Allied Engineering Assoc., Inc.
95 Main Street 3rd Floor – East
P.O. Box 726
North Canaan, CT 06018
860-824-1400
860-824-1401 fax
aea.george@gmail.com
Our Job #1075

Proposed Drainage Report
For
Manor House Inn
Norfolk, CT

This Report is being prepared for the improvements being proposed at the Manor House Inn. The existing site consists of 5 acres of land. There is an existing Country Inn with a paved entrance from Maple Avenue, a paved parking area and a gravel driveway onto Mills Way. The site drains from the north end of the property along Mills Way to the south where there is an existing brook that flows from east to west and goes under Emerson Street.

The existing site was broken up into 5 drainage areas for analysis. EX-DA #1 drains to the highest catch basin in the road. EX-DA #2 drains to the next catch basin on the east side of the road. EX-DA #3 drains onto the road north of the Margaret Novicki property. EX-DA #4 drains onto the Novicki property and EX-DA #5 drains into the brook. The area south of the Novicki property was not analyzed because there is no activity there. Each of the drainage areas were analyzed for the 2 year storm, the 10 year storm, the 25 year storm, the 50 year storm and the 100 year storms.

The analysis for the drainage computations was performed using the Rational Method. The outflow results in cubic feet per second for the 5 existing drainage areas is as follows:

	2 yr	10 yr	25 yr	50 yr	100 yr
EX-DA #1	0.27	0.38	0.45	0.50	0.55
EX-DA #2	1.26	1.77	2.07	2.31	2.55
EX-DA #3	0.70	0.99	1.16	1.30	1.43
EX-DA #4	1.27	1.78	2.09	2.33	2.57
EX-DA #5	5.20	7.31	8.58	9.57	10.55

The proposed improvements include additional impervious areas that normally increase the rate of runoff and the volume of water running off of the property. We first calculated the proposed runoff for all 5 of the drainage areas with the new characteristics. PR-DA #3 AND PR-DA #5 each had increases while the other three were the same or a little bit less. We installed rain gardens at the outlet of the two pipe networks to provide on site detention that will encourage infiltration into the ground, allow for sediments to settle out of the runoff and to reduce the velocity of the runoff and reducing the

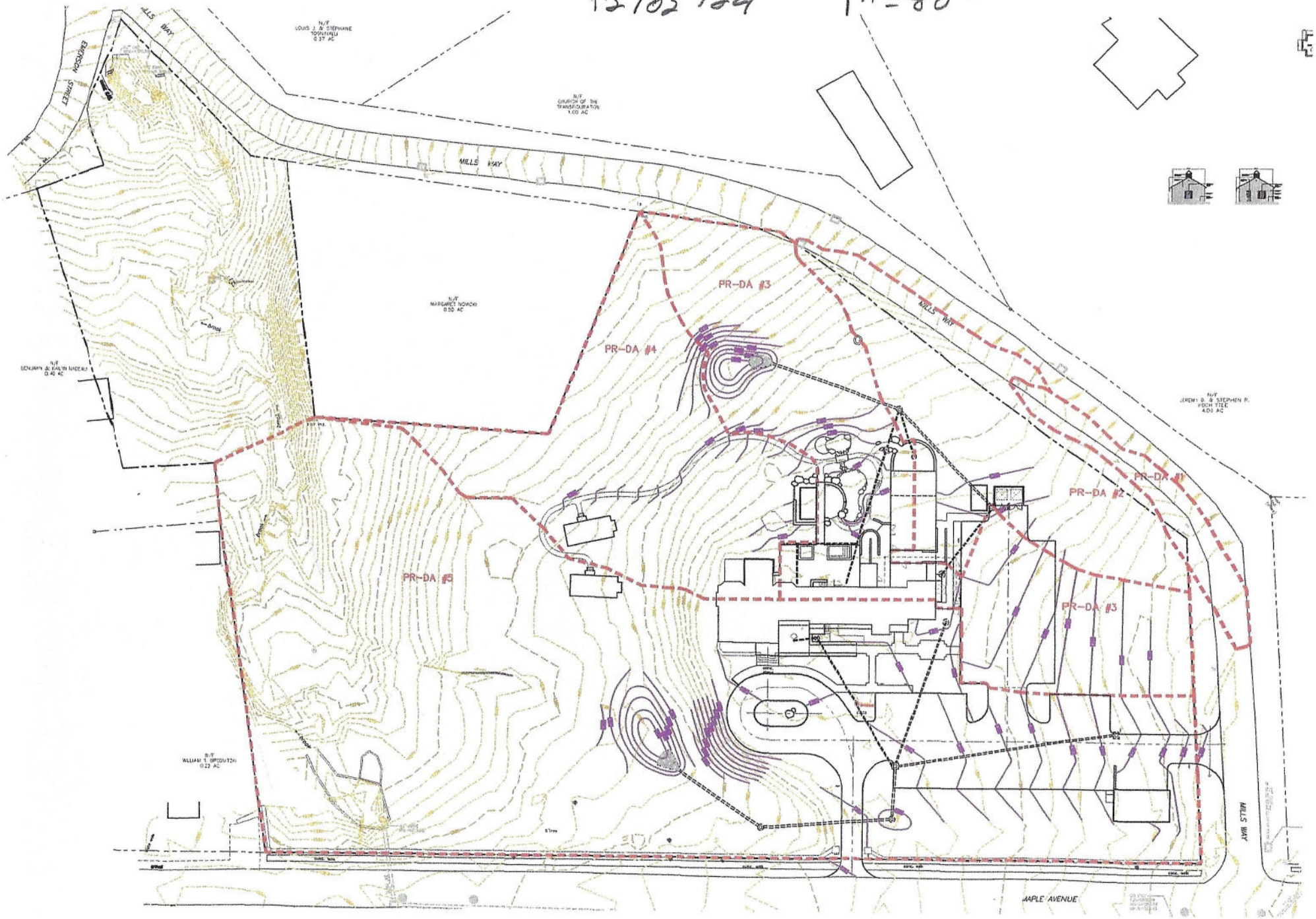
possibility of erosion. The two rain gardens are sized to hold the volume of the 100 year storm flowing into them with hardly any runoff. Taking that into consideration, we analyzed the 5 drainage areas with the stormwater routed through the rain gardens and then combined with the runoff not going through the rain gardens and came up with a decrease in the rate of runoff for all 5 drainage areas for all 5 storms. The outflow results in cubic feet per second of the 5 proposed drainage areas is as follows:

