REVISED SERVICE ESTIMATE, DESIGN REPORT AND CALCULATION OF INTERNAL DEVELOPMENT WORKS FOR REVISED PLOTTED DEVELOPMENT SCHEME MEASURING 180.3115 Acres (164.0615 + 16.25)

AT GARDEN CITY SECTOR – 91 & 92

GURUGRAM
HARYANA

DEVELOPED BY

M/S DLF UTILITIES LIMITED

KUMAR ENDECON PVT. LTD.

REVISED SERVICE ESTIMATE DESIGN REPORT AND CALCULATION OF INTERNAL DEVELOPEMENT WORKS FOR PLOTTED DEVELOPMENT SCHEME MEASURING 180.3115 Acres (164.0615 + 16.25) AT GARDEN CITY SECTOR -91 & 92 , GURUGRAM. DEVELOPED BY M/S DLF UTILITIES LIMITED

REPORT

Gurgaon town of Haryana State is situated on Delhi - Jaipur National Highway No.8 at a distance of 30 kms for Delhi. Being in the national capital Region, the town has fast developing tendency and potential. Further, it has also started sharing the growing Industrial load of Delhi. In order to retieve the growing pressure of population in National Capital of Delhi, Haryana Urban Development Authority has already developed residential sector which are fully inhabited to an extent. Further to the increasing demand HSVP has planned to develop new sectors at outskirt of Gurugram town. This report and revised estimate is prepared for approval of 180.3115 acres Plotted Colony in accordance with revised layout/zoning plan.

Previously this estimate was sanctioned for 164.174 Acres vide memo no. LC-2523-JJ-JE (VA)/2014/ 24948 dated 28.10.14 and OC has already been granted for 161.361 Acres (101.218 Acres vide memo no. LC-2523-II-JE(VA)/2014/14328 dated 02.07.14 and for area 60.1435 Acres vide memo no. LC-2523H-PA(B)-2015/5603 dated 18.03.16) now it has been revised to 180.3115 Acres.

WATER SUPPLY

At present the source of water supply in this area is HSVP. 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 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 new addition of water supply line will not effect much on the existing water supply line which already been designed for taking hire discharges. All new areas water supply lines shall be connected to existing water supply line having sufficient intake capacity.

DESIGN

The scheme has been designed for population considering 13.5 person for each plot and 9 person for EWS. The rate of water supply per head/day has been taken as (150+15%) i.e. 172.5 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 75% 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 450mm dia has been designed to run half full and above 450mm 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.

The new addition of sewer network will not effect on the existing network of sewer line which already been designed for taking hire discharges. All new areas sewer lines shall be connected to existing sewer line having sufficient intake capacity.

STORM WATER DRAINAGE

We proposed to lay underground R.C.C. NP2 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. R.C.C storm water line will be designed as per Manning's formula.

The new addition of storm water network will not effect on the existing network of storm line which already been designed for taking hire discharges. All new areas storm lines shall be connected to existing storm line having sufficient intake capacity.

Additional 2 nos. rain water harvesting (RWH) pits has been included in this estimate for additional area.

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

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

Provision for construction of roads for additional areas has been included in this estimate.

Street Lighting

Provision for street light for additional areas also has been included in this estimate.

Horticulture

Estimates of plantation, landscaping etc., have been included. **Provision for additional areas also has been included in this estimate.**

Rates

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

Cost:

The total cost of the 180.3115 Acres scheme, including cost of all services works out to be Rs. 10156.50 (*Rupees One Hundred One Core Fifty Six Lakhs Fifty Thousand only*) including 3% contingencies & 49% departmental charges. Price escalation, unforeseen Admin charts.

FOR: DLF UTILITIES LIMITED

Authorized Signatory

KUMAR ENDECON PVT. LTD.

DLF UTILITIES LTD.

1.	DETAILS FOR DAILY WATER CONSUMPTION FOR ZONE (I) Sec-91(Right side) - Block - B		
S.N.	Water Demand Plots	population	Water Requirement
		(General &Nursing plot @ 13.5person) & (EWS @ 9 Person)	172.5 LPCD
a.	204 + 6 = 210 (General plot)	2835	489.04 kl
b.	3.86 Acre LTD LAND @ (25 kld /Acres)		96.5 kl
c.	1.75 Acre Commercial @ (25 kld /Acres)		56.0 43.76 kl
d.	0.25 Acre Nursing Home @ (25 kld /Nursing)		25.00 kl
	G.Total		654.29 kl 666.54
	Total Water demand per day	Say	654.29 KL 665 KL 670
	Total Domestic Water demand per day @ 70% of total demand		469 458.5 KL
		Say	459 KL 470
	Flushing Water demand per day @ 30% Of total Demand		196 KL 200
	Horticultural water requirement (Organized Green) (4.59 acre) @25 kl /acre-Per Day	Say	114.75KL 115 KL
	Total Flushing Water demand per day including horticulture		315 392 KL
2	Type of water & Type of Source For Zone 1.		470 459 KL
i.	Domestic water demand/ day (From HSVP)		200 KL
II.	Fire Capacity = 100 (P)^0.5 = 100 (4.59)^0.5 = 168 KL Say		115 KL
III.	Horticulture/day (From Centralized STP For Zone (1&2)		196 KL
IV.	Flushing water demand/ day (From Centralized STP For Zone (1&2)		200

(6)

2 Nos. Pump already provided against approved estimate i.e. 164.174 acres

= 825 lpm

balance pumping capacity req. = 1000 − 825 = 175 lpm

Head = 40 m

say 200 lpm

BHP req. = $\frac{200 \times 40}{60 \times 75 \text{ to } 60}$ = 2.96 HP

say 5.0 HP

Hence it is proposed to install 2 Nos addl. horizontal Centrifugal / submersible pump sets each capable of discharge of 200 lpm at a head of 40 m, with a motor of 5.0 HP (one working + one standby)

3.	HSVP Main water Supply Calculation		
a	Required Fresh Water per Day	~~459~~ 470	KL
b	Supply Duration	16	Hrs
c	Line Flow Rate	~~0.478~~ 0.489	(Cum/Min)
d	Proposed line dia.	100	mm
e	Flow Velocity.	1.5	(m/sec)
f	Friction Head Loss /1000m	19.9	Mtr
g	Length of line	110	Mtr
h	Total Head Loss	2.19	Mtr
4.	TOTAL U.G.		
i	TOTAL U.G. STORAGE AS BASED ONE DAY		
	Therefore it is proposed to construct Raw Water tanks of 400 KL (200KL x 2 nos), and Domestic tank of 400KL (200KL x 2nos) and fire water tanks of 300 KL (300 X 1 nos). Single tank already provided against approved estimate i.e. 164-17A area.		

5.	PUMPS FOR DOMESTIC WATER SUPPLY (HYDROPNUMATIC SUPPLY) FOR ZONE (1)		
i	Potable Water Requirement Per Day	~~459~~ 470	KL
ii	Pumping duration per day	~~6~~ 8	Hrs
iii	Suction lift	470/8 = 58.75 CUM/H	~~Mtr~~
iv	Residual head at ferrule point	979-16 Upon	Mtr
v	Level difference to ground to tank	27	Mtr
vi	Friction Head Loss	3	Mtr
vii	Total head required	10	Mtr
	SAY	40	Mtr
viii	Power Required (Cpm*Head (mt))/(450)*.70(eff)) =(640*40)/(450(0.6)	40	HP(FOR EACH)
	10 HP x 3 Nos Pump Set already provided against approved estimate 164-17A area	9.48 HP	HP(FOR EACH)
	SAY	15.0	
	It is proposed for domestic water supply pump (2w+1s) with capacity 800 LPM. Already provided considering future expansion. 2 Wkg Pump (15+15=30) 3 Nos Pump proposed 800 LPM 40 m Head each 15 HP (2 working + 1 stand by)		

6.	Equipment Description	No's	Each power cons (HP)	Total Power (HP)	
i)	Domestic Water Trans Pumps For	(2W+1S)	15	30	
				~~30~~	HP
				~~22.38~~	KW
	Add for lighting			~~10~~	KW
	Total			~~32.38~~	KW
				~~32.38 x 1.50 = 48.57~~	KVA
			SAY	50	KVA

Requirement of 50 KVA capacity will be added in to the main D.G set to provide stand by supply For Zone1. As per approved SPE & considering future expansion.

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1.	DETAILS FOR DAILY WATER CONSUMPTION FOR ZONE (2) (Left side) – Block-A		
S.N.	Water Demand Plots	Population	Water Requirement
		(General & Nursing plot @ 13 /person) & (EWS @ 9 Person)	172.5 LPCD & 0.1725 KLD
a.	292 + 37 = 329 (General plot)	4442	766.16 KL
b.	1.68 Acre UD LAND @ (25 Kld /Acres)		42.00 KL
c.	2 Acres Community centre @ (25 KL/Acres)		50 KL
d.	6.40 acres (UIS – IPS – 2NS) @ 25 KL/day		160 KL
e.	0.89 acres Commercial-3 @ 25 KL/Acre		28.48 ~~22.25~~ KL
f.	0.2 Acre crèche @ 25 KL/day		5 KL
g.	0.2 acres Nursery school @ 25 KL/Acre		5 KL
	G.Total		1056.64 ~~1050.41~~ KL
	Total Water demand per day	Say	1060 KL
	Total Domestic Water demand per day @ 70% of total demand		742 ~~735~~ KL
	Flushing Water demand per day @ 30% of total demand		318 KL
	Horticultural water requirement (Organized Green) (3.34 acre)@25 kl /acre/Per Day	Say	83.5 KL 85 KL
	Total Flushing Water demand per day including horticulture		400 KL
	CENTRALIZED STP CAPACITY FOR ZONE (1& 2) @ 80 % of total water demand for (zone 1& 2) = 0.8X (~~655~~ 670 + 1060)		1384 ~~1364~~ KLPD
	Already constructed considering future expansion		1800 KLPD

2	Type of water & Type of Source For Zone 2.	742
i.	Domestic water demand/ day (From HSVP)	~~735~~ KL
II.	Fire Capacity 100 (p) $\sqrt{0.5}$ = 100 (~~2.80~~ 4.24) $\sqrt{0.5}$	~~470~~ KL 210
III.	Horticulture/day (From Centralized STP For Zone (2)	85 KL.
IV.	Flushing water demand/ day (From Centralized STP For Zone (2)	318 KL

3.	HSVP Main water Supply Calculation		
a	Required Fresh Water per Day	~~735~~ 742	KL
b	Supply Duration	16	Hrs
c	Line Flow Rate	~~0.765~~ 0.773	(Cum/ Min)
d	Proposed line dia.	100	mm
e	Flow Velocity.	1.5	(m/sec)
f	Friction Head Loss /1000m	47.55	Mtr
g	Length of line	555	Mtr
h	Total Head Loss	26.39	Mtr
4.	TOTAL U.G.		
i	TOTAL U.G. STORAGE AS BASED ONE DAY		
	Therefore it is proposed to construct Raw Water tanks of 400 KL (200 KL x 2 nos), and Domestic tank of 400KL (200 Kl. x 2nos) and fire water tanks of 300 Kl. (300KL X 1 nos). under ground storage tank already provided against applied estimate 164.174 acres are sufficient enough to cater the additional area demand also.		

5.	PUMPS FOR DOMESTIC WATER SUPPLY (HYDROPNUMATIC SUPPLY) FOR ZONE (2)

(10)

(x) Pump sets already provided against applied estimate
i.e. 164.17 acres

2 Nos Pumps (1W + 1 S.by) = 1365 LPM

Balance Pumping capacity req = 1550 LPM - 1365 = 185 LPM

Say = 200 LPM

BHP = $\frac{200 \times 40 \text{ m}}{60 \times 75 \times 0.6}$ = 2.96 BHP

Say 5.0 HP

Hence it is proposed to install 2 Nos. Horizontal / centrifugal submersible pump sets each capable of discharge 200 LPM at a head of 40 m, with a motor of 5.0 HP for additional Area (one working the other as standby) in zone - II

i.	Potable Water Requirement Per Day	~~735~~ 742	KL
ii.	Pumping duration per day	8	Hrs
iii.	Suction lift	0	Mtr
iv.	Residual head at ferrule point	27	Mtr
v	Level difference to ground to tank	3	Mtr
vi.	Friction Head Loss	10	Mtr
vii.	Total head required	40	Mtr
	SAY	40	Mtr
viii.	Power Required (Lpm*head (m))/(4500*.60(effi)) =(~~265~~*40)/(4500*0.6)	~~11.3~~	HP(FOR EACH)
	say	15.00	HP(FOR EACH)
	It is proposed for domestic water transfer pump (2w+1s) with capacity ~~800~~ LPM. Already provided considering future expansion.		

742/8 = 92.75 KLH or 1545.83 Lpm Say 1550 Lpm

1550 M.Sec appd.

However the firm has proposed 2 Nos Pump sets of 800 Lpm, 50 m head with 15.0 HP (2 W+1S formation)

6.	PUMPS FOR FLUSHING WATER SUPPLY (HYDROPNUMATIC SUPPLY) FOR ZONE (1&2)		
i	Flushing Water Requirement Per Day For Zone (1&2) = (392+400) 315	~~392~~ 718	KL
ii.	Pumping duration per day	8	Hrs
iii.	Suction lift	0	Mtr
iv	Residual head at ferrule point	30	Mtr
v	Level difference to ground to tank	7	Mtr
vi.	Friction Head Loss	17	Mtr
vii.	Total head required	50	Mtr
	SAY	50	Mtr
viii.	Power Required (Lpm*head (m))/(4500*.60(effi)) ~~1000*50~~/(4500*0.6)	~~11.7~~ = 16.67 HP	HP(FOR EACH)
	say	~~15~~ 20.0	HP(FOR EACH)
	It is proposed for flushing water transfer pump (3w+1s) with capacity 700 LPM. Already provided considering future expansion.		

718/8 = 89.75 KLH or 1495.83 Lpm Say 1500 Lpm

Flushing water supply pump already provided against appld estimate i.e. 164.13th core.

2 Nos (1 W + 1 S.by) with 15 HP ~ 1540 Lpm

It is proposed to install 2 Nos Horizontal centrifugal/submersible pump sets each (one working + 1 S.by) capable of 350 Lpm at a head of 40 m with a motor of 5.0 HP for Zone 1 & 2.

However the firm has proposed 4 Nos pump sets of 1500 Lpm 50 m head with 30.0 HP each for (Zone 1 & 2)

(12)

7.	Equipment Description	No's	Each power cons (HP)	Total Power (HP)	
i)	Domestic Water Transfer Pumps	(2W+1S)	~~15~~ 5.0	~~30~~ 5.0	
ii)	Flushing Water Transfer Pumps	(1W+1S)	~~15~~ 5.0	~~45~~ 5.0	
				~~75~~ 10	HP
				~~55.95~~ 7.46	KW
	Add for lighting			0.5	KW
			Total	~~70.95~~ 12.46	KW
			12.46	~~70.95~~x1.5 = ~~106.42~~ 18.69	KVA
			Say	~~110~~ 25.0	KVA

25

Requirement of ~~110~~ KVA capacity will be added in to the main D.G. set to provide stand by supply for Zone 2. Already provided considering future expansion.

additional in

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1.	DETAILS FOR DAILY WATER CONSUMPTION FOR ZONE (3) Sec-92 -Block- E,F & G		
	Water Demand		
S.N.	Plots	Population	Water Requirement
		(General & Nursing plot @ 3.5 Person) & (EWS @ 5 Person)	172.5 LPCD & 0.1725 KLD
a	499 + 79 = 578 (General plot)	7803	1346.02 KL
b.	293 (Ews)	2637	454.88 KL.
c	9.58 Acre UD LAND @ (25 kld /Acre)		239.5 KL.
d.	1.25 Acres Dispensary @(25 KL/Acres)		31.25 KL
e.	0.2 Acres Nursery school 1 no. @ 25 KL/acre for		5 KL
f.	0.497 Acres Nursing Home @(25 KL/Acres) (2 NOS)		12,425 KL
g.	1.42 Acre Commercial-2 @ 25 KL /Acre		45.44 ~~35.5~~ KL.
h.	1.09 Acre taxi stand @ (25000 lpd /Acre) (2 NOS)		27.25 KL
i.	1.00 Acre Primary school @ 50 KL/day		50 KL
	G.Total		~~3206.235~~ KL. 2211.765
	Total Water demand per day	**Say**	~~2205~~KL 2212
	Total Domestic Water demand per day @ 70% of total demand		1548 KL.
	Flushing Water demand per day @ 30% of total demand		664 KL.

	Horticultural water requirement (Organized Green)		150·75
	(6.00 acres) @25 kl /acre/Per Day		~~144.75~~ KL
		Say	~~145~~ KL.
			150
	Total Flushing Water demand per day including horticulture (664+150KL)		814 ~~806~~ KL
	CENTRALIZED STP CAPACITY FOR ZONE 3 @ 80 % of total water demand for zone 3		1770 ~~1764~~KLPD
	Provided in approved estimate i.e. 164-17A zone 3 **Already Constructed considering future expansion**		2000 KLPD
2	**Type of water & Type of Source For Zone 3.**		
i.	Domestic water demand/ day (From HSVP)		1544 KL
ii.	Fire tank = 100 (p)^0.5 = 100 (10.5)^0.5		330 KL
III.	Horticulture/day (From Centralized STP For Zone (1&2)		145 KL
IV.	Flushing water demand/ day (From Centralized STP For Zone (1&2)		661 KL

3.	**HSVP Main water Supply Calculation**		
a	Required Fresh Water per Day	1548	KL
b	Supply Duration	16	Hrs
c	Line Flow Rate	~~1.55~~ 1·61	(Cum/ Min)
d	Proposed line dia	150	mm
e	Flow Velocity,	2.192	(m/sec)
f	Friction Head Loss /1000m	5.81	Mtr
g	Length of line	110	Mtr
h	Total Head Loss	8.0	Mtr
4.	**TOTAL U.G.**		
I	**TOTAL U.G. STORAGE AS BASED ONE DAY**		
	Therefore, it is proposed to construct Raw Water tanks of 750 KL (375x2 nos), and domestic tank of 1020 kl (510 x 2nos) and fire water tanks of 420 KL (420X1 nos).		

5.	**PUMPS FOR DOMESTIC WATER SUPPLY (HYDROPNUMATIC SUPPLY) FOR ZONE (3)**			
i.	Potable Water Requirement Per Day		1548	KL
ii.	Pumping duration per day	1548/8X2 = 96.75 KLH	8	Hrs
iii.	Suction lift		0	Mtr
iv.	Residual head at ferrule point	(2w+15.5) or	30	Mtr
v	Level difference to ground to tank	1612.50 /m	3	Mtr
vi.	Friction Head Loss	Say 1620 LPM	17	Mtr
vii.	Total head required		50	Mtr
	SAY		50	Mtr

⊗ Pump sets already provided against applied estimate
i.e. 164174 area

3 Nos (2W + 1 S.by) = 1370 lpm

balance pumping capacity req. 1620 lpm − 1370 lpm
→ 250 lpm

Head = 40 mh

BHP req. = $\frac{250 \times 40}{60 \times 75 \times 0.6}$ = 3.70 HP
say 5.0 HP

It is proposed to install 2 Nos horizontal centrifugal/ submersible pump sets each capable of discharge 250 lpm at a head of 40 m, with a motor of 5.0 HP for additional area (1W + 1 S.by) in Zone-3.

viii.	Power Required (Lpm*head (m)/(4500*0.6eff)) =(1430*50)/(4500*0.6)	18.6 26.48	HP (FOR EACH)
	1620 Pl. see o/p. say	20.0 30	HP (FOR EACH)
	It is proposed for domestic water transfer pump (3w+1s) with capacity 1500 LPM. Already provided considering future expression.		

6.	PUMPS FOR FLUSHING WATER SUPPLY (HYDROPNUMATIC SUPPLY) FOR ZONE (3)		
i.	Flushing Water Requirement Per Day For Zone (3) (664 + 150)	806	KL
ii.	Pumping duration per day incl. Horts	6	Hrs
iii.	Suction lift 101.75 RL m	0	Mtr
iv.	Residual head at ferrule point 1695.83 RL m	30	Mtr
v.	Level difference to ground to tank say 1700 RL m	3	Mtr
vi.	Friction Head Loss	17	Mtr
vii.	Total head required Pump wrongly 1+1)	50	Mtr
	SAY	50	Mtr
viii.	Power Required (Lpm*head (m))/(4500* 70(eff)) =(750*50)/(4500*0.6)	18.98 25.31	HP (FOR EACH)
	17M x 30 2 no. pump set already provided against above	15	HP (FOR EACH)
	It is proposed for flushing water transfer pump (3w+1s) with capacity 900 LPM. Already provided considering future expression.		

already provided considering future expansion.

7.	Equipment Description	No's	Each power cons (HP)	Total Power (HP)	
i)	Domestic Water Transfer Pumps	(3W+1S)	30	90	
ii)	Flushing Water Transfer Pumps	(3W+1S)	15	45	
	Total			135	HP
				100	KW
	Add for lighting			15	KW
			Total	115	KW
			SAY	115 x 1.5 = 172.5 175	KVA

Requirement of 175 KVA capacity will be added in to the main D.G. set to provide stand by supply For Zone 3. Already provided considering future expression.

FINAL ABSTRACT OF COST IN LACS		
Description	Grand Total (For Additional area 16.25 acres including 49% dept. & unforseen charges + 3% cont. PE charges incl.	Already approved SPE for 164.174 Acres in which Part Completion for 161.3615 Acres has been obtained (49% dept. & unforseen charges + 3% cont. PE charges incl.)
Sub Work-1 Water Supply	~~211.23~~ 172.28 Rs. 269.35 lacs	1,114.85
Sub Work-2 Sewerage	~~90.43~~ ~~35.94~~ Rs 106.46 lacs	1,162.36
Sub Work-3 Drainage	~~73.92~~ ~~55.25~~ Rs 87.85 lacs	684.18
Sub Work-4 Road Works	~~203.40~~ ~~116.97~~ Rs 210.25 lacs	2,803.98
Sub Work-5 Street Lighiting	Rs 62.35 lacs	251.96
Sub Work-6 Plantation	Rs ~~7.30~~ 7.52 lacs	52.48
Sub Work-7 Services & Resurfacing of road	Rs ~~257.85~~ 335.16 lacs	3,378.62
TOTALS	Rs. ~~707.95~~ ~~906.48~~ 1078.94 lacs	Rs. 9,448.43
For: DLF Utilities Ltd	Say ~~708~~ ~~907.00~~ Lacs Say Rs 1078.95 lacs	Say 9448.50 Lacs
	Rs. ~~43.57~~ 66.40 lacs	Rs. 57.55
	~~55.81 lacs~~ Revised Cost = 1078.95 lacs + 9448.50 lacs = 10527.45 lacs (Say ~~fourty three lakhs fifty seven thousand~~ per Acre)	(Say ~~fifty seven lacs fifty five thousand per Acre~~)

Checked subject to comments in forwarding letter No. 18247B Dt. 09/10/19 and notes attached with the estimate

Superintending Engineer (HQ) for Chief Engineer 1 HSVP Panchkula

Executive Engineer HSVP Division No.V, Gurugram

Superintending Engineer, HSVP Circle-I, Gurugram

Director Town & Country Planning Haryana, Chandigarh

KUMAR ENDECON PVT. LTD.

Addl. Chief Engineer HSVP, Gurugram

SUB WORK No. 1 **WATER SUPPLY**

S No.	Heads	Description	As per approved estimate for 164.174 acres which Part Completion for 161.3615 acres has been obtained	Additional area and pump / pipe lines added (Estimate for 16.25 acres)
			Amount in Lacs	Amount in Lacs
1	Sub Head 1	Rising Main (Head works)	43.76	-
1	Sub Head 4	Pumping and Machinery (Refer Sub head 2 and 2A sheets)	200.30	~~114.50~~ 185.70 ~~89.93~~
2	Sub Head 03	Distribution line domestic & fire fighting	221.86	~~58.02~~ 50.35 ~~50.64~~
3	Sub Head 04	HSVP rising main	45.16	-
4	Sub Head 05	Flushing/Irr. System	216.58	~~38.71~~ 33.30 ~~31.71~~
TOTAL (including 3% contigency and PE charges & 49% departmental charges, price escalation, unforseen, admin)			1,114.85	~~211.23~~ 269.35 ~~172.28~~

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S No.	Description	Unit	As per approved estimate for 164.174 acres in which Part Completion for 161.3615 acres has been obtained			Additional area (Estimate for 16.25 acres)		
			Qty	Rate	Amount	Qty	Rate	Amount
1	Boring and installing 510 mm I/d Bore well with reverse rotary rig complete with pipe and strainer to a depth of about 120 meter complete with cost of pumping set	Nos	4	700000	2800000	-	-	-
2	Provision for C.I/D.I rising mains, connecting Bore wells with water main and bye-pass arrangements:					-	-	-
a)	100 mm dia	Mtr	438	1200	525600	-	-	-
b)	150 mm dia	Mtr	20	1500	30000	-	-	-
c)	200 mm dia	Mtr	-	-	-	-	-	-
3	Providing tubewell submersible pumps capacity 20000 lph @ 120M head	No	4	150000	600000	-	-	-
4	Provision for construction of tube well chambers of size 1.5 x 1.5 x 1.5 m for tubewell	No.	4	80000	320000	-	-	-
5	Provision for carriage of materials & other unforseen items	LS	-	-	100000	-	-	-
(A)	Total of Sub Head - 1				4375000	-		-
					43.76			-
(B)	Add 3% contigency and PE charges				1.31			-
	TOTAL (A +B)				45.07			-
	Add 49% departmental charges, price escalation, unforseen admn				22.08			-
	Grand Total				67.15	-	-	-

S.No	NODE No.	Dia	Length
1	TW1- Tanks	100	100
2	TW2 - Tanks	100	82
3	TW3- Tanks	100	256
4	TW4 - Tank	150	20

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S No.	Description	As per approved estimate for 164.174 acres in which Part Completion for 161.3616 acres has been obtained				For additional area (estimate 16.25 acres)		
		Unit	Qty	Rate	Amount (INR)	Qty	Rate	Amount (INR)
1	Providing, laying, jointing and testing pipe lines including cost of complete in all respect (from HSVP supply)							
a)	150 mm dia CILA pipe	Mtr	935	1500	14,02,500.00	-	-	-
b)	200 mm dia CILA pipe	Mtr	1355	2000	27,10,000.00	-	-	-
2	Providing and fixing sluice valve including cost of surface boxes and masonary chambers etc. complete in all respects							
a)	150 mm dia v/v	Nos	1	14000	14,000.00	-	-	-
b)	200 mm dia v/v	Nos	2	18200	36,400.00	-	-	-
3	Providing and fixing indicating plates for sluice valve and air valves	Nos	0	1000	3,000.00	-	-	-
4	Provision for carriage of material and other unforseen items	LS	-	100000	1,00,000.00	-	-	-
5	Provision for making connection with HSVP (L/S) on Master Road	Nos	3	50000	1,50,000.00	-	-	-
6	Provision forcutting of roads and making good to in its original condition	L/s	-	100000	1,00,000.00	-	-	-
(A)	Total of Sub Head 2				45,15,900.00			-
					45.16			-
(B)	Add 3% contgency and PE charges				1.35			-
	TOTAL (A +B)				46.51			-
	Add 49% departmental charges, price escalation, unforseen, admin				22.79			-
	Grand Total				69.31			-

Material statement for HSVP line

S.N.	NODE	Dia	Length
1	HSVP- Tank1	150	935
2	HSVP- Tank2	200	565
3	HSVP - Tank3	200	790

Note.- Water connection approval received from executive Engineer Div-III, HSVP vide memo no. 8994 dated 22.-05-2015 (Copy Enclosed)

KUMAR CONSULTANTS PVT. LTD.

