



February 28, 2017

Town of Hanover Conservation Commission  
Hanover Town Hall  
550 Main Street  
Hanover, MA 02339  
Attn: Amy Walkey, Conservation Agent

**SUBJECT: Submission of Notice of Intent (NOI) for Proposed RAMs at the Cold Waste Area and Former Test Range Berm Area  
National Fireworks Site, Hanover, MA - RTN #4-0000090**

Dear Ms. Walkey:

On behalf of the Fireworks Site Joint Defense Group (also referred to as Cooperating Parties), please find enclosed a Notice of Intent (NOI) for two Release Abatement Measures (RAMs) to be conducted at the National Fireworks Site (Site) under the Massachusetts Contingency Plan (MCP), 310 CMR 40.0000. This work is being performed by Tetra Tech, under the oversight of the Massachusetts Department of Environmental Protection (MassDEP), with a Scope of Work conditionally approved by MassDEP in a letter dated October 21, 2016. Because the Cooperating Parties do not own any of the land being investigated, updated access agreements for the areas where potential RAM actions will take place are being arranged in parallel with this submission.

### **Project Background**

The Site consists of approximately 240 acres generally located between King and Winter Streets in the Town of Hanover. The land area encompassed by the Site is currently owned by more than 40 different public and private entities, including the Town of Hanover and its Conservation Commission. The Site is bounded on the east by Winter Street, on the west by King Street, on the north by First Street, and on the south by Factory Pond. The Drinkwater River and Torrey Brook pass through the Site, flowing generally south/southwest toward Lily Pond and Factory Pond. Factory Pond discharges to the Indian Head River, which flows eastward to the North River. The overall site (including a USGS quadrangle map) and surrounding environs are shown on Sheet C-100 of the attached plans.

Historical activities at the Site included the research, development and manufacture of munitions and pyrotechnics by National Fireworks, Inc. and others for the United States Government circa 1907 thru 1970, interspersed with the commercial manufacture of civilian fireworks. Lead, mercury, and various organic solvents were used in some of the manufacturing processes and research and development activities during the facility's operational lifetime.

Given the past use of the Site and the findings of previous site investigations (which included the identification of geophysical anomalies) in some areas, there may be buried metallic items that are a potential source of contamination or could present a potential explosive hazard in the areas referred to here as the Former Test Range Berm (FTRB) Area and the Cold Waste Area (CWA). The remedial activities to be conducted under these RAMs will take place in these two areas. Both of these areas are located on property currently owned by the Town of Hanover and its Conservation Commission and are identified on the attached plans.

The objective of these RAMs is to support the establishment of conditions posing "no significant risk" (NSR) at the two areas by removing the potentially contaminated soil and any material potentially presenting an explosive hazard (MPPEH) on the surface or in the accessible subsurface soil. Following

completion of these activities, the results will be used to determine whether further action is needed or a condition of NSR has been achieved for these areas.

The proposed RAMs are to be performed on Town of Hanover and Conservation Commission land that contains both recreational trails and unimproved access roads. Only the CWA contains resources regulated under the Wetlands Protection Act and requires a Notice of Intent (NOI). The field work to be performed in the two areas has been approved by MassDEP as two separate RAMs. However, the work will be performed in both areas concurrently and by the same team using essentially the same equipment and techniques. As such, to minimize impact to the environment, provide a comprehensive plan to the land owner and facilitate review, aspects of both of the RAMs potentially impacting resources regulated under the Wetlands Protection Act are being presented here in this NOI.

### **Existing Wetland Resources**

In November 2016, Tetra Tech wetland scientists delineated the bank of Factory Pond (utilizing Flag Series A); and Bordering Vegetated Wetlands (utilizing Flag Series B, C, D, E and F) for the areas in the vicinity of the proposed RAMs. The wetland flags were field located by survey and are shown on the attached plans. The wetland lines were delineated using vegetation type and abundance only, as soil characteristics that would be determined using intrusive sampling and inspection methods could not be obtained without a UXO technician present to provide UXO avoidance support. Therefore, this wetland delineation should be considered to be conservative.

It is expected that at the time of the RAMs field work, soil sampling and inspection overseen by a UXO technician will likely decrease the extent of the current 100-foot buffer, based on observations made by the wetland scientists. This would especially apply to the Series F delineated area, which appears to be an area of recent excavation.

### **200-Foot Riverfront**

While the former thread of the Drinkwater River can be seen in bathymetric surveys conducted in Factory Pond towards the pond's center, the pond edge water level (at approximately 49 feet mean sea level (MSL) was used to establish the 200-foot riverfront buffer. The total riverfront acreage for the RAMs uses the riverfront for Factory and Lily Pond but does not include the Drinkwater River or Torrey Brook.

