SERVICE ESTIMATE, DESIGN REPORT AND CALCULATIONS OF INTERNAL DEVELOPMENT WORKS

FOR

PLOTTED COMMERCIAL (SCO) AN AREA MEASURING 2.98125 ACS. IN SECTOR 73, VILLAGE BEGUMPUR KHATOLA, GURUGRAM (HARYANA)

SEPTEMBR– 2022

BEING DEVELOPED BY

For M/S DLF HOME DEVELOPERS LTD.

LC -V

(See Rule 12)

HARYANA GOVERNMENT

TOWN AND COUNTRY PLANNING DEPARTMENT

Licence No. 139 of 2022

This license is being granted under the Haryana Development and Regulation of Urban Areas Act, 1975 & the Rules, 1976 made there under to DLF Home Developers Ltd., 1st floor, Gateway Tower, R-Block, DLF City, Phase-III, Gurugram-122002 for development of Commercial Plotted Colony over an area measuring 2.98125 acres falling in the revenue estate of village Begumpur Khatola in Sector-73, Gurugram.

1. The particulars of the land, wherein the aforesaid Commercial Plotted Colony is to be set up, are given in the schedule of land annexed hereto and duly signed by the Director General, Town & Country Planning, Haryana.

2. The License is granted subject to the following terms and conditions:

   a. That licencee shall be laid the commercial plotted colony in confirmation to the approved layout plan and development works are executed according to the designs and specifications shown in the approved plan.

   b. That the conditions of the agreements already executed are duly fulfilled and the provisions of Haryana Development and Regulation of Urban Areas Act. 1975 and the Rules 1976 made there under are duly complied with.

   c. That the licencee shall pay the External Development Charges as per terms and condition of the agreement executed with the Department.

   d. The EDC have been charged on the basis of EDC Indexation Mechanism Policy dated 11.02.2016, which stands approved by cabinet. If there will be any change and delay in the amendment in the Act/Rules w.r.t. the said rates, then differential amount from the original calculation will required to be deposited as and when demanded by the Department.

   e. That the licencee shall maintain and upkeep of all roads, open spaces, public park and public health services for a period of five years from the date of issue of the completion certificate unless earlier relieved of this responsibility and thereupon to transfer all such roads, open spaces, public parks and public health services free of cost to the Govt. or the local authority, as the case may be, in accordance with the provisions of Section 3(3)(a)(iii) of the Haryana Development and Regulation of Urban Areas Act, 1975.

   f. That area under the sector roads and restricted belt/green belt, if any, which forms part of licenced area in lieu of which benefit to the extent permissible as per policy towards FAR is being granted, shall be transferred free of cost to the Govt.

   g. That licencee shall construct the 18/24 m wide service road forming part of the site area at his own cost and the entire area under road shall be transferred free of cost to the Government.

h. That licensee shall pay the Infrastructure Development Charges amounting to **Rs. 1,80,97,678/-** @ Rs. 1000/- per sq. mtr. in two equal instalments. First instalment will be due within 60 days of grant of license and second Instalment within six months of grant of license failing which 18% PA interest will be liable for the delayed period.

i. That licencee shall integrate the services with Haryana Shahari Vikas Pradhikaran services as per approved service plans and as & when made available.

j. That licencee shall have no objection to the regularization of the boundaries of the license through give and take with the land, that HSVP is finally able to acquire in the interest of planned development and integrated services. The decision of the competent authority shall be binding in this regard.

k. That licencee shall make arrangements for water supply, sewerage, drainage etc. to the satisfaction of DTCP till these services are made available from External Infrastructure to be laid by HSVP or any other Govt. Agency.

l. That development/construction cost of 24 m/18 m wide major internal roads is not included in the EDC rates and you shall pay the proportionate cost for acquisition of land, if any, alongwith the construction cost of the same as and when finalized and demanded by DTCP, Haryana.

m. That licencee shall submit NOC as required under notification dated 14.09.2006 issued by MOEF, GOI before executing development works at site.

n. That licencee shall obtain clearance from competent Authority, if required under PLPA, 1900 and any other clearance required under any other law.

o. That licencee shall pay the labour cess charges as prescribed in policy parameters.

p. That licencee shall provide rain water harvesting system at site as per Central Ground Water Authority norms/Haryana Govt. notification, as applicable.

q. That licencee shall make the provision of solar water heating system as per recommendations of HAREDA and shall make it operational, where applicable, before applying for occupation certificate.

r. That licensee shall use only LED fittings for internal as well as for campus lighting.

s. That in compliance of Rule 24, 26 (2), 27 and 28 of Rules 1976 & Section 5 of Haryana Development and Regulation of Urban Areas Act, 1975, you shall inform account number and full particulars of the scheduled bank wherein licencee have to deposit seventy percentum of the amount from the space holders for meeting the cost of internal development works in the colony.

t. That at the time of booking of the commercial spaces in the licenced colony, if the specified rates of commercial spaces do not include IDC/EDC rates and are to be charged separately as per rates fixed by the Government from the

commercial spaces owners, licensee shall also provide details of calculations per Sqm/per Sq ft to the allottees while raising such demand of EDC.

u. That the pace of construction should be atleast in accordance with your sale agreement with the buyers of the flats/shops as and when scheme is launched, after approval of building plans.

v. That the licencee shall be responsible for compliance of all terms and conditions of licence/provisions of the Act of 1975 and Rules 1976 till the grant of final completion certificate to the colony or relived of the responsibility by the Director, Town & Country Planning, Haryana whichever is earlier.

w. That licencee shall obey all the directions/restrictions imposed by the Department time to time in public interest.

3. That you shall demarcate the land at site and will submit the demarcation plan in the office of District Town Planner, Gurugram within 15 days of issuance of this license.

4. That you shall submit access permission from GMDA/HSVP for deriving access from 60 mtr. wide constructed sector divided road through acquired 12 mtr. wide service road proposed along it, within 30 days or before approval of standard design, whichever is earlier.

5. The license is valid up to 08.09.2027.

Place: Chandigarh
Dated: 09.09.2022.

(T.L. Satyaprakash, IAS)
Director General,
Town & Country Planning
Haryana, Chandigarh

Endst.No.LC-4719-JE (SK)-2022/ 27856 Dated: 13-09-2022

A copy along with a copy of schedule of land is forwarded to the following for information and necessary action:-

1. DLF Home Developers Ltd., 1st floor, Gateway Tower, R-Block, DLF City, Phase-III, Gurugram-122002 alongwith copies of agreement/ bilateral agreement, schedule of land and Layout plan.
2. Chairman, Pollution Control Board, Haryana, Sector-6, Panchkula.
3. Chief Administrator, HSVP, Panchkula.
4. Chief Administrator, Housing Board, Panchkula alongwith copy of agreement.
5. Managing Director, HVPN, Planning Directorate, Shakti Bhawan, Sector-6, Panchkula.
6. Joint Director, Environment Haryana-Cum-Secretary, SEAC, Paryavaran Bhawan, Sector -2, Panchkula.
7. Addl. Director Urban Estates, Haryana, Panchkula.
8. Administrator, HSVP, Gurugram.
9. Chief Engineer, HSVP, Gurugram.
10. Superintending Engineer, HSVP, Gurugram along with a copy of agreement.
11. Land Acquisition Officer, Gurugram.
12. Senior Town Planner, Gurugram alongwith approved layout plan.

13. Senior Town Planner (E&V), Haryana, Chandigarh.
14. District Town Planner, Gurugram alongwith a copy of agreement and approved layout plan.
15. District Town Planner (Enf.), Gurugram.
16. Chief Accounts Officer, O/o DTCP, Haryana alongwith a copy of agreement.
17. Nodal Officer (website), O/o DTCP, Haryana.

(Parveen Kumar)
District Town Planner (HQ)
For Director General, Town & Country Planning
Haryana, Chandigarh

To be read with License no. 139 dated 09/09 of 2022

Detail of land owned by DLF Home Developers Ltd.

