

ADDENDUM NO.: 4

DATE OF ADDENDUM: August 25, 2016

**Parking Expansion Enfield Armory
1635 King Street
Enfield, CT
BI – Q – 672A**

Original Bid Due Date / Time:

August 31, 2016

1:00 PM

Previous Addendums: Add. #3 dated 8/11/2016, Addendum #2 dated 8/3/2016, Addendum #1 dated 8/2/2016

TO: Prospective Bid Proposers:

This Addendum forms part of the "Contract Documents" and modifies or clarifies the original "Contract Documents" for this Project dated 6/30/2016. Prospective Bid Proposers shall acknowledge receipt of the total number the Addenda issued for this Project on the space provided on Section 00 41 00 Bid Proposal Form. Failure to do may subject Bid Proposers to disqualification.

The following clarifications are applicable to drawings and specifications for the project referenced above.

Item 1

Spec. section 01 50 00 Temporary Facilities and Controls under subsection 01 56 00 Temporary Barriers and Enclosures informs contractors to provide 6' chain link with top rail and filter fabric privacy screening? Is it the intention for this temp. fence to encapsulate the entire project as none is shown on drawings? Please clarify.

Answer 1

The construction site does not need fencing around it. The contractor only needs to supply a lockable gate to control access to the new GOV Parking lot off Mullen Road.

Item 2

Where is the groundwater elevation and is it possible to go any deeper than the 163.8?

Answer 2

1. Boring logs are included in the Geotechnical Information.
2. The invert of the system may be adjusted as long as the outlet invert can still be met.

Item 3

Is your WQv just being infiltrated for treatment or is there another treatment chamber/filter?

Answer 3

Water quality treatment is provided by the underground infiltration system. The required water quality volume is provided in the infiltration system below the 3-inch diameter orifice. Calculations are included in the Stormwater Management Narrative which is included in *Appendix C* of the Stormwater Pollution Control Plan.

Item 4

Is it possible to get a cross sectional detail of the retain it system and OCS?

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DATE OF ADDENDUM: August 25, 2016

Answer 4

A preliminary layout has been included in this addendum.

Item 5

Updated Drawing CE-101 is attached.

Item 6

Updated Stormwater Pollution Control Plan is attached.

Item 7

Updated Stormwater Pollution Control Plan Appendix H is attached.

Item 8

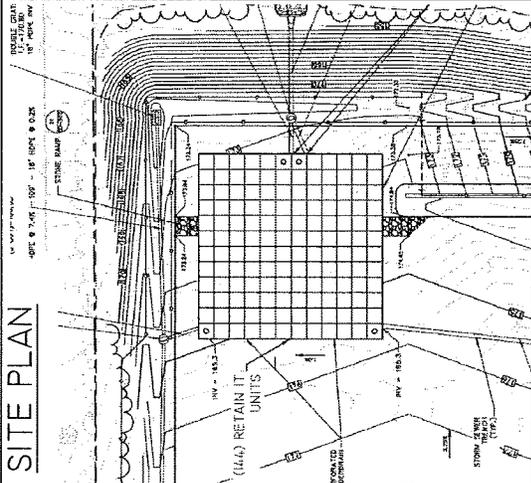
Preliminary Retainlt Plan is attached.

End of Addendum 4

Mellanee Walton

Mellanee Walton, Associate Fiscal Administrative Officer
Department of Administrative Services
On Behalf of the Division of Construction Services

SITE PLAN



NOTES PRELIMINARY

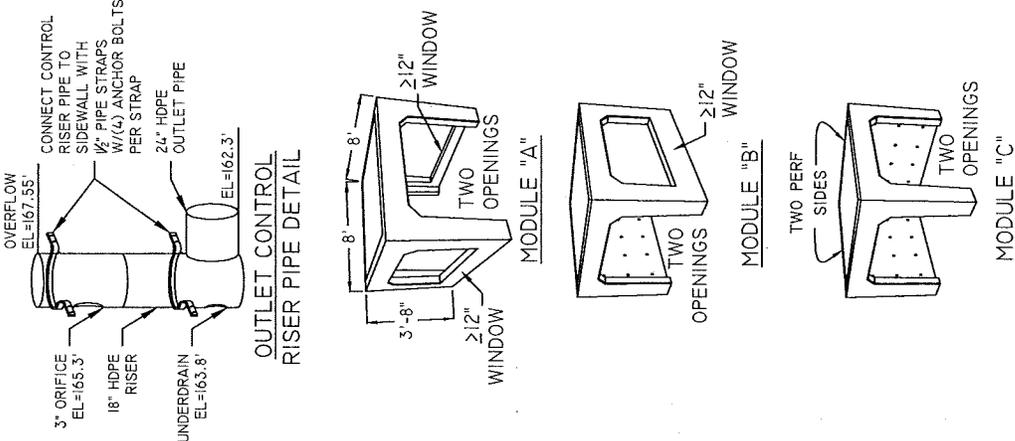
- DESIGN NOTES:**
1. CONCRETE = 5,000 PSI, 28 DAYS
 2. REINFORCING STEEL CONFORMS TO LATEST ASTM A615
 3. H-20 DESIGN LOADING PER AASHTO HS-20-44
 4. VOLUME CAPACITY CALCULATIONS
 - PROPOSED: RETAIN IT INFILTRATION SYSTEM (3' ID HEIGHT STORAGE VOLUME)
 - USE: "A" MIDDLE: (100' X 170.61 CUFT PER UNIT = 17,061.0 CUFT
 - "B" SIDE: (40' X 165.89 CUFT PER UNIT = 6,635.6 CUFT
 - "C" CORNER: (40' X 161.17 CUFT PER UNIT = 6,446.8 CUFT
 - TOTAL UNITS = 144 TOTAL VOLUME = 24,341.28 CUFT
 - AVAILABLE VOLUME FOR ROCK BEDDING INFILTRATION CAPACITY
 - BASE: 12" THICK
 - (100'x100') x 12' x 40% VOIDS = 4,000.0 CUFT
 - PERMETER: 12" THICK
 - (100'x100'+96'+96') x 3.67' x 40% = 575.44 CUFT
 - TOTAL = 4,575.44 CUFT ROCK TOTAL VOLUME

