

Directorate of Town & Country Planning, Haryana

Nagar Yojana Bhavan, Plot No. 3, Sector 18 A, Madhya Marg, Chandigarh
Phone: 0172-2549349 e-mail: tcpharyana7@gmail.com
website: -http://tcpharyana.gov.in

Regd.

To

Newzone Buildwell Pvt. Ltd.,
2nd Floor, Hotel Crown Plaza,
Plot No. 381, Twin District Centre,
Sector 10, Rohini Delhi- 110085.

Memo No. LC-1791/Asstt.(MS)/2022

Dated: 15-4-22

03-06-22

Subject:-

Approval of revised service plan estimate of licence no. 70 of 2008 dated 26.03.2008 granted for setting up Commercial Colony over an area measuring 4.65625 acres in the revenue estate of village Shikohpur, Sector 82A Gurugram- Newzone Buildwell Pvt. Ltd.

Ref:

Please refer to Chief Engineer-I, HSVP, Panchkula office memo dated 14.03.2022 on the matter as subject cited above.

The service plan/estimates for Commercial Colony over an area measuring 4.65625 acres in the revenue estate of village Shikohpur, Sector-82A, Distt. Gurugram being developed by you, has been checked and corrected wherever necessary by Chief Engineer-I, HSVP, Panchkula and are hereby approved subject to the following terms & conditions:

1. That you will abide by all the conditions and notes mentioned in the Service Plan Estimates of the subject cited colony contained in the Chief Engineer-I, HSVP, Panchkula office memo dated 14.03.2022.
2. That you will have to pay the proportionate cost to the External Development Charges for setting up Commercial Colony for the services like water supply, sewerage, storm water drainage, roads, bridges, community building, street lighting, horticulture and maintenance thereof etc. on gross acreage basis as and when determined by HSVP. These charges will be modifiable as and when approved by the authority/State Govt. and will be binding upon the colonizer.
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. That you shall be responsible for maintenance and upkeep of all roads, open spaces, public parks and public health services for a period of five years from the date of issue of the completion certificate under rule 16 unless earlier relieved of this responsibility and there upon to transfer all such roads, open spaces, public parks and public health services free of cost to the Government or the local authority, as the case may be.
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. LED lamps shall be provided to meet the requirement of HVPNL and as well environment.

6. 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.

7. 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.

Note (1):-

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.


(S.K. Sehrawat)
District Town Planner (HQ)
For Director, Town & Country Planning,
Haryana, Chandigarh

Endst. No. LC-1791/Asstt (MS)/2022/

Dated:

A copy is forwarded to the Chief Engineer-1, HSVP, Panchkula with reference to his memo No. CE-I/ACE(HQ)/HDM(G)/2022/41735 dated 14.03.2022 for information and necessary action please.

(S.K. Sehrawat)
District Town Planner (HQ)
For Director, Town & Country Planning,
Haryana, Chandigarh

Approval of service plan estimator

**PROPOSED ~~BUILDING PLAN~~ OF COMMERCIAL COLONY AREA
MEASURING 4.65625 ACRES (LICENSE NO. 70 OF 2008 DATED-
26.03-2008) IN SECTOR-82-A, GURUGRAM BEING DEVELOPED BY
NEWZONE BUILDWELL PVT. LTD.**

**SERVICE COST ESTIMATE FOR EXTERNAL
DEVELOPMENT WORKS**

Proposed 4.65625 Acres Commercial Colony In Sector-82-A, Gurugram Being Developed by
Newzone Buildwell PVT. LTD.

Report:

Estimate for providing water supply sewerage, storm water drainage, road, street lighting and horticulture in respect of 4.65625 Acres Commercial Colony in sector-82-A, Gurugram.

Sector-82-A of Gurugram District of Haryana State is situated approx. 45 kms from Delhi. Being the National Capital Region the town has fast developing tendency and potential. Further, it has also started sharing the growing residential / industrial load of Delhi and Gurugram city. In order to relieve the growing pressure of population in National Capital of Delhi, it has been decided by Haryana Govt. to establish various residential, industrial and other infrastructure sectors in Gurugram. This Commercial project is being developed by M/s. NEWZONE BUILDWELL PVT. LTD. This report and estimate is for plot area measuring 4.65625 Acres.

Water Supply

The source of water supply shall be HSVP water supply connection. It has been proposed to construct underground tanks of capacity as per attached details for domestic purpose. The underground tanks will be filled up from the HSVP riser and then pumped to the tanks of tower proposed on the terrace of the building. Water supply system has been designed as per Hazen William's formula.

Design

The scheme has been designed and the total water supply requirements calculated for population as given in attached sheets.

Pumping Equipment

It has been proposed to install pumping set as described with standby of equal capacity. The provision for standby generating set has been provided in case of any electricity failure Generator will be provided separately or added to the capacity of main generator.

Sewerage Scheme

This scheme is designed for sewer connecting to STP and overflow of STP connected to Municipal sewer manhole.

The sewerage system has been marked on the respective plans. The 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 & Flushing 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.

Proposed 4.65625 Acres Commercial Colony In Sector-82-A, Gurugram Being Developed by
Newzone Buildwell PVT. LTD.

Necessary design statement for entire sewerage system has been prepared and attached with estimate.

Storm Water Drainage

We propose to construct underground pipe drain which will be connecting to the HSVP drain along the service road outside the site. Necessary rainwater harvesting structure shall also be constructed to assist the underground aquifer recharge.

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:

Cost of road has been taken in the estimate.

Street Lighting

Provision for lighting on surrounding area has been made.

Horticulture:

Estimates and details of plantation, landscaping signage, etc., has been included.

Rates

The estimate has been based on the present market rates.

Cost

The total cost of the scheme, including cost of all services works out to be Rs. ^{496.25}~~125.63~~ Lacs/acre including 3% contingencies & 49% department charges.