Village	Rect. No.	Killa No.	Area (K-M)
Begumpur Khatola	39	19/3	0-3
		20	8-0
	40	16/1	1-0
		16/2/1	5-12
		24/2/2	1-2
		25	8-0
		Total	**23-17**
			Or 2.98125 acres

Director,
Town & Country Planning
Haryana

PROJECT REPORT/ESTIMATE FOR PROVIDING EXTERNAL SERVICES, eg., WATER SUPPLY, SEWERAGE, STORM WATER DRAINAGE, ETC. IN RESPECT OF PROPOSED COMMERCIAL (SCO), SECTOR 73 (2.98125 ACRES) GURUGRAM

REPORT

The proposed project is for Plotted Commercial (SCO) at Gurgaon. Everyone knows the fact why Gurgaon is developing so fast, the main reason behind it is that the Gurgaon is hardly 25 to 30 KM away from Delhi. Being in the National Capital Region the Gurgaon town has fast developing tendency and potential, further Haryana Govt. has also started sharing the growing industrial/commercial load of Delhi and Faridabad. Keeping in view the above facts Haryana Govt, has decided to establish various sectors for Institutional, Group Housing, Mall Multiplex and Commercial Complex buildings in Gurgaon. The above-mentioned commercial colony project is being developed by DLF. Client is submitting the same for your reference and approval. This report and estimate is for area measuring approximately 2.98125 Acres.

WATER SUPPLY

The source of water supply shall be ~~HSVP~~/GMDA water supply connection, water supply shall be through and this water is potable. It has been proposed to construct underground tanks of capacity of Raw Water 22 KL (22 Kl x 1), Domestic treated water 22 KL (22 Kl x 1) and firefighting tanks 100 KL (100 x 1) no , and at location as per drawing for the purpose of domestic and fire protection. It has been proposed to construct underground tanks of capacity as per attached details and at location for domestic purpose. The underground tanks will be fed from ~~HSVP~~/GMDA supply, from there water will be pumped each Block using hydropneumatic pumps.

DESIGN:

The scheme has been designed for the population as given in attached sheets.

SEWERAGE SCHEME

Sewer line from proposed development will be connecting to proposed external Sewage Treatment Plant (Capacity 75 KLD) within the complex and excess water, if any, will be disposed off to proposed ~~HSVP~~/GMDA Master Sewer. The sewerage system has been marked on the respective plans.

Sewer lines have been designed for 3.0 times average D.W.F in relation to water supply demand. It has been assumed that about 80% of the domestic water supply shall find its way into the proposed sewer. Sewer lines shall be laid to a gradient maintaining minimum 2.46 ft/sec (0.72 m/sec) self cleaning velocity. Sewer line up to 250 mm dia has been designed to run half full and above 250 mm dia has been designed to run three fourth full at peak flow. Necessary provision for laying S.W pipe sewer line, construction of required number of manholes etc. have been made in the estimate. The sewer line has been designed as per Manning's formulae.
Necessary design statement for entire sewerage system has been prepared and attached with estimate.

STORM WATER DRAINAGE:

We are proposing to lay underground R.C.C pipe drains with required number of MANHOLE for disposal of storm water which will be connecting rain water harvesting system to recharge the aquifer and surplus storm water will be allowed to flow to the ~~HSVP~~ GMDA Master drain along the services road. The intensity of rain

fall has been taken as ¼" (6.25mm) per hour and storm water line has been designed as per Manning's formulae.

SPECIFICATIONS:

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

Roads:
Cost of road has been taken in the estimate.

Street Lighting:
Provision for streets lighting has been included.

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

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

Cost:
The total cost of the scheme, including cost of all services works out to be **Rs. ~~240 lakhs~~ 377.26 ~~(Rupees two crore forty lakh~~**) including 3% contingencies @ 49% departmental charges, price escalation, unforeseen & admin charges etc.

For **M/S DLF HOME DEVELOPERS LTD.**

Authorized signatory

DESIGN CALCULATION:

(i) Water requirement Chart

PROJECT- COMMERCIAL SCO'S SEC-73 (2.98125 ACRES)														
WATER CONSUMPTION SHEET														
												WATER FLOW IN STP		
S.NO.	DESCRIPTION	OCCUPENCY LOAD	F.A.R. (SQM)	POPULATION AS PER NBC-2016	TOTAL POPULA-TION	TOTAL WATER REQUIRED ACC. TO NBC	FLUSH WATER REQUIRED		DOMESTIC WATER REQUIRED		TOTAL GROSS WATER	FLUSHING - 100%	DOMESTIC - 80%	TOTAL WATER IN STP
							LPCD	LPD	LPCD	LPD		100%	80%	
A	SCO TYPE-A 15 NOS./SCO TYPE -B 10 NOS./ SCO TYPE C 15 NOS.													
1	GROUND		4220.79											
1.1	FLOATING POPULATION	3 SQM / PERSON X 90%		1266	1266	15	10	12660	5	6330	18990	12660	5064	17724
1.2	FIXED POPULATION	3 SQM / PERSON X 10%		141	141	45	20	2820	25	3525	6345	2820	2820	5640
2	1ST,2ND,3RD & 4TH FLOOR- TYPICAL FLOOR ON TYPE A,B,& C		13876.24											
2.1	FLOATING POPULATION	6 SQM / PERSON X 90%		2081	2081	15	10	20810	5	10405	31215	20810	8324	29134
2.2	FIXED POPULATION	6 SQM / PERSON X 10%		231	231	45	20	4620	25	5775	10395	4620	4620	9240
B	MAINTENANCE STAFF			ASSUMED	50	45	20	1000	25	1250	2250	1000	1000	2000
C	IRRIGATION WATER REQUIREMENT	6ltr/sqmt as per NBC-2016	1175	ASSUMED		6	6	7050	0	0	7050	0	0	0
	TOTAL				3769			48960		27285	76245	41910	21828	63738
	SAY IN KLD							49		27	76	42	22	64

(i) Total of domestic and flushing requirement = 69.15 KLD
SAY = **69.00 KLD**

Domestic requirement = 27.00 KLD
Flushing requirement = 42.00 KLD

STP Capacity @ 80% of total Domestic water requirement
And 100 % of total flushing water requirement = 64.00 KLD
SAY (Add 20% safety margin) = 13.00 KLD
= **64 + 13 = 77 KLD**
SAY = **75 KLD**

(ii) Horticulture water requirement (Organized Green) = **7.05 KLD, SAY = 7 KL**
(1175 sqm x 6ltr./sqm.)

TOTAL WATER DEMAND (i+ii) = **69+7 = 76 KLD**

SAY = **76.00 KLD**

(i) Fire Fighting requirement
As per NBC-2016 = 100 KL

SAY = **100 KL**

II. Summary of UGT & Source of water

(i) Domestic water (From Bore well / HSVP/GMDA) = 27.00 KLD
(ii) Flushing water (From STP) = 42.00 KLD
(iii) Horticulture (From STP) = 7.00 KLD
(iv) Fire fighting water tank = 100.00 KLD

Therefore it is proposed to construct under ground tank of Raw Water 22 KL (22 x1), domestic water 22 KL (22 x 1) and fire fighting tank 100 KL (100 x 1) no at location as per marked on site plan and flushing and garden irrigation water 50 KL (50 x1) tank located in STP.

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PUMPING SYSTEM FOR WATER SUPPLY:

(A)	**Total domestic water requirement**		=	**27 KL**
(i)	Pumping @ 6 hours / day		=	27/6 = 4500 L/hr
			=	75 lpm
		SAY	=	100 lpm
			=	100 lpm (1 w+1 s)

BOOSTING MACHINERY FOR DOMESTIC PUMP

(ii)	**Gross working head**			
(1)	Residual head		=	**15 meter**
(2)	Friction loss		=	**11.02 meter**
(3)	Static head required		=	**15 meter**
		TOTAL	=	41.02 meter
		SAY	=	50.00 meter

(vi) HP = $\frac{100 \times 50}{60 \times 75 \times 0.65}$ = 1.70 HP, SAY = 2 HP / pump

It is proposed to provide 2 Nos. pumps of 100 lpm @ 50 Mtr. Head (1Working + 1 Stand by) for Domestic Supply.

(B)	**Total flushing + Irrigation water requirement**		=	**50 KL**
(i)	Pumping @ 6 hours / day		=	50 / 6 = 8333 L/hr.
		SAY	=	138 lpm
		SAY	=	150 lpm
		OR	=	150 lpm (1W+1S)

BOOSTING MACHINERY FOR FLUSHING PUMP

(ii)	**Gross working head**			
(1)	Residual head		=	10 meter
(2)	Friction loss		=	23 meter
(3)	Static head required		=	15 meter
		TOTAL	=	48 meter
		SAY	=	50 meter

(vi) HP = $\frac{150 \times 50}{60 \times 75 \times 0.65}$ = 2.56 HP, SAY = 3 HP / pump

It is proposed to provide 2 Nos. pumps of 150 lpm @ 50 Mtr. Head (1 Working + 1 Stand by) for Flushing + Irrigation Supply.

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CAPACITY OF DG SETS.

