# SOUTHWEST CONSERVATION DISTRICT

September 21, 2023

Cheryl Vallerie
Town of Monroe
Wetlands Enforcement officer
7 Fan Hill Road
Monroe, CT 06468

Re: Proposed Residential Development Recommendations
139, 141, & 201 Turkey Roost Road and 30 Cobblers Hill Court

Dear Agent Cheryl:

The Southwest Conservation District (SWCD) is pleased to provide technical assistance and recommendations regarding the proposed development at 139,141, & 201 Turkey Roost Road. As you are aware, the SWCD provides support for municipalities in our service area on a range of conservation matters.

The document has been broken down into several subsections for ease of reading and includes several attachments for visual representation of points of discussion through maps and photos. All visual references to attachments are ***italicized and bolded*** and photos are **bolded**. There are also references to various Monroe and CT DEEP Policies and Regulations; *excerpts of these are indented, in times new roman font and italicized*. Main points are further highlighted in yellow.

**Review of Proposed Development**

As part of our requested review of this proposal we reviewed several files that were submitted to the Town. These included:

- ❖ Town of Monroe Applications for Permit, Inland Wetlands Commission 2022 and 2023
- ❖ CT DEEP Statewide Inland Wetlands & Watercourses Reporting Form
- ❖ Wetland Assessment and Impact Evaluation including Soils report by Davison Environmental
- ❖ Site plan sets from Spath-Bjorklund Associates INC, 2022 and 2023
- ❖ Town of Monroe Inland Wetlands and Watercourses Regulations
- ❖ November 2022 Arcadis Opinion Letter

**Proposal Inconsistencies**

We found several inconsistencies within the proposed 2023 plan. This included:

- The number of detached dwellings (listed as 90 or 99)

- The amount of proposed linear feet of roadway (listed as 5570 or 5530)

- In site plans, the stormwater swale surrounding the development is labeled as a riprap swale with stone check dams, but details show a water quality swale, which utilizes riprap with loam that is seeded with appropriate vegetation.

- Parcel outlines differ throughout some maps and plans included in the application. For example, Parcels 141 Turkey Roost Road and 30 Cobblers Hill Court are sometimes included and sometimes not (p. 19, 70-17, 92-97, 105-107). Additionally, the shape of 30 Cobblers Hill Court changes.

Clarification of these details are important to the Commission's decision-making process. Specifically for the parcel boundaries, they are also required by Monroe's Inland Wetlands and Watercourses Regulations Section 7.5 g:

> *"Clear representation of the property boundaries, including survey dimensions/data for each property line and a notation referencing the source of the survey information."*

**CT DEEP Natural Diversity Database**

There is no CT DEEP NDDB determination letter included in the application. While there are inclusions for a safety plan during construction for the Eastern Box Turtle, there should be a NDDB determination letter to ensure no other rare species are on the site. NDDB mapping shows that the majority of the site is potential rare species habitat and is centered around one of the wetland areas. See ***Attachment A***. This determination letter was likely required for the CT DEEP approval of the wastewater treatment system. If one has not been acquired for this project, one should be requested. There is also an option to utilize DEEP's ezFile Portal to complete the request digitally.

**Wastewater Treatment System**

We commend the willingness of the developer to utilize an onsite wastewater treatment system. However, the proposal says that an active approval from CT DEEP is for a system with an average daily flow of 20,050 gal/day, while the site's anticipated daily flow is ~40,000 gal/day. It is also stated that additional leaching areas that would handle

approximately 28,000 more gal/day have been identified. Have these potential additional leaching areas been considered by DEEP yet?

Also note, the Town of Monroe should enter an agreement with the developer for a bond or escrow account to make any repairs or improvements to the community wastewater treatment system in the future. This would protect the municipality from being on the hook for making repairs after the developer has moved on and left the system to operate on its own. This type of agreement is permitted and described in CT General Statutes 7-245.

It is also important that stormwater on the site should not be directed via surface flows to the areas of leaching fields as this will cause the system to fail. The current proposal appears to direct all stormwater away from the leaching fields.

