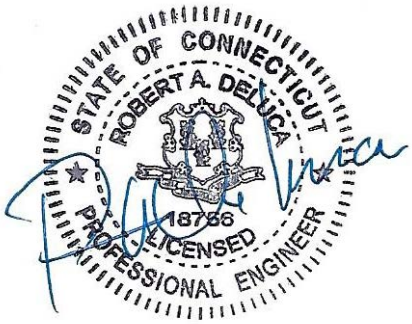
DRAINAGE NARRATIVE
November 29, 2021

21 Bashan Road, East Haddam, CT
Prepared for
Callinan Construction, LLC



The existing parcel consists of approximately 1 acre of undeveloped woodland and field located at 21 Bashan Road in East Haddam, CT. The proposed development consists of a single residential building served by a new 10-foot wide paved driveway approximately 120 L.F.

Rain gardens were sized to contain the total volume associated with the 10-year storm event, without discharge, under post-development conditions.

Methodology:
The site was analyzed using the Rational Method for the 2 and 10-year storm.

Rainfall intensities used in the calculations were taken from weather station readings accessed via the NOAA Atlas 14 Point Precipitation Frequency website. Existing site topography and proposed grading were used to determine the approximate watershed area contributing to each rain garden (See attached sketch maps))

For pre-development conditions, a run-off coefficient, C, of 0.3 was utilized. For post-development conditions, a composite run-off coefficient (C) was determined for each catchment area using values of 0.3 for grass and 0.9 for pavement.

The Time of Concentrations was set at 5 minutes for each watershed. A receding limb factor of four (4) was applied to the hydrograph to more accurately reflect peak flows over a longer period of time.

Analysis of each catchment was performed using Hydraflow Hydrographs Extension for AutoCAD. The analysis determined the total volume of stormwater generated by each catchment area.

The following presents the results, which demonstrate each rain garden has sufficient capacity to mitigate the increase in run-off volume associated with development. No allowance for infiltration has been made.

Pre-Development Conditions (2-Year)

	RG 1	RG 2
Area (Grass)	0.17	0.37
Area (Pavement)	0.00	0.00
Area (Total)	0.17	0.37
Runoff C	0.30	0.30
Run-off Volume (CF)	179	395

Post-Development Conditions (2 -Year)

	RG 1	RG 2
Area (Grass)	0.12	0.35
Area (Pavement)	0.05	0.03
Area (Total)	0.17	0.38
Composite Runoff C	0.48	0.35
Run-off Volume (CF)	293	465

Net Volume Increase (CF)	114	70
Volume Provided (CF)	**179.4**	**111.8**

Pre-Development Conditions (10-Year)

	RG 1	RG 2
Area (Grass)	0.17	0.37
Area (Pavement)	0.00	0.00
Area (Total)	0.17	0.37
Runoff C	0.30	0.30
Run-off Volume (CF)	271	599

Post-Development Conditions (10 -Year)

	RG 1	RG 2
Area (Grass)	0.12	0.35
Area (Pavement)	0.05	0.03
Area (Total)	0.17	0.38
Composite Runoff C	0.48	0.35
Run-off Volume (CF)	445	704

Net Volume Increase (CF)	174	105
Volume Provided (CF)	**179.4**	**111.8**

Project: 21 Bashan Road, East Haddam, CT
Rain Garden Sizing
(Assume 3:1 Side Slope)

RG 1

Bottom Length	17.5	FT
Bottom Width	17.5	FT
Depth	0.5	FT
Top Length	20.5	FT
Top Width	20.5	FT
Volume Provided	**179.4**	CF