S.NO.	EQUIPMENT	QTY	HP	Total HP
(1)	TRANSFER PUMPS (Domestic)	**2**	**2**	**4**
(2)	TRANSER PUMPS (Flushing+Irrigation)	**2**	**3**	**6**
	TOTAL			**10.0**
			***0.746**	***13.40* KW**
		SAY	***1.5**	**20.0 KVA**

PROPOSED - SCO, SEC-73 2.98125 ACRES GURUGRAM		
FINAL ABSTRACT OF COST		2.98125
S.NO	DESCRIPTIONS	AMOUNT (RS.)
PART - A		
SUB WORK NO. I	WATER SUPPLY & FIRE FIGHTING SCHEME	~~78.90~~ ~~73.00~~ 78.90
SUB WORK NO. II	SEWERAGE SYSTEM	~~15.85~~ ~~54.81~~ 57.10
SUB WORK NO.III	STORM WATER DRINAGE	~~13.01~~ ~~39.74~~ 56.10
TOTAL OF PART A		~~101.86~~ ~~166.6~~ 192.10
PART - B		
SUB WORK NO.IV	ROAD & FOOT PATHS	~~41.64~~ ~~32.79~~ 152.94
SUB WORK NO. V	PLANTATION & ROAD SIDE TREES	~~5.29~~ 8.46
TOTAL OF PART B		~~46.93~~ ~~41.2~~ 161.40
PART - C		
SUB WORK NO.VI	STREET LIGHTING	~~5.00~~ 11.43
SUB WORK NO. VII	MTC. CHARGES INCL RESURFACING OF ROADS AFTER 1st 5 YEARS AND 2nd YEAR OF MTC (AS PER HSVP NORMS)	~~88.11~~ 108.05
TOTAL OF PART C		~~93.11~~ 119.48
TOTAL OF A+B+C	(192.10+161.40+119.48)	~~241.90~~ ~~397.28~~ 472.98
TOTAL		~~241.90~~ ~~397.28~~
SAY IN LAKHS		~~242.00~~ 473.00 Lacs.
	~~1265~~	
Deviation of Cost	~~81.17~~	
Say	~~81.17~~ 2655	Lakhs Per Acre
	158.66 Lacs Per Acre.	

For M/S DLF HOME DEVELOPERS LTD.

Authorized signatory

Recommended for approval.

Executive Engineer-1 (EDC)
Gurugram Metropolitan Development Authority
Gurugram

Director General
Town & Country Planning
Haryana, Chandigarh

Checked subject to comments in forwarding letter No. 15075/2022 Dt. 30-09-2022 ...and notes attached with the estimate

Executive Engineer
Sew. Division No. II
GMDA, Gurugram

Chief Engineer,
(Infra-II), GMDA
Gurugram

DSP DESIGN CONSULTANTS

Executive Engineer-III
Drainage Division, GMI
Gurugram

Executive Engineer-I
W/S Division, GMDA
Gurugram

PROPOSED - SCO, SEC-73 2.98125 ACRES GURUGRAM			
SUB WORK No. 1	Water Supply & Fire Fighting scheme		
Sub Head No. 01	Water Supply & Fire Fighting Pumping Machinery	35.51 ~~30.00~~	37.04
Sub Head No. 02	Domestic Water distribution lines	16.26 ~~28.36~~	18.57
Sub Head No. 03	Rising Main From ~~HSVP~~/GMDA	4.60 ~~0.77~~	4.60
Sub Head No. 04	FIRE FIGHTING	7.18 ~~5.85~~	8.73
Sub Head No. 05	Flushing Water supply/Irrigation System	8.50 ~~4.87~~	9.96
TOTAL		72.05 ~~72.85~~	78.90
SAY (IN LAKHS)		~~73.00~~	

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PROPOSED - SCO, SEC-73 2.98125 ACRES GURUGRAM					
	Sub -Work No. 1 **Sub -Head No. 01**	**Water Supply Pumping Machinery**			
S.NO	**Description**	**Unit**	**Qty**	**Rate**	**Amount**
1	Provision for diesel engine generator set each for standby arrangements ~~for T.W~~. & Booster pump complete with 20 KVA capacities. @ Rs 10000 per KVA	LS	1	~~2,50,000.00~~ 2,00,000/-	~~2,50,000.00~~ 2,00,000/-
2	Providing Boosting pumps for the following.				
(a)	DOMESTIC PUMP				
(i)	100 lpm & S0 m Head (1 working+1 Standby)	Each	2	1,50,000.00	3,00,000.00
(b)	FLUSHING + IRRIGATION PUMP				
(i)	150 lpm & 50 m Head (1 working+1 Standby)	Each	2	1,75,000.00	3,50,000.00
3	Provision for chlorination plant complete.	Each	1	~~35,000.00~~ 100000	~~35,000.00~~ 100000
4	Provision for making foundations and erection of pumping machinery.	LS		1,00,000.00	1,00,000.00
5	Provision for pipes, valves and specials inside the pump chamber and boosting chamber.	LS		~~1,00,000.00~~ 300000/-	1,00,000.00 300000
6	Provision for elecric service connection including electrical fitting ~~for tube-well~~ and boositing chamber etc. (lumpsum) including cost of transfarmor.	LS		~~50,000.00~~ 100000	~~50,000.00~~ 105000
7	Provision for carriage of material and other unforeseen Items etc.	LS		~~50,000.00~~ 100000	~~50,000.00~~ 100000
8	UGT 144000 ltrs capacity compartments.	Ltrs	144000	~~5.00~~ 6000/KL	~~7,20,000.00~~ 864000/-
	Total Abstract of cost for Subwork No. 1				~~19,55,000.00~~ 24,14,000
	SAY IN LAKH				~~19.55~~ 24.14
	Add 3% contingencies & PH Charges				~~0.59~~ 0.72
	TOTAL				~~20.14~~ 24.86
	Add 49% Departmental charges, price escalation, unforeseen,				~~9.87~~ 12.18
	TOTAL				~~30.00~~ 37.04

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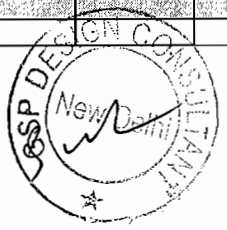
PROPOSED - SCO, SEC-73 2.98125 ACRES GURUGRAM						
	Sub -Work No. 1 Sub -Head No. 02	Domestic Water Distribution Lines.				
S .NO	Description	Unit	Qty	Rate	Amount	
1	Providing, laying, jointing and testing DI pipe lines including cost of excavation etc. complete in all respects.			1475	678500/-	
a	100 mm dia.	Mtr	460	~~2,350.00~~	~~10,81,000.00~~	
~~b~~	~~150 mm dia.~~	~~Mtr~~	~~0~~	~~2,500.00~~	-	
2	Providing, laying, jointing and testing DI pipe lines including cost of excavation etc. complete in all respects. from Mohr Cy MDA			1475	75225	
a	100 mm dia.	Mtr	51	~~1,650.00~~	~~84,150.00~~	
~~b~~	~~32 mm dia.~~	~~Mtr~~	~~0~~	~~590.00~~	-	
~~c~~	~~25 mm dia.~~	Mtr	~~530~~	~~550.00~~	2,91,500.00	
3	Providing and fixing sluice / Butterfly valve including cost of surface box and masonry chamber etc.completed in all respects.					
~~(a)~~	~~150 mm dia.~~	Each	~~0~~	11,500.00	-	
(b)	100 mm dia.	Each	7	10,500.00	73,500.00	
~~(c)~~	~~80 mm dia.~~	Each		~~9,000.00~~	-	
4	Providing and fixing ball valves including cost of surface boxes and masonry chambers etc. complete in all respect.					
~~a~~	~~20 mm dia.~~	LS				
~~b~~	~~25 mm dia.~~	LS				
C	32 mm dia.	LS			1,50,000.00	
5	Providing and fixing air valves and scour valves including cost of brick masonry chamber complete.	Each	5	6500/- ~~3,500.00~~	32500/- ~~17,500.00~~	
6	Provision of cutting of roads & making good to its original condition and carriage of material etc and other unforseen	LS			1,00,000.00	
7	Provision for carriage of material and other unforeseen Items etc.	LS		100000/- ~~50,000.00~~	100000/- ~~50,000.00~~	
	Total Abstract of cost for subwork No. 1			120975	~~18,47,650.00~~	10,59,795
	SAY IN LAKH			12.10	~~18.48~~	10.59
	Add 3% contingencies & PH Charges			0.363	~~0.55~~	0.31
	TOTAL			12.46	~~19.03~~	10.91
	Add 49% Departmental charges, price escalation, unforeseen,			6.11	~~9.33~~	5.35
	TOTAL			18.57	28.36	16.26

