

SERVICE ESTIMATE REPORT

Date: 31/01/2025

REVISION: R1

**M/S SWD GROUP HOUSING
SECTOR-69, GURUGRAM**

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PROJECT: PROPOSED BUILDING PLAN FOR MIXED LAND USE COLONY (98% RESIDENTIAL COMPONENT AND 2% COMMERCIAL COMPONENT) UNDER TOD POLICY OVER AN AREA MEASURING 11.66875 ACRES. (LICENSE NO 90 OF 2024 DATED 18.07.2024) IN THE REVENUE ESTATE OF VILLAGE FAZILPUR JHARSA & BADSHAHAPUR, SECTOR-69 GURUGRAM, BEING DEVELOPED BY RIVERDAY INFRASTRUCTURE PRIVATE LIMITED

REPORT

Gurugram town of Haryana State is situated on Delhi - Jaipur National Highway No.8 at a distance of 30 kms for Delhi. Being in the national capital Region, the town has fast developing tendency and potential. Further, it has also started sharing the growing Industrial load of Delhi. In order to relieve the growing pressure of population in National Capital of Delhi, Haryana Urban Development Authority has already developed residential sector which are inhabited to an extent. Further to the increasing demand HSVP has planned to develop new sectors at outskirts of Gurugram town. This report and estimate are for approval of 11.66875 acres Group Housing scheme in Sector-69, Gurugram.

WATER SUPPLY

The source of water supply shall be GMDA water supply connection, augmented through tube wells & HSVP. As the underground water is potable, provision for ~~Four numbers~~ (3W & 1S) of Bore wells as per calculation. It has been proposed to construct underground tanks of capacity as per attached details and at location for domestic purpose and for fire protection. The underground tanks will be fed from the bore wells and GMDA supply from there water will be pumped to O.H. water tanks on the roof of the Buildings of Individual Towers. STP treated water will be used for Flushing & irrigation water supply and water will be fed from the STP, from there water will be pumped to O.H. water tanks on the roof of the Buildings of Individual Towers

DESIGN

The scheme has been designed for population considering ~~2 BHK-Five persons, 3 BHK-Six persons, 4 BHK-Seven persons, club & commercial Building for each main dwelling unit and Four persons for each EWS.~~ ^{5 Person per OU for main, 2 persons per OU for EWS, 3 persons per OU for service persons} ~~per person~~ ^{added by} ~~per person~~ ^{added by} The rate of water supply (Domestic + Flushing) per capita / day has been taken as 172.5 lpcd for main dwelling unit and EWS.

PUMPING EQUIPMENTS

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

SEWERAGE SCHEME

This scheme is designed for sewer connecting to STP and bypass connection to GMDA sewer scheme.

Sewer lines have been designed for three times average D.W.F in relation to water supply demand. It has been assumed that about 85% of the domestic water supply and flushing water supply shall find its way into the proposed sewer. Sewer lines shall be laid to a gradient maintaining minimum 2.46 ft/sec self-cleaning velocity. Sewer line up to 400 mm dia. has been designed to run half full and above 400 mm dia. has been designed to run three fourth full at peak flow. Necessary

provision for laying S.W / RCC pipe sewer line, construction of required number of manholes etc. have been made in the estimate.

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

STORM WATER DRAINAGE

We proposed to lay underground R.C.C. (NP-3) pipe drains with required number of catch basins for disposal of storm water which will be connected to the Proposed GMDA storm drain on sector Road. R.C.C storm water line will be designed as per Manning's formula.

SPECIFICATIONS

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

Roads:

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

Street Lighting

Provision for streets lighting also has been made in the estimate.

Horticulture

Estimates and details of plantation, landscaping, signage, etc., has 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. 2511.40** lakhs including 3% contingencies @ 49% departmental charges, price escalation, unforeseen & admin charges etc.

For RIVERDAY INFRASTRUCTURE PRIVATE LIMITED



Authorized signatory

Nos. of Dwelling units already appd. as per layout plan appd. vide DTCP HSY. Chd. memo No. ZP-2017/PA(OK)/2024/29698 dt. 19.9.2024. Tower- ABCDEF. PH. I + II + III + IV)

No. of Dwelling units proposed as per appd. layout plan appd. for additional PH-S & SAs. vide DTCP memo No. ZP-2017/PA(OK)/2025/3542 dt. 27/11/2025 Tower- 1 & 2, EWS + Comm

	EXIST.	Proposed	Total
(i) No. of Dwelling units =	948 Nos	298 Nos	1246 Nos
(ii) No. of Service Personal =	144 Nos	—	144 Nos
(iii) EWS.	168 Nos	54 Nos	222 Nos

Population @ 5 Person per unit for main = 6230 Persons

Population @ 3 Persons per unit for Service Personal = 432 Person

Population @ 2 Person per unit for EWS = 444 Person

Total = 7106 Persons

Water Req. @ 172.50 lpcd = $7106 \times 172.50 = 1225785$ Litrs.
or
1225.78 KLD.

Dom. water Demand @ 67% = 821276 Lt

Flushing water Demand @ 33% = 404509 Lt

PROJECT: RESIDENTIAL BUILDING AT SECTOR 69, GURGAON

SUBJECT: WATER DEMAND CALCULATION SHEET

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S. No.	Description	No. of Units	Population		Water Reqmnt			Total Water Requirement			Flow to Sewer (85% Dom+Flu)
			Population as per NBC-2016	Total	Total Water Rqmnt. LPCD	Flushing Water LPCD	Domestic Water LPCD	Flushing Water LPD	Domestic Water LPD	Total	
I	RESIDENTIAL UNITS										
A	TOWER-A										
a)	TYPE-1 (4BHK + UTIL)	78	7	546	172.5	45	127.5	24570	69615	94185	83742.75
b)	TYPE-2 (3BHK)	36	6	216	172.5	45	127.5	9720	27540	37260	33129
c)	TYPE-3 (3BHK+UTIL)	39	6	234	172.5	45	127.5	10530	29835	40365	35889.75
d)	TYPE-5 (2BHK)	3	5	15	172.5	45	127.5	675	1912.5	2587.5	2300.625
e)	TYPE-7A (5BHK + UTIL)	1	8	8	172.5	45	127.5	360	1020	1380	1227
f)	TYPE-7B (5BHK + UTIL)	1	8	8	172.5	45	127.5	360	1020	1380	1227
	Subtotal for TOWER A	158		1027				46215	130943	177158	157516.125
B	TOWER-B										
a)	TYPE-2A (3BHK WITH SERVICE DWELLING UNIT)	36	8	288	172.5	45	127.5	12960	36720	49680	44172
b)	TYPE-3 (3BHK+UTIL)	78	6	468	172.5	45	127.5	21060	59670	80730	71779.5
c)	TYPE-4 (3BHK+UTIL)	39	6	234	172.5	45	127.5	10530	29835	40365	35889.75
d)	TYPE-6 (2BHK)	3	5	15	172.5	45	127.5	675	1912.5	2587.5	2300.625
e)	TYPE-7C (4BHK + UTIL)	1	7	7	172.5	45	127.5	315	892.5	1207.5	1073.625
f)	TYPE-7D (4BHK + UTIL)	1	7	7	172.5	45	127.5	315	892.5	1207.5	1073.625
	Subtotal for TOWER-B	158		1019				45855	129923	175778	156289.125
C	TOWER-C										
a)	TYPE-2A (3BHK WITH SERVICE DWELLING UNIT)	36	8	288	172.5	45	127.5	12960	36720	49680	44172
b)	TYPE-3 (3BHK+UTIL)	78	6	468	172.5	45	127.5	21060	59670	80730	71779.5
c)	TYPE-4 (3BHK+UTIL)	39	6	234	172.5	45	127.5	10530	29835	40365	35889.75
d)	TYPE-6 (2BHK)	3	5	15	172.5	45	127.5	675	1912.5	2587.5	2300.625
e)	TYPE-7C (4BHK + UTIL)	1	7	7	172.5	45	127.5	315	892.5	1207.5	1073.625
f)	TYPE-7D (4BHK + UTIL)	1	7	7	172.5	45	127.5	315	892.5	1207.5	1073.625
	Subtotal for TOWER-C	158		1019				45855	129923	175778	156289.125
D	TOWER-D										
a)	TYPE-2A (3BHK WITH SERVICE DWELLING UNIT)	36	8	288	172.5	45	127.5	12960	36720	49680	44172
b)	TYPE-3 (3BHK+UTIL)	78	6	468	172.5	45	127.5	21060	59670	80730	71779.5
c)	TYPE-4 (3BHK+UTIL)	39	6	234	172.5	45	127.5	10530	29835	40365	35889.75
d)	TYPE-6 (2BHK)	3	5	15	172.5	45	127.5	675	1912.5	2587.5	2300.625
e)	TYPE-7C (4BHK + UTIL)	1	7	7	172.5	45	127.5	315	892.5	1207.5	1073.625
f)	TYPE-7D (4BHK + UTIL)	1	7	7	172.5	45	127.5	315	892.5	1207.5	1073.625
	Subtotal for TOWER-D	158		1019				45855	129923	175778	156289.125
E	TOWER-E										
a)	TYPE-2A (3BHK WITH SERVICE DWELLING UNIT)	36	8	288	172.5	45	127.5	12960	36720	49680	44172
b)	TYPE-3 (3BHK+UTIL)	78	6	468	172.5	45	127.5	21060	59670	80730	71779.5
c)	TYPE-4 (3BHK+UTIL)	39	6	234	172.5	45	127.5	10530	29835	40365	35889.75
d)	TYPE-6 (2BHK)	3	5	15	172.5	45	127.5	675	1912.5	2587.5	2300.625
e)	TYPE-7C (4BHK + UTIL)	1	7	7	172.5	45	127.5	315	892.5	1207.5	1073.625
f)	TYPE-7D (4BHK + UTIL)	1	7	7	172.5	45	127.5	315	892.5	1207.5	1073.625
	Subtotal for TOWER-E	158		1019				45855	129923	175778	156289.125
F	TOWER-F										
a)	TYPE-1 (4BHK + UTIL)	78	7	546	172.5	45	127.5	24570	69615	94185	83742.75
b)	TYPE-2 (3BHK)	36	6	216	172.5	45	127.5	9720	27540	37260	33129
c)	TYPE-3 (3BHK+UTIL)	39	6	234	172.5	45	127.5	10530	29835	40365	35889.75
d)	TYPE-5 (2BHK)	3	5	15	172.5	45	127.5	675	1912.5	2587.5	2300.625
e)	TYPE-7A (5BHK + UTIL)	1	8	8	172.5	45	127.5	360	1020	1380	1227
f)	TYPE-7B (5BHK + UTIL)	1	8	8	172.5	45	127.5	360	1020	1380	1227
	Subtotal for TOWER F	158		1027				46215	130943	177158	157516.125
G	TRUMP TOWER-1										
a)	TYPE-1 (4BHK + UTIL)	45	7	315	172.5	45	127.5	14175	40162.5	54337.5	48313.125
b)	TYPE-2 (3BHK + UTIL)	45	6	270	172.5	45	127.5	12150	34425	46575	41411.25
c)	TYPE-3 (4BHK + UTIL DX (ODD)	24	7	168	172.5	45	127.5	7560	21420	28980	25767
d)	TYPE-4 (4BHK + UTIL DX (EVEN)	25	7	175	172.5	45	127.5	7875	22312.5	30187.5	26840.625
e)	TYPE-5 (2 BHK + UTIL)	4	5	20	172.5	45	127.5	900	2550	3450	3067.5
f)	TYPE-6 (3 BHK + UTIL)	1	6	6	172.5	45	127.5	270	765	1035	920.25
g)	TYPE-7 (4BHK + UTIL_PENT HOUSE (A)	2	7	14	172.5	45	127.5	630	1785	2415	2147.25
h)	TYPE-8 (4BHK + UTIL_PENT HOUSE (B)	1	7	7	172.5	45	127.5	315	892.5	1207.5	1073.625
i)	TYPE-9 (4BHK + UTIL_PENT HOUSE (C)	1	7	7	172.5	45	127.5	315	892.5	1207.5	1073.625

PROJECT: RESIDENTIAL BUILDING AT SECTOR 69, GURGAON

SUBJECT: WATER DEMAND CALCULATION SHEET

S. No.	Description	No. of Units	Population		Water Reqmnt			Total Water Requirement			Flow to Sewer (80% Dom + Flu)
			Population as per NBC-2016	Total	Total Water Rqmnt.	Flushing Water	Domestic Water	Flushing Water	Domestic Water	Total	
j)	TYPE-10 (4BHK + UTIL DX (ODD))	1	7	7	172.5	45	127.5	315	892.5	1207.5	1073.625
	Subtotal for TRUMP TOWER-1	149		989				44505	126098	170603	151687.875
H	TRUMP TOWER-2										
a)	TYPE-1 (4BHK + UTIL)	45	7	315	172.5	45	127.5	14175	40162.5	54337.5	48313.125
b)	TYPE-2 (3BHK + UTIL)	45	6	270	172.5	45	127.5	12150	34425	46575	41411.25
c)	TYPE-3 (4BHK + UTIL DX (ODD))	24	7	168	172.5	45	127.5	7560	21420	28980	25767
d)	TYPE-4 (4BHK + UTIL DX (EVEN))	25	7	175	172.5	45	127.5	7875	22312.5	30187.5	26840.625
e)	TYPE-5 (2 BHK + UTIL)	4	5	20	172.5	45	127.5	900	2550	3450	3067.5
f)	TYPE-6 (3 BHK + UTIL)	1	6	6	172.5	45	127.5	270	765	1035	920.25
g)	TYPE-7 (4BHK + UTIL_PENT HOUSE (A))	2	7	14	172.5	45	127.5	630	1785	2415	2147.25
h)	TYPE-8 (4BHK + UTIL_PENT HOUSE (B))	1	7	7	172.5	45	127.5	315	892.5	1207.5	1073.625
i)	TYPE-9 (4BHK + UTIL_PENT HOUSE (C))	1	7	7	172.5	45	127.5	315	892.5	1207.5	1073.625
j)	TYPE-10 (4BHK + UTIL DX (ODD))	1	7	7	172.5	45	127.5	315	892.5	1207.5	1073.625
	Subtotal for TRUMP TOWER-2	149		989				44505	126098	170603	151687.875
I	COMMERCIAL-1 (Incl. EWS units)										
a)	Ground Floor-Retail-1073 Sq.M.	894.74	3.0 Sq.M./ Person	299		10	5	2990	1495	4485	4260.75
b)	Staff (10%)			30		20	25	600	750	1350	1237.5
c)	First Floor-Primary School-702.87 Sq.M.	702.87	4.0 Sq.M./ Person	176		10	5	1760	880	2640	2508
d)	EWS units over Commercial-01 (2nd to 7th Floor)	584	3.0	335		45		15120	4260	53060	5454
	Subtotal for Commercial -1			841				5350	3125	8475	7850
J	COMMERCIAL-2 (Incl. Nursery School) - G+1										
a)	Ground Floor-Retail-308 Sq.M.	382.00	3.0 Sq.M./ Person	128		10	5	1280	640	1920	1824
b)	Staff (10%)			13		20	25	260	325	585	536.25
c)	First Floor-Nursery School-543.58 Sq.M.	543.58	4.0 Sq.M./ Person	136		10	5	1360	680	2040	1938
	Subtotal for Commercial -2			277				2900	1645	4545	4298.25
K	COMMERCIAL-3 (Incl. EWS Units)										
a)	Ground Floor-Retail-308 Sq.M.	740.12	3.0 Sq.M./ Person	247		10	5	2470	1235	3705	3549.75
b)	Staff (10%)			25		20	25	500	625	1125	1031.25
c)	EWS units over Commercial-03	5400	3.0	1800		45		81000	22500	103500	106645
	Subtotal for Commercial -3			380				8000	4500	12500	11806.25
L	CLUB BUILDING (Stand Alone)										
1	Ground Floor										
a)	Banquet Hall & Pre-Function Hall	335.00		335							
i	Fixed Population		10% Of Population	34		20	25	680	850	1530	1360
ii	Floating Population		90% Of Population	302		10	5	3020	1510	4530	4228
iii	Kitchen For Banquet	LS							5000	5000	4250
iv	lounge For Senior Citizen	178.00	1.4 SQM / Person	128		10	5	1280	640	1920	1792
2	First Floor										
a)	Gym	152.00	1.4 SQM / Person	109							
i	Floating Population		90% Of Population	99		10	5	990	495	1485	1386
ii	Fixed Population		10% Of Population	11		20	25	220	275	495	440
b)	Kids Play Area (200 sqm)	200.00	1.4 SQM / Person	143							
i	Floating Population		90% Of Population	129		10	5	1290	645	1935	1806
ii	Fixed Population		10% Of Population	15		20	25	300	375	675	600
c)	Restaurant/Bar	72.00	(1.2 Person per Seat)	87							
i	Floating Population		90% Of Population	79		15	55	1185	4345	5530	4878.25

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SUBJECT: WATER DEMAND CALCULATION SHEET

