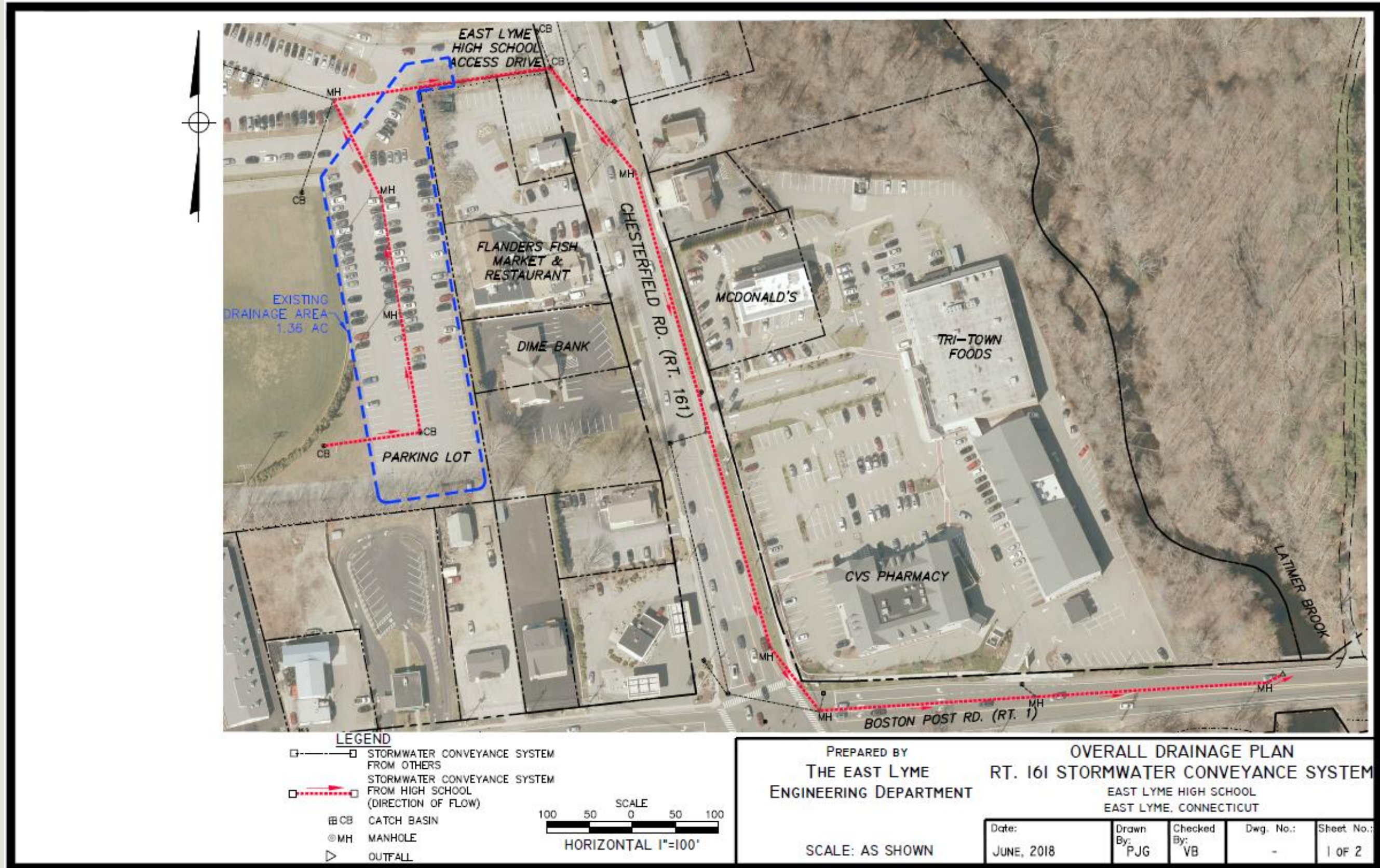




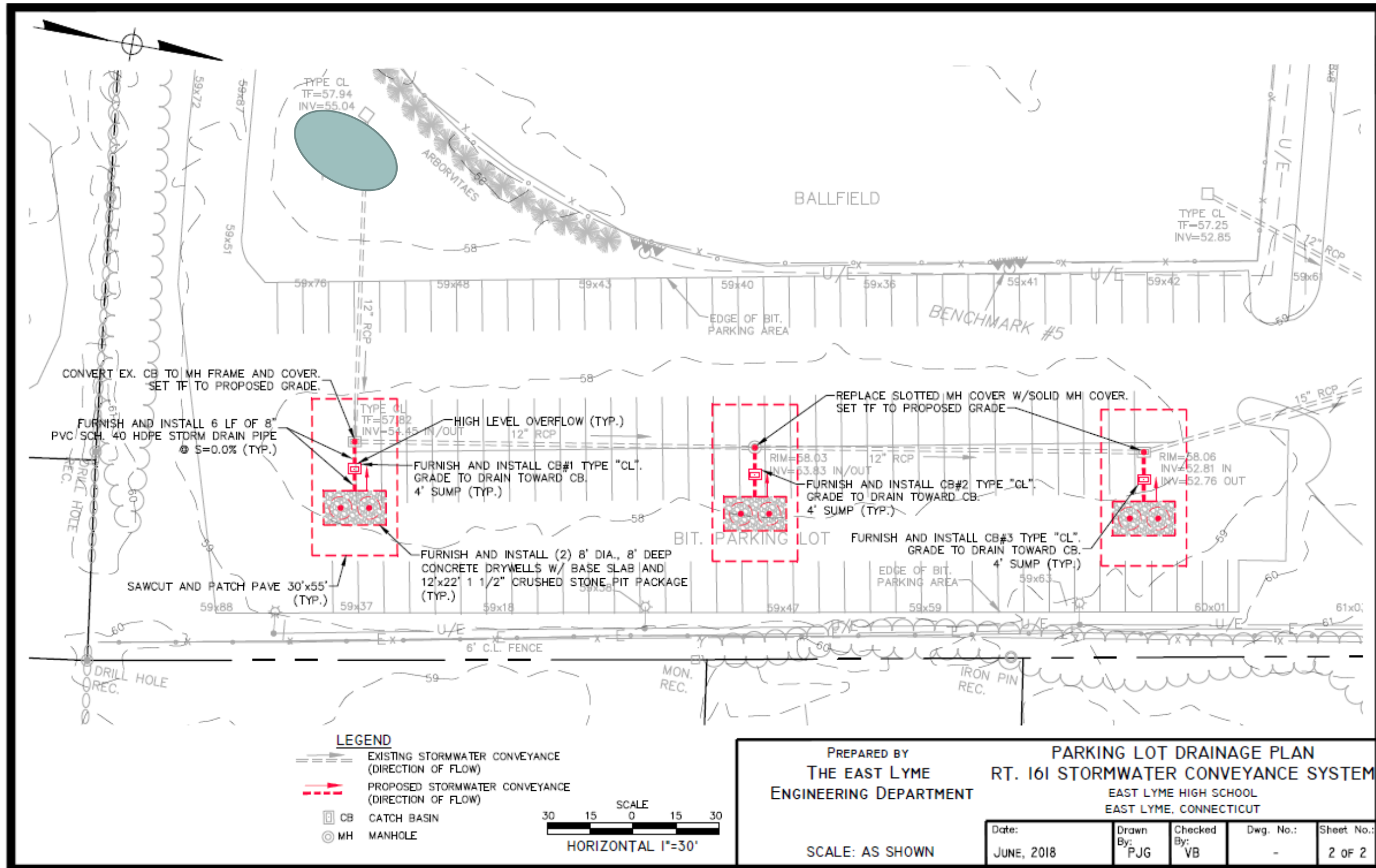
**East Lyme High School
Stormwater Infiltration
Project August 2019**

**Judy Rondeau
Eastern CT Conservation District**

The Problem -



The Solution -



The Rain Garden



Funded by a grant from the Dominion Energy Charitable Foundation Environmental Stewardship Grant Program.