### **Bordering Lands Subject to Flooding (BLSF)**

According to FEMA FIRM Map Number 25023C0203J (dated July 17, 2012), the 100-year flood zone or Bordering Land Subject to Flooding, is at elevation 50 feet NAVD 1988 in the vicinity of the CWA. The FEMA map has been embedded in Sheet C-102 for reference. The 50-foot contour is highlighted on the plans.

### **Project Overview**

In preparing the plans for RAM activities in the CWA, Tetra Tech has been sensitive to the environmental resources of the property by avoiding when possible the 100-foot wetland buffer zone, proposing staging and stockpiling locations in previously disturbed areas, and establishing work area access using pre-existing roadways (much of which are underlain by old asphalt pavement). In order to minimize adverse impacts on the Site's environmental resources, Tetra Tech will utilize best management practices (BMPs) such as erosion and siltation controls and proper construction sequencing to avoid and minimize adverse construction impacts.

The specific requirements and mitigation steps proposed for each of the two areas undergoing RAMs are discussed below. In general, all excavated soil and debris will be mechanically screened on-site to remove the metallic debris (both related and unrelated to the operations at the Former Test Range) and inspected for the presence of MPPEH. The debris and separated soils will be stockpiled, and samples of each stockpile will be collected and analyzed for disposal characterization.

Soils meeting the MCP Method 1 S-1 soil standards will be reused on-site as backfill material. Soil not meeting this standard will be sent for off-site disposal or re-use as applicable. Confirmatory soil samples will be collected from each excavation and analyzed for the constituents previously found to contribute to potential risks or exceedances of the standards.

The RAMs Plan includes the following primary activities:

**Mobilization and Site Preparation**

- Access road clearing and improvement with the addition of dense grade material, where needed;
- Establishing staging areas for soil screening and soil stockpiling through vegetation/tree removal in the work area; and
- Removal of vegetation and stumps from the FTRB Area and CWA.

**Field Excavation and Materials Management Activities**

- Surface and subsurface soil and debris removal through excavation;
- Instrument-assisted inspection and classification of the excavated material as MPPEH;
- On-site mechanical screening, stockpiling and testing to segregate contaminated and non-contaminated soil;
- Off-site disposal or recycling of contaminated soils, metallic and other debris; and
- Safe management and disposal of MPPEH.

**Site Restoration**

- Restoration of the disturbed areas through backfilling of soil determined to be acceptable for re-use; and
- Stabilization of each area.

**Demobilization**

**Additional Field Activity Details**

**Access Roads and Screening and Stockpile Area (Work Area)**

Access to the Work Area on the Conservation Commission land will be via Factory Pond Road and a secondary partially improved road on land privately owned by the Drinkwater Investment Corporation (i.e., P.A. Landers). The current roadways on the Conservation Commission land vary in width from 8 to 12 feet. The roads shown on Sheet C-103 will be widened to 16 feet through cutting of vegetation, grading, and placement of dense grade material, where needed, to provide a smooth accessible surface. An overhead clearance of 12 feet also will be established. These access roads are being widened to meet the requirements of state and local emergency response vehicles.

The Screening and Stockpile Area will be located in a previously disturbed portion of the Site largely underlain by asphalt pavement or hard-pack fill. Much of this area is not vegetated and the vegetation currently present is mostly scrub. A portion of the Work Area is located within the Riverfront area.

Erosion and sediment controls will consist of filter socks as shown on Sheet C-103 and detailed on Sheet C-104 at the downgradient side of the Work Area. Stockpiled soils will be underlain by polyurethane sheeting and covered daily with polyurethane sheeting until removed from the Site or re-used.

At this time there is no permanent or final restoration proposed on the roadways or Work Area, as these areas will be used in future remediation efforts. However, erosion and siltation controls will be maintained until the Site is stabilized to the satisfaction of the Conservation Agent.

**Former Test Range Berm**

The Former Test Range Berm is approximately 300 feet wide by 100 feet long along the berm face. This area will be excavated to a depth of approximately 36 inches and is expected to generate approximately

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3,300 cubic yards (CY) of soil and debris. Soil removed from this area will be transported to the Work Area for screening and stockpiling. However, a 30 yard dumpster will be located here to collect trash and debris that is removed.

The area to be cleared is shown on Sheet C-103, and it is not located within a Resource Area. The berm itself is a relatively steep slope, so some clearing will need to be done upslope from the berm face. It should be noted that the area shown on the plan may be adjusted in the field at the time of clearing to minimize large tree removal or to remove trees that could cause a safety threat or slope sliding potential.