S No.	Description	Unit	As per approved estimate for 164.174 acres in which Part Completion for 161.3618 acres has been obtained			Additional area (Estimate for 18.25 acres)		
			Qty	Rate	Amount	Qty	Rate	Amount
1	(i) Providing and installing electricity driven submersible pumping set capable of deliverible about 825 LPM of water against a total head of 30m complete with motor and other accessories for (Zone one Domestic purpose (1w +1s) (10 HP)	Nos	2	100000	200000			
	(ii) Providing and installing electricity driven submersible pumping set capable of deliverible about 1385 LPM of water against a total head of 30m complete with motor and other accessories for (Zone two Domestic purpose (1w +1s) (15 HP)	Nos	2	150000	300000			
	(iii) Providing and installing electricity driven submersible pumping set capable of deliverible about 1300 LPM of water against a total head of 30m complete with motor and other accessories for (Zone three Domestic purpose (2w +1s) (15 HP)	Nos	3	150000	450000			
	(iv) Providing and installing electricity driven submersible pumping set capable of deliverible about 1540 LPM of water against a total head of 30m complete with motor and other accessories for (Zone one & two flushing purpose (1w +1s) (15 HP)	Nos	2	200000	400000			
	(v) Providing and installing electricity driven submersible pumping set capable of deliverible about 1584 LPM of water against a total head of 30m complete with motor and other accessories for (Zone three flushing purpose (1w + 1s) (20 HP)	Nos	2	200000	400000			
2	Providing for diesel engine generator set each for standby arrangements for booster pump complete with gear head arrangements for following capacity							
	(i) Providing and installing electricity driven submersible pumping set capable of deliverible about 825 LPM of water against a total head of 30m complete with motor and other accessories for (Zone one Domestic purpose (1w+1s) (10 HP)							
	(i) 1 no. 60 KVA for Zone one	LS			500000			
	(ii) 1 no. 80 KVA for Zone two	LS			800000			
	(iii) 1 no. 115 KVA for Zone three	LS			1200000			
3	Construction of UG Tanks (300 +400+4000+300+400+400+420+1020+750) = 4390 KL (Already provided considering future expansion)	KL	2970	3000	8910000			
			1420	3500	4970000			
4	Provisions for chlorination plant complete	Nos	5	100000	500000			
5	Provision for making foundations and erection of pumping machinery	LS		200000	200000			
6	Provision for pipes, valves and specials inside the boosting chamber	LS		500000	500000			
7	Provision for electric service connection including electrical fittings for boosting chamber etc	LS		500000	500000			
8	Provision for carriage of material and other unforeseen items etc.	LS		200000	200000			
						REFER SEPERATE SHEET FOR DETAIL & COSTING. Sub Head 2 (A) - As per revised calculations		
(A)	TOTAL CO to SUB WORK - 1				20030000			-
					Rs. 200.30 Lacs			-
(B)	Add 3% contigency and PE charges				6.01			-
	TOTAL (A+B)				206.31			-
	Add 49% departmental charges, price escalation, unforeseen, admin				101.09			-
	Grand Total				**307.40**			-

KUMAR ENDECON PVT. LTD.

SUB WORK No. 1
Sub Head 2 (a) - As per revised calculation

S No.	Description	Unit	Additional area for 16.25 acres). provided considering Future expansion. (Estimate Already		
			Qty	Rate	Amount
1	(i) Providing and installing electricity driven submersible pumping set capable of deliverible about 800 LPM of water against a total head of 40m complete with motor and other accessories for (Zone one Domestic purpose (2w +1s) (15 HP)	Nos	(2+1) 3	~~175000~~ 1.50	~~525000~~ 4.50
	(ii) Providing and installing elecaficity driven submersible pumping set capable of deliverible about 800 LPM of water against a total head of 50m complete with motor and other accessories for (Zone two Domestic purpose (2w +1s) (15 HP)	Nos	(2+1) 3	~~175000~~ 1.50	~~525000~~ 4.50 (43)
	(iii) Providing and installing electricity driven submersible pumping set capable of deliverible about 700 LPM of water against a total head of 50m complete with motor and other accessories for (Zone three Domestic purpose (3w +1s) (15 HP)	Nos	3+1 4	~~165000~~ 3.00	~~660000~~ 12.00
	(iv) Providing and installing electricity driven submersible pumping set capable of deliverible about 1500 LPM of water against a total head of 50m complete with motor and other accessories for (Zone one & two flushing purpose (3w +1s) (30 HP)	Nos	3+1 4	~~250000~~ 1.50	~~1000000~~ 6.00
	(v) Providing and installing electricity driven submersible pumping set capable of deliverible about 900 LPM of water against a total head of 50m complete with motor and other accessories for (Zone three flushing purpose (3w +1s) (15 HP)	Nos	4	200000	800000
2	Providing for diesel engine generator set each for standby arrangements for booster pump complete with gear head arrangements for following capacity		-	-	-
	(i) Providing and installing electricity driven submersible pumping set capable of deliverible about 825 LPM of water against a total head of 30m complete with motor and other accessories for (Zone one Domestic purpose (1w +1s) (10 HP)		-	-	-
	(i) 1 no. 50 KVA for Zone one	LS	-	-	-
	(ii) 1 no. 110 KVA for Zone two	LS	-	850000	850000
	(iii) 1 no. 175 KVA for Zone three	LS	-	1500000	1500000
3	Construction of UG Tanks (300 +400+4000+300+400+400+420+1020+750) = 4390 KL (Already provided considering future expansion)	KL	-	L:S -	16,00,000 -
4	Provisions for chlorination plant complete. Already provided as / approved SPE of 164.174 acres.	Nos			
5	Provision for making foundations and erection of pumping machinery. Already provided as / approved SPE of 164.174 acres. (for additional area)	LS	-	-	10.00
6	Provision for pipes, valves and specials inside the boosting chamber. Already provided as / approved SPE of 164.174 acres. (for addl.)	LS	-	-	15.00
7	Provision for electric service connection including electrical fittings for boosting chamber etc. Already provided as / approved SPE of 164.174 acres. (for addl.)	LS	-	-	20.00
8	Provision for carriage of material and other unforeseen items etc. Already provided as / approved SPE of 164.174 acres. (for addl.)	LS	-	-	5.00
(A)	TOTAL CO to SUB WORK - 1, SUB HEAD 2 (A)			~~746~~ 74.60	~~8600000~~ 121.00 Rs. 58.80 Lacs
(B)	Add 3% contigency and PE charges				~~2.24~~ 1.76
	TOTAL (A +B)			124.6	~~76.84~~ 60.36
	Add 49% departmental charges, price escalation, unforseen, admin			61.07 185.73	~~37.66~~ 29.58 ~~114.50~~ 89.93
	Grand Total				

KUMAR INDUSTRIES (P) LTD.

SUB WORK No. 1 — WATER SUPPLY
Sub Head 3 — Distribution line with fire fighting

S No.	Description	Unit	As per approved estimate for 154.174 acres which Part Completion for 161.3615 acres has been obtained			Additional area & pipe lines added (Estimate for 15.25 acres)		
			Qty	Rate	Amount	Qty	Rate	Amount
1	Providing, laying, jointing and testing CI/ DI pipe lines including cost of excavation etc. complete in all respects.	Nos					1500	2034000
a)	100	Mtr	11145	1200	13374000	1356	~~1350~~	~~1830600~~
			320	1250	400000		1250	16.95 lacs
b)	150	Mtr	2075	1575	3683000			
c)	200	Mtr	606	2000	300000			
d)	250	Mtr	275	2815	719125			
2	Providing and fixing sluice valve including cost of surface boxes and masonry chambers etc. complete in all respects for all size	Nos	65	15000	975000	6	150000	900000
3	Providing and fixing Air realese valve and scour valves	Nos	12	10000	120000	7	10000	70000
4	Provision for carriage of materials and other unforeseen items	LS		200000	200000	-	L.S ~~30000~~	100000 ~~30000~~
5	Providing and fixing fire hydrant	Nos	146	10000	1460000	16	12500	200000
6	Provision for carriage for material and other unforseen items	LS		200000	200000		L.S ~~28000~~	100000 ~~28000~~
7	Provision for indicating plates	Nos	145	10000	1450000	16	1000 ~~14000~~	0.16 ~~176000~~
8	Provision for cutting of roads & making good to its oroginal condition.	LS		500000	500000	-	L.S ~~65000~~	200000 ~~65000~~
(A)	TOTAL COST to SUB WORK - 1				22168000		378 ~~0000~~	~~3280600~~
					Rs. 221.68 Lacs			Rs ~~38.00~~ Lacs

Say 221.86 Lakhs

32.80 / 32.81 lacs

(B)	Add 3% contigency and PE charges	6.66	1.14 ~~0.99~~
	TOTAL (A +B)	228 52	38.94 ~~33.99~~ 33.79
	Add 49% departmental charges, price escalation, unforseen, admin	111.97	19.08 ~~16.65~~ 16.56
	Grand Total	340.49	~~58.02~~ 50.64

50.35 lacs

MATERIAL STATEMENT OF DWB AND FWS REFERS TO ANNEXURE 3

KUMAR ENDECON PVT. LTD.

S No.	Description	Unit	As per approved estimate for 164.174 acres which Part Completion for 161.3815 acres has been obtained			Additional area & pipe lines added (Estimate for 16.25 acres)		
			Qty	Rate	Amount	Qty	Rate	Amount
1	Providing, laying, jointing and testing pipes lines conforming to HDPE /UPVC IS:4985 including cost of excavation etc. complete in all respects.							
a)	25	Mtr	-	-	-	-	-	
b)	60	Mtr	140	1000	140000	-	~~1500~~	199500
c)	100	Mtr	13050	1200	15660000	1331	~~1350~~ 1250	~~1796850~~
			350	1250	437500			
d)	150	Mtr	1690	1500	2464000	-	-	-
e)	200	Mtr	545	2000	1170000	-	-	-
2	Providing & fixing indicating plates for sluice valves along with chamber	Nos	65	15000	975000	6	15000	90000
3	Providing and fixing air release valve and scour valves	Nos	12	10000	120000	7	10000	70000
4	Providing and fixing 20 mm dia irrigation hydrant valve complete in all respect	Nos	69	3500	241500	13	~~3500~~ 3500	~~45500~~ 45500
5	Provision for carriage of materials and other unforeseen items	Ls			200000	-	~~30000~~ L.S	~~30000~~ 200000
6	Provision for cutting of roads and making good to its original condition	Ls		250000	250000	-	~~34000~~ L.S	~~34000~~ 100000
(A)	TOTAL CO to SUB WORK - 1				21658000		~~2521500~~	~~2866350~~
					Rs. 216.58 Lacs			Rs ~~28.66~~ Lacs

~~25.22~~ 21.70 ~~0.65~~

(B)	Add 3% contigency and PE charges	6.50	~~0.76~~ ~~0.62~~
	TOTAL (A+B)	223.08	~~25.98~~ ~~21.28~~
	Add 49% departmental charges, price escalation, unforseen admn	109.31	~~12.73~~ 10.95 ~~10.43~~
	Grand Total	332.39	~~38.71~~ ~~31.71~~ 33.30

MATERIAL STATEMENT OF IRRIGATION SUPPLY REFERS TO ANNEXURE 4 & 6

KUMAR ENDECON PVT. LTD.

S No.	Description	Unit	As per aparoved estimate for 164.174 acres which Part Completion for 146.3615 acres has been obtained			Additional area and pipe lines added (Estimate for 18.25 acres)		
			Qty	Rate	Amount	Qty	Rate	Amount
1	Providing, Lowering, jointing and cutting SW pipe lines into trenches including cost of Manholes & Cost of excavation etc complete in all respects as per directed section.							
a)	150 mm dia	Mtr	-	-	-	-	-	18.87
b)	200 mm dia SW Pipe avg depth 0-2.5m	Mtr	8586	1250	10731250	1358	1500	2037000
c)	250 mm dia SW Pipe avg depth 0-3.5m	Mtr	1316	1800	2367000	-	-	-
d)	300 mm dia SW Pipe avg depth 0-4.0m	Mtr	1345	2000	2690000	-	-	-
e)	400 mm dia SW Pipe avg depth 0-6.0m	Mtr	3630	3000	~~10890000~~ 10244000	-	-	-
f)	450 mm dia SW Pipe avg depth	Mtr	-	-	10 89 cap	-	-	-
g)	600 mm dia SW Pipe avg depth 0-6.0m	Nos	400	3600	1440000	-	-	-
h)	900 mm dia SW Pipe avg depth 0-9.0m	Nos	755	4000	3020000	-	(L.S)	1.00 la
2	Provision for cartage of material and other unforeseen items	Ls		200000	200000	-	~~25000~~	~~25000~~
3	Provision for lighting and watching	Ls		200000	200000	-	~~25000~~	~~25000~~ 50000
4	Provision for making HSVP connection & providing & fixing vent shaft at suitable place as per requirement	Ls		3500000	3500000	-	(L.S) -	-
5	Provision for temporary disposal arrangement	LS		200000	200000	-	(L.S) ~~25000~~	5.00 ~~25000~~
6	Provision of cutting of road & making good to in its orginal condition	LS		500000	500000	-	(L.S) ~~65000~~	2.00 ~~65000~~
7	Cost of 3500 KLPD STP (2000+1500 = 3500 KL) Already provided considering future expension	Ls			27000000	-	L.S	35,00,000
					13000000	-	-	-
7	Provision for Temporary timbering & Road Cut cumes (L.S)	LS		500000	500000	-	L.S ~~50000~~	2.00000 ~~50000~~
8	Provision for providing vent shaft at suitable places as per P H requirements (L.S.)	Ls		1250000	1250000	-	(L.S) ~~125000~~	5.00 ~~125000~~
(A)	TOTAL CO to FINAL ABSTRACT OF QUANTITY				75729999	5892.000		~~2942000~~ 69.37
					Rs. 757.30 Lacs			Rs. ~~29.42~~ Lacs 2.08
								~~58.92~~ 71.45

(B)	Add 3% contigency and PE charges	22.72		~~1.77~~ 0.70 35.01
	TOTAL (A+B)	780.02		~~60.69~~ 24.12
	Add 40% departmental charges, price escalation, unforseen, admin	382.21		~~29.74~~ 11.82 106.46
	Grand Total	1162.36		90.43 35.94 lacs

MATERIAL STATEMENT OF SEWERAGE SCHEME REFERS TO ANNEXURE 1

KUMAR ENDECON PVT. LTD.

SUB WORK No. 3 — **STORM WATER DRAINAGE**

S No.	Description	Unit	As per approved estimate for 164.174 acres in which Part Completion for 161.3815 acres has been obtained			Additional area and pipe lines added (Estimate for 16.25 acres)		
			Qty	Rate	Amount	Qty	Rate	Amount
1	Providing and laying RCC pipe drain class NP-3 with cement joint, manhole excavation ec complete in all respect including refilling earth.							
a)	400 mm dia	Mtr	10756	1750	18821250	1396	2250	3141000
b)	450 mm dia	Mtr	590	1900	1121000	90	2000	184500
c)	500 mm dia	Mtr	310	3850	1193500	-	2500	225000
d)	600 mm dia	Mtr	1195	4070	4863650	-	-	-
e)	650 mm dia	Mtr	-	-	-	-	-	-
f)	750 mm dia	Mtr	-	-	-	-	-	-
g)	800 mm dia	Mtr	75	6715	503625	-	-	-
h)	900 mm dia	Mtr	720	7000	5040000	-	-	-
i)	1000 mm dia	Mtr	565	7500	4237500	-	(1.5)	5.4
2	Provision for road gullies & connecting pipe	Ls	-	2000000	2000000	-	200000	200000
3	Provision for roof top drain harvesting pit at selected places (35 no. with double bore) - 3 nos of additional area (16.25 acres)	Ls	-	4500000	4500000	-	500000 (1.5)	500000 7.50
4	Provision for timbering & shoring	LS	-	500000	500000	-	1.5 55000	200000 55000
5	Provision for lighting watching & temp drain arrangements	Ls	-	1000000	1000000	-	100000	100000
6	Provision of carriage of material	Ls	-	500000	500000	-	50000	200000 50000
7	Provision for making connection to MSVP line on master road	Ls	-	50000	50000	-	-	-
8	Provision for cutting of roads and making good to its orginal condition	LS	-	250000	250000	-	25000	250000 25000
(A)	TOTAL CO to FINAL ABSTRACT OF QUANTITY				44580525		4816000	3800100 37.24
					Rs. 445.81 Lacs			Rs. 38.00 Lacs
								1.12 48.16
(B)	Add 3% contigency and PE charges				13.37			58.16 1.45 1.68
	TOTAL (A +B)				459.18		2.8	49.61 37.06
	Add 49% departmental charges, price escalation, unforseen, admin				225.00		87.8	24.31 18.17
	Grand Total				684.18			73.92 55.25

MATERIAL STATEMENT OF STORM WATER DRAINAGE REFERS TO ANNEXURE 2

KUMAR ENDECON PVT. LTD.

SUB WORK No. 4 — **ROAD WORK**

Width in meter	As per aproved estimate in which Part Completion has been obtained (160.174 Acres)			Additional area (Estimate for 16.25 acres)		
	Length in meter	Metalled Portion	Area in Sqm.	length in meter	Metalled Portion	Area in Sqm.
12	12722	5.5	69971	1238	5.5	6809
11	196	7	1372			0
18	184	10	1840			0
24	4654	14	65156			0
Total	17756		138338	1238		6809
Add 5% for curves			6916.9			340.45
Total area			145255.860			7149

S No.	Description	Unit	As per approved estimate for 160.174 acres in which Part Completion for 151.3515 acres has been obtained			Additional area for 16.25 acres)		Estimate Amount
			Qty	Rate	Amount	Qty	Rate	
1	Providing for leveling & earth filling as per site condition	Acres	151.174	100000	15117400	16.25	150000	2437500
2a	Soling stone 300mm mm thick (90-63mm) gauge completed to 75mm thick, G68 specification & Confirming to MOT Specification (Table 400-6 grading No-2)	Sq.mtr	-	-	-	-	-	-
2b	Wearing coat (top coat) 100 thick (63-40mm) gauge completed to 75 mm thick WBM specification & confirming to MOT specification (Table 1400-6 grading no. 3)	Sq mtr	-	-	-	-	-	-
2c	50 mm thick, pre-mix (BM) carpet with seal coat 20 mm thick MSS	Sq mtr	145323	650	129628900	7149	1200	8579800
3	Providing of kerbs & channels of CC (1:2:4) on both side of road = (17760 x 2 = 35520 mtr)	Mtr	35520	600	21312000	2476	600	1485600
4	Providing for cement concrete pavement 1:2:4 in commercial area = 3.61 x 4046.7	Sq mtr	7305	600	4383000	912	600	547200
5	Provision for plot indicator board and gulat map & demarcation burg and matting parking arrangement	Ls	-	1000000	1000000	-	-	100000
6	Provision for traffic light arrangement	Ls	-	500000	500000	-	-	500000
7	Provision for carriage of material & unforeseen items	Ls	-	600000	600000	-	-	600000
8	Provision for footpath on 18m, 24m wide road on both side = 2 x 2.50 (4656+200) = 24275	Sq mtr	24275	600	14565000	-	-	-
(A)	TOTAL CC to FINAL ABSTRACT OF QUANTITY				182707000 Rs. 1,827.07 Lacs			7821040 Rs. 78.23 Lacs

(B)	Add 3% contingency and PE charges	54.81	234.61
	TOTAL (A + B)	1861.88	7967.65
	Add 4.5% departmental charges, price escalation, unforseen, plants	922.12	3946.33
	Grand Total	2803.98	11913.98

KURAR ENGECON PVT. LTD.

S No.	Description	Unit	As per approved estimate for 164.174 acres in which Part Completion for 151.3615 acres has been obtained			Additional area (Estimate for 16.25 acres)		
			Qty	Rate	Amount	Qty	Rate	Amount
1	Providing street lightning on roads as per standard specifications of HVPN with CFL	Acres	164.174	100000	16417400	16.25	250000 P/Acre	4062500
(A)	TOTAL CO to FINAL ABSTRACT OF QUANTITY				16417400			4062500
					Rs. 164.17 Lacs			Rs. 40.63 Lacs
(B)	Add 3% contgency and PE charges				4.93			1.22
	TOTAL (A +B)				169.10			41.84
	Add 40% departmental charges, price escalation, unforseen, admn				82.86			20.50
	Grand Total				251.96			62.35

KUMAR ENDECON PVT. LTD.

S No.	Description	Unit	As per approved estimate for 164.174 acres in which Part Completion for 161.3615 acres has been obtained			Additional area (Estimate for 16.25 acres)		
			Qty	Rate	Amount	Qty	Rate	Amount
1	Development of Green areas							
a	Trenching the ordinary soil up to depth of 90 cm including removal and stacking of serviceable material and disposing of by spreading and levelling within a lead to 50m and making up the trenches area of proper levels by filling with earth mixed with manure before and after Rooting trench with water including cost of imported earth and manure		-	-	-	-	-	-
b	Rough dressing of roof area							
	Grassing with "Doob Grass" including watering and maintenance of lawns for 30 days till the grass 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.	Acres	11.67	100000	1167000	~~4.361~~ 1.45	150000	~~282650~~ 2.18
2	Planting Tree							
a	Providing of trees, along roads at 12 Mtr intervals.	Nos	3000	750	2250000	210	1300	273000
	Total road length = 17750 mtr Nos of trees = (17750/12)x 2 = 2960 Say 3000 nos Cost analysis of planting trees Excavation = 30 each Manure = 60 each Tree plants = 60 each Tree guards = 600 each = Rs 750 per tree							
(A)	GST TOTAL CO le FINAL ABSTRACT OF QUANTITY				3417000 Rs. 34.17 Lacs			~~475650~~ Rs. ~~4.76~~ Lacs 4.91
(B)	Add 3% contigency and PE charges				1.03			0.14
	TOTAL (A+B)				35.20			5.05 ~~4.90~~
	Add 49% departmental charges, price escalation, unforseen, admin				17.25			2.47 ~~2.40~~
	Grand Total				52.48			7.52 ~~7.30~~ lacs

S No.	Description	Unit	As per approved estimate for 164.174 acres which Part Completion for 161.3815 acres has been obtained			Additional area (for 16.25 acres) (Estimate		
			Qty	Rate	Amount	Qty	Rate	Amount
1	Provision for MC charges for water supply, storm water drainage, sewerage, Road, Street lighting, Horticulture etc. complete in all aspect, including Operational and establishment charges as per HSVP norms for 10 years completion	Acres	164.174	500000	82087000	16.25	~~550000~~ 750 lacs	~~8937500~~ 121.88 lacs
2	Provision for resurfacing of roads after 5 years 100mm thick layer 100mm thick BUSG complete to 25mm thick premix carpet with seal coat	Sq.mtr	145328	350	50864800	7149	~~490~~ Cost	~~3217650~~ 43.89 lacs
3	Provision for resurfacing of roads after 10 years with 25mm thick premix carpet with seal coat with mech.paver	Sq.mtr	145328	600	87196800	7149	~~660~~ 750	~~4646850~~ 53.62 lacs
	TOYAL CO to FINAL ABSTRACT OF QUANTITY				220148800			~~16801400~~
					Rs. 2,201.47 Lacs			Rs. ~~168.01 Lacs~~ 218.39 lacs
(B)					66.04			6.55 ~~5.04~~
	TOTAL (A+B)				2267.51			244.94 ~~173.85~~
	Add 49% departmental charges, price escalation, unforseen, admin				1111.08			110.22 lacs ~~84.80~~
	Grand Total				3378.62			355.16 lacs ~~257.85~~

KUMAR ENDECON PVT. LTD.

Project -DII -Garden city Sec-81 & 92 (180.3115 Acres)

Domestic Water supply hydraulic calculation

S.No.	Line No		Number of plots						Population @ 3.5 persons /Dwelling Person	Daily water Demand 110 Liter/Day	Others building water consumption in ltr/day & UD Land 76 KL/Acre	Total water demand ltr/day	Peak water demand@2 of daily water demand ltr/day	Peak Water Demand	Length of Pipe	Effective Length (actual length+ 25%)	Proposed dia.	Velocity in meter	Friction Head losses	Total frictional head losses	Fixing Loss @ 10% of pipe length	Total Head Loss	Commanding Pressure head losses	Remarks
			Sector			Total																	
	FROM	TO	EWS	General plot	others/ UD LAND	EWS	General plot	others															
1		2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	
			NOS		NOS	NOS	NOS	NOS	NOS	LPD	LPD	LPD	LPD	LPM	Mtr	Mtr	MM	M/sec	M/mtr	M	M	M	
Zone-1																							
1	25	23	0	11		0	11	0.00	148.5	37151.9		37151.9	92879.375	248	203	254	300	0.876	0.00012	0.0302	0.00302	0.03321	0.03321	
2	25A	25B	0	1		0	1	0.00	13.5	1558.3		1558.3	3896.125	2.7	64	68	300	0.007	0.00000	0.0001	0.00001	0.00010	0.00010	
3	26	23	0	4		0	4	0.00	54	5237.0	30500	35737.0	41842.5	29.0	53	66	300	0.074	0.00011	0.0075	0.00075	0.00826	0.00826	
4	24	23	0	6		0	6	0.00	81	9355.5		9355.5	23388.75	16.2	80	119	300	0.041	0.00004	0.0046	0.00046	0.00506	0.00505	
5	20	95	0	10		0	92	0.00	432	49896.0		49896.0	124740	86.8	225	281	300	0.220	0.00036	0.2418	0.02418	0.26595	0.26595	
6	17	95	0	5		0	5	0.00	67.5	7795.3		7795.3	19488.625	13.5	50	75	300	0.034	0.00003	0.0021	0.00021	0.00228	0.00228	
7	16	15	0	6		0	49	0.00	580.5	67047.8		67047.8	167618.375	116.4	54	68	300	0.295	0.00149	0.1003	0.01004	0.11032	0.11032	
8	20	88	0	10		0	10	0.00	135	15592.5		15592.5	38981.25	27.1	278	373	300	0.069	0.00010	0.0471	0.00471	0.05184	0.05184	
9	18	19	0	5		0	5	0.00	67.5	7795.3	12358	20154.3	50385.625	35.0	135	181	300	0.089	0.00015	0.0291	0.00291	0.03198	0.03198	
10	19	22	0	0		0	15	0.00	202.5	23386.8		23386.8	58471.875	40.6	71	89	300	0.103	0.00021	0.0188	0.00188	0.02083	0.02083	
11	21A	21B	0	5		0	5	0.00	67.5	7795.3		7795.3	19488.625	13.5	80	100	300	0.034	0.00003	0.0028	0.00028	0.00304	0.00304	
12	21	22	0	2		0	2	0.00	27	3118.5	19250	22368.5	55921.25	38.8	17	21	300	0.072	0.00011	0.0023	0.00023	0.00255	0.00255	
13	22	17	0	0		0	22	0.00	297	34303.5		34303.5	85758.75	59.6	60	113	300	0.162	0.00043	0.0483	0.00483	0.05316	0.05316	
14	17	15	0	0		0	22	0.00	297	34303.5		34303.5	85758.75	59.6	45	68	300	0.162	0.00043	0.0247	0.00247	0.02717	0.02717	
15	15	14	0	90		0	75	0.00	1012.5	116943.8	8750	125693.8	314234.375	218.2	125	156	300	0.547	0.00462	0.7215	0.07215	0.79375	0.79375	
16	13	14	0	16		0	16	0.00	216	24948.0		24948.0	62370	43.3	235	294	300	0.110	0.00024	0.0678	0.00678	0.07460	0.07460	
17	14	12	0	9		0	100	0.00	1350	155925.0		155925.0	389812.5	270.7	10	13	150	0.306	0.00096	0.0128	0.00128	0.01383	0.01383	
18	11	12	0	24		0	24	0.00	324	37422.0		37422.0	93555	65.0	144	180	150	0.165	0.00050	0.0908	0.00908	0.09991	0.09991	
19	12	8	0	9		0	133	0.00	1795.5	207339.3		207339.3	518450.625	360.0	96	120	150	0.407	0.00167	0.2003	0.02003	0.22030	0.22030	
20	1	8	0	2		0	2	0.00	27	3118.5		3118.5	7796.25	5.4	40	50	150	0.006	0.00000	0.0000	0.00000	0.00004	0.00004	
21	10	8	0	8		0	8	0.00	67.5	7795.3	2000	9795.3	24488.625	17.0	68	85	100	0.043	0.00004	0.0038	0.00035	0.00384	0.00394	
22	5	6	0	13		0	20	0.00	270	31185.0		31185.0	77962.5	54.1	125	156	150	0.061	0.00005	0.0078	0.00078	0.00859	0.00859	
23	7	8	0	14		0	14	0.00	189	21829.6		21829.6	54573.75	37.9	61	101	300	0.026	0.00015	0.0153	0.00185	0.02071	0.02071	
24	9	8	0	13		0	13	0.00	175.5	20270.3		20270.3	50675.625	35.2	90	113	300	0.030	0.00016	0.0182	0.00182	0.02006	0.02006	
25	6	6	0	6		0	33	0.00	445.5	51455.3		51455.3	128638.125	89.3	65	81	300	0.227	0.00091	0.0739	0.00739	0.08134	0.08134	
26	8	4	0	8		0	69	0.00	796.5	91995.8		91995.8	229988.375	159.7	54	68	300	0.408	0.00287	0.1802	0.01802	0.19819	0.19819	
27	4	3	0	18		0	280	0.00	2835	327442.5		327442.5	818606.25	568.5	192	190	300	1.447	0.02602	5.3231	0.53231	5.85539	5.85539	
28	2	3	0	3		0	3	0.00	40.5	4677.8		4677.8	11694.375	8.1	44	55	300	0.021	0.00001	0.0006	0.00006	0.00065	0.00065	
29	7	1	0	4		0	247	0.00	2929.5	338357.3		338357.3	845893.125	587.4	31	41	300	1.495	0.02977	1.2280	0.12280	1.35062	1.35062	
30	1	800	0	0		0	247	0.00	2929.5	338357.3		338357	845893.125	587.4	16	18	150	0.684	0.00419	0.0723	0.00723	0.07954	0.07954	
Zone-2																							
1	32	31	0	20		0	20	0.00	270	31186.0		31186.0	77962.5	54.1	405	506	100	0.110	0.00036	0.1825	0.01825	0.20048	0.20048	
2	31	33	0	2		0	2	0.00	27	3118.5		3118.5	7796.25	5.4	17	21	100	0.014	0.00001	0.0001	0.00001	0.00012	0.00012	
3	33	30	0	5		0	27	0.00	364.5	42098.8		42098.8	105246.875	73.1	81	101	100	0.166	0.00063	0.0605	0.00605	0.06650	0.06650	
4	30	28	0	22		0	22	0.00	297	34303.5		34303.5	85758.75	59.6	216	270	100	0.162	0.00043	0.1160	0.01160	0.12756	0.12756	
5	30	28	0	5		0	55	0.00	742.5	85758.8		85758.8	214396.875	148.9	81	101	100	0.379	0.00204	0.2375	0.02375	0.26103	0.26103	
6	29	28	0	8		0	9	0.00	121.5	14033.3		14033.3	35083.125	24.4	149	186	100	0.052	0.00009	0.0153	0.00153	0.01681	0.01681	
7	28	35	0	3		0	67	0.00	904.5	104469.5		104469.5	261174.375	181.4	63	79	100	0.462	0.00338	0.2660	0.02660	0.29280	0.29280	
8	29	27	0	3		0	3	0.00	40.5	4677.8		4677.8	11694.375	8.1	36	45	100	0.021	0.00001	0.0005	0.00005	0.00059	0.00059	
9	27	26	0	10		0	80	0.00	1080	124740.0		124740.0	311850	216.6	171	214	100	0.551	0.00469	0.1002	0.10027	1.10292	1.10292	
10	27	24	0	6		0	6	0.00	81	9355.5		9355.5	23388.75	16.2	79	95	100	0.041	0.00006	0.0007	0.00007	0.00406	0.00405	

