Stormwater Management Report

Resubdivision Plans

23-Lot Residential Resubdivision
47 Sharp Hill Road
Montville, CT 06382

July 10, 2025
Revised: November 13, 2025

Prepared for:
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TECHNICAL APPENDIX

1. INTRODUCTION

The property is located at 47 Sharp Hill Road in Montville, Connecticut (the "Site") and is further identified as Lot 23 on the Town of Montville Tax Assessor's Map 63. The property is approximately 19.5 acres, with frontage on Sharp Hill Road to the south and the Carol Drive to the west (See Figure 1 – Site Location Map). Except for the riprap drainage basin at the end of the Carol Drive cul-de-sac, the property is undeveloped.

Existing topography across the Site is moderate to steep with elevations ranging from 435 at the high point to the west, to 326 at the low point at the wetlands to the east. Per NRCS soil mapping (see Technical Appendix 'A'), the underlying soil consists of Woodbridge (Hydrologic Soil Group 'C/D'), Canton and Charlton (Hydrologic Soil Group 'B') and Paxton and Montauk (Hydrologic Soil Group 'C').

The Site is located in the residential 'R-20' Zone. The Site is not located within a Connecticut Department of Energy and Environmental Protection ("CT DEEP") Drinking Water Watershed, or a CT DEEP National Diversity Data Base Critical Area

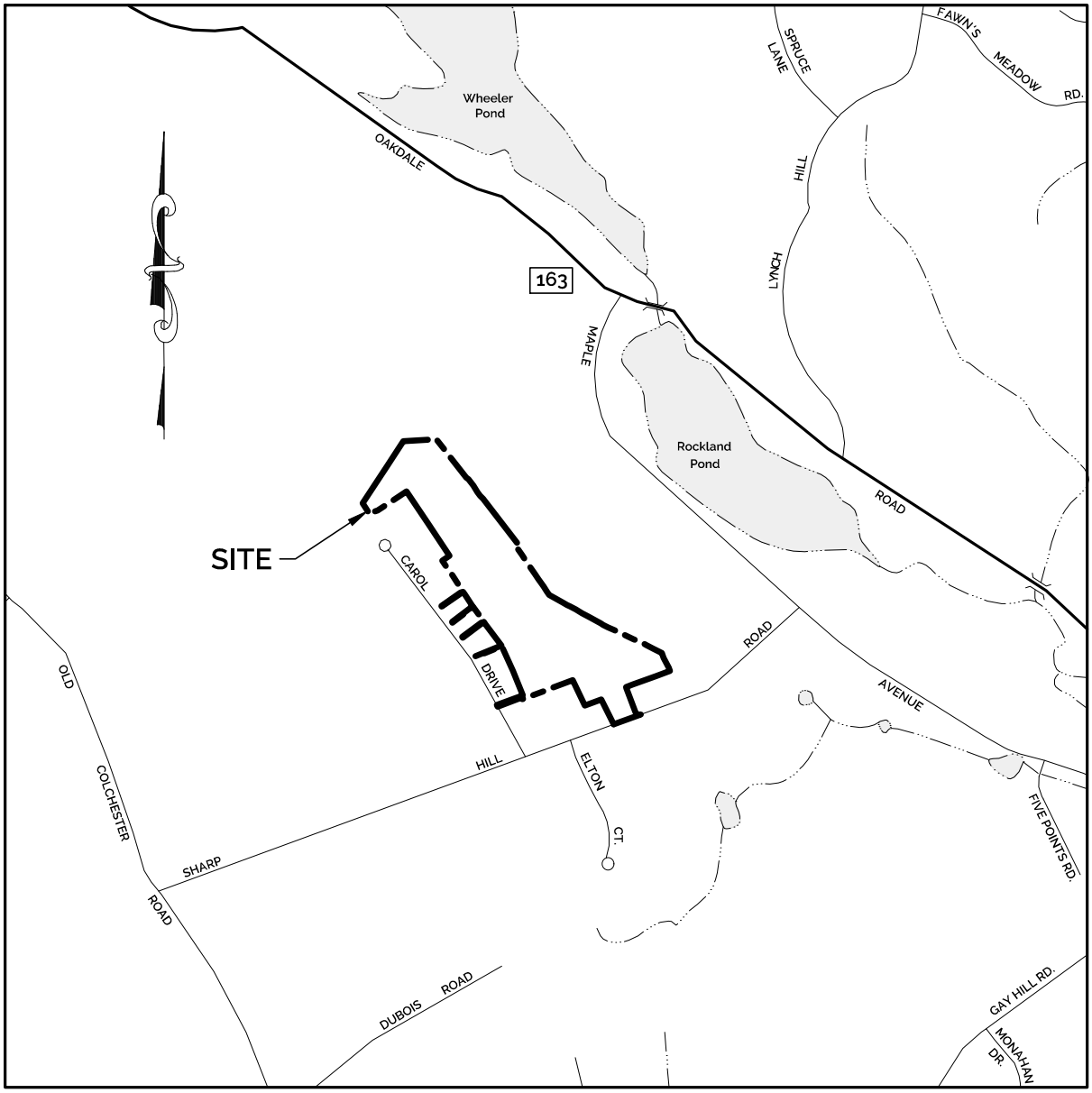
The applicant is proposing a 23-lot residential resubdivision. The parcel was created as part of a subdivision approved in 2016. As part of the resubdivision, the roadway, associated roadway drainage system, stormwater management improvements, and common utilities (sanitary sewer, electric, telephone, cable) will be installed. The residences, driveways, individual lot grading, and drilled wells shown on the site plans for the new building lots are shown for conceptual purposes only. No lot development is proposed at this time. Prior to any individual lot development, a site plan shall be prepared in conformance with all applicable local regulations, and reviewed and approved by the zoning enforcement officer.

