Level lower node
			Mtrs	Mtrs	Mtrs	Mtrs	Mtrs	Mtrs	Mtrs	Mtrs	Mtrs	Mtrs
			24 Mtr. Road									
1	V	W	193	24	0	0	193	0	221.48	221.45	220.87	220.83
2	III	III	73.54	24	0	0	73.54	0	221.51	221.52	221.01	220.90
3	U	V	154.25	24	0	0	154.25	0	221.50	221.48	220.96	220.87
4	U	U1	68.06	24	0	0	68.06	0	221.50	221.51	220.96	221.01
5	I1	I	127.57	24	0	0	127.57	0	221.59	221.58	220.92	220.84
6	H	I3	69.78	24	0	0	69.78	0	221.56	221.59	220.84	220.92
			686.2				686.2					
			18 Mtr. Road									
7	M1	O	75	18	0	75	0	0	221.55	221.55	221.01	221.10
8	I1	M1	108.75	18	0	108.75	0	0	221.59	221.55	220.92	221.01
			184			184						
			12Mtr. Road									
9	V	V1	70	12	70	0	0	0	221.48	221.49	220.87	220.87
10	U1	U2	60	12	60	0	0	0	221.53	221.57	221.01	220.95
11	T2	T3	94.35	12	94.35	0	0	0	221.57	221.53	220.89	220.99
12	T2	T4	82	12	82	0	0	0	221.57	221.54	220.89	220.86
13	T4	T5	64.11	12	64.11	0	0	0	221.53	221.57	220.92	220.89
14	T	U	72.26	12	72.26	0	0	0	221.50	221.50	220.94	220.96
15	T	T1	184.7	12	184.7	0	0	0	221.50	221.53	220.94	220.92
16	S	U2	68.27	12	68.27	0	0	0	221.53	221.50	220.92	220.94
17	S	S1	97.1	12	97.1	0	0	0	221.53	221.52	220.92	220.93
18	R2	R3	27.25	12	27.25	0	0	0	221.53	221.53	220.28	220.59
19	R2	T1	67.58	12	67.58	0	0	0	221.53	221.53	220.28	220.92
20	R1	R2	67.65	12	67.65	0	0	0	221.54	221.53	220.86	220.28
21	R1	R	184.7	12	184.7	0	0	0	221.54	221.52	220.86	220.09
22	R	S	67.64	12	67.64	0	0	0	221.52	221.53	220.09	220.97
23	Q3	Q4	77.43	12	77.43	0	0	0	221.55	221.57	220.92	221.08
24	Q2	Q3	47.5	12	47.5	0	0	0	221.55	221.55	220.97	220.97
25	Q2	Q5	96.36	12	96.36	0	0	0	221.55	221.56	220.97	220.85
26	Q1	Q2	84.52	12	84.52	0	0	0	221.54	221.55	220.86	220.97
27	Q	R	64	12	64	0	0	0	221.52	221.52	220.98	220.09
28	Q	Q1	112.36	12	112.36	0	0	0	221.52	221.54	220.98	220.96
29	P1	P2	33.36	12	33.36	0	0	0	221.55	221.56	221.02	221.03
30	P1	R1	60.35	12	60.35	0	0	0	221.55	221.54	221.02	220.86
31	P	Q	245.05	12	245.05	0	0	0	221.54	221.52	220.94	220.98
32	P	P1	64.00	12	64.00	0	0	0	221.54	221.55	220.94	221.02
33	O	P	96.78	12	96.78	0	0	0	221.55	221.54	221.10	220.94
34	N	O	128	12	128	0	0	0	221.56	221.55	221.07	221.10
35	M	N	28.28	12	28.28	0	0	0	221.57	221.56	221.00	221.02
36	M	M1	136.86	12	136.86	0	0	0	221.57	221.55	221.00	221.01
37	L	M	109.08	12	109.08	0	0	0	221.58	221.57	220.84	221.00
38	K	L	37.62	12	37.62	0	0	0	221.58	221.58	220.88	220.84
39	K	K1	49.29	12	49.29	0	0	0	221.58	221.58	220.88	220.79
40	J	K	37	12	37	0	0	0	221.58	221.58	220.87	220.88
41	J	I3	69.45	12	69.45	0	0	0	221.56	221.59	220.87	220.92
42	I	J	37	12	37	0	0	0	221.59	221.58	220.86	220.87
43	I	I1	69.27	12	69.27	0	0	0	221.59	221.59	220.88	220.98
44	H1	H2	58.45	12	58.45	0	0	0	221.54	221.55	220.73	220.91
45	G	G'	158.63	12	158.63	0	0	0	221.57	221.65	220.83	221.01
46	I1	G'	64.27	12	64.27	0	0	0	221.59	221.65	221.05	221.01
47	I	F1	188.36	12	188.36	0	0	0	221.58	221.69	220.87	221.05
48	E1	I	36.94	12	36.94	0	0	0	221.59	221.59	220.83	220.86
49	I	I1	80	12	80	0	0	0	221.58	221.59	220.86	220.83

Design Statement & Formation Levels for Sec.36A - Rohtak

Sr. No	Upper end Node	Lower end Node	Length of Road	Road Width	Length of 12 mtr wide road	Length of 18 mtr wide road	Length of 24 mtr wide road	Length of Existing Road	Formation level	Formation Level	Natural Surface Level	Natural Surface Level
									upper end	Lower node	upper end	Lower node
			Mtrs	Mtrs	Mtrs	Mtrs	Mtrs	Mtrs	Mtrs	Mtrs	Mtrs	Mtrs
51	D	D1	214.28	12	214.28	0	0	0	221.58	221.72	220.92	221.05
52	C1	E1	37	12	37	0	0	0	221.60	221.59	220.70	220.83
53	C	C1	47.2	12	47.2	0	0	0	221.55	221.60	220.60	220.20
54	B6'	B6"	15.3	12	15.3	0	0	0	221.94	221.95	220.95	220.98
55	B6	B6'	49	12	49	0	0	0	221.93	221.94	221.06	220.95
56	B5'	B5"	36.48	12	36.48	0	0	0	221.90	221.91	221.00	220.98
57	B5'	B2'	113.85	12	113.84	0	0	0	221.90	221.94	221.00	220.95
58	B5	B5'	51.27	12	51.27	0	0	0	221.82	221.90	221.01	221.00
59	B5	B6	127.28	12	127.28	0	0	0	221.82	221.93	221.01	221.06
60	B4	D1	71.94	12	71.94	0	0	0	221.75	221.72	220.93	221.05
61	B4	B5	104.38	12	104.38	0	0	0	221.75	221.82	220.93	221.01
62	B3	B3'	59.18	12	59.18	0	0	0	221.70	221.71	221.00	221.36
63	B3	B4	75.40	12	75.40	0	0	0	221.70	221.75	221.00	220.93
64	B2	B2'	75.54	12	75.54	0	0	0	221.65	221.67	221.04	220.91
65	B2	B3	49.05	12	49.00	0	0	0	221.65	221.70	221.04	221.00
66	B1	B1'	90.15	12	90.15	0	0	0	221.60	221.64	220.79	220.75
67	B1	B2	49.12	12	49.12	0	0	0	221.60	221.65	220.79	221.04
68	B	B1	65	12	65	0	0	0	221.63	221.60	220.82	220.79
69	A	C1	53.27	12	53.27	0	0	0	221.60	221.63	221.45	220.70
			4509		6503	0	0	0				
			5779		4909	184	686.20					

4908.64

say 4910 m 184 690 mtr

Sub Work No. V		Street Lighting
		Amount in Rs.
1	Providing lighting at surroundings Area as per specifications of HVPNL 76.81 acres @ Rs. 85,000/- per acre	6528850
	TOTAL	6528850
	Add 3% Contingencies & PE charges	195865.5
	TOTAL	6724715.5
	Add 49% Department charges, price, escalation unforseen, Admn charges	3295111
	TOTAL	10019826
	Say (in Lacs)	100.20