S. No.	Description	No. of Units	Population		Water Reqmnt			Total Water Requirement			Flow to Sewer (85% Dom + Flw)
			Population as per NBC-2016	Total	Total Water Reqmnt. LPCD	Flushing Water LPCD	Domestic Water LPCD	Flushing Water LPD	Domestic Water LPD	Total	
			No.	No.							LPD
ii	Fixed Population		10% Of Population	9		10	5	90	45	135	128.25 126
3	Second Floor										2632
a)	Spa & Salon	263.00	1.4 SQM / Person	188		10	5	1880	940	2820	2679
b)	Yoga	164.00	1.4 SQM / Person	118		10	5	1180	590	1770	1652
											1681.5
	Subtotal for Club Building			1786				12115	15710	27825	24483
								484944	841971	1266965	25468.5
	SUB TOTAL			11392				408175	1112720	1520895	1162537
								21967	48099	63348	41007
	Add 5% for Miscellaneous uses (Like Maintenance staff, Visitors, Filter backwash etc.)							20499	55636	76135	
								446191	884070	1330313	1102537
	TOTAL WATER DEMAND FOR DOMESTIC PURPOSE							428584	1468356	1596940	1353987
I	SWIMMING POOL & WATER BODY										
a)	Makeup Water for Swimming Pool & Water Body (Approx.)								50000	50000	
	TOTAL FOR SWIMMING POOL								50000	50000	
J	External Irrigation										
a)	External Irrigation 8668.32 Sqm @ 6 Ltr / Sqm							53484	52008	1380313	
								499675	934070		
	GRAND TOTAL							480591.75	1218356	1646939.75	1102537
	TOTAL FRESH WATER DEMAND							500	935	4220	1102.54 KL
II	SEWAGE TREATMENT PLANT										
a)	Total flow to Sewer										1105
b)	Total Capacity of STP Required										1105
	Say										1105
III	UNDER GROUND WATER TANK (RAW & DOMESTIC)										
a)	Total Fresh Water Demand							885	4220	LPD	
b)	Total Capacity required for Raw & Domestic water tank (2 nd of One day requirement)							885	813	KLD	
	Say							820	900	KLD	
	Total Capacity of Raw Water Tank							410	410	KL	
	Say							410	410	KL	
	Total Capacity of Domestic Water Tank							410	410	KL	
	Say							410	410	KL	
IV	UNDER GROUND WATER TANK (FIRE RESERVE)										
a)	Capacity of Fire Tank (As per Table-7 of NBC Part-IV)								200	KL	
b)	Additional capacity (For more than 100 hydrants)								200	KL	
c)	Capacity of Fire Tank required for Water Curtain								200	KL	
	Total Capacity of Fire Tank								600	KL	
IV	UNDER GROUND WATER TANK (FLUSHING TANK PART OF STP)										
a)	Total Flushing Water Demand								481	KLD	
b)	Total Capacity required for Flushing & Irrigation water tank (2 nd of One day requirement)								500	320	500 KLD
	Say								500	320	500 KLD

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			Population as per NBC- 2016	Total	Total Water Rqmnt.	Flushing Water	Domestic Water	Flushing Water	Domestic Water	Total	
				No.	LPCD	LPCD	LPCD	LPD	LPD		LPD
	Total Capacity of Flushing Water Tank								320 500	KL	
	Say Capacity of Flushing Water Tank								320 500	KL	

I. DESIGN CALCULATION (Standard Parcel)

I. Summary of total water (As per water calculation Sheet)

(A) Total of domestic and flushing requirement	=	1330 1646.94 KLD
Say	=	1330 1650 KLD
(B) Domestic requirement	=	885 1220 KLD say 900 KL
(C) Flushing requirement	=	445 429 KLD ✓
(D) Irrigation & Road washing	=	52 54 KLD say 55 KL

STP Capacity @ ~~85%~~ ^{80%} of domestic & ^{100%} flushing water requirement (Excluding Horticulture, Water Body, Swimming Pool & Road Washing requirement)

II. SUMMARY & SOURCE OF WATER

i. Domestic water (From Borewell / GMDA)	=	1220 900 KLD
ii. Flushing water (From STP)	=	429 429 KLD
iii. Horticulture & Road Washing (From STP)	=	52 55 KLD
iv. Total Fresh Water Demand	=	1220 900 KLD

III. SUMMARY OF UGT

(i) Domestic water tank (2/3 rd day requirement)	=	820 900 KLD
(ii) Firefighting water tank	=	600 KLD
(iii) Flushing & horticulture water tank	=	500 KLD
(1/3 rd day requirement in STP)	=	320 320 KLD

Therefore, it is proposed to construct underground water storage @ one day requirement of the total domestic water capacity of Raw Water tank of 1 Nos x ~~410~~ 410 KL & domestic water tank of 1 Nos x ~~410~~ 410 KL for entire project and firefighting tank of 1 Nos x 600 KL for entire project at one location marked on plan. Also, 1 Nos x ~~320~~ 320 KL for Flushing & Horticulture purpose.

IV. BOREWELLS

a) Approx. discharge from each bore well	=	30.00 KL/hr
b) Operating time of bore wells	=	12 hrs/day
c) Total yield from each bore well	=	30.00x12 = 360 KLD
d) Total water requirement	=	900 1220 KLD
e) Number of bore wells	=	900 1220 / 360 = 3.39 Nos.
f) Standby	=	1.0 1.0 Nos.
Total	=	3.39 Nos. 2.50
Say	=	4.0 3.0 Nos.

Since the entire water to the proposed development is to be supplied by GMDA. So, it is proposed to install ~~3~~ 4 numbers (4W + 1S) of bore-wells as supplementary source of water.

V. PUMPING MACHINERY FOR BOREWELLS

Gross working head	=	80.00 mts.
Average fall in S.L.	=	03.05 mts.
Depression Head	=	06.10 mts.
Friction loss in main	=	03.05 mts.
TOTAL	=	92.20 mts.
SAY	=	100.00 mts.
HP	=	$\frac{30000 \times 100 \times 1}{60 \times 60 \times 75 \times 60\%} = 21.60 \text{ HP, Say} = 20 \text{ HP (Each)}$

VI. BOOSTING MACHINERY FOR DOMESTIC PUMP

Pumping hour @ 10 hours /day	=	$\frac{900}{1220} / 10 = 122.0 \text{ KL/hr}$
	=	$\frac{1500}{2033} \text{ lpm}$
	=	$\frac{1500}{2033/2} = 1016 \text{ lpm}$
Say	=	1020 lpm (3W + 1S)
Gross working head	=	8.95 meter
Suction lift	=	20.77 meter
Friction loss	=	198.80 meter
Clear head required	=	228.52 meter
Total	=	230.00 M
Say	=	230.00 M
HP	=	$\frac{500}{1020} \times \frac{230}{60 \times 75 \times 60\%} = 86.88 \text{ HP, Say} = 90 \text{ HP (Each)}$

It is proposed to provide 4-Nos (3 Working + 1 Standby) of pumping sets of 1020 lpm discharge at 230 Mtr. Head for Domestic Supply.

VII. BOOSTING MACHINERY FOR FLUSHING PUMP

a) Flushing & Irrigation Water Supply

Pumping hour @ 10 hours /day	=	$\frac{500}{481} / 10 = 48.5 \text{ KL/hr}$
	=	$\frac{833.33}{801.66} \text{ lpm}$
	=	$\frac{833.33}{808.33/2} = 400.83 \text{ lpm}$
Say	=	400 lpm (2W + 1S)
Gross working head	=	8.95 meter
Suction lift	=	20.77 meter
Friction loss	=	198.80 meter
Clear head required	=	228.52 meter
Total	=	230.00 M
Say	=	230.00 M
HP	=	$\frac{426}{400} \times \frac{230}{60 \times 75 \times 60\%} = 34.97 \text{ HP, Say} = 35 \text{ HP (Each)}$

It is proposed to provide 3 Nos (2 Working + 1 Standby) of pumping sets of 400 lpm discharge at 230 Mtr. Head for Flushing Supply.

VIII. PUMPS FOR FIRE PROTECTION

S.NO	PARAMETER S	LOCATION	PUMP SETS					
			JOCKEY	MAIN	DIESEL	SPRINKLER	WATER CURTAIN	UGT TO SERVICE FLOOR FIRE TANK FILLING
1		Pump room						
(a)	Discharge in lpm		180	2850	2850	2850	3500	2850
(b)	Head in meters		120 / 175 M	120 / 175 M	125 / 180 M	120 / 175 M	60 M	245 M
(c)	HP		12	185		185	80	260
(d)	Quantity in Nos		2	1	2	1	1	2
2		Service Floor (For Tower A&B, Trump Towers)						
(a)	Discharge in lpm		180	2850	2850	2850		
(b)	Head in meters		50 / 70 M	50 / 70 M	50 / 70 M	50 / 70 M		
(c)	HP		5	75		75		
(d)	Quantity in Nos		4	2	2	2		

IX. CAPACITY OF DG SETS

S.NO.	EQUIPMENT	QUANTITY	HP (EACH)	TOTAL HP	TOTAL KW
1	BOREWELL	3 (3W + 1S)	20	88 60	65.65 44.76
2	JOCKEY PUMP (AT FIRE PUMP UGT)	2	12	24	17.90 ✓
3	FIRE PUMP UGT TO SERVICE FLOOR FIRE TANK FILLING (AT FIRE PUMP UGT)	2 (1W + 1S)	260	260	193.96
5	JOCKEY PUMP (AT SERVICE FLOOR)	4	5	20	14.92 ✓
4	DOMESTIC PUMPS (1 SET)	3 (2W + 1S)	90 50	180 100	134.28 74.60
5	FLUSHING & IRRIGATION PUMPS (1 SET)	3 (2W + 1S)	35	70 ✓	52.22 ✓
6	STP (1360 KLD)				150
7	EXTERNAL LIGHTING				50
8	SWIMMING POOL				15
					613.36
	TOTAL				693.93
					693.93 KW
					867.41 KVA
					766.76
		SAY		770	1000-KVA

It is proposed to add ⁷⁷⁰ 1000 KVA capacity for above said machinery to the main DG set.

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ESTIMATE

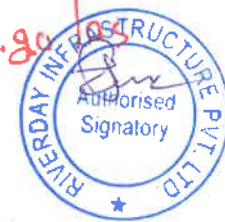
ABSTRACT OF COST

SL NO	DESCRIPTION	AMOUNT (IN Lacs)
		904.67
I.	SUB HEAD NO. I - WATER SUPPLY WORKS	Rs. 789.08
II.	SUB HEAD NO. II - SEWERAGE SYSTEM	Rs. 346.85 331.06
III.	SUB HEAD NO. III - STORM WATER DRAINAGE	Rs. 144.71 190.75
IV.	SUB HEAD NO. IV - ROAD WORK (ROAD & FOOTPATH)	Rs. 480.90 521.45
V.	SUB HEAD NO. V - STREET LIGHT	Rs. 44.77 ✓
VI.	SUB HEAD NO. VI - LANDSCAPING (Hort.)	Rs. 30.80 11.00
VII.	SUB HEAD NO. VII - MAINTENANCE of services incl. Resurfacing of Roads for 10 years as per norms.	Rs. 480.28 507.69
	GRAND TOTAL	Rs. 2,273.40 2511.39 lacs

Cost as per already appd. estimate PH-1, 2, 3 & 4 = Rs 2359.18 lacs
 cost of additional PH-5 & 5A = 8.747615 = 2511.39 - 2359.18 = 152.21 (lacs)
 Total cost of complete area i.e. 11.67 acre = 2359.18 lacs + 152.21 = 2511.39 lacs
 Say 2511.40 lacs

Executive Engineer
 HSVP Division No. V
 Gurugram

Der cost = 2511.40 lacs / 11.67 acre = 215.20 lacs/acre



Checked subject to Comments
 in forwarding letter No. 51888
 Dated 20/2/25 and notes
 Attached with the estimate

Executive Engineer (M)
 for Chief Engineer-I
 HSVP, Panchkula

Superintending Engineer,
 HSVP, Circle-I, Gurugram

Director
 Town & Country Planning
 Haryana, Chandigarh



हरियाणा शहरी विकास प्राधिकरण

HARYANA SHEHARI
VIKAS PRADHIKARAN

Tel. : 2570982
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Website : www.hsvp.in
Email : cencrhuda@gmail.com

Address: C-3, HSVP, HQ Sector-6
Panchkula

C.E.I-No. 57388
Dated: 20/02/2025
Annexure-A

SUB:-

Approval of service plan and estimates for Phase-5 and Phase-5A Part of Mix Land Use Colony (98% Residential and 2% Commercial) under TOD Policy over an area measuring 11.66875 acres (License no. 90 of 2024 dated 18.07.2024) in the revenue estate of Village Fazilpur Jharsa & Badshahpur, Sector-69, Gurugram being developed by Riverday Infrastructure Pvt. 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 HSVP and further shall also confirm to such directions, as issued by Chief Engineer, HSVP from time to time.
4. The work shall be carried out according to Haryana PWD specification or such specifications as are being followed by HSVP. Further it shall also confirm to such other directions, as are issued by Chief Engineer, HSVP 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/ HSVP. All link connections with the State Government/ HSVP 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.




हरियाणा शहरी विकास प्राधिकरण

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Panchkula

8. Only D.I pipes will be used in water supply and flushing system, UPVC/ HDPE pipe for irrigation purposes.
9. A minimum 100 & 150mm i/d/D.I (K-7), 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 HSVP. If needed, the same may be sought by the colonizer from concerned Executive Engineer of HSVP.
11. The developer may be directed to get the Sewage Treatment Plant (STP) got designed from a Govt. Institute like IIT, NIT etc. so as to ensure that the technology adopted by him is appropriate. He must take this action before construction of STP and submit documentary proof for the same at the time of grant of occupation certificate. The efficacy of such STP shall be checked randomly by the concerned Regional Officer of HSPCB.
12. 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. If needed, the same may be sought by the colonizer from concerned Executive Engineer of HSVP.
13. The specifications for various roads will be followed as per IRC/MORTH specifications.
14. The wiring system of street lighting and specifications of street lighting fixture will be as per relevant standards.
15. This shall confirm to such other conditions as are incorporated in the approved estimate and the letter of approval.


Executive Engineer (M),
For Chief Administrator, HSVP,
Panchkula.

PROJECT: PROPOSED BUILDING PLAN FOR MIXED LAND USE COLONY (98% RESIDENTIAL COMPONENT AND 2% COMMERCIAL COMPONENT) UNDER TOD POLICY OVER AN AREA MEASURING 11.66875 ACRES. (LICENSE NO 90 OF 2024 DATED 18.07.2024) IN THE REVENUE ESTATE OF VILLAGE FAZILPUR JHARSA & BADSHAHAPUR, SECTOR-69 GURUGRAM, BEING DEVELOPED BY RIVERDAY INFRASTRUCTURE PRIVATE LIMITED

SUB HEAD.I - WATER SUPPLY WORKS

ABSTRACT OF COST

SL. NO.	DESCRIPTION	AMOUNT IN Rs.
I	SUB WORK NO. I - HEAD WORKS	Rs. 1,34,80,000.00
II	SUB WORK NO. II - PUMPING MACHINERY	Rs. 2,75,85,000.00
III	SUB WORK NO. III - RISING MAIN FROM HUDA	Rs. 19,05,800.00
IV	SUB WORK NO. IV - WATER DISTRIBUTION (Dom. + Fire Fighting)	Rs. 22,37,465.00
V	SUB WORK NO. V - FIRE RISING MAIN	Rs. 45,73,300.00
VI	SUB WORK NO. VI - IRRIGATION SYSTEM	Rs. 16,34,125.00
	Total	Rs. 5,14,15,690.00
	ADD 3% Contingencies	Rs. 15,42,470.70
	Total	Rs. 5,29,58,160.70
	Add 49 % Deptt. Charges, price escalation, unforeseen, admn.charges:	Rs. 2,59,49,498.74
	Grand Total	Rs. 7,89,07,659.44
	Say (in Lacs.)	Rs. 789.08

c.o. to final abstract of cost

PROJECT: PROPOSED BUILDING PLAN FOR MIXED LAND USE COLONY (98% RESIDENTIAL COMPONENT AND 2% COMMERCIAL COMPONENT) UNDER TOD POLICY OVER AN AREA MEASURING 11.66875 ACRES. (LICENSE NO 90 OF 2024 DATED 18.07.2024) IN THE REVENUE ESTATE OF VILLAGE FAZILPUR JHARSA & BADSHAHAPUR, SECTOR-69 GURUGRAM, BEING DEVELOPED BY RIVERDAY INFRASTRUCTURE PRIVATE LIMITED

SUB HEAD NO.1 - WATER SUPPLY WORKS

SUB WORK NO.1 - HEAD WORKS

SL NO	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
1	Boring and installing 510 mm i/d tube wells with reverse rotary rig complete with pipe and strainer to a depth of about 100 m in all respect	Each	3 3	10,00,000.00	Rs. 40,00,000.00
2	Provision for construction of valve chamber of size 1.5m x 1.5 m for housing of Tube well	Each	3 3	1,00,000.00	Rs. 3,00,000.00
3	Provision for valve and special and piping	L.S.	5	1,50,000.00	Rs. 7,50,000.00
4	Provision of carriage for material and other unfore seen items	L.S.	1	2,00,000.00	Rs. 2,00,000.00
5	Construction of UG Tank (Fire Fighting 1 x 600 KL, (Raw Water 1 x 450 KL, Dom. Water 1 x 450 KL, Flushing & Irrigation water 1 x 320 KL) Total- 1740 KL 2000	KL	1740 2000 1740 100	4,500.00	Rs. 78,30,000.00 110.00 Rs. 78,30,000.00
6	Provision for boosting chamber of standard size as per P.H requirement of req. Nos	Each	1	(L.S.) 2,00,000.00	Rs. 2,00,000.00 417000 Rs. 4,17,000.00
Total					Rs. 1,34,80,000.00
(C/O to abstract of cost for sub head No-1)					167.67 lacs

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SUB HEAD NO .I - WATER SUPPLY WORKS.