TOTAL = 28,916.74 CUFT TOTAL VOLUME

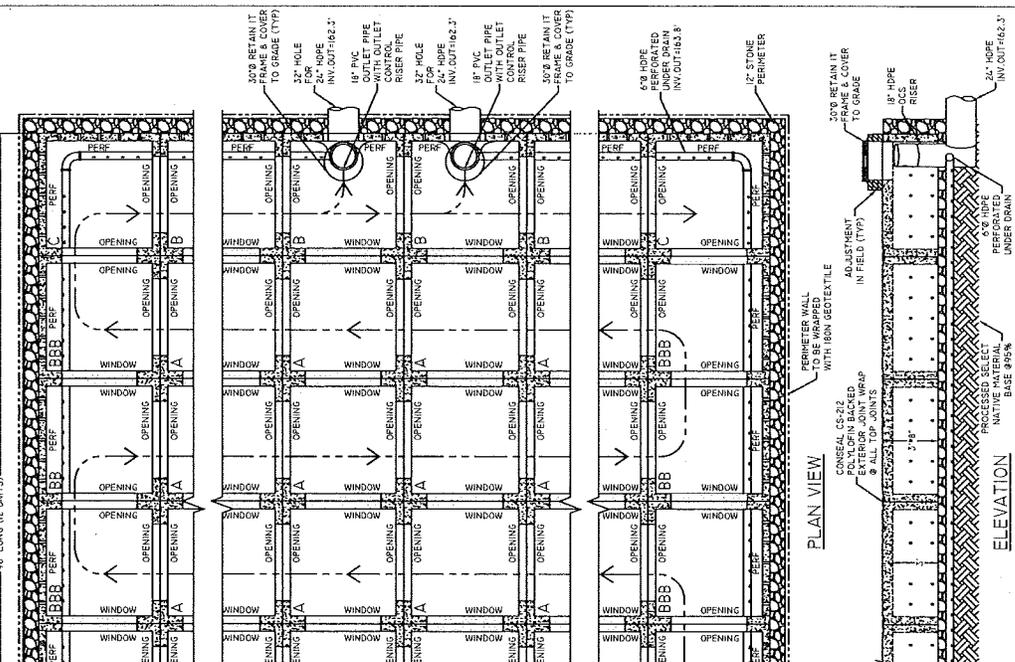
- GEOTEXTILE FABRIC LAYER
 - 18IN. GEO-TEXTILE
- MISMAF MANUFACTURED BY TENCATE GEOSYNTHETICS OR APPROVED EQUAL 356 SOUTH HOLLAND DRIVE FINGERGRASS, GA 30567

SIGNATURE _____ DATE _____

DETAILS



SCHEMATIC LAYOUT



ARROW CONCRETE PRODUCTS
P R O G R E S S I N P R E C A S T

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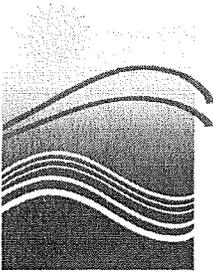
PARKING EXPANSION
ENFIELD ARMY
RETAIN IT
INFILTRATION SYSTEM

DETAIL PLAN
ENFIELD, CT
FUSS & O'NEILL

Sheet **16-182**
Date **8/24/16**
Scale **N.T.S.**
1 OF 1

Appendix H

Natural Diversity Data Base (NDDB) State Listed Species Response
Letter



Connecticut Department of

ENERGY &
ENVIRONMENTAL
PROTECTION

July 19, 2016

Haley Busch
Fuss & O'Neill
146 Hartford Road
Manchester, CT 06040
hbusch@fando.com

Project: Parking Lot Construction East of Existing Parking lot at Enfield Armory
Located at 1635 King Street in Enfield, Connecticut
NDDDB Determination No.: 201608252

Dear Haley,

I have reviewed Natural Diversity Data Base maps and files regarding the area delineated on the map you provided for the proposed Parking Lot Construction East of Existing Parking lot at Enfield Armory Located at 1635 King Street in Enfield, Connecticut. According to our records we have known extant populations of State Special Concern *Terrapene carolina carolina* (box turtle) in the vicinity of the project site. I have included recommended protection strategies and best management practices for this turtle.

Eastern Box Turtle: Eastern box turtles inhabit old fields and deciduous forests, which can include power lines and logged woodlands. They are often found near small streams and ponds. The adults are completely terrestrial but the young may be semiaquatic, and hibernate on land by digging down in the soil from October to April. They have an extremely small home range and can usually be found in the same area year after year. Eastern box turtles have been negatively impacted by the loss of suitable habitat. Some turtles may be killed directly by construction activities, but many more are lost when important habitat areas for shelter, feeding, hibernation, or nesting are destroyed. As remaining habitat is fragmented into smaller pieces, turtle populations can become small and isolated.

Recommended Protection Strategies for Turtles:

Work should occur when these turtles are active (April 1st to September 30th).
Conducting land clearing while the turtle is active will allow the animal to move

out of harm's way and minimize mortality to hibernating individuals. I recommend the additional following protection strategies in order to protect these turtles:

- Exclusionary practices will be required to prevent any turtle access into construction areas. These measures will need to be installed at the limits of disturbance as shown on the plans.
- Exclusionary fencing must be at least 20 in tall and must be secured to and remain in contact with the ground and be regularly maintained (at least bi-weekly and after major weather events) to secure any gaps or openings at ground level that may let animal pass through.
- All staging and storage areas, outside of previously paved locations, regardless of the duration of time they will be utilized, must be reviewed to remove individuals and exclude them from re-entry.
- All construction personnel working within the turtle habitat must be apprised of the species description and the possible presence of a listed species, and instructed to relocate turtles that may be found inside work areas or notify the appropriate authorities to relocate individuals.
- Any turtles encountered within the immediate work area shall be carefully moved to an adjacent area outside of the excluded area and fencing should be inspected to identify and remove access point.
- In areas where silt fence is used for exclusion, it shall be removed as soon as the area is stable to allow for reptile and amphibian passage to resume.
- No heavy machinery or vehicles may be parked in any turtle habitat.
- Special precautions must be taken to avoid degradation of wetland habitats including any wet meadows and seasonal pools.
- The Contractor must search the work area each morning prior to any work being done.

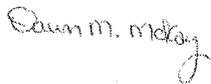
If these protection strategies are followed then the proposed activities will lessen the impact on these turtles. I have attached fact sheet so you may educate workers about this turtle. This determination is good for two years. Please re-submit an NDDDB Request for Review if the scope of work changes or if work has not begun on this project by July 19, 2018.

Natural Diversity Data Base information includes all information regarding critical biological resources available to us at the time of the request. This information is a

compilation of data collected over the years by the Department of Energy and Environmental Protection's Natural History Survey and cooperating units of DEEP, private conservation groups and the scientific community. This information is not necessarily the result of comprehensive or site-specific field investigations. Consultations with the Data Base should not be substitutes for on-site surveys required for environmental assessments. Current research projects and new contributors continue to identify additional populations of species and locations of habitats of concern, as well as, enhance existing data. Such new information is incorporated into the Data Base as it becomes available.

Please contact me if you have further questions at (860) 424-3592, or dawn.mckay@ct.gov . Thank you for consulting the Natural Diversity Data Base. A more detailed review may be conducted as part of any subsequent environmental permit applications submitted to DEEP for the proposed site.

Sincerely,

A handwritten signature in cursive script that reads "Dawn M. McKay".

Dawn M. McKay
Environmental Analyst 3

WILDLIFE IN CONNECTICUT

STATE SPECIES OF SPECIAL CONCERN

Eastern Box Turtle

Terrapene carolina carolina

Description

The eastern box turtle is probably the most familiar of the 8 species of turtles found in Connecticut's landscape. It is known for its high-domed carapace (top shell). The carapace has irregular yellow or orange blotches on a brown to black background that mimic sunlight dappling on the forest floor. The plastron (under shell) may be brown or black and may have an irregular pattern of cream or yellow. The length of the carapace usually ranges from 4.5 to 6.5 inches, but can measure up to 8 inches long. The shell is made up of a combination of scales and bones, and it includes the ribs and much of the backbone.