S No.	Line No.		Number of plots: Self			Total			Population	[illegible]	Others building	Total	Peak water demand	[illegible]	Length	Effective length	[illegible]	[illegible]	[illegible]	Total	Fitting loss	Total	Cumulative	
11	28	25	0	5		0	6	0.00	67.5	7796.3	20000	27796.3	68490.628	48.3	87	109	100	0.123	0.00029	0.0316	0.00316	0.03480	0.03480	
12	25	24	0	24		0	115	0.00	1552.5	179313.8		179313.8	448284.576	311.3	203	254	100	0.797	0.00919	2.3339	0.23339	2.56395	2.56395	
13	24	22	0	8		0	8	0.00	108	12474.0		12474.0	31185	21.7	81	101	150	0.034	0.00001	0.0009	0.00009	0.00102	0.00102	
14	23A	23B	0	10		0	10	0.00	135	15592.5		15592.5	38981.25	27.1	83	104	100	0.069	0.00010	0.0103	0.00103	0.01139	0.01138	
15	23	23B	0	7		0	7	0.00	94.5	10914.8		10914.8	27286.875	18.9	24	30	100	0.043	0.00005	0.0015	0.00015	0.00170	0.00170	
16	23B	22	0	[illegible]		0	19	0.00	256.5	29625.8		29625.8	74064.376	51.4	60	75	100	0.131	0.00033	0.0248	0.00248	0.02701	0.02701	
17	22	1	0	12		0	154	0.00	2079	240124.5		240124.5	600311.28	416.9	230	288	100	0.472	0.00219	0.6295	0.06295	0.69242	0.69242	
18	19	20	0	6		0	6	0.00	81	9355.5	2500	11855.5	29638.75	20.6	65	81	100	0.052	0.00006	0.0049	0.00049	0.00537	0.00537	
19	18	20	0	4		0	4	0.00	54	6237.0		6237.0	15592.5	10.8	41	51	100	0.028	0.00002	0.0009	0.00009	0.00103	0.00103	
20	20	17	0	3		0	13	0.00	175.5	20270.3		20270.3	50675.628	35.2	54	68	100	0.090	0.00016	0.0109	0.00109	0.01204	0.01204	
21	21	17	0	4		0	4	0.00	54	6237.0		6237.0	15592.5	10.8	44	55	100	0.028	0.00002	0.0010	0.00010	0.00111	0.00111	
22	17	13	0	8		0	25	0.00	337.5	198981.3		198981.3	497453.125	345.5	136	169	100	0.879	0.01114	1.8796	0.18796	2.06751	2.06751	
23	15	16	0	5		0	5	0.00	67.5	7796.3		7796.3	19490.625	13.5	28	35	100	0.034	0.00003	0.0010	0.00010	0.00106	0.00106	
24	16	14	0	12		0	12	0.00	162	18711.0		18711.0	46777.5	32.5	125	156	100	0.083	0.00014	0.0218	0.00218	0.02403	0.02403	
25	14	13	0	6		0	23	0.00	310.5	35862.8		35862.8	89656.875	62.3	162	203	100	0.156	0.00047	0.0944	0.00944	0.10386	0.10386	
26	13	4	0	6		0	48	0.00	648	74844.0		74844.0	187110	129.9	27	34	100	0.331	0.00142	0.0615	0.00615	0.06762	0.06762	
27	4	11	0	8		0	56	0.00	756	87318.0		87318.0	218295	151.6	122	153	100	0.388	0.00242	0.3695	0.03695	0.40649	0.40649	
28	11	12	0	10		0	10	0.00	135	15592.5		15592.5	38981.25	27.1	123	156	100	0.069	0.00010	0.0156	0.00156	0.01714	0.01714	
29	11	10	0	7		0	73	0.00	985.5	113825.3		113825.3	284563.125	197.6	135	169	100	0.503	0.00396	0.6681	0.06681	0.73492	0.73492	
30	10	12	0	0		0	73	0.00	985.5	113825.3		113825.3	284563.125	197.6	19	24	100	0.503	0.00398	0.0940	0.00940	0.10343	0.10343	
31	12	9	0	0		0	73	0.00	985.5	113825.3	1750	115575.3	288938.125	200.7	84	105	100	0.511	0.00407	0.4274	0.04274	0.47039	0.47039	
32	9A	9C	0	17		0	17	0.00	229.5	26507.3		26507.3	66268.125	46.0	119	149	100	0.117	0.00027	0.0398	0.00398	0.04380	0.04380	
33	9B	9C	0	8		0	8	0.00	108	12474.0		12474.0	31185	21.7	108	135	100	0.065	0.00007	0.0089	0.00089	0.00980	0.00980	
34	9C	9D	0	0		0	25	0.00	337.5	38981.3		38981.3	97453.125	67.7	82	103	100	0.172	0.00054	0.0558	0.00558	0.06136	0.06136	
35	9	9D	0	8		0	8	0.00	108	12474.0		12474.0	31185	21.7	104	130	100	0.065	0.00007	0.0086	0.00086	0.00943	0.00943	
36	9E	7	0	8		0	41	0.00	553.5	63929.3		63929.3	159823.125	111.0	153	191	100	0.282	0.00136	0.2602	0.02602	0.28618	0.28618	
37	8	7	0	9		0	9	0.00	121.5	14033.3		14033.3	35083.125	24.4	60	75	100	0.062	0.00008	0.0062	0.00062	0.00677	0.00677	
38	7	6	0	0		0	123	0.00	1660.5	191787.8		191787.8	479469.375	333.0	22	28	100	0.847	0.01040	0.2861	0.02861	0.31472	0.31472	
39	5	6	0	10		0	10	0.00	135	15592.5		15592.5	38981.25	27.1	63	79	100	0.069	0.00010	0.0079	0.00079	0.00864	0.00864	
40	6	4	0	0		0	133	0.00	1795.5	207380.3	1250	208630.3	521575.625	362.2	66	83	100	0.922	0.01216	1.0335	0.10335	1.13685	1.13685	
41	4	2	0	18		0	149	0.00	2011.5	232328.3		232328.3	580820.625	403.3	148	185	150	0.456	0.00206	0.3810	0.03810	0.41914	0.41914	
42	3	2	0	18		0	18	0.00	243	28066.5	4600	32666.5	81666.25	56.6	125	156	100	0.144	0.00039	0.0610	0.00610	0.06705	0.06705	
43	2	1	0	0		0	167	0.00	2254.5	260394.8		260394.8	650986.875	452.1	81	101	150	0.511	0.00254	0.2576	0.02576	0.28334	0.28334	
44	1	600	0	0		0	321	0.00	4333.5	500519.3		500519.3	1251298.13	869.0	13	16	200	0.563	0.00210	0.0342	0.00342	0.03767	0.03757	
													Zone-3											
1	73	71	0	14		0	14	0.00	189	21829.5		21829.5	54573.75	37.9	135	169	100	0.098	0.00019	0.0314	0.00314	0.03452	0.03452	
2	72	71	0	6		0	6	0.00	81	9355.5		9355.5	23388.75	16.2	54	68	100	0.041	0.00004	0.0026	0.00026	0.00288	0.00288	
3	71	69	0	3		0	25	0.00	337.5	38981.3		38981.3	97453.125	67.7	117	146	100	0.172	0.00054	0.0796	0.00796	0.08755	0.08755	
4	70	69	0	14		0	14	0.00	189	21829.5		21829.5	54573.75	37.9	92	115	100	0.098	0.00019	0.0214	0.00214	0.02353	0.02353	
5	69	67	0	17		0	56	0.00	756	87318.0	30466	117784.0	294460	204.5	242	303	100	0.529	0.00422	1.2759	0.12759	1.40351	1.40351	
6	68	67	0	16		0	16	0.00	216	24948.0		24948.0	62370	43.3	87	109	100	0.110	0.00024	0.0259	0.00259	0.02849	0.02849	
7	67	66	0	6		0	78	0.00	1053	121621.5		121621.5	304053.75	211.1	87	109	100	0.537	0.00448	0.4868	0.04868	0.53549	0.53548	
8	68	65	0	12		0	12	0.00	162	18711.0	3000	21711.0	54277.5	37.7	135	169	100	0.098	0.00018	0.0311	0.00311	0.03418	0.03418	
9	66	60	0	6		0	90	0.00	1215	140332.5		140332.5	350831.25	243.6	60	75	100	0.620	0.00583	0.4376	0.04376	0.48131	0.48131	
10	64	63	0	9		0	9	0.00	121.5	14033.3		14033.3	35083.125	24.4	168	210	100	0.062	0.00008	0.0172	0.00172	0.01896	0.01896	
11	63	49	0	10		0	109	0.00	1471.5	169958.3		169958.3	424895.625	295.1	100	125	100	0.761	0.00832	1.0397	0.10397	1.14372	1.14372	
12	62	6G	0	5		0	5	0.00	67.5	7796.3		7796.3	19490.625	13.5	54	68	150	0.015	0.00000	0.0003	0.00003	0.00028	0.00028	
13	61	60	0	15		0	15	0.00	202.5	23388.8		23388.8	58471.875	40.6	205	256	100	0.103	0.00021	0.0544	0.00544	0.05986	0.05986	
14	60	58	0	0		0	20	0.00	270	31185.0		31185.0	77962.5	54.1	76	95	150	0.061	0.00005	0.0047	0.00047	0.00522	0.00522	
15	59	58	0	5		0	6	0.00	87.5	15592.5		15592.5	38981.25	27.1	54	68	100	0.069	0.00010	0.0067	0.00067	0.00741	0.00741	

(34)

S No.	Line No	Number of plots						Population @3.5 persons /Ews 9	Daily water Demand 57 Liter/Day	Others building water cons in ltr /day	Total water demand ltr /day	Peak water demand@2.5 of daily water demand ltr	Peak Water Demand	Length of Pipe	Effective Length (actual length	Proposed line dia.	Velocity in m/sec	Frictional head losses	Total Frictional head losses	ews	plot	Cummulative Frictional head losses	Remarks
		Self			Total																		
		ews	General plot	others	ews	General plot	others																
	2	3	4	5	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	head	head	24	
		NOS	NOS	NOS	NOS	NOS	NOS	NOS	LPD	LPD	LPD	LPD	LPM	Mtr	Mtr	MM	M/sec	Mtr/Mtr	Mtr			Mtr	
34	36-35	0	9		0	9		121.5	6925.5		6926	17314	12	132	165	100	0.0306	0.0000	0.0037		0.0037	0.003661	
35	37-34	0	0		0	278		3753	213921.0		213921	534803	371	127	159	100	0.9452	0.0127	2.0219		2.0219	2.021856	
36	35-34	0	0		0	0		0	0.0		0	0	0	23	29	100	0.0000	0.0000	0.0000		0.0000	0	
37	34-27	0	19		0	297		4009.5	228541.5		228542	571354	397	103	129	100	1.0095	0.0144	1.8533		1.8533	1.853333	
38	33A-33C	0	17	0	0	17		229.5	13081.5	0	13082	32704	23	110	137.5	100	0.0678	0.0001	0.0099		0.0099	0.009907	
39	33B-33C	0	8	0	0	8		108	6156	0	6156	15390	11	105	131.25	100	0.0272	0.0000	0.0023		0.0023	0.002342	
40	33C-33C	0	2	0	0	27		364.5	20776.5	0	20777	51941	36	87	108.75	100	0.0918	0.0002	0.0185		0.0185	0.018436	
41	33-33D	0	3		0	30		405	23085.0		23085	57713	40	112	140	100	0.1020	0.0002	0.0289		0.0289	0.028878	
42	33D-32		3		0	33		445.5	25393.5		25394	63484	44	72	90	100	0.1122	0.0002	0.0221		0.0221	0.022148	
43	32-30	0	8		0	338		4563	260091.0	45000	305091	762728	530	68	85	100	1.3	0.0	2		2.0891	2.089135	
44	31-30	0	0		0	0		0	0.0		0	0	0	47	59	100	0.0000	0.0000	0.0000		0.0000	0	
45	30-28	0	18		0	356		4806	273942.0		273942	684855	476	30	38	100	1.2104	0.0201	0.7550		0.7550	0.755034	
46	29-28	0	0		0	372		5022	286254.0		286254	715635	497	58	73	100	1.2646	0.0210	1.5835		1.5835	1.583544	
47	28-27	0	16		0	16		216	12312.0		12312	30780	21	52	65	100	0.0544	0.0001	0.0042		0.0042	0.004186	
48	27-7	0	8		0	360		5130	292410.0		292410	731025	508	24	30	100	1.2920	0.0227	0.6816		0.6816	0.681594	
49	26-20	0	9		0	9		121.5	6925.5		6926	17314	12	77	96	100	0.0306	0.0000	0.0021		0.0021	0.002136	
50	25-26	0	0		0	389		5251.5	299335.5		299336	748339	520	70	88	100	1.3226	0.0237	2.0761		2.0761	2.076054	
51	21-26	0	0		0	389		5251.5	299335.5		299336	748339	520	224	280	100	1.3226	0.0237	6.6434		6.6434	6.643372	
52	24-25	0	15		0	15		202.5	11542.5		11543	28858	20	364	455	100	0.0510	0.0001	0.0260		0.0260	0.026001	
53	23-24	0	0		0	404		5454	310878.0		310878	777195	540	30	38	100	1.3736	0.0254	0.9543		0.9543	0.954313	
54	24-22	0	10		0	10		135	7695.0		7695	19238	13	65	81	100	0.0340	0.0000	0.0022		0.0022	0.002191	
55	22-21	0	0		0	414		5589	318573.0		318573	796433	553	37	46	100	1.4076	0.0266	1.2315		1.2315	1.231505	
56	21-20	0	0		0	414		5589	318573.0		318573	796433	553	157	196	100	1.4076	0.0266	5.2256		5.2256	5.225576	
57	19-22	0	0		0	414		5589	318573.0		318573	796433	553	22	28	100	1.4076	0.0266	0.7322		0.7322	0.732246	
58	20-18	0	0		0	414		5589	318573.0		318573	796433	553	44	55	100	1.4076	0.0266	1.4645		1.4645	1.464493	
59	19-18	0	10		0	10		135	7695.0	82559	90254	225635	157	176	220	100	0.3988	0.0026	0.5668		0.5668	0.566773	
60	19-17	0	10		0	10		135	7695.0		7695	19238	13	56	70	100	0.0340	0.0030	0.0019		0.0019	0.001888	
61	18-16	0	0		0	434		5859	333963.0		333963	834908	580	77	96	100	1.4756	0.0291	2.7968		2.7968	2.796846	
62	17-16	0	0		0	434		5859	333963.0		333963	834908	580	192	240	100	1.4756	0.0291	6.9740		6.9740	6.973953	
63	16-14	0	8		0	442		5967	340119.0		340119.0	850297.5	590.5	72	90	100	1.5028	0.0301	2.7052		2.7052	2.705205	
64	15A-15B		10			10		135	7695.0		7695.0	19237.5	13.4	72	90	100	0.0340	0.0000	0.0024		0.0024	0.002427	
65	15-15B		2			2		27	1539.0		1539.0	3847.5	2.7	56	22	100	0.0068	0.0000	0.0000		0.0000	3.01E-05	
66	15B-14	0	3		0	15		202.5	11542.5		11542.5	28856.25	20.0	56	48	100	0.0510	0.0001	0.0027		0.0027	0.002743	
67	14-13	0	0		0	15		202.5	11542.5		11542.5	28856.25	20.0	171	214	150	0.0227	0.0000	0.0017		0.0017	0.001695	
68	13--11	0	9		0	24		324	18468.0		18468.0	46170	32.1	144	180	150	0.0383	0.0000	0.0034		0.0034	0.003409	
69	12--11	0	2		0	2		27	1539.0		1539.0	3847.5	2.7	136	170	100	0.0068	0.0000	0.0002		0.0002	0.000233	

S No.	Line No		Number of plots						Population		Others building	Total	Peak water demand@5		Length	Effective				Total	Firing		Consumptive	
			Self			Total																		
10	58	56	0	6		6	38	0.00	445.6	51455.3		51455.3	128938.125	89.1	95	119	350	100	0.101	0.00013	0.0150	0.00150	0.01650	0.01650
17	57	56	0	4		0	4	0.00	54	6237.0		6237.0	15592.5	10.8	41	51	100	100	0.026	0.00002	0.0009	0.00009	0.00100	0.00100
16	59	58	0	8		0	45	0.00	607.5	94128.8		94128.8	235321.875	163.4	108	135	350	100	0.414	0.00026	0.3759	0.03759	0.41354	0.41354
19	55	53	0	7		0	7	0.00	94.5	10814.8		10914.8	27286.875	18.9	95	119	100	100	0.043	0.00005	0.0061	0.00061	0.00673	0.00673
20	54	53	0	11		0	11	0.00	148.5	17151.8		17151.8	42879.375	29.8	125	156	100	100	0.076	0.00012	0.0095	0.00188	0.02048	0.02048
21	53	50	0	0		0	53	0.00	890.6	98232.8		98232.8	245581.875	170.5	65	81	100	100	0.434	0.00201	0.2458	0.02449	0.26938	0.26938
22	52	50	0	7		0	7	0.00	94.5	10914.8		10914.8	27286.875	18.9	75	95	100	100	0.044	0.00005	0.0049	0.00049	0.00539	0.00539
23	51	50	0	5		0	5	0.00	67.5	7786.3	31250	39036.3	97815.825	67.8	60	75	100	100	0.173	0.00035	0.0409	0.00409	0.04504	0.04504
24	50	49	0	0		0	75	0.00	1012.5	116941.8		116941.8	292349.375	203.9	18	20	100	100	0.517	0.00418	0.0832	0.00832	0.09157	0.09157
25	28A	28C		8	0		9	0.05	94.5	10914.8	0	10914.8	27286.875	18.9	120	150	100	100	0.048	0.00005	0.0077	0.00077	0.00850	0.00850
26	28B	28C		12	0		12	0.00	121.5	14033.3	0	14033.3	35083.125	24.4	55	69	100	100	0.062	0.00006	0.0067	0.00067	0.00730	0.00730
27	28C	28E		5	0		26	0.00	216	24948.0	0	24948.0	62370	43.3	25	31	100	100	0.110	0.00024	0.0074	0.00074	0.00819	0.00819
28	28D	28B		5	0		5	0.00	54	6237.0	0	6237.0	15592.5	10.8	25	31	100	100	0.026	0.00002	0.0006	0.00006	0.00063	0.00063
29	28E	28G		8	0		32	0.00	337.5	38981.3	0	38981.3	97453.125	67.7	80	100	100	100	0.172	0.00054	0.0054	0.00544	0.05987	0.05987
30	28F	28G		6	0.15		6	0.15	54	6237.0	3750	9987.0	24967.5	17.3	70	88	100	100	0.044	0.00004	0.0038	0.00038	0.00421	0.00421
31	28G	28H		4	0		40	0.10	391.5	45218.3	3750	48968.3	122420.625	84.0	65	69	100	100	0.216	0.00053	0.0571	0.00571	0.06279	0.06279
36	28H	48		8	0.10		58	3.02	4089.6	463284.1	93500	556784.1	1391960.63	1022.2	205	369	150	100	1.166	0.01150	5.2581	0.42501	4.67515	4.67515
37	09	20	0	10		0	249	0.00	3361.5	388263.3	30000	448263.3	1120658.25	729.1	490	575	100	100	1.248	0.04408	25.3478	2.53476	27.88240	27.88240
38	49	46	0	17		0	17	0.00	229.5	26507.3		26507.3	66268.125	43.0	162	203	100	100	0.117	0.00027	0.0340	0.00340	0.05935	0.05935
39	44	45	0	24		0	24	0.00	324	37422.0		37422.0	93555	65.0	162	203	100	100	0.166	0.00059	0.1022	0.01022	0.11240	0.11240
40	45	46	0	0		0	41	0.00	553.5	63929.3		63929.3	159823.125	111.0	50	69	100	100	0.282	0.00136	0.0510	0.00510	0.06811	0.06811
41	47	46	0	2		0	2	0.00	27	3118.5		3118.5	7796.25	5.4	27	36	100	100	0.014	0.00001	0.0002	0.00002	0.00019	0.00019
42	46	43	0	0		0	43	0.00	580.5	67047.8		67047.8	167619.375	116.4	71	89	200	100	0.074	0.00005	0.0045	0.00045	0.00496	0.00496
43	42	43	0	3		0	3	0.00	40.5	4677.8		4677.8	11694.375	8.1	41	51	100	100	0.021	0.00001	0.0005	0.00050	0.00550	0.00550
44	41	43	0	6		0	6	0.00	81	9355.8		9355.8	23388.75	16.2	73	91	100	100	0.041	0.00004	0.0035	0.00035	0.00389	0.00389
45	43	38	0	0		0	52	0.00	702	81091.0		81091.0	202702.5	140.8	95	119	100	100	0.359	0.00211	0.2500	0.02500	0.27594	0.27594
46	40	39	23	0		23	52	0.00	909	104989.5		104989.5	262473.75	182.3	60	75	100	100	0.464	0.00141	0.2267	0.02267	0.25123	0.25123
47	76	74	18	0		18	52	0.00	837	96673.5		96673.5	241683.751	167.8	81	101	100	100	0.427	0.00208	0.2962	0.02962	0.32585	0.32585
48	38	74	18	0		40	52	0.00	810	94584.5		94584.5	236466.25	164.2	65	81	100	100	0.418	0.00281	0.2289	0.02263	0.25118	0.25118
49	74	79	26	0		56	52	0.00	1215	139293.0		139293.0	348232.5	241.8	90	113	100	100	0.618	0.00375	0.6833	0.06833	0.75166	0.75166
50	59	58	0	0		78	52	0.00	1418	163201.8		163201.8	408003.75	283.3	45	56	100	100	0.721	0.00772	0.4437	0.04437	0.48809	0.48809
51	37	36	22	0		22	52	0.00	900	103590.0		103590.0	258975	179.8	63	79	150	100	0.251	0.00068	0.0537	0.00537	0.05907	0.05907
52	35	36	62	0		62	52	0.00	1269	146030.0		146030.0	365075	253.7	134	168	100	100	0.649	0.00629	1.0518	0.10518	1.15689	1.15689
53	36	32	0	0		183	52	0.00	2169	250519.5		250519.5	626298.75	434.9	51	64	150	100	0.482	0.00237	0.1214	0.01214	0.13351	0.13351
54	34	32	48	0		48	52	0.00	1134	130977.0		130977.0	327442.5	227.4	101	129	100	100	0.579	0.00610	0.6610	0.06610	0.72715	0.72715
55	33	32	21	0		21	52	0.00	891	102910.5		102910.5	257276.25	178.7	64	68	100	100	0.455	0.00328	0.2217	0.02217	0.24391	0.24391
56	32	27	0	0		232	52	0.00	2700	312265.0		312265.0	780662.5	559.5	41	51	150	100	0.693	0.00877	0.1935	0.01935	0.21284	0.21284
57	31	24	0	10		232	52	0.00	2925	338197.5	2500	340697.5	851743.75	590.9	108	135	100	100	1.504	0.03009	4.0626	0.40626	4.46890	4.46890
58	30	28	17	0		17	52	0.00	980	113345.0	5000	118345.0	295862.5	207.2	88	95	100	100	0.627	0.00432	0.3674	0.03674	0.40411	0.40411
59	29	28	5	0		5	0	0.00	45	11070.0		11070.0	27675	19.2	27	34	100	100	0.049	0.00005	0.0018	0.00018	0.00198	0.00198
60	28	27	43	0		86	52	0.00	1422	164241.0		164241.0	410602.5	285.1	119	149	100	100	0.726	0.00781	1.1613	0.11613	1.27746	1.27746
61	27	25	0	21		297	83	0.00	3793.5	438149.3		438149.3	1095373.13	760.7	60	79	150	100	0.950	0.0067	0.525	0.053	0.578	0.578
62	26	25	0	9		297	9	0.00	2794.5	322764.8		322764.8	806911.875	560.4	84	105	100	100	0.426	0.02728	2.8844	0.28844	3.15079	3.15079
63	26	24	0	0		297	92	0.00	3915	452182.5	7250	459432.5	1148581.25	797.8	22	28	200	100	0.508	0.00179	0.0493	0.00493	0.05425	0.05425
64	24	23	0	0		297	92	0.00	3915	452182.5	13500	465682.5	1164206.25	808.5	57	71	200	100	0.514	0.00184	0.1310	0.01310	0.14412	0.14412
65	22	23	0	20		297	20	0.00	2943	339916.5		339916.5	849791.25	590.1	118	149	100	100	1.502	0.03907	4.4662	0.44662	4.91279	4.91279
66	21	20	0	0		297	0	0.00	2673	308731.5		308731.5	771828.75	536.0	54	68	100	100	1.364	0.02512	1.8559	0.18559	1.86545	1.86545
67	23	20	0	20		297	132	0.00	4455	514552.5		514552.5	1286381.25	893.3	54	68	200	100	0.668	0.00221	0.1499	0.01499	0.16424	0.16424
68	20	19	0	3		297	384	0.00	7857	907483.5		907483.5	2268708.75	1575.5	220	275	250	100	0.867	0.00218	0.5867	0.05867	0.64542	0.64542
69	19	18	0	2		297	2	0.00	2700	311850.0		311850.0	779625	541.4	27	34	300	100	1.378	0.02560	0.8839	0.08839	0.96025	0.96025
70	18	1	0	17		297	409	0.00	9112.5	937109.3		937109.3	2342773.13	1626.9	41	51	250	100	0.983	0.00226	0.1161	0.01161	0.12766	0.12766
71	60A	60E	0	10	0	297	10	0.00	121.5	14033.3	0	14033.3	35083.125	24.4	180	200	900	100	0.062	0.00008	0.0164	0.00164	0.01806	0.01806
72	60B	60D	0	10	0.0	297	20	0.00	182	187100	7500	26211.0	65527.5	45.5	75	94	900	100	0.176	0.00026	0.0265	0.00265	0.02891	0.02891