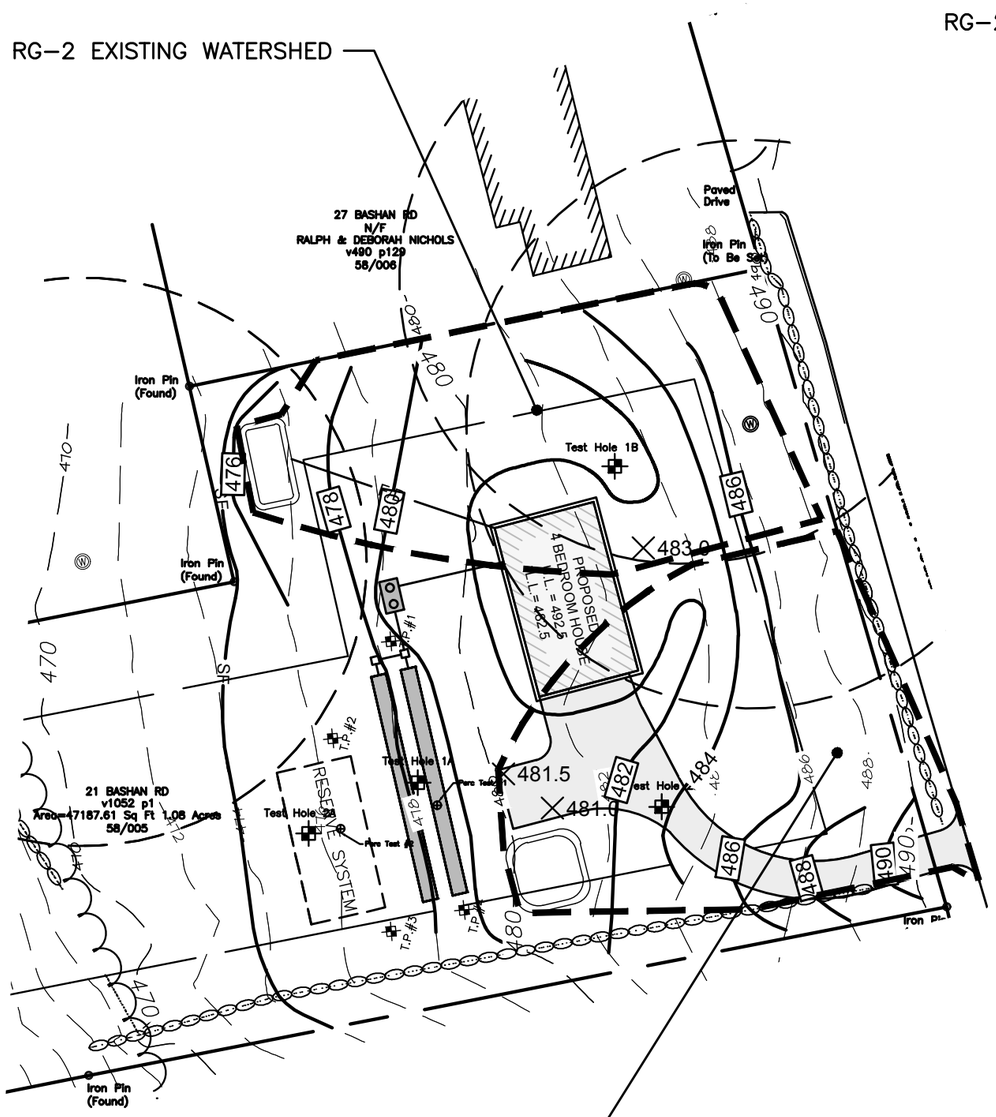
RG 2

Bottom Length	20	FT
Bottom Width	9	FT
Depth	0.5	FT
Top Length	23	FT
Top Width	12	FT
Volume Provided	**111.8**	CF

EXISTING WATERSHED

40' 0 40' 80'