SUB WORK NO. II - PUMPING MACHINERY

SL NO	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
1	Providing and installing electricity driven submersible puming set capcity 30 KL/Hr at 100 m head complete with column pipe and other accessories (20 HP) (For Tubewell)	Set	3	4,00,000.00	Rs. 12,00,000.00 ✓
2	Providing and installing electricity driven pumping set capable of delivering about 1020 LPM, 3 Nos (2 Working + 1 Standby) against a total head of 230 m complete with motor and other accessories complete in all respects (30 HP) (For Domestic Water Transfer Pump)	Each Set	(3+1) 4 Nos	8,50,000.00	30 m la Rs. 8,50,000.00
3	Providing and installing electricity driven puming set capable of delivering about 400 LPM, 3 Nos (2 Working + 1 Standby) against a total head of 230 m complete with motor and other accessories complete in all respects (35 HP) (For Flushing Water Transfer Pump)	Each Set	(2+1) 3 Nos	5.25 lac 6,25,000.00	15.75 lac Rs. 6,25,000.00
4	Provision for diesel engine genset each for stand bye arrangements for TW/ Fire/ Sump/ STP of complete Capacity- (1000 KVA)	Set	1	1,10,00,000.00	Rs. 1,10,00,000.00 ✓
5	Providing & Installing pumping set for fire fighting purpose including all accessories complete in all respect (For Pump Room)				
a)	180 lpm at 120 /175 m Head jockey pump	Each	2	2,50,000.00	Rs. 5,00,000.00 ✓
b)	2850 Lpm at 120 /175 Head DG pump	Each	2	12,50,000.00	Rs. 25,00,000.00
c)	2850 Lpm at 120 /175 Head hydrant pump	Each	1	7,50,000.00	Rs. 7,50,000.00
d)	2850 Lpm at 120 /175 Head sprinkler pump	Each	1	7,50,000.00	Rs. 7,50,000.00
e)	3500 Lpm at 60m Head fire water curtain pump	Each	1	5,50,000.00	Rs. 5,50,000.00
f)	2850 Lpm at 245m Head UGT to service floor fire tank filling	Each	2	7,00,000.00	Rs. 14,00,000.00
6	Providing & Installing pumping set for fire fighting purpose including all accessories complete in all respect (For Service Floor of Tower A&B)				
a)	180 lpm at 50 / 70 m Head jockey pump	Each	2	2,35,000.00	Rs. 4,70,000.00
b)	2850 Lpm at 50 / 70 m Head DG pump	Each	1	9,50,000.00	Rs. 9,50,000.00
c)	2850 Lpm at 50 / 70 m Head Hydrant pump	Each	1	5,50,000.00	Rs. 5,50,000.00
d)	2850 Lpm at 50 / 70 m Head Sprinkler pump	Each	1	5,50,000.00	Rs. 5,50,000.00
	(For Service Floor of Trump Tower)				
a)	180 lpm at 50 / 70 m Head jockey pump	Each	2	2,35,000.00	Rs. 4,70,000.00
b)	2850 Lpm at 50 / 70 m Head DG pump	Each	1	9,50,000.00	Rs. 9,50,000.00
c)	2850 Lpm at 50 / 70 m Head hydrant pump	Each	1	5,50,000.00	Rs. 5,50,000.00
d)	2850 Lpm at 50 / 70 m Head sprinkler pump	Each	1	5,50,000.00	Rs. 5,50,000.00
7	Provision for chlorination plant complete	Each	2	1.00 lac 20,000.00	2.00 lac Rs. 20,000.00

8	Provision for making foundations and erection of Pumping Machinery.	LS			Rs.6,00,000.00
9	Provision for pipes, valves and specials inside the bosting chamber.	LS			Rs.7,00,000.00
10	Provision for electrical service connection including electrical fittings for all pumps & equipments	LS			Rs.2,50,000.00
11	Provision of carriage for material and other unforeseen items	LS			Rs.4,50,000.00
	Total				Rs.2,75,85,000.00
	(C/O to abstract of cost for sub head No-1)				304.65 lacs

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SUB HEAD NO .I - WATER SUPPLY WORKS

SUB WORK NO. III - RISING MAIN FROM HUDA

SL NO	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
1	Providing , Laying, Jointing and testing of Rising main pipe lines From HUDA including cost of excavation etc. complete in all respect.				
a)	150 mm dia DI (K-7) pipe	Metre	235	2,040.00	Rs.4,79,400.00
2	Providing, Laying, Jointing and testing of pipe lines From Borewells to UGT including cost of excavation etc. complete in all respect.				
a)	100 mm dia DI (K-7) pipe	Metre	450	1,460.00	Rs.6,57,000.00
b)	150 mm dia DI (K-7) pipe	Metre	135	2,040.00	Rs.2,75,400.00
3	Providing and fixing sluice valve including cost of surface box and masonry chamber etc. complete in all respect of 100mm dia.	Each	3	12,000.00	Rs. 36,000.00 36,000.00
4	Providing and fixing indicating plates for I valves	Each	3	2,000.00	Rs. 6,000.00 6,000.00
5	Providing and fixing air release valve and scour valves	Each	3	10,000.00	Rs. 30,000.00 30,000.00
6	Making water supply connection	LS			Rs.2,00,000.00
7	Provision of road cutting and making good to its original position.	LS			Rs.1,00,000.00
8	Provision of carriage for material and other unfore seen items	LS			Rs.50,000.00
	Total				Rs.19,05,800.00
	(C/O to abstract of cost for sub head No-1)				18.34 lacs

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SUB HEAD NO .I - WATER SUPPLY WORKS.

SUB WORK NO. IV - WATER DISTRIBUTION (Domestic + Flushing)

SL NO	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
1	Providing, Laying, Jointing and testing of pipe lines including cost of excavation etc. complete in all respect. (Domestic Line)				
a)	150 mm dia DI (K-7) Pipe	Metre	138 ✓	2,040.00	2.82 ¹⁰⁵ Rs.2,81,520.00
b)	100 mm dia DI (K-7) Pipe	Metre	803 ²⁹⁵ 295	1,460.00	11.72 ¹⁰⁵ Rs.4,30,700.00
c)	80 mm dia GI Pipe (B class)	Metre	26	1,435.00	Rs.37,310.00
d)	65 mm dia GI Pipe (B class)	Metre	243	1,270.00	Rs.3,08,610.00
e)	50 mm dia GI Pipe (B class)	Metre	239	1,025.00	Rs.2,44,975.00
f)	40 mm dia GI Pipe (B class)	Metre	0	950.00	Rs.0.00
2	Providing, Laying, Jointing and testing uPVC pipe line of 6 Kg/cm2 pressure rating Confirming to IS : 4985 including cost of excavation etc. complete in all respect. (Flushing Line)				
a)	150mm dia	Metre	29 ✓	1,250.00	0.59 ¹⁰⁵ Rs.36,250.00
b)	100mm dia	Metre	860 ²⁴⁷ 247	1,460.00	12.56 ¹⁰⁵ Rs.2,47,000.00
c)	80mm dia	Metre	69	900.00	Rs.62,100.00
d)	65mm dia	Metre	68	625.00	Rs.42,500.00
e)	50mm dia	Metre	168	500.00	Rs.84,000.00
f)	40mm dia	Metre	290	450.00	Rs.1,30,500.00
3	Providing and fixing valve including cost of masonry chamber etc. complete in all respect.				
a)	150 mm dia	Each	2	15,000.00	0.30 ¹⁰⁵ Rs.0.00
b)	100 mm dia	Each	6	12,000.00	Rs.72,000.00
c)	80 mm dia	Each	2	12,000.00	Rs.24,000.00
4	Providing and fixing indicating plates for valves.	Each	8-14	2,000.00	Rs.16,000.00
5	Providing and fixing scour air release valves.	Each	2	10,000.00	Rs.20,000.00
6	Provision of carriage for material and other unforeseen items	LS			Rs.1,00,000.00
7	Provision for cutting of roads and making good to its original conditions.	LS			Rs.1,00,000.00
	Total				33.91 ¹⁰⁵ Rs.22,37,465.00
	(C/O to abstract of cost for sub head No-1)				

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SUB HEAD NO .I - WATER SUPPLY WORKS

SUB WORK NO.V - FIRE FIGHTING MAIN

SL NO	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
1	Providing, Laying, jointing and testing M. S. pipes for fire rising main including cost of fittings, valves, connection etc. complete in all respect				
a)	150mm dia MS pipe (C Class)	Metre	1465	2,040.00	Rs.29,88,600.00
b)	100mm dia MS pipe (C Class)	Metre	195	1,460.00	Rs.2,84,700.00
c)	80mm dia MS pipe (C Class)	Metre	285	1,000.00	Rs.2,85,000.00
2	Providing and fixing external fire hydrant	Each	61	15,000.00	Rs.9,15,000.00
3	Provision of carriage for material and other unforeseen items	LS			Rs.1,00,000.00
	Total				Rs.45,73,300.00
	(C/O to abstract of cost for sub head No-1)				507645.74 lacs

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SUB HEAD NO .I - WATER SUPPLY WORKS

SUB WORK NO. VI - IRRIGATION

SL NO	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
1	Providing, Laying, Jointing and testing uPVC pipe line of 6 Kg/cm2 pressure rating Confirming to IS : 4985 including cost of excavation etc. complete in all respect. (Garden Hydrant Line)				
a)	25mm dia	Metre	50	300.00	Rs.15,000.00 ✓
b)	32mm dia	Metre	30	350.00	Rs.10,500.00 ✓
c)	40mm dia	Metre	60	450.00	Rs.27,000.00 ✓
d)	50mm dia	Metre	255	500.00	Rs.1,27,500.00 ✓
e)	65mm dia	Metre	69	625.00	Rs.43,125.00 ✓
f)	80mm dia	Metre	20	1900.00	Rs.38,000.00 ✓
g)	100mm dia	Metre	1123	1,000.00	Rs.11,23,000.00 ✓
				12500	14,041.25
2	Providing and fixing garden hydrant valve complete.	Each	34	5,000.00	Rs.1,70,000.00 ✓
3	Provision of carriage for material and other unforeseen items	LS			Rs.1,00,000.00 ✓
	Total				Rs.16,34,125.00
					19.17 lacs
	(C/O to abstract of cost for sub head No-1)				

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SUB HEAD NO. II - SEWERAGE SYSTEM

SL NO	DESCRIPTION	UNIT	QTY	RATE	AMOUNT IN Rs.
1	Providing, laying, jointing and testing SW pipe Class - 'A' and lowering into trenches including cost of excavation bed concrete cost of manholes etc. complete in all respects. (Upto 2.0m depth)				
a)	200mm dia i/d SW pipes	Metre	363	1,700.00	Rs.6,17,100.00
b)	250mm dia i/d SW pipes	Metre	280	2,000.00	Rs.5,60,000.00
c)	300mm dia i/d SW pipes	Metre	169	2,280.00	Rs. 4,27,320.00
d)	400mm dia i/d SW pipes	Metre	28	3,500.00	Rs.98,000.00
2	Providing, laying, jointing and testing SW pipe Class - 'A' and lowering into trenches including cost of excavation bed concrete cost of manholes etc. complete in all respects. (above 2.0m depth)				
a)	200mm dia i/d SW pipes	Metre	0	1,870.00	Rs.0.00
b)	250mm dia i/d SW pipes	Metre	8	2,200.00	Rs.17,600.00
c)	300mm dia i/d SW pipes	Metre	18	2,750.00	Rs.49,500.00
d)	400mm dia i/d SW pipes	Metre	43	3,850.00	Rs.1,66,550.00
3	Providing , Laying, Jointing and testing of pipe lines including cost of excavation etc. complete in all respect. (For STP By-Pass Line)				
a)	150 mm dia HDPE-PE-100 pipe	Metre	260	2,040.00	Rs.5,30,400.00
4	Provision for lighting and watching etc.	Job	1	2,00,000.00	Rs.2,00,000.00
5	Provision for timbering and shoring of trenches	Job	1	5,00,000.00	Rs.5,00,000.00
6	Provision for carriage of materials & unforeseen items	Job	1	5,00,000.00	Rs.5,00,000.00
7	Provision for making connection with HSVP	Job	1	2,00,000.00	Rs.2,00,000.00
8	Capacity of STP (1105 KLD)	KLD	1105	16,000.00	Rs.1,76,80,000.00
9.	PROVISION FOR CUTTING OF ROAD AND MAKING THE SAME ORIGINAL CONDITIONS.	KLD	1360		Rs.2,26,00,650.00
	Total				Rs.2,26,00,650.00
	Add 3 % Contingencies				Rs.6,78,019.50
	Total				Rs.2,32,78,669.50
	Add 49 % Deptt. Charges, price escalation, unforeseen, admn.charges.				Rs.1,14,06,548.00
	Total				Rs.3,46,85,217.50
	Say (in Lacs.)				Rs.346.85
	C/O to abstract of estimate cost				

PROJECT: PROPOSED BUILDING PLAN FOR MIXED LAND USE COLONY (98% RESIDENTIAL COMPONENT AND 2% COMMERCIAL COMPONENT) UNDER TOD POLICY OVER AN AREA MEASURING 11.66875 ACRES. (LICENSE NO 90 OF 2024 DATED 18.07.2024) IN THE REVENUE ESTATE OF VILLAGE FAZILPUR JHARSA & BADSHAHAPUR, SECTOR-69 GURUGRAM, BEING DEVELOPED BY RIVERDAY INFRASTRUCTURE PRIVATE LIMITED

SUB HEAD NO.III - STORM WATER DRAINAGE

SL NO	DESCRIPTION	UNIT	QTY	RATE	AMOUNT IN Rs.
1	Providing, laying, jointing RCC pipe drain Class - NP-3 including cost of excavation bed concrete cost of manholes etc. complete in all respects.				<i>Rs. 10.50 lacs</i>
a)	300 mm dia	Metre	420	2,500.00	Rs. 10,500.00
b)	400 mm dia	Metre	1610	2,500.00	Rs.40,25,000.00
c)	500 mm dia	Metre	20	2,720.00	Rs.54,400.00
2	Provision for road gullies including masonry chamber and making connection with cost of pipe 300mm dia	L.S.	1	5,00,000.00	<i>7.50 lacs.</i> Rs.5,00,000.00
3	Provision for lighting and watching etc.	Job	1	1,00,000.00	Rs.1,00,000.00
4	Provision for timbering and shoring of trenches	L.S.	1	2,00,000.00	Rs.2,00,000.00
5	Provision for carriage of materials & unforeseen items	Job	1	5,00,000.00	Rs.5,00,000.00
6	Provision for making connection with HSVP on master road	Job	1	2,00,000.00	Rs.2,00,000.00
7	Providing Rain Harvesting arrangements (approx. 11.67 acre)	Nos	11	3,50,000.00	Rs.38,50,000.00
8	Provision for temporary disposal arrangement till HSVP services are provided	L.S.	1	10,00,000.00	Rs.10,00,000.00
9.	<i>PROVISION FOR CUTTING OF ROAD & MAKING THE SAME ORIGINAL CONDITIONS</i>	<i>L.S.</i>			<i>2.50 lacs.</i>
	Total				Rs.94,29,400.00 <i>124.29 lacs.</i>
	Add 3 % Contingencies				Rs.2,82,882.00
	<i>AND PE CHARGES.</i>				<i>3.73 lacs.</i>
	Total				Rs.97,12,282.00 <i>128.02 lacs.</i>
	Add 49 % Deptt. Charges, price escalation, unforeseen, admn.charges.				Rs.47,59,018.18 <i>62.73 lacs.</i>
	Total				Rs.1,44,71,300.18 <i>190.75 lacs</i>
	Say (in Lacs.)				Rs.144.71
	C/O to abstract of estimate cost				

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SUB HEAD NO. IV - ROAD WORK (ROAD & FOOTPATH)

SL NO	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
1	Provision for leveling and earth filling as per site condition.approx.11.67 acres @ Rs. 175000 /- per acre.	Acre	11.67	1,75,000.00	Rs.20,42,250.00
2	i) Soling coat 100 mm thick (65-45)mm gauge compacted to 75mm thick WBM conforming to MORT specification (table 400-6 grading no-2)				
	ii) Wearing coat (top coat) 100 mm thick (53-22.4) mm gauge compacted to 75 mm thick conforming to MORT specification (Table 400-6, grading no-3).				
	iii) 25 mm thick premix carpet with seal coat.	Sq.M	15050.2	1,500.00	Rs.2,25,75,300.00
			15990	1750	279.83 lacs.
3	Providing for kerbs and channels of CC 1:1 1/2 : 3 (kerb and channels as per standard design)				20.53 lacs.
	2932.6 mtrs @ Rs.600 per mtrs	Metre	2932.6	600.00	Rs.17,59,560.00
4	Providing for cement concrete pavement 1:1 1/2 : 3 with base concrete 1:4:8 complete in all respect.	L.S.			Rs.10,00,000.00
5	Providing for traffic light control	L.S.			Rs.2,00,000.00
6	Provision for carriage of material & unforeseen items.	L.S.			Rs.5,00,000.00
7	PROVISION FOR TRAFFICE LIGHT CONTROL	L.S.			2.00 lacs.
	Total				Rs.2,80,77,110.00
	Add 3 % Contingencies				339.78
	AND P.E. CHARGES.				10.19 lacs.
	Total				Rs.2,89,19,423.30
	Add 49 % Deptt. Charges, price escalation, unforeseen, admn.charges.				349.97 lacs.
					Rs.1,41,70,517.42
	Total				Rs.4,30,89,940.72
					521.45 lacs
	Say (In Lacs.)				Rs.430.90
	C/O to abstract of estimate cost				

LENGTH OF ROADS.

$$\begin{aligned} \text{6.0M WIDE ROAD} \\ \text{AS PER PLAN ATTACHED} &= 327 \times 6 \\ &= 1962 \text{ sqm.} \end{aligned}$$

$$\begin{aligned} \text{ADD 10\% FOR CURVE} &= 196.20 \\ \hline &2158.29 \end{aligned}$$

$$\begin{aligned} \text{10\% FOR DROP OFF} &= 719.40 \\ \text{PARKING WIDTH} \\ \hline &2877.60 \text{ sqm} \end{aligned}$$

$$\begin{aligned} \text{9.0M WIDE ROAD} \\ 1006 \text{ MTR} \\ \times 9 \\ \hline 9054 \text{ sqm.} \\ 905.40 \text{ sqm} \\ \hline 9959.40 \text{ sqm.} \\ 2213.20 \\ \hline 12172.60 \text{ sqm.} \end{aligned}$$

$$\text{TOTAL} = 2877.60 + 12172.60 = 15050.20 \text{ sqm.}$$

$$\text{CAR ON SURFACE} = 75 \text{ NOS.}$$

$$\text{AREA} = 2.50 \times 5.0 \text{M} \times 75 = 937.50 \text{ sqm.}$$

$$\begin{aligned} \text{GRAND TOTAL} &= 15050.20 + 937.50 = 15987.70 \text{ sqm} \\ \text{say} &= 15990 \text{ sqm.} \end{aligned}$$

