Emaar MGF Land Ltd
Emaar Business Park
M.G Road, Sikanderpur Chowk
Sector-28, Gurgaon-122 002

Tel 0124-4421155
www.emaarmgf.com

Memorandum

Date:	November 17, 2017
To	Mr Nishant Sabharwal
Project:	(GH) Gurgaon Green – 13.531
Licence No.	75 of 2012 dated 31.07.2012
Subject:	Handing over of original Service Plan/ Estimates for an area of 13.531 Acres of Gurgaon Green.

Dear Mr Nishant Sabharwal,

Please find attached the original Service Plan/ Estimates for an area of 13.531 Acres in respect of Group Housing Colony in Sector -102, Gurugram.

Copy of DGTCP Memo No. LC-1287/PA(SN)-2017/28171 dated. 09.11.2017 is attached.

Regards,

Kamal Kant Sehgal

Encl: Original Service Plan/ Estimates + 06 Nos. Drawings.
Copy of Letter from DGTCP

Directorate of Town & Country Planning, Haryana
SCO-71-75, 2nd Floor, Sector-17-C, Chandigarh, Phone: 0172-2549349
Web site tcpharyana.gov.in - e-mail: tcpharyana5@gmail.com

Regd.

To

Kamdhenu Projects Pvt. Ltd.,
Divit Estates Pvt. Ltd.
In collaboration with Emaar MGF Land Ltd.,
ECE House, 28, Kasturba Gandhi Marg,
New Delhi.

Memo. No. LC-1287/PA(SN)-2017/ 28171 Dated: 9-11-17

Subject: **Approval of Service Plan/Estimates in respect of Residential Group Housing colony on the land measuring 13.531 acres under Licence No. 75 of 2012 dated 31.07.2012 in Sector 102, District Gurugram.**

Kindly refer your application on the subject noted above.

The Service Plans/Estimates in respect of Licence No. 75 of 2012 dated 31.07.2012 granted for setting up Residential Group Housing colony over an area measuring 13.531 acres in Sector 102, District Gurugram have been checked and corrected wherever necessary by the Chief Administrator, HUDA & are hereby approved subject to the following terms and conditions:-

1. That you will have to pay External Development Charges as a full and no deduction on account of any services proposed from other Department/from own sources by the colonizer for the time being, as EDC works for a town as a whole will have to be got executed in view of overall planning, proposed area also covered/to be covered in EDC, Gurgaon Town, which is under finalization.

2. The category wise area shown on the plans and proposed density of population thereof has been treated to be correct for the purpose of services only.

3. That you are liable to maintain the licensed area for ten years or as per HUDA norms till such time, the colony is taken over by the local authority/State Govt.

4. The wiring system of street lighting will be under ground and the specifications of the street lighting fixture etc. will be as per relevant standard of HVPNL. LED lamps shall be provided to met the requirement of HVPNL and as well environment.

5. It is made clear that appropriate provision for fire-fighting arrangement as required in the NBC/ISI should also be provided by you and fire safety certificate should also be obtained from the competent authority before undertaking any construction. You shall be sole responsible for fire safety arrangement.

6. All technical notes and comments incorporated in the estimates in two sheets will also apply. A copy of these is also appended as Annexure-A.

7. The correctness of the levels of the colony will be sole responsibility of the owner for integrating the internal sewer/ storm water drainage of the colony by gravity with the master services.

8. That level/extent of external services to be provided by HUDA will be in accordance with EDC deposited. The colonizer will be fully responsible to meet the demand, to dispose of effluent and rain water till these services are provided by HUDA.

9. You shall be sole responsible for disposal of sewage of your colony as per requirement of HSPCB/Environment Deptt. till such time the external services are

made available as per the proposal of the town. All the link connections with the external services shall be made by you at your own cost after seeking approval from competent authority. There should be no pollution due to disposal of sewerage of the colony. The disposal of the effluent should be accordance to the standard norms fixed by Haryana State Pollution Board/Environment Department.

10. The estimate does not include the provision of electrification of the colony. However, it is clear that the supervision charges and O&M charges shall be paid by you directly to the HVPNL.

11. That you shall be solely responsible to lay the services upto the external services laid/to be laid by HUDA or any developing agency on Sector dividing road at respective locations/points

12. You have proposed to utilize recycled water for flushing purposes and provision of separate flashing line, storage tank, metering system, pumping system and plumbing has been made. Therefore, it is clarified that no tap or outlet of any kind will be provided from the flushing lines/plumbing lines for recycled water except for connection to the cistern of flushing tanks and any scouring arrangement. Even ablution taps should be avoided.

(i) Two separate distribution systems, independent to each other, will be adopted, one for potable water supply and second for recycled water. Every Home/Office/business establishment will have access to two water pipe lines.

(ii) Potable water and recycled water supply lines will be laid on opposite berms of road. Recycled water lines will be above sewer lines. Wherever unavoidable and if all pipes are required to be laid on same side of road, these will be located from the ground surface in order of descending quality. Potable water shall be above recycled water which should be above sewer. Minimum clear vertical separation between a potable water line and a recycled water line shall be one ft, if it not possible then readily identifiable sleeve should be used.

To avoid any accidental use of recycled water for potable purposes all:-

(a) Recycle water pipes, fitting, appurtenances, valves, taps, meters, hydrants will be of Red Colour or painted red.

(b) Sign and symbols signifying and clearly indicating "Recycle Water" "Not fit for Drinking" must invariably be stamped/fixed on outlets, Hydrants Valves both surface and subsurface, Covers and at all conspicuous places of recycle distribution system.

(c) Detectable marker tapes of red colour bearing words "Recycle Water" should be fixed at suitable interval on pipes.

(d) Octagonal covers, red in colour or painted red and words "Recycle Water-Not fit for Drinking" embossed on them should be used for recycled water.

13. That it shall be mandatory to provide dual/two button or lever flushing system in toilets.

14. You shall be sole responsible for the construction of various structures such as RCC underground tank etc. according to the standard specification good quality and its workmanship. The structural stability responsibility will entirely rest upon you.

15. In case some additional structures are required to be constructed and decided by HUDA/development agency at a later stage, the same will be binding upon you. Flow of control valves will be installed preferably of automatic type on water supply connection with main water supply line, laid by developing agency or HUDA.

16. The formation level of internal road should match with sector roads. Similar other services like water supply, sewerage and SWD level etc. should be fixed in integration of levels of EDC services of water supply, sewerage and SWD etc, which shall be ensured by you.

17. In case it is decided by Govt. that HUDA/Govt. will construct 24 m wide road and will extend master services on 24 m wide internal circulation road, then additional amounts at rates as decided by the authority/Govt. will be recoverable over and above EDC.

18. Since, the construction of master plan is yet to take place, you will get the road level/formation level of your service fixed from the concerned Superintending Engineer, before execution.

19. This estimate does not include the common services like water supply, storage tank on the top of the building block, the plumbing works etc. will part of the building works.

20. You will have to ensure that the sewer/storm water drainage to be laid by you will be connected with the proposed existing master services by gravity. If it is not possible to connect the services by gravity, it will be your sole responsibility to make the pumping arrangement and maintenance thereof for all the time to come.

21. That you shall not make any connection with the master services i.e. water supply, sewerage, storm water drainage, without prior approval of the competent authority in writing.

22. That the detailed technical proposal/scheme shall be got approved from this office before execution of work at site.

23. The firm will provide solar water heating system as per the guidelines issued by Haryana Govt./Ministry of Environment/Govt. of India.

24. It is made clear that roof top rain harvesting system shall be provided by you as per Central Ground Water Authority norms/Haryana Govt. Notification and the same shall be kept operational/maintained all the time. The arrangement for segregation of first rain water not to be entered into the system shall also be made by you.

25. That you shall transfer the land under master plan road as well as service road to Govt./HUDA for construction of road/service road free of cost and proportionate cost for construction of service road shall also be paid by you.

NOTE(1):-

In order to implement the directions given by National Green Tribunal dated 26.11.2014, 04.12.2014 and 19.01.2015 in original Application No. 21 of 2014 in the matter of Vardhman Kaushik V/s Union of India and Ors, the following instruction issued vide letter No. 2613 dated 5.3.2015 be incorporated for implementation at site as under:-

i) It shall be ensured that there should be no hot mixing on the road side. During construction and maintenance of road, it shall be also ensure that coal tar, bitumen

and asphalt is brought in molten condition and same is neither burnt nor fire is put to melt these substances on open roads.

ii) The demolition material and construction material is transported with proper coverage and precautions, in order not to be cause serious air pollution.

iii) No Govt. authority, contractor, builders would be permitted to store and dump construction material or debris on the metalled road.

iv) Such storage does not cause any obstruction to the free flow of traffic and/ or inconvenience to the pedestrians. Every builder, contractor or person shall ensure that the construction material is completely covered by tarpaulin. To ensure that no dust particles are permitted to pollute the air quality as a result of such storage.

v) The builder/contractor will be responsible and ensure that their activity does not cause any air pollution during the course of the construction and/or storage of material or construction activity. Defaulter shall be liable to be prosecuted under the law in force.

vi) All trucks or vehicles of any kind which are used for construction purposes and/or are carrying construction materials like cement send and other allied material shall be fully covered dust free and/or other precautions would be taken to ensure that enroute their destination, the dust, send or other particles are not permitted to be released in the air and/or contaminate air. Any truck which is not complying with these directions would not be permitted to enter in the NCR region.

NOTE(2):-

Implementation of instruction used by Hon'ble NGT during hearing held on 28.4.2015 in OA No. 21 of 2014 and OA No. 95 of 2014 in the matter of Vardhman Kaushik V/s Union of India and Ors, the following instruction issued vide letter No. CEIEE-W/CHD(G)/4971-89 dated 30.4.2015 shall be complied with in the construction work as under:-

a. All the direction contained in our order dated 4th December, 2014 shall continue to be in force and the Authorities concerned would carry out the said directions in their true spirit and substance.

b. There shall be complete prohibition of burning of any kind of garbage leave, waste plastic, rubber, self-moulding compound and such other materials in the open. Any person affected or concerned would have a right to make a complaint in writing.

c. NGT further directed that all the Corporations of concerned states falling in NCR would notify on their websites, address and Mobile Number to which such complaint can be made/sent.

d. Immediately upon receipt of such complaint, the concerned Authority and for Authorities the designed Officers would proceed to take action in accordance with law.

e. For every incident of burning of any such above stated material, the person who is found actually burning such and/ or responsible for or abating such burning would be liable to pay compensation in terms of the Section 15 of the Nation Green Tribunal Act, 2010 for polluting the environment and would be liable to pay a sum Rs. 5000/- (to be paid instantaneously).

f. In the event such offender refuses to comply with the directions of the Authorized Officers, the Authorized Officers would be at liberty to serve a notice upon him for appearing before the Tribunal and to show cause why the person burning, abating or responsible for such burning materials afore indicated, be not directed to pay compensation as may be determined by the Tribunal in accordance with law.

g. The orders of the NGT are to be complied with as a decree / order of the Civil Court. All these Authorities and the Police are duty bound to carry out the directions/orders of the Tribunal in accordance with law. The money so collected, shall be maintained by the Corporation and / or any Authority as a separate fund to be utilized for improvement, restoration and restitution of the environmental degradation resulting from such activity or otherwise.

h. The payment of such compensation shall not absolve the offender of other liabilities that such person may incur under different laws in force including other provisions of the National Green Tribunal Act, 2010.

i. NGT has directed that there is no burning of leaves or horticulture residue, all the Corporations, Authorities and the State Governments to ensure that there is proper composting pits area-wise prescribed within one week from today (28.04.2015). The composting will be only at those sites and all the Corporations, Authorities and the State Governments shall be responsible to provide due space for collection and deposit of horticulture waste including leaves for composting purposes at these sites.

j. Each officer under whose jurisdictions the area would fall, would be personally responsible for imposition of compensation and costs.

k. The composition sites should be provided nearer to the places where there is large numbers of trees, gardens and compost bits which also convert into self-manure should be used for horticulture purposes to ensure that the burden on the site does not increase beyond its capacity.

l. Decision in regard the land fill sites should be taken expeditiously as possible. Such adequate number of sites if not earmarked, should be identified by the respective corporations and authorities if not done so far.

m. No one would permit the building of plastic and allied products in NCR area. if authorities notice any burning of such materials they would not only ensure that such activity does not persist, but even would be entitled to seize the entire material which is illegally and unauthorized stored/held by a person who does not possess of a license or authorization for dealing with such products in accordance with the plastic waste Management and Handling Rules, 2011. Upon seizure of such material, the authorities would take a direction from Hon'ble NGT and dispose of the same by giving it to the authorized dealer in accordance with the directions issued.

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

DA/As above

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

Endst. No LC-1287-PA(SN)-2017/ Dated :

A copy is forwarded to the Chief Administrator, HUDA, Panchkula with reference to his memo No. CE-1/EE(W)/CHD(G)/2013/8798 dated 24.06.2013 for information and necessary action please.

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

OFFICE COPY
S.E.(H.Q)

PROPOSED GROUP HOUSING

AT
SECTOR-102, GURGAON, HARYANA

SERVICE PLAN ESTIMATE
ON
PUBLIC HEALTH ENGINEERING SERVICES

Client

M/S KAMDHENU PROJECTS PVT. LTD. &
DIVIT ESTATE PVT. LTD. C/O EMAAR MGF LAND LTD.