Upon completion of the removal of the MPPEH and contaminated soil, the disturbed areas in the FTRB will be graded to a maximum 3:1 slope or to conform to surrounding grade and stabilized with loam and seed. This area will then be covered with matting to facilitate effective growth and prevent erosion. A detail of this plan is also shown on Sheet C-104.

**Cold Waste Area**

The first task in the CWA will be the removal of the upland side of the existing fence. The area inside the fence is approximately 10,000 square feet (approximately 1/4 acre). The entire fenced area will be excavated to the groundwater table (average depth of 18 inches), generating approximately 500 CY of soil and debris. If metal objects extend into the pond from the CWA, the excavator bucket will be extended into the pond to retrieve these objects within the reach of the equipment.

Excavated material will be replaced with ½ inch minus sand and gravel. This area will be topped by ¾ inch minus dense grade and 6-inch plus rocks along the pond front, graded to allow access to the pond by launched boat for future remedial activities within Factory Pond. A detail of this proposed plan can be seen on Sheet C-104.

As shown on Sheet C-103 a silt (turbidity) curtain is proposed in Factory Pond to control the migration of silt and sediment. The detail of the silt curtain on Sheet C-104 indicates that the skirt of the curtain will be impermeable. This type of turbidity curtain is designed specifically for maximum silt control in ponds and lakes.


**Stormwater Management**

BMPs will be implemented during the RAMs. These include: the installation and maintenance of erosion and sedimentation controls in the upland areas; installation and maintenance of turbidity barriers around shoreline work areas; stockpile management procedures; and decontamination of vehicles leaving the RAMs Work Area and excavations. These BMPs are identified on Sheets C-103 and C-104, along with areas that will be cleared for access, staging, screening and stockpiling.

Because the project will disturb more than one acre of land where discharges enter a wetland or water of the United States, coverage under the EPA National Pollutant Discharge Elimination System (NPDES) General Permit for Discharges from Construction Activities is required. A project-specific Stormwater Pollution Prevention Plan (SWPPP) will be prepared based on the findings of the Conservation Commission prior to field activities.

If you have any questions regarding this submission prior to the public hearing, or require additional information or clarification, please contact me at 617-443-7551 or Peter Dillon at 617-443-7518.

Sincerely,

  
Ronald J. Marnicio, Ph.D., P.E.  
Project Manager

cc: Cooperating Parties  
MassDEP-SERO



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**Enclosures:**

**MassDEP Bureau of Resource Protection WPA Form 3**

**RAMs Plans**

- |                 |                                   |
|-----------------|-----------------------------------|
| • Drawing G-101 | Cover Sheet and Index to Drawings |
| • Drawing C-101 | Site Overview                     |
| • Drawing C-102 | Existing Conditions Plan          |
| • Drawing C-103 | Proposed Conditions Plan          |
| • Drawing C-104 | Details                           |



Massachusetts Department of Environmental Protection  
Bureau of Resource Protection - Wetlands

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Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:

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City/Town

**Important:**  
When filling out  
forms on the  
computer, use  
only the tab key  
to move your  
cursor - do not  
use the return  
key.



**Note:**  
Before  
completing this  
form consult  
your local  
Conservation  
Commission  
regarding any  
municipal bylaw  
or ordinance.

## A. General Information

1. Project Location (Note: electronic filers will click on button to locate project site):

King Street, Rear (between King and Winter St.)

a. Street Address

Hanover

b. City/Town

02039

c. Zip Code

Latitude and Longitude:

42 deg. 05' 24.05" N

d. Latitude

70 dg. 52' 26.35" W

e. Longitude

68

f. Assessors Map/Plat Number

45

g. Parcel /Lot Number

2. Applicant:

Michelle

a. First Name

O'Brien

b. Last Name

Fireworks Joint Defense Group

c. Organization

c/o Pierce Atwood LLP, 100 Summer Street, Suite 2250

d. Street Address

Boston

e. City/Town

MA

f. State

02110

g. Zip Code

(617) 488-8146

h. Phone Number

(617) 824-2020

i. Fax Number

mobrien@pierceatwood.com

j. Email Address

3. Property owner (required if different from applicant):

☐ Check if more than one owner

Town of Hanover/ Hanover Conservation Comm'n

a. First Name

b. Last Name

c. Organization

Hanover Town Hall, 550 Main Street

d. Street Address

Hanover

e. City/Town

MA

f. State

02339

g. Zip Code

781-826-5000/

781-826-6505

troy.clarkson@hanover-ma.gov/

amy.walkey@hanover-ma.gov

4. Representative (if any):

Ronald

a. First Name

Marnicio

b. Last Name

Tetra Tech, Inc.

