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### **Environment One Corporation**

# Pressure Sewer Preliminary Cost and Design Analysis For THE BIRCHES Carlisle, MA

**Prepared For:** 

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Prepared By: Henry Albro

**December 8, 2014** 

# THE BIRCHES Carlisle, MA

Prepared by: Henry Albro On: December 8, 2014

Notes:

At your request we have prepared this design of E-One systems for units 12,13,14,15,16,17 as shown on attached. I think I will be using in home units unless the pricing, or other retionale is more conducive to exterior units. From the layout we have also included lot 11.

# PRELIMINARY PRESSURE SEWER - PIPE SIZING AND BRANCH ANALYSIS THE BIRCHES Carlisle, MA

Prepared By: Henry Albro

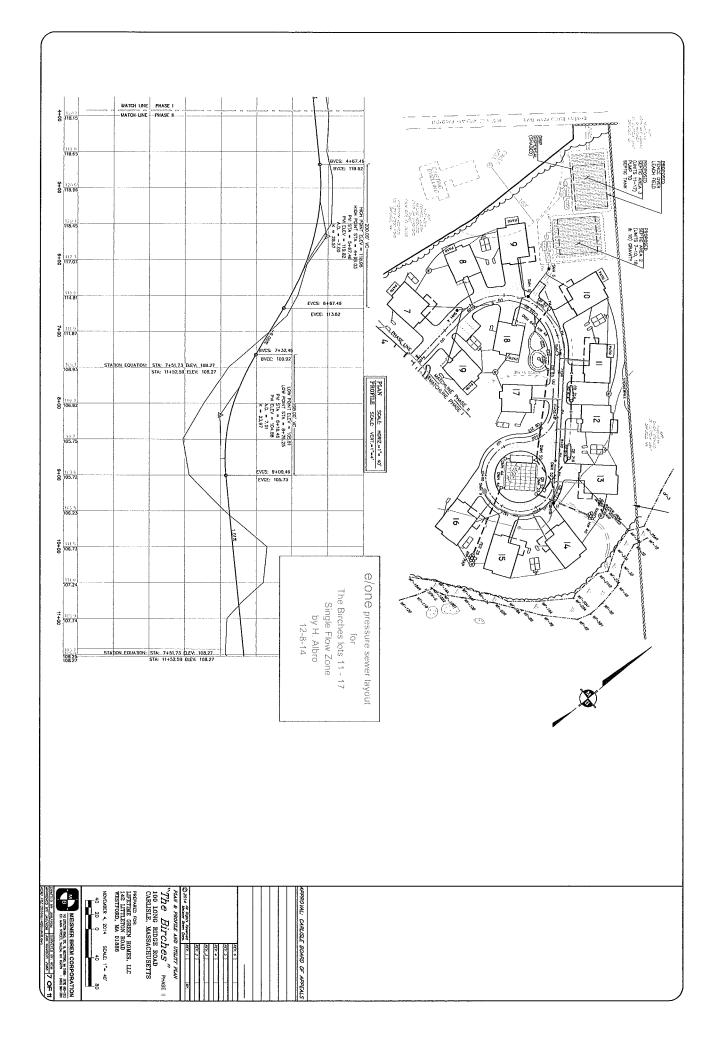
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	1			5-7	
1.00	us spread:			Number	Zone
1.00 1.00	sheet was			to Zone	Connects Number Accum Gals/day
7	calculated		in Zone in Zone	to Zone of Pumps Pumps per Pump	Number
7	using pip		in Zone	Pumps	Accum
12:	e diameter			per Pump	Gals/day
125 11.00	This spreadsheet was calculated using pipe diameters for:   SDR21PVC	MANAGEMENT AND ADDRESS OF THE PARTY OF THE P	(unds)	Per Pump	Max Flow
30	)R21PVC	ACTUAL DISCONDING CONTRACTOR		Sim Ops(GPN	w Max
3 33.00 2.00 2.92		4		(MAD)	Max Flow Pipe Size Max
2.00				(inches) Velocie	Pipe Size
2.92			(FPS)	Velocity	Max
400.00	Fric			this Zone	Length of Main
1.54	ction loss calo		(ff/100 ft)	Factor	aFriction Los
	ulations wer		Zone	Loss This Loss (feet)	ossFriction
6.17	e based on a			Loss (feet)	Accum Fric
6.17 6.17 112.00	Constant for in			Elevation	Accum Frie Max Main
	Friction loss calculations were based on a Constant for inside roughness "C" of:			Elevation	Minimum Pump Static Head Total
100.61 11.39 17.56				(feet)	p Static Head
17.56	150		Head (ft)	Dynamic	Total

# PRELIMINARY PRESSURE SEWER - ACCUMULATED RETENTION TIME (HR) THE BIRCHES Carlisle, MA

December 8, 2014

	2 2 1 2 2				- 0.0				
11.61	11	875	75.37	400.00	18.84	2.00	7	1.00 1.00	1.00
Gals per Day per Dwelling	Gals per				R21PVC	This spreadsheet was calculated using pipe diameters for: SDR21PVC	lculated using pip	dsheet was ca	This sprea
id Average Retentic Day Time (Hr)	Average Fluid Changes per Day	Average Daily Flow	Capacity of Zone Average Daily	Length of Zone	ipe Size (inches) Gallons per 100 Length of Zone lineal feet	Pipe Size (inches)	Accumulated Total of Pumps this Zone	Connects to Zone	Zone Number



Sub Total

**Installation** 

Unit Cost

### **Budgetary Low Pressure Sewer System Costs**

## THE BIRCHES Carlisle, MA

Valves	7	Corp Stop	\$120.00	0.00	\$840.00
	1	Clean Out	\$2,369.00	0.00	\$2,369.00
				1	\$3,209.00
Pumps	7	Lateral (Boundary) Kits	\$287.00	0.00	\$2,009.00
	7	Lateral (Boundary) Installation	\$200.00	0.00	\$1,400.00
	7	IH091-IDU Indoor Unit	\$3,834.00	0.00	\$26,838.00
	7	Indoor Unit Generator Connections FRMA	\$195.00	0.00	\$1,365.00
					<u>\$31,612.00</u>
Piping	400	2.00" Pipe	\$21.00	0.00	\$8,400.00
	10 t	·			<u>\$8,400.00</u>
Other	0	Contractor Overhead	\$0.00	0.00	\$2,161.05
	0	Contingencies	\$0.00	0.00	\$4,322.10
'	1000			1	<u>\$6,483.15</u>
	ber of Con	nine			
	ll Per Conn nd Total Pe	extion \$\frac{\\$6,174.43}{\\$7,100.59}\$ Total (w/o other)  Grand Total (including o	>>>>>> (ther)		\$43,221.00 \$49,704.15

Note: The System Costs above are based on piping sized for, and Grinder Pumps manufactured by Environment One Corporation.

Quantity Description