This report presents the basis of the project hydrologic and hydraulic analysis of the Site, the design for the new stormwater management systems, and Best Management Practices (BMPs) incorporated into the site design to manage and treat stormwater runoff in accordance with the 2024 CT DEEP Stormwater Quality Manual ("SQM") and the Town of Montville Zoning Regulations.

2. PURPOSE OF REPORT

This report presents the basis of design for stormwater management including drainage and stormwater treatment. The report demonstrates that the development:

- Does not increase peak rates of runoff from watersheds encompassing the Site.
- Improves the quality of receiving groundwater, waterbodies, or watercourses by treating stormwater runoff.
- Complies with the 2024 CT DEEP SQM and the Town of Montville Stormwater Management Standards.



1,000 500 0 1,000

SCALE IN FEET

REVISED: 11/13/2025

PROJECT NO. 2025-0197	SCALE: 1" = 1,000'
DRAWN BY: REG	DATE: 7/10/2025
CHECKED BY: SMM	DATE: 7/10/2025
SHEET NUMBER: 1 OF 1	
DRAWING: FIGURE 1	

SITE LOCATION MAP

23-LOT RESIDENTIAL RESUBDIVISION

47 SHARP HILL ROAD, MONTVILLE, CT 06382

MT KINEO BUILDERS, LLC

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Z:\SHARED\H+H ENGINEERING ASSOCIATES\PROJECTS\2025\2025-0197 - MT KINEO BUILDERS - 47 SHARP HILL RD, MONTVILLE\DWGS\DRAINAGE\DRAINAGE MAP - SITE LOCATION MAP.DWG Tab: FIGURE 1 - LOCATION MAP Saved: 11/13/2

3. BASIS OF DESIGN

The layout, grading, and stormwater management design for the development are shown on the Site Development Plans. The basis of the stormwater management design is as follows:

1. Rainfall data is from the National Weather Service NOAA Atlas 14, Volume 10, Version 3 (see Technical Appendix 'B').
2. Stormwater system is designed to meet or exceed the water quality and peak rate of runoff goals established in the CT DEEP SQM.
3. Stormwater treatment Best Management Practices (BMPs) are designed to remove pollutants, such as nutrients, solids, metals, pathogens, pesticides, and hydrocarbons from stormwater runoff and to reduce temperatures of runoff from paved surfaces during hot weather.
4. Pretreatment of runoff for the removal of sediments, oil and grease will be accomplished using deep sump catch basins and outlet hoods.

4. HYDROLOGIC AND HYDRAULIC METHODS

The methods described in Urban Hydrology for Small Watersheds, 2nd Edition, (Technical Release Number 55 [TR-55]) from the Natural Resources Conservation Service (formerly the Soil Conservation Service – [SCS], 1986) were used to calculate stormwater peak-flow generated from pre- and post-development conditions. These methods, which are incorporated into the HydroCAD computer software program, use well documented procedures to calculate stormwater runoff volume, peak-flow rate of discharge, hydrographs and storage volumes required for floodwater reservoirs in small watersheds. The method uses the SCS Runoff Curve Number method to estimate runoff volume, calculate times of concentration, produce tabular hydrographs, and estimate basin storage capacity. Output data from all computer analysis and design are provided in Technical Appendices "F" and "G."

This report presents the basis of the hydrologic and hydraulic analysis and design of the stormwater management systems completed in accordance with the 2024 CT DEEP SQM. Times of concentration applicable to the existing and proposed conditions were developed using the NRCS-velocity method. A minimum time of concentration of 5 minutes was used for small drainage areas and drainage areas consisting mostly of impervious surfaces, and 10 minutes for vegetated areas.

5. STORMWATER MANAGEMENT

The Site is undeveloped. The proposed improvements will increase impervious areas, resulting in changes in stormwater runoff from the Site. Hydrologic analyses of pre- and post-development conditions were completed to assess these increases and to design mitigation measures for water quality and to reduce post-development discharges.