Sub Work No. VI	Horticulture(Plantation & Road Side Trees)	
		Amount in Rs.
1	Development of Lawn Area : a) Trenching of ordinary soil upto depth of 60 cm in terrace & stacking of serviceable material & disposing by spreading and leveling within a lead of 50 M and making up the trenched area for proper levels by filling with earth as earth mixed with manure before and after flooding trench with water in cost of imported earth and manure b) rough dressing of turfed area. c) Grassing with "DOOB GRASS" i/c watering and maintenance of lawns for 30 days till the grass forms a thick lawn, free from weeds and fit for mowing in row 7.5 cm part in either direction. 76.81 Acres @ Rs. 90,000/Acre		6912900
2	Providing and planting trees along boundary @ 12 m interval Total road length 6076 m No. of trees 6076/12 = 506 nos. Say 506 Nos. **Cost Details :** Excavation 30 Manure 60 Tree Plant 60 Tree Guard 600 Total 750 506 nos. trees @ Rs. 750/- each		379500
	TOTAL Add 3% Contingencies & PE charges TOTAL Add 49% Department charges, price escalation unforseen, Admn charges		7292400 218772 7511172 3680474
	TOTAL		11191646
	Say (in Lacs)		111.92

Sub Work No. VII — Services & Resurfacing of Roads

		Amount in Rs.
1	Provision of MTC Charges for W/s, SWD Sewerage, Roads, Steet Lighting, Horticulture etc a) Complete in all aspect, including operational and establishment charges as per HUDA norms after completion. 76.83 acres @ Rs. 5.00 lacs per acre	Rs 38405000
2	Provision of resurfacing of roads after 5 years of MTC one layer of 100 mm thick BUSG. Compacted to 75 mm thick premix carpet with seal coat 39970sq mt. @ Rs. 350/- per sq.mt.	13989500
3	Resurfacing of road after 10 years of MTC i.e 25 mm thick premix carpet with machanical paver 39970sq mt. @ Rs. 300/- per sq. mt	11991000
	TOTAL Add 3% Contingencies & PH charges TOTAL Add 49% Department charges, price, escalation unforseen, Admn charges TOTAL	64385500 1931565 66317065 32495363 98812428
	Say (in Lacs) (Cost to Final abstract of Cost)	988.12 Lacs.

HYDRAULIC CALCULATION FOR WATER SUPPLY SYSTEM

Sl. No	From	To	Line No.	Length Of Line	Size Of Main	No. of General Plots	No.of EWS Plots	Water Requirement for Plots	Green	Other areas	UD	Water requirement for green	Water requirement for UD	Water requirement for other areas	Water Requirements			Total Water Requirement	Head Loss per m	Total Head Loss	Head Loss Progressive	Velocity	Terminal Head	Ground level		Hydraulic Level	
															self	previous	total	30 HRS									
				Mtr	MM			KLD	SQ.M		SQ.M	KLD	KLD	KLD	KLD	KLD	KLD	IPM	Mtr	Mtr	Mtr	M/SEC	Mtr	Start	End	Start	End
1	OHT	X	OHT-X	50	300										0	1765.33	1765.33	3675.81	0.0082	0.136	0.136	0.896	24.87	221.47	221.46	246.344	246.336
2	X	V	X-V	205	250	8		18.68							18.68	1746.65	1765.33	3675.81	0.0102	2.098	1.581	1.247	23.47	221.46	221.48	244.929	244.048
3	V	V1	V-V1	71	100	1		2.34	514.48	NIL	220.87	5.15	1.76	25	31.89	0.00	31.89	66.41	0.0005	0.037	0.037	0.341	24.86	221.48	221.49	246.445	246.455
4	V	U	V-U	154	250	4		9.34	1488.98	NIL	450.15	9.38	2.70	25	46.20	1666.38	1712.57	3568.37	0.0097	1.499	2.784	1.311	22.21	221.48	221.50	243.686	243.706
5	U	T1	U-T1	202	150	24		56.06	3880.15			24.09	0.00		80.14	278.13	358.27	746.89	0.0064	1.303	1.303	0.704	23.70	221.50	221.53	243.199	243.229
6	U	U1	U-U1	79	250	5		7.01			701.32	0.00	4.70		11.71	1296.41	1308.12	2725.25	0.0039	0.465	4.096	0.925	20.91	221.50	221.51	243.406	243.416
7	U1	U2	U1-U2	56	100	4		9.34			467.17	0.00	2.70		12.04	0.00	12.04	25.09	0.0001	0.005	4.095	0.058	20.90	221.51	221.52	243.411	243.421
8	U1	S	U1-S	138	250	8		21.02	1386.70			8.58	0.00		29.60	1254.77	1284.37	2675.76	0.0057	0.728	4.096	0.808	20.91	221.51	221.51	243.406	243.416
9	S	S1	S-S1	97	100	12		28.03			720.00	0.00	3.36		29.39	0.00	29.39	61.22	0.0005	0.044	4.138	0.190	20.86	221.51	221.52	243.373	243.383
10	S	R	S-R	68	250	5		7.01				0.00	0.00		7.01	1218.98	1225.98	2552.88	0.0032	0.335	4.649	0.866	20.55	221.51	221.52	243.061	243.071
11	R	R1	R-R1	183	100	20		46.71	3010.50			12.30	0.00		59.21	0.00	59.21	123.35	0.0017	0.306	4.755	0.262	20.25	221.52	221.54	243.785	243.785
12	R1	R2	R1-R2	62	150	8		7.01				0.00	0.00		7.01	96.58	103.58	215.80	0.0006	0.043	4.798	0.203	20.20	221.54	221.59	243.742	243.732
13	R2	R3	R2-R3	27	100	2		4.67			419.92	0.00	2.58		7.27	0.00	7.27	15.14	0.0000	0.001	4.799	0.032	20.20	221.59	221.59	243.733	243.731
14	R2	T1	R2-T1	88	150	2		4.67			418.00	0.00	2.58		7.25	110.85	118.10	246.05	0.0008	0.066	1.957	0.292	23.66	221.58	221.58	243.173	243.173
15	T1	T2	T1-T2	84	150	0		0.00				0.00	0.00		0.00	160.08	160.08	333.50	0.0014	0.093	1.393	0.514	23.61	221.59	221.52	245.137	245.127
16	T2	T3	T2-T3	86	100	6		14.01	2167.17			13.39	0.00		27.40	0.00	27.40	57.06	0.0004	0.034	1.427	0.121	23.57	221.52	221.53	245.093	245.103