	2 yr	10 yr	25 yr	50 yr	100 yr
PR-DA #1	.26	.37	.44	.49	.54
PR-DA #2	.91	1.28	1.51	1.68	1.85
PR-DA #3	.43	.61	.71	.79	.87
PR-DA #4	1.10	1.55	1.82	2.03	2.24
PR-DA #5	3.85	5.42	6.36	7.09	7.81

In conclusion, the improvements being made to the property will have no adverse effects on any of the surrounding properties or the brook. There is a reduction in volume and rate of runoff, plus we are treating more of the water with the rain gardens than exists at present.

PROPOSED DRAINAGE AREA MAP

12/02/24 1"=80'



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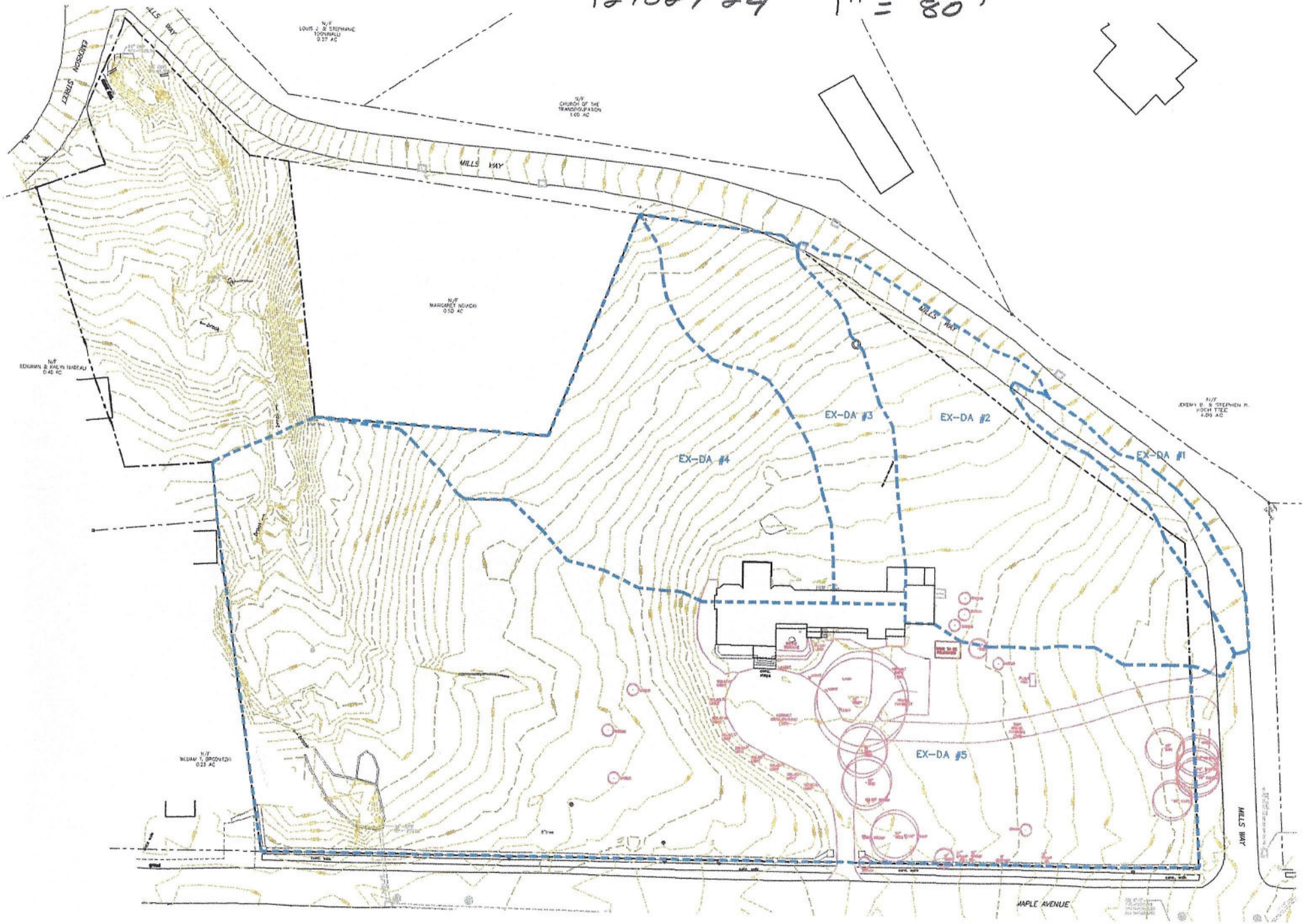
EXISTING DRAINAGE AREA MAP

12/02/24 1" = 80'



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