Digging a BIG Hole



Prepping the Rain Garden



Planting the Rain Garden - July 2018



The intrepid Millstone Environmental
Stewardship Team

Planting the Rain Garden - July 2018



TI
stewardship team

Planting the Rain Garden - July 2018



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Planting the Rain Garden - July 2018



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Planting the Rain Garden - July 2018



Planting the Rain Garden - July 2018



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Planting the Rain Garden - July 2018



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September 2018



Outdoor Classroom – November 2018



Mrs. ~~Vaudreuil~~ Third Gr Class Rain Garden Presentation

8 November 2018

Outline

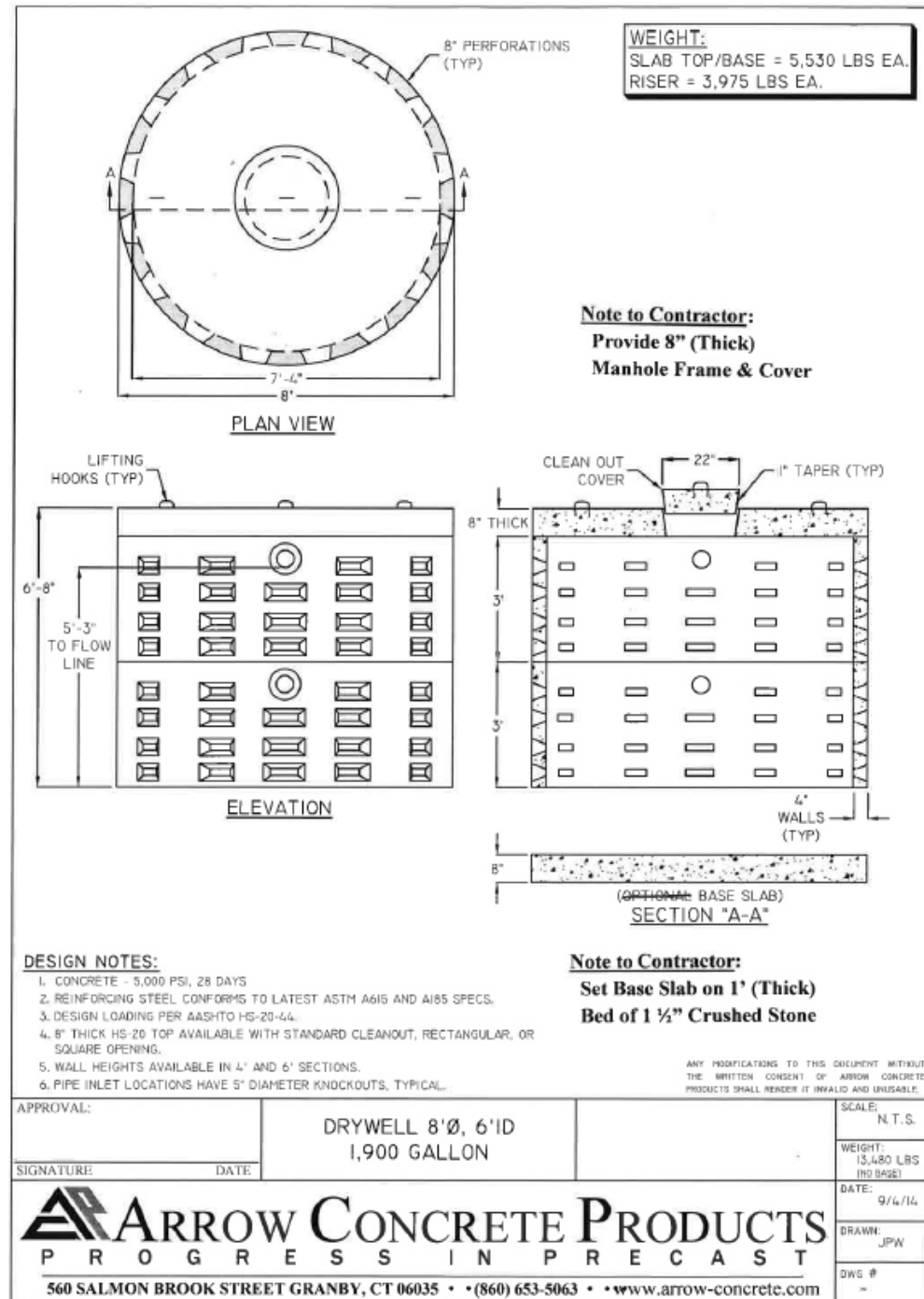
1. Welcome to the rain garden
2. Who I am; what NRWC is
3. What is a rain garden?
4. Why did we put a rain garden here?
5. ~~Storm~~rain connection to Latimer Brook & Niantic River
6. Water quality – how we use Niantic River
7. What is NPS; why is it bad; where does it come from?
8. Fish-in-the-Classroom program connection to Latimer Brook and the rain garden
9. Rain garden as a garden
10. Soil biome/organisms
11. Native plants – what are native plants; why we used them
12. Rain garden as habitat
13. What kind of animals might use the rain garden and why?
14. Pollinators
15. Citizen Ornithology – how might birds use the garden?

