# DRAINAGE & STORMWATER MANAGEMENT REPORT

# Town Boat Launch Improvements And Fishing Pier Construction

**55 Dock Road**
**Uncasville, Connecticut 06382**

**Prepared For:**
**Town of Montville**
**310 Norwich-New London Turnpike**
**Uncasville, Connecticut 06382**

**October 21, 2022**


Prepared By:
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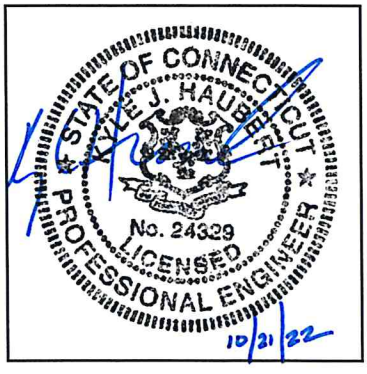


Kyle Haubert, P.E.

October 21, 2022

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Town of Montville
Town Boat Launch Improvements and Fishing Pier Construction
55 Dock Road
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## 1.0 Narrative

The Montville Town boat launch site is located at the eastern end of Dock Road in Uncasville, Connecticut, on the western bank of the Thames River. The proposed project includes the reconstruction of the Town of Montville boat launch, improvements to the existing parking and site, and the construction of a new fishing pier at the property. The location of the site in reference to the USGS Quad Map is attached as Figure 1, and in relation to the 2019 Connecticut Aerial imagery as Figure 2.

Existing Conditions

The existing site and work area is approximately 0.8 acres bordering industrial development and the Thames River. Much of the site is covered with either compacted imported gravel, asphalt millings, or bituminous pavement that limits the growth of vegetation, therefore the soils here are classified as (306) Udorthents/Urban land complex by the NRCS. The total impervious surface within the work area amount to 0.32 acres. The topography of the site is gently sloping and stormwater runoff flows eastward into the Thames River via sheet flow. An aerial view of the existing site and surrounding area is attached as Figure 2.

Proposed Development

The proposed site development includes the replacement of the existing boat launch with a new precast concrete boat launch in the same location. The parking area will be reconfigured and repaved to accommodate new passenger vehicle and trailer parking and a sidewalk access to the boat launch. A retaining wall will be constructed at the westerly limits of the project to allow for the trailer parking spaces and retain the vegetated embankment. The total proposed impervious surface within the work area amountS to 0.38 acres. The proposed site grading has been designed to match the existing drainage patterns as closely as possible. Stormwater runoff will continue to flow via sheet flow easterly toward the Thames River. The site grading is depicted on the site plans.

Stormwater detention for the site was not considered to mitigate the increase in impervious area due to the proximity to the Thames River and the location at the lower reach of the watershed. At this location the Thames River watershed is approximately 921,600 acres (1,440 square miles). In our opinion the 0.06 acre increase in the impervious area onsite, directly adjacent to the river is negligible and will have no negative impact on the Thames River. As a low impact development measure to improve the stormwater quality entering the river and to mitigate the additional impervious area included in the proposed development stormwater runoff from the parking area will be directed to a water quality basin that will over flow to the river. The water quality basin sizing is included in Section 2.0 of this report. A post development watershed map is included as Figure 3.

## 2.0 Stormwater Quality

To meet the Connecticut DEEP stormwater quality requirements and Town MS4 requirements a water quality basin has been designed for the site in accordance with the 2004 Connecticut Stormwater Quality Manual to treat the proposed stormwater runoff.

Stormwater from the impervious parking area and a portion of the sidewalk will flow via sheet flow to the water quality basin. The water quality basin will be vegetated with salt tolerant seed mix. The water quality basin has been sized to exceed the minimum volume required in accordance with the DEEP Stormwater Quality Manual. The storage provided is located below the high level overflow.

| **Water Quality Basin Sizing** | | |
|---|---|---|
| Sizing in Accordance with Chapter 7.4 of the DEP 2004 Storm Water Quality Manual<br>Water Quality Volume (WQV) = (1")(R)(A) / 12<br>R = 0.05 + 0.009(I)<br>I = percent of impervious cover<br>A = watershed area | | |
| Total Watershed Area (Ac.) : | 0.35 | |
| Watershed Impervious Area (Ac.) : | 0.26 | |
| I = | 74.3% | |
| R = | 0.719 | |
| Required WQV = | 0.021 | Ac.-Ft |
| | 913 | CF |
| **WQV Provided (Below High Level Overflow) :** | **1,260** | CF |

## 3.0 Groundwater Recharge

The required groundwater recharge volume for the site will be provided within the water quality basin as follows:

Per DEP 2004 Storm Water Quality Manual:
*Hydrologic Soil Group Approach*
Required Ground Water Recharge Volume (GRV) = (D)(A)(I) / 12