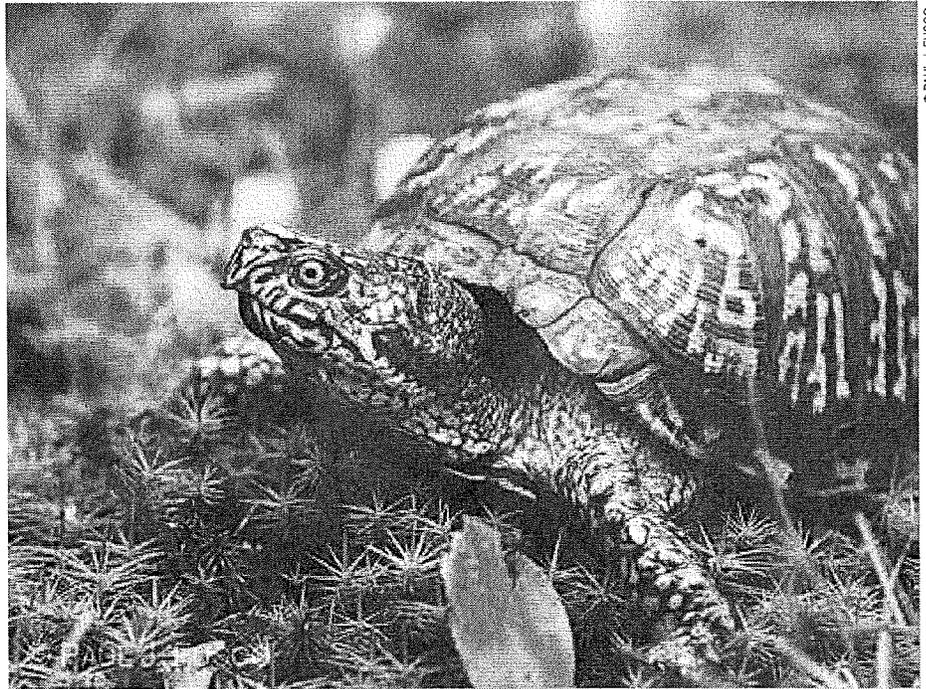
Each individual turtle has distinctive head markings. Males usually have red eyes and a concave plastron, while females have brown eyes and a flat plastron. Box turtles also have a horny beak, stout limbs, and feet that are webbed at the base. This turtle gets its name from its ability to completely withdraw into its shell, closing itself in with a hinged plastron. Box turtles are the only Connecticut turtle with this ability.

Range

Eastern box turtles are found throughout Connecticut, except at the highest elevations. They range from southeastern Maine to southeastern New York, west to central Illinois, and south to northern Florida.

Habitat and Diet

In Connecticut, this terrestrial turtle inhabits a variety of habitats, including woodlands, field edges, thickets, marshes, bogs, and stream banks. Typically, however, box turtles are found in well-drained forest bottomlands and open deciduous forests. They will use wetland areas at various times during the season. During the hottest part of a summer day, they will wander to find springs and seepages where they can burrow into the moist soil. Activity is restricted to mornings and evenings during summer, with little to no nighttime activity, except for egg-



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laying females. Box turtles have a limited home range where they spend their entire life, ranging from 0.5 to 10 acres (usually less than 2 acres).

Box turtles are omnivorous and will feed on a variety of food items, including earthworms, slugs, snails, insects, frogs, toads, small snakes, carrion, leaves, grass, berries, fruits, and fungi.

Life History

From October to April, box turtles hibernate by burrowing into loose soil, decaying vegetation, and mud. They tend to hibernate in woodlands, on the edge of woodlands, and sometimes near closed canopy wetlands in the forest. Box turtles may return to the same place to hibernate year after year. As soon as they come out of hibernation, box turtles begin feeding and searching for mates.

The breeding season begins in April and may continue through fall. Box turtles usually do not breed until they are about 10 years old. This late maturity is a result of their long lifespan, which can range up to 50 to even over 100 years of age. The females do not have to mate every year to lay eggs as they can store sperm for up

to 4 years. In mid-May to late June, the females will travel from a few feet to more than a mile within their home range to find a location to dig a nest and lay their eggs. The 3 to 8 eggs are covered with dirt and left to be warmed by the sun. During this vulnerable time, skunks, foxes, snakes, crows, and raccoons often raid nests. Sometimes, entire nests are destroyed. If the eggs survive, they will hatch in late summer to early fall (about 2 months after being laid). If they hatch in the fall, the young turtles may spend the winter in the nest and come out the following spring.

As soon as the young turtles hatch, they are on their own and receive no care from the adults. This is a dangerous time for young box turtles because they do not develop the hinge for closing into their shell until they are about 4 to 5 years old. Until then, they cannot entirely retreat into their shells. Raccoons, skunks, foxes, dogs, and some birds will prey on young turtles.

Conservation Concerns

The eastern box turtle was once common throughout the state, mostly in the central Connecticut lowlands. However, its distribution is now spotty, although where found, turtles may be locally abundant. Because of the population decline in Connecticut, the box turtle was added to the state's List of Endangered, Threatened, and Special Concern Species when it was revised in 1998. It is currently listed as a species of special concern. The box turtle also is protected from international trade by the 1994 CITES treaty. It is of conservation concern in all the states where it occurs at its northeastern range limit, which includes southern New England and southeastern New York.

Many states have laws that protect box turtles and prohibit their collection. In Connecticut, eastern box turtles **cannot** be collected from the wild (DEP regulations 26-66-14A). Another regulation (DEP regulations 26-55-3D) "grandfathers" those who have a **box turtle collected before 1998**. This regulation limits possession to a single turtle collected before 1998. These

regulations provide some protection for the turtles, but not enough to combat some of the even bigger threats these animals face. The main threats in Connecticut (and other states) are loss and fragmentation of habitat due to deforestation and spreading suburban development; vehicle strikes on the busy roads that bisect the landscape; and indiscriminate (and now illegal) collection of individuals for pets.

Loss of habitat is probably the greatest threat to turtles. Some turtles may be killed directly by construction activities, but many more are lost when important habitat areas for shelter, feeding, hibernation, or nesting are destroyed. As remaining habitat is fragmented into smaller pieces, turtle populations can become small and isolated.

Adult box turtles are relatively free from predators due to their unique shells. The shell of a box turtle is extremely hard. However, the shell is not hard enough to survive being run over by a vehicle. Roads bisecting turtle habitat can seriously deplete the local population. Most vehicle fatalities are pregnant females searching for a nest site.

