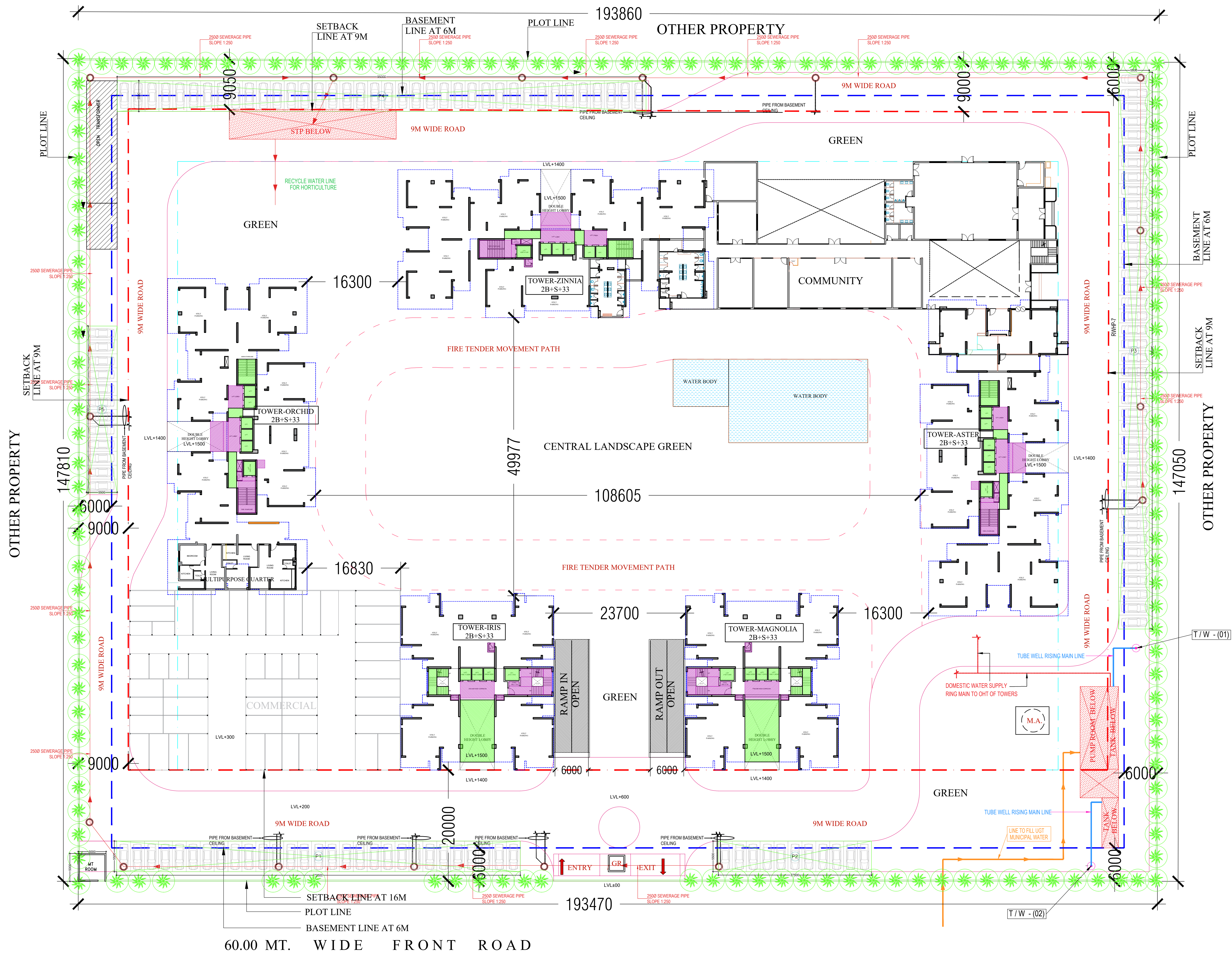




PROJECT - PROPOSED GROUP HOUSING (SKA ESTATE)			
DESIGN OF SEWER LINE			
Population			
Total No. of Apartments	=	1059 Nos.	
Total Permanent Population @ 3.5	=	4765 Persons	
Club & Floating Population	=	500 Persons	
Staff	=	250 Persons	
Total Water Demand			
Apartments @ 135 lpcd	=	6,43,275 Liters	
Club & Floating @ 15 lpcd	=	7,500 Liters	
Staff @ 45 lpcd	=	11,250 Liters	
Total Water Demand	=	6,62,025 Liters	
By taking Interception factor @ 90%			
Hence Total Sewage Load	=	5,95,822 Lit/day	
	or	6.89 Lit/sec	
By taking Peak Factor @ 3			
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	m/sec	
$D =$ Dia (mm)	$=$	250 mm	
$S =$ Slope	$=$	350	
$n =$ Manning Coefficient	$=$	0.011	
$V =$ Velocity (m/sec)			
Actual Pipe Capacity (Q) at 100% flow	$=$	$\frac{\pi D^2 \times V}{4}$	
		$= 0.037542$	m^3/sec
		$Q = 37.54$	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:-

WASTE DISPOSAL LAYOUT

PROJECT: SKA ESTATE
DEVELOPERS: PRASU HOME LLP

DATE = 10.12.2024



ARCHITECTS

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