For _____



**Proposed 4.65625 Acres Commercial Colony In Sector-82-A, Gurugram Being Developed by
Newzone Buildwell PVT. LTD.**

Water Requirement

DESCRIPTION	COVERED AREA IN SQ MTR	POPULATION BASIS	POPULATION	BASIS OF TOTAL WATER REQUIREMENT	TOTAL WATER REQUIREMENT	BASIS OF WATER USAGE AS PER NBC 2016				WATER REQUIREMENT		
						DOMESTIC		FLUSHING		DOMESTIC	FLUSHING	
A) DAILY WATER REQUIREMENT												
2nd BASEMENT												
a) PARKING / SERVICES	6887.000	1person/30sqm	230	45	lts/person	10350.00	25	lts/person	20	lts/person	5750.00	4,600.00
1st BASEMENT												
a) PARKING / SERVICES	6887.000	1person/30sqm	230	45	lts/person	10350.00	25	lts/person	20	lts/person	5750.00	4,600.00
LOWER GROUND FLOOR												
a) PARKING (STAFF)	4026.420	1person/30sqm	134	45	lts/person	6030.00	25	lts/person	20	lts/person	3350.00	2,680.00
b) SHOPS & KIOSKS	2397.360	1person/6 sqm	400									
(i) STAFF		@ 10%	40	45	lts/person	1,800.00	25	lts/person	20	lts/person	1000.00	800.00
(ii) VISITORS		@ 90%	360	15	lts/person	5,400.00	5	lts/person	10	lts/person	1800.00	3,600.00
GROUND FLOOR												
a) SHOPS/ANCHOR STORE	5801.050	1person/3 sqm	1934									
(i) STAFF		@ 10%	193	45	lts/person	8,703.00	25	lts/person	20	lts/person	4835.00	3,868.00
(ii) VISITORS		@ 90%	1741	15	lts/person	26,109.00	5	lts/person	10	lts/person	8703.00	17,406.00
1ST FLOOR												
a) SHOPS/ANCHOR STORE	4886.448	1person/6 sqm	814									
(i) STAFF		@ 10%	81	45	lts/person	3,663.00	25	lts/person	20	lts/person	2035.00	1,628.00
(ii) VISITORS		@ 90%	733	15	lts/person	10,989.00	5	lts/person	10	lts/person	3663.00	7,326.00
2ND FLOOR												
a) SHOPS/ANCHOR STORE	4223.050	1person/6 sqm	704									
(i) STAFF		@ 10%	70	45	lts/person	3,168.00	25	lts/person	20	lts/person	1760.00	1,408.00
(ii) VISITORS		@ 90%	634	15	lts/person	9,504.00	5	lts/person	10	lts/person	3168.00	6,336.00
b) RESTAURANT	490.510	1person/1.8 sqm	273	70	lts/person	19,075.39	55	lts/person	15	lts/person	14987.81	4,087.58
3RD FLOOR												
a) FOOD COURT	1847.720	1person/1.8 sqm	1027	35	lts/person	35,927.89	25	lts/person	10	lts/person	25662.78	10,265.11
b) RESTAURANT	306.670	1person/1.8 sqm	170	70	lts/person	11,926.06	55	lts/person	15	lts/person	9370.47	2,555.58
4TH FLOOR												
a) CINEMA SEATS (1150)		1person/ Seat	1150	15	lts/person	17,250.00	5	lts/person	10	lts/person	5750.00	11,500.00
(ii) VISITORS		@ 20%	230	15	lts/person	3450.00	5	lts/person	10	lts/person	1150.00	2,300.00
TOTAL						1,83,695.33					98,735.06	84,960.28
SAY IN KLD						184					99	85

Total Water Demand in m³/day

(a) For Domestic Purpose	-	99 m ³ /day
(b) For Flushing Purpose	-	85 m ³ /day
(c) Filter Back wash	-	3 m ³ /day

I. Sewage Treatment Plant :

Domestic water demand	=	99 KLD
Sewage flow @ 80 %	=	79 KLD
Flushing water demand	=	85 KLD
Sewage flow @ 80 %	=	68 KLD



Proposed 4.65625 Acres Commercial Colony In Sector-82-A, Gurugram Being Developed by
Newzone Buildwell PVT. LTD.

Filter back wash	=	3 KLD
Sewage flow @ 100 %	=	3 KLD

Total Sewage Flow = 150 KLD

Domestic water demand for Food court & Restaurants	=	67 KLD
Sewage flow @ 80 %	=	53 KLD
Say	=	55 KLD

Proposed capacity of Sewage Treatment Plant

(Including 55 KLD Effluent treatment)

Add 5% for marginal factor

= 150 KLD

= *7.50 KLD*

157.50 KLD

say 160 KLD

II. Under Ground Water Tanks:

Total daily water demand (for domestic purposes)	-	99 m ³ /day
(a) Proposed underground tank for Raw Water	-	50 m ³
(b) Proposed underground tank for Domestic use	-	50 m ³
(c) Minimum Separate Static Storage for Fire Fighting purpose provided.	-	400 m ³
(d) Proposed underground tank for Flushing water in STP	-	<i>60</i> 85 m ³ <i>(at STP)</i>
<i>(Flushing w/s demand) + 1000 = 85 + 5 = 90</i> <i>2.60% = 90 x 60% = 54 KL</i>		
(e) Proposed underground tank for Soft water in STP	-	30 m ³

Proposed capacity of Under Ground Water Tanks

(50+50+400+85+30)

500

= *615* m³

III. Boosting Machinery (Domestic Water Supply Pumps) from UGT :

(a) Daily Domestic Water Demand	<i>(99+3)</i>	-	<i>102</i> 99 m ³ /day
(b) Discharge per hour @ 6 hr. pumping / day	-	<i>17</i>	16.50 m ³ /Hour
Say	-	<i>283.33</i>	275 LPM
(c) Proposed pump discharge for total 1 No. Pump (1Working+1stand by)	-	<i>285</i>	275 LPM
Say	-	<i>285</i>	275 LPM (Each pump)

Gross Working Head

(d) Suction lift - positive suction	-	0 meters
(e) Frictional loss in mains & specials	-	2.70 meter
(f) Max clear head required	-	50 meters
(g) H.P. of each pump required = <i>(285x50)</i> <i>(4500x0.60)</i>	-	<i>5.27</i> 3.77 HP
Say	-	<i>5.50</i> 5.0 HP



It is proposed to provide 2 No. of pumps (1 working + 1 standby) of **5.50** HP Each

IV. Boosting Machinery For (Recycled Water Supply Pumps) :

(a) Daily Recycled Water Demand	-	85 m ³ /day
(b) Discharge per hour @ 5 hr. pumping / day	-	17.0 m ³ /Hour
	Say -	285 LPM
(c) Proposed pump discharge for total 1 No. Pump (1Working+1Stand by)	-	285 LPM
	Say -	285 LPM (Each pump)

Gross Working Head

(d) Suction lift - positive suction	-	0 meters
(e) Frictional loss in mains & specials	-	2.11 meters
(f) Max clear head required	-	50 meters
(g) H.P. of each pump required $= (285 \times 50) / (4500 \times 0.60)$	-	5.27 HP
	Say -	5.50 HP