How You Can Help

- *Leave turtles in the wild. They should never be kept as pets. Whether collected singly or for the pet trade, turtles that are removed from the wild are no longer able to be a reproducing member of a population. Every turtle removed reduces the ability of the population to maintain itself.*
- *Never release a captive turtle into the wild. It probably would not survive, may not be native to the area, and could introduce diseases to wild populations.*
- *Do not disturb turtles nesting in yards or gardens.*
- *As you drive, watch out for turtles crossing the road. Turtles found crossing roads in June and July are often pregnant females and they should be helped on their way and not collected. Without creating a traffic hazard or compromising safety, drivers are encouraged to avoid running over turtles that are crossing roads. Also, still keeping safety precautions in mind, you may elect to pick up turtles from the road and move them onto the side they are headed. Never relocate a turtle to another area that is far from where you found it.*
- *Learn more about turtles and their conservation concerns. Spread the word to others on how they can help Connecticut's box turtle population.*



State of Connecticut
Department of Environmental Protection
Bureau of Natural Resources
Wildlife Division
www.ct.gov/dep



The production of this Endangered and Threatened Species Fact Sheet is made possible by donations to the Connecticut Endangered Species/Wildlife Income Tax Checkoff Fund.

**Stormwater Pollution Control Plan
Enfield Armory Parking Expansion**

Connecticut Army National Guard
Enfield, CT

June 2016
Revised August 2016



FUSS & O'NEILL

146 Hartford Road
Manchester Connecticut 06040
(860) 646.2469

Table of Contents

Stormwater Pollution Control Plan Enfield Armory Parking Expansion

1	Introduction.....	1
2	Site Description.....	1
2.1	Scope of Construction Activities	2
2.2	Area of Disturbance.....	2
2.3	Stormwater Discharge Information.....	2
2.4	Receiving Waters.....	3
2.5	Wetlands on Site	3
3	Construction Sequencing	3
4	Control Measures	4
4.1	Erosion and Sediment Controls	4
4.1.1	Stabilization Practices and Protection	4
4.1.2	Structural Measures.....	5
4.1.3	Maintenance.....	6
4.2	Dewatering Wastewaters.....	7
4.3	Post-Construction Stormwater Management / Best Management Practices.....	8
4.3.1	Standards	8
4.3.2	Control Measures.....	8
4.3.3	Project Performance Standards	8
4.4	Other Controls.....	9
4.4.1	Waste Disposal.....	9
4.4.2	Construction Materials	9
4.4.3	Washout Areas	9
4.4.4	Vehicle Tracking and Dust Control.....	10
4.4.5	Chemical and Petroleum Products.....	10
4.4.6	Fertilizers.....	10
4.4.7	Spill Control Practices.....	11
5	Control Measures for Impaired Waters.....	11
6	Runoff Reduction and Low Impact Development (LID) Information.....	11
7	Inspections.....	12
7.1	Plan Implementation Inspections.....	12
7.2	Routine Inspections	12



7.3 Corrective Actions13

8 Monitoring 13

8.1 Monitoring Requirements14

8.2 Monitoring Reports14

8.3 Sampling Points14

9 Contractors 15

9.1 General15

9.2 Certification Statement.....15

10 Additional Requirements..... 15

10.1 Endangered and Threatened Species15

11 Termination 16

Figures **End of Report**

- 1 Site Location Map
- 2 Hydrologic Soil Report
- 3 FIRM – Flood Insurance Rate Map
- 4 Drainage Basin Map

Appendices **End of Report**

- A CT DEEP General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities Registration Form Summary and General Permit
- B Identification of Contractor and Certification Statements
- C Stormwater Management Narrative (June 14, 2016)
- D Construction Drawings
- E Notice of Termination Form
- F Sedimentation and Erosion Control Inspection Report Form
- G Stormwater Monitoring Report Form (Turbidity Sampling Data) & Sampling Location Plan
- H Natural Diversity Data Base (NDDDB) State Listed Species Response Letter, dated July 19, 2016





1 Introduction

This Stormwater Pollution Control Plan is required as part of the registration process under the *General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities* (General Permit), dated August 21, 2013. A summary of the information required for the electronic submission of this permit is included in *Appendix A*. A copy of this permit is included in *Appendix A*.

The Enfield Amory Parking Expansion, herein referred to as the Parking Expansion, is considered a construction activity in accordance with the Connecticut Department of Energy and Environmental Protection (CT DEEP) General Permit. The purpose of this plan is to specify parameters to follow to minimize pollution caused by use of the project sites during and after construction is completed. Erosion and sediment control requirements are also shown on the plans. A site location map of the project site for the Parking Expansion can be found as *Figure 1*.

During construction, the contractor(s) shall be responsible for implementing all elements of the erosion and sedimentation control measures as defined on the drawings and in this plan. Erosion and sedimentation controls will be implemented and adjusted as needed throughout construction to minimize soil erosion.

Throughout the construction process, the Permittee or Permittee's agent shall periodically inspect erosion control measures. A monitoring program will be implemented to observe potential off-site impacts due to erosion. After construction, the Permittee shall be responsible for maintaining these erosion and sedimentation control measures. The Parking Expansion will not be considered complete until disturbed areas have been satisfactorily stabilized for at least three months, all erosion has been repaired, and temporary erosion control measures have been removed as called for on the plans.

The general contractor(s) and subcontractor(s) will be required to sign the certification statement located in *Appendix B* of this plan.

2 Site Description

The project site is located at 1635 King Street in the Town of Enfield. The 8.9 acre site is bordered to the west by Route 5 / King Street, to the north by properties now/formally (N/F) owned by Southern New England Telephone Company and the Mullen Road, LLC, to the east by property (N/F) owned by Mullen Road, LLC, and to the south by Mullen Road. The Connecticut Army National Guard is proposing to expand the existing parking area on site by approximately 2.25 acres by adding a 1.9 acre government owned vehicle (GOV) lot to the east of the existing lot, and a 0.35 acre privately owned vehicle (POV) lot to the south of the existing lot. The GOV lot will be accessible via a proposed concrete driveway connected to Mullen Road. Additional site improvements include, but are not limited to, additional lighting, fencing, stormwater management, and site restoration. The site contains the Connecticut Army National Guard armory, bituminous concrete parking areas, grass lawns, dense woods, and wetlands. Topography of the existing site varies from mildly sloping to relatively flat.

The hydrologic characteristics of the site further include the following pertinent information:

- The site is characterized by the Natural Resources Conservation Service (NRCS, formerly SCS) as having the following soils:
 - Type B: Udorthents-urban land complex
 - Type C: Scitico, Ninigret, Tisbury; others include: Shaker, Maybid, Rainbow silt loam, and Broadbrook silt loam

The hydrologic model was developed using the Hydrologic Soil Type and associated ground cover for each area. A map of the soils within the site can be found in *Figure 2*.

- The site does not lie within a flood plain or floodway. A portion of the relevant FEMA Flood Insurance Rate Map (Panel Number 09003C0228F, Map Revised July 8, 2013) is presented as *Figure 3*.

2.1 Scope of Construction Activities

Construction is expected to begin in the fall of 2016. Project completion is anticipated in the winter of 2017. Proposed construction activities for the Parking Expansion project include the following:

- Establishing erosion and sedimentation controls
- Performing clearing and grubbing
- Removing existing hardscape surfaces and rough grade the site
- Installing site utilities and the stormwater management system
- Grading the site to final design elevations
- Installing hardscape surfaces
- Installing landscaping and remaining site features
- Stabilizing the site with permanent site vegetation

2.2 Area of Disturbance

The total disturbed area for the Parking Expansion will be approximately 4.5 acres.