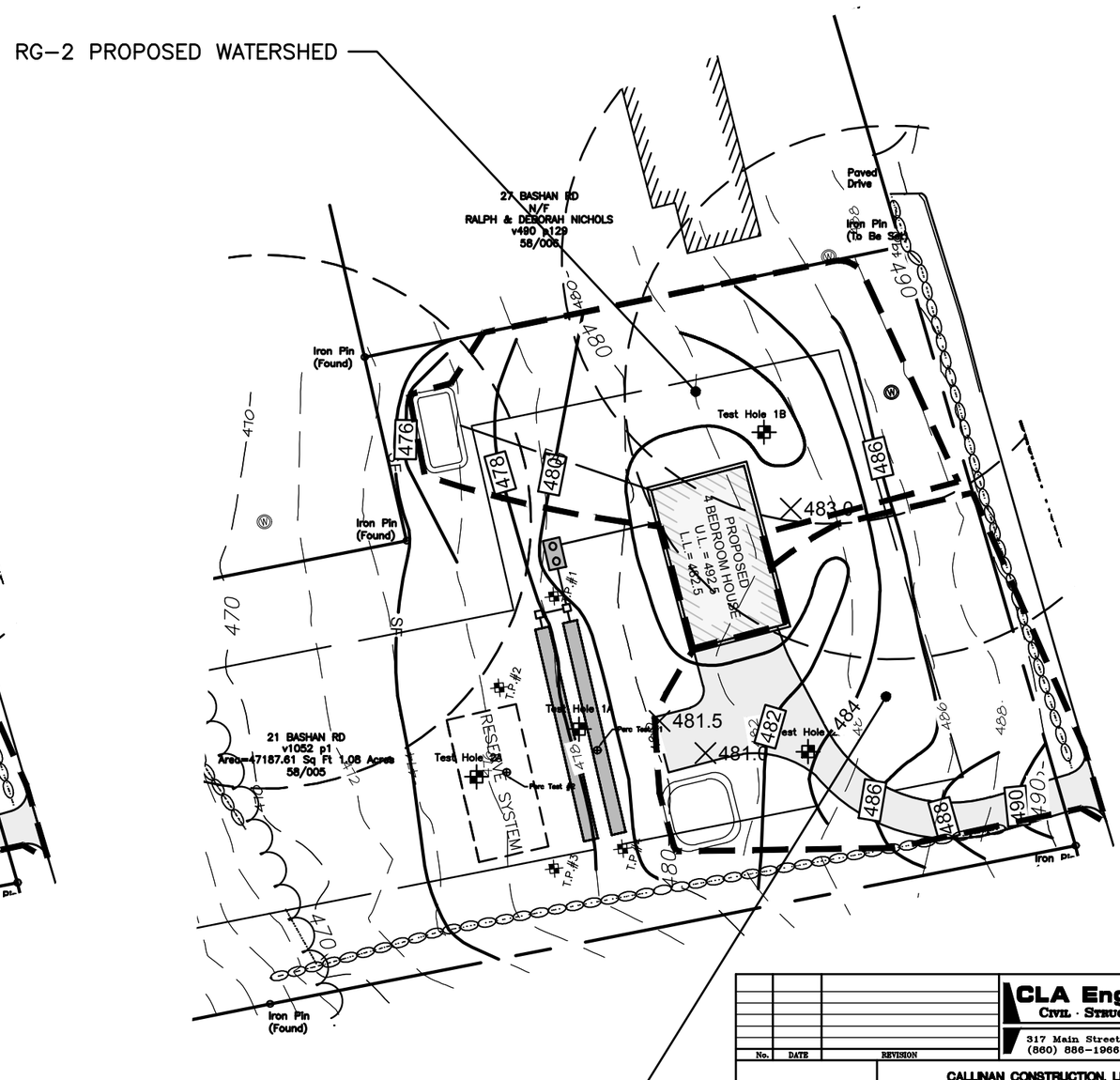
SCALE: 1"=40'



PROPOSED WATERSHED

40' 0 40' 80'

SCALE: 1"=40'



No.	DATE	REVISION

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CALLINAN CONSTRUCTION, LLC

21 BASHAN ROAD
EAST HADDAM, CT

DRAINAGE PLAN

Project No. CLA-6848
Proj. Engineer R.A.D.
Date: 06/17/21
Sheet No. **2**

CLA

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