GRV = groundwater recharge volume (ac-ft)
D = depth of runoff to be recharged (in.) (table 7.4 of the manual)
A = site area (acres)
I = post-development site imperviousness (decimal)

A (total): 0.60 ac. Entire work area
A (impervious): 0.38 ac. Within the work area

I = 0.38 ac. / 0.60 ac. = 0.63

NRCS Soil Group "B": D = 0.25 in. (from table 7-4)

GRV = (0.25 in)(0.60 ac.)(0.63) / 12 = 0.008 ac-ft = 348 cf (required)

Provided: 1,260 cf of storage is provided in the water quality basin below the high level overflow

## 4.0 Stormwater Management

**During Construction**

The stormwater pollution prevention plan and all erosion and sedimentation control measures have been designed in accordance with the 2002 Connecticut Guidelines for Soil Erosion and Sedimentation Control.

The location of temporary erosion and sedimentation control measures for the proposed development are included in the site improvement plan set. Construction details and an erosion and sedimentation control narrative are also included in the plan set. The narrative and construction details outline the requirements for stabilization of disturbed areas, slope stabilization requirements, and maintenance requirements.

Stormwater Management & Pollution Prevention:

Provisions for stormwater management and pollution prevention are outlined on the plans and are as follows:

1. Pollution Prevention Team:
   The Contractor shall be responsible for carrying out the provisions of the plan.
2. Sweeping:
   Impervious surfaces beyond the work site shall be swept clean of sand, silt, and litter daily at the end of the work day.
3. Outside Storage:
   Accessories or equipment stored outside shall be covered or maintained to minimize the possibility of these materials or their residue passing to stormwater.
4. Washing:
   No washing of vehicles, accessories, equipment, or appliances in the work site.
5. Maintenance and Inspection:
   a. The Contractor shall inspect, repair, and/or replace erosion control measures every 7 days and immediately following any significant rainfall or snow melt.
   b. Sediment deposits must be removed when deposits reach approximately one-half the height of the barrier.
   c. Daily dust control using water or approved equal shall be provided for all earth stockpiles, earth piled along excavations, surfaces of backfilled trenches and gravel surfaces.
6. Fueling of vehicles or equipment
   a. Refueling of vehicles and equipment shall take place within the work area and shall be done a minimum of 100-feet upgrade of the edge of river.
   b. Refueling shall be done over a temporary portable spill containment berm.

7. Spills or Accidental Discharges:
    a. Comply with State and Federal regulations to contain and clean up any spill or discharge and dispose of materials at an approved facility.
    b. Contact Connecticut DEEP oil and chemical spill response division 860-424-3338.
    c. The following steps should be performed as soon as possible
        - Stop the source of the spill
        - Contain the spill
        - Cover the spill with absorbent material such as kitty litter, saw dust, or oil absorbent pads. Do not use straw.
        - Dispose of absorber in accordance with Local and State regulations.

**Post Construction**

Stormwater Management & Pollution Prevention:

Provisions for stormwater management and pollution prevention are outlined on the plans and are as follows:

1. Pollution Prevention Team:
   The Town of Montville shall be responsible for carrying out the provisions of the plan.
2. Sweeping:
   Parking lots, sidewalks, and other impervious surfaces shall be swept clean of sand and litter and any other pollutants at least twice per year
    a. Between November 15th and December 15th (after leaf fall)
    b. During April (after snow melt)
3. Maintenance and Inspection:
   Inspect and maintain the water quality basin in accordance with the Operation and Maintenance schedule
    a. Inspect for invasive species, undercut areas, or erosion annually.
    b. Monitor sediment accumulation annually.
    c. Remove debris and mow the basin semi-annually.

## 5.0 Operations and Maintenance Schedule

The following is a general operations and maintenance schedule for the stormwater infrastructure and project site.

| Maintenance Schedule for Water Quality Basin | |
|---|---|
| Activity | Schedule |
| • For the basin and side slopes, inspect for invasive vegetation. | Annual inspection |
| • Inspect for damage, undercut, or eroded area<br>• Monitor for sediment accumulation | Annual inspection |
| • Repair undercut or eroded areas. | As needed maintenance |
| • Inspect and clean debris in the basin<br>• Clean and remove debris from the level spreader outlet<br>• Mow side slopes and basin bottom | Semi-annual |

| Maintenance Schedule for Parking Areas | |
|---|---|
| Activity | Schedule |
| • Sweep parking lots & impervious areas | • Between November 15th and December 15th (after leaf fall)<br>• During April (after snow melt) |
| • Remove and dispose of trash and debris onsite | As needed maintenance |