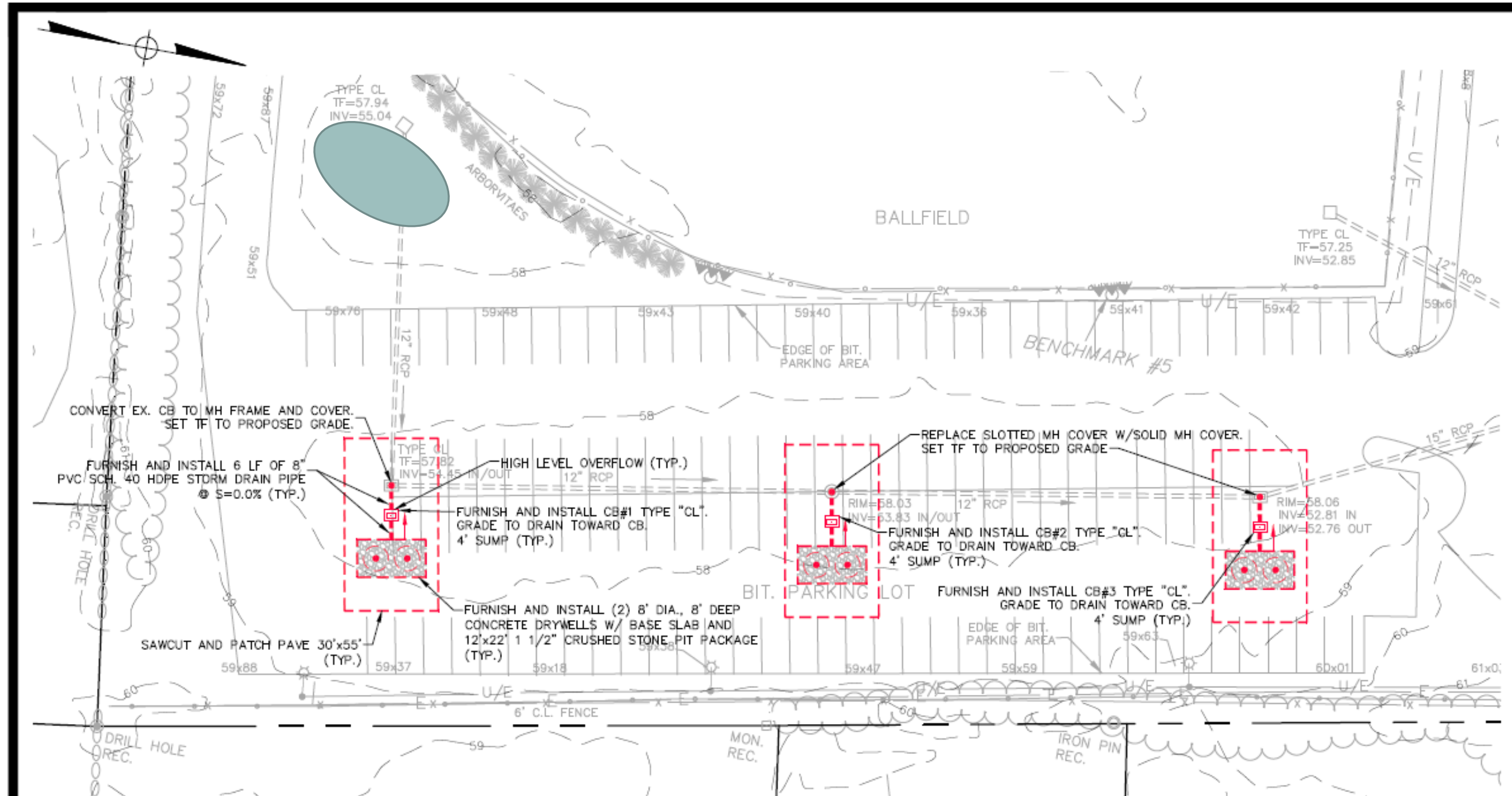
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Stormwater Infiltration Practice – August 2019