LENGTH FOR KERB & CHANNEL.

$$2(327 + 1006) + 10\% = 2932 \text{ Rmb.}$$

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SUB WORK-V - STREET LIGHTING

SL NO	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
1	Providing street lighting on roads as per standard specification of HSVP.	Acre	11.67	2,50,000.00	Rs.29,17,500.00
	Total				Rs.29,17,500.00
	Add 3 % contingencies				Rs.87,525.00
	Total				Rs.30,05,025.00
	Add 49 % Deptt. Charges,price escalation, unforeseen, admn.charges.				Rs.14,72,462.25
	Total				Rs.44,77,487.25
	Say (in Lacs.)				Rs.44.77
	(C/O to summary of estimate cost)				

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SUB HEAD VI - PLANTATION & ROAD SIDE TREE COST

SL NO	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
1	Development of Lawn Area				
a)	Trenching the ordinary soil upto depth of 60cm including removal and stacking of serviceable material and disposing of by spreading and leveling within a lead of 50 m and making up the trenched area of proper levels by filling with earth or earth mixed with manure before and after flooding trench with water including cost of imported earth and manure.				
	Rough dressing of turned area.				
b)	Grassing with Doob Grass including watering and maintenance of lawns for 30 days and maintenance of lawn free weeds and fit for moving in rows 7.5 cm. Apart in either direction including provision for hedges and barbed wire, fencing around park.	Acre	11.67 2.14	1,50,000.00 2.00	Rs.17,50,500.00 4.28 lacs.
2	Providing and planting trees along roads one side at 12m interval. 1470 MTRS/12 = 122.50 SAY 125 NOS.	Each	111.08 125 NOS	2,310.00	Rs.2,56,602.50 2.59 lacs.
	Cost details :				
	Excavation : Rs. 60.00				
	Manure : Rs. 100.00				
	Tree Plant : Rs. 150.00				
	Tree Guard : Rs. 2000.00				
	TOTAL : Rs. 2310.00				
	Total				Rs.20,07,103 7.17 lacs
	Add 3% contingencies & unforeseen				Rs.60,213.08 0.22 lacs.
	Total				Rs.20,67,315.58 7.39 lacs.
	Add 49 % Deptt. Charges, price escalation, unforeseen, admn. charges.				Rs.10,12,984.63 3.61 lacs.
	Total				Rs.30,80,300.21 11.40 lacs
	Say (in Lacs.)				Rs.30.80
	(C/O to summary of estimate cost)				

PROJECT: PROPOSED BUILDING PLAN FOR MIXED LAND USE COLONY (98% RESIDENTIAL COMPONENT AND 2% COMMERCIAL COMPONENT) UNDER TOD POLICY OVER AN AREA MEASURING 11.66875 ACRES. (LICENSE NO 90 OF 2024 DATED 18.07.2024) IN THE REVENUE ESTATE OF VILLAGE FAZILPUR JHARSA & BADSHAHAPUR, SECTOR-69 GURUGRAM, BEING DEVELOPED BY RIVERDAY INFRASTRUCTURE PRIVATE LIMITED

SUB HEAD VII - M/C CHARGES + RESURFACING OF ROADS

SL NO	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
1	Provision for maintenance charges for water supply, sewerage, storm water drainage, roads, street light, horticulture etc. Complete in all respect including operation and establishment charges as per HUDA norms after completion.	Acre	11.67	8,00,000.00	Rs.93,36,000.00
2	Provision for resurfacing of road after first five year of maintenance i.e. 100 mm thick BUGS, compacted to 75 mm thick with 25 mm thick premix with seal coat with mechanical paver.	Sqm	15990 15050.2	660.00	105.53 lacs. Rs.99,33,132.00
3	Provision for resurfacing of road after 10 years of maintenance i.e. 25 mm thick premix carpet with seal coat with mechanical paver.	Sqm	15990 15050.2	825.00	131.92 lacs. Rs.1,24,16,415.00
	Total				330.81 lacs. Rs.3,16,85,547.00
	Add 3% contingencies & unforeseen				9.92 lacs. Rs.9,50,566.41
	Total				340.73 lacs. Rs.3,26,36,113.41
	Add 49 % Deptt. Charges, price escalation, unforeseen, admn. charges.				166.95 lacs. Rs.1,58,91,695.57
	Total				507.69 lacs. Rs.4,86,27,808.98
	Say (in Lacs.)				Rs.486.28
	(C/O to summary of estimate cost)				507.69 lacs.

Project: SWD Group Housing Sect 69, Gurugram, Haryana

Hydraulic Calculation of Domestic Water Riser

S. No.	LINE		Towers	Domestic Water Requirement LPD	Total water demand (Progressive) LPD	Pump working for Hours and capacity in LPM 10 Hrs.	Length of Pipe Mtr	Effective Length (Actual length+ 10%) Mtr	Proposed line dia. MM	Velocity in m/sec Mtr/sec	Frictional head losses Mtr/Mtr	Ele. Height Mtr	F. Loss in Riser Mtr	Total Frictional head losses Mtr	Head at Start Mtr	Head at End Mtr	Remarks
	FROM	TO															
1	D-01	D-03	TOWER-A	130943	130943	218.2	39	42.90	65	1.31	0.039	165.00	6.40	8.06	25.46	198.52	
2	D-02	D-03	TOWER-B	129923	129923	216.5	15	16.50	65	1.30	0.038	165.00	6.31	6.94	26.59	198.52	
3	D-03	D-05	INTERMEDIATE CONNECTION	0	260865	434.8	39	42.90	100	1.11	0.017	0.00	0.00	0.73	198.52	199.26	
4	D-04	D-05	TOWER-C	129923	129923	216.5	15	16.50	65	1.30	0.038	165.00	6.31	6.94	27.32	199.26	
5	D-05	D-07	INTERMEDIATE CONNECTION	0	390788	651.3	47	51.70	100	1.66	0.036	0.00	0.00	1.86	199.26	201.12	
6	D-06	D-07	TOWER-D	129923	129923	216.5	15	16.50	65	1.30	0.038	165.00	6.31	6.94	29.18	201.12	
7	D-07	D-09	INTERMEDIATE CONNECTION	0	520710	867.9	30	33.00	100	2.21	0.061	0.00	0.00	2.02	201.12	203.14	
8	D-08	D-09	TOWER-E	129923	129923	216.5	15	16.50	65	1.30	0.038	165.00	6.31	6.94	31.21	203.14	
9	D-09	D-11	INTERMEDIATE CONNECTION	0	650633	1084.4	34	37.40	150	1.23	0.013	0.00	0.00	0.48	203.14	203.62	
10	D-10	D-11	TOWER-F	130943	130943	218.2	15	16.50	65	1.31	0.039	165.00	6.40	7.04	31.59	203.62	
11	D-11	D-17	INTERMEDIATE CONNECTION	0	781575	1302.6	6	6.60	150	1.47	0.018	0.00	0.00	0.12	203.62	203.74	
12	D-12	D-13	COMMERCIAL BLOCK 2	1645	1645	2.7	9	9.90	50	0.03	0.000	15.00	0.00	0.00	188.73	203.73	
13	D-13	D-15	INTERMEDIATE CONNECTION	0	1645	2.7	39	42.90	150	0.00	0.000	0.00	0.00	0.00	203.73	203.73	
14	D-14	D-15	COMMERCIAL BLOCK 3	15630	15630	26.1	219	240.90	50	0.27	0.003	15.00	0.04	0.70	188.04	203.73	
15	D-15	D-17	INTERMEDIATE CONNECTION	0	17275	28.8	26	28.60	80	0.11	0.000	0.00	0.00	0.01	203.73	203.74	
16	D-16	D-17	COMMERCIAL BLOCK 1	85310	85310	142.2	58	63.80	65	0.86	0.018	30.00	0.53	1.65	172.10	203.74	
17	D-17	D-18	INTERMEDIATE CONNECTION	0	884160	1473.6	136	149.60	100	3.75	0.163	0.00	0.00	24.46	203.74	228.20	
18	D-18	D-24	INTERMEDIATE CONNECTION	0	884160	1473.6	39	42.90	150	1.67	0.023	0.00	0.00	0.97	228.20	229.17	
19	D-19	D-21	TRUMP TOWER-1	129923	129923	216.5	65	71.50	65	1.30	0.038	199.00	7.61	10.34	19.02	228.36	
20	D-20	D-21	TRUMP TOWER-2	129923	129923	216.5	6	6.60	65	1.30	0.038	199.00	7.61	7.86	21.50	228.36	
21	D-21	D-23	INTERMEDIATE CONNECTION	0	259845	433.1	36	39.60	100	1.10	0.017	0.00	0.00	0.67	228.36	229.03	

S. No.	LINE		Towers	Domestic Water Requirement LPD	Total water demand (Progressive) LPD	Pump working for Hours and capacity in LPM 10 Hrs.	Length of Pipe Mtr	Effective Length (Actual length+ 10%) Mtr	Proposed line dia. MM	Velocity in m/sec Mtr/sec	Frictional head losses Mtr/Mtr	Ele. Height Mtr	F. Loss in Riser Mtr	Total Frictional head losses Mtr	Head at Start Mtr	Head at End Mtr	Remarks
	FROM	TO															
22	D-22	D-23	CLUB BUILDING	17069	17069	28.4	11	12.10	50	0.29	0.003	20.00	0.06	0.10	209.07	229.17	
23	D-23	D-24	INTERMEDIATE CONNECTION		276914	461.5	7	7.70	100	1.17	0.019	0.00	0.00	0.15	229.03	229.17	
24	D-24	UG TANK	INTERMEDIATE CONNECTION		1161074	1935.1	20	22.00	150	2.19	0.038	0.00	0.00	0.83	229.17	230.00	
				1161074		1935		230.00									
					1020	LPM	@	230	Mtr.	2W+1S							
			Req. LPM For All Type Buildings														

Project: SWD Group Housing Sect 69, Gurugram, Haryana

Domestic Water Measurement Sheet

S. No.	Line		Proposed line dia.	Length of Pipe	Dia of pipe					
	From	To	MM	Mtr	40mm	50mm	65mm	80mm	100mm	150mm
1	D-01	D-03	65	39	-	-	39	-	-	-
2	D-02	D-03	65	15	-	-	15	-	-	-
3	D-03	D-05	100	39	-	-	-	-	39	-
4	D-04	D-05	65	15	-	-	15	-	-	-
5	D-05	D-07	100	47	-	-	-	-	47	-
6	D-06	D-07	65	15	-	-	15	-	-	-
7	D-07	D-09	100	30	-	-	-	-	30	-
8	D-08	D-09	65	15	-	-	15	-	-	-
9	D-09	D-11	150	34	-	-	-	-	-	34
10	D-10	D-11	65	15	-	-	15	-	-	-
11	D-11	D-17	150	6	-	-	-	-	-	6
12	D-12	D-13	50	9	-	9	-	-	-	-
13	D-13	D-15	150	39	-	-	-	-	-	39
14	D-14	D-15	50	219	-	219	-	-	-	-
15	D-15	D-17	80	26	-	-	-	26	-	-
16	D-16	D-17	65	58	-	-	58	-	-	-
17	D-17	D-18	100	136	-	-	-	-	136	-
18	D-18	D-24	150	39	-	-	-	-	-	39
19	D-19	D-21	65	65	-	-	65	-	-	-
20	D-20	D-21	65	6	-	-	6	-	-	-
21	D-21	D-23	100	36	-	-	-	-	36	-
22	D-22	D-23	50	11	-	11	-	-	-	-
23	D-23	D-24	100	7	-	-	-	-	7	-
24	D-24	UG TANK	150	20	-	-	-	-	-	20
TOTAL				941	0	239	243	26	295	138

Project: SWD Group Housing Sect 69, Gurugram, Haryana

Hydraulic Calculation of Flushing Water Riser

S. No.	LINE		Towers	Flushing Water Requirement	Total water demand (Progressive)	Pump working for Hours and capacity in LPM	Length of Pipe	Effective Length (Actual length+ 10%)	Proposed line dia.	Velocity in m/sec	Frictional head losses	Ele. Height	F. Loss in Riser	Total Frictional head losses	Head at Start	Head at End	Remarks
	FROM	TO	Name of Building	LPD	LPD	10 Hrs.	Mtr	Mtr	MM	Mtr/sec	Mtr/Mtr	Mtr	Mtr	Mtr	Mtr	Mtr	
1	F-01	F-03	TOWER-A	46215	46215	77.0	39	42.90	50	0.78	0.020	165.00	3.34	4.21	52.73	221.94	
2	F-02	F-03	TOWER-B	45855	45855	76.4	15	16.50	50	0.78	0.020	165.00	3.29	3.62	53.32	221.94	
3	F-03	F-05	INTERMEDIATE CONNECTION		92070	153.5	39	42.90	65	0.92	0.020	0.00	0.00	0.87	221.94	222.80	
4	F-04	F-05	TOWER-C	45855	45855	76.4	15	16.50	50	0.78	0.020	165.00	3.29	3.62	54.18	222.80	
5	F-05	F-07	INTERMEDIATE CONNECTION		137925	229.9	47	51.70	65	1.38	0.043	0.00	0.00	2.21	222.80	225.01	
6	F-06	F-07	TOWER-D	45855	45855	76.4	15	16.50	50	0.78	0.020	165.00	3.29	3.62	56.39	225.01	
7	F-07	F-09	INTERMEDIATE CONNECTION		183780	306.3	30	33.00	80	1.22	0.026	0.00	0.00	0.87	225.01	225.88	
8	F-08	F-09	TOWER-E	45855	45855	76.4	15	16.50	50	0.78	0.020	165.00	3.29	3.62	57.26	225.88	
9	F-09	F-11	INTERMEDIATE CONNECTION		229635	382.7	34	37.40	80	1.52	0.040	0.00	0.00	1.49	225.88	227.37	
10	F-10	F-11	TOWER-F	46215	46215	77.0	15	16.50	50	0.78	0.020	165.00	3.34	3.67	58.70	227.37	
11	F-11	F-15	INTERMEDIATE CONNECTION		275850	459.8	5	5.50	80	1.83	0.056	0.00	0.00	0.31	227.37	227.68	
12	F-12	F-14	CLUB BUILDING	12115	12115	20.2	11	12.10	40	0.32	0.005	20.00	0.10	0.16	207.47	227.63	
13	F-13	F-14	TRUMP TOWER-2	44505	44505	74.2	40	44.00	50	0.76	0.019	199.00	3.75	4.58	24.05	227.63	
14	F-14	F-15	INTERMEDIATE CONNECTION		56620	94.4	46	50.60	100	0.24	0.001	0.00	0.00	0.05	227.63	227.68	
15	F-15	F-17	INTERMEDIATE CONNECTION		332470	554.1	74	81.40	100	1.41	0.027	0.00	0.00	2.17	227.68	229.86	
16	F-16	F-17	TRUMP TOWER-1	44505	44505	74.2	14	15.40	50	0.76	0.019	199.00	3.75	4.04	26.81	229.86	
17	F-17	F-19	INTERMEDIATE CONNECTION		376975	628.3	61	67.10	100	1.60	0.034	0.00	0.00	2.26	229.86	232.12	
18	F-18	F-19	COMMERCIAL BLOCK 1	20470	20470	34.1	60	66.00	40	0.54	0.013	30.00	0.40	1.27	200.85	232.12	
19	F-19	F-21	INTERMEDIATE CONNECTION		397445	662.4	26	28.60	100	1.69	0.037	0.00	0.00	1.06	232.12	233.18	
20	F-20	F-21	COMMERCIAL BLOCK 3	7830	7830	13.1	219	240.90	40	0.21	0.002	15.00	0.03	0.57	217.61	233.18	
21	F-21	F-23	INTERMEDIATE CONNECTION		405275	675.5	40	44.00	100	1.72	0.039	0.00	0.00	1.70	233.18	234.88	
22	F-22	F-23	COMMERCIAL BLOCK 2	2900	2900	4.8	9	9.90	150	0.01	0.000	15.00	0.00	0.00	219.88	234.88	
23	F-23	STP	INTERMEDIATE CONNECTION		408175	680.3	20	22.00	150	0.77	0.005	0.00	0.00	0.12	234.88	235.00	
				408175		680											
							@	235	Mtr.	1W+1S							
					800	LPM											

Project: SWD Group Housing Sect 69, Gurugram, Haryana

Flushing Water Measurement Sheet

S. No.	Line		Proposed line dia.	Length of Pipe							
	From	To	MM	Mtr	32mm	40mm	50mm	65mm	80mm	100mm	150mm
1	F-01	F-03	50	39	-	-	39	-	-	-	-
2	F-02	F-03	50	15	-	-	15	-	-	-	-
3	F-03	F-05	65	39	-	-	-	39	-	-	-
4	F-04	F-05	50	15	-	-	15	-	-	-	-
5	F-05	F-07	65	47	-	-	-	47	-	-	-
6	F-06	F-07	50	15	-	-	15	-	-	-	-
7	F-07	F-09	80	30	-	-	-	-	30	-	-
8	F-08	F-09	50	15	-	-	15	-	-	-	-
9	F-09	F-11	80	34	-	-	-	-	34	-	-
10	F-10	F-11	50	15	-	-	15	-	-	-	-
11	F-11	F-15	80	5	-	-	-	-	5	-	-
12	F-12	F-14	40	11	-	11	-	-	-	-	-
13	F-13	F-14	60	40	-	-	40	-	-	-	-
14	F-14	F-15	100	46	-	-	-	-	-	46	-
15	F-15	F-17	100	74	-	-	-	-	-	74	-
16	F-16	F-17	50	14	-	-	14	-	-	-	-
17	F-17	F-19	100	61	-	-	-	-	-	61	-
18	F-18	F-19	40	60	-	60	-	-	-	-	-
19	F-19	F-21	100	26	-	-	-	-	-	26	-
20	F-20	F-21	40	219	-	219	-	-	-	-	-
21	F-21	F-23	100	40	-	-	-	-	-	40	-
22	F-22	F-23	150	9	-	-	-	-	-	-	9
23	F-23	STP	150	20	-	-	-	-	-	-	20
TOTAL				889	0	290	168	86	69	247	29