# FIGURES



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## *LOCATION MAP*

*Town of Montville*
*Town Boat Launch Improvements*
*and Fishing Pier Construction*
*Uncasville Quad (#87)*

*DATE: Oct. 21, 2022*
*SCALE: 1 in = 2,000 ft*
*SOURCE: USGS Quad*

N

**FIGURE**

1


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## *AERIAL LOCATION MAP*

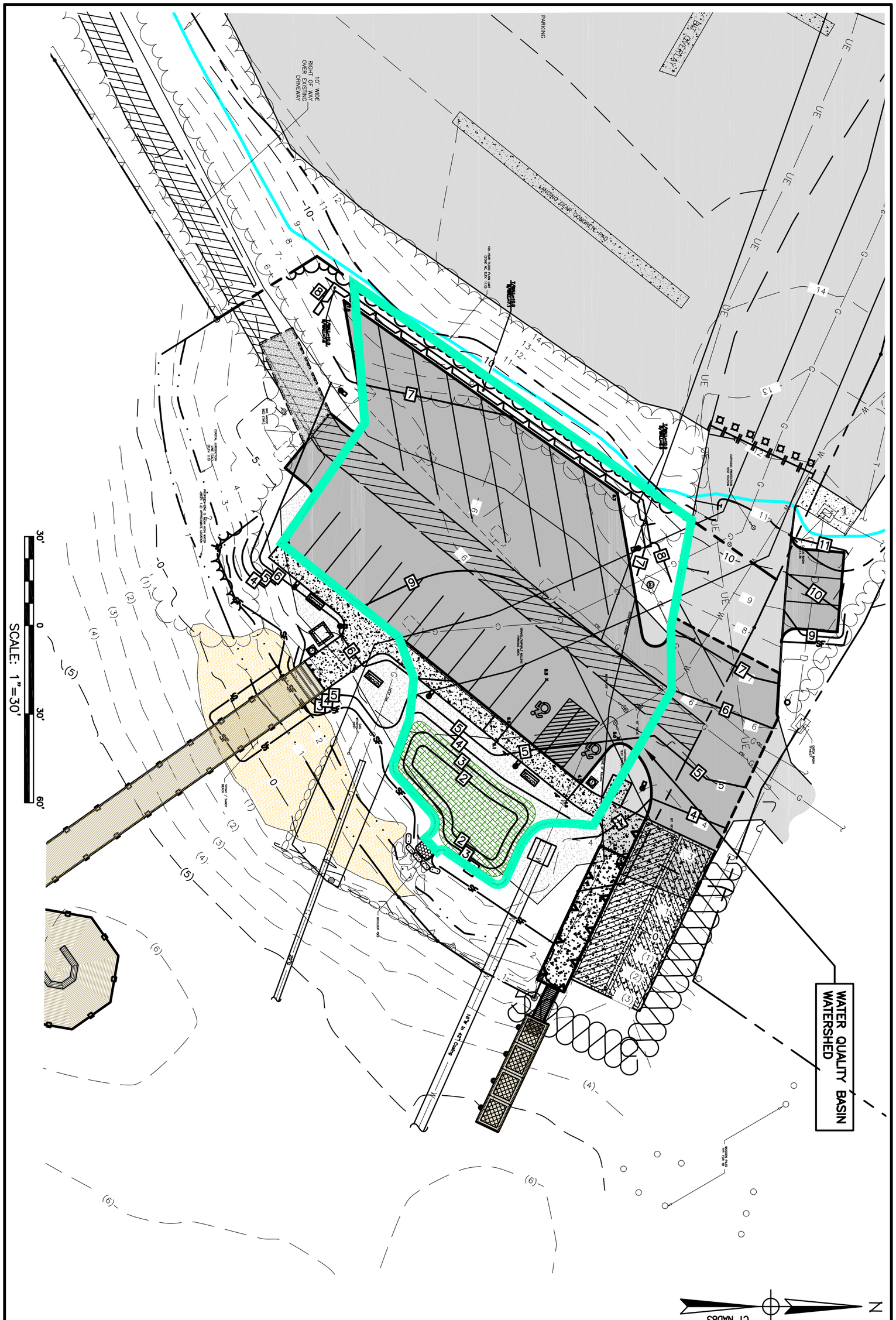
*Town of Montville*
*Town Boat Launch Improvements and Fishing Pier Construction*
*55 Dock Road*

*DATE: Oct. 21, 2022*
*SCALE: 1 in = 100 ft*
*SOURCE: USGS Quad*

N

**FIGURE**

2

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# Town of Montville
## Town Boat Launch Improvements and Fishing Pier Construction
## Watershed Map - Post Development Conditions

| | |
|---|---|
| JOB: | CLA-7187 |
| SCALE: | As Noted |
| DATE: | 10/21/2022 |
| FIGURE NO: | 3 |