Precast concrete drywells





LEGEND

- EXISTING STORMWATER CONVEYANCE (DIRECTION OF FLOW)
- PROPOSED STORMWATER CONVEYANCE (DIRECTION OF FLOW)
- CB CATCH BASIN
- MH MANHOLE

SCALE

 HORIZONTAL 1"=30'

| | | | | | | |
|---|--|---|------------------|-------------------|----------------|----------------------|
| PREPARED BY THE EAST LYME ENGINEERING DEPARTMENT | | PARKING LOT DRAINAGE PLAN RT. 161 STORMWATER CONVEYANCE SYSTEM EAST LYME HIGH SCHOOL EAST LYME, CONNECTICUT | | | | |
| SCALE: AS SHOWN | | Date: JUNE, 2018 | Drawn By: PJG | Checked By: VB | Dwg. No.: - | Sheet No.: 2 OF 2 |

The site was checked for underground utilities, then sawcut.

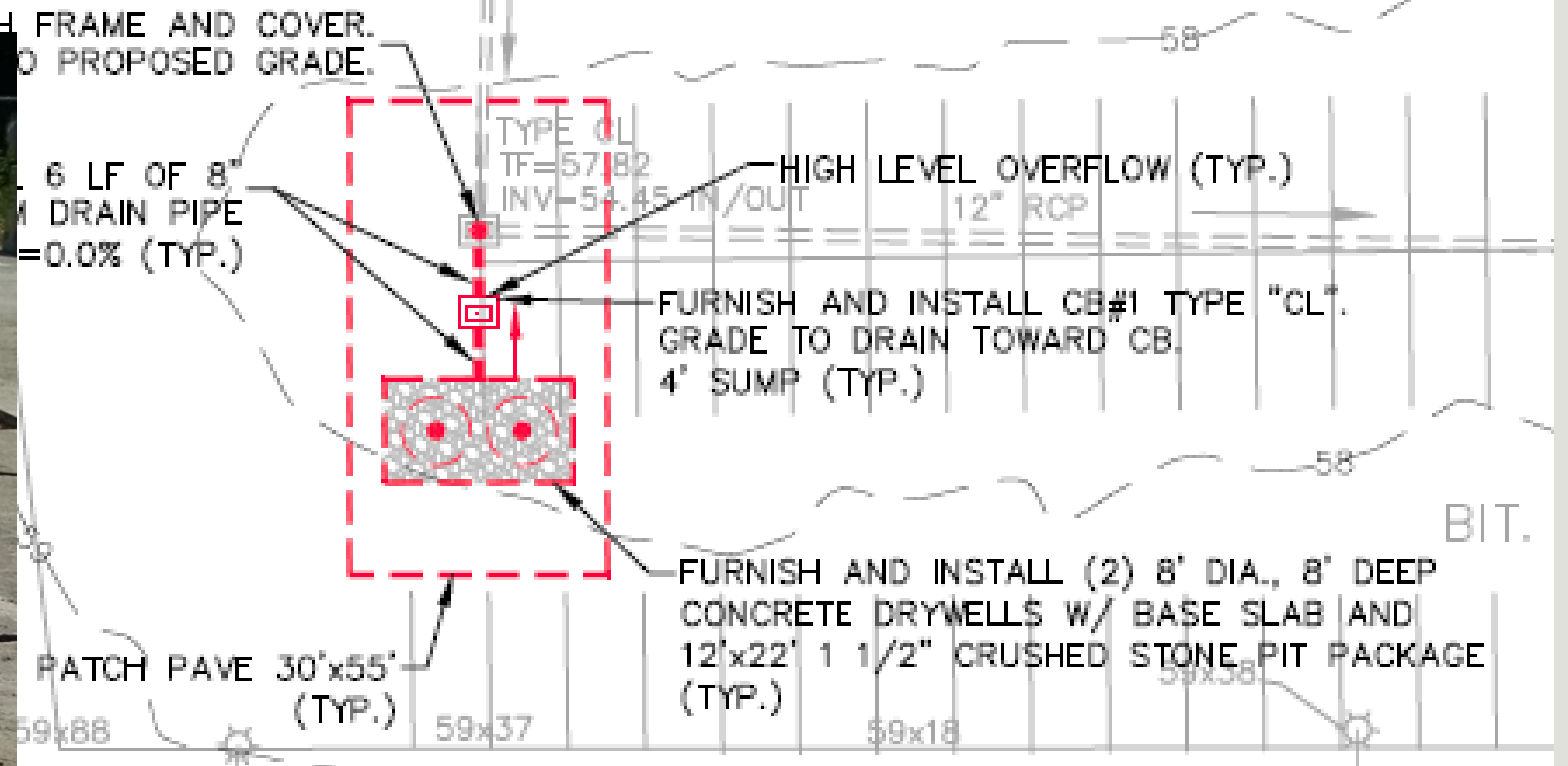




The old catch basin was converted to a manhole and a new cb was installed.



CONVERT EX. CB TO MH FRAME AND COVER.



A hole was excavated for the drywells.



