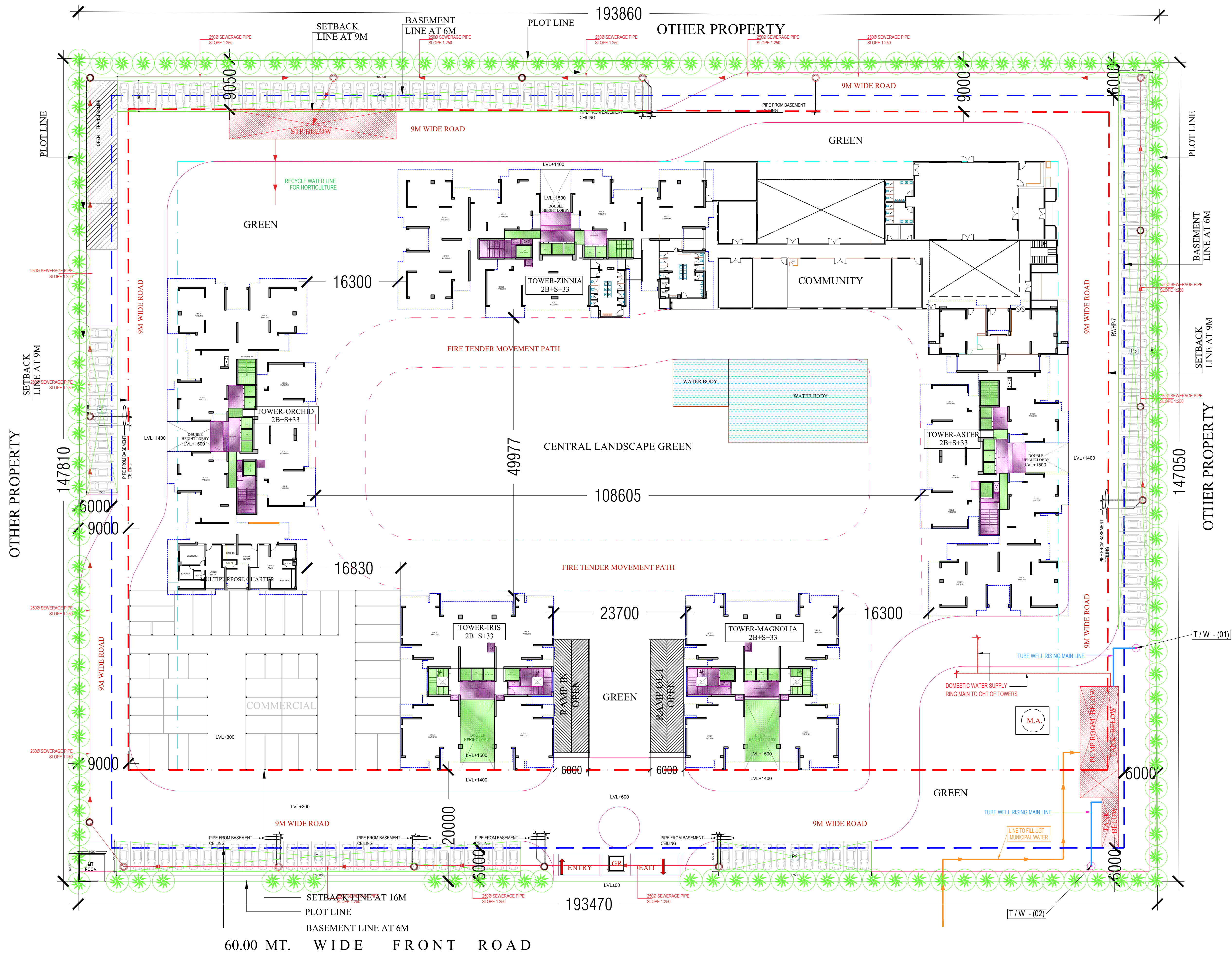




PROJECT - PROPOSED GROUP HOUSING (SKA ESTATE)			
DESIGN OF SEWER LINE			
Population			
Total No. of Apartments	=	1059 Nos.	
Total Permanent Population @ 3.5	=	4765 Persons	
Club & Floating Population	=	500 Persons	
Staff	=	250 Persons	
Total Water Demand	=	6,62,025 Liters	
Apartments @ 135 lpcd	=	6,43,275 Liters	
Club & Floating @ 15 lpcd	=	7,500 Liters	
Staff @ 45 lpcd	=	11,250 Liters	
Total Water Demand	=	6,62,025 Liters	
By taking Interception factor @ 90%	=	5,95,822 Lit/day	
Hence Total Sewage Load	=	5,95,822 Lit/day	
By taking Peak Factor @ 3	=	20.68 Lit/sec	
Peak Sewage Generated (3 times of Avg. Flow)	=	20.68 Lit/sec	
Sewer Pipe Design			
Final Sewage Pipe Dia Selected	=	250 mm	
Slope (1 in ...)	=	350	
Sewer Design as per Manning Formula			
$V = \frac{3.968 \times 10^{-3} \times D^{2/3} \times S^{1/2}}{n}$			
$V = 0.77 \text{ m/sec}$			
D = Dia (mm)	=	250 mm	
S = Slope	=	350	
n = Manning Coefficient	=	0.011	
V = Velocity (m/sec)	=	0.77	
Actual Pipe Capacity (Q) at 100% flow	=	$\frac{\pi D^2 \times V}{4}$	
	=	$\frac{\pi \times 0.037542^2 \times 0.77}{4}$	
	=	0.0037542 m ³ /sec	
	=	37.54 Lit/sec	
Where -			
D = Dia (mm)	=	250 mm	
V = Velocity (m/sec)	=	0.77	
Q = Pipe Capacity (at full flow) m ³ /sec	=		
Peak Sewage Generated (site peak discharge)	=	12.83 Lit/sec	
Actual Pipe Capacity at 100% flow	=	37.54 Lit/sec	
Site peak discharge is less than 50% of pipe capacity, hence 250 mm Pipe Dia is OK			

Drawing Title:-

(EXTERNAL WATER SUPPLY)

PROJECT: SKA ESTATE

DEVELOPERS: PRASU HOME LLP

DATE = 10.12.2024



ARCHITECTS

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