S No.	Line No		Number of plots: Self			Total			Population	[illegible]	Others building	Total	Peak water demand	[illegible]	Length	Effective length	[illegible]	[illegible]	[illegible]	Total	Fitting	[illegible]	Cumulative
73	60C	60D	0	10	0	297	10	0.00	121.5	14033.3	0	14033.3	35083.125	24.4	125	156	100	0.062	0.00008	0.0128	0.00128	0.01410	0.01410
74	60D	60E	0	3	0	297	33	0.30	337.5	38981.3	7500	46481.3	116203.125	80.7	30	36	100	0.205	0.00075	0.0283	0.00283	0.03119	0.03119
75	14	13	0	26		297	59	0.00	3469.5	400727.3		400727.3	1001818.13	695.7	95	118	100	1.771	0.04072	4.8359	0.48359	5.31948	5.31949
76	13	11	0	3		297	62	0.00	3510	405405.0		405405.0	1013512.5	703.8	133	166	100	1.791	0.04161	6.9173	0.69173	7.60906	7.60906
77	12	11	0	7		297	7	0.00	2767.5	319646.3		319646.3	799115.625	554.9	36	45	100	1.412	0.02679	1.2057	0.12057	1.32628	1.32628
78	11	10	0	6		297	74	0.00	3687.5	425875.3		425875.3	1064688.13	739.0	60	75	100	1.881	0.04564	3.4157	0.34157	3.75725	3.75725
79	13	15	0	20		297	95	0.00	3955.5	456860.0		456860.0	1142150.63	793.2	57	71	100	2.019	0.05191	3.6988	0.36988	4.06869	4.06869
80	15	10	0	5		297	100	0.00	4023	464656.5		464656.5	1161641.25	806.7	103	129	100	2.053	0.05367	6.8966	0.68966	7.58822	7.58822
81	15	16	0	3		297	103	0.00	4055	468334.5		468334.5	1170836.25	814.8	54	68	100	2.074	0.05487	3.6834	0.36834	4.05171	4.05171
82	10	9	0	13		297	13	0.00	2848.5	329001.8		329001.8	822504.375	571.2	63	79	100	1.454	0.02826	2.2258	0.22258	2.44835	2.44835
83	17	18	0	7		297	123	0.00	4333.5	500519.3		500519.3	1251298.13	869.0	122	153	100	2.212	0.06147	9.3745	0.93745	10.31198	10.31198
84	16	9	0	9		297	0	0.00	2673	308731.5		308731.5	771828.75	536.0	81	101	100	1.364	0.02512	2.5438	0.25438	2.79818	2.79818
85	9	8	0	6		297	129	0.00	4414.5	509874.8		509874.8	1274686.88	885.2	68	85	150	1.001	0.00883	0.7506	0.07506	0.82567	0.82567
86	7	8	0	0		297	0	0.00	2673	308731.5	2500	311231.5	778078.75	540.3	60	75	100	1.375	0.02560	1.9126	0.19126	2.10391	2.10391
87	6	5	0	7		297	136	0.00	4509	520789.5		520789.5	1301973.75	904.1	68	85	150	1.023	0.00918	0.7805	0.07805	0.85860	0.85860
88	6	5	0	11		297	13	0.00	2848.5	329001.8		329001.8	822504.375	571.2	90	113	100	1.454	0.02828	3.1797	0.31797	3.49764	3.49764
89	5	4	0	4		297	153	0.00	4738.5	547296.8		547296.8	1368241.88	950.2	500	625	150	1.075	0.01007	6.2920	0.62920	6.92115	6.92116
90	3	4	0	5		297	6	0.00	2740.5	316527.8		316527.8	791319.375	549.5	65	81	100	1.359	0.02631	2.1379	0.21379	2.35156	2.35156
91	4	1	0	7		297	166	0.00	4900.5	566007.8		566007.8	1415019.38	982.7	81	101	150	1.112	0.01071	1.0840	0.10840	1.19324	1.19324
92	2	1	0	0		297	6	0.00	2673	308731.5		308731.5	771828.75	536.0	117	146	100	1.364	0.02512	3.6744	0.36744	4.04181	4.04181
93	1	600	0	11		297	579	0.00	10489.5	1211537	12500	1224037	3060093.13	2125.1	14	18	200	1.362	0.01101	0.1927	0.01927	0.21193	0.21193
				579																			
ADDL.																							
2	25A	25B	0	1		0	1	0.00	13.5	1559.3		1559.3	3898.125	2.7	54	68	100	0.007	0.00000	0.0001	0.00001	0.00010	0.00010
11	21A	21B	0	5		0	5	0.00	67.5	7796.3		7796.3	19490.625	13.5	80	100	100	0.074	0.00003	0.0028	0.00028	0.00304	0.00304
14	23A	23B	0	10		0	10	0.00	135	15592.5		15592.5	38981.25	27.1	83	104	100	0.069	0.00010	0.0103	0.00103	0.01139	0.01138
32	9A	9C	0	17		0	17	0.00	229.5	26507.3		26507.3	66268.125	46.0	119	149	100	0.117	0.00027	0.0396	0.00396	0.04360	0.04360
33	9B	9C	0	8		0	8	0.00	108	12474.0		12474.0	31185	21.7	108	135	100	0.055	0.00007	0.0089	0.00089	0.00980	0.00980
34	9C	9D	0	0		0	25	0.00	337.5	38981.3		38981.3	97453.125	67.7	82	103	100	0.172	0.00054	0.0558	0.00558	0.06135	0.06135
25	28A	28C		9	0		9	0.00	94.5	10914.8	0	10914.8	27286.875	18.9	120	150	100	0.048	0.00005	0.0077	0.00077	0.00850	0.00850
26	28B	28C		12	0		12	0.00	121.5	14033.3	0	14033.3	35083.125	24.4	65	81	100	0.062	0.00008	0.0067	0.00067	0.00733	0.00738
27	28C	28E		5	0		26	0.00	216	24948.0	0	24948.0	62370	43.3	25	31	100	0.110	0.00024	0.0074	0.00074	0.00819	0.00819
28	28D	28F		5	0		5	0.00	54	6237.0	0	6237.0	15592.5	10.8	25	31	100	0.028	0.00002	0.0006	0.00006	0.00063	0.00063
29	28E	28G		8	0		29	0.00	337.5	38981.3	0	38981.3	97453.125	67.7	80	100	100	0.172	0.00054	0.0544	0.00544	0.05987	0.05987
30	28F	28G		4	0.15		6	0.15	54	6237.0	3750	9987.0	24967.5	17.3	70	88	100	0.044	0.00004	0.0038	0.00038	0.00421	0.00421
31	28G	28H		4	0		49	0.15	391.5	45218.3	3750	48968.3	122420.625	85.0	65	81	100	0.216	0.00063	0.0571	0.00571	0.06279	0.06279
71	60A	60B	0	10	0	0	10	0.00	121.5	14033.3	0	14033.3	35083.125	24.4	160	200	100	0.062	0.00008	0.0164	0.00164	0.01805	0.01805
72	60B	60D	0	10	0.3	0	20	0.30	162	18711.0	7500	26211.0	65527.5	45.5	75	94	100	0.116	0.00026	0.0245	0.00245	0.02691	0.02691
73	60C	60D	0	10	0	0	10	0.00	121.5	14033.3	0	14033.3	35083.125	24.4	125	156	100	0.062	0.00008	0.0128	0.00128	0.01410	0.01410
74	60D	60E	0	3	0	0	33	0.30	337.5	38981.3	7500	46481.3	116203.125	80.7	30	36	100	0.205	0.00075	0.0283	0.00283	0.03110	0.03110

KUMAR ENDECON PVT. LTD.

Project -Dlf -Garden city Sec-91 & 92 (180.3115 Acres)								
WATER SUPPLY MB								
S No.	Line No		Length	Dia	100 mm	150 mm	200 mm	250 mm
	From	To						
Zone-1								
1	26	23	203	100	203	-	-	-
2	25A	25B	54	100	54	-	-	-
3	25	23	53	100	53	-	-	-
4	24	23	95	100	95	-	-	-
5	23	16	225	100	225	-	-	-
6	17	16	60	100	60	-	-	-
7	16	15	54	100	54	-	-	-
8	20	19	378	100	378	-	-	-
9	18	19	145	100	145	-	-	-
10	19	22	71	100	71	-	-	-
11	21A	21B	80	100	80	-	-	-
12	21	22	17	100	17	-	-	-
13	22	17	90	100	90	-	-	-
14	17	15	46	100	46	-	-	-
15	15	14	125	100	125	-	-	-
16	13	14	295	100	295	-	-	-
17	14	12	10	150	-	10	-	-
18	11	12	144	100	144	-	-	-
19	12	4	96	150	-	96	-	-
20	1	5	40	150	-	40	-	-
21	10	5	68	100	68	-	-	-
22	6	6	125	150	-	125	-	-
23	7	8	81	100	81	-	-	-
24	9	8	90	100	90	-	-	-
25	8	6	65	100	65	-	-	-
26	6	4	54	100	54	-	-	-
27	4	3	152	100	152	-	-	-
28	2	3	44	100	44	-	-	-
29	3	1	33	100	33	-	-	-
30	1	600	14	150	-	14	-	-
TOTAL			3007		2722	285	0	
Zone-2								
1	32	31	405	100	405	-	-	-
2	31	33	17	100	17	-	-	-
3	33	30	81	100	81	-	-	-
4	30	28	216	100	216	-	-	-
5	30	29	81	100	81	-	-	-
6	29	28	149	100	149	-	-	-

S No.	Line No		Length	Dia	100 mm	150 mm	200 mm	250 mm
	From	To						
7	28	26	63	100	63	-	-	-
8	29	27	36	100	36	-	-	-
9	27	26	171	100	171	-	-	-
10	27	24	76	100	76	-	-	-
11	26	25	87	100	87	-	-	-
12	25	24	203	100	203	-	-	-
13	24	22	81	150	-	81	-	-
14	23A	23B	83	100	83	-	-	-
15	23	23B	24	100	24	-	-	-
16	23B	22	60	100	60	-	-	-
17	22	1	230	150	-	230	-	-
18	19	20	65	100	65	-	-	-
19	18	20	41	100	41	-	-	-
20	20	17	54	100	54	-	-	-
21	21	17	44	100	44	-	-	-
22	17	13	135	100	135	-	-	-
23	16	14	28	100	28	-	-	-
24	15	14	125	100	125	-	-	-
25	14	13	162	100	162	-	-	-
26	13	4	27	100	27	-	-	-
27	4	11	122	100	122	-	-	-
28	11	12	125	100	125	-	-	-
29	11	10	135	100	135	-	-	-
30	10	12	19	100	19	-	-	-
31	12	9	84	100	84	-	-	-
32	9A	9C	119	100	119	-	-	-
33	9B	9C	108	100	108	-	-	-
34	9C	9D	82	100	82	-	-	-
35	9	9D	104	100	104	-	-	-
36	9D	7	153	100	153	-	-	-
37	8	7	60	100	60	-	-	-
38	7	6	22	100	22	-	-	-
39	5	6	63	100	63	-	-	-
40	6	4	68	100	68	-	-	-
41	4	2	148	150	-	148	-	-
42	3	2	125	100	125	-	-	-
43	2	1	81	150	-	81	-	-
44	1	600	13	200	-	-	13	-
TOTAL			4375		3822	540	13	

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KEPL

S No.	Line No		Length	Dia	100 mm	150 mm	200 mm	250 mm
	From	To						
Zone-3								
1	73	71	135	100	135	-	-	-
2	72	71	54	100	54	-	-	-
3	71	69	117	100	117	-	-	-
4	70	69	92	100	92	-	-	-
5	69	67	242	100	242	-	-	-
6	68	67	87	100	87	-	-	-
7	67	65	87	100	87	-	-	-
8	66	65	135	100	135	-	-	-
9	65	63	60	100	60	-	-	-
10	64	63	168	100	168	-	-	-
11	63	49	100	100	100	-	-	-
12	62	60	54	150	-	54	-	-
13	61	60	206	100	206	-	-	-
14	60	58	76	150	-	76	-	-
15	59	58	54	100	54	-	-	-
16	58	56	95	150	-	95	-	-
17	57	56	41	100	41	-	-	-
18	56	53	108	100	108	-	-	-
19	55	53	95	100	95	-	-	-
20	54	53	125	100	125	-	-	-
21	53	50	65	100	65	-	-	-
22	52	50	76	100	76	-	-	-
23	51	50	60	100	60	-	-	-
24	50	49	16	100	16	-	-	-
37	49	20	460	100	460	-	-	-
38	48	45	162	100	162	-	-	-
39	44	45	162	100	162	-	-	-
40	45	46	30	100	30	-	-	-
41	47	46	27	100	27	-	-	-
42	46	43	71	200	-	-	71	-
43	42	43	41	100	41	-	-	-
44	41	43	73	100	73	-	-	-
45	43	39	95	100	95	-	-	-
46	40	39	60	100	60	-	-	-
47	75	74	81	100	81	-	-	-
48	38	74	65	100	65	-	-	-
49	74	39	95	100	95	-	-	-

S No.	Line No		Length	Dia	100 mm	150 mm	200 mm	250 mm
	From	To						
50	39	36	46	100	46	-	-	-
51	37	36	63	150	-	63	-	-
52	35	36	135	100	135	-	-	-
53	36	32	41	150	-	41	-	-
54	34	32	103	100	103	-	-	-
55	33	32	54	100	54	-	-	-
56	32	27	41	150	-	41	-	-
57	31	24	108	100	108	-	-	-
58	30	28	68	100	68	-	-	-
59	29	26	27	100	27	-	-	-
60	26	27	119	100	119	-	-	-
61	27	25	63	150	-	63	-	-
62	26	25	84	100	84	-	-	-
63	25	24	22	200	-	-	22	-
64	24	23	57	200	-	-	57	-
65	22	23	119	100	119	-	-	-
66	21	23	54	100	54	-	-	-
67	23	20	54	200	-	-	54	-
68	20	18	220	250	-	-	-	220
69	19	18	27	100	27	-	-	-
70	18	1	41	250	-	-	-	41
75	14	13	95	100	95	-	-	-
76	13	11	133	100	133	-	-	-
77	12	11	36	100	36	-	-	-
78	11	10	60	100	60	-	-	-
79	13	15	57	100	57	-	-	-
80	15	10	103	100	103	-	-	-
81	15	16	54	100	54	-	-	-
82	10	9	63	100	63	-	-	-
83	17	16	122	100	122	-	-	-
84	16	9	81	100	81	-	-	-
85	9	8	68	150	-	68	-	-

S No.	Line No		Length	Dia	100 mm	150 mm	200 mm	250 mm
	From	To						
86	7	8	60	100	60	-	-	-
87	8	5	68	150	-	68	-	-
88	6	5	90	100	90	-	-	-
89	5	4	500	150	-	500	-	-
90	3	4	65	100	65	-	-	-
91	4	1	81	150	-	81	-	-
92	2	1	117	100	117	-	-	-
93	1	600	14	200	-	-	14	-
TOTAL			7183		6654	1150	218	261
GRAND TOTAL			14565		12098	1975	231	261

Annexure-5A

HSVP Supply

S No	Line No	Length	Dia	100 mm	150 mm
1	Main-Pump	120	100	120	

STATEMENT FOR DOMESTIC WATER SUPPLY FOR ADDITIONAL AREA (16.25 ACRES)

SN AS/ NODE	Line No		Length IN MTR	Dia IN MM	100 mm	150 mm	200 mm	250 mm
	From	To						
2	25A	25B	54	100	54	-	-	-
11	21A	21B	80	100	80	-	-	-
14	23A	23B	83	100	83	-	-	-
32	9A	9C	119	100	119	-	-	-
33	9B	9C	108	100	108	-	-	-
34	9C	9D	82	100	82	-	-	-
25	28A	28C	120	100	120	-	-	-
26	28B	28C	65	100	65	-	-	-
27	28C	28E	25	100	25	-	-	-
28	28D	28E	25	100	25	-	-	-
29	28E	28G	80	100	80	-	-	-
30	28F	28G	70	100	70	-	-	-
31	28G	28H	55	100	55	-	-	-
71	60A	60E	160	100	160	-	-	-
72	60B	60D	75	100	75	-	-	-
73	60C	60D	125	100	125	-	-	-
74	60D	60E	30	100	30	-	-	-
TOTAL			1356		1356	0	0	0

Project -Dlf -Garden city Sec-91 & 92 (180.3115 Acres)

Flushing Water supply hydraulic calculation

S No.	Line No	Number of plots						Population @13.5 persons /Ews 9	Daily water Demand 67 Liter /Day	Others building water cons in ltr /day	Total water demand ltr /day	Peak water demand@2.5 of daily water demand ltr	Peak Water Demand	Length of Pipe	Effective Length (actual length	Proposed line dia.	Velocity in m/sec	Frictional head losses	Total Frictional head losses	ews	plot	Commulative Frictional head losses	Remarks
		Self			Total																		
		ews	General plot	others	ews	General plot	othres																
	2	3	4	5	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	head	head	24	
		NOS	NOS	NOS	NOS	NOS	NOS	NOS	LPD	LPD	LPD	LPD	LPM	Mtr	Mtr	MM	Mtr/sec	Mtr/Mtr	Mtr			Mtr	
										ZONE-1&2													
1	64-63	0	22		0	22		297	16929.0		16929	42323	29	398	498	100	0.0748	0.0001	0.0578		0.0578	0.057781	
2	63-61	0	2		0	2		27	1539.0		1539	3848	3	119	149	100	0.0068	0.0000	0.0002		0.0002	0.000204	
3	63-62	0	22		0	48		621	35397.0		35397	88493	61	80	100	100	0.1564	0.0005	0.0455		0.0455	0.045521	
4	63A-63B		5			51		688.5	39244.5		39245	98111	68	80	115	100	0.1734	0.0006	0.0634		0.0634	0.063371	
5	62-61	0	0		0	51		688.5	39244.5		39245	98111	68	74	93	100	0.1734	0.0006	0.0510		0.0510	0.050973	
6	54-60	0	5		0	5		67.5	3847.5		3848	9619	7	73	91	100	0.0170	0.0000	0.0007		0.0007	0.000682	
7	62-60	0	0		0	56		756	43092.0		43092	107730	75	73	91	100	0.1904	0.0007	0.0598		0.0598	0.059792	
8	59-56	0	42		0	42		567	32319.0		32319	80798	56	230	288	100	0.1428	0.0004	0.1106		0.1106	0.110582	
9	58A-58B	0	1		0	43		580.5	33088.5		33089	82721	57	45	45	100	0.1462	0.0004	0.0181		0.0181	0.018079	
10	58-56	0	0		0	43		580.5	33088.5		33089	82721	57	44	55	100	0.1462	0.0004	0.0221		0.0221	0.022097	
11	57-56	0	0		0	0		0	0.0		0	0	0	89	111	100	0.0000	0.0000	0.0000		0.0000	0	
12	56-55	0	22		0	121		1633.5	93109.5		93110	232774	162	68	85	100	0.4114	0.0027	0.2320		0.2320	0.231983	
13	55-54	0	0		0	121		1633.5	93109.5		93110	232774	162	142	178	100	0.4114	0.0027	0.4844		0.4844	0.484435	
14	60-53	0	22		0	22		297	16929.0		16929	42323	29	67	84	100	0.0748	0.0001	0.0097		0.0097	0.009727	
15	54-53	0	0		0	143		1930.5	110038.5		110039	275096	191	89	111	100	0.4862	0.0037	0.4137		0.4137	0.413705	
16	52-50	0	0		0	0		0	0.0		0	0	0	168	210	100	0.0000	0.0000	0.0000		0.0000	0	
17	51-50	0	23		0	23		310.5	17698.5		17699	44246	31	20	25	100	0.0782	0.0001	0.0032		0.0032	0.003153	
18	50-49	0	16		0	39		526.5	30010.5		30011	75026	52	144	180	100	0.1326	0.0003	0.0604		0.0604	0.060355	
19	53-49	0	0		0	162		2457	140049.0		140049	350123	243	123	154	100	0.6188	0.0056	0.8936		0.8936	0.893635	
20	49-48	0	19		0	201		2713.5	154699.5		154670	386674	269	108	135	100	0.6834	0.0070	0.9431		0.9431	0.94306	
21	48-47	0	7		0	7		94.5	5386.5		5387	13466	9	151	189	100	0.0238	0.0000	0.0026		0.0026	0.00263	
22	48-46	0	0		0	208		2808	160056.0		160055	400140	278	62	78	100	0.7072	0.0074	0.5768		0.5768	0.576818	
23	46-41	0	0		0	206		2808	160056.0		160056	400140	278	181	226	100	0.7072	0.0074	1.6839		1.6839	1.683938	
24	42-41	0	19		0	19		256.5	14620.5		14621	36551	25	30	38	100	0.0646	0.0001	0.0033		0.0033	0.00332	
25	46-45	0	2		0	21		283.5	16159.5		16160	40399	28	90	113	100	0.0714	0.0001	0.0120		0.0120	0.011988	
26	45-43	0	0		0	0		0	0.0		0	0	0	65	81	100	0.0000	0.0000	0.0000		0.0000	0	
27	44-43	0	18		0	18		243	13851.0		13851	34628	24	92	115	100	0.0612	0.0001	0.0092		0.0092	0.009211	
28	43-40	0	9		0	48		648	36936.0		36936	92340	64	178	223	100	0.1632	0.0005	0.1096		0.1096	0.109589	
29	41-39	0	5		0	261		3523.5	200839.5		200840	502099	349	68	85	100	0.8874	0.0113	0.9632		0.9632	0.963178	
30	45-40	0	8		0	8		108	6156.0		6156	15390	11	135	169	100	0.0272	0.0000	0.0030		0.0030	0.003011	
31	40-39	0	8		0	269		3631.5	206995.5	302400	509396	1273489	884	9	11	100	2.2508	0.0635	0.7144		0.7144	0.714447	
32	39-38	0	0		0	0		0	0.0		0	0	0	32	40	150	0.0000	0.0000	0.0000		0.0000	0	
33	38-2	0	0		0	0		0	0.0	10927	10927	27318	19	366	458	150	0.0215	0.0000	0.0033		0.0033	0.003276	

S No.	Line No	Number of plots – Self – ews	Number of plots – Self – General plot	Number of plots – Self – others	Number of plots – Total – ews	Number of plots – Total – General plot	Number of plots – Total – others	Population @13.5 persons /Ews 9	Daily water Demand 57 Liter/Day	Others building water cons in ltr /day	Total water demand ltr /day	Peak water demand@2.5 of daily water demand ltr	Peak Water Demand	Length of Pipe	Effective Length (actual length	Proposed line dia	Velocity in meter	Frictional head losses	Total Frictional head losses	ews	plot	Cummulative Frictional head losses	Remarks
																				head	head		
	2	3	4	6	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23			24	
		NOS	NOS	NOS	NOS	NOS	NOS	NOS	LPD	LPD	LPD	LPD	LPM	Mtr	Mtr	MM	Mtr/sec	Mtr/Mtr	Mtr			Mtr	
70	11'-7	0	7		0	33		445.5	25393.5		25393.5	63483.75	44.1	176	220	150	0.0409	0.0000	0.0075		0.0075	0.007514	
71	10'-9	0	2		0	35		472.5	26932.5		26932.5	67331.25	46.8	45	58	100	0.1190	0.0003	0.0154		0.0154	0.015436	
72	8'-9	0	3		0	3		40.5	2308.5		2308.5	5771.25	4.0	108	135	100	0.0102	0.0000	0.0004		0.0004	0.000392	
73	9'-7	0	0		0	38		513	29241.0		29241.0	73102.5	50.8	183	229	100	0.1262	0.0003	0.0731		0.0731	0.073099	
74	7'-3	0	9		0	489		6601.5	376285.5		376285.5	940713.75	653.3	210	263	150	0.7389	0.0050	1.3205		1.3205	1.320471	
75	6'-4	0	5		0	5		67.5	3847.5		3847.5	9618.75	6.7	28	35	100	0.0170	0.0000	0.0003		0.0003	0.000292	
76	5'-4	0	10		0	10		135	7695.0		7695.0	19237.5	13.4	30	38	100	0.0340	0.0000	0.0010		0.0010	0.001011	
77	4'-3	0	0		0	15		202.5	11542.5		11542.5	28856.25	20.0	97	121	100	0.0510	0.0001	0.0060		0.0060	0.006923	
78	3'-2	0	15		0	520		7020	400140.0		400140.0	1000350	694.7	30	38	150	0.7858	0.0056	0.2114		0.2114	0.211391	
79	2'-1	0	16		0	536		7236	412452.0		412452.0	1031130	716.1	341	426	200	0.4556	0.0015	0.6260		0.6260	0.625986	
80	1-800	0	2		0	538		7263	413991.0		413991.0	1034977.5	716.7	14	18	200	0.4573	0.0010	0.0259		0.0259	0.025879	
ADDL.																							
4	83A-83B		5			5		67.5	3847.5		3848	9619	7	80	100	100	0.0170	0.0000	0.0007		0.0007	0.000747	
9	58A-58B	0	1		0	6		81	4617.0		4617	11543	8	45	56	100	0.0204	0.0000	0.0006		0.0006	0.000589	
38	33A-33C	0	17	0	0	17		229.5	13081.5	0	13082	32704	23	110	137.5	100	0.0578	0.0001	0.0098		0.0098	0.009807	
39	33B-33C	0	8	0	0	8		108	6156	0	6156	15390	11	105	131.25	100	0.0272	0.0000	0.0023		0.0023	0.002342	
40	33C-33C	0	2	0	0	27		364.5	20776.5	0	20777	51941	36	80	100	100	0.0816	0.0002	0.0170		0.0170	0.016971	
64	15A-15B		10			10		135	7695.0		7695.0	19237.5	13.4	72	90	100	0.0340	0.0000	0.0024		0.0024	0.002427	

KUMAR ENDECON PVT. LTD.