PROPOSED - SCO, SEC-73 2.98125 ACRES GURUGRAM					
	Sub -Work No. 1 Sub -Head No. 03	Rising Main From ~~HSVP~~/GMDA			
S .NO	Description	Unit	Qty	Rate	Amount
	& connection			3,00,000/-	
1	Provision for rising main from ~~HSVP~~/GMDA main to UGT	LS	1	~~50,000.00~~	3,00,000/- ~~50,000.00~~
					3,00,000/-
	Total Abstract of cost for subwork No. 1				~~50,000.00~~
	SAY IN LAKH				~~0.50~~ 3.00
	Add 3% contingencies & PH Charges				~~0.02~~ 0.09
	TOTAL				~~0.52~~ 3.09
	Add 49% Departmental charges, price escalation, unforeseen,				~~0.25~~ 1.51
	TOTAL				~~0.77~~ 4.60



PROPOSED - SCO, SEC-73 2.98125 ACRES GURUGRAM						
	Sub -Work No. 1 **Sub -Head No. 04**	**FIRE FIGHTING**				
1	Providing , Laying , jointing and testing ~~G.I.~~ D.I/MS pipes lines including cost of excavation etc. complete in all respect.			1475	258125	
(a)	~~150~~ 80 mm dia. Pipe.	M	175	~~1,500.00~~	~~2,62,500.00~~	
(b)	100 mm dia. Pipe.	M	0	~~1,950.00~~	-	
(c)	150 mm dia. Pipe.	M	0	~~2,535.00~~	-	
2	Providing and fixing external fire hydrants etc.	EACH	14	15000/- = 210,000/- 8,500.00	~~1,19,000.00~~	
3.	provision for carriage & indicating plate	L.S	1	1,00,000	1,00,000	
	Total Abstract of cost for Subwork No. 1			568125	~~3,81,500.00~~	468125
	SAY IN LAKH			5.69	~~3.82~~	4.68
	Add 3% contingencies & PH Charges			0.17	~~0.11~~	0.14
	TOTAL			5.86	~~3.93~~	4.82
	Add 49% Departmental charges, price escalation, unforeseen,			2.87	~~1.93~~	2.36
	TOTAL			8.72	~~5.85~~	7.18

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PROPOSED - SCO, SEC-73 2.98125 ACRES GURUGRAM					
	Sub -Work No. 1 **Sub -Head No. 05**		**Flushing Water supply/Irrigation System**		
S . NO	**Description**	**Unit**	**Qty**	**Rate**	**Amount**
1	Providing, Laying, Jointing and testing uPVC (6 kg/cm^2) pressure rating pipe line confirming to IS : 4985 including cost of excavation etc. complete in all respect. **(Flushing & Garden Hydrant Line)**				
(a)	25 mm dia	Meter	100	500 ~~250.00~~	50,000 ~~25,000.00~~
~~(b)~~	~~32 mm dia~~	~~Meter~~	~~0~~	~~350.00~~	-
~~(c)~~	~~40 mm dia~~	~~Meter~~	~~0~~	~~450.00~~	-
1A	Providing, laying, jointing and testing GI pipe lines including cost of excavation etc. complete in all respects.				
(a)	20 mm dia.	Mtr	0	450.00	-
(b)	25 mm dia.	Mtr	10	550.00	5,500.00
(c)	32 mm dia.	Mtr	100	590.00	59,000.00
(d)	40 mm dia.	Mtr	0	780.00	-
(e)	50 mm dia.	Mtr	90	1,020.00	91,800.00
(f)	65 mm dia.	Mtr	185	1300 ~~1,330.00~~	240,000/- ~~2,46,050.00~~
(g)	80 mm dia.	Mtr	0	1,650.00	-
(h)	100 mm dia.	Mtr	0	2,145.00	-
1B	In Provision for injection Hydrant Valve GM -	4NOS.	4	5000/-	20,000/-
3	Providing and fixing sluice / Butterfly valve including cost of surface box and masonry chamber etc.completed in all respects.				
(a)	80 mm dia.	Each	0	~~8,800.00~~	-
(b)	65 mm dia.	Each	5	10,000 ~~2,800.00~~	50,000/- ~~39,000.00~~
(c)	50 mm dia.	Each	1	6,500.00	6,500.00
3	Providing and fixing ball valves including cost of surface boxes and masonry chambers etc. complete in all respect.				
(a)	25 mm dia	Meter	4	550.00	2,200.00
(b)	32 mm dia	Meter	0	7~~80.00~~	-
				6500/-	32500/-
4	Providing and fixing air release valve	Each	5	~~3,500.00~~	17,500.00
5	Provision for carriage of Material and other unforeseen. Items.	LS		10,000.00	10,000.00
6	Provision of cutting of roads & making good to its original condition and carriage of material etc and other unforseen	LS			100 000 ~~10,000.00~~
	Total Abstract of cost for Subwork No. 1				~~5,12,550.00~~ 649500
	SAY IN LAKH				~~5.13~~ 6.49
	Add 3% contingencies & PH Charges				~~0.15~~ 0.19
	TOTAL				~~5.28~~ 6.68
					49% - 3.27
					Total - 9.96

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PROPOSED - SCO, SEC-73 2.98125 ACRES GURUGRAM					
	Add 49% Departmental charges, price escalation, unforeseen,				2.59
	TOTAL				7.87

PROPOSED - SCO, SEC-73 2.98125 ACRES GURUGRAM					
	Sub -Work No. II			Sewerage System	
S . NO	Description	Unit	Qty	Rate	Amount
1	Supplying, lowering, laying, jointing, testing and commissioning of glazed stoneware pipes grade "A" conforming to IS 651:1992 with latest amendements including conveying of pipe to worksite and caulking with hemp / yarn dipped in tar and jointing with C.M. 1:1perfect linking and curing for 10 days, and testing with water with all lead including cost of jointing materials as directed etc., complete.			2270	6,46,950
1.1	200 mm diameter	M	285	~~600.00~~	~~1,71,000.00~~
1.2	250 mm diameter	M	35	2430 ~~700.00~~	~~24,500.00~~ 85050
~~1.3~~	~~300 mm diameter~~ 280	M		~~850.00~~ 2270	~~1,36,000~~ 136200/-
1.4	~~300~~ 150 mm diameter (BRANCHES) (RCC)	M	60	~~500.00~~	~~30,000.00~~
2	Provision for lighting and watching.	LS		50,000 ~~25,000.00~~	50,000/- ~~25,000.00~~
3	Provision for providing oblique junction	LS		100000 ~~25,000.00~~	100000/- ~~25,000.00~~
4	Provision of making connection from ~~HSVP~~/GMDA	LS		3100,000 ~~30,000.00~~	3,00,000/- ~~30,000.00~~
				100000	100000
5	Providing of temporary timbering	LS		~~50,000.00~~	~~50,000.00~~
6	Providing STP of technology SBR/MBBR with Parameter BOD <10, CoD <50, TSS <10	KL	75	25000/- ~~3,500.00~~	1875,000/- ~~2,62,500.00~~
7	Provision for vent shafts at suitable places as per public health requirement	LS		1,00,000.00	1,00,000.00
8	Providing, laying, jointing and testing ~~of~~ pipe lines including cost of excavation etc. complete in all respects.			2270	2,27,000/-
(a)	200 mm dia.	Mtr	100	~~2,145.00~~	~~2,14,500.00~~
9	Provision of cutting of roads & making good to its original condition and carriage of material etc and other unforseen	LS			1,00,000.00
	Total Abstract of cost for Subwork No. II			372020	~~10,32,500.00~~ ~~359690~~
	SAY IN LAKH			37.20	~~10.33~~ ~~35.97~~
	Add 3% contingencies & PH Charges			1.12	~~0.31~~ 1.07
	TOTAL			38.32	~~10.63~~ 37.05
	Add 49% Departmental charges, price escalation, unforeseen,			18.77	~~5.21~~ 18.15
	TOTAL			57.09	~~15.85~~ 55.21

Say Rs. 57.10 lacs.