17	T2	T4	T2-T4	87	150	9		21.02	1455.24			8.99	0.00		30.01	102.82	132.68	276.30	0.0010	0.089	1.482	0.240	23.52	221.53	221.53	245.098	245.098
18	T4	T5	T4-T5	168	150	9		21.02			6339.00	0.00	57.86		58.86	61.74	102.62	213.79	0.0006	0.107	1.589	0.202	23.41	221.53	221.49	244.923	244.900
19	T5	T6	T5-T6	95	100	3		7.01	485.74		590.72	2.88	3.65		13.54	0.00	13.54	28.21	0.0001	0.010	1.599	0.060	23.40	221.49	221.50	244.893	244.900
20	T5	W	T5-W	100	150	6		14.01			1250.70	0.00	7.60		21.62	8.58	30.20	62.91	0.0001	0.007	1.595	0.039	23.40	221.49	221.48	244.856	244.864
21	W	X	W-X	88	150	0		0.00	1589.28			8.58	0.00		8.58	0.00	8.58	17.88	0.0000	0.001	1.596	0.017	23.40	221.45	221.48	244.856	244.864
22	R1	P1	R1-P1	60	100	9		21.02				0.00	0.00		21.02	16.35	37.37	77.85	0.0007	0.042	4.797	0.165	20.20	221.54	221.55	243.749	243.753
23	P2	P1	P2-P1	33	100	2		4.67				0.00	0.00		4.67	0.00	4.67	9.73	0.0000	0.000	4.798	0.021	20.20	221.54	221.55	243.752	243.752
24	P1	P	P1-P	84	100	5		11.68				0.00	0.00		11.68	0.00	11.68	24.33	0.0001	0.005	4.803	0.052	20.20	221.55	221.54	243.747	243.757
25	P	Q	P-Q	245	250	36		67.23	2029.50			12.90	0.00		80.13	966.66	1046.80	2181.09	0.0039	0.956	5.758	0.740	19.24	221.54	221.52	240.782	240.762
26	R	Q	R-Q	64	250	8		18.68				0.00	0.00		18.68	1170.31	1188.99	2477.07	0.0048	0.316	4.765	0.841	20.24	221.52	221.52	241.755	241.755
27	Q	Q1	Q-Q1	112	300	14		32.70	1808.88	M/VB	1387.70	8.08	8.18		48.05	74.57	125.42	261.31	0.0064	0.722	5.487	0.545	19.51	221.52	221.54	241.033	241.053
28	Q1	Q2	Q1-Q2	85	300	4		18.68				0.00	0.00		18.68	55.68	74.37	154.94	0.0025	0.214	5.701	0.320	19.30	221.54	221.55	240.833	240.849
29	Q2	Q3	Q2-Q3	45	300	2		4.67				0.00	0.00		4.67	28.99	33.67	70.22	0.0006	0.030	5.731	0.158	19.27	221.55	221.55	240.819	240.819
30	Q3	Q4	Q3-Q4	78	300	12		28.03	918.64			3.57	0.00		29.59	0.00	29.59	62.69	0.0005	0.037	5.768	0.193	19.23	221.55	221.57	240.782	240.800
31	Q3	Q5	Q3-Q5	78	300	9		21.02				0.00	0.00		21.02	0.00	21.02	43.79	0.0002	0.019	5.750	0.060	19.26	221.55	221.58	240.88	240.84
32	M	M1	M-M1	127	300	6		14.01				0.00	0.00		14.01	0.00	14.01	29.19	0.0003	0.015	5.465	0.042	19.53	221.57	221.55	240.104	240.084
33	F	O	F-O	97	250	14		32.70				0.00	0.00		32.70	939.97	966.66	2013.88	0.0034	0.326	6.024	0.583	18.92	221.54	221.55	240.456	240.466
34	O	M1	O-M1	75	250	0		0.00			682.03	0.00	3.90		3.90	739.04	742.95	1547.81	0.0021	0.155	6.339	0.325	18.76	221.55	221.55	240.311	240.811
35	O	N	O-N	138	300	5		11.68	4924.58			30.82	0.00		42.50	148.92	191.42	398.95	0.0045	1.653	7.992	0.844	17.90	221.55	221.58	238.616	238.624
36	N	M	N-M	28	100	0		0.00				0.00	0.00		0.00	148.92	148.92	310.35	0.0091	0.256	8.192	0.618	16.81	221.56	221.57	238.368	238.378
37	M1	L1	M1-L1	108	250			0.00		1307		0.00	0.00	65	65.00	637.00	720.00	1500.48	0.0010	0.233	8.452	0.518	16.50	221.55	221.59	240.008	240.138
38	M	L	M-L	109	100	0		0.00	934.41			3.45	0.00		3.45	143.37	146.82	310.35	0.0091	0.995	7.447	0.558	17.55	221.57	221.58	238.128	238.188
39	L	L1	L-L1	127	200	6		14.01				0.00	0.00		14.01	0.00	14.01	29.19	0.0000	0.000	8.452	0.015	16.55	221.58	221.59	240.124	240.138
40	L1	H	L1-H	70	250	0		0.00			2148.58	0.00	13.25		13.25	629.74	643.02	1339.62	0.0015	0.111	8.562	0.405	16.44	221.59	221.55	240.028	239.958
41	H	H1	H-H1	108	100	0		0.00				0.00	0.00		0.00	18.68	18.68	38.93	0.0003	0.021	8.583	0.088	16.42	221.56	221.55	239.977	239.957
42	H1	H2	H1-H2	51	100	8		18.68				0.00	0.00		18.68	0.00	18.68	38.93	0.0002	0.010	8.594	0.089	16.41	221.54	221.55	239.946	239.956
43	H	G	H-G	64	200	0		0.00				0.00	0.00		0.00	611.07	611.07	1273.07	0.0043	0.273	8.865	0.675	16.16	221.56	221.57	239.725	239.755
44	G	G'	G-G'	159	150	18		37.37	761.81			4.30	0.00		42.07	68.26	110.33	229.89	0.0007	0.116	8.981	0.217	16.05	221.57	221.59	239.619	239.639
45	G'	F1	G'-F1	84	150	4		9.34	581.03			3.40	0.00		12.75	55.52	68.26	142.21	0.0005	0.039	8.970	0.134	16.08	221.59	221.60	239.62	239.63
46	F1	F	F1-F	185	100	30		46.71	2937.51			17.05	0.00		64.67	55.52	120.19	250.39	0.0061	1.135	8.186	0.581	16.81	221.60	221.59	238.434	238.504
47	G	F	G-F	71	200	0		0.00				0.00	0.00		0.00	500.74	500.74	1043.71	0.0029	0.215	7.080	0.508	17.05	221.57	221.58	239.52	239.52
48	F	E	F-E	39	200	0		0.00				0.00	0.00		0.00	380.55	380.55	792.82	0.0018	0.069	7.150	0.420	17.38	221.58	221.58	239.46	239.46
49	E	D	E-D	31	200	0		0.00				0.00	0.00		0.00	380.55	380.55	792.82	0.0018	0.057	7.578	0.420	17.32	221.58	221.59	239.402	239.412
50	D	D1	D-D1	214	100	23		53.72	2084.21			12.88	0.00		66.59	0.00	66.59	138.73	0.0021	0.460	7.618	0.294	17.28	221.59	221.62	238.972	239.002
51	F1	D1	F1-D1	85	150	0		0.00			4960.00	0.00	30.33		30.33	25.00	55.33	115.28	0.0060	0.514	8.984	0.109	16.02	221.60	221.62	238.616	239.036

