

ARDENNES

**10 YEAR
EXISTING CONDITION STORM DRAIN PIPE COMPUTATIONS**

DATE: 10/07/ 2019

**Montgomery County
PREPARED BY: EBM**

PIPE STRUCTURES		INCREMENTAL DRAINAGE					PIPE TOTAL DRAINAGE					PIPE DATA				PIPE HYDRAULICS					STRUCTURE LOSS					
From	To	Area Increm (Ac)	C (Runoff Coef)	Time to Inlet (min)	A*C Increm	Q (CFS)	Area Total (Ac)	A*C Total	Time in Pipe (Min)	Rain Inten (In/Hr)	Q Total (CFS)	Size (In)	Length (Ft)	Angle Out of Pipe (Deg) - Whole #	Manning Coeff	Full Flow Capacity (cfs)	Q/A (f/s)	Manning Velocity (V _f)	Time in Pipe (min)	Friction Slope (%)	Actual Slope (%)	Str Type (From)	Str No.	Control Angle (Deg)	K _B	Str Loss (ft) (H _B)
EX-I-1	EX-MH-1	0.52	0.90	5.00	0.47	3.31	0.52	0.47	5.00	7.07	3.31	18	35.89	0	0.013	23.59	1.87	1.87	0.32	0.10%	5.04%	Manhole	EX-I-1	0	-	-
EX-MH-1	EX-MH-2	2.36	0.90	6.07	2.12	14.36	2.88	2.59	6.07	6.76	17.53	24	35.19	68.0813	0.013	17.89	5.58	5.58	0.11	0.60%	0.63%	Inlet	EX-MH-1	0	-	-
EX-MH-2	EX-MH-3	67.36	0.90	11.81	60.62	334.34	70.24	63.22	11.81	5.52	348.64	77.8105	131.48	88.2765	0.013	487.15	10.56	10.56	0.21	0.45%	0.87%	Manhole	EX-MH-2	0	-	-
EX-MH-3	EX-MH-4	2.54	0.90	6.20	2.29	15.38	72.78	65.50	12.01	5.48	358.81	70.0295	218.7	8.0679	0.013	535.21	13.42	13.41	0.27	0.83%	1.85%	Inlet	EX-MH-3	0	-	-

- Notes:
1. Areas with beginning time of concentration greater than 5 minutes were determined using the rational method for drainage areas greater than 2 acres per Montgomery County Storm Drain Standard.
 2. The time of concentration was obtained using 5 minutes for the first 100' and a velocity of 7 fps for the remaining length
 3. The diameter of a pipe with pipe capacity equivalent to two 60 inch diameter pies and two 54 inch diameter pipes were used to model both existing double 60 inch and 54 inch diameter pipes located downstream of site.

INLET NO.	INCR. AREA (ac)	C*A	T.C. (min)	I (in/hr)	BASE FLOW (cfs)	OVER FLOW (cfs)	TOTAL INFLOW (cfs)	FLOW BYPASS		INLET LENGTH		INLET DETAILS		STREET SLOPE (%)	CROSS SLOPE (ft/ft)	CURB HEIGHT (ft)	THROAT DEPRESS. (in)	INTERCEPTED FLOW (%)	GUTTER FLOW	
								cfs	TO	COMP. (ft)	ACTUAL (ft.)	INLET TYPE	INLET LOCATION						DEPTH (ft)	SPREAD (ft)
EX-I-1	0.52	0.47	5.00	7.07	3.31	0.00	3.31	1.68	EX-MH-1	10	10	CURB	AT GRADE	1.8	2.31	0.5	1	49%	0.275	8
DEWBERRY		10 YEAR INLET COMPUTATIONS - EXISTING CONDITION												COMPUTED: EBM			2019-10-16			
		ARDENNES												CHECKED:						
		SHEET NO. 1		PROJECT NO. 50101977																

ARDENNES

10 YEAR
PROPOSED CONDITION STORM DRAIN PIPE COMPUTATIONS

DATE: 10/07/ 2019

Montgomery County
PREPARED BY: EBM

PIPE STRUCTURES		INCREMENTAL DRAINAGE					PIPE TOTAL DRAINAGE					PIPE DATA				PIPE HYDRAULICS					STRUCTURE LOSS					
From	To	Area Increm (Ac)	C (Runoff Coef)	Time to Inlet (min)	A*C Increm	Q (CFS)	Area Total (Ac)	A*C Total	Time in Pipe (Min)	Rain Inten (In/Hr)	Q Total (CFS)	Size (In)	Length (Ft)	Angle Out of Pipe (Deg) - Whole #	Manning Coeff	Full Flow Capacity (cfs)	Q/A (f/s)	Manning Velocity (V _f)	Time in Pipe (min)	Friction Slope (%)	Actual Slope (%)	Str Type (From)	Str No.	Control Angle (Deg)	K _B	Str Loss (ft) (H _B)
EX-I-1	EX-MH-1	1.84	0.90	5.00	1.66	11.71	1.84	1.66	5.00	7.07	11.71	18	35.89	0	0.013	23.59	6.63	6.63	0.09	1.24%	5.04%	Manhole	EX-I-1	0	-	-
EX-MH-1	EX-MH-2	1.06	0.90	5.44	0.95	6.62	2.90	2.61	5.44	6.94	18.12	24	35.19	68.0813	0.013	17.89	5.77	5.77	0.10	0.64%	0.63%	Inlet	EX-MH-1	0	-	-
EX-MH-2	EX-MH-3	67.36	0.90	11.81	60.62	334.34	70.26	63.23	11.81	5.52	348.74	77.8105	131.48	88.2765	0.013	487.15	10.57	10.56	0.21	0.45%	0.87%	Manhole	EX-MH-2	0	-	-
EX-MH-3	EX-MH-4	2.54	0.90	6.20	2.29	15.38	72.80	65.52	12.01	5.48	358.91	70.0295	218.7	8.0679	0.013	535.21	13.42	13.42	0.27	0.83%	1.85%	Inlet	EX-MH-3	0	-	-

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								cfs	TO	COMP. (ft)	ACTUAL (ft.)	INLET TYPE	INLET LOCATION						DEPTH (ft)	SPREAD (ft)
EX-I-1	0.23	0.21	5.00	7.07	1.46	0.00	1.46	0.47	EX-MH-1	10	10	CURB	AT GRADE	1.8	2.31	0.5	1	68%	2.7	5.5
DEWBERRY	10 YEAR INLET COMPUTATIONS - PROPOSED CONDITION													COMPUTED: EBM			2019-10-46			
														CHECKED						
	ARDENNES													SHEET NO. 1		PROJECT NO. 50101977				