It is proposed to provide 2 No. of pumps (1 working + 1 standby) of **5.50** HP Each

V. Boosting Machinery For (Garden Irrigation Supply Pumps) :

(a) Daily Recycled Water Demand	-	5 m ³ /day
(b) Discharge per hour @ 2 hr. pumping / day	-	2.5 m ³ /Hour
	Say -	45 LPM
(c) Proposed pump discharge for total 1 No. Pump (1Working+1Stand by)	-	45 LPM
	Say -	45 LPM (Each pump)

Gross Working Head

(d) Suction lift - positive suction	-	0 meters
(e) Frictional loss in mains & specials	-	2.50 meters
(f) Max clear head required	-	30 meters
(g) H.P. of each pump required $= (45 \times 30) / (4500 \times 0.60)$	-	0.5 HP
	Say -	0.50 HP

It is proposed to provide 2 No. of pumps (1 working + 1 standby) of **0.50** HP Each



VI. Pumps for Fire protection For the UGT :

S. No.	Parameters	Location	Pump Sets					Curtain
			Jockey (Hyd)	Jockey (Spr.)	Main	Sprinkler	Diesel	
(a)	Discharge in lpm	Pump Room	180 lpm	180 lpm	2850 lpm	2850 lpm	2850 lpm	2280 lpm
(b)	Head in meters		80	80	80	80	80	56
(c)	HP		10	10	100	100	100	60
(d)	Quantity in Nos.		1	1	1	1	1	1

VII. Generating Sets:

HP of domestic pump = 5.50×1 = ~~5.0~~ 5.50

HP of recycled pumps = $5.5 \times 1 + 0.50 \times 1$ = ~~5.5~~ 6.00

HP of recycled pump = 0.5×1 = ~~0.5~~

HP of Jockey = 10×2 = 20.0

For Electrification =
Total = ~~15.0~~ 46.50
31.0 HP

In KVA = $46.50 \times 1.50 \times 0.746$ = ~~52.03~~ 34.68 KVA

Lighting = ~~5 KVA~~

Total = ~~39.68 KVA~~

Say ~~60~~ 40 KVA



Proposed 4.65625 Acres Commercial Colony In Sector-82-A, Gurugram Being Developed by Newzone Buildwell PVT. LTD.

FINAL ABSTRACT OF COST

		Amount in Lakhs
SUB WORK No. I	WATER SUPPLY & FIRE FIGHTING SCHEME	168.48 132.85
SUB WORK No. II	SEWERAGE SCHEME	82.95 47.50 79.60
SUB WORK No. III	STORM WATER DRAINAGE	47.86 40.95
SUB WORK No. IV	ROADS WORK	63.55 50.00 68.97
SUB WORK No. V	STREET LIGHTING	13.05 6.85 17.87
SUB WORK No. VI	HORTICULTURE	1.27 17.85
SUB WORK No. VII	MTC CHARGES INCL for 10 yrs. RESURFACING OF ROADS AFTER 1st 5 YEARS AND 2nd YEAR OF MTC (AS/ HUDA NORMS)	62.50 62.55 98.24
	TOTAL	366.67 374.07 496.22
	SAY	496.25 Lakhs 374.00

Hence, Total Cost per Gross Acre, $\frac{374}{2.976875} = 125.63$ Lakhs Per Acre

Hence Cost/Acre = $\frac{496.25}{4.65625} = \text{Rs } 106.58 \text{ Lakhs}$

Executive Engineer
HSVP Division No.V,
Gurugram



AUTHORISED SIGNATORY

Checked subject to comments
in forwarding letter No. 41135
Dt. 14/3/2022 and notes
attached with the estimate

Additional Chief Engineer (HQ)
for Chief Engineer-I, HSVP
Panchkula

Superintending Engineer,
HSVP, Circle, Gurugram.

Director
Town & Country Planning
Haryana, Chandigarh

**Proposed 4.65625 Acres Commercial Colony In Sector-82-A, Gurugram Being Developed by
Newzone Buildwell PVT. LTD.
SUB WORK No. 1 (Abstract of Cost)**

Amount in Lakhs

1	SUB HEAD No. 1 (HEAD WORKS & PUMPING MACHINERY)	38.10 31.10
2	SUB HEAD No. 2 (FIRE PUMPING MACHINERY)	48.00 33.00
3	SUB HEAD No. 3 (RISING MAIN)	1.96 3.35
4	SUB HEAD No. 4 (DISTRIBUTION SYSTEM)	2.60 2.75
5	SUB HEAD No. 5 (FLUSHING SYSTEM)	9.72 8.10
6	SUB HEAD No. 6 (FIRE RISING MAIN)	9.40 8.25
	TOTAL	109.78 86.55
	Add 3 % Contingencies & PH Charges	3.29 2.60
	TOTAL	113.07 89.15
	Add 49 % Departmental Charges, Price escalation, unforeseen, Admin.	55.41 43.68
	TOTAL	168.48 132.83
	Say in Lakhs	132.85
	(c/o to final abstract of cost)	



Proposed 4.65625 Acres Commercial Colony In Sector-82-A, Gurugram Being Developed by Newzone Buildwell PVT. LTD.

SUB WORK No. 1

Water Supply

SUB HEAD No. 1

HEAD WORKS

Amount in Lakhs

1. Construction of boosting machinery of suitable size in all respect.

i) Const. of boosting chamber as standard design/appd.design(18'X36') (L.S.)

5.00
2.00

ii) Providing & installing of Centrifugal pumping set capable of delivering 275 LPM, Head 50 m (5.5 HP), 2 Nos.(1 working + 1 Stand by) @ Rs 125000/- each.(For Domestic Water Supply)

285

2.50

iii) Providing & installing of Centrifugal pumping set capable of delivering 285 LPM, Head 50 m (5.5 HP), 2 Nos.(1 working + 1 Stand by) @ Rs 140000/- each.(For Recycled Water Supply)

2.80

iv) Providing & installing of Centrifugal pumping set capable of delivering 45 LPM, Head 30 m (0.5 HP), 2 Nos.(1 working + 1 Stand by) @ Rs 40000/- each.(For Recycled Water Supply)

0.80

v) Providing & installing of Transformer & direct connection of suitable capacity.(L.S.)