**Proposed Stormwater Infrastructure**

Stormwater runoff is a primary source of nonpoint source pollution and can negatively impact nearby wetlands and waterbodies. Ensuring that stormwater is effectively treated is critical to water quality and biological life in wetlands.

Much of the stormwater infrastructure includes large amounts of riprap. While the use of riprap certainly has its place in stormwater infrastructure as it provides stabilization, it does not provide any kind of stormwater treatment. The use of Low Impact Designs (LID) provides stormwater treatment and is being added to many state regulations. CT DEEP will be finalizing the updated Stormwater Quality Manual and Soil Erosion and Sediment Control Guidelines soon. See https://portal.ct.gov/DEEP/Water/Stormwater-Quality-Manual-and-Soil-Erosion-and-Sediment-Control-Guidelines for draft documents. By the time this construction project starts, this manual will likely be enacted by CT DEEP, so it is best to refer to it now.

We recommend incorporating bioretention (**Photo 2**) and/or tree box filters (**Photos 1 & 3**) instead of just planting beds. Appropriate areas for implementation are along the sidewalk & road and islands in the street. This would increase the site's infiltration and lessen the peak flows to the riprap swales and infiltration loads on the stormwater ponds. These tree box systems can be connected to an underdrain system or be used as standalone infiltration systems. Also, an important component to these systems is a specific bioretention soil media mix that is comprised of 60–85% Sand, 15–25% Topsoil, and 3–8% Organic Matter (either sphagnum peat or wood derivatives) that helps with infiltration & filtration. Refer to the CT SWQM 2023 DRAFT (pages 303-320 and 321-335) for in-depth information.

We recommend the addition of pretreatment BMPs, such as Deep Sump Hooded Catch Basins (**Photo 4**), Oil Grit Separators (**Photo 5**), and Proprietary Pretreatment Devices (**Photo 6**) in place of traditional catch basins. Pretreatment BMPs remove additional pollutants, such as sediment, oil, debris, nutrients, and bacteria, before stormwater is directed to the stormwater ponds. Refer to the CT SWQM 2023 DRAFT (pages 243-254) for in-depth information.

Instead of stormwater runoff from each unit going to a riprap pad or into the stormwater drainage system, the use of rain barrels (**Photo 7**) or cisterns could be utilized. The use of this BMP would lessen the load on the current stormwater system and could also provide residents with a way to reuse water for their landscapes and cut down on potential irrigation costs. The included Aquarian Water Company confirmation letter stated they did not factor irrigation demands into their evaluation. The calculations for the development's water usage would need to be recalculated to include irrigation. Also, in place of riprap pads, small bioretention beds could be installed.

Replacing all or portions of the riprap swale with wet water quality swales (**Photo 8**), used in areas with high water tables, or dry water quality swales (**Photo 9**), used in areas with amended soils, could increase the effectiveness and long-term sustainability of the site's stormwater management system. The addition of vegetation would provide treatment and infiltration instead of just conveyance of stormwater. Additionally, it would be more aesthetically pleasing and create more diverse habitats on the site. The proposed plan details do show a schematic for a water quality swale. This is preferable over a riprap only swale. Refer to the CT SWQM 2023 DRAFT (pages 389-412) for in-depth information.

Please note that appropriate maintenance and upkeep of all stormwater BMPs are necessary to maintain water quality benefits and ensure the health of wetlands and nearby waterbodies.

**Proposed Alternatives**

We are glad to see two alternative site plans included with this application. However, it is questionable whether they would be considered "feasible". The previous, now expired, Monroe Planning & Zoning Commission approval stated it was contingent upon "no more than 90 dwelling units, all of which shall we detached". Since the two alternative site plans would likely not be approved by that commission due to the inclusion of apartment buildings, it is unreasonable to include them as "feasible" alternatives. The alternative site plans would be better exercised with changing locations of the entry roadway and/or the wastewater treatment system to areas further from the site's wetlands.

**Proposed Planting Plans**

We approve of the proposed landscape plans which include a good diversity of many native plant species. Most of the included non-native species offer values such as supplemental bloom time for pollinators and suitability for high stress/urban areas, ensuring a stabilized habitat for wildlife.

