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DESIGN OF SEWER LINE

SUBMISSION DRAWING FOR	
M/S. STELLAR SPRING PROJECTS PVT. LTD.	
AT PLOT NO. GH-09, SECTOR-01, GREATER NOIDA (UP)	
<b>POPULATION</b>	
Total No. of Flats	Phase-1 & Phase-2 = 1,540 Nos.
Total Permanent Population	@ 4.5 Persons / Flat = 6,930 Persons
Club & Floating Population	@ 10% of total = 693 Persons
Staff	@ 5% of total = 346 Persons
<b>Total Water Demand</b>	
Per head	@ 80 lpcd = 1,23,240 Liters
Club & Floating	@ 85 lpcd = 58,410 Liters
Staff	@ 45 lpcd = 15,675 Liters
<b>Total Water Demand</b>	<b>= 1,97,325 Liters</b>
By taking interception factor	@ 90% = 177,592.5 Liters
hence Total Sewage Load	er = 177,592.5 Liters
By taking Peak Factor	@ 3 = 53,277 Liters
Peak Sewage Generated (3 times of Avg. Flow)	= 53,277 Liters
<b>Sewer Pipe Design</b>	
Form Sewerage Pipe Dia Selected	= 300 mm
Slope (1 in .)	= 1:200 mm
Sewer Design as per Manning formula	
$V = \frac{0.49148 \times R^{2/3} \times S^{1/2}}{n}$	
$V = 1.14 \text{ m/sec}$	
$D = \text{Dia (mm)} = 300 \text{ mm}$	
$S = \text{Slope} = 1:200$	
$n = \text{Manning Coefficient} = 0.013$	
$V = \text{Velocity (m/sec)} = 1.14$	
<b>Actual Pipe Capacity (Q) at 300% flow</b>	$Q = 0.00759 \times A \times V = 0.8876 \text{ m}^3/\text{sec}$
Where:	$D = \text{Dia (mm)} = 300 \text{ mm}$
$V = \text{Velocity (m/sec)} = 1.14$	
$Q = \text{Pipe Capacity (at 300% flow)} = 0.8876 \text{ m}^3/\text{sec}$	
Peak Sewage Generated (at peak discharge)	= 53,277 Liters
Actual Pipe Capacity at 300% flow	= 88,760 Liters
Actual pipe discharge is less than 50% of pipe capacity, hence 300 mm Pipe Dia is OK.	
Up to 300 mm dia pipe = 100% flow used	24.83% only

LEGENDS	
SYMBOLS	DESCRIPTION
	SEWER PIPE
	SEWER MANHOLE
	INVERT LEVEL
	CONNECTION LEVEL

PROJECT: GROUP HOUSING FOR M/S. STELLAR SPRING PROJECTS PVT. LTD. PLOT NO. GH-09, SECTOR-01, GREATER NOIDA (UP)

SHEET TITLE: SITE PLAN SEWERAGE LAYOUT

SUBMISSION DRAWING PHASE-II

ARCHITECT'S SIGN: SAMEER SAINI (ARCHITECT) REG. NO. CA/2019/1953

OWNER'S SIGN: For Stellar Spring Projects (P) Ltd.

SCALE: 1:1000

CODE: PL-1A

DATE: / /

REVISION SUFFIX:

PLOT NO. GH-10

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