1.50

2. Provision for carriage for materials and other foreseen items L.S

1.00

3. Construction of U.G. tanks 585 KL @ Rs. 3500/-
(50 Raw + 50 Domestic + 370 Fire + 85 Flushing + 30 Soft Water)

500

4500/-

22.50
20.48

4. Provision for facilities for maintenance staff. → TOTAL (L.S.) 31.08
31.10

Say in Lakhs

(C/O To abstract of cost for Subwork No. 1)

Say Re 38.10 Lakhs



SUB WORK No. I
Sub Head No. 02

Fire Fighting
Pumping Machinery
Amount in Lakhs

1	Provision for diesel engine genset each for standby arrange-ments. For pumps complete with gear head arrangemnts of followings capacities 1 No. 40 KVA (Lumpsum) <i>60</i>	Rs.	<i>6.00</i> 6.50
2	Providing and installing pumping set of following capacities for Fire protections : 180 lpm at 80 M head 2 Nos. @ Rs. 1,25,000 each 2850 lpm at 80 M head 1 No. DG pump @ Rs. 7,50,000/- each 2850 lpm at 80 M head 2 Nos. @ Rs. 4,50,000/- each 2280 lpm at 56 M head 1 No. @ Rs. 3,00,000/- each <i>2,00,000/-</i> <i>9,00,000/-</i> <i>8,00,000/-</i> <i>3,00,000/-</i> <i>(Hydrants)</i>	Rs. Rs. Rs. Rs.	<i>4.00</i> 2.50 7.50 <i>9.00</i> 9.00 <i>16.00</i> 3.00 <i>5.00</i>
3	Provision for making foundations and erection of Pumping Machinery (Lump sum)	Rs.	<i>2.00</i> 0.50
4	Provision for pipes, valves and specials inside boosting chamber (Lumpsum)	Rs.	2.00 ✓
5	Provision for electric service connection including electrical fittings for boosting chamber including cost of Transformer. (Lumpsum)	Rs.	<i>2.00</i> 1.00
6	Provision for carriage of material and other unforeseen items etc (Lumpsum)	Rs.	1.00
7.	<i>Provision for chlorination plant complete INR TOTAL Rs 1,00,000/-</i>	Rs.	<i>1.00</i> 33.00 <i>48.00</i>
Say in Lakhs		Rs.	<i>48.00 Lakhs</i> 33.00

(C/O to Abstract of cost for Sub work No. I)



Sub - work No. 1
Sub Head No - 03

Water Supply
Rising main

Amount in Lakhs

- 1 Providing, Laying, Jointing, and testing pipe lines including cost of excavation etc complete in all respect
80 65 mm dia G.I pipe 15 m @ ~~1250/-~~ 1000/-
- 2 Providing & Fixing sluice valve including cost of surface box and masonry chamber etc. complete in all respect
80 65 mm i/d 1 .No. @ ~~7500/-~~ 10,000/-
- 3 Providing and fixing indicating plates for sluice valve and air valves - 1 no @ Rs. 1000/- each
- 4 Providing and fixing air release valve & scour valve 1 No @ Rs. ~~6000~~ /- Each
10,000/-
- 5 Provision for carriage for materials and other unforeseen items (Lump Sum)
- 6 Making Water supply connection with HSVP main
- 7 Provision for cutting of roads and making good to its original condition

Rs.	0.15 0.19
Rs.	0.10 0.08
Rs.	0.01 ✓
Rs.	0.10 0.06
Rs.	0.30 1.00
Rs.	1.00 ✓
Rs.	0.30 1.00
Rs.	<u>1.96</u>
Rs.	3.33
Rs.	3.35 1.96 Lakh

Total
Say in Lakhs

(C/O to Abstract of cost for subwork No. I)



Sub - work No. 1
Sub Head No - 04

Domestic Water Supply
Distribution System
Amount in Lakhs

1	Providing, Laying, Jointing, and testing C.I./GI pipe lines including Fittings ,Valves, Cost of supports etc complete in all respect GI Pipe 80 mm, 110 m @ Rs. 1500/- <i>1000/-</i>	Rs.	<i>1.10</i> 1.65
2	Provision for carriage of materials and other unforeseen items (Lump	Rs.	<i>0.50</i> 1.00
3	Providing and fixing valves 80 mm dia <i>4</i> No. @ Rs. <i>2500</i> /- each <i>10000/-</i>	Rs.	<i>0.40</i> 0.09
4	<i>Provision for cutting of roads & making good the same.</i>	Rs.	<i>0.50</i> 2.74
	Total		
5	<i>Provision for Air release valves 1 No @ Rs 10,000/- each</i>		<i>0.10</i> <u><i>Rs 2.60</i></u>



Sub - work No. 1
Sub Head No - 05

Water Supply
Distribution For Flushing & Irrigation System
Amount in Lakhs

1	Providing, Laying, Jointing, and testing C.I/GI pipe lines including Fittings ,Valves, Cost of excavation etc complete in all respect i) GI Pipe 80 mm, 100 m @ Rs. 1500/- <i>1000/-</i>	Rs.	<i>1.00</i> 1.50
2	Providing, laying, jointing and testing uPVC pipe line confirming to I.S. 4985, including cost of excavation etc. complete in all respects. i) 32 mm OD Pipe 14 M @ 300/- <i>350/-</i> ii) 110 OD Pipe - 415 M @ Rs. 900/- per mtr <i>1000/-</i>	Rs. Rs.	<i>0.05</i> 0.04 3.74 <i>4.15</i>
3	Providing and fixing 25 mm dia. Irrigation hydrant valve complete in all respect 14 Nos. @ Rs. 1000/- each <i>5000/-</i>		<i>0.70</i> 0.14
4	Provision for carriage of materials and other unforeseen items (Lump sum) <i>cutting of roads & material good the same</i>	Rs.	1.00
5	Providing and fixing valves <i>3500/-</i> i) 25 mm dia 14 Nos. @ Rs. 1500/- each <i>21000/-</i> ii) 100 mm dia 4 Nos. @ Rs. 10000/- each <i>12000/-</i>	Rs. Rs.	<i>0.14</i> 0.21 0.40 <i>1.68</i>
6	Provision for carriage of materials and other unforeseen items (Lump sum)	Rs.	1.00
Total		Rs.	<i>9.72</i> 8.03
Say in Lakhs		Rs.	<i>9.72 Lakh</i> 8.10

(C/o To Abstract of cost for subwork no.I)