Project -Dlf -Garden city Sec-91 & 92 (180.3115 Acres)						
Flushing Water supply hydraulic calculation						
S No.	Line No	Length	Dia	100 mm	150 mm	200 mm
ZONE-1 & 2						
1	64-63	398	100	398	-	-
2	63-61	119	100	119	-	-
3	63-62	80	100	80	-	-
4	63A-63B	115	100	115	-	-
5	62-61	74	100	74	-	-
6	54-60	73	100	73	-	-
7	62-60	73	100	73	-	-
8	59-56	230	100	230	-	-
9	56A-56B	45	100	45	-	-
10	58-56	44	100	44	-	-
11	57-56	89	100	89	-	-
12	56-55	68	100	68	-	-
13	55-54	142	100	142	-	-
14	60-53	67	100	67	-	-
15	54-53	89	100	89	-	-
16	52-50	168	100	168	-	-
17	51-50	20	100	20	-	-
18	50-49	144	100	144	-	-
19	53-49	123	100	123	-	-
20	49-48	108	100	108	-	-
21	48-47	151	100	151	-	-
22	48-46	62	100	62	-	-
23	46-41	181	100	181	-	-
24	42-41	30	100	30	-	-
25	46-45	90	100	90	-	-
26	45-43	65	100	65	-	-
27	44-43	92	100	92	-	-
28	43-40	178	100	178	-	-
29	41-39	68	100	68	-	-
30	45-40	135	100	135	-	-
31	40-39	9	100	9	-	-
32	39-38	32	150	-	32	-
33	38-2	366	150	-	366	-
34	36-35	132	100	132	-	-
35	37-34	127	100	127	-	-
36	35-34	23	100	23	-	-
37	34-27	103	100	103	-	-
38	33A-33C	110	100	110	-	-
39	33B-33C	105	100	105	-	-
40	33C-33C	87	100	87	-	-
41	33-33D	112	100	112	-	-
42	33D-32	72	100	72	-	-
43	32-30	68	100	68	-	-
44	31-30	47	100	47	-	-
45	30-28	30	100	30	-	-
46	29-28	58	100	58	-	-
47	28-27	52	100	52	-	-
48	27'-7	24	100	24	-	-
49	26-20	77	100	77	-	-
50	25-26	70	100	70	-	-
51	21-26	224	100	224	-	-
52	24-25	364	100	364	-	-
53	23-24	30	100	30	-	-
54	24-22	65	100	65	-	-
55	22-21	37	100	37	-	-
56	21-20	157	100	157	-	-
57	19-22	22	100	22	-	-

S No.	Line No	Length	Dia	100 mm	150 mm	200 mm
58	20-18	44	100	44	-	-
59	19-18	176	100	176	-	-
60	19-17	56	100	56	-	-
61	18-16	77	100	77	-	-
62	17-16	192	100	192	-	-
63	16-14	72	100	72	-	-
64	15A-15B	90	100	90	-	-
65	15-15B	56	100	56	-	-
66	15B-14	56	100	56	-	-
67	14-13	171	150	-	171	-
68	13--11	144	150	-	144	-
69	12--11	136	100	136	-	-
70	11'-7	176	150	-	176	-
71	10'-9	45	100	45	-	-
72	8'-9	108	100	108	-	-
73	9'-7	183	100	183	-	-
74	7'-3	210	150	-	210	-
75	6'--4	28	100	28	-	-
76	5'-4	30	100	30	-	-
77	4'-3	97	100	97	-	-
78	3'-2	30	150	-	30	-
79	2'-1	341	200	-	-	341
80	1-600	14	200	-	-	14
TOTAL		8456		6972	1129	355

ZONE-3

1	600-1	27	200	0	0	27
2	1--2	34	200	0	0	34
3	2--3	40	150	0	40	0
4	3--4	30	200	0	0	30
5	4--5	16	100	16	0	0
6	5--6	77	100	77	0	0
7	5--10	61	100	61	0	0
8	10--8	113	100	113	0	0
9	7--8	24	100	24	0	0
10	8--9	36	100	36	0	0
11	9--10	87	100	87	0	0
12	10--11	39	100	39	0	0
13	11--12	137	100	137	0	0
14	12--13	24	100	24	0	0
15	12--14	114	100	114	0	0
16	11--3	65	100	65	0	0
17	11--14	39	150	0	39	0
18	2--14	67	100	67	0	0
19	14-15	33	100	33	0	0
20	1--15	70	150	0	70	0
21	15-17	87	100	87	0	0
22	17-16	66	100	66	0	0
23	17-18	68	100	68	0	0
24	15-19	100	100	100	0	0
25	19-22	28	100	28	0	0
26	19-20	16	100	16	0	0

(47)

S No.	Line No	Length	Dia	100 mm	150 mm	200 mm
27	20-21	61	100	61	0	0
28	20-23	59	100	59	0	0
29	23-24	50	100	50	0	0
30	23-26	22	100	22	0	0
31	24-25	136	100	136	0	0
32	24-27	194	100	194	0	0
33	4--28	44	200	0	0	44
34	28-29	117	100	117	0	0
35	28-30	60	100	60	0	0
36	28-31	54	200	0	0	54
37	31A-31C	145	100	145	0	0
38	31B-31C	70	100	70	0	0
39	31C-31E	25	100	25	0	0
40	31D-31E	30	100	30	0	0
41	31E-31G	75	100	75	0	0
42	31F-31G	65	100	65	0	0
43	31G-31H	50	100	50	0	0
44	31-32	398	150	0	398	0
45	32-33	53	100	53	0	0
46	32-35	75	100	75	0	0
47	33-34	77	100	77	0	0
48	34-35	100	100	100	0	0
49	33-35	23	100	23	0	0
50	35-36	55	100	55	0	0
51	36-37	50	100	50	0	0
52	36-38	116	100	116	0	0
53	36-39	119	100	119	0	0
54	39-40	30	100	30	0	0
55	39-41	93	100	93	0	0
56	41-42	115	100	115	0	0
57	41-43	60	100	60	0	0
58	43-44	64	100	64	0	0
59	43-45	183	100	183	0	0
60	34-46	34	100	34	0	0
61	46-47	158	100	158	0	0
62	46-48	50	100	50	0	0
63	48-49	80	100	80	0	0
64	49-50	98	100	98	0	0
65	50-51	82	100	82	0	0
66	49-51	24	100	24	0	0
67	51-52	171	100	171	0	0
68	48-52	204	100	204	0	0
69	52-53	60	100	60	0	0
70	53-54	88	100	88	0	0
71	53-79	175	100	175	0	0
72	53-80	51	100	51	0	0
73	80-55	51	100	51	0	

S No.	Line No	Length	Dia	100 mm	150 mm	200 mm
74	55-56	54	100	54	0	0
75	55-57	101	100	101	0	0
76	31-58	229	100	229	0	0
77	58-59	19	100	19	0	0
78	58-60	40	100	40	0	0
79	60-61	43	100	43	0	0
80	61-62	75	100	75	0	0
81	61-63	14	100	14	0	0
82	60-64	66	100	66	0	0
83	64-65	53	100	53	0	0
84	64-66	500	100	500	0	0
85	66-67	101	100	101	0	0
86	66-68	53	100	53	0	0
87	68-69	72	100	72	0	0
88	69-70	36	100	36	0	0
89	70-71	130	100	130	0	0
90	71-72	92	100	92	0	0
91	68-72	70	100	70	0	0
92	72-73	63	100	63	0	0
93	73-74	117	100	117	0	0
94	71-74	57	100	57	0	0
95	74-76	56	100	56	0	0
96	73-75	62	100	62	0	0
97	75-76	142	100	142	0	0
98	76-77	89	100	89	0	0
99	77A-77C	115	100	115	0	0
100	77B-77C	70	100	70	0	0
101	77C-77D	40	100	40	0	0
102	77E-77F	100	100	100	0	0
103	77F-77D	54	100	54	0	0
104	75-78	29	100	29	0	0
105	80-81	114	100	114	0	0
106	81-82	23	100	23	0	0
107	81-83	38	100	38	0	0
TOTAL		8610		7874	547	188
GRANT TOTAL		17066		14846	1676	543
ADDL.						

STATEMENT FOR F.W.S. FOR ADDITIONAL AREA (16.25 ACRES)

SN ASI NODE	Line No	Length	Dia	100 mm	150 mm	200 mm
4	63A-63B	80	100	80	-	-
9	58A-58B	45	100	45	-	-
38	33A-33C	110	100	110	-	-
39	33B-33C	105	100	105	-	-

(91)

S No.	Line No	Length	Dia	100 mm	150 mm	200 mm
40	33C-33C	80	100	80	-	-
64	15A-15B	72	100	72	-	-
37	31A-31C	145	100	145	0	0
38	31B-31C	70	100	70	0	0
39	31C-31E	25	100	25	0	0
40	31D-31E	30	100	30	0	0
41	31E-31G	75	100	75	0	0
42	31F-31G	65	100	65	0	0
43	31G-31H	50	100	50	0	0
99	77A-77C	115	100	115	0	0
100	77B-77C	70	100	70	0	0
101	77C-77D	40	100	40	0	0
102	77E-77F	100	100	100	0	0
103	77F-77D	64	100	64	0	0
TOTAL		1331		1331	0	0

KUMAR ENDECON PVT. LTD.

DLF GARDEN CITY SECTOR 91 & 92, 140.3118 ACRES. (SEWERAGE DESIGN)

Sl NO.	Line FROM	Line TO	No. of Plot served Normal	No. of Plot served EWS	Population @ 13.5 person/plot & 7 persons/plot for EWS	Water Requirement @172.5 LPD/person	Other Buildings: Area in Acre	Other Buildings: TYPE OF BUILDING	Other Buildings: Basis of Water Requirement LPD	Other Buildings: Total water requirement for other buildings (LPD)	Total Daily Water Requirement in Litre	Av. Sewer load 80% of Water Requirement (Soil) LPD	Peak Load @ 3X Av. Load LPD	Subsoil Infiltration @25% of Av. Load LPD	Self Discharge LPD	Branch Discharge LPD	Total Discharge LPD	Total Discharge LPS	Length of line MM	Dia of Pipe MM	Slope 1 in	Fall in Line Mtr	Velocity m/sec	Capacity of Pipe lps	CHECK FOR CARRYING CAPACITY	Levels at Start: Ground Lvl. at Start mtr	Levels at Start: Invert Lvl at Start mtr	Levels at End: Ground Lvl at End mtr	Levels at End: Invert Lvl at End mtr
SEC - 91																													
1	4	49	15	0	203	34931	0.53	UD LAND	25kl/acre	13250	49101	38545	110835	9630	125271	0	125271	1.40	88	200	145	0.61	0.75	11.81	OK	227.35	225.35	227.84	223.84
2	49	7	0	0	0	0					0	0	0	0	0	125271	126271	1.45	145	200	145	1.00	0.75	11.81	OK	227.64	226.37	227.57	223.64
3	54	6	1	0	14	2329					2329	1863	6056	466	6058	0	6058	0.07	145	200	145	1.00	0.75	11.81	OK	227.57	226.37	227.57	223.64
4	5	7	13	0	176	30274					30274	24219	72657	6056	78712	6055	84767	0.98	33	200	145	0.23	0.75	11.81	OK	227.57	225.85	227.57	223.64
5	6	7	3	0	41	6989	0.03	UD LAND	25kl/acre	750	7738	6189	18567	1547	20114	0	28114	0.23	85	300	250	0.34	0.75	26.51	OK	227.57	223.64	226.50	223.35
6	7	8	0	0	0	0					0	0	0	0	0	224097	224097	2.59	67	300	250	0.27	0.75	26.51	OK	226.56	223.35	226.90	223.25
7	8	20	9	0	122	20969					20969	16767	50331	4192	54493	224097	278560	3.22	207	300	250	0.83	0.75	26.51	OK	226.90	223.35	226.60	222.42
8	9	11	18	0	248	41918	0.24	UD LAND	25kl/acre	6000	47918	38334	115002	9584	124588	0	124588	1.44	367	300	250	1.47	0.75	26.51	OK	227.10	226.10	227.70	223.60
9	10	11	0	0	0	0	0.25	UD LAND	25kl/acre	6250	8252	6000	15000	1250	16250	0	16252	0.18	90	200	145	0.62	0.75	11.81	OK	227.60	225.95	227.70	223.30
10	11	13	7	0	96	16301	0.17	UD LAND	25kl/acre	4250	20551	16441	49323	4110	53403	140838	194049	2.25	72	300	250	0.29	0.75	26.51	OK	227.10	223.60	227.60	223.34
11	12A	13	6	0	81	13973	0.16	UD LAND	25kl/acre	4000	17973	14378	43134	3595	0	69680	59680	0.81	78	200	145	0.54	0.75	11.81	OK	227.70	224.50	227.50	223.34
12	13	10	0	0	0	0					0	0	0	0	61138	194269	255407	2.96	80	300	250	0.32	0.75	26.51	OK	227.60	223.60	227.50	223.34
13	18	19	2	6	27	4658					4658	3726	11178	932	12110	0	12110	0.14	69	200	145	0.48	0.75	11.81	OK	227.50	223.34	227.03	222.98
14	19	20	0	0	0	0					0	0	0	0	0	307516	307516	3.10	62	300	250	0.25	0.75	26.51	OK	226.20	224.65	227.03	222.98
15	20	26	7	0	95	16301					16301	13041	39123	3260	42383	546106	588490	6.81	125	400	370	0.34	0.75	46.93	OK	227.03	221.73	226.63	221.20
16	22	23	4	0	54	9315	0.17	UD LAND	25kl/acre	4250	13965	10652	32596	2713	35289	0	55290	0.41	70	200	145	0.48	0.75	11.81	OK	226.63	222.42	225.80	221.99
17	23	25	5	0	68	11644					11644	9315	27946	2329	30274	0	30274	0.35	100	200	145	0.69	0.75	11.81	OK	227.90	227.13	227.24	224.81
18	24	25	5	0	81	13973					13973	11178	33534	2795	36329	0	36529	0.42	33	200	145	0.23	0.75	11.81	OK	227.24	225.33	227.24	224.81
19	25	26	8	0	108	18636	0.17	UD LAND	25kl/acre	4250	22883	18304	54912	4576	59488	66602	126090	1.46	145	200	145	1.01	0.75	11.81	OK	227.24	224.81	226.60	221.99
20	26	28	8	0	108	18630					18630	14904	44712	3726	48438	714586	769018	8.83	107	400	370	0.29	0.75	46.93	OK	226.60	221.99	226.43	221.69
21	27	28	21	0	284	48904					48904	39123	117369	9781	127150	0	121150	1.47	145	200	145	1.00	0.75	11.81	OK	226.40	224.65	226.43	221.69
22	28	32	12	0	162	27945					27945	22356	67069	5589	72657	690168	993825	11.14	149	400	370	0.40	0.75	46.93	OK	226.43	221.69	226.21	221.27
23	29	31	18	0	243	41918					41918	33534	100602	8384	109086	0	109086	1.26	83	200	145	0.57	0.75	11.81	OK	226.46	224.70	226.25	223.39
24	30	31	18	0	243	41918					41918	33534	100602	8384	108986	0	108986	1.26	79	200	145	0.54	0.75	11.81	OK	226.35	220.95	226.25	223.39
25	31	32	5	0	68	11644					11644	9315	27945	2329	30274	217971	248246	2.87	64	300	145	0.44	0.75	11.81	OK	226.25	223.39	226.21	221.27
26	32	34	14	0	189	32603					32603	26082	78246	6521	84767	1211068	1298838	15.00	129	400	370	0.35	0.75	46.93	OK	226.21	221.27	225.79	220.89
27	33	34	3	0	41	6986	0.17	UD LAND	25kl/acre	4250	11236	8989	26967	2247	29214	0	28214	0.34	34	200	145	0.23	0.75	11.81	OK	226.17	224.17	225.79	220.89
28	34	35	0	0	0	0					0	0	0	0	0	1325050	1339080	15.36	9	400	370	0.02	0.75	46.93	OK	225.79	220.89	225.83	220.86
29	35	37	17	0	230	39589					39589	31671	95013	7918	102931	0	102921	1.19	155	200	145	1.07	0.75	11.81	OK	225.79	224.42	225.87	222.19
30	36	37	2	0	27	4656					4666	3726	11178	932	12110	0	12110	0.14	35	200	145	0.24	0.75	11.81	OK	225.85	224.04	225.87	222.19
31	37	38	4	0	54	9315					9315	7452	22356	1863	24219	115040	139259	1.61	70	200	145	0.48	0.75	11.81	OK	225.37	223.19	225.83	220.86
32	SEPL	40	0	0	0	0					0	0	0	0	0	1464309	1464309	16.95	38	400	370	0.10	0.75	46.93	OK	225.93	220.86	225.38	220.15

Sl No.	USE From	USE To	No. of Plot Served Normal	No. of Plot Served EWS	Population @ 13.5 persons/plot & 5 persons/plot for EWS	Water Requirement @172.5 LPD/person	OTHER BUILDINGS Area in Acre	OTHER BUILDINGS Type of Building	OTHER BUILDINGS Basis of Water Requirement LPD	OTHER BUILDINGS Total water requirement for other buildings (LPD)	Total Daily Water Requirement in Litre	Av. Sewer load 80% of Water Requirement Self (LPD)	Peak Load @ 3X Av. Load (LPD)	Subsoil Infiltration @25% of Av Load (LPD)	Self Discharge (LPD)	Branch Discharge (LPD)	Total Discharge (LPD)	Total Discharge (LPS)	Length of line (Mtr)	Dia of Pipe (MM)	Slope 1 in	Fall in Line (Mtr)	Velocity in m/sec	Capacity of Pipe (lps)	CHECK FOR CARRYING CAPACITY	Levels at Start: Ground Lvl at Start	Levels at Start: Invert Lvl at Start (mtr)	Levels at End: Ground Lvl at End (mtr)	Levels at End: Invert Lvl at End (mtr)
33	50	97	0	0	0	0	1.75	commercial	9 Sqm/person @ 45 lpcd	93117	93117	42494	127481	10623	138104	1454509	1602414	15.56	381	600	620	0.61	0.75	106.90	OK	227.40	225.84	227.30	223.97
34	56A	56B	10	0	136	23288					23288	18630	55890	4658	60548	0	60548	0.70	160	200	145	1.14	0.75	11.81	OK	227.30	224.10	227.20	223.97
35	56	56B	9	0	122	20959	0.04	UD LAND	25kl/acre	1000	21959	17567	52701	4392	57093	0	57093	0.66	73	200	145	0.54	0.75	11.81	OK	227.20	223.97	227.14	223.58
36	51A	51C	14	0	189	32603					32603	26082	78246	6521	84767	0	84767	0.98	121	200	145	0.83	0.75	11.81	OK	227.80	225.40	227.60	224.08
37	51B	51C	8	0	108	18630	0.23	UD LAND	25kl/acre	5750	24380	19504	58512	4876	63388	0	63388	0.73	88	200	145	0.81	0.75	11.81	OK	227.60	225.38	227.50	224.00
38	51C	56B	20	0	273	46575					46575	37260	111780	9315	121095	148155	269250	3.12	72	300	145	0.50	0.75	11.81	OK	227.50	224.68	227.28	224.48
39	56B	57	9	0	122	20959					20959	16767	50301	4192	54493	386890	441385	5.11	104	300	145	0.72	0.75	11.81	OK	227.17	223.73	227.14	223.58
40	57	61	0	0	0	0					0	0	0	0	0	498475	498475	5.77	68	200	145	0.47	0.75	11.81	OK	227.14	225.08	227.12	223.44
41	60	61	4	0	54	9315	0.14	UD LAND	25kl/acre	3500	12815	10252	30756	2563	33319	0	33319	0.39	40	200	145	0.81	0.75	11.81	OK	227.13	225.35	227.12	223.44
42	61	63	0	0	0	0					0	0	0	0	0	531794	531794	6.16	26	300	145	0.18	0.75	11.81	OK	227.12	225.46	227.05	222.70
43	63A	63	11	0	149	25616	0.02	UD LAND	25kl/acre	500	26116	20893	62679	5223	67902	0	67902	0.79	57	200	145	0.39	0.75	11.81	OK	228.50	226.20	227.09	224.98
44	63	63B	0	0	0	0					0	0	0	0	0	599697	599697	6.94	18	200	145	0.12	0.75	11.81	OK	227.10	225.66	227.03	224.72
45	63A	63B	8	0	108	18630	0.17	UD LAND	25kl/acre	4250	22880	18304	54912	4576	59488	0	59488	0.69	67	200	145	0.46	0.75	11.81	OK	227.03	224.73	222.70	222.70
46	63B	91C	0	0	0	0					0	0	0	0	0	659185	659185	7.63	85	200	145	0.24	0.75	11.81	OK	222.70	222.70	227.07	222.58
47	68	70	10	0	135	23288	0.17	UD LAND	25kl/acre	4250	27538	22030	66090	5508	71598	0	71598	0.83	224	200	145	1.54	0.75	11.81	OK	227.14	225.40	227.07	222.58
48	69	70	11	0	149	25616					25616	20493	61479	5123	66602	0	66602	0.77	142	200	145	0.98	0.75	11.81	OK	227.07	223.25	227.11	222.73
49	70	80	6	0	81	13973					13973	11178	33534	2795	36329	138200	174529	2.02	77	300	145	0.53	0.75	11.81	OK	227.01	225.42	227.11	222.37
50	72	73	8	0	108	18630					18630	14904	44712	3726	48438	0	48438	0.56	150	200	145	1.03	0.75	11.81	OK	227.11	222.37	227.15	222.18
51	73	77	0	0	0	0					0	0	0	0	0	48438	48438	0.56	72	300	200	0.29	0.75	26.81	OK	227.18	225.43	227.26	225.23
52	77	79	3	0	41	6986					6986	5589	16767	1397	18164	48438	66602	0.77	39	300	200	0.10	0.75	26.81	OK	227.30	225.63	227.25	225.13
53	78	79	5	0	68	11644					11644	9315	27945	2329	30274	0	30274	0.35	75	200	145	0.52	0.75	11.81	OK	227.25	225.13	227.15	222.18
54	79	80	8	0	108	18630					18630	14904	44712	3726	48438	78712	127150	1.47	154	300	200	0.62	0.75	26.81	OK	227.15	222.10	227.01	221.72
55	80	82	3	0	41	6986					6986	5589	16767	1397	18164	127150	145314	1.68	47	400	370	0.13	0.75	46.93	OK	227.01	221.72	226.94	221.30
56	81	82	9	0	122	20959					20959	16767	50301	4192	54493	0	54493	0.63	176	200	145	1.21	0.75	11.81	OK	227.22	226.45	226.94	221.30
57	82	84	5	0	68	11644					11644	9315	27945	2329	30274	199807	230081	2.66	66	400	370	0.18	0.75	46.93	OK	226.94	221.30	226.43	220.93
58	83	84	18	0	243	41916					41916	33534	100602	8384	108986	0	108986	1.26	187	200	145	1.29	0.75	11.81	OK	227.38	225.83	227.28	224.48
59	84	86	3	0	41	6986					6986	5589	16767	1397	18164	339066	357230	4.13	78	400	370	0.21	0.75	46.93	OK	227.80	225.44	227.50	224.98
60	46A	46B	9	0	122	20959					20959	16767	50301	4192	54493	0	54493	0.63	71	200	145	0.49	0.75	11.81	OK	227.80	225.49	227.50	224.60
61	45	46B	5	0	68	11644					11644	9315	27945	2329	30274	0	30274	0.35	27	200	145	0.19	0.75	11.81	OK	227.80	225.48	227.50	224.58
62	46B	66	9	0	122	20959					20959	16767	50301	4192	54493	84767	139259	1.61	70	200	145	0.48	0.75	11.81	OK	227.60	225.38	227.50	224.98
63	66	68	11	0	149	25616	0.17	UD LAND	25kl/acre	4250	29866	23893	71679	5973	77652	496490	574142	6.65	110	400	370	0.84	0.75	46.93	OK	227.50	224.68	227.28	224.48
64	67	90	13	0	176	30274	0.17	UD LAND	25kl/acre	4250	34524	27619	82857	6905	89762	0	89762	1.04	120	200	145	0.83	0.75	11.81	OK	227.38	225.30	227.28	224.48
65	88	92	12	0	162	27945					27945	22356	67068	5589	72657	772889	845546	9.79	152	400	370	0.41	0.75	46.93	OK	227.28	224.48	226.45	222.79
66	84P	91	12	0	162	27945	0.18	UD LAND	25kl/acre	4500	32445	25956	77868	6489	84357	0	84357	0.98	180	200	145	1.24	0.75	11.81	OK	226.55	225.04	226.45	222.79

KUMAR ENDECON PVT. LTD.

SI	MH		No. of Plot served		Population @ 13.5 persons/plot & 5 persons/plot for EWS	Water Requirement @172.5 LPD/person	OTHER BUILDINGS				Total Daily Water Requirement in Ltrs	As Sewer load 80% of Water Requirement	Peak Load @ 3X Av. Load	Subsoil infiltration @10% of Av Load	Self Discharge	Branch Discharge	Total Discharge		Length of Sew	Dia of Pipe	Slope 1 in	Fall in Sew	Velocity	Capacity of Pipe	CHECK FOR CARRYING CAPACITY	Levels at Start		Levels at End	
No.	FROM	TO	Normal	EWS			Area in Acre	TYPE OF BUILDING	Basis of Water Requirement LPD	Total water requirement for other buildings (LPD)		Self														Ground Lvl at Start	Invert Lvl at Start	Ground Lvl at End	Invert Lvl at End
												LPD	LPD	LPD	LPD	LPD	LPD	LPS	Mtr	MM		Mtr	m/sec	lps			mtr	mtr	mtr
67	87	92	0	0	0	0	0.17	UD LAND	25kl/acre	4250	4250	3400	10200	850	11050	84357	95407	1.10	14	250	160	0.07	0.78	16.70	OK	226.45	222.79	226.40	222.57
68	82	89A	7	0	95	16301					16301	13041	39123	3260	42383	0	42383	0.49	54	200	145	0.37	0.75	11.81	OK	226.45	222.70	226.40	222.57
69	89A	91	5	0	68	11644					11644	9315	27945	2329	30274	42383	72657	0.84	54	300	145	0.37	0.15	11.81	OK	226.40	222.57	226.35	222.48
70	90	91	6	0	81	13973	0.17	UD LAND	25kl/acre	4250	18223	14578	43734	3645	47379	0	47379	0.55	44	200	145	0.30	0.75	11.81	OK	226.30	225.00	226.35	222.45
71	91	91B	15	0	203	34931					34931	27945	83835	6986	90821	120036	210857	2.44	123	200	145	0.85	0.75	11.81	OK	226.35	222.48	226.33	222.32
72	91A	91B	12	0	162	27945					27945	22356	67068	5589	72657	0	72657	0.84	134	200	145	0.92	0.75	11.01	OK	225.59	225.03	226.40	224.45
73	91B	91C	0	0	0	0					0	0	0	0	0	283514	283514	3.28	69	200	145	0.48	0.75	11.81	OK	226.49	226.15	226.49	225.28
74	91C	92	0	0	0	0					0	0	0	0	0	283514	283514	3.28	33	200	145	0.16	0.75	11.81	OK	226.49	225.29	226.45	224.31
75	92	93	0	0	0	0					0	0	0	0	0	378921	378921	4.39	219	400	370	0.59	0.75	46.93	OK	226.50	224.70	226.45	224.31
76	93	95	4	0	54	9315					9315	7452	22356	1863	24219	0	24219	0.28	30	200	145	0.21	0.75	11.81	OK	226.45	224.31	226.39	223.40
77	94	95	4	0	54	9315					9315	7452	22356	1863	24219	0	24219	0.28	33	200	145	0.23	0.75	11.81	OK	226.41	224.67	226.39	225.45
78	95	96	7	0	95	16301					16301	13041	39123	3260	42383	48438	90821	1.05	79	200	145	0.54	0.75	11.81	OK	226.39	223.45	226.35	222.32
79	96	97	0	0	0	0					0	0	0	0	0	400742	400742	4.64	33	400	370	0.09	0.75	46.93	OK	226.33	222.32	226.33	222.15
80	97	98	0	0	0	0	2.56	UD LAND	25kl/acre	64000	64000	51200	153600	12800	166400	2072156	2238556	25.91	338	600	620	0.55	0.78	106.90	OK	227.25	225.60	226.33	222.16
81	98	99	0	0	0	0	8.40	UD LAND	15 Sqm. /Person @ 45 lpd	77702	77702	62161	186484	15540	202024	0	202024	2.34	150	200	145	1.03	0.75	11.01	OK	226.33	219.00	226.33	219.19
82	99	STP	0	0	0	0					0	0	0	0	0	2441590	2440880	28.25	15	600	620	0.02	0.78	106.90	OK	226.33	220.80	225.48	220.28
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SI No.	FROM	TO	Normal	EWS	Population	Water Requirement	Area in Acre	TYPE OF BUILDING	Basis of Water Requirement LPD	Total water requirement for other buildings (LPD)	Total Daily Water Requirement in Ltrs	Self	Peak Load	Subsoil infiltration	Self Discharge	Branch Discharge	Total Discharge LPD	LPS	Length	Dia	Slope 1 in	Fall	Velocity	Capacity	Check	Ground Lvl at Start	Invert Lvl at Start	Ground Lvl at End	Invert Lvl at End
1	23	24	15	0	203	34931	0.03	UD LAND	25kl/acre	750	35681	28545	85635	7136	92771	0	92771	1.07	90	250	225	0.49	0.70	17.19	OK	224.81	222.05	224.81	222.66
2	22	24	8	0	108	18630					18630	14904	44712	3726	48438	0	48438	0.56	231	250	225	1.03	0.70	17.19	OK	225.10	222.35	224.81	222.32
3	24	26	0	0	0	0					0	0	0	0	0	141209	141209	1.63	56	250	225	0.25	0.70	17.19	OK	224.81	222.00	225.30	221.75
4	26	26A	0	0	0	0					0	0	0	0	0	141209	141209	1.63	42	250	225	0.19	0.70	17.19	OK	225.30	221.74	225.36	221.56
5	25	26A	7	0	95	16301	0.17	UD LAND	25kl/acre	4250	20551	16441	49323	4110	53433	0	53433	0.62	28	200	160	0.18	0.72	11.24	OK	225.36	223.61	225.30	223.43
6	26A	19A	0	0	0	0					0	0	0	0	0	194643	194643	2.25	41	250	225	0.18	0.70	17.19	OK	225.36	221.56	225.54	221.38
7	19A	21	0	0	0	0					0	0	0	0	0	450687	450687	5.22	103	400	400	0.26	0.72	45.14	OK	225.54	220.97	225.57	220.71
8	20	21	6	0	81	13973	0.06	UD LAND	25kl/acre	1500	15473	12378	37134	3095	40229	0	40229	0.47	71	200	160	0.44	0.72	11.24	OK	225.40	223.65	225.57	223.21
9	21	29	4	0	54	9315					9315	7452	22356	1863	24219	496971	521190	6.03	53	400	400	0.13	0.72	45.14	OK	225.57	220.72	225.57	220.58
10	27	28	6	0	81	13973					13973	11178	33534	2795	36329	0	36329	0.42	80	200	160	0.50	0.72	11.24	OK	225.60	224.05	225.60	223.65
11	28A	28	3	0	41	6986					6986	5589	16767	1397	18164	0	18164	0.21	40	200	160	0.25	0.72	11.24	OK	225.41	223.66	225.60	223.41
12	29	29	14	0	189	32603	0.04	UD LAND	25kl/acre	1000	33603	26882	80646	6721	87367	70712	166078	1.92	112	200	160	0.70	0.72	11.24	OK	225.60	223.42	225.57	222.72
13	29	31	5	0	68	11644					11644	9315	27945	2329	30274	722596	753870	8.73	57	400	400	0.14	0.72	45.14	OK	225.57	220.58	225.48	220.44
14	30	31	22	0	297	51233					51233	40986	122958	10247	133205	0	133205	1.54	119	200	160	0.74	0.72	11.24	OK	225.78	223.95	225.48	223.21
15	31 REPL	31A	12	0	162	27945					27945	22356	67068	5589	72657	920488	1062115	11.60	96	400	400	0.20	0.72	45.14	OK	225.48	220.43	225.31	220.18
16	19A	16C	9		122	20959	0.14	UD LAND	25kl/acre	3500	24459	19567	58701	4892	63593	0	63593	0.74	110	200	145	0.79	0.75	11.81	OK	225.60	223.60	225.45	222.81