5.1 Pre-Development Drainage Areas and Analysis Points

The pre-development drainage pattern for the Site consists of four drainage subareas (see Figure 2 – Pre-Development Drainage Area Map) and are described as follows:

- **Drainage Subarea #1 'SA1':** Approximately 1.93 acres consisting of 0.21 acres of buildings/impervious surfaces, 0.05 acres of gravel surfaces, 0.01 acres open decking, 1.06 acres of lawn, and 0.60 acres of woods that drains to Drainage Analysis Line #1.
- **Drainage Subarea #2 'SA2':** Approximately 10.03 acres consisting of 0.42 acres of buildings/impervious surfaces, 0.02 acres of gravel surfaces, 0.03 acres open decking, 1.76 acres of lawn, and 7.80 acres of woods that drains to Drainage Analysis Line #2.
- **Drainage Subarea #3 'SA3':** Approximately 6.64 acres consisting of 0.16 acres of buildings/impervious surfaces, 0.01 acres of gravel surfaces, 0.91 acres of lawn, and 5.57 acres of woods that drains to Drainage Analysis Line #3.
- **Drainage Subarea #4 'SA4':** Approximately 0.21 acres of woods that drains to Drainage Analysis Line #4.

The analysis points are as follows:

- **Drainage Analysis Line #1 'AL1'**: Drainage Analysis Line #1 is the southeastern property line.
- **Drainage Analysis Line #2 'AL2'**: Drainage Analysis Line #2 is the wetlands at the eastern property line.
- **Drainage Analysis Line #3 'AL3'**: Drainage Analysis Line #3 is the northern property line.
- **Drainage Analysis Line #3 'AL4'**: Drainage Analysis Line #4 is the northeastern property line.

5.2 Post-Development Drainage Areas

The post-development improvements result in the modification of the drainage areas along with changes in impervious coverage. These conditions are shown on Figure 3 – Post-Development Drainage Area Map, and described as follows:

- **Drainage Subarea #1 'SA1':** Approximately 0.26 acres consisting of 0.004 acres of buildings/impervious surfaces, 0.24 acres of lawn, and 0.01 acres of woods that drains to Drainage Analysis Line #1.
- **Drainage Subarea #2 'SA2'**: For analysis purposes, the drainage area SA2 was subdivided into 4 subareas.
    - **SA2A**: Approximately 10.55 acres consisting of 1.97 acres of buildings/impervious surfaces, 0.06 acres of gravel surfaces, 0.08 acres open decking, 5.55 acres of lawn, and 2.89 acres of woods that drains to Stormwater Management Area '2A'.

- **SA2B**: Approximately 0.55 acres consisting of 0.02 acres of buildings/impervious surfaces, 0.003 acres open decking, and 0.53 acres and receives the outflow from Stormwater Management Area '2A'.
- **SA2C**: Approximately 0.28 acres of lawn and coinciding with the interior Stormwater Management Area '2C' and receives the outflow from Stormwater Management Area '2B'.
- **SA2D**: Approximately 0.09 acres consisting of 0.05 acres of lawn and 0.04 acres of woods that drains to Drainage Analysis Line #2 and receives the outflow from Stormwater Management Area '2C'.

- **Drainage Subarea #3 'SA3'**: For analysis purposes, drainage area SA3 was subdivided into 4 subareas.
  - **SA3A:** Approximately 1.71 acres consisting of 0.50 acres of buildings/impervious surfaces, 0.01 acres open decking, 1.11 acres of lawn, and 0.09 acres of woods that drains to Drainage Management Area '3A'.
  - **SA3B:** Approximately 5.17 acres consisting of 0.46 acres of buildings/impervious surfaces, 0.01 acres of compact gravel, 0.03 acres of open decking, 2.52 acres of lawn, and 2.16 acres of woods that drains to Drainage Analysis Line #3 and receives the outflow from Stormwater Management Area '3A'.
- **Drainage Subarea #4 SA4:** Approximately 0.23 acres consisting of 0.18 acres of lawn, and 0.05 acres of woods that drains to Drainage Analysis Line #4.

Modeling results for the pre- and post-development drainage areas are provided in Figure 4 – Stormwater Runoff Summary, and the hydrologic and hydraulic modeling parameters are provided in the HydroCAD printouts (Technical Appendices 'F' and 'G'). The stage storage information for the BMP's are provided in Figure 5 – Stage Storage Summaries.

5.3 Stormwater Management BMPs

For the post-development conditions, the intent of the proposed stormwater management system is to route stormwater runoff from new impervious surfaces through the proposed stormwater BMPs to provide water quality treatment, peak rate reduction, and promote groundwater recharge through infiltration. The Stormwater Management System is described below:

- **Water Quality Basin 'WQB':** The stormwater runoff generated from the majority of the proposed development and contributing existing developed residential properties along Sharp Hill Road and Carol Drive will be directed into the proposed Water Quality Basin which will retain, attenuate, and infiltrate stormwater runoff and treat stormwater runoff through plant filtration and infiltration. The Water Quality Basin is designed to infiltrate the majority of the water quality event (1.3" storm event) and control discharge rates through the 100-year storm event.