Sub - work No. I
Sub Head No - 06

Water Supply
FIRE FIGHTING MAINS

S. No.	Description	Amount (in Lakhs)
1	Providing, Laying, Jointing and testing M.S. Pipes lines for fire using main including cost of fittings, valves, connection etc. Complete in all respect.	
	(i) 150 mm m.s. pipe line 400 m @ Rs. 1500 ^{1575/-} per mtr	6.00 ^{6.30}
	(ii) 80 mm id/d 18 m @ Rs. 700 ^{1000/-} per mtr.	0.13 ^{0.18}
2	Providing & fixing sluice valve 150 mm dia 3 Nos. @ Rs. 10000 ^{15000/-} each	0.30 ^{0.45}
3	Providing and fixing fire hydrant 9 Nos. @ Rs. 7500 ^{15000/-} each	0.68 ^{1.35}
4	Providing for carriage of a material (L.S.)	0.50 ✓
5	Providing & fixing Indicating Plates For sluice valves & Fire Hydrants 12 Nos. @ Rs.1000 each	0.12 ✓
6	Provision for cutting of roads and making good to its in original condition (L.S.)	0.50 ✓
Total		8.22 ^{9.40}
Say in Lakhs		8.25 ^{9.40 Lakhs.}

C/O To Abstract of Cost of Subwork No. 1)



Sub - work No.II

SEWERAGE

S. No.	Description	Amount (in Lakhs)
1	Providing, jointing, cutting & testing S.W. pipe Class 'A' and lowering into trenches including cost of excavation, bed concrete cost of manholes, erecting / fixing vent shafts as per norms etc. complete in all respects.	
a)	a) 200 mm dia i/d S.W. Pipes Avg. depth up to 2 M, 85 M@ Rs. 1250 / M	1.06
b)	b) 200 mm dia i/d S.W. Pipes Avg. depth up to 4 M, 118 ²⁵⁵ M @ Rs. 1500/M	1.77 ^{3.99}
2	Provision for cartage of material(L.S.)	1.00
3	Provision for making HSVP Connection(L.S.)	1.00
4	Provision for temporary Timbering (L.S.)	1.00
5	Provision for oblique junction (L.S.)	1.00
6	Provision for Sewage Treatment Plant of capacity 150 ¹⁶⁰ KLD including the Effluent Treatment Plant of capacity 55 KLD (L.S.) ^{1600/KLD} } L.S.	45.00 ^{24.40} } 45.00
	and cost of flushing tank of 60 KL	30.83 ^{51.83} 54.05
	Total	51.83 ^{0.92} 1.62
	Add 3% contingencies & PH charges	1.55 ^{31.75} 55.67
		53.39 ^{15.55} 27.28
	Add 49% departmental charges, price escalation unforeseen, admn. Charges	26.16 ^{67.30} 82.95
	Total	79.55 ^{47.50} 89.95
		79.60 ^{89.95}

Say in Lakhs

(C/O to FINAL Abstract of cost)



Sub - work No.III

STORM WATER DRAINAGE

S. No.	Description	Amount (in Lakhs)
1	Providing and laying RCC Pipe drain class NP-3 with cement joint manholes, excavation etc. complete in all respect.	
a	300 mm dia 0 m @ Rs. 2000/-	-
b	400 mm dia 227 m @ Rs. 2500/-	5.68
2	Provision for Road gullies with 250mm dia pipe connections L.S.	3.50 1.50
3	Providing Rain Harvesting arrangements 8 nos. @ Rs. 200000 (L.S.) <i>250,000/- each</i>	20.00 16.00
4	Provision for shoring & Timbering (L.S.)	0.50 1.00
5	Provision for Lighting, Watching	0.50 1.00
6	Provision for carriage of Material (L.S.)	0.50 1.00
7	Provision for making connection to HSVP Line (L.S.)	1.00 0.50
	Total	26.68 <i>31.18</i>
	Add 3% for contingencies and PH charges	0.80 <i>0.94</i>
	Total	27.48 <i>32.12</i>
	Add 49% Departmental Charges, Price Escalation unforeseen, admn. Charges	13.46 <i>15.74</i>
	Total	40.94 <i>47.86</i>
	Say in Lakhs	<i>Rs 47.86 Lakh.</i>
	Cost to final abstract of cost)	40.95



SUB WORK - IV

ROAD WORK

Amount in Lakhs

1	Provision for levelling & earth filling as per site conditions 2.976875 acres @ Rs. 150,000	Rs.	4.47
2. (i)	Const. of roads by providing granular sub-base 300mm as per MORT & H Specifications conforming to clause 401 grading - II 400.1.		
(ii)	Providing, laying, spreading & compacting stone aggregate to wet mix macadam conforming to physical requirement laid in 400 Of MORT & H Specification in two layers compacted to 150mm(0.75+0.75mm) by taking material 1.32 times of the (thickness of the layer) including premixing of material with water in mechanical mixer.		
(iii)	50mm thick B.M.		
(iv)	20 mm thick pre-mix seal Surfacing.		
	FOR 2155 sqm @ Rs. 1200 PER SQM	Rs.	25.86
3	Provision for kerbs & Channels of CC 1:1, 2:3 {342 RMT @ Rs. 600/mm}	Rs.	21.55
		Rs.	4.10
4	Provision for making approach and pavement to building (L.S.)	Rs.	2.00
5	Provision of guide maps and other unforeseen and indicating board etc. (L.S.)	Rs.	1.00
6	Provision of Traffic Lights arrangement (L.S.)	Rs.	1.00
7	Provision for carriage of material & Other unforeseen items (L.S.)	Rs.	1.00
	Total	Rs.	44.94
	Add 3% contingency & PE Charges	Rs.	1.35
	Total	Rs.	46.29
	Add 49% depts. charges, Price Escalation, Unforeseen Admin. Charges	Rs.	22.68
	Total	Rs.	68.97
	Say in Lakhs	Rs.	68.97 Lakhs

(C/O TO FINAL ABSTRACT OF COST)



SUB WORK - V

STREET LIGHTING

	Amount in Lakhs
1 Providing lighting at surrounding area as per standard specifications of HVPN 2.976875 ^{2.50000} acres @ Rs. 150000/ acres 4.65625	Rs. 8.49 11.64 4.47
Add 3% contingencies & PE. Charges	Rs. 0.25 0.35 0.13
Total	Rs. 8.74 11.99 4.60
Add 49% Departemental Charges, Price Exclation, unforeseen admin. Charges	Rs. 4.28 5.88 2.25
Total	Rs. 13.02 17.87 6.85
Say in Lakhs	Rs. 13.05 17.87 Lakh 6.85
(C/O TO FINAL ABSTRACT OF COST)	



SUB - WORK -VI

HORTICULTURE
Rs Lakh
Amount in Rupees

1 Development of Lawn Areas:

- a) Trenching of ordinary soil upto depth of 60 cm i/c removal & stacking of serviceable material & disposing by spreading and levelling within a lead of 50 M and making up the trench area for proper levels by filling with earth or earth mixed with manure before and after flooding trench with water i/c 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 moving in row 7.5 cm part in either direction. ✓

0.2232 acres organised green @ 150000/- acres

Rs.