c. Company

160 Federal Street, 3rd Floor

d. Street Address

Boston

e. City/Town

MA

f. State

02110

g. Zip Code

(617) 443-7551

h. Phone Number

(617) 737-3480

i. Fax Number

ronald.marnicio@tetrattech.com

j. Email address

5. Total WPA Fee Paid (from NOI Wetland Fee Transmittal Form):

\$1575.00

a. Total Fee Paid

\$800.00

b. State Fee Paid

\$775.00

c. City/Town Fee Paid



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### A. General Information (continued)

6. General Project Description:

The purpose of this Release Abatement Measure (RAM) at the Fireworks Site is to explore for and remove any detected MPPEH and contaminated soils in the Former Test Range Berm and Cold Waste Areas. In order to perform these tasks approximately 3.1 acres of vegetation will need to be cleared. Approximately 11,876 square feet in the BVW will be excavated and restored.

7a. Project Type Checklist: (Limited Project Types see Section A. 7b.)

- |   |   |
|---|---|
| 1. <input type="checkbox"/> Single Family Home                        | 2. <input type="checkbox"/> Residential Subdivision       |
| 3. <input type="checkbox"/> Commercial/Industrial                     | 4. <input type="checkbox"/> Dock/Pier                     |
| 5. <input type="checkbox"/> Utilities                                 | 6. <input type="checkbox"/> Coastal engineering Structure |
| 7. <input type="checkbox"/> Agriculture (e.g., cranberries, forestry) | 8. <input type="checkbox"/> Transportation                |
| 9. <input checked="" type="checkbox"/> Other                          |   |

7b. Is any portion of the proposed activity eligible to be treated as a limited project (including Ecological Restoration Limited Project) subject to 310 CMR 10.24 (coastal) or 310 CMR 10.53 (inland)?

1. ☐ Yes ☒ No If yes, describe which limited project applies to this project. (See 310 CMR 10.24 and 10.53 for a complete list and description of limited project types)

2. Limited Project Type

If the proposed activity is eligible to be treated as an Ecological Restoration Limited Project (310 CMR 10.24(8), 310 CMR 10.53(4)), complete and attach Appendix A: Ecological Restoration Limited Project Checklist and Signed Certification.

8. Property recorded at the Registry of Deeds for:

Plymouth

a. County

3861

c. Book

b. Certificate # (if registered land)

590

d. Page Number

### B. Buffer Zone & Resource Area Impacts (temporary & permanent)

1. ☒ Buffer Zone Only – Check if the project is located only in the Buffer Zone of a Bordering Vegetated Wetland, Inland Bank, or Coastal Resource Area.
2. ☒ Inland Resource Areas (see 310 CMR 10.54-10.58; if not applicable, go to Section B.3, Coastal Resource Areas).

Check all that apply below. Attach narrative and any supporting documentation describing how the project will meet all performance standards for each of the resource areas altered, including standards requiring consideration of alternative project design or location.



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**B. Buffer Zone & Resource Area Impacts (temporary & permanent) (cont'd)**

For all projects affecting other Resource Areas, please attach a narrative explaining how the resource area was delineated.

Resource Area	Size of Proposed Alteration	Proposed Replacement (if any)
a. <input checked="" type="checkbox"/> Bank	90 1. linear feet	90 2. linear feet
b. <input checked="" type="checkbox"/> Bordering Vegetated Wetland	11,876 1. square feet	11,876 2. square feet
c. <input checked="" type="checkbox"/> Land Under Waterbodies and Waterways	1. square feet Recovery of debris within 10 ft. of pond shoreline by excavator	2. square feet

Resource Area	Size of Proposed Alteration	Proposed Replacement (if any)
d. <input type="checkbox"/> Bordering Land Subject to Flooding	50 1. square feet	50 2. square feet
e. <input type="checkbox"/> Isolated Land Subject to Flooding	3. cubic feet of flood storage lost 1. square feet	4. cubic feet replaced
f. <input checked="" type="checkbox"/> Riverfront Area	2. cubic feet of flood storage lost Drinkwater River (Factory Pond) 1. Name of Waterway (if available) - specify coastal or inland	3. cubic feet replaced

2. Width of Riverfront Area (check one):

- ☐ 25 ft. - Designated Densely Developed Areas only
- ☐ 100 ft. - New agricultural projects only
- ☒ 200 ft. - All other projects

3. Total area of Riverfront Area on the site of the proposed project: 2,771,059  
square feet

4. Proposed alteration of the Riverfront Area:

<u>124,884</u>	<u>11,876</u>	<u>113,008</u>
a. total square feet	b. square feet within 100 ft.	c. square feet between 100 ft. and 200 ft.