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PROPOSED - SCO, SEC-73 2.98125 ACRES GURUGRAM					
S .NO	Sub -Work No. III			Storm Water System	
S . NO	Description	Unit	Qty	Rate	Amount
1	Providing, lowering, laying & jointing RCC NP2 class pipes and specials into trenches including cost of excavation, cost of manholes etc. complete in all respects.				
(a)	250 mm dia.	M	80	2950 ~~550.00~~	2,36,000/- ~~44,000.00~~
(b)	400 mm dia.	M	630	2950 ~~700.00~~	~~4,41,000.00~~ 18585 00/-
(c)	~~450 mm~~ dia.	M	0	~~800.00~~	
(d)	500 mm dia.	M	~~1750~~	~~850.00~~	60,000/- ~~12,750.00~~
2	Provision for rainwater harvesting arrangements @ Rs. ~~1~~ 4.5 lac per acre for approximately 2.98125 acres by providing Recharging Well.	LS	2	4,50,000 ~~1,00,000.00~~	~~4,50,000/-~~ ~~2,00,000.00~~ 900 000/-
3	Provision of road gully chamber with pipe connection	LS		1000000/- ~~3,500.00~~	/- 100000/-
4	Provision for lighting and watching.	LS		1,00,000 ~~25,000.00~~	1,00,000 ~~25,000.00~~
5	Provision for connection with ~~HSVP~~/GMDA Storm water main line 1 no.	LS		~~25,000.00~~	3,00,000/- ~~25,000.00~~
6	Provision of cutting of roads & making good to its original condition and carriage of material etc and other unforseen	LS			~~1,00,000.00~~ 1,00,000
	Total Abstract of cost for Subwork No. III			3654500/-	~~8,47,750.00~~ ~~3,20,4500~~
	SAY IN LAKH			36.55	~~8.48~~ ~~32.64~~
	Add 3% contingencies & PH Charges			1.10	~~0.25~~ ~~8.96~~
	TOTAL			37.65	~~8.73~~ ~~33.00~~
	Add 49% Departmental charges, price escalation, unforeseen,			18.45	~~4.28~~ ~~16.17~~
	TOTAL			56.10	~~13.01~~ ~~49.17~~

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PROPOSED - SCO, SEC-73 2.98125 ACRES GURUGRAM					
S .NO	Sub -Work No.IV			Roads and Footpaths	
	ROAD NAME		Length (M)	Metalled portion	Area in sqmt.
(a)	6 M WIDE		485.0	4.00	1,940.00
(b)	8 M WIDE		145.0	4.50	652.50
(c)	12 M WIDE		129.0	7.50	967.50
(d)	Total Length of Road		759.0		3,560.00
	Total Area of Road =			3,560.00	m2
	Add 5% for curve =			178.00	m2
	Total Area			3,738.00	m2
	SAY			3,738.00	m2
	Kerb and Channels:	759.0	5% curves	37.95	796.95

S .NO	Description	Unit	Qty	Rate	Amount
1	Provision for leveling and earth filling as Per site condition.	Acre	2.98125	~~1,50,000.00~~ 175000	521718.75 ~~4,47,187.50~~
1	The necessary provision for construction of roads parking etc has beeb made in the estimate according to the HSVP/GMDA norms the follwing specification has been proposed. 250 mm G.S.B + 250 mm WMM				
2	Constriction of roads by providing granular sub base ~~300 mm~~ as per MORT & H specs conforming to clause 401 grading -I/ 400.1				
(I)	Providing and laying spreading & compacting hand broken/ crushed stone aggregate to wet mix conforming to physical requirement laid in 400 of MORT & H specification n in two layers (Compacting to 250mm (125+125mm) by taking material 1:32 times of the (thickness of the layer) including premixing of material with water in mechanical mixer.				
(II)	50mm thick ~~B.M~~ DBM with 30 mm				
(III)	~~20mm thick mix seal surfacing~~ BC			1500	5,607,000/-
(IV)	Sqm		3738.00	~~450.00~~	~~16,82,100.00~~
3	Provision for kerbs and channels		1592	600	955200/-
(a)	Metre 796x2 = 1592 RM		~~796.95~~	~~250.00~~	~~1,99,237.50~~
4	Provision of guide maps and indicators	LS		~~20,000.00~~ 50000	~~20,000.00~~ 50000
5	Provision of foot path on 8m wide road on both side	LS	2277 Sq mtr	~~1,00,000.00~~ 1000	~~1,00,000.00~~ 2277000/-
6	Provision for plot indicators	LS		~~10,000.00~~ 2500	~~10,000.00~~ 25000
7	provision for demarcating burgees	LS		30,000.00	30,000.00

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PROPOSED - SCO, SEC-73 2.98125 ACRES GURUGRAM					
8	Provision for traffic arrangement	LS		1,00,000.00	1,00,000.00
9	Provision for making approach and pavement to building.	LS		~~1,00,000.00~~ 300000	~~1,00,000.00~~ 300000
10	Provision for carriage of materials & other unforeseen Items.	LS		~~25,000.00~~ 100000	~~25,000.00~~ 100000
	Total Abstract of cost for Subwork No. IV				~~27,13,525.00~~ 9965918.75
	SAY IN LAKHS				~~27.14~~ 99.65
	Add 3% contingencies & PH Charges				~~8.81~~ 2.98
	TOTAL				~~27.95~~ 102.64
	Add 49% Departmental charges, price escalation, unforeseen,				~~13.70~~ 50.29
	TOTAL				~~41.64~~ 152.94

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PROPOSED - SCO, SEC-73 2.98125 ACRES GURUGRAM						
	Sub -Work No.V		**Plantation and road side trees**			
	Description	**Unit**	**Qty**	**Rate**	**Amount**	
S .NO	**Development of lawn area**					
1	Trenching the ordinary soil up to dept of 60cm including removal and stacking serviceable material and disposing of by spreading and leveling within a lead of 50m and making up the trenches area to proper leads by filling with earth mixed with manure before and after flooding trench with water including cost of imported earth and manure.					
(a)	Rough dressing of turfed area					
(b)	Grassing with "Doob Grass" including watering and IV. Maintenance of lawns for 30 days till the grass forms a thick lawn, free from weeds and fit for moving in rows 7.5 m Apart in either direction 2.98125 @ ~~100000~~ 150,000/- per acre.	Acre	2.98	150,000/- ~~1,00,000~~.00	447000/- ~~2,98,125~~.00	
(c)	Providing tress, guards and planting tress along road at 12 m interval Total road length = 700Mtr. No of Tress = 700/12) = 58.33 Say = 58Nos. **Cost Analysis of Planting Trees** Excavation = 50.00 each Manure = 50.00 each Tree plants = 200.00 each Tree guards = 500.00 each Total Cost = Rs. 800.00 per tree	Each	58	1800 ~~800.00~~	104400/- ~~46,400.00~~	
2	**Total Abstract of cost for Subwork No. VI**				~~3,44,525.00~~	551400
	SAY IN LAKHS				3.45	5.51
	Add 3% contingencies & PH Charges				0.10	0.16
	TOTAL				3.55	5.67
	Add 49% Departmental charges, price escalation, unforeseen,				1.74	2.78
	TOTAL				5.29	8.46

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PROPOSED - SCO, SEC-73 2.98125 ACRES GURUGRAM					
S .NO	Sub -Work No.VI				Street Lighting
	Description	Unit	Qty	Rate	Amount
1	Providing Street lighting on roads as per standard specification of HVPN.			250,000/-	745312.5/-
(a)	Acre		2.98125	~~1,00,000.00~~	~~2,98,125.00~~
	Total Abstract of cost for Subwork No. V				2,98,125.00
	SAY IN LAKHS				~~2.98~~ 7.45
	Add 3% contingencies & PH Charges				0.09 0.22
	TOTAL				3.07 7.67
	Add 49% Departmental charges, price escalation, unforeseen,				1.50 3.76
	TOTAL				4.58 11.43
	SAY IN LAKHS				5.00

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PROPOSED - SCO, SEC-73 2.98125 ACRES GURUGRAM					
	Sub -Work No. VII		**MTC. Charges & Resurfacing of Roads**		
S.NO	**Description**	**Unit**	**Qty**	**Rate**	**Amount**
1	Provision for MTC charges for water supply, sewerage, storm water drainage, roads, street light and horticulture complete in all respects.			750,000/-	2235137.5/- 2235937.5/-
1.1	Acres		2.98125	~~3,00,000.00~~	~~8,94,375.00~~
2	Resurfacing of roads after Ist 5 Yrs, 50mm thick B.M & 25 mm thick P. carpet.			600	9136000/-
(a)	Sqm	Sqm	3,560.00	~~400.00~~	~~14,24,000.00~~
3	Provision for resurfacing of roads after 10 yrs. by providing 25mm thick premire carpet.			750/-	2670000/-
(a)	Sqm	Sqm	3,560.00	~~450.00~~	~~16,02,000.00~~
	Total Abstract of cost for Subwork No. VII				~~39,70,375.00~~ 7041937.5
	SAY IN LAKHS				~~39.70~~ 70.41
	Add 3% contingencies & PH Charges				~~1.18~~ 2.11
	TOTAL				~~40.88~~ 72.53
	Add 49% Departmental charges, price escalation, unforeseen,				~~19.79~~ 35.54
	TOTAL				~~60.17~~ 108.05
	SAY IN LAKHS				~~88.11~~