6.98
~~33,480~~

2 Providing and planting trees along boundary @ 6 m interval

Total peripheri of Green = *342* 392 m

No, of trees *342* 392/6

Cost Details

Excavation = 60
Manure = 90
Tree Plant = 150
Tree Guard = 1000
Total 1300

57 1300
~~65~~ Trees @ Rs. 750/- Each

Total

Add 3 % Contingencies & PH Charges

Add 49% departmental Charges

TOTAL

(C/O TO FINAL ABSTRACT OF COST)

~~SAY~~ ~~65.33~~
65 Nos.

Rs. 30/-
Rs. 60/-
Rs. 60/-
Rs. 600/-
Rs. 750/-

Rs. *0.74*
~~48,750~~

Rs. *7.72*
~~82,230~~ *0.23*
Rs. ~~2,467~~ *295*

Rs. ~~84,697~~ *3.90*
~~41,501~~

Rs. ~~1,26,198~~ *11.85*

Say Rs. *11.85*
1.27 Lakhs



SUB WORK -VII- SERVICES & RESURFACING OF ROADS

Amount in Lakhs

1	Providing of MTC charges for W/s, SWD Sewarage, Roads, Street Lighting, Horticulture etc. complete in all aspects, including operational and establishment charges as per HUDA norms for 10 years completion 2.976875 acres @ ^{7.50} 5 lacs per acre	Rs.	14.88 34.92
2	Provision of resurfacing of roads after 5 years of MTC one layer of ^{50mm thick B.M. & 25mm thick} 100 mm thick BUSG compacted to 75 mm thick premix carpet with seal coat 2155 sq. mt. @ Rs. ⁶⁰⁰ 700/- per sq.mt.	Rs.	15.09 12.93
	Resurfacing of road after 10 years of MTC 2155 sq.mt. @ Rs. ⁷⁵⁰ 500 per sq.mt. ⁶⁰⁰ (with 50mm B.M. & 25mm premix carpet)	Rs.	10.78 16.16
	Total	Rs.	43.99 64.01
	Add 3% contingencies & PE charges	Rs.	1.22 1.92
	Total	Rs.	41.97 65.93
	Add 49% Departmental charges	Rs.	22.18 32.31
	Total	Rs.	62.53 98.24
	Say	Rs.	67.50 98.24 62.55 Lakhs

(C/O TO FINAL ABSTRACT OF COST)



TITLE : DAILY WATER REQUIREMENT AND STORAGE.

DESCRIPTION	COVERED AREA IN SQ MTR	POPULATION BASIS	POPULATION	BASIS OF TOTAL WATER REQUIREMENT	TOTAL WATER REQUIREMENT	BASIS OF WATER USAGE AS PER NBC 2016				WATER REQUIREMENT	
						DOMESTIC		FLUSHING		DOMESTIC	FLUSHING
A) DAILY WATER REQUIREMENT											
2nd BASEMENT											
a) PARKING / SERVICES	6887.000	1person/30sqm	230	45 lts/person	10350.00	25 lts/person	20 lts/person	5750.00	4,600.00		
1st BASEMENT											
a) PARKING / SERVICES	6887.000	1person/30sqm	230	45 lts/person	10350.00	25 lts/person	20 lts/person	5750.00	4,600.00		
LOWER GROUND FLOOR											
a) PARKING (STAFF)	4026.420	1person/30sqm	134	45 lts/person	6030.00	25 lts/person	20 lts/person	3350.00	2,680.00		
b) SHOPS & KIOSKS	2397.360	1person/6 sqm	400								
(i) STAFF		@ 10%	40	45 lts/person	1,800.00	25 lts/person	20 lts/person	1000.00	800.00		
(ii) VISITORS		@ 90%	360	15 lts/person	5,400.00	5 lts/person	10 lts/person	1800.00	3,600.00		
GROUND FLOOR											
a) SHOPS/ANCHOR STORE	5801.050	1person/3 sqm	1934								
(i) STAFF		@ 10%	193	45 lts/person	8,703.00	25 lts/person	20 lts/person	4835.00	3,868.00		
(ii) VISITORS		@ 90%	1741	15 lts/person	26,109.00	5 lts/person	10 lts/person	8703.00	17,406.00		
1ST FLOOR											
a) SHOPS/ANCHOR STORE	4886.448	1person/6 sqm	814								
(i) STAFF		@ 10%	81	45 lts/person	3,663.00	25 lts/person	20 lts/person	2035.00	1,628.00		
(ii) VISITORS		@ 90%	733	15 lts/person	10,989.00	5 lts/person	10 lts/person	3663.00	7,326.00		
2ND FLOOR											
a) SHOPS/ANCHOR STORE	4223.050	1person/6 sqm	704								



TITLE : DAILY WATER REQUIREMENT AND STORAGE.												
DESCRIPTION	COVERED AREA IN SQ MTR	POPULATION BASIS	POPULATION	BASIS OF TOTAL WATER REQUIREMENT		TOTAL WATER REQUIREMENT	BASIS OF WATER USAGE AS PER NBC 2016				WATER REQUIREMENT	
							DOMESTIC		FLUSHING	DOMESTIC	FLUSHING	
(i) STAFF		@ 10%	70	45	lts/person	3,168.00	25	lts/person	20	lts/person	1760.00	1,408.00
(ii) VISITORS		@ 90%	634	15	lts/person	9,504.00	5	lts/person	10	lts/person	3168.00	6,336.00
b) RESTAURANT	490.510	1person/1.8 sqm	273	70	lts/person	19,075.39	55	lts/person	15	lts/person	14987.81	4,087.58
3RD FLOOR												
a) FOOD COURT	1847.720	1person/1.8 sqm	1027	35	lts/person	35,927.89	25	lts/person	10	lts/person	25662.78	10,265.11
b) RESTAURANT	306.670	1person/1.8 sqm	170	70	lts/person	11,926.06	55	lts/person	15	lts/person	9370.47	2,555.58
4TH FLOOR												
a) CINEMA SEATS (1150)		1person/ Seat	1150	15	lts/person	17,250.00	5	lts/person	10	lts/person	5750.00	11,500.00
(ii) VISITORS		@ 20%	230	15	lts/person	3450.00	5	lts/person	10	lts/person	1150.00	2,300.00
TOTAL						1,83,695.33					98,735.06	84,960.28
SAY IN KLD						184					99	85