Architect

DESIGN FORUM INTERNATIONAL
K-47, KAILASH COLONY
NEW DELHI - 110048

EMAAR MGF LAND LTD. NEW DELHI

Plumbing & Fire Suppression Consultant

PARADISE CONSULTANTS
G-76C, Shaheen Bagh, New Delhi -110025

PROJECT REPORT / ESTIMATES FOR PROVIDING INTERNAL SERVICES e.g. WATER SUPPLY, FIRE, SEWERAGE & STORM WATER DRAINAGE ETC. IN RESPECT OF RESIDENTIAL PROJECT GROUP HOUSING, SECTOR-102, GURGAON (HARYANA)

Gurgaon is located at 28°26'N 77°02'E28.47°N 77.03°E/28.47; 77.03. It has an average elevation of 220 metres (721 ft) Gurgaon district, comprising four blocks Pataudi, Sohna, Gurgaon and Farrukhnagar, was created on 15 August, 1979.On its north, it is bounded by the district of Rohtak and the Union Territory of Delhi. Faridabad district lies to its east. On its south, the district shares boundaries with the district of Mewat. To its west lies the district of Rewari and the State of Rajasthan.Gurgaon is situated between the Himalayas and Aravalis mountain ranges. It is surrounded on three sides by Haryana and to the east, across the river Yamuna by Uttar Pradesh. Its greatest length is around 13 miles and the greatest breadth is 17 miles. Delhi's altitude ranges between 213 to 305 meters above sea level.

GROUP HOUSING is a residential proposed between sector - 102, at Gurgaon for development by **M/s KAMDHENU PROJECTS PVT. LTD. AND DIVIT ESTATE PVT. LTD. C/o EMAAR MGF LAND LTD.** The area of licenced G.H.S Colony is 13.531 Acres.

Water Supply

The source of water supply shall be HUDA water supply connection. It has been proposed to construct undergorund tanks of capacity as per attached detailleds for domestic and other purpose. The underground tanks will be filled up from the riser and then pumped to the overhead water tanks of each tower.

1 **Source**

At point

The source of water supply in this area is tubewells as the underground water is sweet and fit for human consumption, moreover, the water is available at reasonable depth. The average yield of tubewell with 60'–80' strainer will be about 18000 lph per hour. The recharging of under ground water table in this belt is stated to be good. However still we shall resort to rain water harvesting system to keep up the recharging system. The number of tubewells required for the above area has been worked out to 3 Nos and the tubewells will be bored in tune with growth of demand to avoid absolence of the tubewells. The ultimate requirement of tubewells includes provision of 10% standby. Ultimately water supply will be connected to HUDA main W/S lines as and when desired. Services will be laid by HUDA.

2 **Pumping Equipments**

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

3 **Sewerage**

This scheme is designed for sewer connecting to the proposed sewage treatment. The sewerage system has been marked on the respective plans.

The sewer lines have been designed for 3 times average DWR in relation to the water supply demand assuming that 80% fo the domestic water supply shall find its way into the proposed sewer SW pipe sewers have been proposed designed to run half full. The sewers have been designed on 0.75 mtr. per second velocity ie. Self cleansing velocity. Necessary provisions for laying SW pipes manholes etc. has been made in this estimate.

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

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4	**Storm Water Drainage**
	The storm water drain is being designed to carry 6.25 mm rain fall per hour. Also suitable provisions are contemplated in our scheme to ensure better recharging of under ground water table in the area. RCC NP_3 pipe drain with minimum 400 mm dia is proposed in this area.
5	**Roads**
	Cost of road has been taken in the estimate
6	**Street Lighting**
	Provision for street lighting on surrounding area has been made.
7	**Horticulture**
	Estimates and details of plantation, landscaping, signage etc. has been included
8	**Specifications :**
	The work will be carried out in accordance with the standard specifications of PH as laid down by the HUDA/Haryana Government.
9	**Rates**
	Estimates for providing services in this site has been prepared on the recent HUDA rates.
10	**Cost**
	The total cost of development in this Project including various PH & B & R services works out to Rs. ~~690.82~~ lacs which includes 3% contingency and PE charges and ~~11%~~ departmental charges also.
	The cost per gross acre for this phase works out to Rs. ~~51.05~~ Lacs/acre which covers the provision of services like water supply, sewerage, storm water drainage, roads, street lighting and plantations including plantations maintenance thereof as well as future expansion whatsoever indicated.
	M/s KAMDHENU PROJECTS PVT. LTD. AND DIVIT ESTATE PVT. LTD. C/o EMAAR MGF LAND LTD.
	Authorised Signatory

1219.16 lacs
1209.66 lacs
+ 985.00

Paradise Consultants New Delhi

DESIGN FORUM INTERNATIONAL

EMAAR MGF LAND LTD NEW DELHI

GROUP HOUSING, SECTOR-102, GURGAON (HARYANA)

	DESIGN CALCULATION				
1	**Daily Domestic Water Requirement**				
	Nos. of Blocks				
	Apartment			672	
	EWS			119	
	Service Personnel			75	
	Population @ 5 person per unit - Apartment			5	
	Population @ 2 person per unit - EWS			~~2~~	
	Population @ 2 person per unit - Service Personnel			2	
	Therefore population (Apartment)			3360	persons
	Therefore population (EWS)			~~238~~ 595	persons
	Therefore population (Maintenance Personnel)			150	persons
	Total Population			~~3748~~ 4105	**persons**
			SAY	~~3748~~	**persons**
	Water requirement for apartmant		@	172.5	liter / head / day
				~~646500.00~~ 708125	lpd
			or	~~646.53~~	KLD (1)
				710	
2	**Other Requirement**				
a.)	Primary/Nursery School	1	@	10000	lit/day
	Therefore daily water requirement			10000	lit/day
				10	KLD
b.)	No. of Club	1			
	Daily water requirement lumpsum		@	25000	lit/day
	Therefore daily water requirement			25000	lit/day
				25	KLD
c.)	No. of Convenient □Shopping	1			
	Daily water requirement lumpsum		Lumpsum	5000	lit/day
	Therefore daily water requirement			5000	lit/day
				5.00	KLD
			Total	40.00	KLD (3)

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3	Total Daily Water Requirement (1+2)			666.53	KLD	
i)	Domestic Water Requirement @	65%		440.24	KLD	
			Say	450.00	KLD	
ii)	Flushing Water Requirement @	35%		240.29	KLD	
			Say	250.00	KLD	
4	**Water usage from STP**					
a)	Area under Parks	3.53	acre			
	Daily water requirement		@	25000	lit/acre/day	
				88250.00	lit/day	
				88.25	KLD	
b)	Area under Roads					
	Daily water requirement		Lumpsum	25000	lit/acre/day	
				25000	lit/day	
				25	KLD	
c)	Under Road+ Parks (a+b)		Total	113.25	KLD	
			Say	114.00	KLD	
d)	**Total treated water requirement [3 (ii) + c]**			364.00	KLD	
	Total Daily Requirement [3 (i) + d]			814.00	KLD	
			SAY	814.00	KLD	

I	**Tubewell**					
	Assuming working hours of tubewells			10	hours	
	Assuming discharge/hour of each tubewell			18	KL/hours	
	Total fresh water demand			490 ~~450.00~~	KLD	
		490				
	No. of tubewells required	~~450.00~~	710/18	~~2.50~~	2.72	
	Add 10% standby			~~0.25~~	0.27	
			Total	~~2.75~~	2.99	
			Say	3.00		
	It is proposed to provide (i.e. 3 No.) to cater the present requirement (for drinking use only upto Person (No T/W should be used for Cooking activities).					
II	**Pumping machinery for tubewell**					
	Gross working load		=	65.00	m	
	Average fall in SL		=	3.05	m	
	Depression head		=	6.10	m	
	Friction loss in main		=	2.50	m	
			=	76.65	m	
		Say	=	77.00	m	
	BHP = 18000x77x1/60x60x75x0.6		=	8.56	BHP	
	With 60% efficiency	Say		10.0	BHP	
III	**Underground Tank**					
	Daily fresh water requirement for domestic use			=	450.00	KL
	Capacity of under ground tank		12/24		250	But Proposed 450 KL
	~~24~~ hours storage	450.00	x ~~24/24~~	=	~~450.00~~	KL
	Fire Tank Capacity Proposed As / IS Code 15105			=	100.00	KL
			Proposed	=	200.00	KL
			Total		**650**	KL
	It is proposed to provide under ground tank of capacity **650 KL** which also includes **200 KL** capacity for fire fighting. (250 + 200 Extra) (2 x 100)					
	This tank will have Six compartments, two for fire, two for raw and the other two for domestic use. The water first enters the fire compartment, then over flows to the raw use compartment so that the water in the fire compartment shall remain fresh.					
	FIRE WATER TANK				200.00	KL
	TOTAL UG STORAGE (DOMESTIC + FLUSHING + HORTICULTURE)			=	814.00	KL
	RAW WATER TANK				200.00	KL
	DOMESTIC WATER TANK				250.00	KL
	FLUSHING, HORTICULTURE & ROAD WASHING (PART OF STP)				364.00	KL

450

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IV	**DOMESTIC WATER PUMPS - LOCATED IN PUMP ROOM**					
a.)	**Domestic Water Transfer Pumps**					
i)	**For Towers**					
	Daily requirement for domestic use			=	393.55	KL
	Assuming 6 hours running 2 pumps (with one standby)					
	Discharge/hour	393.55	/ 6 / 2	=	32.80	KL/HR
	Head of pump					
	i) Suction lifts			=	0.0	m
	ii) Friction loss in M<main & specials			=	4.0	m
	iii) Residual head			=	5.0	m
	iv) Clear head			=	55.0	m
				=	64.0	m
	BHP of motor	32.80	x1000x64/4500x60x0.60		13.0	HP
			SAY	=	**15.0**	**HP**
ii)	**For EWS, Club, Shopping & Schools**					
	Daily requirement for domestic use			=	52.68	KL
	Assuming 6 hours running 1 pumps (with one standby)					
	Discharge/hour	52.68	/ 6 / 1	=	8.78	KL/HR
	Head of pump					
	i) Suction lifts			=	0.0	m
	ii) Friction loss in M<main & specials			=	4.0	m
	iii) Residual head			=	4.0	m
	iv) Clear head			=	32.0	m
				=	40.0	m
	BHP of motor	8.78	x1000x40/4500x60x0.60		2.2	HP
			SAY	=	**3.0**	**HP**

5 PUMPS FOR FIRE PROECTION

	Pump Description	Location	Nos.	Discharge	Head	HP
i)	Diesel Driven Pump	Pump Room	1	1620	90.00	
ii)	Hydrant Pump	Pump Room	1	1620	90.00	55
iii)	Sprinkler Pump	Pump Room	0	1620	90.00	55
iv)	Jockey Pump	Pump Room	1	180	90.00	15

Capacity of Gen Set	Nos.	HP			
Domestic Water Transfer Pumps for Towers	2	15.0	=	30	HP
Domestic Water Transfer Pumps for EWS, Club, Shopping & Schools	1	3.0	=	3	HP
Fire Pump (Jockey)	1	15.0	=	15	HP
Tubewell	3	10.0	=	30	HP
Lighting			=	25	HP
				103	HP
or	103 x0.746x1.50			115.26	KVA
		Say		120.00	KVA

Requirement of 120 KVA capacity will be added in to the main D.G. set to provide standby supply.

Estimate for Providing in Internal Development works for Housing for

M/s KAMDHENU PROJECTS PVT. LTD. AND DIVIT ESTATE PVT. LTD. C/o EMAAR MGF LAND LTD.

	Amount (Lacs.)	
Sub Work - I Water Supply	~~302.15~~ ~~205.76~~	346.85 Lacs
Sub Work - II Sewerage	~~131.64~~ ~~96.62~~	180.25 Lacs
Sub Work - III Storm Water Drainage	~~128.64~~ ~~98.42~~	128.64 Lacs
Sub Work - IV Roads & Footpath	~~138.44~~ ~~109.89~~	195.10 Lacs
Sub Work - V Street Lighting	~~20.77~~ ~~16.89~~	
Sub Work - VI - Horticulture	~~36.04~~ ~~17.82~~	10.30 Lacs
Sub Work - VII - Maintenance of Services for 10 years including resurfacing of roads after 1st 5 years & II phase i.e. 10 years of maintenance (as per HUDA norms)	~~337.78~~ ~~146.42~~	337.25 Lacs
Total	~~1294.96~~ ~~690.82~~	1219.16 Lacs

~~(RUPEES SIX CRORE NINTY LACS EIGHTY TWO THOUSAND ONLY)~~

M/s KAMDHENU PROJECTS PVT. LTD. AND DIVIT ESTATE PVT. LTD. C/o EMAAR MGF LAND LTD.