Additionally, some of the chosen species, such as Flowering Dogwood (*Cornus florida*), Eastern Redbud (*Cercis canadensis*), and Serviceberry (*Amelanchier arborea*) are known species that can handle being used in the previously mentioned tree box filter systems. Some additional appropriate species are Freeman Maple (*Acer x freemanii*), Ginkgo (*Ginkgo biloba*), Scotch Pine (*Pinus sylvestris*), Chokecherry (*Prunus virginiana*), Black Chokeberry (*Aronia melanocarpa*), Smooth Sumac (*Rhus glabra*), and Staghorn Sumac (*Rhus typhina*). These species can tolerate the specific soil media mix and conditions of the tree box filter systems.

Also, in some areas, turfgrass lawn could be enhanced or replaced with more pollinator friendly species; Pennsylvania sedge (*Carex pensylvanica*) is good for shady areas while wild strawberry (*Fragaria virginiana*) is good for sunnier spaces and white clover (*Trifolium repens*) is appropriate in both sunny & shady locations. Not only do these alternatives diversify lawn areas, but usually require less frequent mowing and do not need added fertilizer or watering to remain green all season. Having diversified lawn areas could minimize the need for the installation of irrigation systems.

**Invasive Management Plan**

While the Davison Environmental Wetland Assessment and Impact Evaluation that was submitted with the application recommended an Invasive Species Control Plan with appropriate disposal, no actual plan is included with the application. We agree with Davison Environmental's recommendation to create one. We further agree with their recommended construction sequence for establishing well-vegetated stormwater basins.

**Conclusions**

Some clarifications of the proposal are necessary to get a better sense of the project and its potential impacts on nearby wetlands and waterbodies. Additionally, we recommend incorporating more green infrastructure into the stormwater management system to increase the site's infiltration and treatment of stormwater runoff. This is essential to ensure stormwater leaving the site will not negatively impact the wetlands and nearby waterbodies. We also recommend the inclusion of an invasive plant species management plan, an NDDB determination letter, more information about the wastewater treatment system and more thoughtful site alternative plans.

Due to our small bandwidth and other pressing deadlines, SWCD's review of this proposal could have been more in depth. Lack of comment on particular aspects of the proposal shouldn't be translated as our approval or agreement. We have tried to provide input on aspects that jumped out to us as pertinent for helping the Commission in their decision-making process.