HYDRAULIC CALCULATION FOR WATER SUPPLY SYSTEM

SL No	From	To	Line No.	Length Of Line	Size Of Main	No. of General Plots	No. of EWS Plots	Water Requirement for Plots	Green	Other areas	UD	Water requirement for green	Water requirement for UD	Water requirement for other areas	Water Requirements self	previous	total	Total Water Requirement	Head Loss per M	Total Head Loss	Head Loss Progressive	Velocity	Terminal Head	Ground level Start	Ground level End	Hydraulic level Start	Hydraulic level End
																		20 HRS									
				Mtr	MM			KLD	SQ.M		SQ.M	KLD	KLD	KLD	KLD	KLD	KLD	LPM	Mtr	Mtr	Mtr	M/SEC	Mtr	Start	End	Start	End
52	DI	B4	DI-B4	72	150			0.00		RS		0.00	0.00	25	25.00	0.00	25.00	33.08	0.0001	0.009	7.821	0.099	17.88	221.63	221.62	239.00	238.999
53	D	C	D-C	16	200	3		0.00				0.00	0.00		0.00	313.96	313.96	654.09	0.0012	0.020	7.198	0.347	17.80	221.59	221.59	239.392	239.392
54	C	B	C-B	45	200	3		0.00				0.00	0.00		0.00	313.96	313.96	654.09	0.0012	0.056	7.254	0.347	17.75	221.59	221.80	239.336	239.346
55	B	B1	B-B1	52	200	2		4.67				0.00	0.00		4.67	270.79	275.46	579.88	0.0010	0.060	7.314	0.304	17.59	221.60	221.85	239.266	239.416
56	B1	B1'	B1-B1'	90	100	15		35.03			604.52	0.00	3.74		38.77	0.00	38.77	80.77	0.0008	0.068	7.382	0.171	17.52	221.63	221.84	239.248	239.258
57	B1	B2	B1-B2	30	200	4		9.34				0.00	0.00		9.34	222.68	232.02	483.37	0.0007	0.020	7.349	0.256	17.55	221.64	221.56	239.201	239.311
58	B2	B2'	B2-B2'	75	100	15		35.03				0.00	0.00		35.03	0.00	35.03	72.98	0.0006	0.047	7.350	0.155	17.90	221.66	221.67	239.264	239.274
59	B2	B3	B2-B3	40	200	3		7.01				0.00	0.00		7.01	215.67	222.68	463.92	0.0007	0.032	7.381	0.246	17.62	221.66	221.70	239.239	239.339
60	B3	B3'	B3-B3'	38	100	6		14.01	2715.50			16.78	0.00		30.79	0.00	30.79	64.14	0.0006	0.029	7.410	0.136	17.59	221.70	221.71	239.29	239.3
61	B3	B4	B3-B4	75	200	11		25.69				0.00	0.00		25.69	159.19	184.88	385.17	0.0005	0.035	7.445	0.204	17.56	221.71	221.75	239.265	239.300
62	B4	B5	B4-B5	104	150			0.00	1426.18	PS		8.81	0.00	50	58.81	100.58	159.39	331.65	0.0014	0.149	7.594	0.313	17.41	221.75	221.80	239.150	239.226
63	B5	B6	B5-B6	125	100	12		28.03	1426.18			8.81	0.00		36.84	6.70	43.54	90.70	0.0009	0.117	7.711	0.192	17.29	221.82	221.93	239.109	239.239
64	B6	B6'	B6-B6'	49	150	2		4.67	928.81			2.06	0.00		6.70	0.00	6.70	13.96	0.0000	0.001	7.713	0.010	17.28	221.93	221.94	239.217	239.227
65	B6'	B6''	B6'-B6''	15	100	2		4.67				0.00	0.00		4.67	0.00	4.67	9.73	0.0000	0.000	7.882	0.011	17.13	221.94	221.95	239.038	239.048
66	B6'	B5'	B6'-B5'	153	100	15		30.36	884.15			5.46	0.00		35.82	4.67	40.50	84.37	0.0008	0.092	7.881	0.179	17.12	221.95	221.90	239.069	239.010
67	B5''	B5'	B5''-B5'	16	100	2		4.67				0.00	0.00		4.67	0.00	4.67	9.73	0.0000	0.000	7.790	0.021	17.11	221.91	221.90	239.12	239.11
68	B5'	B5	B5'-B5	51	100	5		11.68				0.00	0.00		11.68	49.17	60.84	118.45	0.0015	0.078	7.790	0.251	17.21	221.90	221.82	239.11	239.08
69	L	K	L-K	37	150	0		0.00				0.00	0.00		0.00	143.27	143.27	298.48	0.0032	0.046	7.690	0.301	17.51	221.58	221.56	239.09	239.09
70	K1	K	K1-K	49	100		11	13.37	1175.81			7.28	0.00		20.65		20.65	42.98	0.0002	0.012	7.502	0.033	17.50	221.59	221.58	239.088	239.078
71	K	J	K-J	37	150			0.00				0.00	0.00		0.00	172.84	172.84	255.13	0.0008	0.038	7.535	0.243	17.47	221.58	221.58	239.045	239.045
72	J1	J	J1-J	49	100		26	31.58				0.00	0.00		31.58		31.58	65.83	0.0005	0.036	7.670	0.140	17.43	221.58	221.58	239.02	239.01
73	J	I	J-I	37	150			0.00				0.00	0.00		0.00	91.05	91.05	189.69	0.0005	0.019	7.589	0.176	17.41	221.56	221.58	238.991	239.001
74	I1	I	I1-I	59	100		30	39.68	804.38			4.97	0.00		43.85		43.85	91.35	0.0009	0.065	7.654	0.194	17.38	221.58	221.59	238.936	238.936
75	I	E1	I-E1	37	150			0.00				0.00	0.00		0.00	47.20	47.20	98.34	0.0002	0.006	7.660	0.090	17.34	221.59	221.59	238.95	238.93
76	E1	E	E1-E	84	100		27	32.81	864.01			2.25	0.00		35.05		35.05	73.02	0.0006	0.056	7.715	0.155	17.29	221.58	221.58	238.877	238.887
77	E1	C1	E1-C1	37	150			0.00				0.00	0.00		0.00	12.15	12.15	25.33	0.0000	0.000	7.715	0.024	17.29	221.59	221.60	238.877	238.887
78	C1	C	C1-C	47	100		10	12.15				0.00	0.00		12.15		12.15	25.33	0.0001	0.004	7.717	0.084	17.28	221.60	221.60	238.883	238.893
79	C1	A	C1-A	55	150			0.00	821.65	m/vb		3.84	0.00	5	8.84		8.84	18.42	0.0000	0.000	7.718	0.017	17.28	221.60	221.60	238.882	238.892
80	A	B	A-B	26	150			0.00				0.00	0.00		0.00	38.50	38.50	80.23	0.0001	0.003	7.257	0.076	17.74	221.80	221.60	238.343	238.343
81	A	A'	A-A'	28	100			0.00	1976.25	Taxi-ati		8.50	0.00	30	38.50	0.00	38.50	80.23	0.0007	0.066	7.782	0.170	17.32	221.60	221.61	238.817	238.827
	TOTAL			6194		400	169	1309.7	41720.4		20538	257.723488	326.8178478	128													