1219.16 Rs. 90.10 Lacs

say Rs. Per Lacs/Acre. = ~~1095/13.531 = 80.93 Lacs.~~

say Rs. = ~~81.00~~ Lacs.
90.10 Lacs/Acres

Authorized Signatory

Sub Divisional Engineer
HUDA Sub Divn. No/4
GURGAON

Executive Engineer
HUDA Division No. V.
Gurgaon

Superintending Engineer
HUDA Circle No. 1,
Gurgaon

Checked subject to comments in forwarding letter No. 8798 Dt. 24/6/13 and notes attached with the estimate

Executive Engineer (W)
for Chief Engineer
HUDA Panchkula
31/6/13

Director
Town & Country Planning
Haryana, Chandigarh

EMAAR MGF LAND LTD. NEW DELHI

FINAL ABSTRACT OF REVISED COST

	Amount (Lacs.)	Amount (Lacs.)	
Sub Head - (I) Head Works		~~58.90~~ ~~51.78~~	63.04 Lacs
Sub Head - (II) Pumping Machinery		~~48.50~~ ~~36.80~~	69.75 Lacs
Sub Head - (III) Distribution System		42.58	
Sub Head - (IV) Irrigation Scheme		~~11.47~~ ~~9.13~~	14.33 Lacs
Sub Head - (V) Fire Scheme		~~35.33~~ ~~35.03~~	36.30 Lacs
	Total	~~186.88~~ ~~175.23~~	226.45 Lacs
Add 3% Contingencies		~~5.91~~ ~~6.26~~	6.78 Lacs
	Total	~~202.79~~ ~~180.49~~	232.78 Lacs
Add ~~14~~ 49% Departmental Charges		~~99.37~~ ~~25.27~~	114.06 Lacs
	Grand Total	~~205.76~~ ~~302.15~~	346.84
(CO to final abstract of cost)	Say	~~205.76~~ ~~302.15~~	Say 346.85 Lacs

	Sub Work I				Water Supply	
	Sub Head No. I				Head Works	
S. No.	Description	Unit	Qty	Rate	Amount	
					Rs. (lacs)	
1	Boring and installing 510 mm i/d tubewells with reverse/direct rotary rig complete with pipe strainer to a depth of about 80 m. complete	Nos.	3	700000/- ~~500000.00~~	2.1.00 ~~15.00~~	
2	Constructing pump chambers as per standard design of PWD PH/HUDA of size 1.50x1.50 m	Nos.	3	100000/- ~~90000.00~~	3.00 ~~2.70~~	
3	Construction of boosting chambers of suitable size along with under ground tank of capacity 650 KL pumping machinery and generating set etc. complete in all respects.					
	Details of boosting station					
i)	construction of boosting chamber	LS	-	-	7.50	
ii)	UG tank 650 KL capacity incl. 200 KL for fire fighting in two compartments @ ~~2000~~ 3500/KL. (451 - 200)	LS	-	-	22.75 ~~19.50~~	
4	Provision for carriage of material and other unforeseen items.	LS	-	-	1.00 ~~2.00~~	
5	Provision for facilites staff for Maintenance	LS	-	-	5.00	
	(C.O. to abstract of cost of Sub-work No.I)				~~58.00~~ ~~51.70~~ Lacs	
				Say	~~51.70~~ Lacs	
					~~58.00~~	

(5) Provision for rising main from HUDA main to site
100 mm ϕ DI. 233 m @ 1200/-

279
63.04 Lacs

	Sub Work I				Water Supply	
	Sub Head No. II				Pumping Machinery	
S. No.	Description	Unit	Qty	Rate	Amount (in Lakhs)	
1 (i)	Providing and installing electricity driven electro or submersible pumping set capable of delivering about 16.0 KL water per hour against a total head of 77.0 M complete with motor and other accessories. (For Tubewell -10.0 HP)	Nos.	3	125000/- ~~100000.00~~	3.75 ~~3.00~~	
(ii)	Providing & installing electricity driven pumping set capable of delivering 550 LPM of water against a total head of 64 m complete with motor and other accessories (For Domestic - 15.0 HP) flushing - 365 LPM - 70 mt head	Nos.	3	2.50 ~~160000.00~~	7.50 ~~4.80~~	
(iii)	Providing & installing electricity driven pumping set capable of delivering 150 LPM of water against a total head of 40 m complete with motor and other accessories (For Domestic - 3.0 HP) Elec, sinks and scrub Flushing — 80 LPM - 41 MHS	Nos.	2	1,70,000/- ~~100000.00~~ ~~60000.00~~	5.10 2.50 ~~1.20~~	
2	Provision for diesel engine generator set each for standby Arrangements for booster pump complete with gear haed arrangements of following capacities.		2	70,000/- 25.00 lpm	1.40 25.00	
	1 No. - 120 KVA 250	Nos.	1	~~1200000.00~~	~~12.00~~	
3	Providing & installing pumping set of following capacities for fire protection:			150000/-	1.50	
i)	160 LPM @ 90 M Head (15 HP)	Nos.	1	~~90000.00~~	~~0.90~~	
ii)	~~1620~~ 2250 LPM @ 90 M Head (55 HP) Hydrant	Nos.	1	5.00 ~~300000.00~~	~~3.00~~	5.00
iii)	~~1620~~ 2250 LPM @ 90 M Head (55 HP) Sprinkler	Nos.	0	~~300000.00~~	~~0.00~~	
iv)	~~1620~~ 2250 LPM @ 90 M Head (DG Pump) 110 HP	Nos.	1	~~425000.00~~ 700000/-	~~4.25~~	7.00
4	Provision for diesel engine genset stand bye arrangements for Tubewells.	Nos.	3	150000.00	4.50	
5	Provision for cheap pressure type chlorination plant complete.	Nos.	3	100000/- ~~15000.00~~	3.00 ~~0.45~~	
6	Provision for making foundations & erection of pumping machinery.	LS	-	-	~~0.70~~	1.00
7	Provision for pipes, valves & specials inside the pump chamber.	LS	-	-	1.00 ~~1.25~~	
8	Provision for electric services connection including electric fittings for tubewells chambers complete. Including Cost of Transformer	LS	-	-	3.00	
9	Provision for carriage for materials and other unforeseen items.	LS	-	-	1.00 ~~0.75~~	
	(C.O. to abstract of cost of Sub-work No.I)				~~36.80~~	~~49.50~~
				Say	~~36.80~~ 49.50	

Rs 69.75 Lacs

EMAAR MGF LAND LTD NEW DELHI

	Sub Work I				Water Supply	
	Sub Head No. III				Distribution System/Rising Main	
S. No.	Description	Unit	Qty	Rate	Amount (Rs.)	
1	Providing, laying, jointing & testing G.I. pipes including cost of excavation complete as per ISI marked.					
i)	32 mm dia	M	54	400.00	21600.00	
ii)	40 mm dia	M	218	550.00	119900.00	
iii)	50 mm dia	M	62	650.00	40300.00	
iv)	65 mm dia	M	992	850.00	843200.00	
v)	~~80 mm dia~~	~~M~~	~~0~~	~~950.00~~	0.00	
vi)	100 mm dia	M	1195	1200.00	1434000.00	
vii)	150 mm dia	M	553	1650.00	912450.00	
2	Providing, fixing & Testing Ball valves including cost of complete in all respects.					
i)	32 mm dia	Nos.	1	1250.00	1250.00	
ii)	40 mm dia	Nos.	3	1600.00	4800.00	
iii)	50 mm dia	Nos.	1	2000.00	2000.00	
3	Providing, fixing & Testing Sluice valves including cost of complete in all respects.					
i)	65 mm i/d	Nos.	2	3500.00	7000.00	
ii)	80 mm i/d	Nos.	1	10000.00	10000.00	
iii)	100 mm i/d	Nos.	4	12000.00	48000.00	
iv)	150 mm i/d	Nos.	2	15000.00	30000.00	
4	Providing, fixing & Testing Non Return valves (NRV) including cost of complete in all respects.					
i)	100 mm i/d	Nos.	3	12000.00	36000.00	
5	Providing and fixing air valves and scour valves including cost of complete in all respects.	Nos.	4	10000.00	40000.00	
6	Providing and fixing indicating plates for sluice valve, air valve etc.	Nos.	16	1000.00	16000.00	
7	Provision for carriage of material	LS	-	-	150000.00	
8	Provision for cutting the roads and making to its original conditions.	LS	-	-	150000.00	
9	Making water supply connection.	LS	-	-	250000.00	
10	Provision for rising main from tubewells to UG Tank					
i)	100 mm i/d	M	134	950.00	127300.00	
ii)	150 mm i/d	M	73	1350.00	98550.00	
iii)	200 mm i/d	M	30	1900.00	57000.00	
	(C.O. to abstract of cost of Sub-work No.I)				4257850.00	
				Say	42.58	Lacs

EMAAR MGF LAND LTD. NEW DELHI

	Sub Work I				Water Supply	
	Sub Head No. IV				Irrigation	
S. No.	Description	Unit	Qty	Rate	Amount (Rs.)	
1	Providing, laying, jointing & testing uPVC pipe line confirming to IS 4985 including cost of Excavation etc. complete in all respect.					
i)	65 mm dia	M	1568	500.00	784000.00	
ii)	80 mm dia	M	25	600.00	15000.00	
2	Providing and fixing 20mm dia Irrigation hydrant valve complete in all respect.	Nos.	38	800.00	30400.00	
3	Providing & fixing valve 25mm dia	Nos.	38	400.00	15200.00	
4	Providing, fixing & Testing Sluice valves including cost of complete in all respects.					
i)	65 mm i/d	Nos.	2	2700.00	5400.00	
ii)	80 mm i/d	Nos.	1	4750.00	4750.00	
5	Providing and fixing air valves and scour valves including cost of complete in all respects.	Nos.	2	4500.00	9000.00	
6	Providing and fixing indicating plates for sluice valve, air valve etc.	Nos.	5	800.00	4000.00	
7	Provision for carriage of materials etc. and other unforsean charges	LS	-	-	15000.00	
8	Provision for cutting of roads & making good to its in original condition	LS	-	-	30000.00	
			Total		912750.00	
			Say		9.13	Lacs

Rs. 14,33 lacs

Sub Work I

Sub Head No. V

Fire Scheme

S. No.	Description	Unit	Qty	Rate	Amount (Rs.)
1	Providing, laying, jointing & testing M.S. pipes for fire ring main including cost of Fittings, Valves & excavation complete (as per ISI marked) in all respect.			1575	24.57
a)	150 mm dia	M	1560	~~1500.00~~	~~2340000.00~~
b)	~~100 mm dia~~	~~M~~	~~0~~	~~1200.00~~	~~0.00~~
c)	80 mm dia	M	210	~~950.00~~ 1000	~~199500.00~~ 210
2	Providing and fixing External Fire Hydrants complete with masonary chambers.	Nos.	33	10000.00	330000.00
3	Providing & fixing valve 150mm dia				
a)	150 mm dia	Nos.	1	15000.00	15000.00
b)	~~100 mm dia~~	~~Nos.~~	~~0~~	~~12000.00~~	~~0.00~~
c)	80 mm dia	Nos.	33	10000.00	330000.00
4	Providing, fixing & Testing Non Return valves (NRV) including cost of complete in all respects.				
i)	80 mm i/d	Nos.	33	5000.00	165000.00
5	Provision for cutting of roads and carriage of materials etc. and other unforsean charges	LS	-	-	40000.00
6	Provision for indication plates	Nos.	33	1000.00	33000.00
7	Provision for carriage of material	LS	-	-	~~50000.00~~ 40000 0.50
			Total		~~3502500.00~~ 3532.50
			Say		~~35.03~~ Lacs ~~35.35~~

Rs 36.30 lacs

EMAAR MGF LAND LTD. NEW DELHI

	Sub Work II			Sewerage Scheme		
S. No.	Description	Unit	Qty	Rate	Amount (Rs.)	
1	Providing, lowering, jointing, cutting salt glazed stone ware pipes and specials into trenches including cost of excavation, bed concrete lot of manholes complete.					
i)	**250 mm i/d**					
a)	Average depth 1.5 m to 4.5 m	M	1395	1500.00	2092500.00	25.80
b)	Average depth 4.5 m to 6.0 m	M	0	1600.00	0.00	
ii)	**400 mm dia i/d**					
a)	Average depth 1.5 m to 4.5 m	M	0	2000.00	0.00	
b)	Average depth 4.5 m to 6.0 m	M	110	2150.00	236500.00	
2	Provision for lighting, watching and temporary diversion of traffic	LS	-	-	100000.00	
3	Provision for cutting of roads and carriage of materials etc. and other unforsean charges	LS	-	-	100000.00	
4	Provision for connection with HUDA	LS	-	-	200000.00	
5	Cost of 550 Kld Sewerage Treatment Plant.	LS	-	-	5000000.00	
6	Provision for CI / DI pipe 150 mm dia pipe from STP. To Huda Main Line.	LS	-	-	500000.00	
	Add 3% contingencies				246870	
	Add 4% Deptt. Charges			Total	9662491.80	
	(C.O. to abstract of cost of Sub-work No. 1)			Say	96.62	Lacs

	Sub Work - III			Storm Water Drain		
S. No.	Description	Unit	Qty	Rate	Amount (Rs.)	
1	Providing, lowering, jointing, cutting RCC NP_3 pipes and specials into trenches including cost of excavation cost of manholes, ventilating chambers etc. complete in all respects.					
i)	250 mm i/d (C.B.)					
a)	Average depth upto 1.5 m	M	1472	1300.00	1913600.00	
ii)	400 mm i/d					
a)	Average depth upto 1.5 m	M	15	1850.00	27750.00	
b)	Average depth 1.5 m to 4.5 m	M	1632	2000.00	3264000.00	
iii)	500 mm i/d					
a)	Average depth upto 1.5 m	M	11	2000.00	22000.00	
b)	Average depth 1.5 m to 4.5 m	M	2	2150.00	4300.00	
2	Provision for Road Gully & Drain	LS	-	-	250000.00	
3	Provision for cutting of roads and carriage of materials etc. and other unforseen items	LS	-	-	150000.00	
4	Provision for disposal arrangements Recharge Pit	Nos	14	150000.00	2100000.00	
5	Provision for lighting, watching and temporary diversion of traffic	LS	-	-	500000.00	
6	Provision for connection with HUDA	LS	-	-	150000.00	
					8381650.00	
	Add 3% contingencies				251449.50	
					8633099.50	
	Add ~~14~~ 49% Deptt. Charges				~~1208633.93~~ 4230218.76	
			Total	128632928	~~9841733.43~~	
		SAY			~~98.42 Lacs~~ 128.64	
	(C.O. to abstract of cost of Sub-work No. 1					