- **Bioretention Basin 'A':** The stormwater runoff generated from said drainage basin, the outflow from the Water Quality Basin, and the contributing rear portion of the building for proposed Building Lot 23 will be directed into proposed Bioretention Basin 'A'. The Bioretention Basin is designed to infiltrate the water quality event (1.3" storm event) and control discharge rates through the 100-year storm event.
- **Bioretention Basin 'B':** The stormwater runoff generated from said drainage basin and the outflow from Bioretention Basin 'A.' The Basin is designed to provide additional water quality enhancements and control discharge rates through the 100-year storm event.
- **Bioretention Basin 'C':** The stormwater runoff generated from a portion of the proposed roadway, proposed Building Lot 13, portions of Building Lots 11, 12, 14, and 18, and the contributing area from one of the existing residential houses on Carol Drive will be directed into proposed Bioretention Basin 'C'. The Bioretention Basin is designed to infiltrate the water quality event (1.3" storm event) and control discharge rates through the 100-year storm event.
- **Diversion Swale:** Stormwater runoff from select existing residential properties along Carol Drive will be intercepted and conveyed via a proposed diversion swale. The swale will be lined with Modified Riprap to mitigate erosive potential and maintain channel stability. At the downstream terminus, a level spreader will be installed to dissipate flow energy and uniformly distribute runoff to the wooded buffer.

Field Measured infiltration rates in the vicinity of Stormwater Management Area 'A' varied between 6.51 inches/hour (Test Hole #101), 0.05 inches/hour (Test Hole #102), 1.89 inches/hour (Test Hole #104), and 4.08 inches/hour (Test Hole #105). The unsuitable soil layer found in proximity to Test Hole #102 will be removed. Additionally, a Bioretention Soil Mix will be used for the bottom of the basins. The soil mix is designed to infiltrate at 2.0 inches/hour. After applying a factor of safety of 2.0, an infiltration rate of 1.0 inches/hour was used for design purposes.

5.4 Storm System Outlet Location

At a minimum, the proposed water quality basin and bioretention basins are designed to infiltrate through the water quality storm event. Beyond the design event, each stormwater management system will discharge runoff as described below:

- **Water Quality Basin 'WQB':** An outlet control structure is proposed to allow for a controlled discharge through the 100-year storm event and riprap spillway is proposed to allow a controlled discharge beyond the 100-year storm event. The overflow discharge routed through the outlet control structure outlets to a flared end section and riprap apron to Bioretention Basin 'A.' The overflow discharge is routed over the riprap spillway and to the aforementioned basin.
- **Bioretention Basin 'A':** An outlet control structure is proposed to allow for a controlled discharge through the 100-year storm event and riprap spillway is proposed to allow a

controlled discharge beyond the 100-year storm event. The overflow discharge routed through the outlet control structure outlets to a flared end section and riprap apron to Bioretention Basin 'B.' The overflow discharge is routed over the riprap spillway and to the aforementioned basin.

- **Bioretention Basin 'B':** An outlet control structure is proposed to allow for a controlled discharge through the 100-year storm event and riprap spillway is proposed to allow a controlled discharge beyond the 100-year storm event. The overflow discharge routed through the outlet control structure outlets to a flared end section and riprap apron. The overflow discharge routed over the riprap spillway is directed toward Analysis Line #2.
- **Bioretention Basin 'C':** An outlet control structure is proposed to allow for a controlled discharge through the 100-year storm event and riprap spillway is proposed to allow a controlled discharge beyond the 100-year storm event. The overflow discharge routed through the outlet control structure outlets to a flared end section and riprap apron. The overflow discharge routed over the riprap spillway is directed toward Analysis Line #3.

Figure 4A – Runoff Summary						
Storm Frequency (depth of rainfall (in.))	Analysis Line #1 – Southeastern Property Line					
	Existing		Proposed		Change	
	Peak Rate (CFS)	Volume (CF)	Peak Rate (CFS)	Volume (CF)	Peak Rate (CFS)	Volume (CF)
WQS (1.30)	0.09	819	0.01	80	-0.08	-739
1-year (2.90)	1.48	6,652	0.20	781	-1.28	-5,871
2-year (3.45)	2.14	9,324	0.30	1,114	-1.84	-8,210
10-year (5.12)	4.37	18,482	0.64	2,273	-3.73	-16,209
25-year (6.16)	5.85	24,682	0.87	3,068	-4.98	-21,614
100-year (7.76)	8.18	34,653	1.23	4,354	-6.95	-30,299