5. Has an alternatives analysis been done and is it attached to this NOI? ☐ Yes ☒ No

6. Was the lot where the activity is proposed created prior to August 1, 1996? ☒ Yes ☐ No

3. ☐ Coastal Resource Areas: (See 310 CMR 10.25-10.35)

**Note:** for coastal riverfront areas, please complete Section B.2.f. above.



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### B. Buffer Zone & Resource Area Impacts (temporary & permanent) (cont'd)

Check all that apply below. Attach narrative and supporting documentation describing how the project will meet all performance standards for each of the resource areas altered, including standards requiring consideration of alternative project design or location.

Online Users:  
Include your document transaction number (provided on your receipt page) with all supplementary information you submit to the Department.

Resource Area	Size of Proposed Alteration	Proposed Replacement (if any)
---------------	-----------------------------	-------------------------------

- |   |  |                                  |
|---|--|----------------------------------|
| a. <input type="checkbox"/> Designated Port Areas | Indicate size under Land Under the Ocean, below                |                                  |
| b. <input type="checkbox"/> Land Under the Ocean  | 1. square feet<br>2. cubic yards dredged                       |                                  |
| c. <input type="checkbox"/> Barrier Beach         | Indicate size under Coastal Beaches and/or Coastal Dunes below |                                  |
| d. <input type="checkbox"/> Coastal Beaches       | 1. square feet   | 2. cubic yards beach nourishment |
| e. <input type="checkbox"/> Coastal Dunes         | 1. square feet   | 2. cubic yards dune nourishment  |

	Size of Proposed Alteration	Proposed Replacement (if any)
--	-----------------------------	-------------------------------

- |   |   |  |
|---|---|--|
| f. <input type="checkbox"/> Coastal Banks                         | 1. linear feet  |  |
| g. <input type="checkbox"/> Rocky Intertidal Shores               | 1. square feet  |  |
| h. <input type="checkbox"/> Salt Marshes                          | 1. square feet  | 2. sq ft restoration, rehab., creation |
| i. <input type="checkbox"/> Land Under Salt Ponds                 | 1. square feet<br>2. cubic yards dredged  |  |
| j. <input type="checkbox"/> Land Containing Shellfish             | 1. square feet  |  |
| k. <input type="checkbox"/> Fish Runs                             | Indicate size under Coastal Banks, inland Bank, Land Under the Ocean, and/or inland Land Under Waterbodies and Waterways, above<br>1. cubic yards dredged   |  |
| l. <input type="checkbox"/> Land Subject to Coastal Storm Flowage | 1. square feet  |  |
| 4. <input type="checkbox"/> Restoration/Enhancement               | If the project is for the purpose of restoring or enhancing a wetland resource area in addition to the square footage that has been entered in Section B.2.b or B.3.h above, please enter the additional amount here. |  |

a. square feet of BVW

b. square feet of Salt Marsh

5. ☐ Project Involves Stream Crossings

a. number of new stream crossings

b. number of replacement stream crossings



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### C. Other Applicable Standards and Requirements

- ☐ This is a proposal for an Ecological Restoration Limited Project. Skip Section C and complete Appendix A: Ecological Restoration Limited Project Checklists – Required Actions (310 CMR 10.11).

#### Streamlined Massachusetts Endangered Species Act/Wetlands Protection Act Review

1. Is any portion of the proposed project located in **Estimated Habitat of Rare Wildlife** as indicated on the most recent Estimated Habitat Map of State-Listed Rare Wetland Wildlife published by the Natural Heritage and Endangered Species Program (NHESP)? To view habitat maps, see the *Massachusetts Natural Heritage Atlas* or go to [http://maps.massgis.state.ma.us/PRI\\_EST\\_HAB/viewer.htm](http://maps.massgis.state.ma.us/PRI_EST_HAB/viewer.htm).

a. ☐ Yes ☒ No

If yes, include proof of mailing or hand delivery of NOI to:

Natural Heritage and Endangered Species Program  
Division of Fisheries and Wildlife  
1 Rabbit Hill Road  
Westborough, MA 01581

2008 (MassGIS)

b. Date of map

If yes, the project is also subject to Massachusetts Endangered Species Act (MESA) review (321 CMR 10.18). To qualify for a streamlined, 30-day, MESA/Wetlands Protection Act review, please complete Section C.1.c, and include requested materials with this Notice of Intent (NOI); OR complete Section C.2.f, if applicable. *If MESA supplemental information is not included with the NOI, by completing Section 1 of this form, the NHESP will require a separate MESA filing which may take up to 90 days to review (unless noted exceptions in Section 2 apply, see below).*