SI NO.	LINE FROM	LINE TO	No of Plot served Normal	No of Plot served EWS	Population @ 13.5 persons/plot & 5 persons/plot for EWS	Water Requirement @172.5 LPD/person	OTHER BUILDINGS Area in Acre	OTHER BUILDINGS TYPE OF BUILDING	OTHER BUILDINGS Basis of Water Requirement LPD	OTHER BUILDINGS Total water requirement for other buildings (LPD)	Total Daily Water Requirement in Litre	Av. Sewer load 80% of Water Requirement Self	Peak Load @ 3X Av. Load	Subsoil infiltration @10% of Av Load	Self Discharge	Branch Discharge	Total Discharge	Total Discharge	Length of line	Dia of Pipe	Slope 1 in	Fall in line	Velocity in	Capacity of Pipe	CHECK FOR CARRYING CAPACITY	Levels at Start Ground Lvl at Start	Levels at Start Invert Lvl at Start	Levels at End Ground Lvl at End	Levels at End Invert Lvl at End
												LPD	LPD	LPD	LPD	LPD	LPD	LPS	Mts	MM		Mts	m/sec	lps			mtr	mtr	mtr
17	16B	16C	9		122	20959	0.09	UD LAND	25kl/acre	2250	23209	18567	60701	4642	60343	0	60343	0.70	58	200	145	0.48	0.76	11.81	OK	225.50	223.90	225.46	223.02
18	16C	31A	4		54	9315					9315	7452	22358	1863	24219	123936	149156	1.71	39	200	145	0.27	0.75	11.81	OK	225.46	222.81	225.39	220.18
19	31A	31B	0		0	0					0	0	0	0	0	1150209	1130209	15.31	39	400	400	0.10	0.72	45.14	OK	225.45	220.18	225.39	220.00
20	16E	16F	9		122	20959					20959	16767	50301	4192	54493	0	54493	0.63	190	200	145	0.60	0.75	11.81	OK	225.29	221.29	225.29	220.60
21	16F	31B	1		14	2329					2329	1863	5589	466	6055	54485	60548	0.70	30	200	145	0.21	0.75	11.81	OK	225.29	220.60	225.29	220.00
22	31B	31C	1		14	2329					2329	1863	5589	466	6055	1210817	1216872	14.09	30	400	400	0.06	0.72	45.14	OK	225.26	220.00	225.29	219.93
23	31C	48	3	0	41	6989	1.5	UD LAND	25kl/acre	37500	44499	35589	106767	8897	115664	1038443	1154108	13.36	286	400	400	0.72	0.72	45.14	OK	225.31	220.19	225.10	219.47
24	40	42	12	0	162	27945	0.06	UD LAND	25kl/acre	1500	29445	23556	70668	5889	76557	0	76557	0.89	82	200	160	0.51	0.72	11.24	OK	225.10	223.35	225.17	222.78
25	41	42	2	0	27	4658	1.83	Commercial	6 m3/person at 45 litre	55545	60202	48162	144486	12041	156527	0	156527	1.81	40	200	160	0.31	0.72	11.24	OK	225.26	223.51	225.17	223.20
26	42	43	0	0	0	0					0	0	0	0	0	289412	289412	3.12	68	200	160	0.43	0.72	11.24	OK	225.17	221.71	225.35	221.29
27	38	39	18	0	176	30274					30274	24219	72657	6055	78712	0	78712	0.91	82	200	160	0.51	0.72	11.24	OK	225.17	223.42	225.55	222.80
28	39	43	1	0	14	2329					2329	1863	5589	466	6055	532813	538868	6.23	26	200	160	0.24	0.72	11.24	OK	225.58	221.58	225.56	221.33
29	43	45	2	0	27	4658					4658	3726	11178	932	12110	808080	820190	9.49	40	200	160	0.25	0.72	11.24	OK	225.55	221.28	225.59	221.03
30	44	45	1	0	14	2329					2329	1863	5589	466	6055	0	6055	0.07	9	200	160	0.06	0.72	11.24	OK	225.69	223.84	225.59	223.78
31	45	46	13	0	176	30274					30274	24219	72657	6055	78712	826244	904956	10.47	211	250	225	0.94	0.70	17.19	OK	225.59	220.98	225.10	220.04
32	49	51	12	0	162	27945					27945	22356	67068	5589	72657	155064	227721	2.64	195	200	160	1.24	0.72	11.24	OK	225.58	222.31	225.30	221.08
33	50	51	9	0	122	20959	2.291	Commercial	6 m3/person at 45 litre	69507	90465	72372	217117	18093	235210	0	235210	2.72	57	200	160	0.36	0.72	11.24	OK	225.30	223.75	225.30	223.39
34	51	53	0	0	0	0					0	0	0	0	0	511371	511371	5.92	62	200	160	0.39	0.72	11.24	OK	225.30	220.86	225.02	220.47
35	52	53	9	0	122	20959					20959	16767	50301	4192	54493	0	54493	0.63	67	200	160	0.36	0.72	11.24	OK	225.35	223.80	225.62	223.44
36	53	55	8	0	108	18630					18630	14904	44712	3726	48438	577973	626411	7.25	92	200	160	0.58	0.72	11.24	OK	225.02	220.47	225.56	219.89
37	54	55	4	0	54	9315					9315	7452	22356	1863	24219	0	24219	0.28	30	200	160	0.19	0.72	11.24	OK	225.51	223.76	225.58	223.57
38	55	57	7	0	95	16301					16301	13041	39123	3260	42383	662739	705123	8.16	121	250	225	0.54	0.70	17.19	OK	225.56	219.84	225.40	219.31
39	58	57	11	0	149	25616	0.12	UD LAND	25kl/acre	3000	28615	22893	68679	5723	74402	0	74402	0.86	60	200	160	0.37	0.72	11.24	OK	225.55	223.80	225.40	223.43
40	57	63	0	0	0	0					0	0	0	0	0	803744	803744	9.30	9	250	225	0.04	0.70	17.19	OK	225.40	219.31	225.40	219.27
41	61	62	4	0	54	9315					9315	7452	22356	1863	24219	0	24219	0.28	49	200	160	0.31	0.72	11.24	OK	225.51	223.76	225.43	223.45
42	62	63	5	0	68	11644					11644	9315	27946	2329	30274	278109	308383	3.67	67	200	160	0.42	0.72	11.24	OK	225.43	222.06	225.40	221.64
43	63	64	0	0	0	0					0	0	0	0	0	1118181	1118181	12.94	72	250	225	0.32	0.70	17.19	OK	225.40	219.27	225.30	218.95
44	66	69	11	0	175	30274	0.04	UD LAND	25kl/acre	1500	31774	25419	76257	6355	81312	369340	450652	5.22	124	250	225	3.60	0.70	17.19	OK	224.825	221.74	224.8	221.19
45	67	68	6	0	81	13973					13973	11178	33534	2795	36329	0	36329	0.42	43	200	160	0.27	0.72	11.24	OK	224.825	223.09	224.8	222.81
46	68	72	4	0	54	9315					9315	7452	22356	1863	24219	535418	559637	6.48	46	250	225	0.20	0.70	17.19	OK	224.8	221.17	224.86	220.98
47	70	72A	3	0	41	6986					6986	5589	16767	1397	18164	0	18164	0.21	31	200	160	0.19	0.72	11.24	OK	224.875	223.13	224.875	222.93
48	71	72	7	0	95	16301					16301	13041	39123	3260	42383	195752	238135	2.73	27	200	160	0.17	0.72	11.24	OK	224.875	222.22	224.86	222.05
49	72A	72B	6	0	81	13973					13973	11178	33534	2795	36329	0	36329	0.42	71	200	160	0.44	0.72	11.24	OK	224.85	223.18	224.85	222.68
50	72B	72	0	0	0	0					0	0	0	0	0	248240	248240	2.87	25	200	160	0.16	0.72	11.24	OK	224.86	221.78	224.86	221.61
51	72	75	0	0	0	0					0	0	0	0	0	813937	813937	9.42	33	250	225	0.24	0.70	17.19	OK	224.86	220.94	224.85	220.74
52	73	75	10	0	135	23288	0.03	UD LAND	25kl/acre	750	24038	19230	57690	4808	62498	0	62498	0.72	86	200	160	0.54	0.72	11.24	OK	224.80	223.05	224.85	222.51
53	74	75	34	0	459	79178					79178	63342	190026	15836	205862	0	205862	2.30	176	200	160	1.15	0.72	11.24	OK	225	223.25	224.85	222.15
54	75	77	0	0	0	0					0	0	0	0	0	1191281	1191281	13.79	60	300	300	0.21	0.71	25.05	OK	224.86	220.68	225.00	220.47

NARENDECON PVT. LTD. KUMAR

Sl	LINE		No of Plot served		Population @ 13.5 person/plot & 9 persons/plot for EWS	Water Requirement @172.5 LPD/person	OTHER BUILDINGS				Total Daily Water Requirement in liter	Av. Sewer load 80% of Water requirement	Peak Load @ 3X Av. Load	Subsoil infiltration @25% of Av Load	Self Discharge	Branch Discharge	Total Discharge		Length of Sewer	Dia of Pipe	Slope 1 in	Fall in Line	Velocity in	Capacity of Pipe	CHECK FOR CARRYING CAPACITY	Levels at Start		Levels at End	
NO.	FROM	TO	Normal	EWS			Area in Acre	TYPE OF BUILDING	Basis of Water Requirement LPD	Total water requirement for other buildings (LPD)		Self														Ground Lvl at Start	Invert Lvl at Start	Ground Lvl at End	Invert Lvl at End
												LPD	LPD	LPD	LPD	LPD	LPD	LPS	Mtr	MM		Mtr	m/sec	lps			mtr	mtr	mtr
55	77	79	10	0	135	23288					23288	18630	55890	4658	60548	1218545	1279099	14.80	159	300	280	0.57	0.71	25.05	OK	225	220.47	225.2	219.00
56	78	79	11	0	149	26016	0.11	UD LAND	25kl/acre	2750	28266	22093	69070	5073	73752	0	73752	0.85	75	200	160	0.47	0.72	11.24	OK	225.1	223.30	225.2	222.83
57	79	81	7	0	95	16301					16301	13041	39122	3260	42383	1425502	1497895	16.93	89	400	400	0.22	0.72	45.14	OK	225.2	219.80	225.2	219.56
58	80	81	15	0	202	34931	0.17	UD LAND	25kl/acre	4250	33181	31345	94036	7838	101871	0	101871	1.18	148	200	160	0.93	0.72	11.24	OK	224.8	223.08	225.2	222.13
59	81	83	0	0	0	0	0.15	UD LAND	25kl/acre	3750	3750	3000	9000	750	9750	1824249	1833986	19.91	58	400	400	0.15	0.72	45.14	OK	225.2	219.57	225.47	219.43
60	82	83	12	0	162	27945	0.16	UD LAND	25kl/acre	4000	31946	25556	76668	6389	83057	0	85057	0.96	131	200	160	0.82	0.72	11.24	OK	225.42	223.87	225.475	222.85
61	83	84	14	0	189	32603					32603	26082	78246	6521	84767	1729166	1819992	20.99	113	400	400	0.28	0.72	45.14	OK	225.475	219.43	225.286	219.15
62	84	84A	31	0	419	72191	0.17	UD LAND	25kl/acre	4250	76441	61153	183459	15288	198747	2988442	3187189	36.66	276	500	550	0.50	0.71	69.80	OK	225.286	218.95	224.911	218.45
63	61A	61C	5		68	11644	0.04	UD LAND	25kl/acre	1000	12644	10115	30345	2529	32874	0	32874	0.38	109	200	145	0.75	0.75	11.81	OK	225.90	223.90	225.80	223.15
64	61B	61C	9		122	20959	0.05	UD LAND	25kl/acre	1250	22209	17767	53301	4442	57743	0	57743	0.67	53	200	145	0.37	0.75	11.81	OK	225.80	223.90	225.80	223.53
65	61C	61E	2		27	4658					4658	3726	11178	932	12110	90617	102736	1.19	30	200	145	0.21	0.75	11.81	OK	225.80	223.15	225.85	222.94
66	61D	61E	5		68	11644					11644	9315	27946	2329	30274	0	30274	0.36	40	200	145	0.28	0.75	11.81	OK	225.79	223.70	225.65	223.42
67	61E	61G	5		68	11644					11644	9315	27946	2329	30274	133000	163274	1.89	69	200	145	0.48	0.75	11.81	OK	225.85	223.42	225.40	222.95
68	61F	61G	4		54	9315	0.28	UD LAND	25kl/acre	7000	16315	13052	39156	3263	42419	0	42419	0.49	59	200	145	0.41	0.76	11.81	OK	225.50	223.50	225.40	223.09
69	61G	84A	2		27	4659					4659	3726	11178	932	12110	205693	217802	2.52	70	200	145	0.48	0.76	11.81	OK	225.40	222.95	225.30	218.45
70	84A	86			0	0					0	0	0	0	0	3386691	3386691	39.19	70	500	550	0.13	0.71	69.8	OK	225.40		225.10	218.45
71	86	88	0	0	81	13973	0.22	UD LAND	25kl/acre	5500	19473	15578	46734	3895	50629	0	50622	0.59	74	200	160	0.46	0.72	11.24	OK	224.9	223.15	224.85	222.69
72	87	88	9	0	122	20959					20959	16767	50301	4192	54493	0	54493	0.63	128	200	160	0.80	0.72	11.24	OK	224.8	223.20	224.65	222.25
73	88	90	0	0	0	0					0	0	0	0	0	106121	106121	1.22	45	200	160	0.28	0.72	11.24	OK	224.85	221.63	224.90	221.35
74	89	90	3	0	41	6986					6986	5589	16767	1397	18164	0	18164	0.21	26	200	160	0.16	0.72	11.24	OK	224.95	223.20	224.90	223.04
75	90 A	90	9	0	122	20959	0.05	UD LAND	25kl/acre	1250	22209	17767	53301	4442	57743	0	67743	0.67	130	200	160	0.81	0.72	11.24	OK	224.74	222.99	224.9	222.17
76	90	40	0	0	0	0					0	0	0	0	0	181028	181028	2.10	58	200	160	0.36	0.72	11.24	OK	224.90	221.36	225.1	221.00
77	40	85	14	5	189	32603					32603	26082	78246	6521	84767	0	84767	0.98	185	400	400	0.46	0.72	45.14	OK	225.10	219.46	224.91	218.88
78	85	91	0	0	0	0					0	0	0	0	0	0	0	0.00	99	400	650	0.11	0.71	69.80	OK	224.91	218.54	224.73	218.44
79	91	126	6	0	81	13973					13973	11178	33534	2795	36329	5703964	5740292	66.44	57	500	520	0.11	0.73	71.76	OK	224.73	218.54	224.64	218.43
80	92	93	0	22	198	34155	0.025	UD LAND	25kl/acre	625	34780	27824	83472	6956	90428	0	90428	1.36	103	200	160	0.64	0.72	11.24	OK	224.9	223.15	224.8	222.51
81	93	95	0	0	0	0					0	0	0	0	0	90428	90428	1.05	36	200	160	0.23	0.72	11.24	OK	224.8	222.53	224.8	222.30
82	94	96	0	40	360	62100					62100	49680	149040	12420	161460	0	161460	1.87	90	200	160	0.66	0.72	11.24	OK	224.9	223.15	224.8	222.59
83	95	96	0	18	162	27945					27945	22356	67068	5589	72657	0	72857	0.84	49	200	160	0.31	0.72	11.24	OK	224.88	223.10	224.8	222.79
84	96	99	0	0	0	0					0	0	0	0	0	324545	324545	3.79	45	200	160	0.28	0.72	11.24	OK	224.8	222.30	224.8	222.02
85	97	99	0	46	414	71415					71415	57132	171396	14283	185679	0	185679	2.15	103	200	160	0.64	0.72	11.24	OK	224.875	223.12	224.8	222.49
86	98	99	0	18	162	27945					27945	22356	67068	5589	72657	0	72857	0.84	40	200	160	0.25	0.72	11.24	OK	224.85	223.10	224.8	222.85
87	99	102	0	0	0	0					0	0	0	0	0	582881	582881	6.75	40	200	160	0.25	0.72	11.24	OK	224.8	222.02	224.8	221.77
88	100	102	0	60	540	93150	0.06	UD LAND	25kl/acre	1500	94650	75720	227160	18930	246090	0	246090	2.85	143	200	160	0.89	0.72	11.24	OK	224.9	223.15	224.8	222.28
89	101	102	0	20	180	31050					31050	24840	74520	6210	80730	0	86730	3.93	44	200	160	0.28	0.72	11.24	OK	224.8	223.08	224.8	222.18
90	102	105	0	0	0	0					0	0	0	0	0	909701	909701	10.53	37	200	160	0.23	0.72	11.24	OK	224.8	221.77	224.7	221.54
91	103	103A	0	21	189	32603					32600	26082	78246	6521	84767	0	84767	0.98	62	200	160	0.39	0.72	11.24	OK	224.9	223.15	224.8	222.70
92	MPL	103A	0	15	135	23288					23288	18630	55890	4658	60548	0	60546	0.70	78	200	160	0.49	0.72	11.24	OK	224.8	223.084	[illegible]	222.56

S NO.	LINE FROM	LINE TO	No of Plot served Normal	No of Plot served EWS	Population @ 13.5 persons/plot & 4 persons/plot for EWS	Water Requirement @172.5 LPD/person	OTHER BUILDINGS: Area in Acre	OTHER BUILDINGS: TYPE OF BUILDING	OTHER BUILDINGS: Basis of Water Requirement LPD	OTHER BUILDINGS: Total water requirement for other buildings (LPD)	Total Daily Water Requirement in litre	As Sewer load 80% of Water Requirement Self (LPD)	Peak Load @ 3X Av. Load (LPD)	Subsoil infiltration @25% of Av Load (LPD)	Self Discharge (LPD)	Branch Discharge (LPD)	Total Discharge (LPD)	Total Discharge (LPS)	Length of line (MTR)	Dia of Pipe (MM)	Slope 1 in	Fall in Line (MTR)	Velocity in (m/sec)	Capacity of Pipe (lps)	CHECK FOR CARRYING CAPACITY	Levels at Start: Ground Lvl at Start	Levels at Start: Invert Lvl at Start (mtr)	Levels at End: Ground Lvl at End (mtr)	Levels at End: Invert Lvl at End (mtr)
93	103A	105	0	30	180	31050					31050	24840	74520	6210	80730	145314	226044	2.82	95	200	160	0.59	0.72	11.24	OK	224.8	222.56	224.7	221.97
94	104	105	0	15	117	20183					20183	16146	48438	4037	52475	0	52475	0.61	47	200	160	0.29	0.72	11.24	OK	224.7	222.95	224.7	222.66
95	105	107	0	0	0	0					0	0	0	0	0	1189220	1189220	13.76	44	200	160	0.28	0.72	11.24	OK	224.7	221.64	224.7	221.28
96	107	125	0	0	0	0	0.2	UD LAND	25kl/acre	5000	5000	4000	12000	1000	13000	1337874	1350874	15.63	50	250	225	0.22	0.70	17.19	OK	224.7	221.21	224.595	220.99
97	108	118	35	0	338	57269	0.15	UD LAND	25kl/acre	9700	66969	53575	160725	13394	174119	0	174119	2.02	104	200	160	0.65	0.72	11.24	OK	224.75	223.00	224.72	222.35
98	118	120	2	0	27	4658					4658	3726	11178	932	12110	973936	986046	11.40	17	200	225	0.08	0.70	17.19	OK	224.63	220.68	224.63	220.60
99	119	120	15	0	203	34931	0.25	UD LAND	25kl/acre	6250	41181	32945	98835	8236	107071	0	107071	1.24	180	200	160	1.13	0.72	11.24	OK	224.90	223.24	224.63	222.12
100	120	122	4	0	54	9315					9315	7452	22356	1863	24219	1116336	1140555	13.20	65	250	225	0.24	0.70	17.19	OK	224.63	220.62	224.585	220.36
101	121	122	9	0	122	20959					20959	16767	50301	4192	54493	0	54493	0.63	14	200	160	0.09	0.72	11.24	OK	224.77	223.02	224.595	222.33
102	122	124	0	0	0	0					0	0	0	0	0	1182686	1182686	13.68	60	250	225	0.23	0.70	17.19	OK	224.595	220.38	224.535	220.06
103	123	124	5	0	68	11644	0.2	RB	25kl/acre	5000	16644	13315	39945	3329	43274	0	43274	0.50	98	200	160	0.43	0.72	11.24	OK	224.535	222.79	224.535	222.38
104	124	125	0	0	0	0					0	0	0	0	0	1220157	1220157	14.12	8	250	225	0.04	0.70	17.19	OK	224.535	220.08	224.535	220.02
105	125	126	6	0	81	13973					13973	11178	33534	2795	36329	2570851	2607180	30.18	49	400	400	0.12	0.72	45.14	OK	224.535	219.87	224.64	219.75
106	126	STP	0	0	0	0					0	0	0	0	0	2792839	2792839	32.32	20	600	675	0.03	0.72	102.45	OK	224.84	218.23	224.84	218.20
ADDL																													
3	5A	5	1	0	14	2329					2329	1863	5589	466	6055	0	6055	0.07	145	200	145	1.90	0.75	11.81	OK	0.00	226.37	227.57	223.64
11	12A	13	6	0	81	13973	0.16	UD LAND	25kl/acre	4000	17973	14378	43134	3595	0	6055	6055	0.07	78	200	145	0.54	0.75	11.81	OK	227.79	223.80	227.50	223.34
36	51A	51C	14	0	189	32603					32603	26082	78246	6521	84767	0	84767	0.98	121	200	145	0.83	0.75	11.81	OK	227.80	225.48	227.50	224.88
37	51B	51C	8	0	108	18630	0.23	UD LAND	25kl/acre	5750	24380	19504	58512	4876	63388	0	63388	0.73	88	200	145	0.61	0.75	11.81	OK	227.60	225.28	227.50	224.88
38	51C	56B	20	0	270	46575					46575	37260	111780	9315	121095	148155	269250	3.12	72	200	145	0.50	0.75	11.81	OK	227.50	224.68	227.28	224.48
60	46A	46B	9	0	122	20959					20959	16767	50301	4192	54493	0	54493	0.63	71	200	145	0.49	0.75	11.81	OK	227.80	225.48	227.50	224.88
16	16A	16C	9		122	20959	0.14	UD LAND	25kl/acre	3500	24459	19567	58701	4892	63593	0	63593	0.74	116	200	145	0.79	0.75	11.81	OK	225.60	223.60	225.45	222.81
17	16B	16C	9		122	20959	0.09	UD LAND	25kl/acre	2250	23209	18567	55701	4642	60343	0	60343	0.70	69	200	145	0.48	0.75	11.81	OK	225.60	223.50	225.45	223.02
19	16C	31A	4		54	9315					9315	7452	22356	1863	24219	123936	148155	1.71	39	200	145	0.27	0.75	11.81	OK	225.45	222.01	225.38	224.88
20	16E	16F	9		122	20959					20959	16767	50301	4192	54493	0	54493	0.63	108	200	145	0.69	0.75	11.81	OK	223.20	221.29	225.29	220.60
21	16F	51G	1		14	2329					2329	1863	5589	466	6055	54493	60548	0.70	30	200	145	0.21	0.75	11.81	OK	225.29	220.80	225.20	220.00
63	61A	61C	5		68	11644	0.04	UD LAND	25kl/acre	1000	12644	10115	30345	2529	32874	0	32874	0.38	109	200	145	0.75	0.75	11.81	OK	225.90	223.10	225.80	223.15
64	61B	61C	9		122	20959	0.05	UD LAND	25kl/acre	1250	22209	17767	53301	4442	57743	0	57743	0.67	53	200	145	0.37	0.75	11.81	OK	225.90	223.90	225.80	223.53
65	61C	61E	2		27	4658					4658	3726	11178	932	12110	90626	102736	1.19	30	200	145	0.21	0.75	11.81	OK	225.80	223.15	225.68	222.94
66	61D	61E	5		68	11644					11644	9315	27945	2329	30274	0	30274	0.35	40	200	145	0.28	0.75	11.81	OK	225.70	223.76	225.65	223.42
67	61E	61G	5		68	11644					11644	9315	27945	2329	30274	133000	163274	1.89	69	200	145	0.48	0.75	11.81	OK	225.60	223.42	225.40	222.95
68	61F	61G	4		54	9315	0.28	UD LAND	25kl/acre	7000	16315	13052	39156	3263	42419	0	42419	0.49	60	200	140	0.41	0.75	11.81	OK	225.60	223.50	225.40	223.09
69	61G	64A	2		27	4658					4658	3726	11178	932	12110	205692	217802	2.52	70	200	165	0.48	0.75	11.81	OK	225.40	222.95	226.10	218.45

DLF GARDEN CITY SECTOR 91 & 92, 180.3115 ACRES, (SEWERAGE DESIGN)

MATERIAL STATEMENT FOR SEWER

Sl	LINE		Length of line	Dia of Pipe	DIA OF PIPE IN (MM)					
NO.	FROM	TO								
			Mtr	MM	200	250	300	400	500	600
SEC - 91										
1	4	4B	88	200	88	-	-	-		-
2	4B	7	145	200	145	-	-	-		-
3	5A	5	145	200	145	-	-	-		-
4	5	7	33	200	33	-	-	-		-
5	6	7	86	300	-	-	86	-		-
6	7	8	67	300	-	-	67	-		-
7	8	20	207	300	-	-	207	-		-
8	9	11	367	300	-	-	367	-		-
9	10	11	90	200	90	-	-	-		-
10	11	13	72	300	-	-	72	-		-
11	12A	13	78	200	78	-	-	-		-
12	13	19	82	300	-	-	82	-		-
13	18	19	69	200	69	-	-	-		-
14	19	20	62	300	-	-	62	-		-
15	20	26	125	400	-	-	-	125		-
16	22	23	70	200	70	-	-	-		-
17	23	25	100	200	100	-	-	-		-
18	24	25	33	200	33	-	-	-		-
19	25	26	146	200	146	-	-	-		-
20	26	28	107	400	-	-	-	107		-
21	27	28	145	200	145	-	-	-		-
22	28	32	149	400	-	-	-	149		-
23	29	31	83	200	83	-	-	-		-
24	30	31	79	200	79	-	-	-		-
25	31	32	64	200	64	-	-	-		-
26	32	34	129	400	-	-	-	129		-
27	33	34	34	200	34	-	-	-		-
28	34	38	9	400	-	-	-	9		-
29	35	37	155	200	155	-	-	-		-
30	36	37	35	200	35	-	-	-		-
31	37	38	70	200	70	-	-	-		-
32	38	50	38	400	-	-	-	38		-
33	50	97	381	600	-	-	-	-		381

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SI	LINE		Length of line	Dia of Pipe	DIA OF PIPE IN (MM)					
NO.	FROM	TO								
			Mtr	MM	200	250	300	400	500	600
34	56A	56B	166	200	166	-	-	-		-
35	56	56B	78	200	78	-	-	-		-
36	51A	51C	121	200	121	-	-	-		-
37	51B	51C	88	200	88	-	-	-		-
38	51C	56B	72	200	72	-	-	-		-
39	56B	57	104	200	104	-	-	-		-
40	57	61	68	200	68	-	-	-		-
41	60	61	45	200	45	-	-	-		-
42	61	63	26	200	26	-	-	-		-
43	63A	63	57	200	57	-	-	-		-
44	63	63B	18	200	18	-	-	-		-
45	63A	63B	67	200	67	-	-	-		-
46	63B	91C	35	200	35	-	-	-		-
47	68	70	224	200	224	-	-	-		-
48	69	70	142	200	142	-	-	-		-
49	70	80	77	200	77	-	-	-		-
50	72	73	150	200	150	-	-	-		-
51	73	77	72	300	-	-	72	-		-
52	77	79	39	300	-	-	39	-		-
53	78	79	75	200	75	-	-	-		-
54	79	80	154	300	-	-	154	-		-
55	80	82	47	400	-	-	-	47		-
56	81	82	176	200	176	-	-	-		-
57	82	84	66	400	-	-	-	66		-
58	83	84	187	200	187	-	-	-		-
59	84	86	78	400	-	-	-	78		-
60	46A	46B	71	200	71	-	-	-		-
61	85	46B	27	200	27	-	-	-		-
62	46B	86	70	200	70	-	-	-		-
63	86	88	310	400	-	-	-	310		-
64	87	88	120	200	120	-	-	-		-
65	88	92	152	400	-	-	-	152		-
66	64	67	180	200	180	-	-	-		-
67	67	92	14	250	-	14	-	-		-
68	62	89A	54	200	54	-	-	-		-
69	89A	91	54	200	54	-	-	-		-