	Sub Work IV				Road Work	
S. No.	Description	Unit	Qty	Rate	Amount (Rs.)	
1	Provision for leveling & earth filling as per site condition 13.531 acre @ 125000/acre	Acres	13.531	125000	1691375.00	
2	Construction of road by:- i) soling coat 100 mm thick (63-45) mm gauge compacted to 75 mm thick WBM conforming to MOTspecification (table 400-6,grading no 2) 7544.72 sqm.X0.10 m - 754.472 cum say 755 cum @ 950/ cum	Cu. mtr.	755	950	717250.00	
	ii) Wearing coat (top coat) 100 mm thick (53-22.4)mm gauge compacted to 75mm thick conforming to MOT specifications (table 400-6, grading no 3) 7544.72 sqm.X0.10 m - 754.472 cum say 755 cum @ 950/ cum	Cu. mtr.	756	950	717250.00	
	iii) 25mm thick pre-mix carpet with seal coat 7544.72 sqm. say 7545 sqm @ 265/ sqm	Sq. mtr.	7545	265	1999425.00	
3	Provision for making approach and pavement to building block by providing concrete pavement or tiles. Etc. 4354.25 sqm. Say 4354 sqm @ 500/ sqm.	Sq. mtr.	4354	500	2177000.00	
4	Provision for parking arrangement 3312.5 sqm.@ 500/sqm	Sq. mtr.	3312.5	500	1656250.00	
5	Provision for Carriage of material	LS.		200000.00	200000.00	
6	Provision for traffic lighting and guide map/ indicators	LS.		200000.00	200000.00	
			Total	122.11	9358650.00	
	Add 3% contingencies			3.81	280756.50	
					9639306.50	
	49%		Total	130.92	96.39	Lacs
	Add 14 % department charges			64.15	13.50	Lacs
		SAY		195.07	109.89	Lacs

Say Rs 195.10 lacs

	Sub Work V				Street Lighting	
S. No.	Description	Unit	Qty	Rate	Amount (Rs.)	
1	Supply, installation, testing and commissioning of Street Lighting GI Poles, Light Fixtures, Feeder Pillars, Cables & Wires including cable end terminations and Earthing Station etc. for Street Lighting (c.f.t. foldings)	per acre	13.531	100000.00	1353100.00	
	Add 3% contingencies				40593.00	
	Total				1393693.00	
	Add 14% Deptt. Charges			8290937	~~105117.02~~	
			Total	20766237	~~1588810.00~~	
		SAY			~~15.89~~	Lacs
					20.77	

	Sub Work VI				Horticulture	
S. No.	Description	Unit	Qty	Rate	Amount (Rs.)	
1	Development of lawn area					
	a) Trenching the ordinary soil upto depth of 60 cm.Including removal & packing of serviceable material & disposing at a lead of 50 M and making up the trenched area to prope level by filling with earth mixed with manure befor & after flodding trench with water including cost of imported earth & manure.					
	b) Rough dressing of trenched area.					
	c) Grassing including watering & maintenance of lawns free from weeds & fit for mowing in rows including hedges, shrubs & green belts (as per HUDA Norms)			1,00	3,52	
	14273.15 Sq.mt or 3.52Acs		3,52	~~150000~~	~~2,00,30~~	
	~~13.531~~ acres @ Rs. ~~0.90~~ lacs. @ 1,00 lacs	per acre	~~13.331~~	~~90000.00~~	~~1,217,790~~	
	425 trees @ Rs. 750/- each				~~300,000~~	3.19
					~~1517790.00~~	~~22.49~~ 6.71
	Add 3% contingency charges				~~45533.70~~	~~01.10~~ 0.20
				Total	~~1563323.70~~	~~24.19~~ 6.91
	Add 14% Deptt. Charges				~~218865.32~~	~~11.85~~ 3.38
				Total	~~1782189.02~~	~~36.04~~ 10.29 lacs
			say		~~17.82~~ Lacs	
					~~36.04~~	

Say Rs 10.30 lacs

EMAAR MGF LAND LTD. NEW DELHI

	Sub Work VII				Maintenance Charges & Resurfacing of Roads	
S. No.	Description	Unit	Qty	Rate	Amount (Rs.)	
1	Provision for maintenance charges for water supply, sewerage,storm water drainage, roads, street light, horticulture etc. complete including operation & establishments charges as per HUDA norms after completion & resurfacing of roads after 10 years or 1st phase.					
	13.531 acres @ 5 lacs per acre	per acre	13.531	500000.00	6765500	
2	Provision for resurfacing & strengthening of road after five years of Ist phase 15211.47 sqm @ ~~250~~ 400 per sqm	Sq. mtr.	15211.5	~~250~~ 400	~~3802875.00~~	60.84
3	Provision for resurfacing & strengthening of road after ten years of 2nd phase 15211.47 sqm @ ~~125~~ 60 per sqm	Sq. mtr.	15211.5	~~125~~ 60	~~1901437.50~~	91.26
			29.75	Total	12469812.5	
	Add 3% contingency & PE charges		6.99		374094.375	
	49%		226.34	Total	12843906.88	
	Add ~~44%~~ Departmetal charges		110.90		4798148.963	
			337.25	Total	14642053.84	
			say		146.42 Lacs	

Say Rs 337.25 lacs

MGF LAND LTD. NEW DELHI

PROJECT :- GROUP HOUSING SECTOR-102, GURGOAN, HARYANA DOMESTIC WATER SUPPLY QUANTITY SHEET			
S.No.	Line No	Length of Pipe	Dia of Pipe
		mtr.	mtr.
1	*UGT - D1*	41.0	150
2.	D1 - D2	203.0	150
3.	D2 - D3	235.0	100
4.	D1 - D4	253.0	150
5.	D4 - D3	135.0	100
6.	*UGT - DD1*	40.0	65
7.	DD1 - DD1a	415.0	65
8.	DD1 - DD2	92.0	65
9.	DD2 - DD2a	62.0	50
10.	DD2 - DD3	87.0	40
FLUSHING WATER SUPPLY QUANTITY SHEET			
1	*S.T.P. - F1*	56.0	150
2.	F1 - F2	134.0	100
3.	F2 - F3	235.0	100
4.	F1 - F4	253.0	100
5.	F4 - F3	203.0	100
6.	*S.T.P. - FF1*	10.0	65
7.	FF1 - FF1a	37.0	40
8.	FF1 - FF2	435.0	65
9.	FF2 - FF2a	94.0	40
10.	FF2 - FF3	54.0	32

S.No.	Line No	Length of Pipe	Dia of Pipe
		mtr.	mtr.
TUBE WELL WATER SUPPLY QUANTITY SHEET			
1	TW 01 -T1	119.0	100
2.	TW 02 -T1	5.0	100
3.	T1 - T2	73.0	150
4.	TW 03 -T2	5.0	100
5.	T2 - *UGT.*	30.0	200
6.	W.M. - M1	5.0	100
7.	M1 - **UGT**	233.0	100
		470 MTS	

S.No.	Line No	Length of Pipe	Dia of Pipe
		mtr.	mtr.
		Length in (MTR)	Pipe Dia (MM)
Domestic & Flushing Water Supply line		54.0	32
Domestic & Flushing Water Supply line		218.0	40
Domestic & Flushing Water Supply line		62.0	50
Domestic & Flushing Water Supply line		992.0	65
Domestic & Flushing Water Supply line		0.0	80
Domestic & Flushing Water Supply line		1195.0	100
Domestic & Flushing Water Supply line		553.0	150
		Length in (M)	Pipe Dia
Municipal Water Supply line		233.0	100
Tube Well Water Supply line		134.0	100
Tube Well Water Supply line		73.0	150
Tube Well Water Supply line		30.0	200
Tube Well Water Supply line		0.0	250
32 Dia Valve		1	Nos.
40 Dia Valve		3	Nos.
50 Dia Valve		1	Nos.
65 Dia Valve		2	Nos.
80 Dia Valve		1	Nos.
100 Dia Valve		4	Nos.
150 Dia Valve		2	Nos.
200 Dia Valve		0	Nos.
100 Dia Non Return Valve		3	Nos.
Air Valve		4	Nos.

PROJECT :- GROUP HOUSING SECTOR-102, GURGOAN, HARYANA

IRRIGATION WATER SUPPLY QUANTITY SHEET

S.No.	Line No		Length of Pipe	Dia of Pipe
	From	To	mtr.	mm.
1	*S.T.P.- 01*	G1	25.0	80
2.	G1	G2	51.0	65
3.	G2	G3	187.0	65
4.	G3	G4	53.0	65
5.	G4	G5	18.0	65
6.	G5	G7	139.0	65
7.	G5	G6	177.0	65
8.	G6	G7	77.0	65
9.	G7	G8	45.0	65
10.	G8	G9	75.0	65
11.	G8	G12	183.0	65
12.	G9	G12	34.0	65
13.	G9	G10	133.0	65
14.	G10	G11	133.0	65
15.	G12	G11	33.0	65
16.	G11	G13	117.0	65
17.	G2	G13	113.0	65

	Length in (mtr.)	Pipe Dia
Irrigation Water Supply line	**1568.0**	**65**
Irrigation Water Supply line	**25.0**	**80**

Garden Hydrant	38	Nos.
65 Dia Valve	2	Nos.
80 Dia Valve	1	Nos.
Air Valve	2	Nos.

PROJECT :- GROUP HOUSING SECTOR-102, GURGOAN, HARYANA

FIRE QUANTITY SHEET

S.No.	Line No		Length of Pipe	Dia of Pipe
	From	To	mtr.	mtr.
1	***UGT***	FF1	20.0	150
2.	FF1	FF2	24.0	150
3.	FF2	FF3	25.0	150
4.	FF3	FF4	409.0	150
5.	FF4	FF5	220.0	150
6.	FF2	FF10	110.0	150
7.	FF4	FF10	54.0	150
8.	FF10	FF9a	113.0	150
9.	FF5	FF8a	80.0	150
10.	FF8a	FF9a	24.0	150
11.	FF9a	FF9	52.0	150
12.	FF9a	FF8a	24.0	150
13.	FF8a	FF8	52.0	150
14.	FF9	FF8	24.0	150
15.	FF8	FF7	39.0	150
16.	FF5	FF6	141.0	150
17.	FF6	FF7	30.0	150
18.	FF7	FF11	86.0	150
19.	FF11	FF1	33.0	150

	Length	
80 mm Dia Pipe	**210.0**	**mtr.**
100 mm Dia Pipe	**0.0**	**mtr.**
150 mm Dia Pipe	**1560.0**	**mtr.**

External Fire Hydrant =	**33**	**Nos.**
80 Dia Valve =	**33**	**Nos.**
100 Dia Valve =	**0**	**Nos.**
150 Dia Valve =	**1**	**Nos.**
80 Dia Non Return Valve =	**33**	**Nos.**

PROJECT :- GROUP HOUSING SECTOR-102, GURGOAN, HARYANA

TITLE - SEWERAGE QUANTITY SHEET

S.No.	Line No.		Length	Pipe Dia		Depth			Excavation Depth	EXCAVATION			
						Start	End	Avg.		0.0 - 1.5	1.5 - 3.0	3.0 - 4.5	4.5 - 6.0
	From	To	(mtr.)	(mm)	(mtr.)	(mtr.)	(mtr.)	(mtr.)	(cum.)	(mtr.)	(mtr.)	(mtr.)	(mtr.)
1.	S1	S2	82.0	250	0.250	1.20	1.63	1.42	91.45	82.0	0.0	0.0	0.0
2.	S2	S3	150.0	250	0.250	1.63	2.32	1.98	221.94	0.0	150.0	0.0	0.0
3.	S3	S4	164.0	250	0.250	2.32	3.28	2.80	330.74	0.0	164.0	0.0	0.0
4.	S4a	S4	140.0	250	0.250	1.20	1.89	1.54	167.75	0.0	140.0	0.0	0.0
5.	S4	S5	132.0	250	0.250	3.28	4.03	3.66	339.47	0.0	0.0	132.0	0.0
6.	S7	S8	126.0	250	0.250	1.20	1.91	1.56	152.05	0.0	126.0	0.0	0.0
7.	S8	S9	180.0	250	0.250	1.91	2.91	2.41	317.29	0.0	180.0	0.0	0.0
8.	S9	S5	318.0	250	0.250	2.91	4.48	3.70	826.26	0.0	0.0	318.0	0.0
9.	S5	S6	108.0	400	0.400	4.48	4.83	4.66	428.13	0.0	0.0	0.0	108.0
10.	S6a	S6	103.0	250	0.250	1.20	1.74	1.47	118.57	103.0	0.0	0.0	0.0
11.	S6	S.T.P	2.0	400	0.400	4.83	4.83	4.83	8.21	0.0	0.0	0.0	2.0
Total			1505.0						3002.0	185.0	760.0	450.0	110.0

Excavation Depth				
	(0.0 - 1.5)	(1.5 - 3.0)	(3.0 - 4.5)	(4.5 - 6.0)
250 mm Dia pipe	185.0	760.0	450.0	0.0
400 mm Dia pipe	0.0	0.0	0.0	110.0