HYDRAULIC CALCULATION FOR SEWERAGE SYSTEM

HYDRAULIC CALCULATION FOR SEWERAGE SYSTEM

S. No.	Mode of Start	Mode at End	Name of line	No. of Personal plots to be served: Self	No. of Personal plots to be served: Previous	No. of Personal plots to be served: Total	No. of Misc EWS Plots	Self water requirement for Plots	Other Areas	Area	Water requirement for Other areas	Water Requirement: Self	Water Requirement: Previous	Water Requirement: Total	Total Water Requirement	Total discharge in sewers %	Total discharge at 3 times	Infiltration Ground Water @10%	Total discharge in m³	Actual discharge		Velocity	Flow (Carrying Capacity)	Dia of sewer	Slope	Length of sewer line	Fall	Formation level: Upper end	Formation level: Lower end	Invert level: Upper end	Invert level: Lower end	Lowest at junction	Remarks	Hydraulic: Upstream level	Hydraulic: Down stream level	Hydraulic: Avg.
				Nos.	Nos.	Nos.	Nos.	KLD		Sq.M	KLD	KLD	KLD	KLD	KLD	KLD	KLD	KLD	KLD	MLD	Cumec	M/sec	Cumec	mm		Mtrs.	Mtrs.	Mtrs.	Mtrs.	Mtrs.	Mtrs.	Mtrs.		M	M	M
1	MH	Y	MH-Y	8	12	20		13.44				15.64	9.00	59.68	18.7	16.0	47	1.4	45	0.04	0.0005	0.324	0.011	200	278	85	0.17	221.490	221.460	219.550	219.281	220.151	1.1	0.90	1.10	1.10
	I	1	1-I	0	68	80		0.00				0.00	959.73	959.73	959.8	219.8	1500	72.0	2232	7.23	0.0250	0.826	0.035	300	200	17	0.05	221.588	221.550	217.476	217.410			4.20	4.36	4.28
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]				[illegible]	[illegible]	[illegible]	48.9	20.7	87	2.0	93	0.08	0.0009	0.757	0.012	[illegible]	198		0.15	[illegible]	[illegible]	[illegible]	220.081			1.20	1.55	[illegible]
	I	1	1-I	0	37	37		0.00				0.00	998.17	998.62	998.7	349.0	2247	74.9	2322	2.32	0.0269	0.626	0.040	[illegible]	200	17	0.05	221.590	221.590	217.326	217.271			4.72	4.32	4.29
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]				[illegible]	[illegible]	[illegible]	32.0	24.6	73	2.5	76	0.08	0.0009	0.757	0.012	[illegible]	198		0.13	[illegible]	[illegible]	[illegible]	218.654			1.32	3.54	[illegible]
	E	E	E-E	0	18	50		0.00				0.00	1031.47	1031.47	1031.5	315.6	2321	73.4	2396	2.40	0.0274	0.576	0.026	[illegible]	200	37	0.05	221.590	221.590	217.223	217.151			4.37	4.88	4.25
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]			[illegible]	[illegible]	[illegible]	17.7	31.9	79	1.3	80	0.08	0.0001	0.757	0.012	[illegible]	195		0.28	[illegible]	[illegible]	[illegible]	220.231			1.89	1.98	[illegible]
	C	A	C-A	0	0	0		0.00	Earth	581.4	20	30.00	1018.67	1078.67	1078.5	896.0	2127	60.5	2505	2.51	0.0290	0.826	0.036	[illegible]	200	16	0.08	221.690	221.640	217.151	217.139			4.39	4.87	4.63
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]			3.20	3.83	
57	G	E	G-F	0	135	175		0.00				0.50	37.37	37.54	37.4	29.0	74	2.8	83	0.09	0.0010	0.757	0.012	[illegible]	150	72	0.78	221.570	221.565	218.739	218.461			1.81	2.27	2.12
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]				[illegible]	[illegible]	[illegible]	46.7	35.9	105	3.5	108	0.11	0.0013	0.757	0.019	[illegible]	[illegible]	[illegible]	0.04	[illegible]	[illegible]	[illegible]	218.452			1.20	1.59	
[illegible]	F	H	F-H	0	115	183		0.00				0.00	84.08	84.28	84.1	61.5	188	5.8	193	0.20	0.0023	0.757	0.012	[illegible]	208	75	0.37	221.560	221.560	219.283	218.987	218.737		2.72	2.00	2.45
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]				[illegible]	[illegible]	[illegible]	53.7	40.3	171	9.8	175	0.13	0.0014	0.757	0.012	[illegible]	[illegible]	[illegible]	0.06	[illegible]	[illegible]	[illegible]	218.562			1.78	2.00	
[illegible]	D	B	D-B	0	97	93		0.00				0.00	137.79	137.29	137.8	103.3	310	10.3	109	0.37	0.0037	0.612	0.012	[illegible]	500	46	0.13	221.500	221.600	218.931	218.809			2.66	2.29	1.53
58	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]				[illegible]	[illegible]	[illegible]	9.9	7.0	21	0.7	12	0.02	0.0003	0.757	0.012	200	150		0.29	[illegible]	[illegible]	[illegible]	219.455			1.28	1.87	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]				[illegible]	[illegible]	[illegible]	37.4	28.3	84	2.8	87	0.09	0.0010	0.757	0.012	200	150	[illegible]	0.67	[illegible]	[illegible]	[illegible]	219.282			1.47	1.94	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]				[illegible]	[illegible]	[illegible]	35.0	26.3	79	2.6	81	0.08	0.0009	0.757	0.012	200	150	[illegible]	0.48	[illegible]	[illegible]	[illegible]	219.353			1.29	1.66	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]				[illegible]	[illegible]	[illegible]	45.3	35.0	106	3.5	109	0.11	0.0013	0.757	0.012	200	100	[illegible]	0.27	[illegible]	[illegible]	[illegible]	218.853			1.81	1.84	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	134.1	100.8	302	10.1	312	0.31	0.0036	0.656	0.015	[illegible]	550	[illegible]	0.27	[illegible]	[illegible]	[illegible]	218.557			2.24	2.73	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	59.6	49.7	171	4.8	115	0.12	0.0014	0.757	0.012	200	150	[illegible]	0.36	[illegible]	[illegible]	[illegible]	219.586			2.28	2.16	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]				[illegible]	[illegible]	[illegible]	59.4	40.2	121	4.0	116	0.12	0.0014	0.656	0.015	[illegible]	400	[illegible]	0.10	[illegible]	[illegible]	[illegible]	219.331			2.27	2.02	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]				[illegible]	[illegible]	[illegible]	14.0	10.5	32	1.1	33	0.03	0.0004	0.757	0.012	200	150	[illegible]	2.20	[illegible]	[illegible]	[illegible]	218.866			1.30	1.47	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]				[illegible]	[illegible]	[illegible]	75.6	55.0	168	5.6	174	0.17	0.0020	0.656	0.015	[illegible]	400	[illegible]	0.12	[illegible]	[illegible]	[illegible]	218.309			0.77	2.45	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]				[illegible]	[illegible]	[illegible]	35.0	26.3	79	2.6	81	0.08	0.0009	0.757	0.012	[illegible]	180	[illegible]	0.28	[illegible]	[illegible]	[illegible]	218.875			1.90	1.49	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]				[illegible]	[illegible]	[illegible]	119.0	89.3	268	8.9	277	0.28	0.0032	0.612	0.012	[illegible]	500	[illegible]	0.10	[illegible]	[illegible]	[illegible]	218.311			2.45	2.52	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	39.7	29.8	89	3.0	92	0.09	0.0011	0.757	0.012	200	200	[illegible]	0.11	[illegible]	[illegible]	[illegible]	218.134			1.70	1.51	
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]				[illegible]	[illegible]	[illegible]	163.4	122.5	368	12.3	380	0.38	0.0044	0.612	0.012	[illegible]	500	[illegible]	0.12	[illegible]	[illegible]	[illegible]	218.089			2.42	1.51	
60	B	A										0.00	301.58	[illegible]	301.2	225.9	678	22.6	700	0.70	0.0081	0.612	0.022	[illegible]	500	97	0.19	221.690	221.630	[illegible]	218.023			2.79	1.80	
b	A	House Sewer	A-House Sewer									0.00	1379.83	[illegible]	1379.8	1034.8	3105	103.5	3208	3.21	0.0371	0.677	0.033	[illegible]	[illegible]	305	0.20	221.410	221.420	[illegible]	215.850			4.41	4.78	
				4000	5733	6138	166	3958.11	0	31595	425.07	1514	19027.30	35581.1	15187	13596	36516	1158.6	39443	35.27	0.413	40.2359	1.26	[illegible]	[illegible]	5813	23.2	19303.6	17911	17095.3	15745.1334	2316.007	0			