Design of Domestic Water Riser

a)	Total daily domestic water requirement	=	99 m ³ /day
b)	Pumping hours	=	6 hrs.
c)	Flow rate per hr.	=	16.50 m ³ /hr
d)	Dia of Riser	=	80 mm
e)	Velocity in line	=	0.91 m/s
f)	Losses mtr / mtr	=	0.021 mtr/mtr
g)	Total length of riser	=	110 mtr.
h)	Add 15% extra for fittings	=	127 mtr.
i)	Total head loss	=	2.70 mtr.
j)	Level of Pump Room	=	(-) 4.40 M
k)	Level of Inlet to O.H.T.	=	(+) 35.60 M
l)	Clear Head required	=	40.0 mtr.
m)	Head Required at Inlet	=	5.0 mtr.
n)	Gross head required	=	40.0+5.0+2.70 mtr.
		=	47.70 m
	Say	=	50.0 M

Design of Flushing Water Riser

a)	Total daily domestic water requirement	=	85 m ³ /day
b)	Pumping hours	=	5 hrs.
c)	Flow rate per hr.	=	17.0 m ³ /hr
d)	Dia of Riser	=	80 mm
e)	Velocity in line	=	0.94 m/s
f)	Losses mtr / mtr	=	0.023 mtr/mtr
g)	Total length of riser	=	100 mtr.
h)	Add 15% extra for fittings	=	115 mtr.
i)	Total head loss	=	2.64 mtr.
j)	Level of Pump Room	=	(-) 4.40 M
k)	Level of Inlet to O.H.T.	=	(+) 35.60 M
l)	Clear Head required	=	40.0 mtr.
m)	Head Required at Inlet	=	5.0 mtr.
n)	Gross head required	=	40.0+5.0+2.64 mtr.
		=	47.64 M
	Say	=	50 M



23

TITLE :- DESIGN OF HSVP RISING MAIN

S.NO	LINE NO	AVERAGE DEMAND	PEAK DEMAND @ 1.5 TIMES	FLOW RATE	LENGTH OF PIPE	HEAD LOSS MTR/ MTR	TOTAL HEAD LOSS	VELOCITY	DIA OF PIPE
		KLD	KLD	LPM	MTR.	MTR.	MTR.	M/SEC	MM
1	HSVP MAIN- UGT	99.00	148.50	103.13	15	0.00968	0.15	0.52	65



24

Title :- Water Supply Risers from Pump Room (Material Statement).

S.NO	LINE FROM	LINE TO	LENGTH OF PIPE IN MTR			DIA OF RISER	PIPE DIA IN MM					VALVES ON LINES				
			HORIZONTAL		VERTICAL		TOTAL	100	80	65	50	100	80	65	50	
Domestic Water Riser																
1	Plumbing Pump Room	O.H.T.	70	40	110	80	0	110	0	0	0	1	0	0	0	
Flushing Water Riser																
2	S.T.P. Pump Room	O.H.T.	60	40	100	80	0	100	0	0	0	1	0	0	0	
TOTAL																
							0	210	0	0	0	2	0	0	0	
HSVP RISING MAIN																
3	HSVP MAIN- UGT		10	5	15	80 65	0	0	15	0	0	0	1			



TITLE :- FIRE EXTERNAL RING MAIN - STATEMENT OF MATERIAL													
S.NO	LINE NO	PIPE				VALVE				EXTERNAL HYDRANT			
		200 mm	150 mm	100 mm	80 mm	200 mm	150 mm	100 mm	80 mm	80 mm			
1	Pump Room-FF1		15		0		1		0				0
2	FF1-FF2		31		0		1		0				0
3	FF2-FF3		90		4		0		2				2
4	FF3-FF4		105		6		0		3				3
5	FF4-FF5		84		4		0		2				2
6	FF5-FF1		75		4		1		2				2
TOTAL		0	400	0	18	0	3	0	9				9



PROJECT : Proposed 4.65625 Acres Commercial Colony In Sector-82-A, Gurugram Being Developed by Newzone Buildwell PVT. LTD.

Title: Garden Irrigation Piping (Material Statement)

Line No.	Length Of Line	Outer Dia of Pipe	Length of Lines			G.H. Nos.	Valves		
			110 OD	40 OD	32 OD		100 mm	32 mm	25 mm
PUMP ROOM - G1	15	110	15	0	0	0	1		0
G1 - G2	25	110	25	0	1	1	1		1
G2 - G3	115	110	115	0	4	4	0		4
G3 - G4	85	110	85	0	3	3	1		3
G4 - G5	105	110	105	0	4	4	0		4
G5 - G1	70	110	70	0	2	2	1		2
TOTAL	415		415	0	14	14	4	0	14



Title: Self Load on Sewerage Lines.

NAME OF SEWER LINE	LOAD ON LINES			SEWAGE FLOW (Self Load on Line) LPD
	DAILY WATER REQUIREMENT IN LTRS.	SEWAGE FLOW	LOAD ON LINES	
		@ 80 % OF DWR		
S1 - S2	187000	149600	0.2	29920
S2 - S3	187000	149600	0.15	22440
S3 - S4	187000	149600	0.2	29920
S4 - S5	187000	149600	0.15	22440
S5 - S6	187000	149600	0.15	22440
S6 - STP	187000	149600	0.15	22440
				149600
STP - HSVP SEWER				149600



Title: Sewerage Quantity Sheet.											
NAME OF SEWER LINE	Length of line MTR	Dia of Pipe MM	Depth of Line			Line Depth Upto 2.0 Mtr			Line Depth Upto 4.0 Mtr		
			U/End	L/End	Average Depth	200 Dia	250 Dia	400 Dia	200 Dia	250 Dia	400 Dia
S1 - S2	30	200	1.80	1.76	1.78	30	0	0	0	0	0
S2 - S3	45	200	1.76	2.17	1.96	45	0	0	0	0	0
S3 - S4	45	200	2.17	2.43	2.30	0	0	0	45	0	0
S4 - S5	34	200	2.43	2.61	2.52	0	0	0	34	0	0
S5 - S6	35	200	2.61	2.79	2.70	0	0	0	35	0	0
S6 - STP	4	200	2.79	2.82	2.81	0	0	0	4	0	0
STP - HSVP SEWER	10	200	1.30	0.90	1.10	10	0	0	0	0	0
TOTAL S.W. PIPE	203	M				85	0	0	118	0	0



Title: Hydraulic Design of Sewer.