#### c. Submit Supplemental Information for Endangered Species Review\*

1. ☐ Percentage/acreage of property to be altered:
- (a) within wetland Resource Area percentage/acreage
- (b) outside Resource Area percentage/acreage
2. ☐ Assessor's Map or right-of-way plan of site
2. ☐ Project plans for entire project site, including wetland resource areas and areas outside of wetlands jurisdiction, showing existing and proposed conditions, existing and proposed tree/vegetation clearing line, and clearly demarcated limits of work \*\*
- (a) ☐ Project description (including description of impacts outside of wetland resource area & buffer zone)
- (b) ☐ Photographs representative of the site

\* Some projects not in Estimated Habitat may be located in Priority Habitat, and require NHESP review (see <http://www.mass.gov/eea/agencies/dfg/dfw/natural-heritage/regulatory-review/>). Priority Habitat includes habitat for state-listed plants and strictly upland species not protected by the Wetlands Protection Act.

\*\* MESA projects may not be segmented (321 CMR 10.16). The applicant must disclose full development plans even if such plans are not required as part of the Notice of Intent process.



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### C. Other Applicable Standards and Requirements (cont'd)

- (c) ☐ MESA filing fee (fee information available at [http://www.mass.gov/dfwele/dfw/nhESP/regulatory\\_review/ mesa/ mesa\\_fee\\_schedule.htm](http://www.mass.gov/dfwele/dfw/nhESP/regulatory_review/ mesa/ mesa_fee_schedule.htm)). Make check payable to "Commonwealth of Massachusetts - NHESP" and **mail to NHESP** at above address

*Projects altering 10 or more acres of land, also submit:*

- (d) ☐ Vegetation cover type map of site
- (e) ☐ Project plans showing Priority & Estimated Habitat boundaries
- (f) OR Check One of the Following

1. ☐ Project is exempt from MESA review.  
Attach applicant letter indicating which MESA exemption applies. (See 321 CMR 10.14, [http://www.mass.gov/dfwele/dfw/nhESP/regulatory\\_review/ mesa/ mesa\\_exemptions.htm](http://www.mass.gov/dfwele/dfw/nhESP/regulatory_review/ mesa/ mesa_exemptions.htm); the NOI must still be sent to NHESP if the project is within estimated habitat pursuant to 310 CMR 10.37 and 10.59.)

2. ☐ Separate MESA review ongoing. a. NHESP Tracking # \_\_\_\_\_ b. Date submitted to NHESP \_\_\_\_\_
3. ☐ Separate MESA review completed.  
Include copy of NHESP "no Take" determination or valid Conservation & Management Permit with approved plan.

3. For coastal projects only, is any portion of the proposed project located below the mean high water line or in a fish run?

a. ☒ Not applicable – project is in inland resource area only      b. ☐ Yes    ☐ No

If yes, include proof of mailing, hand delivery, or electronic delivery of NOI to either:

South Shore - Cohasset to Rhode Island border, and the Cape & Islands:

Division of Marine Fisheries -  
Southeast Marine Fisheries Station  
Attn: Environmental Reviewer  
1213 Purchase Street – 3rd Floor  
New Bedford, MA 02740-6694  
Email: [DMF.EnvReview-South@state.ma.us](mailto:DMF.EnvReview-South@state.ma.us)

North Shore - Hull to New Hampshire border:

Division of Marine Fisheries -  
North Shore Office  
Attn: Environmental Reviewer  
30 Emerson Avenue  
Gloucester, MA 01930  
Email: [DMF.EnvReview-North@state.ma.us](mailto:DMF.EnvReview-North@state.ma.us)

Also if yes, the project may require a Chapter 91 license. For coastal towns in the Northeast Region, please contact MassDEP's Boston Office. For coastal towns in the Southeast Region, please contact MassDEP's Southeast Regional Office.





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### C. Other Applicable Standards and Requirements (cont'd)

Online Users:  
Include your  
document  
transaction  
number  
(provided on your  
receipt page)  
with all  
supplementary  
information you  
submit to the  
Department.