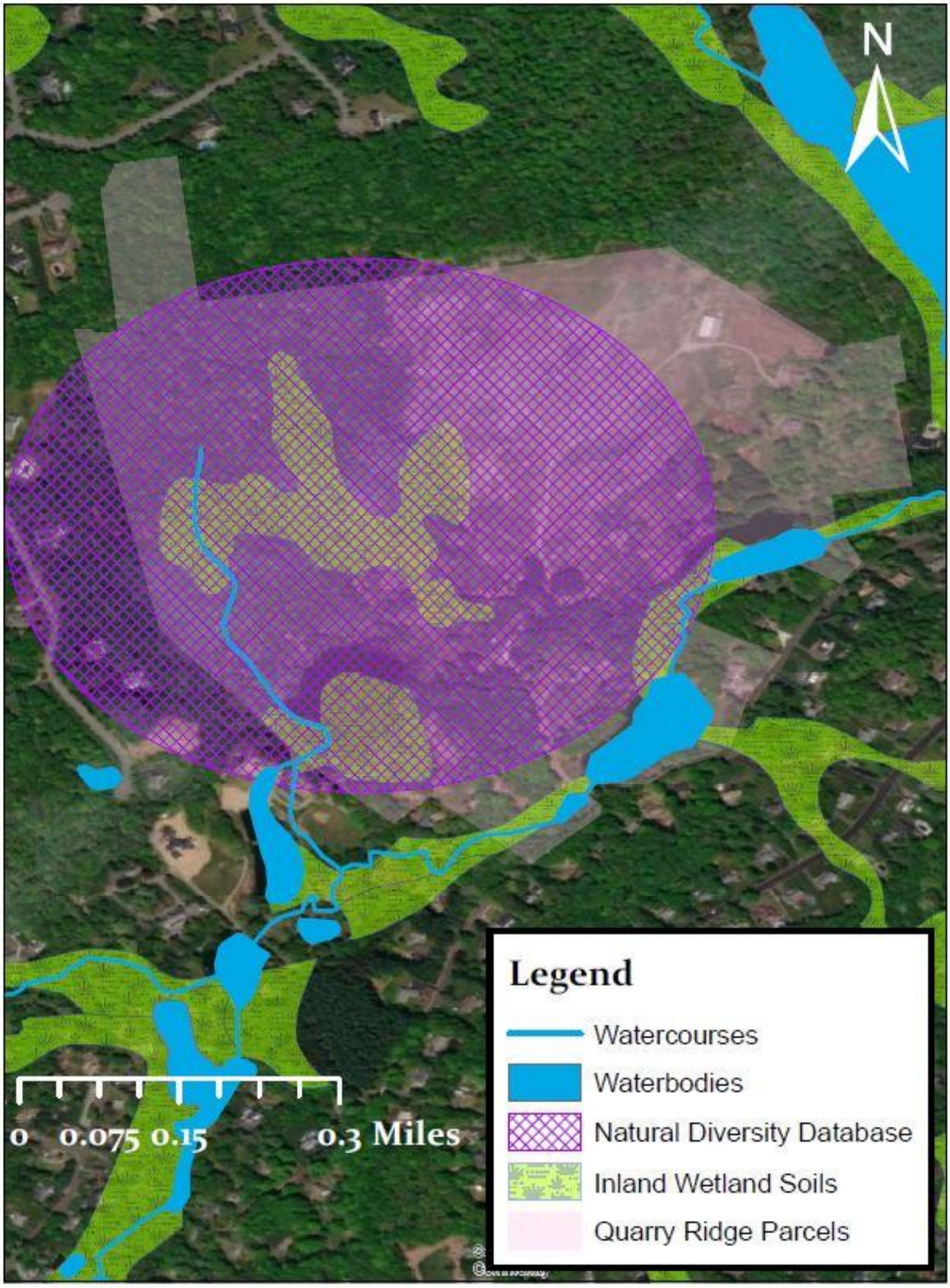
Sincerely,

Chris Sullivan
Executive Director

Courtney Gilligan
Natural Resource Specialist

# Attachment A

Site NDDB Map


N
Legend
Watercourses
Waterbodies
Natural Diversity Database
Inland Wetland Soils
Quarry Ridge Parcels
0 0.075 0.15 0.3 Miles