Figure 4B – Runoff Summary						
Storm Frequency (depth of rainfall (in.))	Analysis Line #2 – Wetlands					
	Existing		Proposed		Change	
	Peak Rate (CFS)	Volume (CF)	Peak Rate (CFS)	Volume (CF)	Peak Rate (CFS)	Volume (CF)
WQV (1.30)	0.12	2,251	0.00	24	-0.12	-2,237
1-year (2.90)	4.94	27,281	0.55	16,112	-4.39	-11,169
2-year (3.45)	7.56	39,628	1.41	30,116	-6.15	-9,512
10-year (5.12)	16.75	83,408	12.96	82,540	-3.79	-868
25-year (6.16)	23.05	113,771	23.05	118,295	No change	+4,524
100-year (7.76)	33.19	163,288	31.05	176,043	-2.14	+12,755

Figure 4C – Runoff Summary						
Storm Frequency (depth of rainfall (in.))	Analysis Line #3 – Northern Property Line					
	Existing		Proposed		Change	
	Peak Rate (CFS)	Volume (CF)	Peak Rate (CFS)	Volume (CF)	Peak Rate (CFS)	Volume (CF)
WQV (1.30)	0.04	1,000	0.06	1,161	+0.02	+161
1-year (2.90)	2.80	15,901	2.86	18,400	+0.06	+2,499
2-year (3.45)	4.45	23,567	4.36	27,212	-0.09	+3,645
10-year (5.12)	10.40	51,258	10.53	58,141	+0.13	+6,883
25-year (6.16)	14.54	70.716	14.32	79,366	-0.22	+8,650
100-year (7.76)	21.22	102,692	20.69	113,808	-0.53	+11,116

Figure 4D – Runoff Summary						
Storm Frequency (depth of rainfall (in.))	Analysis Line #4 – Northeastern Property Line					
	Existing		Proposed		Change	
	Peak Rate (CFS)	Volume (CF)	Peak Rate (CFS)	Volume (CF)	Peak Rate (CFS)	Volume (CF)
WQV (1.30)	0.00	32	0.01	62	+0.01	+30
1-year (2.90)	0.12	506	0.17	675	+0.05	+169
2-year (3.45)	0.19	749	0.26	971	+0.07	+222
10-year (5.12)	0.44	1,630	0.56	2,013	+0.12	+383
25-year (6.16)	0.62	2,249	0.76	2,731	+0.14	+482
100-year (7.76)	0.91	3,265	1.09	3,897	+0.18	+632

Figure 4E – Runoff Summary						
Storm Frequency (depth of rainfall (in.))	Total Site Discharge					
	Existing		Proposed		Change	
	Peak Rate (CFS)	Volume (CF)	Peak Rate (CFS)	Volume (CF)	Peak Rate (CFS)	Volume (CF)
WQS (1.30)	0.20	4,102	0.06	1,328	-0.14	-2,774
1-year (2.83)	9.08	50,340	3.12	35,968	-5.96	-14,372
2-year (3.40)	13.95	73,269	4.75	59,413	-9.20	-13,856
10-year (5.08)	31.19	154,777	21.60	144,967	-9.59	-9,810
25-year (6.14)	43.07	211,418	35.98	203,459	-7.09	-7,959
100-year (7.76)	62.19	303,898	51.60	298,101	-10.59	-5,797

Figure 5A – Stage Storage Summary		
Storm Frequency (rainfall depth (in.))	**Water Quality Basin**	
	Water Surface Elevation (FT.)	**Storage Volume (CF)**
WQS (1.30)	355.78	3,034
1-year (2.83)	356.26	4,311
2-year (3.40)	356.27	4,333
10-year (5.08)	356.30	4,445
25-year (6.14)	356.35	4,591
100-year (7.76)	356.46	4,918

Treatment Practice Elevations (FT.)

Top of Berm Elevation = 357.00
Spillway Elevation = 356.50
Bottom of Basin Elevation = 354.00

Outlet Control Structure Elevations (FT.)

Top of Frame Elevation = 356.25
48"(W) x 6"(H) Orifice Invert Elevation = 355.75
Outlet Pipe Invert Elevation = 345.00

Design Exfiltration Rate = 1.0 inches/hour
(Receiving soil below infiltration trench to be replaced with Biofiltration Soil Mix)

Figure 5B – Stage Storage Summary		
Storm Frequency (rainfall depth (in.))	**Bioretention Basin 'A'**	
	Water Surface Elevation (FT.)	**Storage Volume (CF)**
WQS (1.30)	343.02	103
1-year (2.83)	345.64	18,235
2-year (3.40)	346.39	25,308
10-year (5.08)	346.70	28,434
25-year (6.14)	346.76	29,033
100-year (7.76)	346.97	31,251

Treatment Practice Elevations (FT.)

Top of Berm Elevation = 347.50
Spillway Elevation = 347.00
Bottom of Basin Elevation = 343.00

Outlet Control Structure Elevations (FT.)