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PROJECT- COMMERCIAL SCO'S SEC- 73 (2.98125 ACRES)

WATER CONSUMPTION SHEET

S.NO.	DESCRIPTION	OCCUPENCY LOAD	F.A.R. (SQM)	POPULATION AS PER NBC-2016	TOTAL POPULA-TION	TOTAL WATER REQUIRED ACC. TO NBC	FLUSH WATER REQUIRED		DOMESTIC WATER REQUIRED		TOTAL GROSS WATER	WATER FLOW IN STP		
							LPCD	LPD	LPCD	LPD		FLUSHING - 100%	DOMESTIC - 80%	TOTAL WATER IN STP
A	SCO TYPE-A 15 NOS./SCO TYPE -B 10 NOS./ SCO TYPE C 15 NOS.											100%	80%	
1	GROUND		4220.79											
1.1	FLOATING POPULATION	3 SQM / PERSON X 90%		1266	1266	15	10	12660	5	6330	18990	12660	5064	17724
1.2	FIXED POPULATION	3 SQM / PERSON X 10%		141	141	45	20	2820	25	3525	6345	2820	2820	5640
2	1ST,2ND,3RD & 4TH FLOOR- TYPICAL FLOOR ON TYPE A,B,& C		13876.24											
2.1	FLOATING POPULATION	6 SQM / PERSON X 90%		2081	2081	15	10	20810	5	10405	31215	20810	8324	29134
2.2	FIXED POPULATION	6 SQM / PERSON X 10%		231	231	45	20	4620	25	5775	10395	4620	4620	9240
B	MAINTENANCE STAFF			ASSUMED	50	45	20	1000	25	1250	2250	1000	1000	2000
C	IRRIGATION WATER REQUIREMENT	6ltr/sqmt as per NBC-2016	1175	ASSUMED		6	6	7050	0	0	7050	0	0	0
	TOTAL				3769			48960		27285	76245	41910	21828	63738
	SAY IN KLD							49		27	76	42	22	64

	UGT REQUIREMENT				
a.	STP Required			64	KLD
b.	Add 20% safety margin			13	KLD
				76	
	SAY			75	KLD
A	Fire Water Tank			100	KLD
B	Domestic water Tank			22	KLD
C	Raw water Tank			22	KLD
D	Flushing+Irrigation water Tank			50	KLD

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COMMERCIAL SCO'S SEC-73, 2.98125 ACRES								
S. No.	Reference Line		Dia of pipe	Length of Pipe	DIA OF PIPE (D.I PIPE)	DIA OF PIPE (D.I PIPE)	DIA. OF PIPE (G.I PIPE) FOR VERTICAL CONNECTION TO SHOPS	
			(mm)	(m)	100 mm	150 mm	25 mm	32 mm
	TO	FROM						
1	D1	D2	100	83.9	84	-		
2	D2	D3	100	21.6	22	-		
3	D3	D9	100	48.9	49	-		
4	D4	D8	100	64.0	64	-		
5	D5	D6	100	68.8	69	-		
6	D6	D7	100	15.0	15	-		
7	D7	D8	100	46.0	46	-		
8	D8	D9	100	28.0	28	-		
9	D9	D10	100	30.0	30	-		
10	D10	D11	100	41.5	42	-		
11	D11	UGT	100	9.0	9	-		
	TOTAL			457	457	0	525	0
	SAY			460	460	0	530	0
HSVP/GMDA LINE			100 MM	51				

COMMERCIAL SCO'S SEC-73, 2.98125 ACRES

DESIGN CALCULATION FOR DOMESTIC WATER SYSTEM

S. NO.	Reference line		Number of plot			Popul. (Total No of Persons)		Total Requirement	Total Water Requirement.	DIA.	Velocity	Length of Line	(S) Slope of pipe	Head Loss for line Length	Fitting Loss @ 10% of pipe length	Total Head Loss	CUMMULATIVE
Head loss is calculated for the farthest and highest point on water supply line i.e. for A-01 from pump room.																	
	FROM	TO	TOTAL	LESS	NET	FIXED	FLOAT.	(In LPD)	(In LPM)	(In MM)	m/sec	(In Mtr)	(In m/m)	(In Mtr)	(In Mtr)	(In Mtr)	(In Mtr)
1	UGT	D11	40	0	40	422	3347	27285	76	100	1.5	9.0	0.042	0.38	0.038	0.42	0.42
2	D11	D10	40	0	40	422	3347	27285	76	100	1.5	41.5	0.042	1.74	0.174	1.92	2.33
3	D10	D9	40	0	40	422	3347	27285	76	100	1.5	30.3	0.042	1.27	0.127	1.40	3.73
4	D9	D8	40	15	25	308	2319	19295	54	100	1.5	28.0	0.042	1.18	0.118	1.29	5.02
5	D8	D7	25	13	12	195	1500	12375	34	100	1.5	46.0	0.042	1.93	0.193	2.12	7.15
6	D7	D6	12	0	12	195	1500	12375	34	100	1.5	15.0	0.042	0.63	0.063	0.69	7.84
7	D6	D5	12	0	12	195	1500	12375	34	100	1.5	68.8	0.042	2.89	0.289	3.18	11.02
Line-UGT to B-10																	
1	UGT	D11	40	0	40	422	3347	27285	76	100	1.5	9.0	0.042	0.38	0.038	0.42	0.42
2	D11	D10	40	0	40	422	3347	27285	76	100	1.5	41.5	0.042	1.74	0.174	1.92	2.33
3	D10	D9	40	0	40	422	3347	27285	76	100	1.5	30.3	0.042	1.27	0.127	1.40	3.73
4	D9	D8	40	15	25	308	2319	19295	54	100	1.5	28.0	0.042	1.18	0.118	1.29	5.02
5	D8	D4	25	15	10	77	699	5420	15	100	1.5	64.0	0.042	2.69	0.269	2.96	7.98
Line-UGT to C-01																	
1	UGT	D11	40	0	40	422	3347	27285	76	100	1.5	9.0	0.042	0.38	0.038	0.42	0.42
2	D11	D10	40	0	40	422	3347	27285	76	100	1.5	41.5	0.042	1.74	0.174	1.92	2.33
3	D10	D9	40	0	40	422	3347	27285	76	100	1.5	30.3	0.042	1.27	0.127	1.40	3.73
4	D9	D3	40	25	15	114	1028	7990	22	100	1.5	48.9	0.042	2.05	0.205	2.26	5.99
5	D3	D2	15	0	15	114	1028	7990	22	100	1.5	21.6	0.042	0.91	0.091	1.00	6.99
6	D2	D1	15	0	15	114	1028	7990	22	100	1.5	83.9	0.042	3.52	0.352	3.87	10.86

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COMMERCIAL SCO'S SEC-73, (2.98125 ACRES) MATERIAL STATEMENT OF FLUSHING WATER LINE											
S. No.	Reference Line		Dia of pipe	Length of Pipe		Length of line In(m) (GI Pipe)					
	To	From	(mm)	(m)	100 mm	80 mm	65 mm	50 mm	40 mm	32 mm	25 mm
1	F1	F2	50	87.9	-	-	-	88	-	-	-
2	F2	F3	65	33.2	-	-	33	-	-	-	-
3	F3	F4	65	16.3	-	-	16	-	-	-	-
4	F4	F5	65	16.2	-	-	16	-	-	-	-
5	F5	F7	65	65.4	-	-	65	-	-	-	-
6	F6	F7	32	15.5	-	-	-	-	-	16	-
7	F7	F10	65	48.0	-	-	48	-	-	-	-
8	F8	F9	32	69.4	-	-	-	-	-	69	-
9	F9	F10	32	12.5	-	-	-	-	-	13	-
10	F10	STP	65	3.1	-	-	3	-	-	-	-
	TOTAL			368	0	0	182	88	0	97	0
	SAY			370	0	0	185	90	0	100	0

COMMERCIAL SCO'S SEC-73, (2.98125 ACRES)