SI	LINE		Length of line	Dia of Pipe	DIA OF PIPE IN (MM)					
NO.	FROM	TO			200	250	300	400	500	600
			Mtr	MM						
70	90	91	44	200	44	-	-	-		-
71	91	91B	123	200	123	-	-	-		-
72	91A	91B	134	200	134	-	-	-		-
73	91B	91C	69	200	69	-	-	-		-
74	91C	92	23	200	23	-	-	-		-
75	92	96	219	400	-	-	-	219		-
76	93	95	30	200	30	-	-	-		-
77	94	95	33	200	33	-	-	-		-
78	95	96	79	200	79	-	-	-		-
79	96	97	33	400	-	-	-	33		-
80	97	99	338	600	-	-	-	-		338
81	98	99	150	200	150	-	-	-		-
82	99	STP	15	600	-	-	-	-		15
TOATL			8317		4899	14	1208	1462	0	734
SEC-92										
1	23	24	90	250	-	90	-	-	-	-
2	22	24	231	250	-	231	-	-	-	-
3	24	26	56	250	-	56	-	-	-	-
4	26	26A	42	250	-	42	-	-	-	-
5	25	26A	28	200	28	-	-	-	-	-
6	26A	19A	41	250	-	41	-	-	-	-
7	19A	21	103	400	-	-	-	103	-	-
8	20	21	71	200	71	-	-	-	-	-
9	21	29	53	400	-	-	-	53	-	-
10	27	28	80	200	80	-	-	-	-	-
11	28A	28	40	200	40	-	-	-	-	-
12	28	29	112	200	112	-	-	-	-	-
13	29	31	57	400	-	-	-	57	-	-
14	30	31	119	200	119	-	-	-	-	-
15	31	31A	99	400	-	-	-	99	-	-
16	16A	16C	115	200	115	-	-	-	-	-
17	16B	16C	69	200	69	-	-	-	-	-
18	16C	31A	39	200	39	-	-	-	-	-
19	31A	31B	39	400	-	-	-	39	-	-
20	16E	16F	100	200	100	-	-	-	-	-

Sl	LINE		Length of line	Dia of Pipe	DIA OF PIPE IN (MM)					
NO.	FROM	TO								
			Mtr	MM	200	250	300	400	500	600
21	16F	31B	30	200	30	-	-	-	-	-
22	31B	31C	30	400	-	-	-	30	-	-
23	31C	46	286	400	-	-	-	286	-	-
24	40	42	92	200	92	-	-	-	-	-
25	41	42	49	200	49	-	-	-	-	-
26	42	43	68	200	68	-	-	-	-	-
27	38	39	82	200	82	-	-	-	-	-
28	39	43	39	200	39	-	-	-	-	-
29	43	45	40	200	40	-	-	-	-	-
30	44	45	9	200	9	-	-	-	-	-
31	45	46	211	250	-	211	-	-	-	-
32	49	51	198	200	198	-	-	-	-	-
33	50	51	57	200	57	-	-	-	-	-
34	51	53	62	200	62	-	-	-	-	-
35	52	53	57	200	57	-	-	-	-	-
36	53	55	92	200	92	-	-	-	-	-
37	54	55	30	200	30	-	-	-	-	-
38	55	57	121	250	-	121	-	-	-	-
39	56	57	59	200	59	-	-	-	-	-
40	57	63	9	250	-	9	-	-	-	-
41	61	62	49	200	49	-	-	-	-	-
42	62	63	67	200	67	-	-	-	-	-
43	63	84	72	250	-	72	-	-	-	-
44	66	68	124	250	-	124	-	-	-	-
45	67	68	43	200	43	-	-	-	-	-
46	68	72	46	250	-	46	-	-	-	-
47	70	72a	31	200	31	-	-	-	-	-
48	71	72	27	200	27	-	-	-	-	-
49	72A	72B	71	200	71	-	-	-	-	-
50	72B	72	26	200	26	-	-	-	-	-
51	72	75	55	250	-	55	-	-	-	-
52	73	75	86	200	86	-	-	-	-	-
53	74	75	176	200	176	-	-	-	-	-
54	75	77	60	300	-	-	60	-	-	-
55	77	79	159	300	-	-	159	-	-	-
56	78	79	75	200	75	-	-	-	-	-

SI	LINE		Length of line	Dia of Pipe	DIA OF PIPE IN (MM)					
NO.	FROM	TO								
			Mtr	MM	200	250	300	400	500	600
57	79	81	89	400	-	-	-	89	-	-
58	80	81	148	200	148	-	-	-	-	-
59	81	83	58	400	-	-	-	58	-	-
60	82	83	131	200	131	-	-	-	-	-
61	83	84	113	400	-	-	-	113	-	-
62	84	84A	276	500	-	-	-	-	276	-
63	61A	61C	109	200	109	-	-	-	-	-
64	61B	61C	53	200	53	-	-	-	-	-
65	61C	61E	30	200	30	-	-	-	-	-
66	61D	61E	40	200	40	-	-	-	-	-
67	61E	61G	69	200	69	-	-	-	-	-
68	61F	61G	59	200	59	-	-	-	-	-
69	61G	84A	70	200	70	-	-	-	-	-
70	84A	86	70	500	-	-	-	-	70	-
71	86	88	74	200	74	-	-	-	-	-
72	87	88	128	200	128	-	-	-	-	-
73	88	90	45	200	45	-	-	-	-	-
74	89	90	26	200	26	-	-	-	-	-
75	90 A	90	130	200	130	-	-	-	-	-
76	90	46	58	200	58	-	-	-	-	-
77	46	85	185	400	-	-	-	185	-	-
78	85	91	59	500	-	-	-	-	59	-
79	91	126	57	500	-	-	-	-	57	-
80	92	93	103	200	103	-	-	-	-	-
81	93	96	36	200	36	-	-	-	-	-
82	94	96	90	200	90	-	-	-	-	-
83	95	96	49	200	49	-	-	-	-	-
84	96	99	45	200	45	-	-	-	-	-
85	97	99	102	200	102	-	-	-	-	-
86	98	99	40	200	40	-	-	-	-	-
87	99	102	40	200	40	-	-	-	-	-
88	100	102	143	200	143	-	-	-	-	-
89	101	102	44	200	44	-	-	-	-	-
90	102	105	37	200	37	-	-	-	-	-
91	103	103A	62	200	62	-	-	-	-	-
92	106	103A	78	200	78	-	-	-	-	-

Sl NO.	LINE FROM	LINE TO	Length of line Mtr	Dia of Pipe MM	DIA OF PIPE IN (MM) 200	250	300	400	500	600
93	103A	105	95	200	95	-	-	-	-	-
94	104	105	47	200	47	-	-	-	-	-
95	105	107	44	200	44	-	-	-	-	-
96	107	125	50	250	-	50	-	-	-	-
97	108	118	104	200	104	-	-	-	-	-
98	118	120	17	250	-	17	-	-	-	-
99	119	120	180	200	180	-	-	-	-	-
100	120	122	55	250	-	55	-	-	-	-
101	121	122	14	200	14	-	-	-	-	-
102	122	124	66	250	-	66	-	-	-	-
103	123	124	68	200	68	-	-	-	-	-
104	124	125	9	250	-	9	-	-	-	-
105	125	126	49	400	-	-	-	49	-	-
106	126	STP	20	600	-	-	-	-	-	20
TOTAL			8136		4979	1295	219	1161	462	20
GRAND TOTAL			16453		9878	1309	1427	2623	462	754

ADDL. FOR 16.25 ACRES

Sector 91 /92

S.N. as / calculatio	LINE FROM	LINE TO	Length (Mtr)	Dia of Pipe (In MM)	DIA OF PIPE IN (MM) 200	250	300	400	500	600
3	5A	5	645	200	645	-	-	-	-	-
11	12A	6 13	78	200	78	-	-	-	-	-
36	51A	14 51C	121	200	121	-	-	-	-	-
37	51B	8 51C	88	200	88	-	-	-	-	-
38	51C	20 56D	72	200	72	-	-	-	-	-
60	46A	9 46D	71	200	71	-	-	-	-	-
16	16A	0 16C	115	200	115	-	-	-	-	-
17	16B	8 31A	69	200	69	-	-	-	-	-
18	16C	4 16F	39	200	39	-	-	-	-	-
20	16E	9 16D	100	200	100	-	-	-	-	-
21	16F	1 61C	30	200	30	-	-	-	-	-
63	61A	51C	109	200	109	-	-	-	-	-
64	61B	8 61G	53	200	53	-	-	-	-	-
65	61C	2 61G	30	200	30	-	-	-	-	-
66	61D	5 61G	40	200	40	-	-	-	-	-
67	61E	5 61G	69	200	69	-	-	-	-	-
68	61F	1 61G	59	200	59	-	-	-	-	-
69	61G	84 A	70	200	70	-	-	-	-	-
TOTAL			1358		1958	0	0	0	0	0

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DESIGN STATEMENT - STROM WATER DRAINAGE FOR SL. 91 & 92

SL NO.	STROM LINE		AREA SERVED			RUNOFF ASSUMING	DIA OF	GRADIANT.	VELOCITY	DESIGN	CHECK FOR	LENGTH				
			self(sqm)	BRANCH(sqm)	TOTAL(Sqm)	RF @ 1" (25MM)	PIPE	1/	m/sec	DISCHARGE.	CARRYING	OF LINE	starting(GL)	starting(IL)	End(GL)	End(IL)
	FROM	TO				IN LPS.	IN MM			IN LPS	CAPACITY					
1	1	2	4368	0	4368	15	400	370	0.75	84.48	OK	87	227.10	226.10	227.03	224.76
2	2	5	7017	4368	11385	40	400	370	0.75	84.48	OK	126	227.63	224.75	227.50	224.42
3	3	5	4730	0	4730	16	400	370	0.75	84.48	OK	90	227.10	225.10	227.50	224.86
4	4A	4	600	0	600	16	400	370	0.75	84.48	OK	50	227.10	225.10	227.50	224.86
5	4	5	2665	0	3265	11	400	370	0.75	84.48	OK	58	227.57	225.57	227.50	225.41
6	5	6	1919	18780	20699	74	400	370	0.75	84.48	OK	84	227.50	224.42	226.40	224.01
7	6	7	5177	20699	25876	92	450	390	0.79	112.55	OK	80	226.40	224.01	226.40	223.80
8	7	28	4165	25876	30041	106	450	390	0.79	112.55	OK	109	226.40	223.80	226.63	223.02
9	8	11	16797	0	16797	58	400	300	0.83	93.82	OK	378	226.90	224.90	227.71	224.54
10	10	11	3920	0	3920	14	400	370	0.75	84.48	OK	93	227.71	225.71	227.71	225.46
11	11	11D	3000	20717	23717	89	450	390	0.90	128.44	OK	82	227.71	224.54	227.03	223.76
12	11C	11D	1865	0	1865	89	450	300	0.90	128.44	OK	99	227.71	224.54	227.03	223.76
13	11D	11B	3584	25582	29166	14	400	370	0.75	84.48	OK	80	225.40	224.40	227.03	224.29
14	11A	11B	500	0	530	14	400	370	0.75	84.48	OK	80	225.40	224.40	227.03	224.29
15	11B	26	969	29666	30626	106	600	300	1.09	276.62	OK	44	227.03	223.75	226.63	223.02
16	23A	23	3466	0	3466	12	400	370	0.75	84.48	OK	39	228.38	226.38	227.88	225.75
17	23	24	7721	3488	11209	39	400	370	0.75	84.48	OK	112	227.88	225.75	227.31	224.76
18	24	26	8772	11209	19981	69	400	370	0.75	84.48	OK	250	227.31	224.76	226.63	224.06
19	25	27	2207	80648	82855	290	1000	600	0.94	661.44	OK	150	226.63	223.02	225.41	221.03
20	27	OUTFALL 4	2978	82855	85833	300	1000	600	0.94	661.44	OK	144	225.41	221.03	224.70	221.03
18	12	14	5956	0	5956	21	400	300	0.83	93.82	OK	90	226.25	224.25	226.25	223.96
19	13	14	3182	0	3182	11	400	300	0.83	93.82	OK	81	226.45	224.45	226.25	224.18
20	14	16	1328	9136	10464	36	400	300	0.83	93.82	OK	65	226.25	223.96	226.20	223.44
21	15	16	6333	0	6333	22	400	300	0.83	93.82	OK	108	226.83	223.83	226.20	223.47
22	16	20	3294	16799	20093	70	400	300	0.83	93.82	OK	52	226.20	223.44	226.17	223.33
23	25	22	3715	0	3715	13	400	370	0.75	84.48	OK	95	226.80	224.80	226.43	224.54
24	21	22	10709	0	10709	37	400	370	0.75	84.48	OK	139	226.40	224.40	226.43	224.03
25	22	20	3383	14424	17807	62	400	370	0.75	84.48	OK	99	226.43	224.03	226.17	223.76
26	20	19	9646	37900	47746	166	600	400	0.94	238.56	OK	157	226.17	223.33	225.80	222.85
27	18	19	2050	0	2050	7	400	370	0.75	84.48	OK	30	225.75	223.79	225.80	223.71
28	19	19a	0	49796	49796	173	600	400	0.94	239.56	OK	49	225.80	222.66	225.83	221.13
29	17	19a	6282	0	6282	22	400	370	0.75	84.48	OK	77	225.86	223.86	225.83	223.64
30	19a	OUTFALL 3	0	56078	56078	195	600	400	0.94	239.56	OK	42	225.83	221.13	224.90	221.00
31	63	64	7140	0	7140	25	400	300	0.83	93.82	OK	201	227.40	225.40	226.70	224.66
32	64	61	2726	7140	9866	34	400	300	0.83	93.82	OK	86	226.70	224.86	227.03	224.51
33	60	61	9837	0	9837	34	400	300	0.83	93.82	OK	232	227.12	225.12	227.03	224.35
34	61	58	3146	19703	22849	79	600	400	0.94	239.56	OK	79	227.03	224.51	227.05	224.20
35	57	58	7073	0	7073	25	400	370	0.75	84.48	OK	127	227.12	225.12	227.05	224.78
36	58	56	2222	29922	32144	112	600	400	0.94	239.56	OK	28	227.05	224.20	227.07	223.80
37	62a	62b	600	0	600	2	400	370	0.75	84.48	OK	21	227.40	225.40	227.33	224.43
38	62	62b	1000	0	1000	3	400	370	0.75	84.48	OK	164	227.33	225.33	227.33	224.89
39	62b	55	2000	1500	3500	13	400	370	0.75	84.48	OK	98	227.33	224.43	227.14	224.21
40	59	55	4000	0	4000	14	400	370	0.75	84.48	OK	81	227.17	225.17	227.14	224.95
41	55	56	8239	7600	15839	55	400	370	0.75	84.48	OK	158	227.14	224.29	227.07	223.86
42	56	54	27359	47983	75342	262	800	600	1.02	461.45	OK	75	227.07	223.80	227.11	223.65
43	53	54	19600	0	19600	68	400	370	0.75	84.48	OK	180	227.17	225.17	227.11	223.69
44	54	52	11960	94942	106902	371	900	600	1.01	576.69	OK	87	227.11	223.69	227.15	223.39
17	51A	51B	3780	0	3780	13	400	370	0.75	93.67	OK	85		223.99		223.49
18	51	51B	3058	0	3058	11	400	370	0.75	93.67	OK	35		225.18		223.69
45	51B	52	4838	6838	11676	17	400	370	0.75	84.48	OK	61	227.18	225.18	227.15	225.02
46	52	50	10092	118578	128538	425	900	600	1.01	576.69	OK	139	227.15	223.39	227.01	223.07
47	50	29	200	122700	122900	427	900	600	1.01	576.69	OK	53	227.01	223.07	227.01	222.98
48	29	30	2173	122900	125073	434	900	600	1.01	576.69	OK	103	227.20	222.98	226.94	222.91
49	28	30	7098	0	7098	25	400	370	0.75	84.48	OK	105		225.20	225.94	224.91

KUMAR ENGINEERS LTD.

SL. NO.	STROM LINE		AREA SERVED			RUNOFF ASSUMING RF @ 1" (25MM) IN LPS.	DIA OF PIPE IN MM	GRADIANT. 1/	VELOCITY m/sec	DESIGN DISCHARGE. IN LPS	CHECK FOR CARRYING CAPACITY	LENGTH OF LINE	starting(GL)	starting(IL)	End(GL)	End(IL)
	FROM	TO	self(sqm)	BRANCH(sqm)	TOTAL(Sqm)											
50	30	48	6252	132171	140423	488	900	700	0.93	833.91	OK	147	226.94	222.91	226.33	222.36
51	32	33	5076	0	5076	16	400	370	0.75	84.48	OK	108	227.38	225.38	227.38	225.09
52	33	40	5283	5076	10359	36	400	370	0.75	84.48	OK	116	227.38	222.38	226.33	223.48
53	34	34B	500	0	500	2	400	370	0.75	84.48	OK	83	227.38	225.38	227.10	225.00
54	34A	34B	600	0	600	2	400	370	0.75	84.48	OK	138	227.38	225.38	227.10	226.01
55	25	27	4592	0	4592	16	400	370	0.75	84.48	OK	110		225.89		225.56
56	26	27	5462	0	5462	19	400	370	0.75	93.87	OK	55		226.89		225.56
57	27	34B	5075	10054	15129	53	400	370	0.75	93.87	OK	77		225.56		225.00
58	27	35	15158	16229	31387	55	400	370	0.75	84.48	OK	106	227.10	225.00	226.50	223.89
59	34B	35	474	16258	16732	58	400	370	0.75	84.48	OK	68	226.50	223.89	226.45	223.76
60	35	37	5305	0	5305	18	400	370	0.75	84.48	OK	36	226.77	224.77	226.45	224.61
61	36	37	400	22037	22437	78	400	370	0.75	84.48	OK	15	226.45	223.15	226.40	223.71
62	37	39	2325	0	2325	8	400	370	0.75	84.48	OK	60	226.40	224.40	226.40	223.60
63	38	39	1280	24762	26042	90	400	370	0.75	84.48	OK	65	226.40	223.60	226.40	223.43
64	39	39 b	500	0	500	2	450	360	0.79	112.65	OK	58	226.76	224.76	226.40	223.57
65	39 a	39 b	600	26542	27142	94	400	370	0.75	84.48	OK	47	226.40	223.57	226.33	223.44
66	39 b	40	525	27142	27667	132	450	370	0.81	115.66	OK	23	226.33	223.46	226.33	223.45
67	40	46	6158	0	6158	21	1000	700	0.97	663.14	OK	124	226.78	224.53	226.60	224.12
68	41	43	3283	0	3283	11	400	370	0.75	84.48	OK	35	226.60	224.85	226.59	224.75
69	42	43	2462	9451	11913	41	400	370	0.75	84.48	OK	153	226.60	224.12	226.39	223.71
70	43	45	300	0	300	1	400	370	0.75	84.48	OK	12	226.60	224.85	226.39	223.84
71	44	45	250	12213	12463	43	400	370	0.75	84.48	OK	11	226.39	223.84	226.33	223.81
72	45	45	4576	180553	185129	579	400	370	0.75	84.48	OK	210	226.33	222.96	226.00	223.49
73	46	49	1828	0	1828	6	1000	650	1.04	733.81	OK	27	226.52	223.78	226.50	223.70
74	46A	48	3708	0	3708	13	400	370	0.75	84.48	OK	21	226.63	223.78	226.50	223.72
75	47	48	4900	5638	10438	36	400	370	0.75	84.48	OK	89	226.50	223.70	226.00	223.48
76	48	49	6021	197565	203586	743	400	370	0.75	84.48	OK	36	226.00	221.82	226.00	221.14
77	49	OUTFALL 2					1000	550	1.13	797.73	OK					
1	A	65	5268	0	5268	18	400	370	0.75	93.87	OK	156		223.91		223.10
2	B	D	2890	0	2890	10	400	370	0.75	93.87	OK	65		223.91		223.51
3	C	D	4201	0	4201	15	400	370	0.75	93.87	OK	106		223.91		223.51
4	D	65	1735	7091	8826	31	400	370	0.75	93.87	OK	40		223.51		223.31
74	65	72	5211	14094	19305	68	400	370	0.75	84.48	OK	151	225.31	223.31	225.57	222.76
75	65A	69	5167	0	5167	18	400	370	0.75	84.48	OK	109	225.57	223.57	225.50	223.02
76	66	68	1814	0	1814	6	400	370	0.75	84.48	OK	33	225.80	223.80	225.70	223.11
77	67	68	7599	0	7599	26	400	370	0.75	84.48	OK	124	225.49	223.49	225.50	223.18
78	68	69	1836	9413	11249	39	400	370	0.75	84.48	OK	62	225.70	223.16	225.41	223.01
79	69	73	2147	16415	18563	64	400	370	0.75	84.48	OK	67	225.50	223.02	225.57	222.58
80	71	72	7387	0	7387	26	400	370	0.75	84.48	OK	120	225.54	223.54	225.41	222.76
81	72	73	3969	26692	30661	56	400	370	0.75	84.48	OK	68	225.57	222.76	225.30	222.58
82	73	75	1533	30061	31594	125	500	500	0.75	131.77	OK	70	225.41	222.58	225.30	222.43
83	74	75	3301	0	3301	11	400	370	0.75	84.48	OK	61	225.35	223.39	224.81	222.32
84	75	78	3601	34899	38496	149	600	620	0.76	192.42	OK	65	225.30	222.43	224.81	222.59
85	76	78	3751	0	3751	13	400	370	0.75	84.48	OK	83	224.81	222.81	224.81	222.45
86	77	78	6488	0	6488	23	400	370	0.75	84.48	OK	240	225.10	223.10	224.81	222.39
87	78	OUTFALL 6	5469	0	45135	165	600	400	0.94	239.58	OK	7	224.81	222.32	224.81	222.39
88	79	81	4320	0	4320	15	400	600	0.59	66.34	OK	136	225.30	223.30	225.18	223.09
89	80	81	2620	0	2620	9	400	600	0.59	66.34	OK	46	225.30	223.30	225.14	223.22
90	81	82	2225	6940	9165	32	400	600	0.59	66.34	OK	47	225.18	223.09	224.85	223.01
91	82a	82b	200	0	200	1	400	370	0.75	84.48	OK	32	224.85	222.85	224.85	222.76
92	82b	82c	100	0	100	0	400	370	0.75	84.48	OK	28	224.85	222.85	225.14	222.77
93	82c	82	0	300	300	1	400	370	0.75	84.48	OK	97	224.85	222.75		222.52

KUMAR ENGINEERS (P) LTD.

SL NO.	STROM LINE		AREA SERVED			RUNOFF ASSUMING RF @ 1" (25MM) IN LPS.	DIA OF PIPE IN MM	GRADIANT. 1/	VELOCITY m/sec	DESIGN DISCHARGE IN LPS	CHECK FOR CARRYING CAPACITY	LENGTH OF LINE	starting(GL)	starting(IL)	End(GL)	End(IL)
	FROM	TO	self(sqm)	BRANCH(sqm)	TOTAL(Sqm)											
94	82	84	330	9465	9795	34	400	370	0.75	84.48	OK	65	225.14	223.01	225.22	222.91
95	83	84	2988	0	2988	10	400	370	0.75	84.48	OK	90	225.27	223.27	225.22	223.00
96	84a	84	100	0	100	0	400	370	0.75	84.48	OK	171	225.40	223.40	225.22	223.34
97	84	85 a	9350	12883	22233	77	400	400	0.72	81.25	OK	220	225.22	222.91	224.85	222.36
98	85	87	0	0	0	0	400	370	0.76	84.48	OK	7	225.30	223.38	225.19	223.28
99	86	87	6005	0	6005	21	400	370	0.75	84.48	OK	96	225.10	223.10	225.19	222.93
100	87	89	5174	9995	11179	39	400	370	0.75	84.48	OK	88	225.19	222.93	225.25	222.66
101	88	85 a	6729	0	6729	23	500	500	0.75	131.77	OK	57	225.30	223.30	225.30	223.15
102	85 a	89	2003	28962	30962	108	600	800	0.67	169.29	OK	74	225.30	222.75	225.25	222.60
103	89	92	0	30962	30962	148	400	370	0.75	84.48	OK	71	225.25	222.65	225.48	222.56
104	90	92	10109	0	10109	35	600	500	0.84	238.07	OK	149	225.42	223.42	225.48	223.02
105	92	94	3806	41071	44877	155	400	370	0.75	93.87	OK	98	225.48	222.55	225.30	222.45
19	A	C	4593	0	4593	16	400	370	0.75	93.87	OK	124	225.80	223.80	225.80	223.50
20	B	C	3656	0	3656	13	400	370	0.75	93.87	OK	65	225.80	223.50	225.80	223.40
21	C	E	140	8240	8380	29	400	370	0.75	93.87	OK	17	225.80	223.40	225.80	223.40
22	D	E	1909	0	1909	7	400	370	0.75	93.87	OK	35	225.80	223.40	225.80	223.10
23	E	G	3632	10298	13930	49	400	370	0.75	93.87	OK	81	225.80	223.80	225.80	223.10
24	F	G	2542	0	2542	9	400	370	0.75	93.87	OK	68	225.80	223.10	225.80	222.90
25	G	I	997	16472	17439	61	400	370	0.75	93.87	OK	65	225.80	223.80	225.80	222.90
26	H	I	2872	0	2872	10	400	370	0.75	93.87	OK	50	225.80	223.00	225.80	222.90
27	I	93	3006	20311	23317	82	400	370	0.75	93.87	OK	114	225.50	223.00	225.30	222.40
106	93	94	5572	23317	28889	19	400	370	0.75	84.48	OK	57	224.30	222.30	225.40	222.31
107	94	97	0	73766	73766	214	600	500	0.84	238.07	OK	64	225.30	222.40	225.40	223.19
108	95	97	4236	0	4236	15	400	370	0.76	84.48	OK	118	225.51	223.51	225.56	223.15
109	96	97	3376	0	3376	12	400	370	0.75	84.48	OK	90	225.40	223.40	225.56	221.96
110	97	99	3220	81578	84798	252	600	400	0.94	266.16	OK	98	225.49	222.31	225.56	223.45
111	98	99	2016	0	2616	9	400	370	0.76	84.48	OK	39	225.56	223.56	225.62	221.84
112	99	101	4097	87414	91511	278	600	350	1.01	284.55	OK	80	225.59	221.96	225.62	223.49
113	100	101	4625	0	4625	16	400	370	0.75	84.48	OK	49	225.62	223.62	225.30	221.74
114	101	105	300	96136	96436	293	600	300	1.09	307.35	OK	75	225.62	221.84	225.30	223.16
115	102	105	2411	0	2411	8	400	370	0.75	84.48	OK	52	225.30	223.30	225.30	223.06
116	103	105	14429	0	14429	50	400	370	0.75	84.48	OK	150	225.56	223.56	225.30	221.72
117	105	OUTFALL 7	0	113276	113276	351	600	200	1.33	378.43	OK	5	225.30	221.74	226.39	222.39
							400	370	0.75	84.48	OK	150	224.80	222.80	224.59	221.49
118	105	108	8998	0	8998	31	400	370	0.75	84.48	OK	161	224.67	222.67	224.59	221.46
119	107	108	9694	0	9694	34	400	370	0.75	84.48	OK	24	224.59	221.49	224.59	222.53
120	108	110	1908	18892	20592	72	400	370	0.75	84.48	OK	22	224.59	222.59	224.54	221.16
121	109	110	1080	0	1080	4	400	370	0.75	84.48	OK	69	224.69	221.49	224.54	221.47
122	110	113	1002	21672	22674	78	400	300	0.83	93.82	OK	30	224.54	221.50	224.91	223.20
123	111	113	4959	52715	57674	200	900	900	0.82	470.86	OK	391	225.29	223.29	224.91	222.93
124	139	140	300	0	300	1	400	370	0.75	84.48	OK	84	224.97	222.97	224.99	222.90
125	138	140	600	0	600	2	400	370	0.75	84.48	OK	178	224.91	222.97	224.90	222.42
126	140	111	800	900	1700	6	400	370	0.75	84.48	OK	50	225.10	223.10	224.90	222.83
127	137	135	100	0	100	0	400	370	0.75	84.48	OK	45	224.95	222.95	224.90	222.39
128	133	135	4435	0	4435	15	400	370	0.75	84.48	OK	129	224.74	222.74	224.85	221.28
129	134	135	7149	0	7149	25	400	370	0.75	84.48	OK	58	224.90	222.42	224.85	222.48
130	135	132	0	11684	11684	41	400	370	0.75	84.48	OK	120	224.80	222.80	224.85	222.27
131	131	132	4820	0	4820	17	400	370	0.75	84.48	OK	9	224.85	222.29	224.80	222.03
132	132	130	0	16904	16904	59	400	370	0.75	84.48	OK	62	224.85	222.85	224.80	222.00
133	129	130	1575	0	1575	5	400	370	0.75	84.48	OK	62	224.85	222.27	224.80	222.68
134	130	126	1399	18079	19478	68	400	370	0.75	84.48	OK	93	224.90	222.00	224.80	222.00
135	125	126	1509	0	1509	5	400	370	0.75	84.48	OK	44	224.80	222.90	224.80	222.57
136	126	128	428	1509	1937	7	400	370	0.75	84.48	OK	122	224.90	222.90	224.80	221.93
137	127	128	4275	0	4275	15	400	370	0.75	84.48	OK	40	224.88	222.00	224.80	
138	128	124	80	25690	25770	89	450	380	0.79	112.65	OK					