HYDRAULIC DESIGN OF STORM WATER DRAINAGE SYSTEM

Sl. No	Node at Start	Node at End	Name of Line	Length in mtr.		Self Area	Self Area	Additional Area (Ha)	Total Area (Ha)	Rain fall	Actual Discharge	Actual Discharge	Pipe dia	Slope	Velocity m/sec	Cap of pipe in lps	Actual Velocity	Self cleansing velocity	Ground level at Start	Ground level at End	Invert level at Start	Invert Level at End	Depth at Start	Depth at End	Average Depth	Invert at junction
				MTR	Sq.M	Sq.mtr	(Ha)	(Ha)	(Ha)	mm/hr	Cu.M/hr	LPS	MM	1 in	M/s	LPS	M/s	M/s					Mtr	Mtr	Mtr	Mtr
1	B5	B6	B5-B6	54	3971.5	3447.970	0.345	0.00	0.345	6.25	7.24	3.51	400	510	0.60	75.627	0.62	0.11	221.880	221.880	221.05	220.95	0.90	0.882	0.915	
2	B6	B5	B6-B5	127	4427.6	3974.652	0.397	0.145	0.487	6.25	25.13	6.70	400	510	0.60	75.627	0.61	0.12	221.590	221.635	221.04	220.71	0.90	1.025	1.043	
3	B7	B3	B7-B3	112	4073.58	3405.637	0.341	0.00	0.341	6.25	17.00	4.73	400	510	0.60	75.627	0.54	0.10	221.940	221.980	221.04	220.84	0.90	1.056	0.938	
4	B7'	B3	B7'-B3	36	800.5	313.9468	0.031	0.000	0.031	6.25	3.02	0.82	400	510	0.60	75.627	0.30	0.05	221.980	221.980	221.04	220.81	0.90	0.888	0.894	
5	B3	B5	B3-B5	55	3790.1	1075.08	0.108	0.35	0.501	6.25	25.69	6.06	400	510	0.60	75.627	0.74	0.09	221.930	221.920	220.84	220.75	1.05	1.058	1.051	
6	B5	B3	B5-B3	180	18610.91	3616.5	0.362	0.965	1.277	6.25	78.53	21.81	400	510	0.60	75.627	0.87	0.11	221.920	221.900	220.75	220.40	1.11	1.502	1.303	220.71
7	B7	B3	B7-B3	50	7910.7	1160.258	0.116	0.000	0.116	6.25	6.76	1.88	400	510	0.60	75.627	0.11	0.10	221.710	221.700	220.81	220.71	0.90	0.950	0.927	
8	B1	B3	B3-B1	48	2129.8	1185.253	0.119	1.700	1.819	6.25	91.21	25.35	400	400	0.58	74.820	0.32	0.08	221.700	221.400	220.40	220.32	1.30	1.318	1.318	
9	B2	B3	B7-B2	75	2557	2215.753	0.215	0.000	0.215	6.25	11.07	3.07	400	510	0.60	75.627	0.07	0.14	221.570	221.660	220.77	220.64	0.90	1.022	0.961	
10	B1	B1	B2-B1	48	2745.9	1220.384	0.122	2.046	2.038	6.25	108.42	30.12	400	400	0.46	74.820	0.24	0.08	221.660	221.670	220.32	220.25	1.34	1.387	1.358	
11	B7	B1	B7-B1	95	4729.5	3943.601	0.314	0.000	0.314	6.25	16.13	4.68	400	510	0.60	75.627	0.04	0.15	221.540	221.420	220.60	220.49	1.00	1.348	1.376	
12	B1	B	B1-B	64	2118.5	1261.282	0.129	2.500	2.619	6.25	131.13	38.42	400	400	0.58	74.820	0.28	0.06	221.600	221.620	220.25	220.15	1.31	1.465	1.399	220.13
13	B	D	B-D	67		472	0.047	2.625	2.656	6.25	129.65	32.08	450	350	0.57	98.748	0.25	0.08	221.480	221.520	220.03	220.25	1.41	1.505	1.452	
14	D1	D	D1-D	200	19233.81	9926.828	0.993	0	0.594	6.25	69.65	15.00	400	570	0.60	75.727	0.11	0.06	221.720	221.520	220.81	220.40	0.90	1.275	1.017	
15	D	F	D-F	79		570	0.057	3.624	3.717	6.25	186.84	50.62	450	350	0.57	98.748	0.40	0.09	220.960	221.580	220.05	219.91	1.41	1.670	1.582	
16	F1	F	F1-F	136	12318.81	8570.882	0.858	0	0.858	6.25	47.88	13.30	400	570	0.60	75.627	0.09	0.23	221.690	221.580	220.70	220.46	0.90	1.105	1.008	221.71.0
17	F	G	F-G	75		565	0.055	4.514	4.638	6.25	231.42	64.28	450	350	0.57	98.748	0.49	0.15	221.580	221.550	219.95	219.95	1.61	1.703	1.672	219.85
18	B4	G	B4-G	200	19312.31	10344.13	1.014	0.002	1.014	6.25	50.77	14.09	400	570	0.60	75.627	0.11	0.15	221.750	221.650	220.88	220.50	0.90	1.155	1.025	
19	G	H	G-H	258	8014.2	5803.956	0.580	1.864	1.968	6.25	79.83	22.17	400	570	0.60	75.627	0.29	0.17	221.690	221.590	220.30	220.07	1.35	1.808	1.572	
20	E	H	E-H	84		480	0.048	6.220	6.294	6.25	315.18	87.14	450	350	0.52	98.748	0.55	0.09	221.530	221.560	219.85	219.77	1.72	1.792	1.753	219.75
21	A'	A	A'-A	95	4013.5	3261.707	0.375	0.000	0.375	6.25	16.22	4.52	400	570	0.60	75.627	0.04	0.14	221.570	221.300	220.67	220.51	0.90	1.091	0.977	
22	A	C	A-C	141	1912.4	1201.728	0.120	0.325	0.452	6.25	22.29	6.41	400	570	0.60	75.627	0.05	0.15	221.610	221.300	220.51	220.26	1.10	1.102	1.119	
23	C1	C	C1-C	50	1316.26	851.5627	0.085	0	0.085	6.25	4.25	1.18	400	510	0.60	75.627	0.01	0.09	221.300	221.300	220.40	220.40	0.90	0.938	0.944	
24	C	E	C-E	92		221	0.022	0.547	0.539	6.25	26.83	7.60	400	570	0.60	75.627	0.06	0.09	221.300	221.300	220.26	220.13	1.04	1.127	1.100	
25	E1	E	E1-E	86	3572	2154.658	0.216	0	0.216	6.25	11.39	3.37	400	570	0.60	75.627	0.07	0.15	221.190	221.300	220.48	220.13	0.90	1.067	0.975	
26	E	I	E-I	40		297	0.030	0.806	0.839	6.25	41.44	11.51	400	570	0.60	75.627	0.10	0.07	221.790	221.300	220.18	220.13	1.40	1.457	1.433	
27	I1	I	I1-I	70	3051.2	2100.248	0.210	0	0.210	6.25	11.31	3.36	400	570	0.60	75.627	0.03	0.12	221.190	221.190	220.00	219.92	0.90	1.023	0.951	
28	I	J	I-J	37		287	0.022	1.064	1.096	6.25	54.39	15.08	400	510	0.60	75.627	0.22	0.06	221.190	221.160	220.13	219.08	1.41	1.510	1.508	
29	J1	J	J1-J	88	3612.73	1980.018	0.198	0	0.198	6.25	9.90	2.75	400	510	0.60	75.627	0.02	0.12	221.790	221.560	220.89	220.57	0.90	1.071	0.986	
30	J	K	J-K	37		197	0.022	1.294	1.296	6.25	66.31	18.19	400	510	0.60	75.627	0.24	0.06	221.780	221.560	220.06	219.96	1.52	1.519	1.515	
31	K1	K	K1-K	48	2809.65	1831.289	0.183	0	0.183	6.25	9.51	2.53	400	510	0.60	75.627	0.02	0.09	221.590	221.550	220.60	220.60	0.90	0.936	0.938	
32	K	L	K-L	58		275	0.027	1.486	1.511	6.25	75.55	20.99	400	510	0.60	75.627	0.27	0.07	221.580	221.560	219.93	219.83	1.50	1.614	1.601	
33	L	L1	L-L1	228	9480.6	6626.839	0.663	1.511	2.174	6.25	108.70	30.19	400	510	0.60	75.627	0.39	0.12	221.580	221.680	219.83	219.20	1.85	1.878	1.788	
34	M1	M1	B3-M1	97	4897.85	3196.858	0.316	0	0.326	6.25	24.80	6.87	400	510	0.60	75.627	0.04	0.06	221.560	221.560	220.55	220.59	0.90	0.976	0.923	