Top of Frame Elevation = 346.65
48"(W) x 6"(H) Upper Orifice Invert Elevation = 346.25
5" dia. Low Orifice Invert Elevation = 344.35
Outlet Pipe Invert Elevation = 339.00

Design Exfiltration Rate = 1.0 inches/hour
(Receiving soil below basin to be replaced with Biofiltration Soil Mix)

Figure 5C – Stage Storage Summary		
Storm Frequency (rainfall depth (in.))	**Bioretention Basin 'B'**	
	Water Surface Elevation (FT.)	**Storage Volume (CF)**
WQS (1.30)	337.50	11
1-year (2.83)	338.65	3,321
2-year (3.40)	338.85	4,049
10-year (5.08)	340.47	11,185
25-year (6.14)	341.57	17,534
100-year (7.76)	343.00	27,824

Treatment Practice Elevations (FT.)
Top of Berm Elevation = 344.00
Spillway Elevation = 343.00
Bottom of Basin Elevation = 337.50

Outlet Control Structure Elevations (FT.)
Top of Frame Elevation = 341.60
48"(W) x 6"(H) Upper Orifice Invert Elevation = 340.90
48"(W) x 6"(H) Middle Orifice Invert Elevation = 338.70
5" dia. Low Orifice Invert Elevation = 337.75
Outlet Pipe Invert Elevation = 335.00

Design Exfiltration Rate = 1.0 inches/hour
(Receiving soil below basin to be replaced with Biofiltration Soil Mix)

Figure 5D – Stage Storage Summary		
Storm Frequency (rainfall depth (in.))	**Bioretention Basin 'C'**	
	Water Surface Elevation (FT.)	**Storage Volume (CF)**
WQS (1.30)	387.76	425
1-year (2.83)	388.97	2,964
2-year (3.40)	389.28	3,789
10-year (5.08)	390.13	6,331
25-year (6.14)	390.67	8,259
100-year (7.76)	391.14	10,091

Treatment Practice Elevations (FT.)
Top of Berm Elevation = 392.00
Spillway Elevation = 391.50
Bottom of Basin Elevation = 387.50

Outlet Control Structure Elevations (FT.)
Top of Frame Elevation = 391.25
24"(W) x 6"(H) Upper Invert Elevation = 390.70
10"(W) x 4"(H) Middle Orifice Invert Elevation = 389.00
4" dia. Low Orifice Invert Elevation = 388.10
Outlet Pipe Invert Elevation = 385.50

Design Exfiltration Rate = 1.0 inches/hour
(Receiving soil below basin to be replaced with Biofiltration Soil Mix)

Figure 5E – Stage Storage Summary		
Storm Frequency (rainfall depth (in.))	**Riprap Diversion Swale**	
	Water Depth (in.)	**Storage Volume (CF)**
WQS (1.30)	0.06	41
1-year (2.83)	0.75	478
2-year (3.40)	1.09	637
10-year (5.08)	2.29	1,106
25-year (6.14)	3.12	1,386
100-year (7.76)	4.48	1,795
Channel Specifications Shape: Trapezoidal Channel Side Slopes: 3:1 (H:V) Bottom Width = 4.00 Minimum Channel Depth = 1.00		

6. SOURCE CONTROL AND POLLUTION PREVENTION MAINTENANCE AND OPERATION

Source control and pollution prevention practices for this development are intended to eliminate the generation of pollutants at their source, reduce the types and concentration of pollutants in stormwater runoff and to assure that the BMPs continue to function to remove oil and grease and TSS. The town will be responsible for maintaining the stormwater management system and roadway, and individual homeowners shall be responsible for maintaining their property and the private stormwater management improvements. The goal of this section is to identify maintenance operations for the development.

The following maintenance and operation measures are recommended for source control.

Roadway

The access drive and parking areas shall be swept once per year, preferably after the end of the winter sanding season.

Landscaping

Normal landscaping maintenance shall consist of pruning, mulching, planting, mowing lawns, raking leaves, etc. Use of fertilizers and pesticides will be controlled and limited to minimal amounts necessary for healthy landscape maintenance.

Trees will be fertilized no more than once in the spring with an organic fertilizer. Shrubs and lawn will be fertilized with an organic slow-release fertilizer each spring. Liming of lawn areas to control pH will also be done in the spring if soil testing indicates that it is necessary.

Pesticides will only be used as a control method when a problem has been clearly identified, and other natural control methods are not successful. All pesticide applications shall be by licensed applicators, where necessary.

Trash Collection

Trash will be disposed of using rollaway refuse bins. The pickup of trash will occur on a regular basis, and all trash will be disposed of legally off-site.

Outdoor Storage

There will be no outdoor storage of hazardous chemicals, fertilizer, pesticides, or herbicides anywhere on site.

Snow Removal & Storage

Snow shall be shoveled and plowed from the roadway areas as soon as practical during and after winter storms and deposited in snow storage areas on the site or removed.