# Attachment B

Green Infrastructure Examples

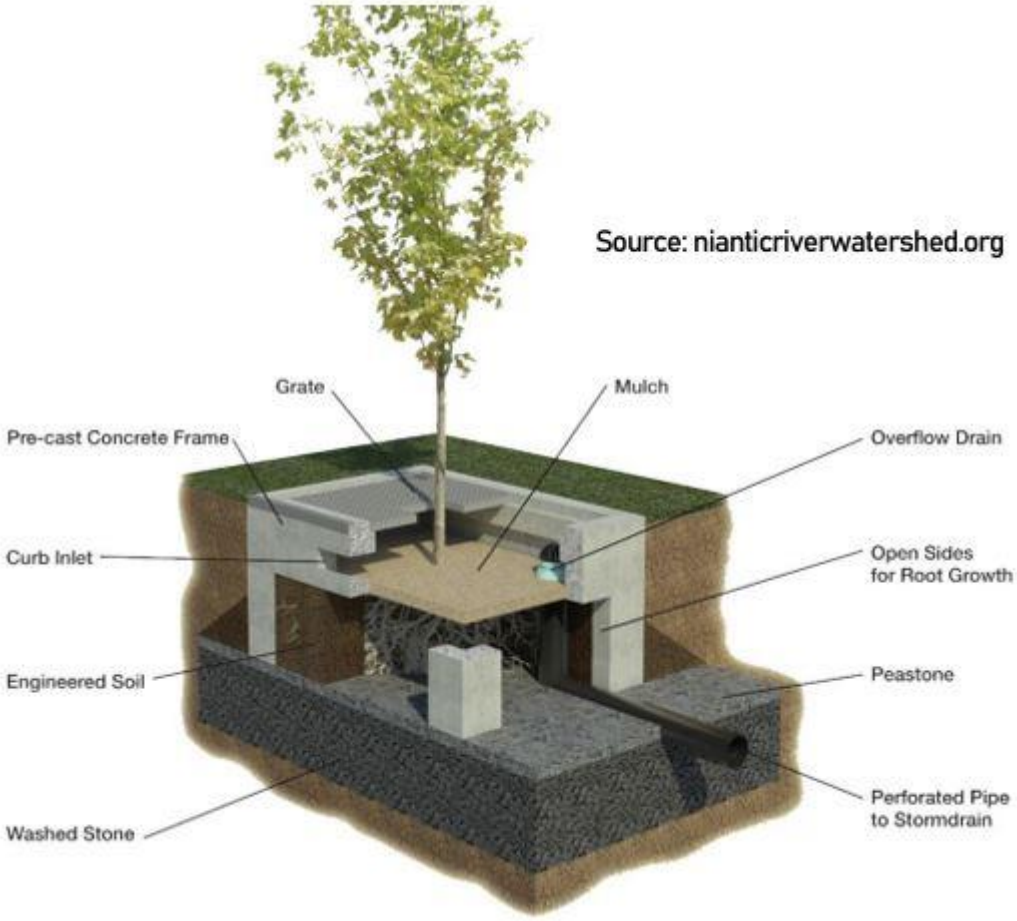



**Photo 1.** Example of a Tree Filter from the CT Stormwater Quality Manual

**Roadside bioswale in urban residential setting.