PROJECT : SWD Group Housing Sect 69, Gurugram, Haryana

Design Calculation for Sewerage Water Pipe

S. No.	LINE	Pipes	Total Water Requirement	Av. Sower load		Peak Load @ 30 Av. Load	Subsoil Infiltration @25% of Av. Load	Self Discharge	Branch Discharge	Total Discharge	Length of line	Dia of Pipe	Slope	Fall in Line	Capacity of pipe (QD)	Velocity (V)	Q/D	v/v	Actual velocity (vel)	Check for carrying capacity	G. Level at Start	G. Level at End	Invert Level at Start	Invert Level at End	Total drop in Invert as per Ramp slope	Depth at Start	Depth at End	Type of Manhole																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
				85% of Water requirement	Self																								NO.	FROM	TO	NAME OF BUILDING	LPD	LPD	LPD	LPD	LPD	LPD	LPD	Mtr	mm	Mtr	Mtr	LPS	m/sec	%	m/sec	m/sec	Mtr	Mtr	Mtr	Mtr	Mtr	Mtr			1	S1	S2	TOWER - A & B	352935	293995	899284	74999	974983	0	974983	35	200	150	0.23	34.83	0.85	0.32	0.39	0.89	0.759	OK	0.45	0.45	-0.45	-0.68	0.00	0.50	1.13	910 Dia	2	S2	S3	TOWER - C	175778	149411	448233	37353	485585	974983	1460568	38	250	200	0.19	54.69	0.86	0.31	0.39	0.88	0.754	OK	0.45	0.45	-0.68	-0.87	0.00	1.13	1.32	910 Dia	3	S3	S4	TOWER - D	175778	149411	448233	37353	485585	1460568	1946154	26	250	200	0.13	54.69	0.86	0.41	0.45	0.95	0.814	OK	0.45	0.45	-0.87	-1.00	0.00	1.32	1.45	910 Dia	4	S4	S5	TOWER - E & F	382935	299995	899284	74999	974983	1946154	2921137	38	300	250	0.15	79.54	0.87	0.43	0.46	0.97	0.839	OK	0.45	0.45	-1.00	-1.15	0.00	1.45	1.60	910 Dia	5	S5	S6			0	0	0	2921137	2921137	33.81	49	300	250	0.19	79.54	0.87	0.43	0.46	0.97	0.839	OK	0.45	0.45	-1.15	-1.35	0.00	1.60	1.80	910 Dia	6	S6	S7			0	0	0	2921137	2921137	33.81	52	300	250	0.21	79.54	0.87	0.43	0.46	0.97	0.839	OK	0.45	0.45	-1.35	-1.55	0.00	1.80	2.00	1220 Dia	7	S7	S21			0	0	0	2921137	2921137	33.81	31	300	250	0.12	79.54	0.87	0.43	0.46	0.97	0.839	OK	0.45	0.45	-1.55	-1.68	0.00	2.00	2.13	1220 Dia	8	S8	S9	CLUB BUILDING	27825	23651	70954	5923	76867	0	76867	58	200	150	0.38	34.83	0.85	0.09	0.13	0.46	0.392	OK	0.45	0.45	-0.45	-0.83	0.00	0.90	1.28	910 Dia	9	S9	S10			0	0	0	76867	76867	0.89	53	200	150	0.35	34.83	0.85	0.03	0.13	0.46	0.392	OK	0.45	0.45	-0.83	-1.19	0.00	1.28	1.64	910 Dia	10	S10	S11			0	0	0	76867	76867	0.89	48	200	150	0.32	34.83	0.85	0.03	0.13	0.46	0.392	OK	0.45	0.45	-1.19	-1.78	0.00	1.64	2.51	910 Dia	11	S11	S12	TRUMP TOWER - 2	170609	145012	435036	36253	871289	76867	548156	31	250	200	0.16	54.69	0.86	0.12	0.24	0.69	0.591	OK	0.73	0.45	-1.78	-2.21	0.28	2.51	2.66	1520 Dia	12	S12	S13	TRUMP TOWER - 1	170603	145012	435036	36253	471289	548156	1071945	33	250	200	0.16	54.69	0.86	0.22	0.33	0.80	0.685	OK	0.45	0.45	-2.21	-2.37	0.00	2.66	2.82	1520 Dia	13	S13	S14	COMMERCIAL-01 (RETAIL+PRIMARY SCHOOL+EWS) - 1/3	22145	18823	56470	4706	61176	1019445	1080621	27	250	200	0.14	54.69	0.86	0.23	0.33	0.81	0.694	OK	0.45	0.45	-2.37	-2.51	0.00	2.82	2.96	1520 Dia	14	S14	S19	COMMERCIAL-01 (RETAIL+PRIMARY SCHOOL+EWS) - 1/3	22145	18823	56470	4706	61176	1080621	1141797	27	250	200	0.14	54.69	0.86	0.24	0.34	0.83	0.711	OK	0.45	0.45	-2.51	-2.64	0.00	2.96	3.09	1520 Dia	15	S15	S16	COMMERCIAL-03 (RETAIL+EWS)	23460	19941	59823	4985	64808	0	64808	0.75	22	200	150	0.15	34.83	0.85	0.02	0.10	0.40	0.343	OK	0.45	0.45	-0.45	-0.60	0.00	1.05	1.35	910 Dia	16	S16	S17			0	0	0	64808	64808	0.75	45	200	150	0.30	34.83	0.85	0.02	0.10	0.40	0.341	OK	0.45	0.45	-0.60	-0.90	0.00	1.05	1.35	910 Dia	17	S17	S18			0	0	0	64808	64808	0.75	39	200	150	0.26	34.83	0.85	0.02	0.10	0.40	0.341	OK	0.45	0.45	-0.90	-1.16	0.00	1.35	1.61	910 Dia	18	S18	S19			0	0	0	64808	64808	0.75	48	200	150	0.32	34.83	0.85	0.02	0.10	0.40	0.341	OK	0.45	0.45	-1.16	-1.48	0.00	1.61	1.93	910 Dia	19	S19	S20	COMMERCIAL-02 (RETAIL+PRIMARY SCHOOL+EWS) - 1/3	22145	18823	56470	4706	61176	1206605	1267780	48	250	200	0.24	54.69	0.86	0.27	0.36	0.95	0.728	OK	0.45	0.45	-2.64	-2.88	0.00	3.09	3.33	1520 Dia	20	S20	S21			0	0	0	1267780	1267780	14.67	51	250	200	0.25	54.69	0.86	0.27	0.36	0.85	0.728	OK	0.45	0.45	-2.88	-3.74	3.60	9.19	1520 Dia	21	S21a	S21	COMMERCIAL-02 (RETAIL+NURSERY SCHOOL)	4545	3863	11590	966	12556	0	12556	15	200	150	0.10	34.83	0.85	0.00	0.05	0.28	0.239	OK	0.45	0.45	-8.74	-8.84	0.00	9.19	9.29	1800 Dia	21	S21	S19			0	0	0	4201472	4201472	48.63	28	400	350	0.08	144.77	0.89	0.34	0.40	0.91	0.806	OK	0.45	0.45	-8.74	-8.82	0.00	9.19	9.27	1800 Dia		
NO.	FROM	TO	NAME OF BUILDING	LPD	LPD	LPD	LPD	LPD	LPD	LPD	Mtr	mm	Mtr	Mtr	LPS	m/sec	%	m/sec	m/sec	Mtr	Mtr	Mtr	Mtr	Mtr	Mtr																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
1	S1	S2	TOWER - A & B	352935	293995	899284	74999	974983	0	974983	35	200	150	0.23	34.83	0.85	0.32	0.39	0.89	0.759	OK	0.45	0.45	-0.45	-0.68	0.00	0.50	1.13	910 Dia																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
2	S2	S3	TOWER - C	175778	149411	448233	37353	485585	974983	1460568	38	250	200	0.19	54.69	0.86	0.31	0.39	0.88	0.754	OK	0.45	0.45	-0.68	-0.87	0.00	1.13	1.32	910 Dia																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
3	S3	S4	TOWER - D	175778	149411	448233	37353	485585	1460568	1946154	26	250	200	0.13	54.69	0.86	0.41	0.45	0.95	0.814	OK	0.45	0.45	-0.87	-1.00	0.00	1.32	1.45	910 Dia																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
4	S4	S5	TOWER - E & F	382935	299995	899284	74999	974983	1946154	2921137	38	300	250	0.15	79.54	0.87	0.43	0.46	0.97	0.839	OK	0.45	0.45	-1.00	-1.15	0.00	1.45	1.60	910 Dia																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
5	S5	S6			0	0	0	2921137	2921137	33.81	49	300	250	0.19	79.54	0.87	0.43	0.46	0.97	0.839	OK	0.45	0.45	-1.15	-1.35	0.00	1.60	1.80	910 Dia																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
6	S6	S7			0	0	0	2921137	2921137	33.81	52	300	250	0.21	79.54	0.87	0.43	0.46	0.97	0.839	OK	0.45	0.45	-1.35	-1.55	0.00	1.80	2.00	1220 Dia																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
7	S7	S21			0	0	0	2921137	2921137	33.81	31	300	250	0.12	79.54	0.87	0.43	0.46	0.97	0.839	OK	0.45	0.45	-1.55	-1.68	0.00	2.00	2.13	1220 Dia																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
8	S8	S9	CLUB BUILDING	27825	23651	70954	5923	76867	0	76867	58	200	150	0.38	34.83	0.85	0.09	0.13	0.46	0.392	OK	0.45	0.45	-0.45	-0.83	0.00	0.90	1.28	910 Dia																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
9	S9	S10			0	0	0	76867	76867	0.89	53	200	150	0.35	34.83	0.85	0.03	0.13	0.46	0.392	OK	0.45	0.45	-0.83	-1.19	0.00	1.28	1.64	910 Dia																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
10	S10	S11			0	0	0	76867	76867	0.89	48	200	150	0.32	34.83	0.85	0.03	0.13	0.46	0.392	OK	0.45	0.45	-1.19	-1.78	0.00	1.64	2.51	910 Dia																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
11	S11	S12	TRUMP TOWER - 2	170609	145012	435036	36253	871289	76867	548156	31	250	200	0.16	54.69	0.86	0.12	0.24	0.69	0.591	OK	0.73	0.45	-1.78	-2.21	0.28	2.51	2.66	1520 Dia																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
12	S12	S13	TRUMP TOWER - 1	170603	145012	435036	36253	471289	548156	1071945	33	250	200	0.16	54.69	0.86	0.22	0.33	0.80	0.685	OK	0.45	0.45	-2.21	-2.37	0.00	2.66	2.82	1520 Dia																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
13	S13	S14	COMMERCIAL-01 (RETAIL+PRIMARY SCHOOL+EWS) - 1/3	22145	18823	56470	4706	61176	1019445	1080621	27	250	200	0.14	54.69	0.86	0.23	0.33	0.81	0.694	OK	0.45	0.45	-2.37	-2.51	0.00	2.82	2.96	1520 Dia																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
14	S14	S19	COMMERCIAL-01 (RETAIL+PRIMARY SCHOOL+EWS) - 1/3	22145	18823	56470	4706	61176	1080621	1141797	27	250	200	0.14	54.69	0.86	0.24	0.34	0.83	0.711	OK	0.45	0.45	-2.51	-2.64	0.00	2.96	3.09	1520 Dia																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
15	S15	S16	COMMERCIAL-03 (RETAIL+EWS)	23460	19941	59823	4985	64808	0	64808	0.75	22	200	150	0.15	34.83	0.85	0.02	0.10	0.40	0.343	OK	0.45	0.45	-0.45	-0.60	0.00	1.05	1.35	910 Dia																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
16	S16	S17			0	0	0	64808	64808	0.75	45	200	150	0.30	34.83	0.85	0.02	0.10	0.40	0.341	OK	0.45	0.45	-0.60	-0.90	0.00	1.05	1.35	910 Dia																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
17	S17	S18			0	0	0	64808	64808	0.75	39	200	150	0.26	34.83	0.85	0.02	0.10	0.40	0.341	OK	0.45	0.45	-0.90	-1.16	0.00	1.35	1.61	910 Dia																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
18	S18	S19			0	0	0	64808	64808	0.75	48	200	150	0.32	34.83	0.85	0.02	0.10	0.40	0.341	OK	0.45	0.45	-1.16	-1.48	0.00	1.61	1.93	910 Dia																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
19	S19	S20	COMMERCIAL-02 (RETAIL+PRIMARY SCHOOL+EWS) - 1/3	22145	18823	56470	4706	61176	1206605	1267780	48	250	200	0.24	54.69	0.86	0.27	0.36	0.95	0.728	OK	0.45	0.45	-2.64	-2.88	0.00	3.09	3.33	1520 Dia																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
20	S20	S21			0	0	0	1267780	1267780	14.67	51	250	200	0.25	54.69	0.86	0.27	0.36	0.85	0.728	OK	0.45	0.45	-2.88	-3.74	3.60	9.19	1520 Dia																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
21	S21a	S21	COMMERCIAL-02 (RETAIL+NURSERY SCHOOL)	4545	3863	11590	966	12556	0	12556	15	200	150	0.10	34.83	0.85	0.00	0.05	0.28	0.239	OK	0.45	0.45	-8.74	-8.84	0.00	9.19	9.29	1800 Dia																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
21	S21	S19			0	0	0	4201472	4201472	48.63	28	400	350	0.08	144.77	0.89	0.34	0.40	0.91	0.806	OK	0.45	0.45	-8.74	-8.82	0.00	9.19	9.27	1800 Dia																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
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Project: SWD Group Housing Sect 69, Gurugram, Haryana

Design Calculation for Sewerage Water Pipe

S. No.	Noding		Diameter	Length of Pipe	Avg. Depth	Pipe Dia			
	Start	End				200	250	300	400
1	S1	S2	200	35	1.02	35	-	-	-
2	S2	S3	250	38	1.23	-	38	-	-
3	S3	S4	250	26	1.39	-	26	-	-
4	S4	S5	300	38	1.53	-	-	38	-
5	S5	S6	300	49	1.70	-	-	48.5	-
6	S6	S7	300	52	1.90	-	-	52	-
7	S7	S21	300	31	2.07	-	-	30.5	-
8	S8	S9	200	58	1.09	58	-	-	-
9	S9	S10	200	53	1.46	53	-	-	-
10	S10	S11	200	48	2.07	48	-	-	-
11	S11	S12	250	31	2.58	-	31	-	-
12	S12	S13	250	33	2.74	-	33	-	-
13	S13	S14	250	27	2.89	-	27	-	-
14	S14	S19	250	27	3.03	-	27	-	-
15	S15	S16	200	22	0.97	22	-	-	-
16	S16	S17	200	45	1.20	45	-	-	-
17	S17	S18	200	39	1.48	39	-	-	-
18	S18	S19	200	48	1.77	48	-	-	-
19	S19	S20	250	48	3.21	-	48	-	-
20	S20	S21	250	51	6.26	-	51	-	-
21	S21a	S21	200	15	9.24	15	-	-	-
21	S21	STP	400	28	9.23	-	-	-	28
TOTAL				839		363	280	169	28
MANHOLE									
910mm Dia			12						
1220mm Dia			2						
1520mm Dia			6						
1800mm Dia			2						

