



DESIGN OF SEWER LINE

Total Sewage Load = 7,26,612 Lt/day
(As per water load calculation) or 8.41 Lt/sec

By taking Peak Factor @ 3
Peak Sewage Generated (3 times of Avg. Flow) = 25.23 Lt/sec

Sewer Pipe Design

Final Sewage Pipe Dia Selected = 300 mm
Slope (1 in ...) = 350

Sewer Design as per Manning Formula

$$V = \frac{3.968 \times 10^{-3} \times D^{2.49} \times S^{0.54}}{n}$$

V = 0.89 m/sec

D = Dia (mm) = 300 mm
S = Slope = 350
n = Manning Coefficient = 0.011
V = Velocity (m/sec)

Actual Pipe Capacity (Q) at 100% flow = 61.05 m³/sec
Q = 61.05 Lt/sec

Where -
D = Dia (mm) = 300 mm
V = Velocity (m/sec) = 0.89
Q = (at full flow) m³/sec

Peak Sewage Generated (6x1 peak discharge) = 25.23 Lt/sec
Actual Pipe Capacity at 100% flow = 61.05 Lt/sec
Site peak discharge is less than 50% of pipe capacity, hence 300 mm Pipe Dia is OK

WATER REQUIREMENT CALCULATIONS (MUNICIPAL SUBMISSION)

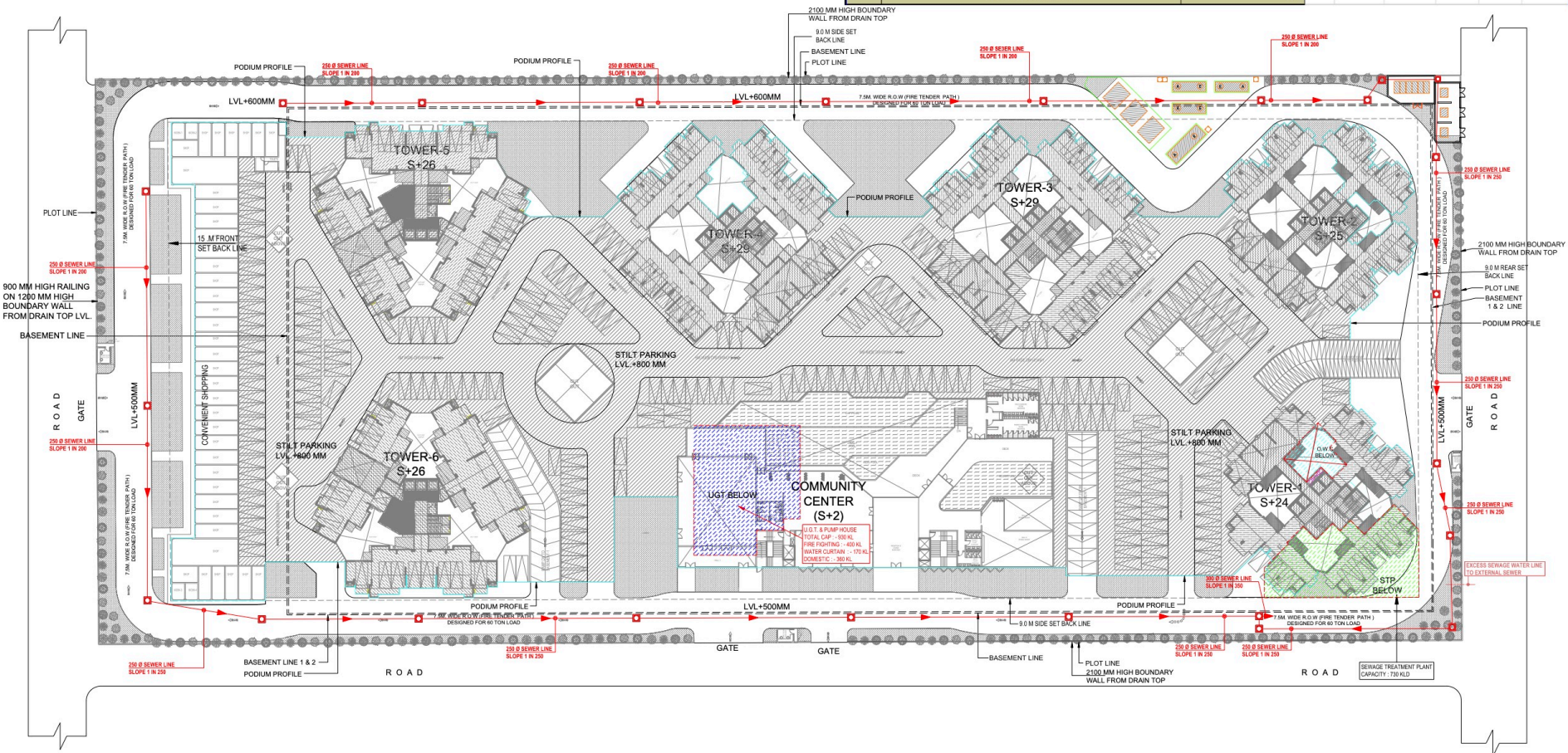
S.No.	Description	Built up Area (Sq.M)	Horticulture Water Requirement per Sq.M Area	No. of Units / Seats	Unit Population	Total Population	Domestic Fresh Water Requirement (A)		Recycle Water Requirement (B)		Total Water Requirement (A+B)		Flow to Sewer		
							LPCC	LPD	LPCC	LPD	LPD	Domestic 90%	Flushing 100%	LPD	
1	Apartments (3 BHK)			848	4.5	3816	90	343440	45	171720	515160	309096	1717200	480816	
2	Apartments (4 BHK)			308	4.5	1386	90	124740	45	62370	187110	112266	623700	174636	
3	Floating Population					530	5	2650	10	5300	7950	2385	5300	7685	
4	Maintenance Staff / Drivers					270	25	6750	20	5400	12150	6075	5400	11475	
5	Club (LS)							20000	0	20000	18000	0	18000		
6	Commercial (LS)							10000	0	10000	9000	0	9000		
7	Filter Backwash							25000		25000		25000	25000		
8	Makeup Water for Swimming Pool							10000		10000					
9	Horticulture	11873	4						47492	47492					
Total								5,42,580		2,92,282	8,34,862	4,56,822	2,69,790	7,26,612	

SUMMARY OF WATER REQUIREMENT / UGT & STP CAPACITY CALCULATION

Description	Water Requirement (KLD)
Domestic Fresh Water Requirement	543
Recycle Water Requirement	292
Flow to Sewer	727
STP Capacity required	730

LEGEND :

S.No.	SYMBOL	DESCRIPTION
1.	MANHOLE	MANHOLE
2.	SEWER LINE	SEWER LINE
3.	BASEMENT RETAINING WALL	BASEMENT RETAINING WALL



rev. no.	date	revision

project
PROPOSED GROUP HOUSING FOR "Pleiades" AT, PLOT NO: - GH-14B, SECTOR- 01, GREATER NOIDA, (U.P.)

title
LAYOUT PLAN

sub-title
EXTERNAL SEWERAGE SYSTEM

drawing released for
 APPROVAL SUBMISSION
 ADVANCE COPY CONSTRUCTION

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 scale 1:475 designed by Badri Vishal
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