4. Is any portion of the proposed project within an Area of Critical Environmental Concern (ACEC)?  
a. ☐ Yes ☒ No If yes, provide name of ACEC (see instructions to WPA Form 3 or MassDEP Website for ACEC locations). **Note:** electronic filers click on Website.
- b. ACEC
5. Is any portion of the proposed project within an area designated as an Outstanding Resource Water (ORW) as designated in the Massachusetts Surface Water Quality Standards, 314 CMR 4.00?  
a. ☐ Yes ☒ No
6. Is any portion of the site subject to a Wetlands Restriction Order under the Inland Wetlands Restriction Act (M.G.L. c. 131, § 40A) or the Coastal Wetlands Restriction Act (M.G.L. c. 130, § 105)?  
a. ☐ Yes ☒ No
7. Is this project subject to provisions of the MassDEP Stormwater Management Standards?  
a. ☐ Yes. Attach a copy of the Stormwater Report as required by the Stormwater Management Standards per 310 CMR 10.05(6)(k)-(q) and check if:  
1. ☐ Applying for Low Impact Development (LID) site design credits (as described in Stormwater Management Handbook Vol. 2, Chapter 3)  
2. ☐ A portion of the site constitutes redevelopment  
3. ☐ Proprietary BMPs are included in the Stormwater Management System.  
b. ☐ No. Check why the project is exempt:  
1. ☐ Single-family house  
2. ☐ Emergency road repair  
3. ☐ Small Residential Subdivision (less than or equal to 4 single-family houses or less than equal to 4 units in multi-family housing project) with no discharge to Critical Areas.

### D. Additional Information

- ☐ This is a proposal for an Ecological Restoration Limited Project. Skip Section D and complete Appendix A: Ecological Restoration Notice of Intent – Minimum Required Documents (310 CMR 10.12).

Applicants must include the following with this Notice of Intent (NOI). See instructions for details.

**Online Users:** Attach the document transaction number (provided on your receipt page) for any of the following information you submit to the Department.

1. ☒ USGS or other map of the area (along with a narrative description, if necessary) containing sufficient information for the Conservation Commission and the Department to locate the site. (Electronic filers may omit this item.)
2. ☒ Plans identifying the location of proposed activities (including activities proposed to serve as a Bordering Vegetated Wetland [BVW] replication area or other mitigating measure) relative to the boundaries of each affected resource area.



Massachusetts Department of Environmental Protection  
Bureau of Resource Protection - Wetlands

**WPA Form 3 – Notice of Intent**

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:

MassDEP File Number

Document Transaction Number

HANOVER

City/Town

**D. Additional Information (cont'd)**

3. ☒ Identify the method for BVW and other resource area boundary delineations (MassDEP BVW Field Data Form(s), Determination of Applicability, Order of Resource Area Delineation, etc.), and attach documentation of the methodology.

4. ☒ List the titles and dates for all plans and other materials submitted with this NOI.

Release Abatement Measures, Fireworks Site, Hanover, Plymouth County, MA

a. Plan Title

Tetra Tech

John Scaramuzzo

b. Prepared By

c. Signed and Stamped by

2/28/17

1 to 50 feet

d. Final Revision Date

e. Scale

f. Additional Plan or Document Title

g. Date

5. ☐ If there is more than one property owner, please attach a list of these property owners not listed on this form.
6. ☐ Attach proof of mailing for Natural Heritage and Endangered Species Program, if needed.
7. ☐ Attach proof of mailing for Massachusetts Division of Marine Fisheries, if needed.
8. ☒ Attach NOI Wetland Fee Transmittal Form
9. ☐ Attach Stormwater Report, if needed.

**E. Fees**

1. ☐ Fee Exempt: No filing fee shall be assessed for projects of any city, town, county, or district of the Commonwealth, federally recognized Indian tribe housing authority, municipal housing authority, or the Massachusetts Bay Transportation Authority.

Applicants must submit the following information (in addition to pages 1 and 2 of the NOI Wetland Fee Transmittal Form) to confirm fee payment:

1859944

2/27/17

2. Municipal Check Number

3. Check date

1859940

2/27/17

4. State Check Number

5. Check date

Tetra Tech Inc.

6. Payor name on check: First Name

7. Payor name on check: Last Name



Massachusetts Department of Environmental Protection  
Bureau of Resource Protection - Wetlands

**WPA Form 3 – Notice of Intent**

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:

MassDEP File Number

Document Transaction Number

HANOVER

City/Town

**F. Signatures and Submittal Requirements**

I hereby certify under the penalties of perjury that the foregoing Notice of Intent and accompanying plans, documents, and supporting data are true and complete to the best of my knowledge. I understand that the Conservation Commission will place notification of this Notice in a local newspaper at the expense of the applicant in accordance with the wetlands regulations, 310 CMR 10.05(5)(a).