2.3 Stormwater Discharge Information

Fuss & O'Neill prepared a narrative summarizing the hydrologic and hydraulic characteristics for the existing conditions and proposed project. The drainage report, entitled "Stormwater Management Narrative" dated June 14, 2016, is included as *Appendix C*.

Currently, the majority of stormwater runoff generated by the site either sheet flows east into existing wetlands or is collected by an existing stormwater management system and is discharged to the storm sewer system on Mullen Road. Portions of the site that do not drain towards wetlands or are not collected by the existing stormwater management system sheet flow offsite to the north.

The design yields a net decrease in stormwater peak discharge and runoff volume from the site due to proposed stormwater management features. The majority of the site will be collected in an underground stormwater management system and treated for water quality prior to discharging to either the existing wetlands or the existing state storm sewer system. The system is adequately sized to convey stormwater for the 25-year design storm. Portions not collected by the proposed storm system will continue to sheet flow off site to the north, similar to existing conditions. Construction drawings that depict proposed drainages patterns and features have been included in this report as *Appendix D*.

2.4 Receiving Waters

The Parking Expansion project site is located within the Connecticut Major Basin and the Connecticut Main Stem Regional Basin, as indicated within the *Public Water Supply Sources & Drainage Basins of Connecticut* mapping provided in *Figure 4* of this plan. One discharge point discharges to a state storm sewer system which eventually discharges to the Connecticut River.

2.5 Wetlands on Site

Inland wetlands were delineated by Matthew Davison, who is a soil scientist from Tighe & Bond. Approximately 0.5 acres of federal wetlands are located along the eastern border of the site. The proposed project will not alter any existing wetlands.

3 Construction Sequencing

The Contractor shall be aware that grubbing, stripping, and associated earthwork operations have significant potential to cause erosion and sedimentation until complete stabilization of the site has occurred.

Pre-Construction activities include obtaining required permits, authorizations, and approvals from State authorities, as well as private entities including the Permittee having jurisdiction of the Parking Expansion project. In addition, notifications to regulatory authorities will be made and copies of such permits, authorizations, approvals, and notifications will be provided to the Engineer.

The general sequencing for construction activities is as follows:

- Install the construction entrance; catch basin and yard drain protection; silt fencing and other erosion & sediment controls as shown on the Erosion & Sediment Control Plan and detail sheets.
- Perform clearing and grubbing by removing trees, shrubs, and other vegetation. Grind stumps and remove roots, obstructions, and debris. Fill depressions caused by clearing and grubbing operations.
- Rough grade the entire site and install temporary sediment traps, stormwater management systems and other utilities.



- Perform final site work, which includes; paving; completing remaining work on drainage systems, utilities, and parking/driveway areas; landscaping and stabilizing disturbed soil surfaces. Remove erosion and sedimentation controls when areas they protect are stabilized.

4 Control Measures

The following paragraphs address the controls and measures to be implemented on the work site both during and after construction to minimize stormwater pollution to the waters of the State of Connecticut. Control measures during construction activities are shown on the Erosion and Sedimentation Control Plan sheets within the Construction Drawings included as *Appendix D*.

4.1 Erosion and Sediment Controls

The goal of this plan is to control erosion on the site and to control movement of sediment into adjacent wetlands, watercourses or storm sewer systems. Note that erosion and sediment controls shall conform to the requirements of the *Connecticut Guidelines for Soil Erosion and Sediment Control*, dated May 2002, which will hereafter be referred to as the "Guidelines", and the *2004 Connecticut Stormwater Quality Manual*, which will hereafter be referred to as the "Standards". To meet these goals, stabilization, structural and maintenance practices shall be implemented by the Contractor as outlined below.

4.1.1 Stabilization Practices and Protection

Both temporary and permanent stabilization practices shall be implemented throughout the project to minimize erosion of soil from the disturbed site. Temporary and permanent stabilization measures are proposed to provide protection against erosion both during and after construction.

The contractor shall maintain temporary erosion and sediment control measures until the area has been permanently stabilized. When construction activities have permanently ceased, stabilization and protection practices shall be implemented within seven days. Areas that will remain disturbed but inactive for at least 30 days shall receive temporary seeding or soil protection in accordance with the Standards. Areas that will remain disturbed beyond the seeding season shall receive long term non-vegetative stabilization and protection measures sufficient to protect the site through the winter. In all cases, stabilization and protection measures shall be implemented as soon as possible in accordance with the Standards.

The stabilization practices to be implemented during the construction of the proposed redevelopment project are as follows:

- **Temporary Vegetative Cover:** All exposed areas that will be inactive for more than seven days, or immediately (as schedules allow) for stockpiles not to be used for 30 days, and areas that have not yet reached finished grades shall receive a temporary vegetative cover during the planting season of March 15 to July 1 and August 1 to October 15. This temporary vegetative



cover shall consist of perennial rye grass. The rye grass shall be planted at a rate of 2 lbs./1,000 sq. ft. at a depth of ½ inch. Limestone (equivalent to be 50% calcium plus magnesium oxide) shall be applied as seedbed prepared at a rate of 90 lbs./1,000 sq. ft. Where grass predominates, fertilize according to a soil test at a minimum application rate of 1 lb. of nitrogen per ton, areas to be left bare before finish grading and seeding outside of planting seasons shall receive an air-dried woodchip mulch, free of coarse matter, treated with 12 lbs. of nitrogen per ton, applied at a rate of 185—275 lbs./1,000 sq. ft.

- **Temporary Mulching:** Temporary mulching shall be used to temporarily stabilize areas that will be inactive for 30 days or more, or 14 days for stockpiles, and cannot be seeded within the recommended planting dates. In addition, temporary mulching shall be conducted immediately following temporary or permanent seeding in order to aid the growth of vegetation. Temporary mulch shall consist of straw or hay overlay applied at a rate of 70 to 90 pounds per 1,000 square feet (two tons per acre). This mulch shall be spread uniformly by hand or mulch blower and shall be bonded with a non-asphaltic tackifier or other approved method immediately after spreading.
- **Permanent Vegetative Cover:** Once the planting season begins, temporary stabilization measures shall be removed and slopes shall be prepared and seeded. After the removal of temporary stream crossings and erosion control blankets, the disturbed area shall be scarified and seeded. Seeding shall be in accordance with the technical specifications for the project. Seeding shall only occur between April 1 and June 1 and August 15 and October 15.