PROJECT :- GROUP HOUSING SECTOR-102, GURGOAN, HARYANA

TITLE :- STORM WATER QUANTITY SHEET

S.No.	Line No.		Length	Size of Pipe		Depth			Excavation Depth	EXCAVATION		
						Start	End	Avg.		0.0 -1.5	1.5 - 3.0	3.0 - 4.5
	From	To	(mtr.)	(mm)	(mtr.)	(mtr.)	(mtr.)	(mtr.)	(cum.)	(mtr.)	(mtr.)	(mtr.)
1	A1	A2	72.0	400	0.400	1.50	1.58	1.54	132.35	0.0	72.0	0.0
2.	A2	D.C.01	2.0	400	0.400	1.58	1.58	1.58	3.76	0.0	2.0	0.0
3.	D.C.01	R.P.01	1.0	400	0.400	1.58	1.58	1.58	1.88	0.0	1.0	0.0
4.	R.P.01	A3	5.0	400	0.400	1.50	1.51	1.50	9.02	0.0	5.0	0.0
5.	A3	A4	90.0	400	0.400	1.51	1.62	1.56	167.64	0.0	90.0	0.0
6.	A4	D.C.02	2.0	400	0.400	1.62	1.62	1.62	3.84	0.0	2.0	0.0
7.	D.C.02	R.P.02	1.0	400	0.400	1.62	1.62	1.62	1.92	0.0	1.0	0.0
8.	R.P.02	A5	1.0	400	0.400	1.50	1.50	1.50	1.80	0.0	1.0	0.0
9.	A5	A6	94.0	400	0.400	1.50	1.67	1.58	177.12	0.0	94.0	0.0
10.	A6	D.C.03	2.0	400	0.400	1.67	1.67	1.67	3.94	0.0	2.0	0.0
11.	D.C.03	R.P.03	1.0	400	0.400	1.67	1.67	1.67	1.97	0.0	1.0	0.0
12.	R.P.03	A7	2.0	400	0.400	1.50	1.50	1.50	3.60	0.0	2.0	0.0
13.	A7	A8	65.0	400	0.400	1.50	1.57	1.54	119.31	0.0	65.0	0.0
14.	A31	A32	105.0	400	0.400	1.50	1.53	1.52	190.80	0.0	105.0	0.0
15.	A32	D.C.04	3.0	400	0.400	1.53	1.54	1.54	5.51	0.0	3.0	0.0
16.	D.C.04	R.P.04	3.0	400	0.400	1.54	1.54	1.54	5.53	0.0	3.0	0.0
17.	R.P.04	A33	5.0	400	0.400	1.50	1.51	1.50	9.02	0.0	5.0	0.0
18.	A33	A8	16.0	400	0.400	1.51	1.54	1.52	29.16	0.0	16.0	0.0
19.	A8	A9	13.0	400	0.400	1.57	1.59	1.58	24.43	0.0	13.0	0.0
20.	A9	A10	62.0	400	0.400	1.59	1.65	1.62	119.02	0.0	62.0	0.0
21.	A34	A35	83.0	400	0.400	1.50	1.60	1.55	153.37	0.0	83.0	0.0
22.	A35	D.C.05	8.0	400	0.400	1.60	1.61	1.60	15.22	0.0	8.0	0.0
23.	D.C.05	R.P.05	2.0	400	0.400	1.61	1.61	1.61	3.82	0.0	2.0	0.0
24.	R.P.05	A10	7.0	400	0.400	1.50	1.51	1.51	12.64	0.0	7.0	0.0
25.	A10	A11	48.0	400	0.400	1.65	1.73	1.69	95.58	0.0	48.0	0.0
26.	A11	D.C.06	3.0	400	0.400	1.73	1.74	1.74	6.11	0.0	3.0	0.0
27.	D.C.06	R.P.06	3.0	400	0.400	1.74	1.74	1.74	6.12	0.0	3.0	0.0
28.	R.P.06	A12	7.0	400	0.400	1.50	1.51	1.51	12.64	0.0	7.0	0.0
29.	A12	A13	70.0	400	0.400	1.51	1.54	1.52	127.68	0.0	70.0	0.0
30.	A13a	A13	104.0	400	0.400	1.50	1.53	1.52	188.89	0.0	104.0	0.0

S.No.	Line No.		Length	Size of Pipe		Depth			Excavation Depth	EXCAVATION		
						Start	End	Avg.		0.0 -1.5	1.5 - 3.0	3.0 - 4.5
	From	To	(mtr.)	(mm)	(mtr.)	(mtr.)	(mtr.)	(mtr.)	(cum.)	(mtr.)	(mtr.)	(mtr.)
31.	A13	D.C.-13	3.0	400	0.400	1.54	1.64	1.59	5.66	0.0	3.0	0.0
32.	D.C.-14	R.P.-07	2.0	400	0.400	1.64	1.64	1.64	3.88	0.0	2.0	0.0
33.	R.P.-07	*Over Flow To HUDA*	15.0	400	0.400	1.50	1.08	1.29	23.82	15.0	0.0	0.0
34.	A14	A15	40.0	400	0.400	1.50	1.52	1.51	72.40	0.0	40.0	0.0
35.	A15	D.C.08	4.0	400	0.400	1.52	1.53	1.52	7.29	0.0	4.0	0.0
36.	D.C.08	R.P.-08	1.0	400	0.400	1.53	1.53	1.53	1.83	0.0	1.0	0.0
37.	R.P.-08	A16	4.0	400	0.400	1.50	1.51	1.50	7.21	0.0	4.0	0.0
38.	A16	A17	60.0	400	0.400	1.51	1.56	1.53	110.08	0.0	60.0	0.0
39.	A17a	A17	60.0	400	0.400	1.50	1.61	1.55	111.16	0.0	60.0	0.0
40.	A17	D.C.09	2.0	400	0.400	1.61	1.61	1.61	3.81	0.0	2.0	0.0
41.	D.C.09	R.P.09	2.0	400	0.400	1.61	1.61	1.61	3.82	0.0	2.0	0.0
42.	R.P.09	A18	2.0	400	0.400	1.50	1.50	1.50	3.60	0.0	2.0	0.0
43.	A18	A19	69.0	400	0.400	1.50	1.52	1.51	125.17	0.0	69.0	0.0
44.	A19	D.C.10	2.0	400	0.400	1.52	1.53	1.53	3.65	0.0	2.0	0.0
45.	D.C.10	R.P.10	2.0	400	0.400	1.53	1.53	1.53	3.66	0.0	2.0	0.0
46.	R.P.10	A20	3.0	400	0.400	1.50	1.51	1.50	5.41	0.0	3.0	0.0
47.	A20	A21	24.0	400	0.400	1.51	1.55	1.53	43.83	0.0	24.0	0.0
48.	A21a	A21b	35.0	400	0.400	1.50	1.56	1.53	64.07	0.0	35.0	0.0
49.	A21c	A21b	31.0	400	0.400	1.50	1.55	1.53	56.64	0.0	31.0	0.0
50.	A21b	A21	35.0	400	0.400	1.56	1.62	1.59	66.22	0.0	35.0	0.0
51.	A21	A22	37.0	400	0.400	1.62	1.69	1.66	72.34	0.0	37.0	0.0
52.	A22	D.C.-11	1.0	400	0.400	1.69	1.69	1.69	1.99	0.0	1.0	0.0
53.	D.C.-11	R.P.11	1.0	400	0.400	1.69	1.69	1.69	1.99	0.0	1.0	0.0
54.	R.P.11	A23	1.0	400	0.400	1.50	1.50	1.50	1.80	0.0	1.0	0.0
55.	A23	A24	88.0	400	0.400	1.50	1.56	1.53	160.95	0.0	88.0	0.0
56.	A25	A26	100.0	400	0.400	1.50	1.63	1.58	186.27	0.0	100.0	0.0
57.	A26	D.C.-12	1.0	400	0.400	1.63	1.63	1.63	1.93	0.0	1.0	0.0
58.	D.C.-12	R.P.12	2.0	400	0.400	1.63	1.63	1.63	3.86	0.0	2.0	0.0
59.	R.P.12	A27	13.0	400	0.400	1.50	1.52	1.51	23.55	0.0	13.0	0.0
60.	A27	A28	101.0	400	0.400	1.52	1.55	1.54	185.48	0.0	101.0	0.0
61.	A28	D.C.13	2.0	400	0.400	1.55	1.55	1.55	3.70	0.0	2.0	0.0

S.No.	Line No.		Length	Size of Pipe		Depth			Excavation Depth	EXCAVATION		
						Start	End	Avg.		0.0 -1.5	1.5 - 3.0	3.0 - 4.5
	From	To	(mtr.)	(mm)	(mtr.)	(mtr.)	(mtr.)	(mtr.)	(cum.)	(mtr.)	(mtr.)	(mtr.)
62.	D.C.13	R.P.13	2.0	400	0.400	1.55	1.56	1.56	3.71	0.0	2.0	0.0
63.	R.P.13	A29	2.0	400	0.400	1.50	1.50	1.50	3.60	0.0	2.0	0.0
64.	A29	A24	18.0	400	0.400	1.50	1.54	1.52	32.75	0.0	18.0	0.0
65.	A24	D.C.-14	2.0	400	0.400	1.58	1.56	1.56	3.72	0.0	2.0	0.0
66.	D.C.-14	R.P.14	2.0	500	0.500	1.68	1.66	1.66	4.31	0.0	2.0	0.0
67.	R.P.14	*Over Flow To HUDA*	11.0	500	0.500	1.60	1.16	1.38	20.35	11.0	0.0	0.0
68.	**Catch Basin Line**		1472.0	250	0.250	0.60	0.70	0.65	1186.64	1472.0	0.0	0.0
Total			**3132.0**						**4258.0**	**1498.0**	**1634.0**	**0.0**

Excavation Depth			
	(0.0 - 1.5)	(1.5 - 3.0)	(3.0 - 4.5)
250 mm Dia pipe	1472.0	-	-
400 mm Dia pipe	15.0	1632.0	0.0
500 mm Dia pipe	11.0	2.0	0.0

PROJECT :- GROUP HOUSING SECTOR-102, GURGOAN, HARYANA

TITLE :- ROAD QUANTITY SHEET

AREA OF METALLED ROAD (A)

S.NO.	ROAD NO.	LENGTH (In Sq. Mt.)	WIDTH	TOTAL AREA (In Sq. Mt.)
1	1	22.560	6.500	146.640
2	2	41.190	6.500	267.735
3	3	42.465	6.500	276.023
4	4	87.600	6.500	569.400
5	5	25.275	3.190	80.627
6	6	48.910	6.500	317.915
7	7	169.720	6.500	1103.180
8	8	7.585	6.500	49.303
9	9	52.915	6.500	343.948
10	10	38.215	6.500	248.398
11	11	142.355	6.500	925.308
12	12	143.545	6.500	933.043
13	13	16.625	6.000	99.750
14	14	30.475	6.000	182.850
15	15	44.500	6.000	267.000
16	16	62.630	6.000	375.780
17	17	42.860	6.000	257.160
18	18	69.130	6.000	414.780
	TOTAL			6858.837
	ADD 10% FOR CURVES			685.884
	TOTAL METALLED ROAD AREA (A)			7544.720 SQM

7545

1088 Rmt.

AREA OF HARD PAVED (For Fire Tender Movement) (B)				
S.NO.	ROAD NO.	LENGTH	WIDTH	TOTAL AREA
		(In Sq. Mt.)		(In Sq. Mt.)
1	A	27.070	6.000	162.420
2	B	40.190	6.000	241.140
3	C	18.045	6.000	108.270
4	D	101.145	6.000	606.870
5	E	153.490	6.000	920.940
6	F	21.750	6.000	130.500
7	G	16.165	6.000	96.990
8	H	41.250	6.000	247.500
9	I	96.870	6.000	581.220
10	J	143.760	6.000	862.560
	TOTAL			3958.41
	ADD 10% FOR CURVES			395.841
	TOTAL HARD PAVED AREA (B)			4354.250 SQM

AREA UNDER CAR PARKING (C)

NO. OF CARS ON SURFACE = 265 NO.

AREA UNDER CAR PARKING = 5 X 2.5 X 265 = ~~3142.5~~ 3312.5 SQM

TOTAL AREA UNDER CAR PARKING (C)	3312.50 SQM

TOTAL AREA OF ROADS = A + B + C = 7544.720 +4354.250 + 3312.50 = 15211.470 SQM

PROJECT :- GROUP HOUSING SECTOR-102, GURGOAN, HARYANA

TITLE :- TUBE WELL WATER DESIGN CHART

S.NO	Line No.		Average Demand	Peak Demand @ 1.5 Times	Flow Rate	Length of Pipe	Head Loss mtr./ mtr.	Total Head Loss	Velocity	Dia of Pipe
	From	To	lph.	lph.	lpm.	mtr.	mtr.	mtr.	m/sec	mm
1	TW 01	T1	18.00	27.00	450.00	119.0	0.018	2.16	0.954	100
2.	TW 02	T2	18.00	27.00	450.00	5.0	0.018	0.09	0.954	100
3.	T1	T2	36.00	54.00	900.00	73.0	0.009	0.66	0.848	150
4.	TW 03	T2	18.00	27.00	450.00	5.0	0.018	0.09	0.954	100
5.	T2	UGT.	54.00	81.00	1350.00	30.0	0.005	0.14	0.716	200
Total Length of branch lines						232.0	mtr.			