35	M1	N	M1-N	207		760	0.075	0.335	0.411	6.25	20.55	5.71	400	510	0.60	75.627	0.05	0.18	221.260	221.360	220.50	220.41	0.95	1.316	1.098	219.58
36	N	N1	N-N1	70	3982.75	3398.557	0.340	6.850	6.930	6.25	346.09	96.11	500	800	0.70	113.743	0.49	0.09	221.560	220.950	219.49	219.05	1.82	1.912	1.874	
37	L1	M	L1-M	109	18166.5	13007.6	1.301	9.865	10.736	6.25	505.74	141.14	600	900	0.63	177.446	0.50	0.12	221.560	220.950	219.10	219.65	1.98	2.366	2.026	
38	M1	M	M1-M	98	9974.6	8087.386	0.027	0.000	0.827	6.25	32.84	4.13	400	510	0.60	75.627	0.07	0.17	221.570	221.300	220.67	220.53	0.90	1.051	0.977	
39	M	O	M-O	75	3304.25	3141.266	0.314	10.865	11.078	6.25	553.79	153.83	600	900	0.63	177.446	0.54	0.08	221.550	221.300	219.05	218.85	2.86	2.192	2.191	
40	L'	R	L'-R	123		726	0.074	0.000	0.244	6.25	9.59	6.80	400	510	0.60	75.627	0.06	0.22	221.560	221.560	220.68	220.41	1.00	1.096	1.098	
41	N	R	N-R	50	5711.15	3646.874	0.366	0.070	0.412	6.25	22.51	6.14	400	510	0.60	75.627	0.05	0.10	221.560	221.500	220.66	220.51	1.10	1.194	1.145	
42	O	P	O-P	97	9472	4524.827	0.452	11.338	11.071	6.25	580.53	160.35	600	900	0.63	177.446	0.55	0.11	221.560	221.240	218.48	218.29	2.84	2.249	2.201	
43	P1	P	P1-P	83	1166.57	792.9040	0.079	0	0.079	6.25	9.95	2.19	400	510	0.60	75.627	0.05	0.09	221.300	221.560	220.30	220.00	0.90	0.944	0.924	
44	P	R	P-R	150	20129.80	10690.4	1.069	12.050	13.169	6.25	657.40	182.63	600	900	0.63	177.446	0.65	0.09	221.510	221.240	218.29	218.01	2.24	2.961	2.864	218.99
45	Q1	Q2	Q1-Q2	95	2862.36	2624.791	0.262	0	0.262	6.25	10.07	2.80	400	510	0.60	75.627	0.02	0.12	221.300	221.550	220.35	220.07	0.90	1.060	0.982	
46	Q1	Q3	Q4-Q3	79	3794	2649.896	0.265	0	0.265	6.25	13.23	3.62	400	510	0.60	75.627	0.06	0.10	221.420	221.550	220.47	220.54	0.90	1.057	0.958	
47	Q3	Q2	Q3-Q2	45	735.57	500.9724	0.051	0.265	0.316	6.25	15.76	4.38	400	510	0.60	75.627	0.06	0.09	221.550	221.550	220.53	220.46	1.03	1.101	1.060	
48	Q2	Q1	Q2-Q1	85	3238.67	2250.362	0.226	0.517	0.742	6.25	37.12	10.01	400	510	0.60	75.627	0.08	0.11	221.950	221.540	220.45	220.30	1.10	1.242	1.172	
49	Q1	Q	Q1-Q	200	6380.8	3084.275	0.308	0.742	1.049	6.25	52.44	14.57	400	570	0.60	75.627	0.12	0.31	221.540	221.510	220.30	219.94	1.24	1.551	1.400	
50	Q	Q	Q-Q	217	11540	8061.238	0.807	0.000	0.807	6.25	40.34	11.20	400	570	0.60	75.627	0.09	0.41	221.540	221.510	220.63	220.13	0.90	1.287	1.099	
51	Q	R	Q-R	65	1355.6	971.5244	0.098	1.855	1.955	6.25	97.86	27.19	450	270	0.60	79.277	0.31	0.11	221.510	221.510	219.96	219.86	1.56	1.648	1.614	219.95
52	R	S	R-S	68	1258.2	949.1618	0.095	15.202	15.297	6.25	759.84	211.07	700	950	0.68	260.578	0.55	0.07	221.500	221.510	218.99	218.92	2.53	2.592	2.552	
53	S1	S	S1-S	97	6882.42	4737.632	0.474	0	0.474	6.25	23.19	5.88	400	570	0.60	75.617	0.05	0.17	221.500	221.510	220.67	220.45	0.90	1.068	0.980	219.30
54	S	U1	S-U1	110	9798.7	5864.63	0.582	15.621	16.223	6.25	806.34	223.20	700	950	0.68	260.578	0.58	0.12	221.510	221.510	218.92	218.79	2.59	2.721	2.659	
55	U1	U1	U1-U1	60	3045.2	3027.853	0.317	0	0.317	6.25	18.38	5.09	400	510	0.60	75.627	0.04	0.12	221.500	221.600	220.60	220.50	0.90	0.956	0.928	
56	U1	U	U1-U	60	3451.83	3433.687	0.341	16.098	16.161	6.25	838.54	232.17	700	950	0.68	260.578	0.60	0.08	221.500	221.520	218.79	218.70	2.71	2.803	2.752	
57	R1	R2	R1-R2	68	1609.00	1139.558	0.114	0	0.114	6.25	5.09	1.58	400	510	0.60	75.627	0.01	0.03	221.590	221.600	220.64	220.51	0.90	1.009	0.905	
58	R2	R3	R2-R3	77	1407.09	1005.88	0.101	0	0.101	6.25	4.77	1.43	400	510	0.60	75.627	0.01	0.05	221.530	221.530	220.63	220.58	0.90	0.947	0.924	
59	R3	T	R3-T	58	2672.43	2194.699	0.103	0.516	0.256	6.25	12.80	6.05	400	510	0.60	75.627	0.09	0.12	221.100	221.510	220.53	220.47	0.81	1.139	1.079	
60	T	U	T-U	202	14475.6	9992.65	0.695	0.956	20.501	6.25	515.97	143.08	450	570	0.60	75.627	1.16	0.36	221.530	220.528	220.48	220.09	1.10	1.680	1.298	
61	U	V	U-V	240	7879.9	5585.556	0.551	37.020	37.583	6.25	1879.21	383.09	700	950	0.68	260.578	1.50	0.36	221.510	221.460	218.70	218.40	2.81	3.038	2.926	218.40
62	V1	V	V1-V	25	2956.6	5877.895	0.588	0	0.588	6.25	9.89	2.61	400	570	0.60	75.627	0.07	0.12	221.490	221.460	220.59	220.44	0.90	1.020	0.960	
63	V	W	V-W	220	9539.5	8531.501	0.582	37.575	38.412	6.25	1420.24	394.78	900	1000	0.73	462.110	0.60	0.31	221.280	221.460	218.35	218.15	3.00	3.293	3.176	218.34
64	T1	T2	T1-T2	24	783	541.617	0.045	0	0.050	6.25	2.98	0.71	400	510	0.60	75.627	0.01	0.11	221.510	221.520	220.61	220.56	0.90	1.060	0.930	
65	T1	T3	T2-T3	88	5809.6	4136.616	0.413	0	0.413	6.25	20.68	5.74	400	510	0.60	75.627	0.05	0.15	221.510	221.510	220.60	220.49	0.90	1.041	0.970	
66	T2	T4	T3-T4	87	5895.67	4250.679	0.425	0.517	0.882	6.25	44.65	12.40	400	570	0.60	75.627	0.09	0.11	221.520	221.510	220.16	220.03	1.04	1.181	1.112	
67	T4	T5	T4-T5	188	20238.90	14645.09	1.317	0.893	1.800	6.25	67.08	17.42	400	570	0.60	75.627	0.22	0.19	221.510	221.410	220.11	220.03	1.18	1.468	1.327	
68	T5	T5	T5-T5	97	3998.43	2784.917	0.279	0	0.279	6.25	13.92	3.88	400	510	0.60	75.627	0.03	0.17	221.500	221.460	220.28	220.17	0.90	0.873	0.935	
69	T5	W	T5-W	155	2028.53	4211.677	0.421	2.716	3.070	6.25	153.62	37.88	400	510	0.60	75.627	0.70	0.38	221.490	221.410	220.08	219.85	1.28	1.906	1.512	219.80
70	W	X	W-X	238		0	0.000	41.050	41.050	6.25	1654.61	463.95	900	1200	0.71	453.079	0.69	0.37	221.450	221.450	218.14	218.01	3.11	3.450	3.487	
				8256	194260.4	323139	31.293																			