SL NO.	STROM LINE		AREA SERVED			RUNOFF ASSUMING RF @ 1" (25MM) IN LPS.	DIA OF PIPE IN MM	GRADIANT. 1/	VELOCITY m/sec	DESIGN DISCHARGE IN LPS	CHECK FOR CARRYING CAPACITY	LENGTH OF LINE	starting(GL)	starting(IL)	End(GL)	End(IL)
	FROM	TO	self(sqm)	BRANCH(sqm)	TOTAL(Sqm)											
139	123	124	2132	0	2132	7	400	370	0.75	84.48	OK	49	224.85	222.05	224.60	222.72
140	122	124	3785	0	3785	13	400	370	0.75	84.48	OK	98	224.88	222.88	224.60	222.62
141	124	121	100	31688	31788	110	500	500	0.75	131.77	OK	40	224.80	221.93	224.60	221.74
142	119	121	4624	0	4624	16	400	370	0.75	84.48	OK	132	224.80	222.90	224.80	222.54
143	120	121	2204	0	2204	8	400	370	0.75	84.48	OK	49	224.80	222.80	224.80	222.67
144	121	118	100	39516	39716	154	600	520	0.76	192.42	OK	48	224.80	221.74	224.70	221.67
145	117	118	3783	0	3783	13	400	370	0.75	84.48	OK	57	224.80	222.80	224.70	222.65
146	114	116	3297	0	3297	11	400	370	0.75	84.48	OK	78	224.90	222.90	224.90	222.69
147	115	116	1497	0	1497	5	400	370	0.75	84.48	OK	58	224.90	222.90	224.90	222.74
148	116	118	1694	4794	6488	23	400	370	0.75	84.48	OK	89	224.90	222.89	224.70	222.45
149	118	111	2028	49987	51015	177	600	620	0.76	192.42	OK	95	224.70	221.67	224.50	221.52
150	113	OUTFALL 10	0	80248	80248	279	900	700	0.98	533.91	OK	161	224.54	221.15	224.64	220.93
151	141	142	3745	0	3745	13	450	350	0.77	86.86	OK	99	225.10	223.10	225.1	222.82
152	142	144	6772	3745	10517	37	450	450	0.73	104.87	OK	91	225.10	222.82	225.58	222.61
153	143	144	2596	0	2596	9	400	370	0.75	84.48	OK	90	225.63	223.13	225.59	223.00
154	144	146	1807	13113	14920	52	500	600	0.68	120.29	OK	39	225.59	222.61	225.55	222.55
155	145	145	5337	0	5337	19	400	370	0.75	84.48	OK	58	225.55	222.47	225.50	222.26
156	146	145	0	20257	20257	70	600	600	0.77	195.60	OK	91	225.55	222.26	225.17	223.13
157	147	148	2721	0	2721	9	400	370	0.75	84.48	OK	43	225.17	223.17	225.17	222.10
158	148a	148	200	0	200	1	400	370	0.75	84.48	OK	70	225.17	223.17	225.17	222.98
159	148	OUTFALL 9	0	23178	23178	80	600	500	0.84	236.07	OK	5	225.17	222.10	225.17	222.10
ADDL																
4	4A	4	600	0	600	16	400	370	0.75	84.48	OK	50	227.10	225.10	227.50	224.86
12	11C	11D	1805	0	1805	89	450	300	0.90	126.44	OK	90	227.71	224.54	227.03	223.75
17	51A	51B	3780	0	3780	13	400	370	0.75	93.87	OK	95		223.88		223.49
25	25	27	4592	0	4592	16	400	370	0.75	93.87	OK	110		225.99		225.92
27	26	27	5462	0	5462	19	400	370	0.75	93.87	OK	95		225.99		225.56
28	27	34B	5075	10054	15129	53	400	370	0.75	93.87	OK	77		225.56		225.00
1	A	8S	5268	0	5268	18	400	370	0.75	93.87	OK	150		223.91		223.10
2	B	D	2890	0	2890	10	400	370	0.75	93.87	OK	55		223.91		223.51
3	C	D	4201	0	4201	15	400	370	0.75	93.87	OK	105		223.91		223.51
4	D	8S	1735	7091	8826	31	400	370	0.75	93.87	OK	43		223.51		223.31
19	A	C	4593	0	4593	16	400	370	0.75	93.87	OK	124	225.80	223.88	225.80	223.50
20	B	C	3659	0	3659	13	400	370	0.75	93.87	OK	65	225.80	223.80	225.80	223.50
21	C	E	140	8249	8389	29	400	370	0.75	93.87	OK	17	225.80	223.50	225.80	223.40
22	D	E	1909	0	1909	7	400	370	0.75	93.87	OK	35	225.80	223.40	225.80	223.40
23	E	G	3632	10298	13930	49	400	370	0.75	93.87	OK	81	225.80	223.40	225.80	223.10
24	F	G	2542	0	2542	9	400	370	0.75	93.87	OK	66	225.80	223.10	225.80	223.10
25	G	I	967	16472	17439	61	400	370	0.75	93.87	OK	65	225.80	223.80	225.80	227.90
26	H	I	2872	0	2872	10	400	370	0.75	93.87	OK	50	225.80	223.50	225.80	222.90
27	I	60	3006	20311	23317	82	400	370	0.75	93.87	OK	114	225.50	223.50	225.80	222.90

KUMAR ENDECON PVT. LTD.

DRAINAGE MATERIAL STATEMENT

SL. NO.	STROM LINE FROM	STROM LINE TO	DIA OF PIPE IN MM	LENGTH OF LINE	DIA OF PIPE IN mm 400	450	500	600	700	800	900	1000
1	1	2	400	67	67	-	-	-	-	-	-	-
2	2	5	400	126	126	-	-	-	-	-	-	-
3	3	5	400	90	90	-	-	-	-	-	-	-
4	4A	4	400	50	50	-	-	-	-	-	-	-
5	4	5	400	58	58	-	-	-	-	-	-	-
6	5	6	400	84	84	-	-	-	-	-	-	-
7	6	7	450	80	-	80	-	-	-	-	-	-
8	7	26	450	109	-	109	-	-	-	-	-	-
9	8	11	400	378	378	-	-	-	-	-	-	-
10	10	11	400	93	93	-	-	-	-	-	-	-
11	11	11D	450	82	-	82	-	-	-	-	-	-
12	11C	11D	450	90	-	90	-	-	-	-	-	-
13	11D	11B	400	80	80	-	-	-	-	-	-	-
14	11A	11B	400	60	60	-	-	44	-	-	-	-
15	11B	26	600	44	-	-	-	-	-	-	-	-
16	23A	23	400	39	39	-	-	-	-	-	-	-
17	23	24	400	112	112	-	-	-	-	-	-	-
18	24	26	400	250	250	-	-	-	-	-	-	150
19	26	27	1000	150	-	-	-	-	-	-	-	144
20	27	OUTFALL 4	1000	144	-	-	-	-	-	-	-	294
TAL				2206	1507	361	0	44	0	0	0	
18	12	14	400	90	90	-	-	-	-	-	-	-
19	13	14	400	61	61	-	-	-	-	-	-	-
20	14	16	400	65	65	-	-	-	-	-	-	-
21	15	16	400	108	108	-	-	-	-	-	-	-
22	16	20	400	52	52	-	-	-	-	-	-	-
23	25	22	400	95	95	-	-	-	-	-	-	-
24	21	22	400	138	138	-	-	-	-	-	-	-
25	22	20	400	99	99	-	-	-	-	-	-	-
26	20	19	600	157	-	-	-	157	-	-	-	-
27	18	19	400	30	30	-	-	-	-	-	-	-
28	19	19a	600	49	-	-	-	49	-	-	-	-
29	17	19a	400	77	77	-	-	-	-	-	-	-
30	19a	OUTFALL 3	600	42	-	-	-	42	-	-	-	-
TOTAL				1083	635	0	0	248	0	0	0	0
31	63	64	400	201	201	-	-	-	-	-	-	-
32	64	61	400	86	86	-	-	-	-	-	-	-
33	60	61	400	232	232	-	-	-	-	-	-	-
34	61	58	600	79	-	-	-	79	-	-	-	-
35	57	58	400	127	127	-	-	-	-	-	-	-
36	58	56	600	28	-	-	-	28	-	-	-	-
37	62a	62b	400	21	21	-	-	-	-	-	-	-
38	62	62b	400	164	164	-	-	-	-	-	-	-
39	62b	55	400	98	98	-	-	-	-	-	-	-
40	59	55	400	81	81	-	-	-	-	-	-	-
41	55	58	400	158	158	-	-	-	-	75	-	-
42	56	54	600	75	-	-	-	-	-	-	-	-
43	53	54	400	180	180	-	-	-	-	-	87	-
44	54	52	900	87	-	-	-	-	-	-	-	-
17	51A	51B	400	95	95	-	-	-	-	-	-	-
16	51	51B	400	35	35	-	-	-	-	-	-	-
45	51B	52	400	61	61	-	-	-	-	-	139	-
46	52	50	900	139	-	-	-	-	-	-	53	-
47	50	29	900	53	-	-	-	-	-	-	103	-
48	29	30	900	103	-	-	-	-	-	-	-	-
49	28	30	400	106	106	-	-	-	-	-	147	-
50	30	46	900	147	-	-	-	-	-	-	-	-
51	32	33	400	108	108	-	-	-	-	-	-	-
52	33	40	400	118	118	-	-	-	-	-	-	-
53	34	34B	400	83	83	-	-	-	-	-	-	-
54	34A	34B	400	138	138	-	-	-	-	-	-	-
26	25	27	400	110	110	-	-	-	-	-	-	-
27	26	27	400	96	96	-	-	-	-	-	-	-
28	27	34B	400	77	77	-	-	-	-	-	-	-
55	34B	35	400	106	106	-	-	-	-	-	-	-
56	35	37	400	68	68	-	-	-	-	-	-	-
57	36	37	400	58	58	-	-	-	-	-	-	-
58	37	39	400	15	15	-	-	-	-	-	-	-

SL NO.	STROM LINE		DIA OF PIPE IN MM	LENGTH OF LINE	DIA OF PIPE IN mm							
	FROM	TO			400	450	500	600	700	800	900	1000
59	38	39	400	60	60	-	-	-	-	-	-	-
60	39	39 b	450	65	-	65	-	-	-	-	-	-
61	39 a	39 b	400	58	58	-	-	-	-	-	-	-
62	39 b	40	450	47	-	47	-	-	-	-	-	23
63	40	46	1000	23	-	-	-	-	-	-	-	-
64	41	43	400	124	124	-	-	-	-	-	-	-
65	42	43	400	36	36	-	-	-	-	-	-	-
66	43	45	400	153	153	-	-	-	-	-	-	-
67	44	45	400	12	12	-	-	-	-	-	-	-
68	45	46	400	11	11	-	-	-	-	-	-	210
69	46	49	1000	210	-	-	-	-	-	-	-	-
70	46A	48	400	27	27	-	-	-	-	-	-	-
71	47	48	400	21	21	-	-	-	-	-	-	-
72	48	49	400	89	89	-	-	-	-	-	-	36
73	49	OUTFALL 2	1000	36	-	-	-	-	-	-	-	-
TOTAL				4304	3212	112	0	107	0	75	529	269
1	A	65	400	150	150	-	-	-	-	-	-	-
2	B	D	400	55	55	-	-	-	-	-	-	-
3	C	D	400	105	105	-	-	-	-	-	-	-
4	D	65	400	40	40	-	-	-	-	-	-	-
4	65	72	400	151	151	-	-	-	-	-	-	-
75	65A	69	400	100	100	-	-	-	-	-	-	-
76	66	68	400	33	33	-	-	-	-	-	-	-
77	67	68	400	124	124	-	-	-	-	-	-	-
78	68	69	400	52	52	-	-	-	-	-	-	-
79	69	73	400	67	67	-	-	-	-	-	-	-
80	71	72	400	120	120	-	-	-	-	-	-	-
81	72	73	400	68	68	-	-	-	-	-	-	-
82	73	75	500	70	-	-	70	-	-	-	-	-
83	74	75	400	61	61	-	-	-	-	-	-	-
84	75	78	600	68	-	-	-	69	-	-	-	-
85	76	78	400	83	83	-	-	-	-	-	-	-
86	77	78	400	240	240	-	-	-	-	-	-	-
87	78	OUTFALL 6	600	7	-	-	-	7	-	-	-	-
TOTAL				1604	1459	0	70	75	0	0	0	0
88	79	81	400	138	138	-	-	-	-	-	-	-
99	80	81	400	46	46	-	-	-	-	-	-	-
90	81	82	400	47	47	-	-	-	-	-	-	-
91	82a	82c	400	32	32	-	-	-	-	-	-	-
92	82b	82c	400	28	28	-	-	-	-	-	-	-
93	82c	82	400	87	87	-	-	-	-	-	-	-
94	82	84	400	65	65	-	-	-	-	-	-	-
95	83	84	400	90	90	-	-	-	-	-	-	-
96	84a	84	400	171	171	-	-	-	-	-	-	-
97	84	88 a	400	220	220	-	-	-	-	-	-	-
98	85	87	400	7	7	-	-	-	-	-	-	-
99	86	87	400	98	98	-	-	-	-	-	-	-
100	87	89	500	86	-	-	86	-	-	-	-	-
101	88	88 a	400	57	57	-	-	-	-	-	-	-
102	88 a	89	500	74	-	-	74	-	-	-	-	-
103	89	92	600	71	-	-	-	71	-	-	-	-
104	90	92	400	149	149	-	-	-	-	-	-	-
105	92	94	600	98	-	-	-	98	-	-	-	-
19	A	C	400	124	124	-	-	-	-	-	-	-
20	B	C	400	65	65	-	-	-	-	-	-	-
21	C	E	400	17	17	-	-	-	-	-	-	-
22	D	E	400	35	35	-	-	-	-	-	-	-
23	E	G	400	81	81	-	-	-	-	-	-	-
24	F	G	400	68	68	-	-	-	-	-	-	-
25	G	I	400	65	65	-	-	-	-	-	-	-
26	H	I	400	50	50	-	-	-	-	-	-	-
27	I	93	400	114	114	-	-	-	-	-	-	-
106	93	94	400	57	57	-	-	-	-	-	-	-
107	94	97	600	64	-	-	-	64	-	-	-	-
108	95	97	400	118	118	-	-	-	-	-	-	-
109	96	97	400	90	90	-	-	-	-	-	-	-
110	97	99	600	96	-	-	-	96	-	-	-	-
111	98	99	400	39	39	-	-	-	-	-	-	-
112	99	101	600	80	-	-	-	80	-	-	-	-

SL NO.	STROM LINE FROM	STROM LINE TO	DIA OF PIPE IN MM	LENGTH OF LINE	DIA OF PIPE IN mm 400	450	500	600	700	800	900	1000
113	100	101	400	49	49	-	-	-	-	-	-	-
114	101	105	600	75	-	-	-	75	-	-	-	-
115	102	105	400	52	52	-	-	-	-	-	-	-
116	103	105	400	190	190	-	-	-	-	-	-	-
117	105	OUTFALL 7	600	5	-	-	-	5	-	-	-	-
TOTAL				3096	2447	0	160	489	0	0	0	0
118	106	108	400	150	150	-	-	-	-	-	-	-
119	107	109	400	161	161	-	-	-	-	-	-	-
120	108	110	400	24	24	-	-	-	-	-	-	-
121	109	110	400	22	22	-	-	-	-	-	-	-
122	110	113	400	69	69	-	-	-	-	-	30	-
123	111	113	900	30	-	-	-	-	-	-	-	-
124	139	140	400	391	391	-	-	-	-	-	-	-
125	138	140	400	84	84	-	-	-	-	-	-	-
126	140	111	400	178	178	-	-	-	-	-	-	-
127	137	135	400	50	50	-	-	-	-	-	-	-
128	133	135	400	45	45	-	-	-	-	-	-	-
129	134	135	400	129	129	-	-	-	-	-	-	-
130	135	132	400	58	58	-	-	-	-	-	-	-
131	131	132	400	120	120	-	-	-	-	-	-	-
132	132	130	400	9	9	-	-	-	-	-	-	-
133	129	130	400	82	82	-	-	-	-	-	-	-
134	130	128	400	62	62	-	-	-	-	-	-	-
135	125	126	400	93	93	-	-	-	-	-	-	-
136	126	128	400	44	44	-	-	-	-	-	-	-
137	127	128	400	122	122	-	-	-	-	-	-	-
138	126	124	450	40	-	40	-	-	-	-	-	-
139	123	124	400	49	49	-	-	-	-	-	-	-
140	122	124	400	98	98	-	-	-	-	-	-	-
141	124	121	500	40	-	-	40	-	-	-	-	-
142	119	121	400	132	132	-	-	-	-	-	-	-
143	120	121	400	49	49	-	-	-	-	-	-	-
144	121	118	600	48	-	-	-	48	-	-	-	-
145	117	118	400	57	57	-	-	-	-	-	-	-
146	114	116	400	78	78	-	-	-	-	-	-	-
147	115	116	400	58	58	-	-	-	-	-	-	-
148	116	118	400	89	89	-	-	-	-	-	-	-
149	118	111	600	95	-	-	-	95	-	-	-	-
150	113	OUTFALL 10	900	161	-	-	-	-	-	-	161	-
TOTAL				2917	2503	40	40	143	0	0	191	0
151	141	142	400	99	99	-	-	-	-	-	-	-
152	142	144	450	91	-	91	-	-	-	-	-	-
153	143	144	400	30	30	-	-	-	-	-	-	-
154	144	146	500	39	-	-	39	-	-	-	-	-
155	145	146	400	96	96	-	-	-	-	-	-	-
156	146	148	600	81	-	-	-	81	-	-	-	-
157	147	148	400	43	43	-	-	-	-	-	-	-
158	148a	148	400	70	70	-	-	-	-	-	-	-
159	146	OUTFALL 9	500	5	-	-	-	5	-	-	-	-
TOTAL				556	340	91	39	86	0	0	0	0
			Grand Total length	15766	12303	604	309	1192	0	75	720	563

STATEMENT FOR ADDITIONAL AREA (16.25 ACRES)

SL	STROM LINE FROM	STROM LINE TO	DIA OF PIPE IN MM	LENGTH OF LINE	DIA OF PIPE IN mm 400	450	500	600	700	800	900	1000
4	4A	4	450	50	50	-	-	-	-	-	-	-
12	11C	11D	450	90		90	-	-	-	-	-	-
17	51A	51B	400	95	95	-	-	-	-	-	-	-
26	25	27	400	110	110	-	-	-	-	-	-	-
27	26	27	400	95	95	-	-	-	-	-	-	-
28	27	34B	400	77	77	-	-	-	-	-	-	-
1	A	65	400	150	150	-	-	-	-	-	-	-
2	B	D	400	55	55	-	-	-	-	-	-	-

SL NO.	STROM LINE FROM	STROM LINE TO	DIA OF PIPE IN MM	LENGTH OF LINE	DIA OF PIPE IN mm 400	450	500	600	700	800	900	1000
3	C	D	400	105	105	-	-	-	-	-	-	-
4	D	65	400	40	40	-	-	-	-	-	-	-
19	A	C	400	124	124	-	-	-	-	-	-	-
20	B	C	400	65	65	-	-	-	-	-	-	-
21	C	E	400	17	17	-	-	-	-	-	-	-
22	D	E	400	35	35	-	-	-	-	-	-	-
23	E	G	400	81	81	-	-	-	-	-	-	-
24	F	G	400	68	68	-	-	-	-	-	-	-
25	G	I	400	65	65	-	-	-	-	-	-	-
26	H	I	400	50	50	-	-	-	-	-	-	-
27	I	93	400	114	114	-	-	-	-	-	-	-
TOTAL				1396	1396	90	0	0	0	0	0	0

KUMAR ENDECON PVT. LTD.

MATERIAL STATEMENT FOR ROAD							
				WIDTH			
S.NO	NODE	WIDTH	LENGTH	12	15	18	24
1	1-2	12	120	120	0	0	0
2	3-4	12	139	139	0	0	0
3	5-6	12	158	158	0	0	0
4	6A-6B	12	45	45	0	0	0
5	7-8	12	60	60	0	0	0
6	9-10	12	93	93	0	0	0
7	11-12	12	46	46	0	0	0
8	13-14	12	31	31	0	0	0
9	14A-14B	12	50	50	0	0	0
10	15-16	24	478	0	0	0	478
11	19-20	12	57	57	0	0	0
12	21-22	12	95	95	0	0	0
13	23-24	12	82	82	0	0	0
14	25-26	12	130	130	0	0	0
15	27-28	12	90	90	0	0	0
16	29-30	12	313	313	0	0	0
17	31-32	12	141	141	0	0	0
18	33-34	12	143	143	0	0	0
19	35-36	12	114	114	0	0	0
20	37-38	18	24	0	0	24	0
21	39-40	12	176	176	0	0	0
22	41-42	12	192	192	0	0	0
23	43-44	12	58	58	0	0	0
24	45-46	12	110	110	0	0	0
25	47-48	12	105	105	0	0	0
26	49-50	12	157	157	0	0	0
27	52A-52B	12	115	115	0	0	0
28	52C-52D	12	45	45	0	0	0
29	52E-52F	12	80	80	0	0	0
30	52G-52H	12	73	73	0	0	0
31	51-52	12	200	200	0	0	0
32	53-54	12	141	141	0	0	0
33	55-56	12	102	102	0	0	0
34	57-58	12	49	49	0	0	0
35	59-60	12	65	65	0	0	0
36	61-62	24	510	0	0	0	510
37	63-64	12	105	105	0	0	0
38	63A-63B	12	24	24	0	0	0
39	65-66	12	135	135	0	0	0
40	67-68	15	91	0	91	0	0
41	69-70	12	70	70	0	0	0
42	71-72	12	42	42	0	0	0
43	74A - 74B	12	85	85	0	0	0
44	73-74	12	224	224	0	0	0
45	75-76	12	27	27	0	0	0
46	77-78	12	291	291	0	0	0
47	79-80	12	127	127	0	0	0
48	81-82	12	243	243	0	0	0
49	82A-82B	18	60	0	0	60	0
50	83-84	12	133	133	0	0	0
51	85-86	12	160	160	0	0	0
52	87-88	12	188	188	0	0	0
53	89-90	12	118	118	0	0	0
54	91-92	24	1600	0	0	0	1600
55	93-94	12	67	67	0	0	0
56	95-96	12	63	63	0	0	0
57	97-98	12	41	41	0	0	0
58	99-100	12	63	63	0	0	0
59	101-102	12	39	39	0	0	0
60	103-104	12	47	47	0	0	0

S.NO	NODE	WIDTH	LENGTH	WIDTH			
				12	15	18	24
61	105-106	12	105	105	0	0	0
62	107-108	12	45	45	0	0	0
63	109-110	12	73	73	0	0	0
64	111-112	12	158	158	0	0	0
65	113-114	12	87	87	0	0	0
66	115-116	12	203	203	0	0	0
67	117-118	12	44	44	0	0	0
68	120A-120B	12	45	45	0	0	0
69	120C-120D	12	70	70	0	0	0
70	120E-120F	12	65	65	0	0	0
71	120G-120H	12	115	115	0	0	0
72	120I-120J	12	35	35	0	0	0
73	120K-120L	12	45	45	0	0	0
74	119-120	24	1701	0	0	0	1701
75	121-122	12	90	90	0	0	0
76	123-124	15	52	0	52	0	0
77	125-126	12	235	235	0	0	0
78	127-128	12	92	92	0	0	0
79	129-130	12	231	231	0	0	0
80	131-132	12	48	48	0	0	0
81	133-134	12	49	49	0	0	0
82	135-136	12	73	73	0	0	0
83	137-138	12	21	21	0	0	0
84	139-140	12	195	195	0	0	0
85	141-142	12	48	48	0	0	0
86	143-144	15	53	0	53	0	0
87	145-146	24	365	0	0	0	365
88	147-148	12	332	332	0	0	0
89	149-150	12	64	64	0	0	0
90	151-152	12	33	33	0	0	0
91	153-154	12	147	147	0	0	0
92	155-156	12	25	25	0	0	0
93	157-158	12	134	134	0	0	0
94	159-160	12	26	26	0	0	0
95	161-162	12	100	100	0	0	0
96	163-164	12	86	86	0	0	0
97	165-166	12	26	26	0	0	0
98	167-168	12	91	91	0	0	0
99	169-170	12	48	48	0	0	0
100	171-172	12	46	46	0	0	0
101	173-174	12	42	42	0	0	0
102	175-176	12	47	47	0	0	0
103	177-178	12	235	235	0	0	0
104	179-180	18	44	0	0	44	0
105	181-182	12	135	135	0	0	0
106	183-184	12	48	48	0	0	0
107	185-186	12	181	181	0	0	0
108	187-188	12	73	73	0	0	0
109	189-190	12	155	155	0	0	0
110	191-192	18	56	0	0	56	0
111	193A-193B	12	100	100	0	0	0
112	193C-193D	12	100	100	0	0	0
113	193E-193F	12	60	60	0	0	0
114	193G-193H	12	45	45	0	0	0
115	193I-193J	12	65	65	0	0	0
116	193-194	12	335	335	0	0	0
117	195-196	12	120	120	0	0	0
118	197-198	12	96	96	0	0	0
119	199-200	12	72	72	0	0	0
120	201-202	12	27	27	0	0	0
121	203-204	12	263	263	0	0	0

S.NO	NODE	WIDTH	LENGTH	WIDTH 12	15	18	24
122	206-206	12	47	47	0	0	0
123	207-208	12	142	142	0	0	0
124	209-210	12	164	164	0	0	0
125	211-212	12	553	553	0	0	0
126	213-214	12	355	355	0	0	0
127	215-216	12	789	789	0	0	0
128	217-218	12	183	183	0	0	0
129	219-220	12	175	175	0	0	0
130	221-222	12	91	91	0	0	0
131	223-224	12	65	65	0	0	0
TOTAL			18994	13960	196	184	4654
	BLACK TOP WIDTH			5.5	7	10	14
	AREA IN Sqm			76780	1372	1840	65156
			TOTAL AREA Sqm		146148		
			Add 5% for curves		7257		
			TOTAL AREA Sqm		152405		

LENGTH FOR KERB & CHANNEL = 13960+196+184+4654 = 18994 mtr. say 19000 mtr.

STATEMENT OF ROAD FOR ADDITIONAL AREA (16.25 ACRES)

S.NO AS / NODE	NODE	WIDTH IN MTR	LENGTH IN MTR	WIDTH 12 MTR	15	18	24
4	6A-6B	12	45	45	0	0	0
9	14A-14B	12	50	50	0	0	0
27	52A-52B	12	115	115	0	0	0
28	52C-52D	12	45	45	0	0	0
29	52E-52F	12	80	80	0	0	0
30	52G-52H	12	73	73	0	0	0
43	74A-74B	12	85	85	0	0	0
68	120A-120B	12	45	45	0	0	0
69	120C-120D	12	70	70	0	0	0
70	120E-120F	12	65	65	0	0	0
71	120G-120H	12	115	115	0	0	0
72	120I-120J	12	35	35	0	0	0
73	120K-120L	12	45	45	0	0	0
111	193A-193B	12	100	100	0	0	0
112	193C-193D	12	100	100	0	0	0
113	193E-193F	12	60	60	0	0	0
114	193G-193H	12	45	45	0	0	0
115	193I-193J	12	65	65	0	0	0
TOTAL			1238	1238	0	0	0

KUMAR ENDECON PVT. LTD.