**

**Bioretention planter in urban downtown setting.**

**Photo 2.** Examples of Bioretention from the CT Stormwater Quality Manual.

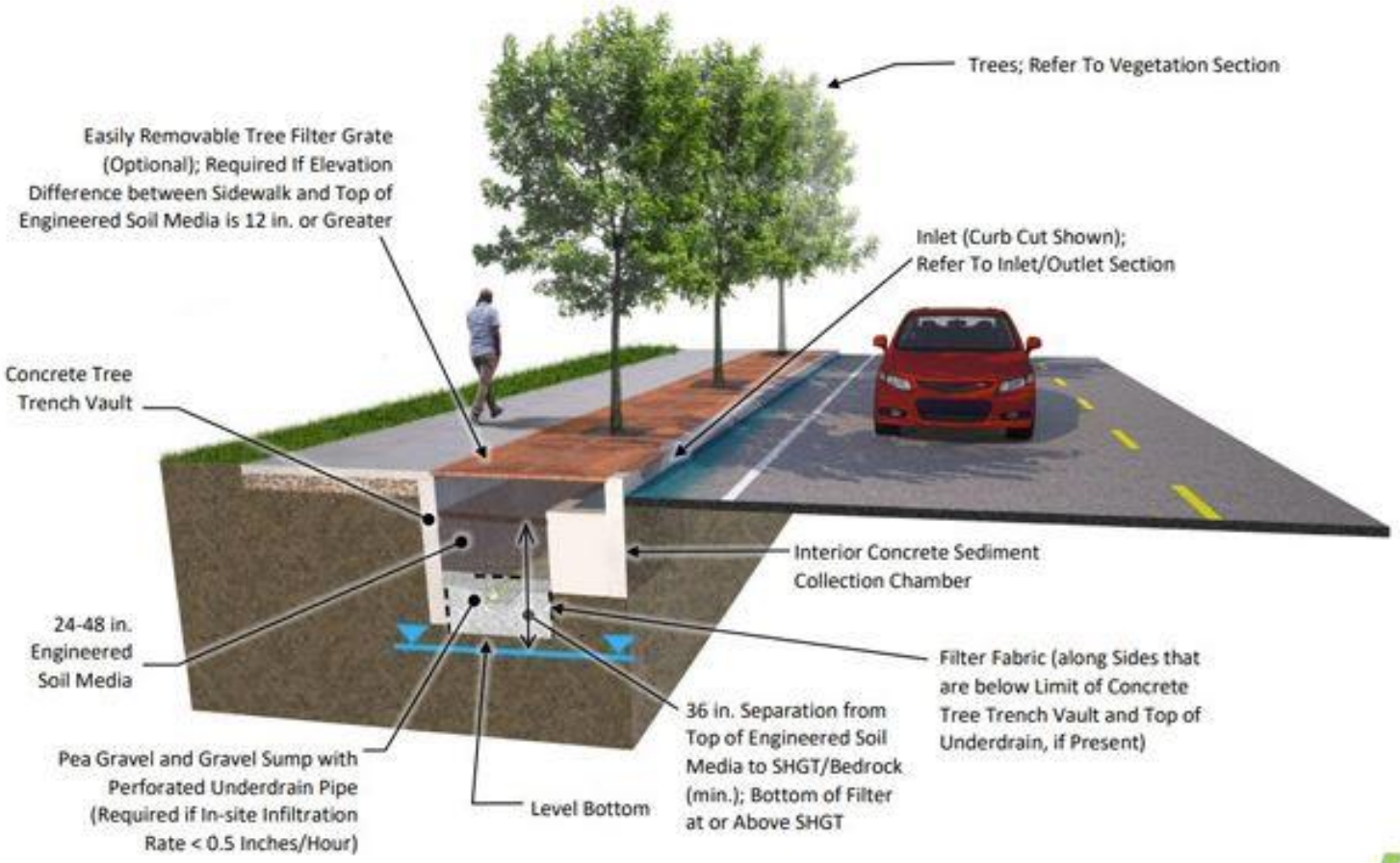
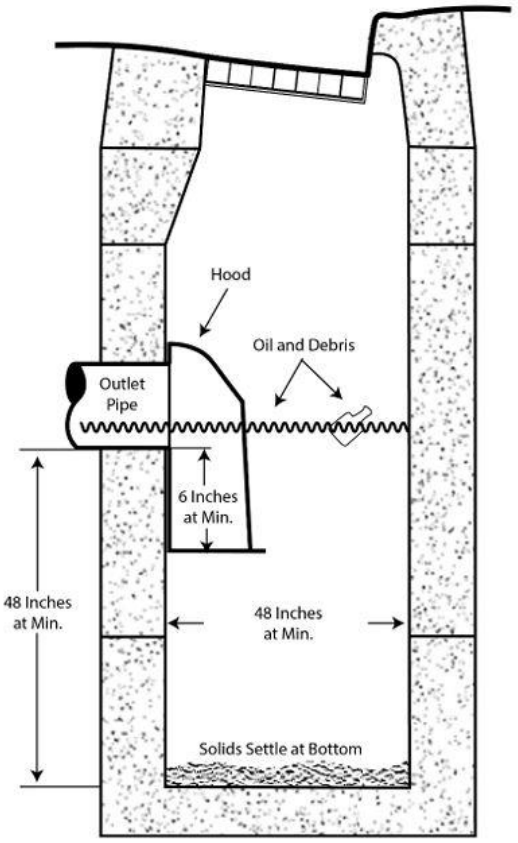
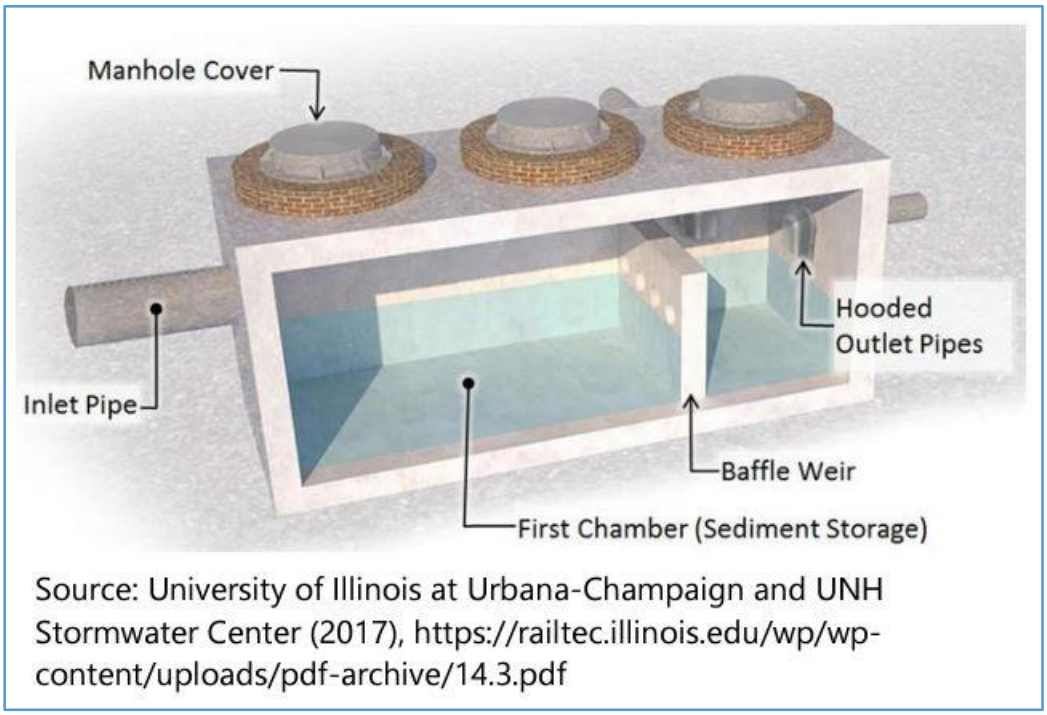