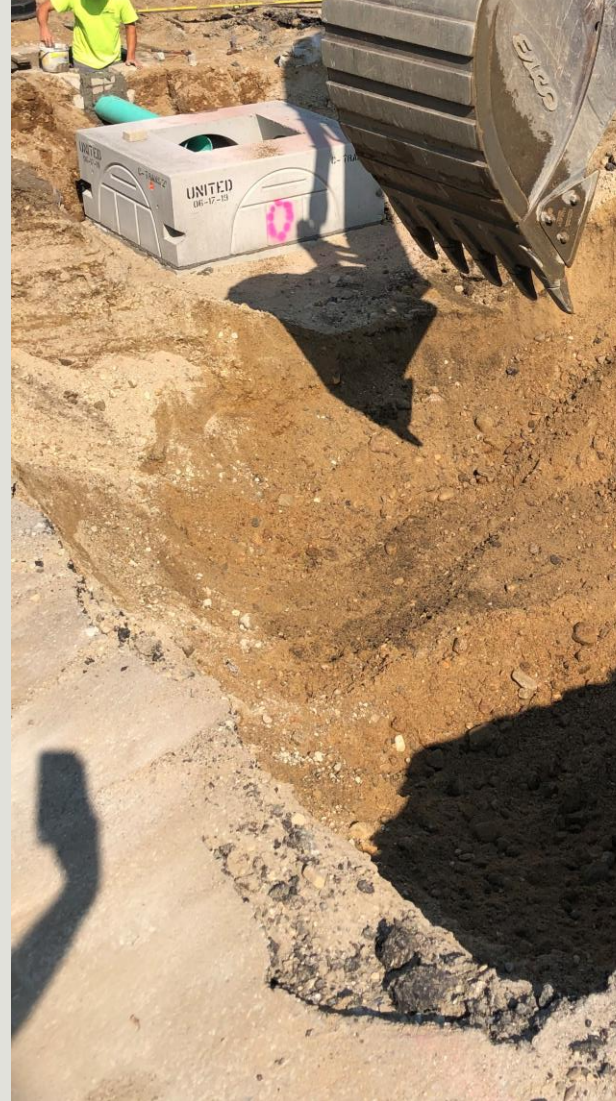
A ho

ells.



The drywells were installed.

A hole was excavated for the drywells.



were

installed.

The pit was backfilled with approx. 72 in. of crushed stone



The drywell tops and manhole risers have been put in place. The pipe connecting the catch basin to the drywells has been installed.

The site is backfilled and compacted



Finally, each site is paved and striped



Finally, each site is paved and striped



Finally, each site is paved and striped



Stormwater Treatment – approximately 934,000 gallons of stormwater runoff/ year

**TOWN OF EAST LYME
PUBLIC WORKS DEPARTMENT**

6/14/2019



East Lyme Parking Lot Infiltration System

Water Quality Volume - Required (Per 2004 CT Stormwater Quality Manual)

$$\begin{aligned} \text{WQV (Required)} &= 1''(R)(A)/12 \\ &= 1''(0.779)(1.36)/12 \\ &= 0.088 \text{ Acre-Feet} \\ &= 3846 \text{ Cubic Feet (CF)} \end{aligned}$$

R = Runoff Coefficient (0.05 + 0.009(I)) R = 0.779
A = Area A = 1.36 Acres
I = Impervious Coverage (82%) I = 81 %

Volume of Drywells

Concrete Drywell Dimensions 8" Diameter, 6' Inside Depth (1900 Gallons)
Concrete Drywell Base Slab 8" Thick Slab

$$\text{Drywell Volume} = 1900 \text{ Gallons} / 7.48 \text{ gal/cf} = 254 \text{ cf/drywell}$$