EMAAR MGF LAND LTD. NEW DELHI

PROJECT :- GROUP HOUSING SECTOR-102, GURGOAN, HARYANA

(Pump Riser Calculation Sheet)

Domestic Water Supply Design Calculation For Towers

Line No.	Pipe No.	Load on pipe (fix units)	Probable demand (lps)	Assumed pipe dia. (mm)	Head loss (mtr./mtr.)	Pipe length (mtr.)	Eq. Length fitts (%)	Eq. Length (mtr.)	Total length (mtr.)	Head loss line (mtr.)	Head loss prog (mtr.)	Velocity (m/sec)	Pump Head Available in basement	Residual Head Available at terrace	Residual Head Available at inlet of tank	Tower Height From Pump Room	Building Name
1	2	3	4	5	6	7	8	9	10	11	12	13	15	14			
UGT - D1			18.220	150	0.013	41.0	5	2.05	43.05	0.562	0.562	1.030	64.00	63.44	-	-	-
D1 - D2			9.136	150	0.004	203.0	5	10.15	213.15	0.775	1.337	0.517	63.44	62.10	12.10	50.00	Tower -17,18,19,20,21 & 22)
D2 - D3			5.087	100	0.009	235.0	5	11.75	246.75	2.185	3.522	0.647	62.10	56.58	6.58	52.00	Tower -1,2,23,24,25,26 & 27)
D1 - D4			9.084	150	0.004	253.0	5	12.65	265.65	0.956	1.517	0.514	63.44	61.92	11.92	50.00	Tower -8,9,10,11,12,14,15 & 16)
D4 - D9			4.049	100	0.006	135.0	5	6.75	141.75	0.823	2.340	0.515	61.92	59.58	9.58	50.00	Tower -3,4,5,6 & 7)
			Flow Rate			18.220	lps										
						1093.2	LPM										
			(2 W + 1 S)			546.6	LPM										
			Maximum Building Height			45	m										
			Pump Head			64.00	m										
			Pump HP			13.0	HP										
			Say			15.0	HP										

Flushing Water Supply Design Calculation For Towers

Line No.	Pipe No.	Load on pipe (fix units)	Probable demand (lps)	Assumed pipe dia. (mm)	Head loss (mtr./mtr.)	Pipe length (mtr.)	Eq. Length fitts (%)	Eq. Length (mtr.)	Total length (mtr.)	Head loss line (mtr.)	Head loss prog (mtr.)	Velocity (m/sec)	Pump Head Available in basement	Residual Head Available at terrace	Residual Head Available at inlet of tank	Tower Height From Pump Room	Building Name
1	2	3	4	5	6	7	8	9	10	11	12	13	15	14			
S.T.P. - F1			9.811	150	0.004	58.0	5	2.90	58.90	0.244	0.244	0.555	64.00	63.76	-	-	-
F1 - F2			5.255	100	0.009	134.0	5	6.70	140.70	1.323	1.567	0.669	63.76	62.19	12.19	50.00	Tower -3,4,5,6 & 7)
F2 - F3			2.739	100	0.003	235.0	5	11.75	246.75	0.694	2.262	0.349	62.19	59.93	7.93	52.00	Tower -1,2,23,24,25,26 & 27)
F1 - F4			4.891	100	0.008	253.0	5	12.65	265.65	2.188	2.432	0.622	63.76	61.32	11.32	50.00	Tower -8,9,10,11,12,14,15 & 16)
F4 - F3			2.180	100	0.002	203.0	5	10.15	213.15	0.393	2.825	0.277	61.32	58.50	8.50	50.00	Tower -17,18,19,20,21 & 22)
			Flow Rate			9.811	lps										
						588.7	LPM										
			(2 W + 1 S)			294.3	LPM										
			Maximum Building Height			45	m										
			Pump Head			64.00	m										
			Pump HP			7.0	HP										
			Say			7.5	HP										

Domestic Water Supply Design Calculation For EWS, Club, Shops & Schools

Line No.	Pipe No.	Load on pipe (fix units)	Probable demand (lps)	Assumed pipe dia. (mm)	Head loss (m/m)	Pipe length (mtr.)	Eq. Length fitts (%)	Eq. Length (mtr.)	Total length (mtr.)	Head loss line (mtr.)	Head loss prog (mtr.)	Velocity (m/sec)	Pump Head Available in basement	Residual Head Available at terrace	Residual Head Available at inlet of tank	Tower Height From Pump Room	Building Name
1	2	3	4	5	6	7	8	9	10	11	12	13	15	14			
UGT - DD1			2.439	65	0.019	40.0	5	2.00	42.00	0.777	0.777	0.735	40.00	39.22	-	-	-
DD1 - DD1a			1.235	65	0.016	415.0	5	20.75	435.75	6.922	7.699	0.677	39.22	31.52	7.52	24.00	EWS
DD1 - DD2			1.204	65	0.015	92.0	5	4.60	96.60	1.482	2.259	0.659	39.22	36.96	-	-	-
DD2 - DD2a			0.603	50	0.032	62.0	5	3.10	65.10	2.076	4.316	0.838	36.96	32.67	17.67	15.00	Club & Shopping
DD2 - DD3			0.301	40	0.012	87.0	5	4.35	91.35	1.129	3.389	0.495	36.96	33.61	13.61	20.00	Nursary School
			Flow Rate			2.439	lps										
			(1 W + 1 S)			146.3	LPM										
			Maximum Building Height			18	m										
			Pump Head			40.00	m										
			Pump HP			2.2	HP										
			SAY			3.00	HP										

Flushing Water Supply Design Calculation For EWS, Club, Shops & Schools

Line No.	Pipe No.	Load on pipe (fix units)	Probable demand (lps)	Assumed pipe dia. (mm)	Head loss (m/m)	Pipe length (mtr.)	Eq. Length fitts (%)	Eq. Length (mtr.)	Total length (mtr.)	Head loss line (mtr.)	Head loss prog (mtr.)	Velocity (m/sec)	Pump Head Available in basement	Residual Head Available at terrace	Residual Head Available at inlet of tank	Tower Height From Pump Room	Building Name
1	2	3	4	5	6	7	8	9	10	11	12	13	15	14			
S.T.P. - FF1			1.313	65	0.006	10.0	5	0.50	10.50	0.062	0.062	0.396	40.00	39.94	-	-	-
FF1 - FF1a			0.865	40	0.054	37.0	5	1.85	38.85	2.087	2.148	0.962	39.94	37.79	5.79	32.00	EWS
FF1 - FF2			0.648	65	0.005	435.0	5	21.75	456.75	2.197	2.259	0.355	39.94	37.68	-	-	-
FF2 - FF2a			0.486	40	0.030	94.0	5	4.70	98.70	2.965	3.320	0.703	37.68	34.36	19.36	15.00	Club & Shopping
FF2 - FF3			0.162	32	0.012	54.0	5	2.70	56.70	0.680	2.919	0.366	37.68	34.76	14.76	20.00	Nursary School
			Flow Rate			1.313	lps										
			(1 W + 1 S)			78.8	LPM										
			Maximum Building Height			18	m										
			Pump Head			40.00	m										
			Pump HP			1.2	HP										
			SAY			2.00	HP										

PROJECT : 68 DGAON GREEN, SECTOR - 102, GURGAON (HARYANA)

TITLE :- HYDRAULIC SEWAGE CHART

S.No.	Line No.		Gross Water Requirement (Load on Line)	Sewage Flow (Self Load on Line) LPD	Sewage Flow (Self Load on Line) KLD	Previous Load	Prog-ressive Discharge	Prog-ressive Discharge (Average)	Prog- ressive Discharge (Peak)	Infiltration @ 25% Av. Discharge	Total Dis-charge	Length	Pipe Size	Slope (1 in)	Fall	Velocity	Capacity of Pipe	FSL at Start	Invert Levels at Start	FSL at End	Invert Levels at End	Manhole Start Depth	Manhole Start End	Average Depth
	From	To	lpd	80%	1000	Kld.	Kld.	lps.	lps.	lps.	lps.	(mtr.)	(mm)	(part)	(mtr.)	(m/s) (v)	lps.	(mtr.)	(mtr.)	(mtr.)	(mtr.)	(mtr.)	(mtr.)	(mtr.)
1.	S1	S2	130750	104600	104.60	0.00	104.60	1.21	3.63	0.30	3.93	82.0	250	190	0.43	0.76	18.70	212.55	211.35	212.55	210.92	1.20	1.63	1.42
2.	S2	S3	60300	48240	48.24	104.60	152.84	1.77	5.31	0.44	5.75	150.0	250	190	0.79	0.76	18.70	212.55	210.92	212.45	210.13	1.63	2.32	1.98
3.	S3	S4	4485	3588	3.59	152.84	156.43	1.81	5.43	0.45	5.88	164.0	250	190	0.86	0.76	18.70	212.45	210.13	212.55	209.27	2.32	3.28	2.80
4.	S4a	S4	53820	43056	43.06	0.00	43.06	0.50	1.50	0.12	1.62	140.0	250	190	0.74	0.76	18.70	212.60	211.40	212.55	210.66	1.20	1.89	1.54
5.	S4	S5	74175	59340	59.34	199.48	258.82	3.00	8.99	0.75	9.74	152.0	250	190	0.69	0.76	18.70	212.55	209.27	212.60	208.57	3.28	4.03	3.66
6.	S7	S8	89700	71760	71.76	0.00	71.76	0.83	2.49	0.21	2.70	126.0	250	190	0.66	0.76	18.70	212.60	211.40	212.65	210.74	1.20	1.91	1.56
7.	S8	S9	44850	35880	35.88	71.76	107.64	1.25	3.74	0.31	4.05	180.0	250	190	0.95	0.76	18.70	212.65	210.74	212.70	209.79	1.91	2.91	2.41
8.	S9	S5	169395	135516	135.52	107.64	243.16	2.81	8.44	0.70	9.15	318.0	250	190	1.67	0.76	18.70	212.70	209.79	212.60	208.12	2.91	4.48	3.70
9.	S5	S6	0	0	0.00	501.98	501.98	5.81	17.43	1.45	18.88	108.0	400	370	0.29	0.75	46.93	212.60	208.12	212.65	207.82	4.48	4.83	4.66
10.	S6a	S6	41055	32844	32.84	0.00	32.84	0.38	1.14	0.10	1.24	103.0	250	190	0.54	0.76	18.70	212.65	211.45	212.65	210.91	1.20	1.74	1.47
11.	S6	S.T.P	0	0	0.00	534.82	534.82	6.19	18.57	1.55	20.12	2.0	400	190	0.01	0.75	46.93	212.65	207.82	212.65	207.82	4.83	4.83	4.83

Formula Used:

Peak factor is considered as 3 times for population upto 20,000 persons & above 20,000 person peak factor is considered 2.5 times.

Velocity(m/s)=(1/n)x(A/P)^(2/3)*(1/slope)^.5

n=.015 for RCC pipe (Manning's Coefficient)

A=Area of x-section of pipe in sqm.

P =Wetted Perimeter in m

Capacity of pipe(lps) = Area of x-section of pipe in sqm x velocity in m/s x1000x1/2(Sewers are designed to run half full)

Abbreviation Used:

IL=Invert level of pipe

FSL=Full supply level

FRL=Formation Road Level

CL=Connection Level

PROJECT : GURGAON GREEN, SECTOR - 102, GURGAON (HARYANA)
LOAD ON SEWAGE LINES

			Apartment (General)			Apartment (EWS)			Water Requirement for Non Residential Plots.					
S. No.	Name of Sewer Line		Number of Apartment	Population @ 5 persons / Flat.	Water Requirement @ 172.5 Ltr/ head / day	Number of Apartment	Population @ 2 persons/ Flat	Water Requirement @ 172.5 Ltr/ head / day	Type of Building	Basis of Water Requirement	Total Water Requirement	Gross Water Requirement (Load on Line)	Sewage Flow (Self Load on Line)	Sewage Flow (Self Load on Line)
	From	To		Nos.	lpd.		Nos.	lpd.		lpd.	lpd.	lpd.	lpd	kld.
				5	172.5		2	172.5		Lumpsum			80%	100
1.	S1	S2	140	700	120750	0	0	0	Nursery School	10000	10000	130750	104600	104.60
2.	S2	S3	56	280	48300	0	0	0	Club House / Convenient	12000	12000	60300	48240	48.24
3.	S3	S4	0	0	0	13	26	4485	-	-	0	4485	3588	3.59
4.	S4a	S4	52	260	44850	26	52	8970	-	-	0	53820	43056	43.06
5.	S4	S5	78	390	67275	20	40	6900	-	-	0	74175	59340	59.34
6.	S7	S8	104	520	89700	0	0	0	-	-	0	89700	71760	71.76
7.	S8	S9	52	260	44850	0	0	0	-	-	0	44850	35880	35.88
8.	S9	S5	190	950	163875	16	32	5520	-	-	0	169395	135516	135.52
9.	S5	S6	0	0	0	0	0	0	-	-	0	0	0	0.00
10.	S6a	S6	0	0	0	119	238	41055	-	-	0	41055	32844	32.84
11.	S6	S.T.P	0	0	0	0	0	0	-	-	0	0	0	0.00
			672	3360	579600	194	388	66930			22000	668530	534824	534.82
													Say	550.00

PROJECT : GURGAON GREEN, SECTOR - 102, GURGAON (HARYANA)