Project: SWD Group Housing Sector 69, Gurugram, Haryana

Design Calculation for Storm Water Drainage Pipe

Sl. No.	Node		Length of Pipe	Terrace Area		Hard Area		Green Area		Total Area			Total Discharge		Diameter of Pipe	Slope	Velocity	Carrying capacity of Pipe	Check for carrying capacity	Ground Level		Fall in Line	Invert Level		Depth of Line		Diameter of manhole		
				Self	Previous	Self	Previous	Self	Previous	Terrace	Hard	Green	M ² /S	LPS						Start	End		Start	End	Start	End		Mtr.	Mtr.
1	ST01	ST02	18.00	795.00								795.00			0.001	1.242	300	350	0.63	44.81	OK	0.450	0.450	0.051	-0.45	-0.50	0.90	0.95	910 Dia
2	ST02	ST04	50.00		795.00	865.00		595.00			865.00	795.00	595.00	0.003	2.599	400	550	0.61	76.99	OK	0.450	0.450	0.091	-0.50	-0.59	0.95	1.04	910 Dia	
3	ST03	ST04	18.00	790.00								790.00			0.001	1.234	300	350	0.63	44.81	OK	0.450	0.450	0.051	-0.45	-0.50	0.90	0.95	910 Dia
4	ST04	ST05	28.00		1585.00	865.00	536.00	658.36	595.00	1585.00	1401.00	1585.00	1253.36	0.005	4.749	400	550	0.61	76.99	OK	0.450	0.450	0.051	-0.59	-0.64	1.04	1.09	910 Dia	
5	ST05	ST06	6.00		1585.00				1401.00	1253.36	1401.00	1585.00	1253.36	0.005	4.749	400	550	0.61	76.99	OK	0.450	0.450	0.011	-0.64	-0.65	1.09	1.10	910 Dia	
6	ST06	ST08	16.00	235.00	1585.00			103.00	1253.36	1356.36	1401.00	1820.00	1356.36	0.005	5.143	400	550	0.61	76.99	OK	0.450	0.450	0.029	-0.65	-0.68	1.10	1.13	910 Dia	
7	ST07	ST08	18.00	735.00								735.00			0.001	1.148	300	350	0.63	44.81	OK	0.450	0.450	0.051	-0.45	-0.50	0.90	0.95	910 Dia
8	ST08	ST10	31.00		2555.00	375.00		425.00	1356.36	1776.00	1776.00	2555.00	1781.36	0.007	6.923	400	550	0.61	76.99	OK	0.450	0.450	0.056	-0.68	-0.74	1.13	1.19	910 Dia	
9	ST09	ST10	18.00	1131.00								1131.00			0.002	1.767	300	350	0.63	44.81	OK	0.450	0.450	0.051	-0.45	-0.50	0.90	0.95	910 Dia
10	ST10	ST12	10.00		3686.00	965.00			1781.36	2741.00	2741.00	3686.00	1781.36	0.010	10.030	400	550	0.61	76.99	OK	0.450	0.450	0.018	-0.74	-0.76	1.19	1.21	910 Dia	
11	ST11	ST12	57.00					730.00						730.00	0.000	0.190	300	350	0.63	44.81	OK	0.450	0.450	0.163	-0.45	-0.61	0.90	1.06	910 Dia
12	ST12	ST15	14.00	335.00	3686.00	4865.00		353.00	2511.36	7606.00	7606.00	4021.00	2864.36	0.018	17.593	400	550	0.61	76.99	OK	0.450	0.450	0.025	-0.76	-0.78	1.21	1.23	910 Dia	
13	ST13	ST14	61.00			523.00		965.00			523.00		965.00	0.001	0.978	300	350	0.63	44.81	OK	0.450	0.450	0.174	-0.45	-0.62	0.90	1.07	910 Dia	
14	ST14	ST15	19.00	235.00			345.00	523.00	965.00	235.00	868.00		1488.00	0.002	1.960	300	350	0.63	44.81	OK	0.450	0.450	0.054	-0.62	-0.68	1.07	1.13	910 Dia	
15	ST15	ST16	73.00		4256.00		568.00	8474.00		4352.36	9042.00	4256.00	4352.36	0.020	20.342	400	550	0.61	76.99	OK	0.450	0.450	0.133	-0.78	-0.92	1.23	1.37	910 Dia	
16	ST16	ST17	20.00		4256.00		865.00	9042.00	468.00	4352.36	9907.00	4256.00	4820.36	0.022	21.665	400	550	0.61	76.99	OK	0.450	0.450	0.036	-0.92	-0.95	1.37	1.40	910 Dia	
17	ST17	ST18	2.00		4256.00			126.00	4820.36	4256.00	9907.00	4256.00	4946.36	0.022	21.698	400	550	0.61	76.99	OK	0.450	0.450	0.004	-0.95	-0.96	1.40	1.41	910 Dia	
18	ST18	ST19	47.00		4256.00	235.00		9907.00		4946.36	10142.00	4256.00	4946.36	0.022	22.024	400	550	0.61	76.99	OK	0.450	0.450	0.085	-0.96	-1.04	1.41	1.49	910 Dia	
19	ST19	ST20	39.00	458.00	4256.00	283.00		10142.00		4946.36	10425.00	4714.00	4946.36	0.023	23.133	400	550	0.61	76.99	OK	0.450	0.450	0.071	-1.04	-1.11	1.49	1.56	910 Dia	
20	ST20	ST24	23.00	462.00	4714.00	985.00		10425.00		4946.36	11410.00	5176.00	4946.36	0.025	25.223	400	550	0.61	76.99	OK	0.450	0.450	0.042	-1.11	-1.15	1.56	1.60	910 Dia	
21	ST21	ST22	40.00			911.00					911.00			0.001	1.265	400	550	0.61	76.99	OK	0.450	0.450	0.073	-0.45	-0.52	0.90	0.97	910 Dia	
22	ST22	ST24	28.00			568.00		911.00			1479.00			0.002	2.054	400	550	0.61	76.99	OK	0.450	0.450	0.051	-0.52	-0.57	0.97	1.02	910 Dia	
23	ST23	ST24	18.00	538.00				453.00				538.00	453.00	0.001	0.959	300	350	0.63	44.81	OK	0.450	0.450	0.051	-0.45	-0.50	0.90	0.95	910 Dia	
24	ST24	ST26	35.00		538.00		358.00	1479.00	572.00	453.00	1837.00	538.00	1025.00	0.004	3.659	400	550	0.61	76.99	OK	0.450	0.450	0.064	-0.57	-0.64	1.02	1.09	910 Dia	
25	ST25	ST26	17.00	532.00			279.00				279.00	532.00		0.001	1.219	300	350	0.63	44.81	OK	0.450	0.450	0.049	-0.45	-0.50	0.90	0.95	910 Dia	
26	ST26	ST27	2.00		1070.00				1025.00	1025.00	2116.00	1070.00	1025.00	0.005	4.878	400	550	0.61	76.99	OK	0.450	0.450	0.004	-0.64	-0.64	1.09	1.09	910 Dia	
27	ST27	ST29	29.00	12.00	1070.00	653.00		2116.00	135.00	1025.00	2769.00	1082.00	1160.00	0.006	5.839	400	550	0.61	76.99	OK	0.450	0.450	0.053	-0.64	-0.69	1.09	1.14	910 Dia	
28	ST28	ST29	16.00	623.00								623.00		0.001	0.973	300	350	0.63	44.81	OK	0.450	0.450	0.046	-0.45	-0.50	0.90	0.95	910 Dia	

Sl. No.	Node		Length of Pipe	Terrace Area		Hard Area		Green Area		Total Area			Total Discharge		Diameter of Pipe	Slope	Velocity	Carrying capacity of Pipe	Check for carrying capacity	Ground Level		Fall in Line	Invert Level		Depth of Line		Diameter of manhole
	Start	End		Self	Previous	Self	Previous	Self	Previous	Terrace	Hard	Green	M ³ /S	LPS						Start	End		Mtr.	Mtr.	Start	End	
29	ST29	ST31	31.00		1705.00	168.00	2769.00	369.00	1160.00	1705.00	2937.00	1529.00	0.007	7.141	400	550	0.61	76.99	OK	0.450	0.450	0.056	-0.69	-0.75	1.14	1.20	910 Dia
30	ST30	ST31	15.00	652.00		165.00				652.00	165.00		0.001	1.248	400	350	0.63	44.81	OK	0.450	0.450	0.043	-0.45	-0.49	0.90	0.94	910 Dia
31	ST31	ST32	9.00		2357.00	264.00	3102.00	196.00	1529.00	2357.00	3366.00	1725.00	0.009	8.807	400	550	0.61	76.99	OK	0.450	0.450	0.016	-0.75	-0.77	1.20	1.22	910 Dia
32	ST32	ST33	6.00		2357.00		3366.00		1725.00	2357.00	3366.00	1725.00	0.009	8.807	400	550	0.61	76.99	OK	0.450	0.450	0.011	-0.77	-0.78	1.22	1.23	910 Dia
33	ST33	ST35	22.00	125.00	2357.00	236.00	3366.00	176.00	1725.00	2482.00	3602.00	1901.00	0.009	9.376	400	550	0.61	76.99	OK	0.450	0.450	0.040	-0.78	-0.82	1.23	1.27	910 Dia
34	ST34	ST35	15.00	533.00		243.00		76.00		533.00	243.00	76.00	0.001	1.190	400	350	0.63	44.81	OK	0.450	0.450	0.043	-0.45	-0.49	0.90	0.94	910 Dia
35	ST35	ST37	27.00		3015.00	534.00	3845.00	364.00	1977.00	3015.00	4379.00	2341.00	0.011	11.403	400	550	0.61	76.99	OK	0.450	0.450	0.049	-0.82	-0.87	1.27	1.32	910 Dia
36	ST36	ST37	15.00	621.00						621.00			0.001	0.970	400	350	0.63	44.81	OK	0.450	0.450	0.043	-0.45	-0.49	0.90	0.94	910 Dia
37	ST37	ST38	6.00	35.00	3636.00		4379.00	44.00	2341.00	3671.00	4379.00	2385.00	0.012	12.439	400	550	0.61	76.99	OK	0.450	0.450	0.011	-0.87	-0.88	1.32	1.33	910 Dia
38	ST38	ST40	23.00		3671.00	356.00	4379.00	330.00	2385.00	3671.00	4735.00	2715.00	0.013	13.019	400	550	0.61	76.99	OK	0.450	0.450	0.042	-0.88	-0.92	1.33	1.37	910 Dia
39	ST39	ST40	33.00	801.00				391.00		801.00			0.001	1.353	400	350	0.63	44.81	OK	0.450	0.450	0.094	-0.45	-0.54	0.90	0.99	910 Dia
40	ST40	ST41	41.00	112.00	4472.00	712.00	4735.00	453.00	3106.00	4584.00	5447.00	3559.00	0.016	15.655	400	550	0.61	76.99	OK	0.450	0.450	0.075	-0.92	-0.99	1.37	1.44	910 Dia
41	ST41	ST42	6.00	4584.00			5447.00		3559.00	4584.00	5447.00	3559.00	0.016	15.655	400	550	0.61	76.99	OK	0.450	0.450	0.011	-0.99	-1.00	1.44	1.45	910 Dia
42	ST42	ST43	17.00		4584.00	251.00	5447.00	164.00	3559.00	4584.00	5698.00	3723.00	0.016	16.046	400	550	0.61	76.99	OK	0.450	0.450	0.031	-1.00	-1.04	1.45	1.49	910 Dia
43	ST43	ST44	37.00	435.00	4584.00	396.00	5698.00		3723.00	5019.00	6094.00	3723.00	0.017	17.276	400	550	0.61	76.99	OK	0.450	0.450	0.067	-1.04	-1.10	1.49	1.55	910 Dia
44	ST44	ST48	9.00	237.00	5019.00	227.00	6094.00		3723.00	5256.00	6321.00	3723.00	0.018	17.961	400	550	0.61	76.99	OK	0.450	0.450	0.016	-1.10	-1.12	1.55	1.57	910 Dia
45	ST45	ST47	32.00	265.00		472.00				265.00	472.00		0.001	1.070	400	350	0.63	44.81	OK	0.450	0.450	0.091	-0.45	-0.54	0.90	0.99	910 Dia
46	ST46	ST47	30.00					465.00				465.00	0.000	0.121	400	350	0.63	44.81	OK	0.450	0.450	0.086	-0.45	-0.54	0.90	0.99	910 Dia
47	ST47	ST48	20.00		265.00	768.00	472.00		465.00	265.00	1240.00	465.00	0.002	2.257	400	350	0.63	44.81	OK	0.450	0.450	0.057	-0.54	-0.60	0.99	1.05	910 Dia
48	ST48	ST49	50.00	236.00	5521.00	815.00	7561.00	135.00	4188.00	5757.00	8376.00	4323.00	0.022	21.754	400	550	0.61	76.99	OK	0.450	0.450	0.091	-1.12	-1.21	1.57	1.66	910 Dia
49	ST49	ST50	2.00	132.00	5757.00	211.00	8376.00		4323.00	5889.00	8587.00	4323.00	0.022	22.254	400	550	0.61	76.99	OK	0.450	0.450	0.004	-1.21	-1.21	1.66	1.66	1220 Dia
50	ST50	ST51	64.00		5889.00	1250.00	8587.00	856.00	4323.00	5889.00	9837.00	5179.00	0.024	24.213	400	550	0.61	76.99	OK	0.450	0.450	0.116	-1.21	-1.33	1.66	1.78	1220 Dia
51	ST51	ST52	2.00	49.00	5889.00	23.00	9837.00	46.00	5179.00	5938.00	9860.00	5225.00	0.024	24.333	400	550	0.61	76.99	OK	0.450	0.450	0.004	-1.33	-1.33	1.78	1.78	1220 Dia
52	ST52	ST53	44.00	386.00	5938.00	468.00	9860.00	353.00	5225.00	6324.00	10328.00	5578.00	0.026	25.678	400	550	0.61	76.99	OK	0.450	0.450	0.080	-1.33	-1.41	1.78	1.86	1230 Dia
53	ST53	ST54	54.00	357.00	6324.00	368.00	10328.00		5578.00	6681.00	10696.00	5578.00	0.027	26.747	400	550	0.61	76.99	OK	0.450	0.450	0.098	-1.41	-1.51	1.86	1.96	1220 Dia
54	ST54	ST55	58.00		11857.00		22106.00		10524.36	11857.00	22106.00	10524.36	0.052	51.970	400	550	0.61	76.99	OK	0.450	0.450	0.105	-1.51	-1.62	1.96	2.07	1220 Dia
55	ST55	ST58	37.00		11857.00		22106.00		10524.36	11857.00	22106.00	10524.36	0.052	51.970	400	550	0.61	76.99	OK	0.450	0.450	0.067	-1.62	-1.68	2.07	2.13	1220 Dia
56	ST56	ST57	43.00	350.00						350.00			0.001	0.547	400	550	0.61	76.99	OK	0.450	0.450	0.078	-0.45	-0.53	0.90	0.98	910 Dia
57	ST57	ST58	30.00	350.00						700.00			0.001	1.094	400	550	0.61	76.99	OK	0.450	0.450	0.055	-0.53	-0.58	0.98	1.03	910 Dia
58	ST58	ST61	22.00		12557.00		22106.00		10524.36	12557.00	22106.00	10524.36	0.053	53.064	400	550	0.61	76.99	OK	0.450	0.450	0.040	-1.68	-1.72	2.13	2.17	1220 Dia

Sl. No.	Node		Length of Pipe	Terrace Area		Hard Area		Green Area		Total Area		Total Discharge		Diameter of Pipe	Slope	Velocity	Carrying capacity of Pipe	Check for carrying capacity	Ground Level		Fall in Line	Invert Level		Depth of Line		Diameter of manhole
				Self	Previous	Self	Previous	Self	Previous	Terrace	Hard	Green	6.25 mm/hr	LPS					Start	End		Start	End	Start	End	
59	ST59	ST60	43.00	350.00						350.00			0.001	0.547	400	550	0.61	OK	0.450	0.450	0.078	-0.45	-0.53	0.90	0.98	910 Dia
60	ST60	ST61	30.00	350.00	350.00					700.00			0.001	1.094	400	550	0.61	OK	0.450	0.450	0.055	-0.53	-0.58	0.98	1.03	910 Dia
61	ST61	ST62	15.00		13257.00				10524.36	13257.00	22106.00	10524.36	0.054	54.158	400	550	0.61	OK	0.450	0.450	0.027	-1.72	-1.75	2.17	2.20	1220 Dia
62	ST62	Ex. Drain	10.00		13257.00				10524.36	13257.00	22106.00	10524.36	0.05	54.16	500	650	0.65	OK	0.450	0.450	0.015	-1.75	-1.77	2.20	2.22	1220 Dia
63	ST63	ST64	33.00	386.00		464.00		148.00		386.00	464.00	148.00	0.001	1.286	400	550	0.61	OK	0.450	0.450	0.060	-0.45	-0.51	0.90	0.96	910 Dia
64	ST64	ST65	48.00	260.00	386.00	427.00	464.00	165.00	148.00	646.00	891.00	313.00	0.002	2.328	400	550	0.61	OK	0.450	0.450	0.087	-0.51	-0.60	0.96	1.05	910 Dia
65	ST65	ST66	89.00		646.00		891.00		313.00	646.00	891.00	313.00	0.002	2.328	400	550	0.61	OK	0.450	0.450	0.162	-0.60	-0.76	1.05	1.21	910 Dia
66	ST66	ST67	107.00	260.00	646.00	407.00	891.00	218.00	313.00	906.00	1298.00	531.00	0.003	3.357	400	550	0.61	OK	0.450	0.450	0.195	-0.76	-0.95	1.21	1.40	910 Dia
67	ST67	ST68	112.00	260.00	906.00	407.00	1298.00	218.00	531.00	1166.00	1705.00	749.00	0.004	4.385	400	550	0.61	OK	0.450	0.450	0.204	-0.95	-1.16	1.40	1.61	910 Dia
68	ST68	Ex. Drain	10.00		906.00		1298.00		531.00	906.00	1298.00	531.00	0.00	3.36	500	650	0.65	OK	0.450	0.450	0.015	-1.16	-1.17	1.61	1.62	910 Dia

Project: SWD Group Housing Sect 69, Gurugram, Haryana

Measurement Sheet for Storm Water Pipe

S. No.	Noding		Diameter	Length of Pipe	Avg. Depth	Pipe Dia			
	Start	End				300	400	500	600
1	ST01	ST02	300	18	0.93	18	-	-	-
2	ST02	ST04	400	50	1.00	-	50	-	-
3	ST03	ST04	300	18	0.93	18	-	-	-
4	ST04	ST05	400	28	1.07	-	28	-	-
5	ST05	ST06	400	6	1.10	-	6	-	-
6	ST06	ST08	400	16	1.12	-	16	-	-
7	ST07	ST08	300	18	0.93	18	-	-	-
8	ST08	ST10	400	31	1.16	-	31	-	-
9	ST09	ST10	300	18	0.93	18	-	-	-
10	ST10	ST12	400	10	1.20	-	10	-	-
11	ST11	ST12	300	57	0.98	57	-	-	-
12	ST12	ST15	400	14	1.22	-	14	-	-
13	ST13	ST14	300	61	0.99	61	-	-	-
14	ST14	ST15	300	19	1.10	19	-	-	-
15	ST15	ST16	400	73	1.30	-	73	-	-
16	ST16	ST17	400	20	1.38	-	20	-	-
17	ST17	ST18	400	2	1.40	-	2	-	-
18	ST18	ST19	400	47	1.45	-	47	-	-
19	ST19	ST20	400	39	1.53	-	39	-	-
20	ST20	ST54	400	23	1.58	-	23	-	-
21	ST21	ST22	400	40	0.94	-	40	-	-
22	ST22	ST24	400	28	1.00	-	28	-	-
23	ST23	ST24	300	18	0.93	18	-	-	-
24	ST24	ST26	400	35	1.06	-	35	-	-
25	ST25	ST26	300	17	0.92	17	-	-	-
26	ST26	ST27	400	2	1.09	-	2	-	-
27	ST27	ST29	400	29	1.12	-	29	-	-
28	ST28	ST29	300	16	0.92	16	-	-	-
29	ST29	ST31	400	31	1.17	-	31	-	-
30	ST30	ST31	300	15	0.92	15	-	-	-
31	ST31	ST32	400	9	1.21	-	9	-	-
32	ST32	ST33	400	6	1.22	-	6	-	-
33	ST33	ST35	400	22	1.25	-	22	-	-
34	ST34	ST35	300	15	0.92	15	-	-	-
35	ST35	ST37	400	27	1.29	-	27	-	-
36	ST36	ST37	300	15	0.92	15	-	-	-
37	ST37	ST38	400	6	1.32	-	6	-	-
38	ST38	ST40	400	23	1.35	-	23	-	-
39	ST39	ST40	300	33	0.95	33	-	-	-
40	ST40	ST41	400	41	1.41	-	41	-	-
41	ST41	ST42	400	6	1.45	-	6	-	-
42	ST42	ST43	400	17	1.47	-	17	-	-
43	ST43	ST44	400	37	1.52	-	37	-	-
44	ST44	ST48	400	9	1.56	-	9	-	-
45	ST45	ST47	300	32	0.95	32	-	-	-
46	ST46	ST47	300	30	0.94	30	-	-	-