DESIGN CALCULATION FOR FLUSHING WATER SYSTEM

S. NO	Reference line		Number of Plot			TOTAL POPULATION(In Nos)		Total Water Requirement	Total Water Requirement	DIA	Velocity	Length of Line	(S) Slope of pipe	Head Loss for line Length	Fitting Loss @ 10% of pipe length	Total Head Loss	cumulative head loss
	From	To	Total	Less	Net	Fixed	Float.	(In LPD)	(In LPM)	(In MM)	m/sec	(In Mtr)	(In m/m)	(In Mtr)	(In Mtr)	(In Mtr)	(In Mtr)
Head loss is calculated for the farthest point on water supply line i.e. for C-01 from STP.																	
1	STP	F10	40	0	40	422	3347	41910	116	65	1.5	3.1	0.069	0.22	0.022	0.237	0.237
2	F10	F7	40	7	33	338	2598	32740	91	65	1.5	48.0	0.069	3.33	0.333	3.664	3.901
3	F7	F5	33	8	25	242	1742	22260	62	65	1.5	65.4	0.069	4.54	0.454	4.992	8.893
4	F5	F4	25	10	15	172	1052	13960	39	65	1.5	16.2	0.069	1.12	0.112	1.237	10.130
5	F4	F3	15	0	15	172	1052	13960	39	65	1.5	16.3	0.069	1.13	0.113	1.244	11.374
6	F3	F2	15	0	15	172	1052	13960	39	65	1.5	33.2	0.069	2.30	0.230	2.534	13.909
7	F2	F1	15	0	15	172	1052	13960	39	50	1.5	87.9	0.094	8.28	0.828	9.113	23.022
Line from STP to A16																	
8	STP	F10	40	0	40	422	3347	41910	116	65	1.5	3.1	0.069	0.22	0.022	0.237	0.237
9	F10	F7	40	7	33	338	2598	32740	91	65	1.5	48.0	0.069	3.33	0.333	3.664	3.901
10	F7	F6	33	30	3	36	321	3930	11	32	1.5	15.5	0.159	2.46	0.246	2.705	6.606
Line from STP to A01																	
11	STP	F10	40	0	40	422	3347	41910	116	65	1.5	3.1	0.069	0.22	0.022	0.237	0.237
12	F10	F9	40	33	7	84	749	9170	25	32	1.5	12.5	0.159	1.98	0.198	2.181	2.418
13	F9	F8	7	0	7	84	749	9170	25	32	1.5	69.4	0.159	11.01	1.101	12.110	14.528

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SCO'S COMMERCIAL SECTOR-73, 2.98125 ACRE

MATERIAL STATEMENT OF SEWER WATER LINES

S.No.	Sewer Line No.		Dia of Pipe (mm)	Length of pipe	Length of line In mtr.		
					150 mm	200 mm	250 mm
	FROM	TO			SW Pipe	SW Pipe	SW Pipe
1	S1	S2	200	89.7	-	89.7	-
2	S2	S3	200	33.3	-	33.3	-
3	S3	S4	200	15.8	-	15.8	-
4	S4	S5	200	18.1	-	18.1	-
5	S5	S7	200	66.6	-	66.6	-
6	S6	S7	200	13.9	-	13.9	-
7	S7	S10	250	28.5	-	-	28.5
8	S8	S9	200	32.9	-	32.9	-
9	S9	S10	200	13.6	-	13.6	-
10	S10	STP	250	2.5	-	-	2.5
TOTAL				**315**	**0**	**284**	**31**
AND TOTAL				**320**	**0**	**285**	**35**
Bracnh Pipe		250MM DIA	=	60			
STP Overflow Line		200MM DIA	=	100			

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SCO'S COMMERCIAL SECTOR-73, 2.98125 ACRE
DESIGN CALCULATION FOR SEWERAGE LINE

S.No.	sewerage Line No.		Length(m)	Design of Sewerage System				Population		Sewage flow @ 80%LPCD	Peak Flow(lpd)	Peak Flow	Pipe Size (mm)	Slope (1 in)	Velocity (m/s)	Capacity of pipe (lps)	Fall (m)	Ground Level(m)		Invert Level(m)		q/Q	va/v	Actual velocity(va)	d/D	Depth(m)		Remarks
	From	To		Self	Prev. plots	Total	Other	Fixed	Floating			(lps)		1 in				Start	End	Start	End					Start	End	
1	S1	S2	89.7	15	0	15	STAFF-10	124	1028	16816	50446.8	0.584	200	150	0.923	14.512	0.598	225.50	225.50	224.00	223.40	0.020	0.400	0.369	0.100	1.50	2.10	IL
2	S2	S3	33.3	0	15	15	STAFF-15	139	1028	17356	52066.8	0.603	200	150	0.923	14.512	0.222	225.50	225.50	223.40	223.18	0.020	0.400	0.369	0.100	2.10	2.32	IL
3	S3	S4	15.8	0	15	15		139	1028	17356	52066.8	0.603	200	150	0.923	14.512	0.105	225.50	225.50	223.18	223.07	0.020	0.400	0.369	0.100	2.32	2.43	IL
4	S4	S5	18.1	0	15	15		139	1028	17356	52066.8	0.603	200	150	0.923	14.512	0.121	225.50	225.50	223.07	222.95	0.020	0.400	0.369	0.100	2.43	2.55	IL
5	S5	S7	66.6	10	15	25	STAFF-15	232	1728	29087	87260.4	1.010	200	150	0.923	14.512	0.444	225.50	225.40	222.95	222.51	0.030	0.460	0.425	0.130	2.55	2.89	IL
6	S6	S7	13.9	3	0	3		36	324	5183	15549.84	0.180	200	150	0.923	14.512	0.093	225.50	225.40	224.00	223.91	0.010	0.300	0.277	0.070	1.50	1.49	CL
7	S7	S10	28.5	5	28	33		328	2592	42909	128726.64	1.490	250	200	0.928	22.786	0.143	225.10	225.10	222.51	222.37	0.030	0.460	0.427	0.130	2.59	2.73	IL
8	S8	S9	32.9	7	0	7		84	756	12094	36282.96	0.420	200	150	0.923	14.512	0.219	225.50	225.50	224.00	223.78	0.010	0.300	0.277	0.070	1.50	1.72	IL
9	S9	S10	13.6	7	0	7	STAFF-10	94	756	12454	37362.96	0.432	200	150	0.923	14.512	0.091	225.50	225.50	223.78	223.69	0.010	0.300	0.277	0.070	1.72	1.81	CL
10	S10	STP	2.5	0	40	40		422	3348	55363	166089.6	1.922	250	200	0.928	22.786	0.013	225.50	225.50	222.37	222.36	0.040	0.510	0.473	0.150	3.13	3.15	CL

SCO'S COMMERCIAL SEC-73, 2.98125 ACRES

MATERIAL STATEMENT OF STORM WATER LINES

S.No	Line No.		Dia of Pipe (mm)	Length of pipe	Length of line In mtr.		
	FROM	TOTAL			400 mm	450 mm	500 mm
1	SW1	SW2	400	90	90		
2	SW2	SW7	400	31	31		
3	SW3	SW6	400	46	46		
4	SW4	SW5	400	69	69		
5	SW6	SW7	400	53	53		
6	SW7	RWH2	400	12	12		
7	SW8	SW9	400	49	49		
8	SW9	SW10	400	71	71		
9	SW10	RWH-1	400	8	8		
10	RWH-1	SW-13	400	26	26	-	
11	SW11	SW-12	400	46	46	-	
12	SW-12	SW-13	400	37	37	-	-
13	SW13	RWH-2	400	42	42	-	-
14	RWH-2	EXT. DRAIN	500	15	-		15
		TOTAL		**592**	**577**	**0**	**15**
		SAY	400 MM	**595**	**580**	**0**	**15**
~~**BRANCH PIPE**~~			~~250 MM~~	80			
			400 MM	50			

400 MM ø Total = 580 + 50 = 630 M/r.

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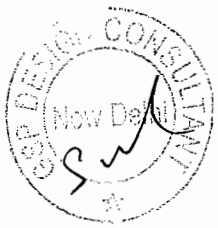
SCO'S COMMERCIAL SEC-73, 2.98125 ACRES