TITLE :- HYDRAULIC STORM WATER DESIGN CHART

S.No.	Line No.		Length	Catchment Area (Sqm.)			Discharge @ 6.25mm / hr	Pipe dia	Slope 1 in	Velocity m/sec.	Capacity of pipe	Fall in line	Levels at start (mtr.)			Levels at End (mtr.)			Manhole Depth		
																			Depth (mtr.)		Avg
	From	To	(mtr.)	Self	Progg.	Total	60% runoff (lps)	(mm)	(mm)	m/sec	lps.	mm.	FRL	FSL	IL	FRL	FSL	IL	Start	End	Depth
1.	A1	A2	72.0	2256.0	0.0	2256.0	2.35	400	570	0.60	75.63	0.13	212.75	211.65	211.25	212.70	211.52	211.12	1.50	1.58	1.54
2.	A2	D.C.01	2.0	0.0	2256.0	2256.0	2.35	400	570	0.60	75.63	0.00	212.70	211.52	211.12	212.70	211.52	211.12	1.58	1.58	1.58
3.	D.C.01	*R.P.01*	1.0	0.0	2256.0	2256.0	2.35	400	570	0.60	75.63	0.00	212.70	211.52	211.12	212.70	211.52	211.12	1.58	1.58	1.58
4.	*R.P.01*	A3	5.0	0.0	2256.0	2256.0	2.35	400	570	0.60	75.63	0.01	212.70	211.60	211.20	212.70	211.59	211.19	1.50	1.51	1.50
5.	A3	A4	90.0	2819.0	2256.0	5075.0	5.29	400	570	0.60	75.63	0.16	212.70	211.59	211.19	212.65	211.43	211.03	1.51	1.62	1.56
6.	A4	D.C.02	2.0	0.0	5075.0	5075.0	5.29	400	570	0.60	75.63	0.00	212.65	211.43	211.03	212.65	211.43	211.03	1.62	1.62	1.62
7.	D.C.02	*R.P.02*	1.0	0.0	5075.0	5075.0	5.29	400	570	0.60	75.63	0.00	212.65	211.43	211.03	212.65	211.43	211.03	1.62	1.62	1.62
8.	*R.P.02*	A5	1.0	0.0	5075.0	5075.0	5.29	400	570	0.60	75.63	0.00	212.65	211.55	211.15	212.65	211.55	211.15	1.50	1.50	1.50
9.	A5	A6	94.0	2945.0	5075.0	8020.0	8.35	400	570	0.60	75.63	0.16	212.65	211.55	211.15	212.65	211.38	210.98	1.50	1.67	1.58
10.	A6	D.C.03	2.0	0.0	8020.0	8020.0	8.35	400	570	0.60	75.63	0.00	212.65	211.38	210.98	212.65	211.38	210.98	1.67	1.67	1.67
11.	D.C.03	*R.P.03*	1.0	0.0	8020.0	8020.0	8.35	400	570	0.60	75.63	0.00	212.65	211.38	210.98	212.65	211.38	210.98	1.67	1.67	1.67
12.	*R.P.03*	A7	2	0.0	8020.0	8020.0	8.35	400	570	0.60	75.63	0.00	212.65	211.55	211.15	212.65	211.55	211.15	1.50	1.50	1.50
13.	A7	A8	65.0	2536.0	8020.0	10556.0	11.00	400	570	0.60	75.63	0.11	212.65	211.55	211.15	212.60	211.43	211.03	1.50	1.57	1.54
14.	A31	A32	105	3289.0	0.0	3289.0	3.43	400	570	0.60	75.63	0.18	212.75	211.65	211.25	212.60	211.47	211.07	1.50	1.53	1.52
15.	A32	D.C.04	3	0.0	3289.0	3289.0	3.43	400	570	0.60	75.63	0.01	212.60	211.47	211.07	212.60	211.46	211.06	1.53	1.54	1.54
16.	D.C.04	*R.P.04*	3	0.0	3289.0	3289.0	3.43	400	570	0.60	75.63	0.01	212.60	211.46	211.06	212.60	211.46	211.06	1.54	1.54	1.54
17.	*R.P.04*	A33	5.00	0.0	3289.0	3289.0	3.43	400	570	0.60	75.63	0.01	212.60	211.50	211.10	212.60	211.49	211.09	1.50	1.51	1.50
18.	A33	A8	16	502.0	3289.0	3791.0	3.95	400	570	0.60	75.63	0.03	212.60	211.49	211.09	212.60	211.46	211.06	1.51	1.54	1.52
19.	A8	A9	13.0	408.0	14347.0	14755.0	15.37	400	570	0.60	75.63	0.02	212.60	211.43	211.03	212.60	211.41	211.01	1.57	1.59	1.58
20.	A9	A10	62.00	1942.0	14755.0	16697.0	17.39	400	570	0.60	75.63	0.11	212.60	211.41	211.01	212.55	211.30	210.90	1.59	1.65	1.62
21.	A34	A35	83.00	5450.0	0.0	5450.0	5.68	400	570	0.60	75.63	0.15	212.60	211.50	211.10	212.55	211.35	210.95	1.50	1.60	1.55
22.	A35	D.C.05	8.00	0.0	5450.0	5450.0	5.68	400	570	0.60	75.63	0.01	212.55	211.35	210.95	212.55	211.34	210.94	1.60	1.61	1.60
23.	D.C.05	*R.P.05*	2.00	0.0	5450.0	5450.0	5.68	400	570	0.60	75.63	0.00	212.55	211.34	210.94	212.55	211.34	210.94	1.61	1.61	1.61
24.	*R.P.05*	A10	7.00	0.0	5450.0	5450.0	5.68	400	570	0.60	75.63	0.01	212.55	211.45	211.05	212.55	211.44	211.04	1.50	1.51	1.51
25.	A10	A11	48.00	1504.0	22147.0	23651.0	24.64	400	570	0.60	75.63	0.08	212.55	211.30	210.90	212.55	211.22	210.82	1.65	1.73	1.69
26.	A11	D.C.06	3.00	0.0	23651.0	23651.0	24.64	400	570	0.60	75.63	0.01	212.55	211.22	210.82	212.55	211.21	210.81	1.73	1.74	1.74
27.	D.C.06	*R.P.06*	3.00	0.0	23651.0	23651.0	24.64	400	570	0.60	75.63	0.01	212.55	211.21	210.81	212.55	211.21	210.81	1.74	1.74	1.74

S.No.	Line No.		Length	Catchment Area (Sqm.)			Discharge @ 6.25mm / hr	Pipe dia	Slope 1 in	Velocity m/sec.	Capacity of pipe	Fall in line	Levels at start (mtr.)			Levels at End (mtr.)			Depth (mtr.)		Avg.
28.	*R.P.06*	A12	7.00	0.0	23651.0	23651.0	24.64	400	570	0.60	75.63	0.01	212.55	211.45	211.05	212.55	211.44	211.04	1.50	1.51	1.51
29.	A12	A13	70.00	2193.0	23651.0	25844.0	26.92	400	570	0.60	75.63	0.12	212.55	211.44	211.04	212.45	211.31	210.91	1.51	1.54	1.52
30.	A13a	A13	104.00	3258.0	0.0	3258.0	3.39	400	570	0.60	75.63	0.18	212.60	211.50	211.10	212.45	211.32	210.92	1.50	1.53	1.52
31.	A13	D.C.-14	3.00	0.0	29102.0	29102.0	30.31	400	570	0.60	75.63	0.01	212.45	211.31	210.91	212.55	211.31	210.91	1.54	1.64	1.59
32.	D.C.-14	*R.P.-07*	2.00	0.0	29102.0	29102.0	30.31	400	570	0.60	75.63	0.00	212.55	211.31	210.91	212.55	211.31	210.91	1.64	1.64	1.64
33.	*R.P.-07*	*Over Flow To HUDA*	15.00	0.0	29102.0	29102.0	30.31	400	570	0.60	75.63	0.03	212.45	211.35	210.95	212.00	211.32	210.92	1.50	1.08	1.29
34.	A14	A15	40.00	1253.0	0.0	1253.0	1.31	400	570	0.60	75.63	0.07	212.75	211.65	211.25	212.70	211.58	211.18	1.50	1.52	1.51
35.	A15	D.C.08	4.00	0.0	1253.0	1253.0	1.31	400	570	0.60	75.63	0.01	212.70	211.58	211.18	212.70	211.57	211.17	1.52	1.53	1.52
36.	D.C.08	*R.P.-08*	1.00	0.0	1253.0	1253.0	1.31	400	570	0.60	75.63	0.00	212.70	211.57	211.17	212.70	211.57	211.17	1.53	1.53	1.53
37.	*R.P.-08*	A16	4.00	0.0	1253.0	1253.0	1.31	400	570	0.60	75.63	0.01	212.70	211.60	211.20	212.70	211.59	211.19	1.50	1.51	1.50
38.	A16	A17	60.00	1880.0	1253.0	3133.0	3.26	400	570	0.60	75.63	0.11	212.70	211.59	211.19	212.65	211.49	211.09	1.51	1.56	1.53
39.	A17a	A17	60.00	1880.0	0.0	1880.0	1.96	400	570	0.60	75.63	0.11	212.65	211.55	211.15	212.65	211.44	211.04	1.50	1.61	1.55
40.	A17	D.C.09	2.00	0.0	5013.0	5013.0	5.22	400	570	0.60	75.63	0.00	212.65	211.44	211.04	212.65	211.44	211.04	1.61	1.61	1.61
41.	D.C.09	*R.P.09*	2.00	0.0	5013.0	5013.0	5.22	400	570	0.60	75.63	0.00	212.65	211.44	211.04	212.65	211.44	211.04	1.61	1.61	1.61
42.	*R.P.09*	A18	2.00	0.0	5013.0	5013.0	5.22	400	570	0.60	75.63	0.00	212.65	211.55	211.15	212.65	211.55	211.15	1.50	1.50	1.50
43.	A18	A19	69.00	2162.0	5013.0	7175.0	7.47	400	570	0.60	75.63	0.12	212.65	211.55	211.15	212.55	211.43	211.03	1.50	1.52	1.51
44.	A19	D.C.10	2.00	0.0	7175.0	7175.0	7.47	400	570	0.60	75.63	0.00	212.55	211.43	211.03	212.55	211.42	211.02	1.52	1.53	1.53
45.	D.C.10	*R.P.10*	2.00	0.0	7175.0	7175.0	7.47	400	570	0.60	75.63	0.00	212.55	211.42	211.02	212.55	211.42	211.02	1.53	1.53	1.53
46.	*R.P.10*	A20	3.00	0.0	7175.0	7175.0	7.47	400	570	0.60	75.63	0.01	212.55	211.45	211.05	212.55	211.44	211.04	1.50	1.51	1.50
47.	A20	A21	24.00	752.0	7175.0	7927.0	8.26	400	570	0.60	75.63	0.04	212.55	211.44	211.04	212.55	211.40	211.00	1.51	1.55	1.53
48.	A21a	A21b	35.00	1597.0	0.0	1597.0	1.66	400	570	0.60	75.63	0.06	212.55	211.45	211.05	212.55	211.39	210.99	1.50	1.56	1.53
49.	A21c	A21b	31.00	971.0	0.0	971.0	1.01	400	570	0.60	75.63	0.05	212.55	211.45	211.05	212.55	211.40	211.00	1.50	1.55	1.53
50.	A21b	A21	35.00	1897.0	2568.0	4465.0	4.65	400	570	0.60	75.63	0.06	212.55	211.39	210.99	212.55	211.33	210.93	1.56	1.62	1.59
51.	A21	A22	57.00	2059.0	12392.0	14451.0	15.05	400	570	0.60	75.63	0.06	212.55	211.33	210.93	212.55	211.26	210.86	1.62	1.69	1.66
52.	A22	D.C.-11	1.00	0.0	14451.0	14451.0	15.05	400	570	0.60	75.63	0.00	212.55	211.26	210.86	212.55	211.26	210.86	1.69	1.69	1.69
53.	D.C.-11	*R.P.11*	1.00	0.0	14451.0	14451.0	15.05	400	570	0.60	75.63	0.00	212.55	211.26	210.86	212.55	211.26	210.86	1.69	1.69	1.69
54.	*R.P.11*	A23	1.00	0.0	14451.0	14451.0	15.05	400	570	0.60	75.63	0.00	212.55	211.45	211.05	212.55	211.45	211.05	1.50	1.50	1.50
55.	A23	A24	88.00	3757.0	14451.0	18208.0	18.97	400	570	0.60	75.63	0.15	212.55	211.45	211.05	212.45	211.29	210.89	1.50	1.56	1.53

MAAR MGF LTD NEW DELHI

S.No.	Line No.		Length	Catchment Area (Sqm.)			Discharge @ 6.25mm / hr	Pipe dia	Slope 1 in	Velocity m/sec.	Capacity of pipe	Full in line	Levels at start (mtr.)			Levels at End (mtr.)			Depth (mtr.)		Avg.
56.	A25	A26	100.00	5133.0	0.0	5133.0	5.35	400	570	0.60	75.63	0.18	212.65	211.55	211.15	212.60	211.37	210.97	1.50	1.63	1.56
57.	A26	D.C.-12	1.00	0.0	5133.0	5133.0	5.35	400	570	0.60	75.63	0.00	212.60	211.37	210.97	212.60	211.37	210.97	1.63	1.63	1.63
58.	D.C.-12	*R.P.12*	2.00	0.0	5133.0	5133.0	5.35	400	570	0.60	75.63	0.00	212.60	211.37	210.97	212.60	211.37	210.97	1.63	1.63	1.63
59.	*R.P.12*	A27	13.00	0.0	5133.0	5133.0	5.35	400	570	0.60	75.63	0.02	212.60	211.50	211.10	212.60	211.48	211.08	1.50	1.52	1.51
60.	A27	A28	101.00	3164.0	5133.0	8297.0	8.64	400	570	0.60	75.63	0.18	212.60	211.48	211.08	212.45	211.30	210.90	1.52	1.55	1.54
61.	A28	D.C.13	2.00	0.0	8297.0	8297.0	8.64	400	570	0.60	75.63	0.00	212.45	211.30	210.90	212.45	211.30	210.90	1.55	1.55	1.55
62.	D.C.13	*R.P.13*	2.00	0.0	8297.0	8297.0	8.64	400	570	0.60	75.63	0.00	212.45	211.30	210.90	212.45	211.29	210.89	1.55	1.56	1.56
63.	*R.P.13*	A29	2.00	0.0	8297.0	8297.0	8.64	400	570	0.60	75.63	0.00	212.45	211.35	210.95	212.45	211.35	210.95	1.50	1.50	1.50
64.	A29	A24	18.00	564.0	8297.0	8861.0	9.23	400	570	0.60	75.63	0.03	212.45	211.35	210.95	212.45	211.31	210.91	1.50	1.54	1.52
65.	A24	D.C.-14	2.00	0.0	27069.0	27069.0	28.20	400	570	0.60	75.63	0.00	212.45	211.29	210.89	212.45	211.29	210.89	1.56	1.56	1.56
66.	D.C.-14	*R.P.14*	2.00	0.0	56171.0	56171.0	58.51	500	770	0.60	117.98	0.00	212.45	211.29	210.79	212.45	211.29	210.79	1.66	1.66	1.66
67.	*R.P.14*	*Over Flow To HUDA*	11.00	0.0	56171.0	56171.0	58.51	500	770	0.60	117.98	0.01	212.45	211.35	210.85	212.00	211.34	210.84	1.60	1.16	1.38