Project: SWD Group Housing Sect 69, Gurugram, Haryana

Measurement Sheet for Storm Water Pipe

S. No.	Noding		Diameter	Length of Pipe	Avg. Depth	Pipe Dia			
	Start	End				300	400	500	600
47	ST47	ST48	400	20	1.02	20	-	-	-
48	ST48	ST49	400	50	1.61	-	50	-	-
49	ST49	ST50	400	2	1.66	-	2	-	-
50	ST50	ST51	400	64	1.72	-	64	-	-
51	ST51	ST52	400	2	1.78	-	2	-	-
52	ST52	ST53	400	44	1.82	-	44	-	-
53	ST53	ST54	400	54	1.91	-	54	-	-
54	ST54	ST55	400	58	2.01	-	58	-	-
55	ST55	ST58	400	37	2.10	-	37	-	-
56	ST56	ST57	400	43	0.94	-	43	-	-
57	ST57	ST58	400	30	1.01	-	30	-	-
58	ST58	ST61	400	22	2.15	-	22	-	-
59	ST59	ST60	400	43	0.94	-	43	-	-
60	ST60	ST61	400	30	1.01	-	30	-	-
61	ST61	ST62	400	15	2.19	-	15	-	-
62	ST62	Ext.Drain	500	10	2.21	-	-	10	-
63	ST63	ST64	400	33	0.93	-	33	-	-
64	ST64	ST65	400	48	1.00	-	48	-	-
65	ST65	ST66	400	89	1.13	-	89	-	-
66	ST66	ST67	400	107	1.31	-	107	-	-
67	ST67	ST68	400	112	1.51	-	112	-	-
68	ST68	Ext.Drain	500	10	1.61	-	-	10	-
TOTAL				2050		420	1610	20	0
MANHOLE									
910mm Dia			58						
1220mm Dia			10						
1520mm Dia			0						
1800mm Dia			0						

Project: SWD Group Housing Sect 69, Gurugram, Haryana**Material Sheet For External Fire Hydrant System**

S. NO.	FROM	TO	LENGTH	DIA.	DIA. OF PIPE		
					80MM	100MM	150MM
1	RING MAIN	EFH	163	80	163	-	-
2	RING MAIN	EFH (VERTICAL)	122	80	122	-	-
3	RING MAIN	EFH	195	100	-	195	-
4	PUMP ROOM	RING MAIN	1465	150	-	-	1465
		TOTAL LENGTH	1945 mtr		285 mtr	195 mtr	1465 mtr
	TOTAL EXTERNAL FIRE HYDRANT		61	Nos			

Project: SWD Group Housing Sect 69, Gurugram, Haryana

Material Sheet For Irrigation System

S.No	LINE NO		PIPE IN METER	PIPE DIAMETER	LENGTH OF PIPE (MTR.)						
	FROM	TO	LENGTH (MTR.)	MM	25 MM	32 MM	40 MM	50 MM	65 MM	80 MM	100 MM
1	1	2	53	100	-	-	-	-	-	-	53
2	2	3	87	100	-	-	-	-	-	-	87
3	3	4	69	100	-	-	-	-	-	-	69
4	4	5	69	100	-	-	-	-	-	-	69
5	5	6	64	100	-	-	-	-	-	-	64
6	6	9	17	100	-	-	-	-	-	-	17
7	7	8	43	50	-	-	-	43	-	-	-
8	8	9	41	65	-	-	-	-	41	-	-
9	9	10	51	100	-	-	-	-	-	-	51
10	10	11	38	100	-	-	-	-	-	-	38
11	11	12	56	100	-	-	-	-	-	-	56
12	12	13	50	100	-	-	-	-	-	-	50
13	13	14	30	100	-	-	-	-	-	-	30
14	14A	14C	75	50	-	-	-	75	-	-	-
15	14B	14C	46	50	-	-	-	46	-	-	-
16	14C	14	91	50	-	-	-	91	-	-	-
17	14	21	105	100	-	-	-	-	-	-	105
18	1	15	76	100	-	-	-	-	-	-	76
19	15	16	84	100	-	-	-	-	-	-	84
20	16	17	102	100	-	-	-	-	-	-	102
21	17	18	72	100	-	-	-	-	-	-	72
22	18	20	33	100	-	-	-	-	-	-	33
23	19	20	15	32	-	15	-	-	-	-	-
24	20	21	28	100	-	-	-	-	-	-	28
25	21	26	29	100	-	-	-	-	-	-	29
26	22	23	15	32	-	15	-	-	-	-	-
27	23	24	60	40	-	-	60	-	-	-	-
28	24	25	28	65	-	-	-	-	28	-	-
29	25	26	20	80	-	-	-	-	-	20	-
30	26	STP	10	100	-	-	-	-	-	-	10
		TOTAL LENGTH	1557 mtr		50 mtr	30 mtr	60 mtr	255 mtr	69 mtr	20 mtr	1123 mtr
TOTAL GARDEN HYDRANT = 34 Nos											
25 DIA VERTICAL LENGTH					=	51	mtr				

RIVERDAY INFRASTRUCTURE PRIVATE LIMITED

Regd. Office: 12A Floor, Tower 2, M3M International Financial Center, Sector-66, Gurugram- 122002, Haryana
CIN: U70100HR2021PTC098078, Email: secretarial@smartworlddevelopers.com, Phone: 0124-6600000

CERTIFIED TRUE COPY OF THE RESOLUTION PASSED IN THE MEETING OF THE BOARD OF DIRECTORS OF RIVERDAY INFRASTRUCTURE PRIVATE LIMITED HELD ON FRIDAY 23RD AUGUST 2024 AT THE REGISTERED OFFICE OF THE COMPANY AT 12A FLOOR, TOWER 2, M3M INTERNATIONAL FINANCIAL CENTER, SECTOR-66, GURUGRAM-122002, HARYANA, INDIA.

"RESOLVED THAT consent of the Board be and is hereby accorded to make an application before Haryana Shahari Vikas Pradhikaran, Haryana (hereinafter referred to as "HSVP") Metropolitan Development Authority (GMDA), Dakshin Haryana Bijli Vitran Nigam Limited (DHBVN), Municipal Corporation Gurugram (MCG), Irrigation and Water Resource Department Haryana, Haryana Water Resources Authority and other concerned authorities to obtain various clearances including electrical load sanction, assurance letter for water supply, storm and sewerage disposal, Fire towards setting up of proposed mixed land use colony (98% Residential and 2% Commercial Component) in revenue estate of Village Fazilpur Jharsa and Badshahpur, Sector-69, Gurugram, as per the draft placed before the Board.

RESOLVED FURTHER THAT Mr. Sajid Rafique and Mr. Pankajakshan Thattarath Nambiar ("Authorised Signatory") be and are hereby severally authorized to sign, file and submit Form(s), Reply(s), Intimation(s), Communication(s), application(s), affidavit(s), Undertaking(s), Indemnity Bond(s), Letter(s) and other allied/ related Document(s) for the aforesaid purpose and to do all other acts, deeds and things as may be necessary or required in this regard.

RESOLVED FURTHER THAT aforesaid Authorised Signatory be and are hereby severally authorized to appear and represent the Company before the office of aforesaid in connection with the aforesaid matter.

RESOLVED FURTHER THAT all acts, deeds and things done and documents executed aforesaid shall be deemed to be valid and enforceable only if the same are consistent with this resolution and that the Board shall not be responsible for any illegal and invalid acts and any other act beyond the scope of the aforesaid powers executed by the above executive and shall not bind the Company against any third parties or before any authorities in any manner and that the Board shall not be answerable in that behalf.

RESOLVED FURTHER THAT the authority in favour of Mr. Sajid Rafique and Mr. Pankajakshan Thattarath Nambiar shall remain in force till they are in association with and/or in the employment of the Company or till powers entrusted herein in their favour are revoked by the Board of Directors or till completion of project, whichever is earlier.

RESOLVED FURTHER THAT in pursuance of Section 21 of the Companies Act, 2013, any Director of the Company be and is hereby authorized to sign/authenticate this resolution for and on behalf of the Company."

// Certified True Copy //

For Riverday Infrastructure Private Limited


RIVERDAY INFRASTRUCTURE PRIVATE LIMITED

Mukesh Kumar
(Director)
DIN: 07405456

Director

Directorate of Town & Country Planning, Haryana

Nagar Yojana Bhavan, Plot no. 3, Sector-18 A, Madhya Marg, Chandigarh

Web site tcpharyana.gov.in - e-mail: tcpharyana7@gmail.com

LC -V
(See Rule 12)

License No. 90. of 2024

This Licence has been granted under the Haryana Development and Regulation of Urban Areas Act, 1975 & the Rule 1975, made there under to Modgen Developers Pvt. Ltd., Regd. Off.- 41st Floor, Tower-I, M3M International Financial Center, Sector-66, Gurugram-122101 for setting up of Mixed Land Use Colony (98% Residential & 2% Commercial) under TOD policy over an area measuring 11.66875 acre (an area measuring 11.5 acres under migration from licence no. 29 of 2009 dated 24.06.2009 granted for IT park under TOD for area measuring 14.6875 acre (after de-licence an area measuring 0.3125 acre) and fresh applied land measuring 0.16875 acre) in the revenue estate of village Fazilpur Jharsa & Badshapur, Sector-69, Gurugram.

1. The particulars of the land, wherein the aforesaid Mixed Land Use Colony under TOD Policy is to be set up, are given in the Schedule annexed hereto and duly signed by the Director, Town & Country Planning, Haryana.
2. The Licence is granted subject to the following conditions: -
 - a. That licensee shall pay the Infrastructure Development Charges amounting to Rs. 6,45,81,570/- in two equal installments. First installment will be due within 60 days of grant of license and second Installment within six months of grant of license failing which 18% PA interest will be liable for the delayed period.
 - b. That the licensee shall pay all fee & charges as per policy dated 26.12.2018.
 - c. That licensee shall pay proportionate EDC as per schedule prescribed by the Director.
 - d. That licensee shall submit the additional bank guarantee, if any required at the time of approval of Service Plans/Estimate. With an increase in the cost of construction and increase in the number of facilities in Layout Plan, you will be required to furnish an additional bank guarantee within 30 days on demand. It is made clear that bank guarantee of Internal Development Works/EDC has been worked out on the interim rates.
 - e. That licensee shall maintain and upkeep all roads open spaces, public parks and public health services for a period of five years from the date of issue to the completion certificate unless earlier relieved of this responsibility and thereupon to transfer all such roads/service roads, open spaces, public parks and public health services free of cost to the Government 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 licensee shall construct at your own cost, or get constructed by any other institution or individual at its cost, schools, hospitals, community centre and other community buildings on the lands set apart for this purpose, in a period as may be

Director
Town & Country Planning
Haryana, Chandigarh

specified, and failing which action as per the Act/Rules shall be initiated. The land shall vest with the Government after such specified period, free of cost, in which case the Government shall be at liberty to transfer such-land to any person or institution including a local authority, for the said purposes, on such terms and conditions, as it may deem fit.

- g. That licenced land forming the part of Sector, Road, Service roads, Green belts and 24/18 m wide road as the case may be land pockets which are earmarked for community sites shall be transferred within a period of 30 days in favour of Government from the date of approval of Zoning Plan.
- h. That licensee shall pay the proportionate cost of construction of such percentage of sites of such school, hospital, community centre and other community building and at such rates as specified by the Director.
- i. That licensee shall arrange electric connection from HVPN/DHBVNL for electrification of your colony and shall install the electricity distribution infrastructure as per the peak load requirement of the colony for which you shall get the electrical (distribution) service plan / estimates approved from the agency responsible for installation of external electric services i.e. HVPN/DHBVNL Haryana and complete the same before obtaining completion certificate for the colony.
- j. That licensee shall permit the Director or any other officer authorized by him to inspect the execution of the layout and the development works in the colony and to carry out all directions issued by him for ensuring due compliance of the execution of the layout and development works in accordance with the licence granted.
- k. That licensee shall construct 24/30 m wide internal circulation road forming part of licenced area at your own costs and transfer the same free of cost to the Government.
- l. That licensee shall construct and allot EWS category flats as per departmental policy dated 08.07.2013 and as amended from time to time, if applicable.
- m. That licensee shall submit NOC from the Ministry of Environment & Forest, Govt. of India with respect to their notification dated 14.09.2006 and clearance regarding PLPA, 1900 from competent authority before executing development works.
- n. That licensee shall make arrangement 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.
- o. That licensee shall convey the 'Ultimate Power Load Requirement' of the project to the concerned power utility, with a copy to the Director, within two months period from the date of grant of licence to enable provision of site in your land for Transformers/Switching Station/Electric Sub-Stations as per the norms prescribed by the power utility in the zoning plan of the project.
- p. That licensee shall provide the rain water harvesting system as per Central Ground Water Authority Norms/Haryana Govt. notification as applicable.

- q. That licensee shall aware that the development/construction cost of 24/30 m wide road/major internal road 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 24/30 m wide road/major internal road as and when finalized and demanded by the Director Town & Country Planning, Haryana.
- r. That licensee shall provide the solar water heating system as provisions of HAREDA and shall be made operational where applicable before applying for an occupation certificate.
- s. That licensee shall submit compliance of Rule 24, 26, 27 & 28 of Rules 1976 & Section 5 of Haryana Development and Regulation of Urban Areas Act, 1975, and shall inform account number and full particulars of the scheduled Bank wherein you have to deposit seventy percentum of the amount from the Flat/shop buyers for meeting the cost of Internal Development Works in the colony.
- t. That licensee shall keep the pace of construction atleast in accordance with sale agreement executed with the buyers of the flats as and when scheme is launched.
- u. That licensee shall pay the labourcess as per policy instructions issued by Haryana Government vide Memo No. Misc. 2057-5/25/2008/2TCP dated 25.02.2010.
- v. That licensee shall not pre-launch/sale of flats before approval of the building plans.
- w. That licensee shall not use the ground water for the purpose of construction of building. The building plans shall be approved only after the source of water for construction purpose is explained to the satisfaction of HSVP Authority in terms of orders of the Hon'ble High Court dated 16.07.2012 in CWP's no. 20032 of 2008, 13594 of 2009 and 807 of 2012.
- x. That licensee shall obey all the directions/restrictions imposed by the Department from time to time in public interest.
- y. That licensee shall specify the detail of calculations per Sqm/per Sqft., which is being demanded from the flat/shop owners on account of IDC/EDC, if being charged separately as per rates fixed by Govt.
- z. That licensee shall not give any marketing and selling rights to any other company other than the collaborator company.
- aa. That licensee shall fulfill their liabilities towards their existing allottee Neil Max Infra Pvt. Ltd. in existing licence No. 29 of 2009 (left after migration).
- bb. That licensee shall integrate the bank account in which 70% allottee receipts are credited under Section-4(2)(I)(D) of the Real Estate Regulation and Development Act, 2016 with the online application/payment gateway of the Department, in such manner, so as to ensure that 10% of the total receipt from each payment made by an allottee is automatically deducted and gets credited to the EDC head in the State treasury.
 - i. That such 10% of the total receipt from each payment made by the allottee, which is received by the Department shall get automatically credited, on the date of receipt in the Government treasury against EDC dues.

- ii. That such 10% deduction shall continue to operate till the total EDC dues get recovered from the owner/developer.
- iii. The implementation of such mechanism shall, however, have no bearing on EDC installment schedule conveyed to the owner/developer. The owner/developer shall continue to supplement such automatic EDC deductions with payments from its own funds to ensure that by the EDC installment that are due for payment that paid as per the prescribed schedule.

3. The licence is valid up to 17/7/2029.

Dated: 18/7/2024.
Place:

(Amit Khatri, IAS)
Director, Town & Country Planning
Haryana, Chandigarh

Endst. No. LC-5319/PA (SK)/2024/ 22119

Dated: 18-07-2024

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

1. ✓ Modgen Developers Pvt. Ltd., Regd. Off. 41st Floor, Tower-I, M3M International Financial Center, Sector-66, Gurugram-122101 alongwith a copy of agreement, LC-IV B, Bilateral agreement & zoning 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, Panchkula.
9. Chief Engineer, HSVP, Panchkula.
10. Superintending Engineer, HSVP, Gurugram along with a copy of agreement.
11. Land Acquisition Officer, Gurugram.
12. Senior Town Planner, Gurugram alongwith zoning plan.
13. District Town Planner, Gurugram along with a copy of agreement and zoning plan.
14. Chief Accounts Officer of this Directorate along with a copy of agreement.
15. PM(IT) for updation of the same on the departmental website.