$$\begin{aligned} \text{Total Volume (Drywells)} &= 254 \text{ cf/ drywell} \times 2 \text{ drywells/pit} \times 3 \text{ pits} \\ &= 1524 \text{ cf (3 Pits with 2 Drywells per Pit)} \end{aligned}$$



Volume of Stone

$$\begin{aligned} \text{Drywell Pit Dimensions} &= 15' \text{ Wide} \times 22' \text{ Long} \times 7.67' \text{ Deep} = 2531 \text{ cf/pit} \\ \text{Drywell Pit Volume} &= 2531 \text{ cf/pit} \times 3 \text{ pits} = 7593 \text{ cf} \\ \text{Stone Volume} &= 7593 \text{ cf (Pit)} - 1524 \text{ cf (Drywells)} - 202 \text{ cf (Base Slabs)} = 5867 \text{ cf} \\ &= (5867 \text{ cf} \times 165 \text{ lb/cf}) / 2000 \text{ lb/ton} \\ &= 484 \text{ ton (Say 500 Ton to top Drywells)} \end{aligned}$$

Water Quality Volume - Provided

$$\begin{aligned} \text{Stone Volume} &= 5867 \text{ cf (Stone)} \times 0.4 \text{ (\% Voids)} \\ &= 2347 \text{ cf} \\ \text{Drywell Volume} &= 1524 \text{ cf} \\ \text{WQV (Provided)} &= 2347 \text{ cf} + 1524 \text{ cf} \\ &= 3871 \text{ cf} \end{aligned}$$

WQV (Provided) 3871 cf > WQV (Required) 3846 cf

The End!



This project was funded in part by CT DEEP through a Clean Water Act §319 NPS program grant and a donation from the East Lyme Board of Education, with significant in-kind assistance from the East Lyme Department of Public Works.