Directorate of Town & Country Planning, Haryana

Ayojna Bhawan, Sector 18, Chandigarh
Phone:0172-2549349; e-mail:tcphry@gmail.com
http://tcpharyana.gov.in

To

Sunika Properties Pvt. Ltd. & Others
N-09, 1st Floor, Connaught Place,
New Delhi – 01.

Memo No. LC-1606-JE(B)/2013/ 48821 Dated: 16/8/13

Subject: **Approval of service plan/estimates for Internal Development Works in respect of Residential Plotted Colony over an area measuring 76.812 acres (License No. 09 of 2009 dated 19.05.2009) in Sector 36A, Rohtak.**

Kindly refer your application on the subject cited above.

The service plan/estimates of residential plotted colony for an area measuring 76.812 acres (License No. 09 of 2009) in Sector 36A, Rohtak have been checked and corrected wherever necessary by the Chief Administrator, HUDA & are hereby approved subject to the following terms and conditions:-

1. That you will have to pay the proportionate cost of External Development Charges for setting up of Residential Plotted Colony for the services like water supply, sewerage, storm water drainage, roads, bridges, community buildings, street lighting, horticulture and maintenance thereof etc. on gross acreage basis as determined/demanded. These charges will be modifiable and modified charges will be binding upon you.
2. That you are liable to maintain the estate developed by you as per HUDA norms for 10 years or till the area is handed over to MC/local authority, whichever is later.
3. The category wise area shown on the plans and proposed density of population thereof has been treated to be correct for the purpose of services only.
4. It is made clear that appropriate provision for fire fighting arrangement as required in the NBC/ISI should also be provided by you and fire safety certificate should also be obtained from the competent authority before undertaking any construction. You shall be sole responsible for fire safety arrangement.
5. All technical notes and comments incorporated in the estimates in two sheets will also apply. A copy of these is also appended as Annexure-A.
6. The wiring system of street lighting will be under ground and the specifications of the street lighting fixture etc will be as per relevant standard of HVPNL.
7. You will have to ensure that the sewer/storm water drainage to be laid by you will be connected with the proposed existing master services by gravity. If it is not possible to connect the services by gravity, it will be your sole responsibility to make the pumping arrangement and maintenance thereof for all the time to come.
8. That you shall not make any connection with the master services i.e. water supply, sewerage, storm water drainage, without prior approval of the competent authority in writing.
9. You shall be sole responsible for disposal of sewage of your colony as per requirement of HSPCB/Environment Deptt. till such time the external services are made available as per the proposal of the town. All the link connections with the external services shall be made by you at your own cost after seeking approval from competent authority.
10. That you have to make your own arrangement by way of installation of tube well after approval from Central Ground Water Board, within their respective colonies HUDA/any other developing agency can make available the water only after the sector, in which licensed area falls is developed subject to following:-
    (i) Availability of litigation and encroachment free land.
    (ii) Permission within reasonable period from Forest & Environment Department, wherever required.
    (iii) Till the water supply and other services made available by HUDA or any other development agency, the licensee will have to make their own arrangements. Tube well bored with permission from Central Ground Water Board and other concerned authority for the purposes and RO system will have also to be provided by colonizer as per requirement at his own cost/source to the individual plot holder.
    (iv) HUDA/development agency shall supply the drinking water only to the license granted in the master plan area.

11. The estimate does not include the provision of electrification of the colony. However, it is clear that the supervision charges and O&M charges shall be paid by you directly to the HVPNL.
12. That presently tubewell based water supply proposed, the potability of water before supply the same to residents be made ensured by you.
13. That the tertiary water shall be used for green parks as per proposal made in the recycled water plan.
14. You shall be fully responsible to meet the demand, to dispose of effluent and drain water till these external services are provided by HUDA or any other development agency. It is also made clear that there will be no pollution due to disposal of sewerage of your colony. The disposal of effluent should be in accordance to the standard norms, fixed by the Haryana State Pollution Control Board/Environment Department.
15. The correctness of the levels of the colony will be sole responsibility of the owner for integrating the internal sewer/ storm water drainage of the colony by gravity with the master services.
16. You shall be sole responsible for the construction of various structures such as RCC under ground tank etc according to the standard specification good quality and its workmanship. The structural stability responsibility will entirely rest upon you.
17. In case it is decided by Govt. that HUDA/Govt. will construct 24 m wide road and will extend master services on 24 m wide internal circulation road, then additional amounts at rates as decided by the authority/Govt. will be recoverable over and above EDC.
18. That the detailed technical proposal/scheme shall be got approved from this office before execution of work at site.
19. In case some additional structures are required to be constructed and decided by HUDA/development agency at a later stage, the same will be binding upon you. Flow of control valves will be installed preferably of automatic type on water supply connection with main water supply line, laid by developing agency or HUDA.
20. The firm will provide solar water hearing system as per the guidelines issued by Haryana Govt./Ministry of Environment/Govt. of India.
21. It is made clear that roof top rain harvesting system shall be provided by you as per Central Ground Water Authority norms/Haryana Govt. Notification and the same shall be kept operational/maintained all the time. The arrangement for segregation of first rain water not to be entered into the system shall also be made by you.
22. That you shall transfer the land under master plan road as well as service road to Govt./HUDA for construction of road/service road free of cost and proportionate cost for construction of service road shall also be paid by you.
23. This estimate does not include the common services like water supply, storage tank on the top of the building block, the plumbing works etc. will part of the building works.
24. That you shall be solely responsible to lay the services upto the external services laid/to be laid by HUDA or any developing agency on Sector dividing road at respective locations/points.

A copy of the approved service plan/estimates is enclosed herewith. You are requested to supply three additional copies of the approved service plan/estimates to the Chief Administrator, HUDA, Panchkula under intimation to this office.

(Sunita Sethi)
District Town Planner (HQ)
For Director General, Town & Country Planning
Haryana, Chandigarh

Endst. No. LC-1606-JE(B)-2013/ Dated :

A copy is forwarded to the Chief Administrator, HUDA, Panchkula with reference to his office Memo No. 11562 dated 31.08.2010 for information and necessary action.

(Sunita Sethi)
District Town Planner (HQ)
For Director General, Town & Country Planning
Haryana, Chandigarh

Directorate of Town and Country Planning, Haryana
SCO No. 71-75, 2nd Floor, Sector-17 C, Chandigarh, web site: tcpharyana.gov.in
Phone: 0172-2549349; e-mail: tcphry@gmail.com

LC-IX
[See Rule 16 (2)]

To

Shyamli Projects Pvt. Ltd.,
C/o Sonika Properties Pvt. Ltd.,
N-49, 1st Floor, Connaught Place,
New Delhi-110001.

Memo No. LC-1606-Vol-II-JE (BR)-2016/98558 Dated: 6/9/2016

Subject: **Grant of part completion certificate for an area measuring 62.650 acres part of licence no. 9 of 2009 dated 19.05.2009 granted for setting up of a Residential Plotted Colony over an area measuring 76.812 acres in the revenue estate of village Para and Rohtak, District Rohtak – Sonika Properties Pvt. Ltd.**

With reference to your application dated 15.07.2015, regarding request for grant of part completion certificate in respect of residential plotted colony developed in the revenue estate of Village Para and Rohtak, District Rohtak for which license no. 9 of 2009 dated 19.05.2009 was granted on the land measuring 76.812 acres.

It is hereby certified that the development works namely: Water supply, Sewerage, Storm water Drainage, Roads, Horticulture and Street Lights in the residential plotted colony comprising of Licence mentioned above for 62.650 acres as indicated on the enclosed approved layout plan and certified by Chief Administrator, HUDA Panchkula and read in conjunction with the following terms and conditions have been completed to my satisfaction. The completion certificate is granted on the following terms and conditions:-

i. That you shall be required to obtain final completion certificate after laying out the colony as per approved layout plan and completion of Internal Development Works as per approved specifications and design as required under section 3(6) of the Haryana Development and Regulation of Urban Area Act, 1975.

ii. That you shall be fully responsible for operation, upkeep and maintenance of all roads, openspaces, public parks and public health services like water supply, sewerage and drainage etc. for a period as approved in the service plan estimates of your colony from the date of issuance of final completion certificate or earlier relieved of said responsibility and thereupon transfer all such roads openspaces, public parks and public health services like water supply, sewerage and drainage etc. free of cost to the Government or the local authority as directed.

iii. The services will be laid by the colonizer upto alignment of proposed external services of the town and connection with the HUDA system will be done by the licensee at his own cost with the prior approval of the competent authority. In case pumping is required, the same will be done

by the licensee at his own cost. The services will be provided as per provision in the EDC of Rohtak.

iv. Level/Extent of the services to be provided by HUDA i.e. water supply sewerage, SWD, roads etc. will be proportionate of EDC provisions.

v. That in case some additional structures are required to be constructed and decided by HUDA at a later stage, the same will be binding upon you.

vi. That you shall neither erect nor allow the erection of any communication and transmission Tower with in colony without prior approval of competent authority.

vii. That you shall be solely responsible for water supply, disposal of sewage and storm water of the colony as per guidelines of HSPCB/Environment Department till such time the external services are provided by HUDA/State Government as per their scheme.

viii. That you shall get the licence renewed as laid down under rule 13 of Haryana Development and Regulation of Urban Area Rules, 1976 till the grant of final completion certificate.

ix. That you shall submit the certificate issued by UHBVN Ltd. within three month of issuance of part completion certificate stating that the design and provision of electrical services are as per norms in the colony.

This part completion certificate shall be void ab-initio, if any of the conditions mentioned above are not complied with.

DA/As above

(Arun Kumar Gupta)
Director General,
Town and Country Planning
Haryana, Chandigarh

Endst. No. LC-1506-Vol-II-JE(BR)-2016/ Dated:

A copy is forwarded to the following for information and necessary action.

i. Chief Administrator, HUDA, Panchkula.
ii. Senior Town Planner, Rohtak.
iii. District Town Planner, Rohtak.
iv. Account Officer O/o Director General, Town and Country Planning, Haryana, Chandigarh.

District Town Planner, (HQ)
For Director General, Town and Country Planning,
Haryana, Chandigarh.