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

To be read with License No. 90 Dated 18/7/ of 2024

Detail of land owned by Modgen Developers Pvt. Ltd.

Village	Rect. No.	Killa No	Area (K-M)		
FazilpurJharsa	51	11/2Min	0-19		
		19/2	3-0		
		20Min	3-18		
		21	8-0		
		22	3-14		
		9/1	4-4		
		1/2Min	0-18		
		10/1Min	2-17		
		10/2Min	1-14		
		2/2	0-5		
		11/1Min	3-6		
		Badshahpur	42	9	8-0
				10	7-18
11	6-13				
12	8-0				
19	8-0				
22	8-0				
43	6			1-1	
15	3-7				
65	2			8-0	
3/1	0-6				
42	26	1-7			
		Total	93-7		
			Or 11.66875 Acres		

Director
Town & Country Planning
Haryana
Jaspreet

Directorate of Town & Country Planning, Haryana

Nagar Yojana Bhawan, Plot No.3, Sector-18-A, Madhya Marg, Chandigarh, Phone: 0172-2549349

Web site tcpharyana.gov.in - e-mail: tcpharyana7@gmail.com

ORDER

In pursuant to this office Endst. No. LC-5319/PA(SK)/2024/22119-133 dated 18.07.2024, License No. 90 of 2024 dated 18.07.2024 was granted in favour Modgen Developers Pvt. Ltd. to develop a Mix Land Use Colony (98% residential & 2% commercial) under TOD Policy over an area measuring 11.66875 acres (an area measuring 11.50 acres under migration from licence no. 29 of 2009 dated 24.06.2009 granted for IT park under TOD for area measuring 14.6875 acres (after de-license an area measuring 0.3125 acre) and fresh applied land measuring 0.16875 acre) falling in the revenue estate of village Fazilpur Jharsa & Badshahpur, Sector-69, Gurugram-Manesar Urban Complex.

2. And whereas the request dated 22.07.2024 received for change of developer in favour of Riverday Infrastructure Pvt. Ltd. for area measuring 11.66875 acres falling in the revenue estate of village Fazilpur Jharsa & Badshahpur, Sector-69, Gurugram-Manesar Urban Complex was examined and accordingly the in-principle approval was granted on 03.09.2024 subject to fulfilment of conditions mentioned therein.

3. After receiving the compliances of in-principle approval dated 03.09.2024, the request for change of developer in favour of Riverday Infrastructure Pvt. Ltd. is hereby allowed under policy dated 18.02.2015. The terms and conditions as stipulated in the above said license will remain the same and the company Riverday Infrastructure Pvt. Ltd. shall be sole responsible for compliance of all terms and conditions of provisions of Act 1975 & Rules 1976 till the completion of certificate to the colony or relieved of the responsibility by DTCP, Haryana whichever is earlier.

(Amit Khatri, IAS)
Director, Town & Country Planning
Haryana, Chandigarh

Endst No. LC-5319/JE(RK)/2024/ 28240

Dated: 09-09-2024

A copy is forwarded to the following for information:

1. Riverday Infrastructure Pvt. Ltd., Regd. Off. 12A Floor, Tower 2, M3M International Financial Center, Sector-66, Gurugram-122002.
2. Modgen Developers Pvt. Ltd., 41st Floor, Tower-I, M3M International Financial Center, Sector 66, Gurugram-122101.
3. Chairman, Pollution Control Board, Haryana, Sector-6, Panchkula.
4. Chief Administrator, HSVP, Panchkula.
5. Chief Administrator, Housing Board, Panchkula.
6. Managing Director, HVPNL, Planning Directorate, Shakti Bhawan, Sector-6, Panchkula.
7. Deputy Secretary/Project Director, Ministry of Road Transport and Highway, G-5&6, Dwarka Sector-10, Delhi

8. Joint Director, Environment Haryana-Cum-Secretary, SEAC, Paryavaran Bhawan, Sector-2, Panchkula.
9. Addl. Director Urban Estates, Haryana, Panchkula.
10. Administrator, HSVP, Gurugram.
11. Chief Engineer, HSVP, Panchkula.
12. Superintending Engineer, HSVP, Gurugram along with a copy of agreement.
13. Land Acquisition Officer, Gurugram.
14. Senior Town Planner, Gurugram.
15. District Town Planner (P), Gurugram.
16. District Town Planner (Enf), Gurugram.
17. Chief Accounts Officer O/o DTCP, Haryana, Chandigarh.
18. PM (IT) O/o DTCP, Haryana to update the status on the website.

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

FORM BR-III
(See Code 4.2 (4))
Form of Sanction

From

Chief Town Planner, Haryana-cum-Chairman,
Building Plan Approval Committee,
O/o Director, Town & Country Planning Department,
Haryana, Nagar Yojna Bhavan,
Madhya Marg, Sector 18, Chandigarh.
Tele-Fax: 0172-2548475; Tel.: 0172-2549851,
E-mail: tcpharyana7@gmail.com
Website www.tcpharyana.gov.in.

To

Riverday Infrastructure Pvt. Ltd.,
Regd. Office - 12A Floor, Tower-2,
M3M International Financial Center,
Sector-66, Gurugram - 122002.

Memo No. ZP-2017/PA(DK)/2025/

3542

Dated

27-01-2025

Subject: Approval of building plans of Phase-5 & Phase-5A part of Mixed Land Use Colony (98% Residential and 2% Commercial) under TOD Policy over an area measuring 11.66875 acres (Licence No. 90 of 2024 dated 18.07.2024), Sector-69, Gurugram being developed by Riverday Infrastructure Pvt. Ltd.

Reference your application dated 24.12.2024 for permission to erect the buildings in Mixed Land Use Colony (98% Residential and 2% Commercial) under TOD Policy over an area measuring 11.66875 acres (Licence No. 90 of 2024 dated 18.07.2024), Sector-69, Gurugram in accordance with the plans submitted with it after receipt of ₹ 35,84,125/- towards Infrastructure Development Charges for 12% additional FAR being considered as an incentive for providing green buildings as per GRIHA Four Star Rating norms in view of provision of Code 6.5 of Haryana Building Code, 2017.

Permission is hereby granted for the aforesaid construction, subject to the provisions of the Haryana Scheduled Roads & Controlled Areas Restriction of Unregulated Development Act, 1963 and Haryana Building Code-2017, subject to the following amendments, terms and conditions:-

1. The plans are valid for a period of 2 years of the buildings less than 15.00 meters in height and 5 years for the multistoried buildings from the date of issuance of sanction, subject to validity of licenses granted for this scheme.
2. The structural responsibility of the construction shall be entirely of the owner/ supervising architect/ Engineer of the scheme.

Further that: -

- a) The building shall be constructed in accordance to the Structure Design by Structure Engineer and certified by Proof Consultant on prescribed FORM BR-V (A2).
- b) All material to be used for erection of building shall conform to I.S.I. and N.B.C. standards.
- c) No walls/ceiling shall be constructed of easily inflammable material and staircases shall be built of the fire resisting material as per standard specification.

- d) The roof slab of the basement external to the buildings if any shall be designed / constructed to take the load of fire tender up to 45 tones.
3. FIRE SAFETY:
- (i) The colonizer and the Supervising Architect of the project shall be entirely responsible for making provisions of fire safety and fire-fighting measures and shall abide by all fire safety bye laws.
 - (ii) That you shall get approved the fire-fighting scheme in accordance with the Section 15 of the Haryana Fire Safety Act-2009 and directions issued by the Director, Haryana Fire Services, Haryana, before starting the construction work at site.
4. No addition and alteration in the building plans/ layout plan shall be made without the prior approval of DTCP. Further, only figured dimensions shall be followed and in case of any variation in the plans, prior approval of DTCP shall be pre-requisite.
 5. That you shall furnish the service plan/ estimate of this scheme in accordance with approved building plans.
 6. Based on the actual estimated cost of internal development of the colony you shall furnish additional bank guarantee, if required.
 7. The revenue Rasta if any passing through the site shall be kept unobstructed.
 8. If any infringement of byelaws remains unnoticed, the Department reserves the right to amend the plan as and when any such infringement comes to its notice after giving an opportunity of being heard and the Department shall stand indemnified against any claim on this account.
 9. The layout showing the electric installation shall have to be got approved from the competent authority before execution of work at site.
 10. No person shall occupy or allow any other person to occupy any new building and before grant of occupation certificate, you shall apply for occupation certificate as per the provisions of Code 4.10 of the Haryana Building Code-2017 which shall be accompanied by certificates regarding completion of works described in the plans and it shall be accompanied by:
 - (i) Structural stability certificate duly signed by the recognized Architect & Structural Engineer.
 - (ii) A clearance from Fire Safety point of view from the competent authority.
 11. The provision of letter boxes for each dwelling unit shall be made at the ground floor of each building.
 12. The basements shall be used for parking, services or as prescribed in the approved zoning plan and building plans. The parking lots proposed in the scheme shall be exclusively for the use of flat owners/residents of the group housing scheme. The parking lot shall not be leased out /transferred to any person who is not a flat owners /residents of the group housing complex.
 13. That you shall comply with the conditions laid down in the memo no. 4063 dated 03.01.2025 of Chief Engineer, HSVP, Panchkula (Copy enclosed).

14. That you shall comply with the conditions laid down in the Memo No. 206 dated 08.01.2025 of Deputy Director, Directorate of Fire and Emergency Services, Haryana, Panchkula (Copy enclosed).

15. GENERAL: -

- (i) That you shall obtain the clearance/NOC as per the provisions of the Notification No. S.O. 1533 (E) Dated 14.9.2006 issued by Ministry of Environment and Forest, Government of India before starting the construction/execution of development works at site.
- (ii) That you shall strictly comply with the directions of MoEF Guidelines, 2010 while raising construction and comply with the instructions of Director, Town and Country Planning, Haryana, Chandigarh issued vide orders dated 14.5.2015 which is also available on the departmental website www.tcpharyana.gov.in.
- (iii) That you shall submit the fire-fighting scheme duly approved in accordance with the section 15 of the Haryana Fire Safety Act 2009 and directions issued by Director, Urban Local Bodies Haryana before starting the construction work at site.
- (iv) That you shall submit the approved Electrical Service Plan from competent authority and certificate to this effect that adequate arrangement has been put in place before grant of occupation certificate.
- (v) That the rain water harvesting system shall be provided as per Central Ground Water Authority norms/Haryana Govt. notification as applicable.
- (vi) That you shall use only Light-Emitting Diode lamps (LED) fitting for internal lighting as well as Campus lighting.
- (vii) That you shall ensure the installation of Solar Photovoltaic Power Plant as per the provisions of order No. 22/52/2005-5Power dated 21.03.2016 issued by Haryana Government Renewable Energy Department.
- (viii) That you shall strictly comply with the directions issued vide Notification No. 19/6/2016-5P dated 31.03.2016 issued by Haryana Government Renewable Energy Department.
- (ix) That if any, site for Electric Sub Station is required, same will be provided by you in the colony.
- (x) That provision of parking shall be made within the area earmarked /designated for parking in the colony and no vehicle shall be allowed to park outside the premises.
- (xi) That you shall follow provisions of section 46 of 'The Persons with Disabilities (Equal Opportunities, protection of Rights and full Participation) Act, 1995' which includes construction of Ramps in public buildings, adaption of toilets for wheel chair users, Braille symbols and auditory signals in elevators or lifts and other relevant measures for Hospitals, Primary Health Centre and other medical care and rehabilitation units.

- (xii) That you shall abide the terms and conditions of the Undertaking/Affidavit submitted in the office of Administrator, HSVP, Gurugram in compliance of Order dated 16.07.2012 of the Hon'ble High Court and shall not extract groundwater for construction purposes.
 - (xiii) That you shall abide by the policies issued by the Department regarding allotment of EWS flats time to time.
 - (xiv) That the recovery of labour cess being made by the Department is interim in nature and that the final estimation of cost of construction and recovery of any deficiency in labour cess shall be done at the level of the 'assessing officer' designated for the purpose by the Labour Department, which shall be final and binding.
 - (xv) That you shall deposit the balance amount of Labour Cess in future, time to time as per progress in construction at site.
16. Environment: That you shall raise construction as per guidelines of MoEF-2010 issued regarding Building, Construction, Township and Area Development Projects.
17. In addition, you shall comply with the instructions of Director, Town & Country Planning, Haryana, Chandigarh issued vide order dated 14.05.2015, available on the Departmental Website www.tcpharyana.gov.in at URL https://tcpharyana.gov.in/Policy/Misc392%20OA%20No.%2021%20of%202014%20Vardhaman%20Kaushik%20Vs.%20UOI_ors.pdf in compliance of the orders dated 10.04.2015 passed by Hon'ble National Green Tribunal in OA No. 21 of 2014, which are as under:
- (i) You shall put tarpaulin on scaffolding around the area of construction and the building. You are also directed that you shall not store any construction material particularly sand on any part of the street/roads.
 - (ii) The construction material of any kind that is stored in the site will be fully covered in all respects so that it does not disperse in the Air in any form.
 - (iii) All the construction material and debris shall be carried in the trucks or other vehicles which are fully covered and protected so as to ensure that the construction debris or the construction material does not get dispersed into the air or atmosphere, in any form whatsoever.
 - (iv) The dust emissions from the construction site should be completely controlled and all precautions taken in that behalf.
 - (v) The vehicles carrying construction material and construction debris of any kind should be cleaned before it is permitted to ply on the road after unloading of such material.
 - (vi) Every worker working on the construction site and involved in loading, unloading and carriage of construction material and construction debris shall be provided with mask to prevent inhalation of dust particles.
 - (vii) Every owner and or builder shall be under obligation to provide all medical help, investigation and treatment to the workers involved in the construction

of building and carry of construction material and debris relatable to dust emission.

- (viii) It shall be the responsibility of every owner/builder to transport construction material and debris waste to construction site, dumping site or any other place in accordance with rules and in terms of Hon'ble NGT order dated 10.04.2015 referred above.
- (ix) All to take appropriate measures and to ensure that the terms and conditions of the Hon'ble NGT order dated 10.04.2015 referred above in OA No. 21 of 2014 and the earlier orders passed in said case should strictly comply with by fixing sprinklers, creations of green air barriers.
- (x) Compulsory use of wet jet in grinding and stone cutting.
- (xi) Wind breaking walls around construction site.
- (xii) That you shall ensure that least dust has emitted into air/atmosphere and all steps are taken to prevent the same.
- (xiii) That all the builders, who are building commercial, residential complexes which are covered under the EIA Notification of 2006, shall provide green belt around the building that they construct and compliance of the same shall be ensured prior to issuance of occupancy certificate. The width of green belt will be kept 1.5 meter along boundary wall within site, along periphery.
- (xiv) If any person, owner and or builder is found to be violating any of the conditions stated in this order and or for their non-compliance such person, owner, builder shall be liable to pay compensation of ₹ 50,000/- per default in relation to construction activity at its site and ₹ 5,000/- for each violation during carriage and transportation of construction material, debris through trucks or other vehicles, in terms of Section 15 of the NGT Act on the principle of Polluter Pay. Such action would be in addition not in derogation to the other action that the Authority made take against such builder, owner, person and transporter under the laws in force.
- (xv) All the owners/builders shall ensure that C & D waste is transported in terms of this order to the site in question only and due record in that behalf shall be maintained by the builders, transporters and NCR of Delhi.
- (xvi) It is made clear that even if constructions have been started after seeking Environmental Clearance under the EIA notification 2006 and after taking other travel but is being carried out without taking the preventive and protective environmental steps as stated in above said order dated 10.04.2015 passed by NGT and MOEF guidelines, 2010, the State Government, SPCB and any officer of any Department as afore-stated shall be entitled to direct stoppage of work.

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18. On the basis of GRIHA Four Star Rating Certificate duly submitted by the colonizer, and as per provision of Code 6.5 of Haryana Building Code, 2017, the additional FAR of 12% is allowed. Since, the final rating will be issued by GRIHA after completion

of total building complex/project, therefore, final occupation for three times the area of additional FAR (which is sought to be availed, as incentive for green building), shall be withheld till the final rating from GRIHA is obtained. However, if the colonizer fails to achieve the final rating, which is lesser than the provisional rating, the occupation certificate of all building complex shall be issued after compounding the additional FAR (i.e. difference of additional FAR from provisional rating & final rating) at the ten times of the rates of EDC applicable at the time of submission of occupation certificate.

19. That you shall submit the scanned copy of the approved building plans in CD format within one week to this office from the issuance of this letter.

This sanction will be void abinitio, if any of the conditions mentioned above are not complied with.

DA/As above & One set of Building Plapns.

H Sharma

(Hitesh Sharma)

Senior Town Planner (M)HQ,

Member Secretary

For: Chief Town Planner, Haryana-cum-Chairman,

Building Plan Approval Committee,

Town & Country Planning Department,

Haryana, Chandigarh.

Endst. No. ZP-2017/PA(DK)/2025/_____ Dated:- _____

A copy is forwarded to the following for information:-

1. Haryana State Pollution Control Board, Panchkula with the request that the compliance of the instructions issued by NGT be monitored and strict compliance to be ensured.
2. MD, HVPNL, Planning Directorate, Shakti Bhawan, Sector-6, Panchkula with request to assess the power utility site requirement as per ultimate power load requirement.
3. Executive Engineer, GMDA, Gurugram.
4. Senior Town Planner, Gurugram.
5. Chief Engineer, HSVP, Panchkula.
6. District Town Planner, Gurugram along with one set of approved building plans.
7. District Town Planner (E), Gurugram.
8. Nodal Officer, website updation.
9. Deputy Director, Directorate Fire and Emergency Service, Haryana, Panchkula.

Encl: as above

H Sharma

Senior Town Planner (M)HQ,

Member Secretary

For: Chief Town Planner, Haryana-cum-Chairman,

Building Plan Approval Committee,

Town & Country Planning Department,

Haryana, Chandigarh.