4.1.2 Structural Measures

Structural practices shall be implemented to control the movement of sediment and minimize any discharge of pollutants from the site, divert flows away from exposed soils, store flows, and limit runoff. The structural practices to be implemented during construction are as follows:

- **Geotextile Sediment Filter Fence (Silt Fence):** To minimize the transport of sediment from the disturbed areas to receiving wetlands, geotextile sediment filter fence shall be utilized at select areas around the site to filter runoff from the disturbed areas. Geotextile sediment filter fence details and locations are provided on the drawings. A row of geotextile sediment filter fence shall be placed around stockpiles during stockpiling operations. Geotextile sediment filter fence shall be removed only when the entire site has been permanently stabilized.
- **Haybale Barriers:** To reduce velocity of stormwater traveling across the site, haybale barriers may be installed across the direction of high runoff flows. Haybale barriers shall remain as temporary measures during construction to protect downgradient disturbed surfaces during establishment. Where control measures are required for more than 60 days use geotextile sediment filter fence.
- **Construction Entrances:** To prevent soil or sediment from being carried off site by construction equipment, a construction entrance will be installed before construction traffic into and out of the project area. The width of the anti-tracking pad shall not be less than the



width of the ingress or egress. Adjacent roadways shall be swept daily to remove material that may be tracked onto pavement.

- **Sediment Control at Catch Basins:** To prevent sediment from clogging the existing and proposed storm water sewer systems during construction, catch basin inserts shall be installed around catch basins. Inserts shall be emptied as necessary. Sediment control at catch basins shall be removed only when the entire site has been permanently stabilized.
- **Temporary Sediment Trap:** To control sediment deposition and to prevent soil or sediment from being carried throughout the site, a temporary sediment trap will be provided to detain sediment-laden runoff. Temporary Sediment Trap details and locations are provided on the drawings.
- **Temporary Erosion Control Blankets:** To provide temporary surface protection, temporary erosion control blankets will be installed in sensitive areas, as indicated on the plans. Temporary erosion control blankets shall comply with the Guidelines.

4.1.3 Maintenance

The erosion and sediment controls must be maintained in a condition that will protect waters of the State from pollution during site construction. The Contractor shall conduct the following maintenance to promote the proper performance of erosion and sediment control measures.

- **Temporary and Permanent Vegetation:** At any eroded areas, repair by filling to finished grades, replace vegetative support material and seed, fertilizer and lime, as specified for temporary and permanent stabilization. Add additional mulch as required.
- **Temporary Mulching:** Inspect temporary soil protection area at least once a week and within 24 hours of the end of a storm with a rainfall amount of 0.5 inch or greater for mulch movement and erosion. Where soil protection falls below 100%, reapply mulch within 48 hours. Determine the cause of failure. If mulch failure was the result of wind, consider applying tackifier or netting. If mulch failure was caused by concentrating water, install additional measures to control water and sediment movement, repair erosion damage, re-apply mulch with anchoring or use Temporary Erosion Control Blankets. Inspections should take place until work resumes.
- **Silt Fence and Haybales:** Inspect silt fence and haybales immediately after each rainfall and at least daily during prolonged rainfall. Any required repairs should be made immediately. Should the barrier decompose or become ineffective while the barrier is still needed, the barrier shall be replaced promptly. Sediment deposits should be removed when they reach approximately one-half the height of the barrier. Sediment shall be disposed of on-site as non-structural fill. Sediment deposits remaining in place after the silt fence or haybales are no longer required shall be removed and placed in a stockpile surrounded by silt fence in a location suitable to the Permittee.



- **Construction Entrances:** Maintain the entrance in a condition that will prevent tracking and washing sediment onto paved surfaces. Provide periodic top dressing with additional stone of additional length as conditions demand. Repair any measures used to trap sediment as needed. Immediately remove all sediment spilled, dropped, washed or tracked onto paved surfaces. Adjacent roadways shall be left clean at the end of each day. If the construction is properly maintained and the action of a vehicle traveling over the stone pad is not sufficient to remove the majority of the sediment then either (1) increase the length of the construction entrance, (2) modify the construction access road surface, or (3) install washing racks and associated settling area or similar devices before the vehicle enters a paved surface.
- **Pavement Sweeping:** Sweep paved surfaces adjacent to the construction entrances, the soil management areas, and designated haul routes daily. Properly dispose of sediment or debris collected during sweeping.
- **Temporary Erosion Control Blankets:** Inspect the blankets at least once a week and within 24 hours of the end of a storm with a rainfall amount of 0.5 inch or greater for failures. If failures are discovered, re-install the blanket after regrading and re-seeding, ensuring that blanket installation still meets the design specifications. When repetitive failures are observed at the same location, review conditions and limitations for use and determine if diversions, stone check dams, or other measures are needed to reduce failure rate.
- **Catch Basin Inserts:** Inspect the inserts after each major precipitation event or inspect them weekly if no major rain events have occurred. Remove, clean, and reinstall inserts when sediment accumulates to half of the capacity of the insert.
- **Temporary Sediment Traps:** Inspect the temporary sediment traps at least once a week and within 24 hours of the end of a storm with rainfall amount of 0.5 inch or greater. Check the outlet to ensure it is structurally sound and has not been damaged by erosion or construction equipment. Maintain the height of the stone outlet to be at least 1 foot below the crest of the embankment. Also check for sediment accumulation and filtration performance. Dewater the trap and remove sediments when sediment accumulation reaches half of the capacity of the trap.

4.2 Dewatering Wastewaters

Dewatering on this site is not anticipated. However, in such a case where dewatering is necessary, wastewater from dewatering pumps will be infiltrated into the ground where possible. Where this is impracticable, proper methods and devices will be utilized to the extent permitted by law, such as pumping water into a temporary sedimentation depression, providing surge protection at the inlet and outlet of pumps, floating the intake of the pump, or other methods to minimize and retain the suspended solids. These wastewaters will not be discharged directly without treatment. If a pumping operation causes turbidity problems beyond the control of these measures, the operation will cease until feasible means of controlling turbidity (e.g., discharge to the sanitary sewer) are determined and implemented.

4.3 Post-Construction Stormwater Management / Best Management Practices

4.3.1 Standards

Detailed erosion and sedimentation controls in accordance with the Standards have been proposed for this site. This system will protect the wetlands during and after construction until the site is stabilized. Best Management (BMP's) shall be implemented to minimize the discharge of litter, debris, building materials, hardened concrete waste, or similar materials to adjacent wetlands and the storm drainage systems.

4.3.2 Control Measures

At the end of construction, areas disturbed by construction activities shall be stabilized. As a result, the potential for erosion at this site after construction is minimal. Grassed areas will also serve as a filter to remove sediment from runoff if permanently stabilized areas are properly maintained. Perimeter controls (i.e., silt fence) will be actively maintained until final stabilization of those portions of the site up-gradient of the perimeter control. Temporary perimeter controls will be removed after final stabilization.

Water quality measures have been incorporated into the design using BMPs to treat stormwater runoff prior to discharging. The goal of the post-construction stormwater management is to remove floatables and help achieve the removal of at least 80% of the total suspended solids from stormwater. This is accomplished, in part, through implementation of deep catch basin sumps, grass swales, rain gardens, and underground infiltration systems.

These BMPs are capable of removing a minimum of 80% of TSS that may be present in runoff from the proposed development of the site. The contractor shall be responsible for cleaning post-construction stormwater structures and removal of remaining silt fence before filing a termination notice, a copy of which is included as *Appendix E*. After filing the termination, maintenance and cleaning of the unit shall become the responsibility of the Permittee.

The design will meet the requirements of the Connecticut Stormwater Quality Manual, the Guidelines and Standards for Soil Erosion and Sediment Control, and federal stormwater regulations.