Catch Basins and Manholes

A Connecticut-licensed hauler shall pump the sumps of on-site catch basins and manholes, and shall dispose of the pumping legally. Road sand may be reused for winter sanding, but may not

be stored on-site. As part of the hauling contract, the hauler shall notify the town in writing where the material is being disposed.

For the first two years, each catch basin and manhole shall be inspected every four months, with one inspection occurring during the month of April. Any debris occurring within one foot from the bottom of each sump shall be removed by vacuum "Vactor" type of maintenance equipment. After the first two years the inspection schedule may be adjusted to meet actual operating conditions, however, one inspection shall always be conducted in April. All sediment shall be disposed of in accordance with all rules and regulations of the CT DEEP.

Stormwater Basins

The water quality basin and bioretention basins shall be cleaned at the end of construction once the contributing areas are fully stabilized.
Following construction, the basins shall be inspected every six months and/or after storm events of two inches of rainfall or greater. Inspections shall include the following:

- Inspect filter media standing water or other evidence of clogging.
- Check for sediment accumulation, trash, and debris.
- Check for blockages, structural integrity, and evidence of erosion at inlet, outlet, and overflow spillway.

Regular maintenance shall include the following:

- Basin floor/side slopes shall be mowed 6" to 8" as needed. grass clippings, leaves and accumulated sediment and debris shall be removed during the summer, however, plant matter shall be left in place over winter months to insulate the soil and add organic matter to the soil. Removal criteria shall include when plant matter is smothering or killing vegetation and aesthetics.
- Remove sediment greater than 1.0 inch deep in March-April in the filter media bed in a manner to minimize damage to vegetation.
- Inspect soil and repair eroded areas seasonally or as necessary.
- Remove any invasive species (including roots) that have become established within the basin and embankments.
- If there is an accumulation of organic debris or sediment on the floor of the basin, or if ponded water is regularly observed more than 48 hours after a rainfall event, the top 6" shall be removed and the exposed soil surface rototilled to a depth of 12". Sedimentation should be removed when it is visibly dry and readily separates from the basin floor to minimize smearing. After this work has been done, the bottom of the basin shall be restored to its original condition.
- No pesticides or non-organic fertilizers shall be used in areas draining to the bioretention basin.

Diversion Swale

The diversion swale shall be cleaned at the end of construction once the contributing areas are fully stabilized.

For the first 6 months after construction, the diversion swale shall be inspected after major storms (1" or more of precipitation).

After the first 6 months of operation, the diversion swale shall be inspected annually.

Typical maintenance shall include the following:

- Remove trash and organic debris (leaves).
- Remove sediment from check dams when sediment accumulation exceeds 2".
- Remove sediment from level spreader, as necessary.

7. CONCLUSION

The new stormwater management improvements were designed in accordance with the 2024 CT DEEP SQM and Town of Montville Zoning regulations. BMPs were incorporated in the site design that attenuates post-development runoff rates and treats stormwater runoff through the water quality event. Overall, the stormwater management system provides quantitative and qualitative improvements for the site.

SHEET FLOW						
ID	SURFACE	ROUGH COEFF.	START EL. (FT.)	END EL. (FT.)	LENGTH (FT.)	SLOPE (FT./FT.)
SF1A	LAWN	0.240	431.0	421.3	106	0.092
SF1B	WOODS	0.600	421.3	420.5	11	0.073
SF1C	LAWN	0.240	420.5	418.3	33	0.067
TOTAL SHEET FLOW LENGTH:					150	
SHALLOW CONCENTRATED FLOW						
ID	SURFACE		START EL. (FT.)	END EL. (FT.)	LENGTH (FT.)	SLOPE (FT./FT.)
SCF1A	UNPAVED		418.3	403.5	195	0.076
SCF1B	PAVED		403.5	403.3	3	0.067
SCF1C	UNPAVED		403.3	396.7	29	0.228
SCF1D	PAVED		396.7	395.4	16	0.081
SCF1E	UNPAVED		395.4	382.0	158	0.085
SCF1F	PAVED		382.0	381.7	4	0.075
SCF1G	UNPAVED		381.7	380.5	16	0.075
SCF1H	PAVED		380.5	380.4	1	0.100
SCF1I	UNPAVED		380.4	358.0	225	0.100

SHEET FLOW						
ID	SURFACE	ROUGH COEFF.	START EL. (FT.)	END EL. (FT.)	LENGTH (FT.)	SLOPE (FT./FT.)
SF2A	LAWN	0.240	433.5	428.8	28	0.168
SF2B	WOODS	0.600	428.8	417.5	122	0.093
TOTAL SHEET FLOW LENGTH:					150	
SHALLOW CONCENTRATED FLOW						
ID	SURFACE		START EL. (FT.)	END EL. (FT.)	LENGTH (FT.)	SLOPE (FT./FT.)
SCF2A	UNPAVED		417.5	325.5	958	0.096

