T Sewer Flow Calculations

Sewer Flow Calculation

1) Design Flow from Proposed Buildings

STRUCTURE	# UNITS	BEDROOMS/UNIT	HYDRAULIC LOAD (GPD/BEDROOM)[1]	DESIGN FLOW RATE (GPD)
CARRIAGE HOMES	61.00	3.00	110.00	20130.00
SINGLE FAMILY	44.00	4.00	110.00	19360.00
			Total	39490.00

Flow rate with Peaking Factor of 4 [2] = 157960.00 gpd

2)Design Flow from I & I

	# UNITS	PIPE DIAMETER (IN)	PIPE LENGTH (SINGLE, FT)	PIPE LENGTH (TOTAL, MI.)	FLOW RATE (GPD/IN DIA./MILE)	TOTAL FLOW (GPD)
LATERALS	105.00	4.00	100.00	1.99	500.00	3977.27
MAIN	1.00	8.00	4425.00	0.84	500.00	3352.27
					TOTAL	**7329.55**

gpd

Summary of Design Flow (Including Peaking Factor of 4)

Average daily flow =	**165289.55**	**gpd**
=	**0.26**	**cfs**
Peak hour flow =	**6887.06**	**gph**

Minimum Sewer Pipe Capacity Calculation

Material	PVC	
Manning's n	0.010	
Pipe Diameter	8.000	in
Slope (User)	0.004	ft/ft
Length	250	ft
Upstrem Invert	11	ft
Downstream Invert	10	ft
Slope (Calculated)	0.004	ft/ft
Full Flow Velocity	2.85	fps
Flow Capacity	**0.99**	**cfs**

Minimum pipe capacity is greater than design flow
0.99 cfs > 0.26 cfs OK

Notes:

[1] Unit flow values based on NYSDEC Design Standards for Intermediate Sized Wastewater Treatment Systems, Dated 3/5/2014, Table B-3, pp. B-17.

[2] Peaking factor of 4 based on Recommended Standards for Wastewate Facilities (10 States Standards), 2014 edition.