4.3.3 Project Performance Standards

Currently, approximately 20% of the site is covered by bituminous concrete, buildings, or other impervious surfaces. As a result of the development, approximately 47% of the site will be covered by impervious surfaces. The proposed scope depicts the GOV and POV lots as gravel surface; however the hydrologic and hydraulic analyses, as well as the water quality volume calculations, have been analyzed conservatively as a bituminous pavement surface. Modeling the proposed project in this method anticipates the potential paving of the lots in the future. The full water quality volume from the proposed GOV lot and the proposed POV parking lot will be retained on-site by BMP control measures

such as rain gardens and an underground infiltration system. These BMP's will treat stormwater runoff for sediment, floatables, and nutrients. These control measures shall be installed and maintained in accordance with the Standards.

4.4 Other Controls

Good housekeeping will be maintained to minimize impacts of protected areas by pollutants, soil, and fugitive sediment.

4.4.1 Waste Disposal

The following BMPs shall be implemented to minimize the discharge of litter, debris, construction materials, hardened concrete waste, or similar materials to waters of the State.

- Construction waste will be removed from the site and disposed of legally.
- Waste will be removed from the site as soon as practical.
- Containers will be appropriate for the material stored.
- Where necessary, containers will be sealed/covered to prevent waste from escaping the container.
- Containers will only be located where approved by the engineer or regulatory agency.
- Waste storage areas shall be located, designed, and operated to prevent polluted runoff from leaving the waste storage area.
- Fences or covers shall be provided to prevent waste from blowing out of the waste storage area.

4.4.2 Construction Materials

Construction materials needed for this project will be properly stored in a neat and orderly manner until used. Construction materials shall be stored outside of any buffers and at least 50 feet from any stream, wetland, or other sensitive resource.

4.4.3 Washout Areas

Washout of applicators, containers, vehicles, and equipment for concrete, paint, and other materials shall be conducted in a designed washout area. There shall be no surface discharge of washout wastewaters from this area. To eliminate overflows during rainfall or after snowmelt, all washwater shall be directed into a pit. This area shall be outside of any buffers and at least 50 feet from any stream, wetland, or other sensitive resource. The area shall be completely self-contained and clearly marked.

In addition, dumping of liquid wastes in storm sewers is prohibited. All wastes including hardened concrete waste from washouts shall be disposed of legally at an off-site location. At least once per week, all containers or pits used for washout should be inspected for structural integrity, adequate holding capacity, and to check for leaks or overflows. If any deficiencies are discovered, corrective action shall be taken immediately. Washout areas shall be emptied when levels reach $\frac{1}{2}$ the height of the container or pit.

4.4.4 Vehicle Tracking and Dust Control

As shown on the plans, construction entrances shall be installed and maintained to prevent vehicles from tracking sediments onto Town and State roads. The Contractor shall be responsible for performing dust suppression techniques during construction, including but not limited to:

- Spraying water or calcium chloride as necessary to control dust from construction activities. The volume of water sprayed for controlling dust shall be minimized so as to prevent runoff of water. No discharge of dust control water shall contain or cause a visible oil sheen, floating solids, visible discoloration, or foaming. Calcium chloride may also be used to control dust.
- Sweeping surfaces adjacent to the construction entrances and the soil management areas daily. The designated haul routes will be swept as required.

If at any time fugitive dust is observed to be generated from the construction site, the Contractor shall be responsible for employing additional dust suppression techniques to remedy the situation.

4.4.5 Chemical and Petroleum Products

All chemical and petroleum product containers stored on the site (excluding those contained within vehicles and equipment) shall be provided with impermeable containment which will hold at least 110% of the volume of the largest container, or 10% of the total volume of all containers in the area, whichever is larger, without overflow from the containment area. All chemicals and their containers shall be stored under a roofed area. Containers of 100 gallon capacity or more may be stored without a roof only if stored in a double-walled tank.

On-site vehicles shall be monitored for leaks and receive maintenance as needed.

4.4.6 Fertilizers

Fertilizers, if used in conjunction with the seeding operation, will be applied only in the amounts recommended by the manufacturer. Once applied, fertilizer will be worked into the soil to limit exposure to stormwater. Storage will be in a covered area. The contents of any partially used bags of fertilizer will be transferred to a sealable plastic bin to avoid spills.

4.4.7 Spill Control Practices

The following practices shall be implemented during construction activities to mitigate spills of material and prevent their release to the waters of the State.

- Manufacturers' recommended methods for spill cleanup will be clearly posted and site personnel will be made aware of the procedures and the location of the information and cleanup supplies.
- Materials and equipment necessary for spill cleanup will be kept in the material storage area on-site. Equipment and materials will include but not be limited to brooms, dust pans, mops, rags, gloves, goggles, kitty litter, sand, sawdust, and plastic and metal trash containers specifically for this purpose.
- Spills will be cleaned up immediately after discovery.
- Spills of toxic or hazardous material will be reported to the appropriate State and local government agency, regardless of size.

5 Control Measures for Impaired Waters

The Parking Expansion project does not directly discharge to impaired waters. No additional control measures are necessary.

6 Runoff Reduction and Low Impact Development (LID) Information

Runoff reduction practices and LID measures have been utilized throughout the Parking Expansion project. A detailed erosion and sediment (E&S) control plan has been prepared for the site (*Appendix D*). During construction, measures will be taken to reduce erosion and manage sedimentation from disturbed areas. Stormwater LID measures incorporated into the design include deep sump catch basins, grass swales, rain gardens, and underground infiltration systems. The grass swales, rain gardens and underground infiltration system also promote infiltration of stormwater runoff.

Reduction in overall peak stormwater runoff from the site will be achieved by increasing retention onsite. The Stormwater Management Narrative found in *Appendix C* provides figures for the watershed drainage patterns, soil information, infiltration areas, and post-construction stormwater management features. The Stormwater Management Narrative also provides design calculations for stormwater runoff reductions, water quality volumes and flow rates, and effective surface coverages for the site.

7 Inspections

7.1 Plan Implementation Inspections

Within the first 30 days following commencement of the construction activity on the sites, the permittee shall contact: 1) the appropriate District; or 2) a qualified soil erosion and sediment control professional or qualified professional engineer, as defined by the General Permit, to inspect the site. The site shall be inspected at least once and no more than three times during the first 90 days to confirm compliance with the General Permit and proper initial implementation of all controls measures designated in the Plan for the sites for the initial phase of construction.

7.2 Routine Inspections

The Permittee shall routinely inspect the sites for compliance with the General Permit and the Plan until a Notice of Termination has been submitted. Inspection procedures for these routine inspections shall be addressed and implemented in the following manner: The Permittee shall maintain a rain gauge on-site to document rainfall amounts. The Permittee shall engage a qualified inspector to inspect the site at least once a week and within 24 hours of the end of a storm that generates a discharge. For storms that equal or exceed 0.5 inches that end on a weekend, holiday or other time after which normal working hours will not commence within 24 hours, an inspection is required within 24 hours. For storms of less than 0.5 inches, an inspection shall occur immediately upon the start of the subsequent normal working hours. Where sites have been temporarily or finally stabilized, an inspection shall be conducted at least once every month for three months to confirm compliance with the General Permit.