**Photo 3.** Examples of a multiple Tree Filter from the CT Stormwater Quality Manual.




Source: Adapted from https://upstreamtechnologies.us/docs/snout-design.pdf

**Photo 4.** Example of a Deep Sump Hooded Catch Basin from the CT Stormwater Quality Manual




Source: University of Illinois at Urbana-Champaign and UNH Stormwater Center (2017), https://railtec.illinois.edu/wp/wp-content/uploads/pdf-archive/14.3.pdf

**Photo 5.** Example of an Oil Grit Separator from the CT Stormwater Quality Manual

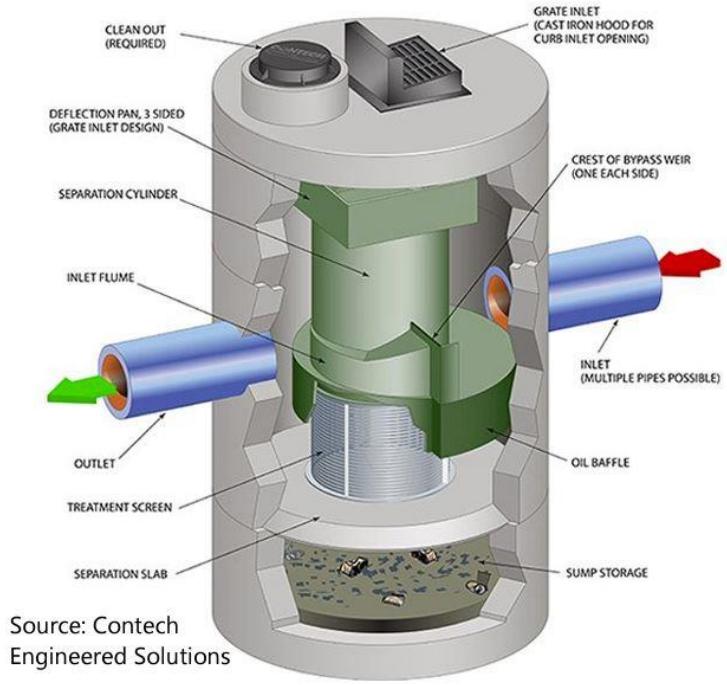



**Photo 6.** Example of a Proprietary Pretreatment Device from the CT Stormwater Quality Manual

**Photo 7.** Example of a Rain Barrel from the CT Stormwater Quality Manual

**Photo 8.** Example of a Wet Water Quality Swale from the CT Stormwater Quality Manual


**Photo 9.** Example of a Dry Water Quality Swale from the CT Stormwater Quality Manual