SHEET FLOW						
ID	SURFACE	ROUGH COEFF.	START EL. (FT.)	END EL. (FT.)	LENGTH (FT.)	SLOPE (FT./FT.)
SF3A	LAWN	0.240	434.5	433.0	18	0.083
SF3B	WOODS	0.600	433.0	420.2	132	0.097
TOTAL SHEET FLOW LENGTH:					150	
SHALLOW CONCENTRATED FLOW						
ID	SURFACE		START EL. (FT.)	END EL. (FT.)	LENGTH (FT.)	SLOPE (FT./FT.)
SCF3A	UNPAVED		420.2	367.7	510	0.103

SHEET FLOW						
ID	SURFACE	ROUGH COEFF.	START EL. (FT.)	END EL. (FT.)	LENGTH (FT.)	SLOPE (FT./FT.)
SF4A	WOODS	0.600	354.5	340.5	150	0.093
TOTAL SHEET FLOW LENGTH:					150	
SHALLOW CONCENTRATED FLOW						
ID	SURFACE		START EL. (FT.)	END EL. (FT.)	LENGTH (FT.)	SLOPE (FT./FT.)
SCF4A	UNPAVED		340.5	330.0	81	0.130

UNIT	NAME	RATING
46B	WOODBRIDGE FINE SANDY LOAMS, 0-8% SLOPES, VERY STONY	C/D
47C	WOODBRIDGE FINE SANDY LOAMS, 3-15% SLOPES, EXTREMELY STONY	C/D
62D	CANTON & CHARLTON FINE SANDY LOAMS, 15-35% SLOPES, EXTREMELY STONY	B
84B	PAXTON & MONTAUK FINE SANDY LOAMS, 3-8% SLOPES	C
85C	PAXTON & MONTAUK FINE SANDY LOAMS, 8-15% SLOPES, VERY STONY	C

RATING	GROUND COVER	CN	AREA (S.F.)
-	BLDGS. / IMPERVIOUS	98	9,093
C	COMPACT GRAVEL (EST.)	92	2,325
C	OPEN DECK (EST.)	86	575
C	LAWN (GOOD)	74	46,031
C	WOODS (GOOD)	70	26,153
	TOTAL WATERSHED SUBAREA:		84,177
	WEIGHTED CN VALUE:		76

RATING	GROUND COVER	CN	AREA (S.F.)
-	BLDGS. / IMPERVIOUS	98	18,392
C	COMPACT GRAVEL (EST.)	92	1,017
C	OPEN DECK (EST.)	86	1,114
C	LAWN (GOOD)	74	76,515
B	WOODS (GOOD)	55	2,776
C	WOODS (GOOD)	70	336,735
D	WOODS (GOOD) (WETLANDS)	77	390
	TOTAL WATERSHED SUBAREA:		436,939
	WEIGHTED CN VALUE:		72

RATING	GROUND COVER	CN	AREA (S.F.)
-	BLDGS. / IMPERVIOUS	98	6,755
C	COMPACT GRAVEL (EST.)	92	596
C	LAWN (GOOD)	74	39,584
B	WOODS (GOOD)	55	30,364
C	WOODS (GOOD)	70	212,059
	TOTAL WATERSHED SUBAREA:		289,358
	WEIGHTED CN VALUE:		70

RATING	GROUND COVER	CN	AREA (S.F.)
C	WOODS (GOOD)	70	9,201
	TOTAL WATERSHED SUBAREA:		9,271
	WEIGHTED CN VALUE:		69

TOTAL WATERSHED AREA (AC.):	819,745

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REV.	DESCRIPTION OF REVISION	DATE	APPR.
1	TITLE BLOCK REVISED	11/13/2025	SMM

PRE-DEVELOPMENT DRAINAGE AREA MAP

23-LOT RESIDENTIAL RESUBDIVISION
PROPERTY ADDRESS:
47 SHARP HILL ROAD, MONTVILLE, CONNECTICUT 06382
PREPARED FOR:
MT KINEO BUILDERS, LLC
P.O. BOX 246, WEST MYSTIC, CT 06388

SCALE IN FEET: 50 25 0 50

PROJECT NO.: 2025-0197	SCALE: 1" = 50'
DRAWN BY: REG	DATE: 7/10/2025
CHECKED BY: SMM	DATE: 7/10/2025

DRAWING
FIGURE 2

SHEET NUMBER: 1 OF 1

Z:\SHARED\HH ENGINEERING ASSOCIATES\PROJECTS\2025\2025-0197 - MT KINEO BUILDERS - 47 SHARP HILL RD, MONTVILLE\DWGS\DRAINAGE\DRAINAGE MAP-EXISTING.DWG Tab: HH-24X36 Saved: 11/13/2025 10:33 PM Plotted: 11/13/2025 10:39 PM