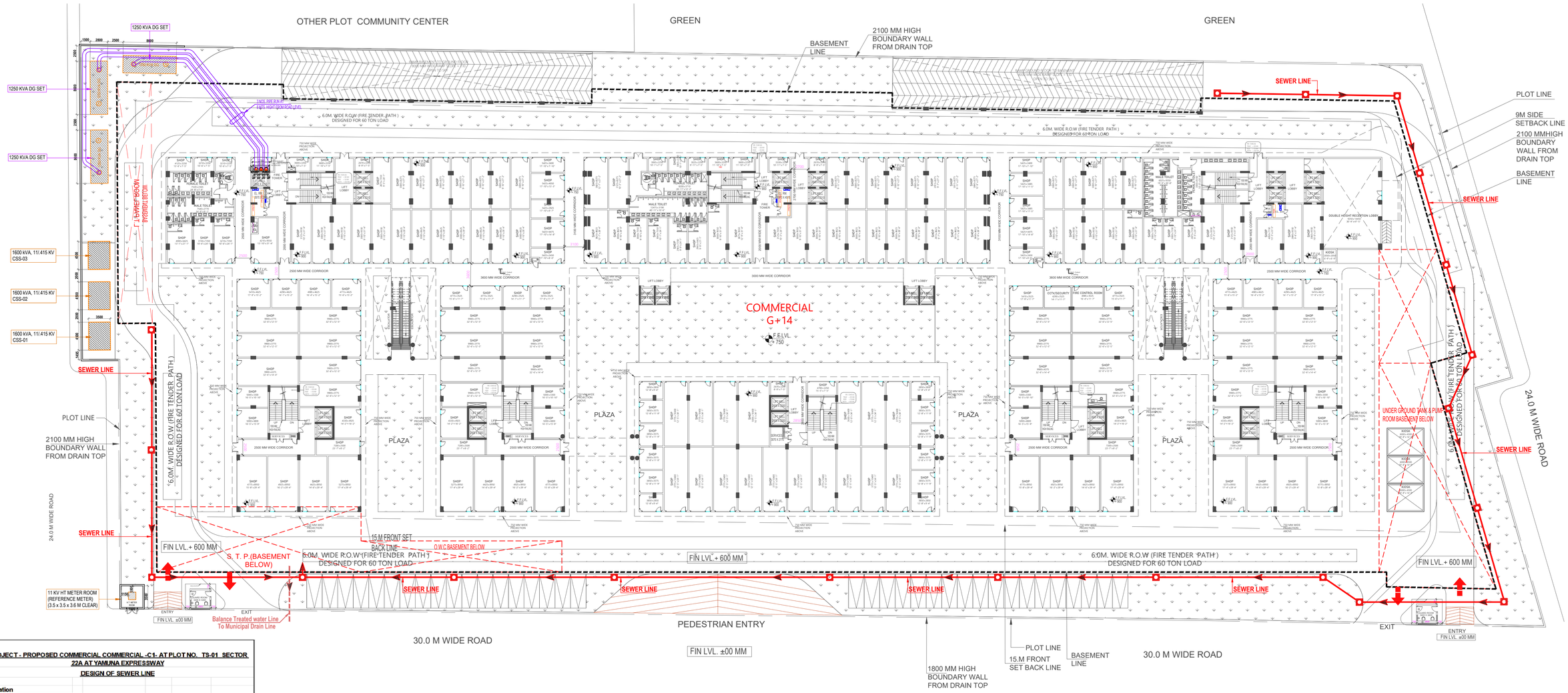

PROJECT - PROPOSED COMMERCIAL COMMERCIAL -C1- AT PLOT NO. TS-01 SECTOR 22A AT YAMUNA EXPRESSWAY

DESIGN OF SEWER LINE

Population				
Permenent Population (Shopping)	400 Person @ 45 L.	=	18000	**Liters**
Transient Pelulation (Shopping)	3570 Person @ 15 L.	=	53550	**Liters**
Restaurant	340 Person @ 70 L.	=	23800	**Liters**
Food Court	390 Person @ 35 L.	=	13650	**Liters**
Entertainment Zone	580 Person @ 15 L.	=	8700	**Liters**
Rooms	990 Person @ 85 L.	=	84150	**Liters**
Total Water Demand		=	**201,850**	**Liters**
By taking Interception factor	@ 90%			
Hence Total Sewage Load		=	181,665	Lit/day
		or	2.10	Lit/sec
By taking Peak Factor	@ 3			
Peak Sewage Generated (3 times of Avg. Flow)		=	6.31	Lit/sec
Sewer Pipe Design				
Final Sewage Pipe Dia Selected		=	200	mm
Slope (1 in ...)		=	250	

Sewer Design as per Manning Formula

$$V = \frac{3.968 \times 10^{-3} \times D^{2/3} \times S^{1/2}}{n}$$

V = 0.78 m/sec

D	= Dia (mm)	=	200	mm
S	= Slope	=	250	
n	= Manning Coeficient	=	0.011	
V	= Velocity (m/sec)			

$$\text{Actual Pipe Capacity (Q) at 100\% flow} = \frac{\Pi D^2 \times V}{4}$$

= 0.024500 m^3/sec

Q = 24.50 Lit/sec

Where -

D	= Dia (mm)	=	200 mm
V	= Velocity (m/sec)	=	0.78
Q	= Pipe Capacity (at full flow) m3/sec		
Peak Sewage Generated (site peak discharge)		=	6.31 Lit/sec
Actual Pipe Capacity at 100% flow		=	24.50 Lit/sec

Site peak discharge is less then 50% of pipe capacity, hence 250 mm Pipe Dia is OK

LEGEND :

S. No.	SYMBOL	DESCRIPTION
1.	M.H.	MANHOLE
2.		SEWER LINE
3.		BALANCE TREATED WATER LINE
4.		BASEMENT LINE

VISHAL SHARMA ARCHITECT CA-98/23261 9310164666 NEW DELHI

THREE C HOMES PVT. LTD. Authorised Signatory

Rev. No.	Date	NO.OF PRINTS	Revision
:	:	:	:

Project

PROPOSED COMMERCIAL BUILDING AT PLOT NO. C-1 IN PLOT NO. TS - 01, SECTOR 22-A, YAMUNA EXPRESSWAY, (U.P.) FOR M/S THREE C HOMES PVT. LTD.

Title

SITE PLAN

Subtitle

EXTERNAL SEWERAGE SYSTEM

Drawing released for

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☐ ADVANCE COPY ☐ CONSTRUCTION

Drg. no.	EX / S-01
Scale	1 : 350
Date	Dec. 2024
Drawn by	Kulwant
Designed by	R.K.
Checked by	Anand Havelia

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