Name of Sewer Line	Sewage Flow (Self Load on Line) LPD	Previous Load LPD	Progressive Discharge	Progressive Discharge (Average)	Peak Discharge @ 3 Times Average	Infiltration @ 25% KLD	Total Discharge KLD	Total Discharge CUSECS	Length of line MTR	Dia of Pipe MM	Slope 1 IN	Value of (n)	Velocity Flowing Full FT/SEC	Capacity of Pipe Flowing Full (Q) CUSECS	Capacity of Pipe Flowing Half Full (Q) CUSECS	Fall in Line MTR	Levels at Start		Levels at End	
																	F.F.L. at Start MTR	Invert Lvl at Start	F.F.L. At End MTR	Invert Lvl at End
S1 - S2	29920	0	29920	29.920	89.760	7.480	97.240	0.04	30	200	190	0.013	2.5	0.84	0.42	0.16	0.45	-1.35	0.25	-1.51
S2 - S3	22440	29920	52360	52.360	157.080	13.090	170.170	0.07	45	200	190	0.013	2.5	0.84	0.42	0.24	0.25	-1.51	0.43	-1.74
S3 - S4	29920	52360	82280	82.280	246.840	20.570	267.410	0.11	45	200	190	0.013	2.5	0.84	0.42	0.24	0.43	-1.74	0.45	-1.98
S4 - S5	22440	82280	104720	104.720	314.160	26.180	340.340	0.14	34	200	190	0.013	2.5	0.84	0.42	0.18	0.45	-1.98	0.45	-2.16
S5 - S6	22440	104720	127160	127.160	381.480	31.790	413.270	0.17	35	200	190	0.013	2.5	0.84	0.42	0.18	0.45	-2.16	0.45	-2.34
S6 - STP	22440	127160	149600	149.600	448.800	37.400	486.200	0.20	4	200	190	0.013	2.5	0.84	0.42	0.02	0.45	-2.34	0.45	-2.37
STP - HSVP SEWER	149600	0	149600	149.60	448.800	37.400	486.200	0.20	10	200	190	0.013	2.5	0.84	0.42	0.05	0.45	-0.85	0.00	-0.90



303

Title: Storm Water Drainage Hydraulic Design.

S No	Line No.	Length in mtr.	Self Area in Sq. mtr.	Previous Area in (Sq. mtr.)	Total Area in (Sq. mtr.)	Total Area (Hec.)	Rain Fall inches /hr	Total Discharge (Cusecs)	Pipe dia	Slope 1 in	Velocity f/sec	Cap of pipe in cusecs	Fall in line mtr.	Road level at Start	H.F.L at Start	Invert Level at Start	Road level at End	H.F.L at End	Invert Level at End	Depth at Start (M)	Depth at End (M)
1	D1 - D2	35	1540	0	1540	0.154	1/4"	0.10	400	550	2.0	2.72	0.06	0.45	-0.55	-0.95	0.45	-0.61	-1.01	1.40	1.46
2	D2 - D4	20	1655	1540	3195	0.320	1/4"	0.20	400	550	2.0	2.72	0.04	0.45	-0.61	-1.01	0.45	-0.65	-1.05	1.46	1.50
3	D3 - D4	30	2485	3195	5680	0.568	1/4"	0.35	400	550	2.0	2.72	0.05	0.45	-0.65	-1.05	0.45	-0.70	-1.10	1.50	1.55
4	D4 - D5	40	1935	5680	7615	0.762	1/4"	0.47	400	550	2.0	2.72	0.07	0.45	-0.70	-1.10	0.45	-0.78	-1.18	1.55	1.63
5	D5 - D8	20	485	7615	8100	0.810	1/4"	0.50	400	550	2.0	2.72	0.04	0.45	-0.78	-1.18	0.45	-0.81	-1.21	1.63	1.66
6	D6 - D7	32	490	8100	8590	0.859	1/4"	0.54	400	550	2.0	2.72	0.06	0.45	-0.55	-0.95	0.45	-0.61	-1.01	1.40	1.46
7	D7 - D8	45	935	8590	9525	0.953	1/4"	0.59	400	550	2.0	2.72	0.08	0.45	-0.61	-1.01	0.45	-0.69	-1.09	1.46	1.54
8	D8 - OUTFALL	5	0	9525	9525	0.953	1/4"	0.59	400	550	2.0	2.72	0.01	0.45	-0.81	-1.21	0.00	-0.82	-1.22	1.66	1.22



Title : Storm Water Drainage Qty Sheet

S.No	Line No.	Length in mtr.	Pipe dia	Depth at Start	Depth at End	Average Depth	Pipe Upto 2mtr Depth			Pipe from 2 to 4 mtr Depth		
							250 Dia	300 Dia	400 Dia	250 Dia	300 Dia	400 Dia
1	D1 - D2	35	400	1.40	1.46	1.43	0	0	35	0	0	0
2	D2 - D4	20	400	1.46	1.50	1.48	0	0	20	0	0	0
3	D3 - D4	30	400	1.50	1.55	1.53	0	0	30	0	0	0
4	D4 - D5	40	400	1.55	1.63	1.59	0	0	40	0	0	0
5	D5 - D8	20	400	1.63	1.66	1.65	0	0	20	0	0	0
6	D6 - D7	32	400	1.40	1.46	1.43	0	0	32	0	0	0
7	D7 - D8	45	400	1.46	1.54	1.50	0	0	45	0	0	0
8	D8 - OUTFALL	5	400	1.66	1.22	1.44	0	0	5	0	0	0
TOTAL		227					0	0	227	0	0	0



32

ROAD AREA CALCULATION				
ROADS No.	LENGTH	WIDTH	METAL	AREA (SQM.)
	(M)	(M)	PORTION IN (M)	
R1	96	6	6	576
R2	75	6	6	450
R3	96	6	6	576
R4	75	6	6	450
TOTAL	342			2052
				Sqm
Add 5% extra for curves				102.6
Total Road Area in sqmtr.				2155
Total length of Road				342 M

