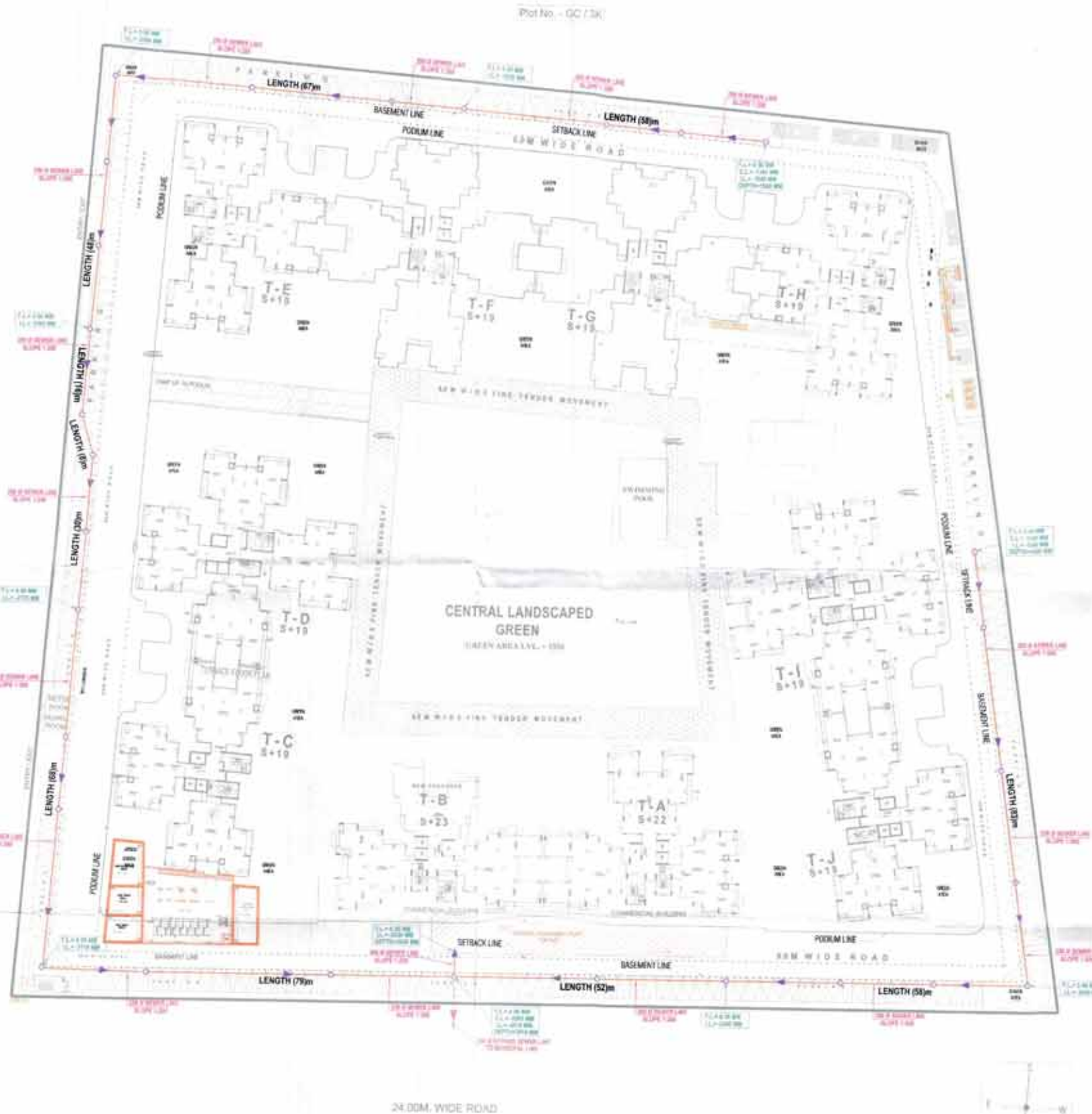




PROJECT - Group Housing at Gh-31 GC/38 Sector 16-C Greater Noida
DESIGN OF SEWER LINE

Population			
Total No. of Apartments			1,203 Nos.
Total Permanent Population	@ 4.5		5,294 Persons
Club & Floating Population			900 Persons
Staff			300 Persons
Total Water Demand			
Apartments	@ 125 lpcd		791,573 Liters
Club & Floating	@ 15 lpcd		13,500 Liters
Staff	@ 45 lpcd		13,500 Liters
Total Water Demand			818,573 Liters
By taking Interference factor			
Hence Total Sewage Load	@ 90%		736,715 Liters/day
			or 8.53 Liters/sec
By taking Peak Factor			
Peak Sewage Generated (3 times of Avg. Flow)	@ 3		25.58 Liters/sec
Sewer Pipe Design			
Final Sewage Pipe Dia Selected			300 mm
Slope (1 in 100)			250
Sewer Design as per Manning Formula			
$V = \frac{3.96 \times 10^{-14} \times D^{5.33} \times S^{0.54}}{1.49 \times n}$			
V =	1.02 m/sec		
D = Dia (mm)	300 mm		
S = Slope	250		
n = Manning Coefficient	0.011		
V = Velocity (m/sec)	1.02		
Actual Pipe Capacity (Q) at 100% flow			
$Q = \frac{1.49 \times V \times A}{10.76}$			
Q =	0.072223 m³/sec		
Q =	72.23 Liters/sec		
When:			
D = Dia (mm)	300 mm		
V = Velocity (m/sec)	1.02		
Q = Pipe Capacity (at full flow)	72.23 Liters/sec		
Peak Sewage Generated (i.e. peak discharge)			
25.58 Liters/sec			
Actual Pipe Capacity at 100% flow			
72.23 Liters/sec			
Since peak discharge is less than 50% of pipe capacity, hence 300 mm Pipe Dia is OK			

LEGEND:

S. No.	SYMBOL	DESCRIPTION
1.	M.H.	MANHOLE
2.	—	SEWER LINE
3.	—	STRESS SEWER LINE
4.	—	BASEMENT LINE

rev. no.	date	revision
project VVIP HOMES GREATER NOIDA		
title SITE PLAN		
sub title EXTERNAL SEWERAGE SYSTEM		
drawing released for ☐ APPROVAL ☒ SUBMISSION ☐ ADVANCE COPY ☐ CONSTRUCTION		
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