The items to be inspected shall include, at a minimum, the following:

- Disturbed areas of the construction activity that have not been permanently stabilized
- Erosion and sediment control measures
- Structural control measures
- Stockpile areas
- Washout areas
- Drainage control facilities including diversion and perimeter drainage ditches
- Locations where vehicles enter or exit the site

Disturbed areas and areas used for storage of materials that are exposed to precipitation shall be inspected for evidence of, or the potential for, pollutants leaving the work site. Erosion and sediment control measures identified in the plan shall be observed to ensure that they are operating correctly. Where discharge locations or points are accessible, they shall be visually inspected to ascertain whether erosion control measures are effective in preventing significant impacts, such as turbidity to receiving waters. Locations where vehicles enter or exit the site shall be inspected for evidence of off-site sediment tracking.

Based on the results of the inspection, the description of potential sources and pollution prevention measures identified in the plan shall be revised as appropriate by the Permittee or his agent as soon as practicable after such inspection.

A report shall be prepared for every inspection and retained as part of the plan. The report shall, at a minimum, summarizing the following;

- The scope of the inspection
- Name(s) and qualifications of personnel making the inspection
- Date(s) of the inspection
- Weather conditions including precipitation information
- Major observations relating to the implementation of the storm water pollution control plan
- Descriptions of the stormwater discharge(s) from the site
- Any water quality monitoring performed during the inspection
- Statement that, in the judgment of the qualified inspector(s), the site is either in compliance or out of compliance with the terms and conditions of the Plan and General Permit.

The report shall be signed by both the qualified inspector and the permittee or his/her authorized representative in accordance with the General Permit. A blank copy of the inspection report is provided in *Appendix F*.

If the site inspection indicates that the site is out of compliance, the inspection report shall include a summary of the remedial actions required to bring the site back into compliance. During the period in which any corrective actions are being developed and have not yet been fully implemented, interim measures shall be implemented to minimize the potential for the discharge of pollutants to the site.

7.3 Corrective Actions

If at any time an inspection determines that the site is out of compliance with the terms and conditions of this Plan and the General Permit, corrective actions shall be taken. Non-engineered corrective actions (as identified in the Standards) shall be implemented on site within 24 hours and incorporated into a revised Plan within three calendar days of the date of inspection unless another schedule is specified in the Standards. Engineered corrective actions (as identified in the Standards) shall be implemented on site within seven days and incorporated into a revised Plan within ten calendar days of the date of inspection unless another schedule is specified in the Standards.

8 Monitoring

Stormwater sampling is required for monitoring turbidity. Sampling shall occur on a monthly basis, during storm events that generate a discharge of stormwater from the site while construction activity is ongoing, until final stabilization of the drainage areas associated with each outfall is achieved. Sampling shall continue on a monthly basis until final stabilization of the drainage area associated with each outfall is achieved.



Sampling is only required during normal working hours, as defined by the General Permit. For this site, normal working hours for stormwater monitoring shall be Monday through Friday 7am to 5pm. If sampling is discontinued due to the end of normal working hours, it shall be resumed the next working day as long as the discharge continues. Sampling may be temporarily suspended if at any time conditions exist that may reasonably pose a threat to the safety of the person taking the sample (e.g. high winds, lightning, flooding, intense rainfall etc.). Sampling shall resume once the unsafe conditions are no longer present. If there is no stormwater discharge during a month, sampling is not required.

8.1 Monitoring Requirements

All samples shall be collected from discharges resulting from a storm event that occurs at least 24 hours after any previous storm event that generated a discharge. Sampling of snow or ice melt in the absence of a storm event is not a valid sample.

Samples shall be grab samples taken at least three separate times during a storm event. The samples shall be representative of the flow and characteristics of the discharge. The first sample shall be taken within the first hour of stormwater discharge from the site. In cases where discharges begin outside of normal working hours, the first sample shall be taken at the start of normal working hours.

Sampling is required of areas of concentrated runoff of stormwater from disturbed areas. Sampling shall be done in accordance with 40 CFR Part 136/ASTM D1889-00. Sampling locations can be found in *Appendix G* and shall be identified in the field with a flag, stake, or other visible marker.

8.2 Monitoring Reports

The stormwater turbidity value for each sampling point shall be determined by taking the average of the turbidity values of all samples at that sampling point during a given storm. Any samples containing snow or ice melt must be noted. A blank copy of the stormwater monitoring report for submitting turbidity sampling data is provided in *Appendix G*.

Monitoring reports shall be submitted to CT DEEP in accordance with the provisions outlined in the General Permit.

8.3 Sampling Points

There are four discharge locations for the project site. A site plan showing the proposed sampling locations are provided in *Appendix G*. The site sampling locations are described below:

- Sampling Location # 1 is at the outlet control structure located in the proposed rain garden adjacent to the POV lot. The drainage area includes the parking lot, driveways, walkways, and landscaped areas in proximity to the rain garden. In existing conditions runoff from this area sheet flows into an existing swale that is located where the proposed rain garden is to be constructed.



- Sampling Location # 2 is the proposed outfall located east of the GOV parking lot. The drainage area includes a majority of the east side of the GOV parking lot. Under existing conditions, runoff from this area sheet flows easterly across the property into the wetlands which then discharge offsite through the existing flared-end section located at the east edge of the wetlands.
- Sampling Location #3 is at the proposed rain garden located adjacent to the proposed concrete driveway that connects to the GOV parking lot. The drainage area includes the southeastern portion of the parking lot and driveway along with the swale running along the eastern side of the parking lot.
- Sampling Location #4 was determined based on the area down gradient of proposed work areas. The proposed work does not create new outfalls and will not promote channeled or concentrated flow in the area. The monitor will review the area and collect a sample if concentrated runoff is observed leaving the work area.

9 Contractors

9.1 General

All contractors and subcontractors who will perform actions on site that may reasonably be expected to cause or have the potential to cause pollution of the waters of the State will be identified in *Appendix B*.

9.2 Certification Statement

All contractors and subcontractors must sign the certification included in *Appendix B*. All certifications will be included in the Stormwater Pollution Control Plan.

10 Additional Requirements

10.1 Endangered and Threatened Species

Fuss & O'Neill submitted a Request for Natural Diversity Data Base (NDDB) State Listed Species Review in June 2016. The Connecticut Department of Energy and Environmental Protection (CTDEEP) issued a response letter dated July 19, 2016, reference NDDB Determination No. 201608252 that determined the project site was within the vicinity of extant populations of the Eastern Box Turtle (*terrapene carolina carolina*). The letter included recommended protection strategies related to the species. The recommendations have been incorporated into the Construction Drawings plan set.

This letter can be found *Appendix H* of this plan.



11 Termination

Once the site has been stabilized and all final inspections have occurred, the registrant shall file a termination notice. Prior to filing for termination, all temporary erosion and sediment control measure shall be removed. A blank copy of the Notice of Termination Form is provided in *Appendix E*.