DESIGN CALCULATION FOR STORM LINE

SL. NO.	NAME OF THE LINE		AREA TO BE SERVED IN ACRES			DISCHARGE @ 1/4" RAIN FALL	FINAL DISCHARGE	SIZE OF PIPE DRAIN (IN MM)	VELOCITY	DISCHARGE CAPACITY OF PIPE	Check	LENGTH OF PIPE	SLOPE	FALL IN MET-ERS	GROUND LEVEL		INVERT LEVEL		DEPTH OF PIPE AT		AVERAGE DEPTH OF PIPE	REMARKS
	FROM	TO	SELF	PREVIOUS	TOTAL	6.25MM/HR								As per pipe slope	U/End	L/End	U/End	L/End	U/End	L/End		
						(InM3/sec)	(In LPS)	(In mm)	(In m/sec)	(In LPS)		(In mtrs.)	(In mtrs.)	(In mtrs.)	(In mtrs.)	(In mtrs.)	(In mtrs.)	(In mtrs.)	(In mtrs.)	(In mtrs.)	(in mts)	
1	SW1	SW2	0.61	0.00	0.61	0.00431	4.3	400	0.78	98.21	OK	90.3	450	0.201	225.50	225.21	224.300	224.099	1.20	1.111	1.16	IL
2	SW2	SW7	0.03	0.61	0.65	0.00453	4.5	400	0.78	98.21	OK	30.6	450	0.068	225.21	225.30	224.099	224.031	1.11	1.269	1.19	CL
3	SW3	SW6	0.31	0.00	0.31	0.00220	2.2	400	0.78	98.21	OK	45.7	450	0.102	225.50	225.35	224.300	224.198	1.20	1.152	1.18	IL
4	SW4	SW5	0.36	0.00	0.36	0.00256	2.6	400	0.78	98.21	OK	68.5	450	0.152	225.50	225.40	224.300	224.148	1.20	1.252	1.23	IL
4	SW5	SW6	0.04	0.36	0.40	0.00282	2.8	400	0.78	98.21	OK	23.1	450	0.051	225.40	225.35	224.148	224.096	1.25	1.254	1.25	IL
5	SW6	SW7	0.12	0.71	0.84	0.00588	5.9	400	0.78	98.21	OK	52.5	450	0.117	225.35	225.30	224.096	223.980	1.25	1.320	1.29	IL
6	SW7	RWH2	0.05	1.48	1.54	0.01079	10.8	400	0.78	98.21	OK	11.7	450	0.026	225.30	225.30	223.980	223.954	1.32	1.346	1.33	IL
7	SW8	SW9	0.38	0.00	0.38	0.00268	2.7	400	0.78	98.21	OK	49.3	450	0.110	225.50	225.50	224.300	224.190	1.20	1.310	1.25	IL
8	SW9	SW10	0.31	0.38	0.69	0.00485	4.8	400	0.78	98.21	OK	71.0	450	0.158	225.50	225.50	224.190	224.033	1.31	1.467	1.39	IL
9	SW10	RWH-1	0.02	0.69	0.71	0.00502	5.0	400	0.78	98.21	OK	7.7	450	0.017	225.50	225.50	224.033	224.016	1.47	1.484	1.48	IL
10	RWH-1	SW-13	0.00	0.71	0.71	0.00502	5.0	400	0.78	98.21	OK	25.7	450	0.057	225.50	225.50	224.016	223.958	1.48	1.542	1.51	IL
11	SW11	SW-12	0.46	0.00	0.46	0.00320	3.2	400	0.78	98.21	OK	45.7	450	0.102	225.50	225.50	224.300	224.198	1.20	1.302	1.25	IL
12	SW-12	SW-13	0.00	0.46	0.46	0.00320	3.2	400	0.78	98.21	OK	36.5	450	0.081	225.50	225.50	224.198	224.117	1.30	1.383	1.34	CL
13	SW13	RWH-2	0.28	1.17	1.45	0.01015	10.2	400	0.78	98.21	OK	41.6	450	0.092	225.50	225.50	224.117	224.025	1.38	1.475	1.43	CL
14	RWH-2	EXT. DRAIN	0.00	2.98	2.98	0.02094	20.9	500	0.82	161.07	OK	15.3	550	0.028	225.50	225.00	223.954	223.926	1.55	1.074	1.31	CL

PROJECT : SCO'S COMMERCIAL SEC-73, (2.98125 ACRES) MATERIAL STATEMENT OF EXTERNAL FIRE HYDRANT					
S. No.	Reference Line	Dia of Pipe	Pipe Length (m)	Length of line In mtr. (GI PIPE)	
				~~80 mm~~ 100M	100 mm
1	EFH-01 TO DOMESTIC LINE	80	34	34	-
2	EFH-02 TO DOMESTIC LINE	80	10	10	-
3	EFH-03 TO DOMESTIC LINE	80	18	18	-
4	EFH-04 TO DOMESTIC LINE	80	7	7	-
5	EFH-05 TO DOMESTIC LINE	80	5	5	-
6	EFH-06 TO DOMESTIC LINE	80	27	27	-
7	EFH-07 TO DOMESTIC LINE	80	7	7	-
8	EFH-08 TO DOMESTIC LINE	80	7	7	-
9	EFH-09 TO DOMESTIC LINE	80	7	7	-
10	EFH-10 TO DOMESTIC LINE	80	7	7	-
11	EFH-11 TO DOMESTIC LINE	80	22	22	-
12	EFH-12 TO DOMESTIC LINE	80	7	7	-
13	EFH-13 TO DOMESTIC LINE	80	7	7	-
14	EFH-14 TO DOMESTIC LINE	80	7	7	-
	TOTAL		171.5	171.5	0.0
	SAY		175.0	175.0	0.0
	EFH	**14**			



PROJECT:- COMMERCIAL SCO SEC-73,(2.98125 ACRES)								
MATERIAL STATEMENT FOR ROAD								
S. No.	Road Name (m)		Road Length (m)	6 M WIDE	8 M WIDE	12 M WIDE	Metal Portion (m)	Area (sqm)
	FROM	TO						
1	R1	R2	107.11	107.11			4	428.4
2	R2	R3	53.99	53.99			4	216.0
3	R3	R4	62.95	62.95			4	251.8
4	R5	R6	80.30	80.30			4	321.2
5	R7	R8	85.17	85.17			4	340.7
6	R9	R10	52.86	52.86			4	211.4
7	R10	R11	40.93	40.93			4	163.7
8	R12	R13	95.71		95.71		4.5	430.7
9	R14	R15	11.95		11.95		4.5	53.8
10	R15	R16	12.24		12.24		4.5	55.1
11	R16	R17	11.95		11.95		4.5	53.8
11	R14	R17	12.24		12.24		4.5	55.1
12	R18	R19	128.50			129	7.5	963.8
Total Length			**755.90**	**483.31**	**144.09**	**128.50**		**3545.40**
SAY			**759**	**485**	**145**	**129**		**3550**

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PROJECT:- COMMERCIAL SCO SEC-73,(2.98125 ACRES) MATERIAL STATEMENT FOR ROAD								
S. No.	Road Name (m)		Road Length (m)	6 M WIDE	8 M WIDE	12 M WIDE	Metal Portion (m)	Area (sqm)
	FROM	TO						
1	R1	R2	107.11	107.11			4	428.4
2	R2	R3	53.99	53.99			4	216.0
3	R3	R4	62.95	62.95			4	251.8
4	R5	R6	80.30	80.30			4	321.2
5	R7	R8	85.17	85.17			4	340.7
6	R9	R10	52.86	52.86			4	211.4
7	R10	R11	40.93	40.93			4	163.7
8	R12	R13	95.71		95.71		4.5	430.7
9	R14	R15	11.95		11.95		4.5	53.8
10	R15	R16	12.24		12.24		4.5	55.1
11	R16	R17	11.95		11.95		4.5	53.8
11	R14	R17	12.24		12.24		4.5	55.1
12	R18	R19	128.50			129	7.5	963.8
Total Length			**755.90**	**483.31**	**144.09**	**128.50**		**3545.40**
SAY			**759**	**485**	**145**	**129**		**3550**

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SCO'S COMMERCIAL SEC-73, (2.98125ACRES) MATERIAL STATEMENT FOR GARDEN HYDRANT

S. No.	*Reference* Line	Pipe Length (m)	Length of line In mtr. (uPVC pipe)					G.I. PIPES
			25 MM OD	32 MM OD	40 MM OD	50 MM OD	65 MM OD	25 MM DIA.
1	GH-01 TO FLUSHING LINE	12	12					2
2	GH-01 TO GH-02	37	37					2
3	GH-02 TO GH-03	45	45					2
4	GH-04 TO FLUSHING LINE	6	6					2
	TOTAL	**100**	**100**					**8**
	OR SAY	**100**	**100**	0	0	0	0	**10**
	GH	**4**