Formula Used:

Velocity(m/s)=(1/n)x[A/P)^(2/3)*(1/slope)^.5

n=.015 for RCC pipe (Manning's Coefficient)

A=Area of x-section of pipe in sqm

P =Wetted Perimeter in m

Capacity of pipe(lps) =Area of x-section of pipe in sqm x velocity in m/s x1000x1/2(Storm water are designed to run full flow)

Abbreviation Used:

IL=Invert level of pipe

FSL=Full supply level

FRL=Formation Road Level

CL=Connection Level

EMAAR MGF LAND LTD. NEW DELHI

GURGAON - MANESAR URBAN COMPLEX - 2031 AD

FINAL DEVELOPMENT PLAN FOR CONTOLLED AREAS
DENOTED ON DRG.NO.-D.T.P.(G)1936 DATED 16.04.2010
UNDER SECTION 5 (7) OF ACT NO. 41 OF 1963

LEGEND:-

- DISTRICT BOUNDARY
- MUNICIPAL CORPORATION BOUNDARY
- OLD MUNICIPAL COMMITTEE LIMIT
- CONTROLLED AREA BOUNDARY
- VILLAGE ABADI
- METALLED ROAD
- KATCHA RASTA
- NATIONAL HIGHWAY
- RAILWAY LINE
- METRO ROUTE
- WATER BODIES / DRAIN / RIVER
- SECTOR NO / DENSITY / PPH

100 RESIDENTIAL (GROUP HOUSING/PLOTTED)

200 COMMERCIAL

300 INDUSTRIAL
- 320 LIGHT INDUSTRY
- 330 MEDIUM INDUSTRY
- 340 HEAVY INDUSTRY

400 TRANSPORT AND COMMUNICATION
- 410 RAILWAY STN., YARD, SIDINGS
- 420 IRON STAND, WORK SHOP, PARKING
- 430 TELEPHONE EXCHANGE

500 PUBLIC UTILITIES
- 510 WATER WORKS
- 520 DISPOSAL WORKS
- 530 GRID SUB STATION

600 PUBLIC AND SEMI PUBLIC USE
- 610 MINI SECRETARIAT, JUDICIAL COMPLEX, JAIL, POLICE STATION AND OTHER INSTITUTIONS
- 620 EDUCATIONAL, CULTURAL, RELIGIOUS INSTITUTIONS
- 630 MEDICAL AND HEALTH INSTITUTIONS
- 640 CULTURAL INSTITUTIONS LIKE THEATRES, OPERA HOUSES ETC. OF NON-COMMERCIAL NATURE
- 650 DEFENCE LAND

700 OPEN SPACES
- 710 SPORTS GROUNDS, STADIUMS, PLAY GROUNDS
- 720 PARKS
- 730 WATER BODIES/LAKES

800 AGRICULTURAL ZONE
- 810 MARKET GARDEN
- 820 LAND UNDER AGRICULTURE OPERATION WHERE NO CHANGE OF LAND USE / LICENSE SHALL BE GRANTED
- 850 FOREST LAND
- 860 DAIRY FARMING / GAUSHALA

900 SPECIAL ZONE

1000 NATURAL COSERVATION ZONE

HUBS
H-1 ENTERTAINMENT HUB, H-2 WORLD TRADE HUB & H-7 FASHION HUB

N

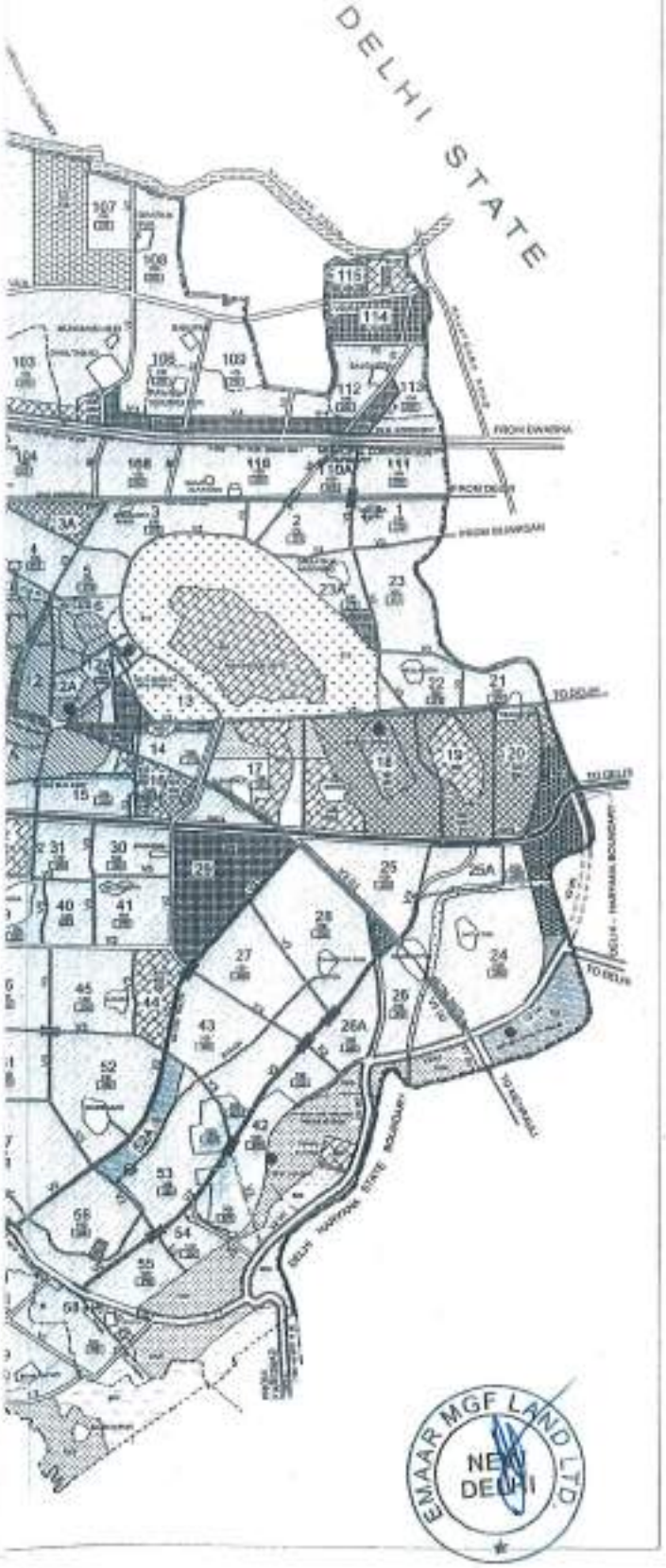
SCALE: 1:50000
(IN ORIGINAL DRG ONLY)

DRAWING NO DTP(G) 2104/2012 DATED 09.11.2012

DRAWN BY ASSTT. DRAFTSMAN	(DILBAGH AHLAWAT)	CHECKED BY PLANNING ASSTT.	(SOMVIR SINGH)
ASSTT. TOWN PLANNER	(J. P. JANGRA)		
DISTT. TOWN PLANNER GURGAON	(VIRENDER SINGH)		
(K.K. SINGH) SENIOR TOWN PLANNER GURGAON	(ARVIND MEHTANI) CHIEF CO-ORDINATOR PLANNERS(NCR) HARYANA	(T.C. GUPTA, IAS) DIRECTOR TOWN & COUNTRY PLG. HARYANA	

DEPARTMENT OF TOWN AND COUNTRY PLANNING,HARYANA

POSED 13.531 ACRE
OLUP HOUSING SITE.



FORM LC-V
(See Rule 12)
HARYANA GOVERNMENT
TOWN AND COUNTRY PLANNING DEPARTMENT

License No. 75 of 2012

This License has been granted under the Haryana Development and Regulation of Urban Areas Act, 1975 & the Rule 1976, made there under to Kamdhenu Projects Pvt. Ltd., Divit Estates Pvt. Ltd. C/o Emaar MGF Land Ltd., ECE House, 28, Kasturba Gandhi Marg, New Delhi for setting up of RESIDENTIAL GROUP HOUSING COLONY on the land measuring 13.531 acres in the revenue estate of village Dhankot, Sector 102, Gurgaon – Manesar Urban Complex.

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

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

   a) That the Group Housing Colony area is laid out to conform 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.

3. That you will construct 24 mtrs wide internal circulation road passing through your site at your own cost and the portion of road shall be transferred free of cost to the Government.

4. That the portion of Sector/Master plan road which shall form part of the licensed area shall be transferred free of cost to the Government in accordance with the provisions of Section 3(3)(a)(iii) of the Haryana Development and Regulation of Urban Areas Act, 1975.

5. That the licensee will not give any advertisement for sale of flats/office/floor area in colony before the approval of layout plan/building plan.

6. That you will have no objection to the regularization of the boundaries of the license through give and take with the land that HUDA is finally able to acquire in the interest of planned development and integration service. The decision of the competent authority shall be binding in this regard.

7. That you shall obtain approval/NOC from competent authority to fulfill the requirement of notification dated 14-09-2006 of Ministry of Environment & Forest, Government of India and clearance from the PLPA, 1900 before starting the development works of the colony.

8. That the developer will use only CFL fittings for internal lighting as well as campus lighting.

9. That you shall convey the 'Ultimate Power Load Requirement' of the project to the concerned power utility, with a copy to the Director, with in two months period from the date of grant of license to enable provision of site in your land for Transformers/Switching Station/Electric Sub-Stations as per the norms prescribed by the power utility at the time of approval of building plans of the project.

10. That you shall make arrangement for water supply, sewerage, drainage etc, to the satisfaction of the competent authority till the external services are made available from the external infrastructure to be laid by HUDA.

11. That you shall provide the rain water harvesting system as per Central Ground Water Authority Norms/ Haryana Government notification as applicable.

To be read with Licence No. 75 of 2012

1 Details of Land owned by Kamdhenu Projects Pvt. Ltd.,village Dhankot, Distt. Gurgaon

Village	Rect. No.	Killa No.	Area K---M
Dhankot	58	19	7---7
		20	7---7
		21/2	0--13
		22	8---0
	78	1	8---0
		2	8---0
		9	8---0
		10/1	6--14
		10/3	0---8
		11/2/3	0---4
		12/1/1	3---8
		12/1/3	0---3
		Total =	58--4

2 Details of Land owned by Divit Estates Pvt. Ltd.,village Dhankot, Distt. Gurgaon

Village	Rect. No.	Killa No.	Area K---M
Dhankot	58	17/2	5--14
		18	7---7
		23	8---0
		24/1	5---7
		24/2/1	0---4
	78	3	8---0
		8	8---0
		13/1/1	7---9
		Total=	50--1
			K---M
		Grand Total=	108--5 or 13.531 Acres

Director General
Town and Country Planning,
Haryana, Chandigarh

C.E. No. 8798
Dated 24/6/13
Annexure-A

SUB: - **Approval of service plan /estimate of Group Housing Colony area measuring 13.531 acres Village Dhankot, Sector-102, Gurgaon (License No. 75 of 2012 dated 31.7.2012) being developed by M/S. Kamdhenu Projects Pvt.Ltd. C/o M/S. Emaar MGF Land Ltd.**

Technical note and comments:-

1. All detailed working drawings would have to be prepared by the colonizer for Integrating the internal services proposals with the master proposals of town.
2. The correctness of the levels will be the sole, responsibility of the colonizer for the integration of internal proposals, with the master proposals, of town and will be got confirmed before execution.
3. The material to be used shall the same specifications as are being adopted by HUDA and further shall also confirm to such directions, as issued by Chief Engineer, HUDA from time to time.
4. The work shall be carried out according to Haryana PWD specification or such specifications as are being followed by HUDA. Further it shall also confirm to such other directions, as are issued by Chief Engineer, HUDA from time to time.
5. The colonizer will be fully responsible to meet the demand of water supply and allied services till such time these are made available by State Government/ HUDA. All link connections with the State Government/ HUDA system and services will be done by the colonizer. If necessary extra tube-wells shall also be installed to meet extra demand of water beyond the provision according to EDC deposited.
6. Structural design & drawings of all the structures, such as pump chamber, boosting chamber, RCC OHSR underground tanks quarters, manholes chamber, sections of RCC pipes sewer and SW pipes, sewer, ventilating shafts for sewerage and Masonry Ventilation Chamber for Chamber for storm water drainage, temporary disposal/ arrangement etc. will be as per relevant I.S codes and PWD specifications; colonizer himself will be responsible for structural stability of all structures.
7. Potability of water will be checked and confirmed and the tube-wells will be put into operation after getting chemical analysis of water tested.

C.E. No. 8798
Dated:- 24/6/13

8. Only C.I/D.I pipes will be used in water supply and flushing system, UPVC/HDPE pipe for irrigation purposes.
9. A minimum 100 i/d C.I/D.I, 200mm i/d SW and 400mm id RCC NP-3 pipes will be used for water supply, sewerage and storm water drainage respectively.
10. Standard X-section for S.W. pipes sewer, RCC pipes sewer etc. will be followed as are being adopted in Haryana Public Health Engineering Deptt.or HUDA.
11. The X-section, width of roads, will be followed as approved by the Chief Town Planner, Haryana, Chandigarh. The kerbs and channels will also be provided as per approved X-section and specifications.
12. The specifications for various roads will be followed as per IRC/MORTH specifications.
13. The wiring system of street lighting and specifications of street lighting fixture will be as per relevant standards.
14. This shall confirm to such other conditions as are incorporated in the approved estimate and the letter of approval.

8/6/13

Executive Engineer (W),
For Chief Administrator, HUDA,
Panchkula