

WAREHAM TOWN CLERK
2022 APR 6 PM 3:52



Environment One Corporation

**Pressure Sewer Preliminary
Cost and Design Analysis**

For

**Bay Pointe Club Apartment/Condo Quadriplex E/O
Wareham, MA**

**Prepared For:
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February 28, 2022

**Bay Pointe Club Apartment/Condo Quadriplex E/One Pump Station rev3
Wareham, MA**

Prepared by : MTS

On: February 28, 2022

Notes :

Quad station with invert out at 24.0'. Force Main of a length of 780 feet to SMH-14 with an Invert at 33.89'

We designed the system with the four pumps to accommodate the potential peak diurnal flows.

The design flow of the system is 13,570 gpd based on 118 bedrooms and 115 gpd/bedroom. This equates to 9.4 gpm.

When we look at peak flows we look at 4X the design flow, which equates to 37.7 gpm. To handle 37.7 gpm it will require three (3) E/One pumps to operate at once. Each pump does about 13 gpm. The 4th installed pump act as a redundant backup.

The system operates off of a PLC and will rotate the lead, lag operation of all 4 pumps so they get even use over the life of the system.

<<<< END OF NOTES >>>>

PRELIMINARY PRESSURE SEWER - PIPE SIZING AND BRANCH ANALYSIS
Bay Pointe Club Apartment/Condo Quadruplex E/One Pump Station rev3
Wareham, MA

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Zone Number	Connects to Zone	Number of Pumps in Zone	Accum Pumps in Zone	Gals/day per Pump	Max Flow Per Pump (gpm)	Max Flow Stan Ops (GPM)	Pipe Size (inches)	Max Velocity (FPS)	Length of Main this Zone	Friction Factor (ft/100 ft)	Friction Loss This Zone	Accum Friction Loss (feet)	Max Main Elevation	Minimum Pump Elevation	Static Head (feet)	Total Dynamic Head (ft)
1.00	1.00	4	4	3392	11.64	3	1.50	5.91	780.00	8.30	64.75	64.75	33.89	24.00	9.89	74.64
This spreadsheet was calculated using pipe diameters for: SDR11 HDPE Friction loss calculations were based on a Constant for inside roughness "C" of: 150																

PRELIMINARY PRESSURE SEWER - ACCUMULATED RETENTION TIME (HR)
 Bay Pointe Club Apartment/Condo Quadriplex E/One Pump Station rev3
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Zone Number	Connects to Zone	Accumulated Total of Pumps this Zone	Pipe Size (inches)	Gallons per 100 lineal feet	Length of Zone	Capacity of Zone	Average Daily Flow	Average Fluid Changes per Day	Average Retention Time (Hr)	Accumulated Retention Time (Hr)
1.00	1.00	4	1.50	9.85	780.00	76.85	13,568	176.54	0.14	0.14
This spreadsheet was calculated using pipe diameters for: SDR11HDPE										
								Gals per Day per Dwelling		
								176.54	0.14	0.14
								200		