I further certify under penalties of perjury that all abutters were notified of this application, pursuant to the requirements of M.G.L. c. 131, § 40. Notice must be made by Certificate of Mailing or in writing by hand delivery or certified mail (return receipt requested) to all abutters within 100 feet of the property line of the project location.

1. Signature of Applicant

*Michael J. O'Brien for Fireworks Joint Defense Group*

2. Date

*2/28/2017*

3. Signature of Property Owner (if different)

*[Signature]*

4. Date

*3/1/17*

5. Signature of Representative (if any)

*Ronald J. Mammisio for Tetra Tech, Inc.*

6. Date

*2/28/17*

**For Conservation Commission:**

Two copies of the completed Notice of Intent (Form 3), including supporting plans and documents, two copies of the NOI Wetland Fee Transmittal Form, and the city/town fee payment, to the Conservation Commission by certified mail or hand delivery.

**For MassDEP:**

One copy of the completed Notice of Intent (Form 3), including supporting plans and documents, one copy of the NOI Wetland Fee Transmittal Form, and a **copy** of the state fee payment to the MassDEP Regional Office (see Instructions) by certified mail or hand delivery.

**Other:**

If the applicant has checked the "yes" box in any part of Section C, Item 3, above, refer to that section and the Instructions for additional submittal requirements.

The original and copies must be sent simultaneously. Failure by the applicant to send copies in a timely manner may result in dismissal of the Notice of Intent.





Massachusetts Department of Environmental Protection  
Bureau of Resource Protection - Wetlands  
**NOI Wetland Fee Transmittal Form**  
Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

**Important:** When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.



## A. Applicant Information

### 1. Location of Project:

King Street, Rear (between King and Winter St.)

1845563

c. Check number

Hanover

b. City/Town

\$775.00

d. Fee amount

### 2. Applicant Mailing Address:

Michelle

a. First Name

O'Brien

b. Last Name

Fireworks Joint Defense Group

c. Organization

c/o Pierce Atwood LLP, 100 Summer Street, Suite 2250

d. Mailing Address

Boston

e. City/Town

MA

f. State

02110

g. Zip Code

(617) 488-8146

h. Phone Number

(617) 824-2020

i. Fax Number

mobrien@pierceatwood.com

j. Email Address

### 3. Property Owner (if different):

Town of Hanover/Hanover Conservation Comm

a. First Name

b. Last Name

c. Organization

Hanover Town Hall, 550 Main Street

d. Mailing Address

Hanover

e. City/Town

MA

f. State

02339

g. Zip Code

781-826-5000/

781-826-6505

i. Fax Number

troy.clarkson@hanover-ma.gov/

amy.walkey@hanover-ma.gov

## B. Fees

Fee should be calculated using the following process & worksheet. **Please see instructions before filling out worksheet.**

**Step 1/Type of Activity:** Describe each type of activity that will occur in wetland resource area and buffer zone.

**Step 2/Number of Activities:** Identify the number of each type of activity.

**Step 3/Individual Activity Fee:** Identify each activity fee from the six project categories listed in the instructions.

**Step 4/Subtotal Activity Fee:** Multiply the number of activities (identified in Step 2) times the fee per category (identified in Step 3) to reach a subtotal fee amount. Note: If any of these activities are in a Riverfront Area in addition to another Resource Area or the Buffer Zone, the fee per activity should be multiplied by 1.5 and then added to the subtotal amount.

**Step 5/Total Project Fee:** Determine the total project fee by adding the subtotal amounts from Step 4.

**Step 6/Fee Payments:** To calculate the state share of the fee, divide the total fee in half and subtract \$12.50. To calculate the city/town share of the fee, divide the total fee in half and add \$12.50.

To calculate filing fees, refer to the category fee list and examples in the instructions for filling out WPA Form 3 (Notice of Intent).

[illegible]

Total Project Fee:	<u>\$1575.00</u>
	a. Total Fee from Step 5
My share of filing Fee:	<u>\$775.00</u>
	b. 1/2 Total Fee less \$12.50
My share of filing Fee:	<u>\$800.00</u>
	c. 1/2 Total Fee plus \$12.50

**To MassDEP Regional Office (see Instructions):** Send a copy of the Notice of Intent or Abbreviated Notice of Intent; a copy of this form; and a copy of the state fee payment. (E-filers of Notices of Intent may submit these electronically.)



# RELEASE ABATEMENT MEASURES FIREWORKS SITE HANOVER, PLYMOUTH COUNTY, MASSACHUSETTS

160 Federal Street, 3rd Floor  
Boston, MA 02110  
Phone: (617) 443-7500 Fax: (617) 737-3480



www.tetrattech.com

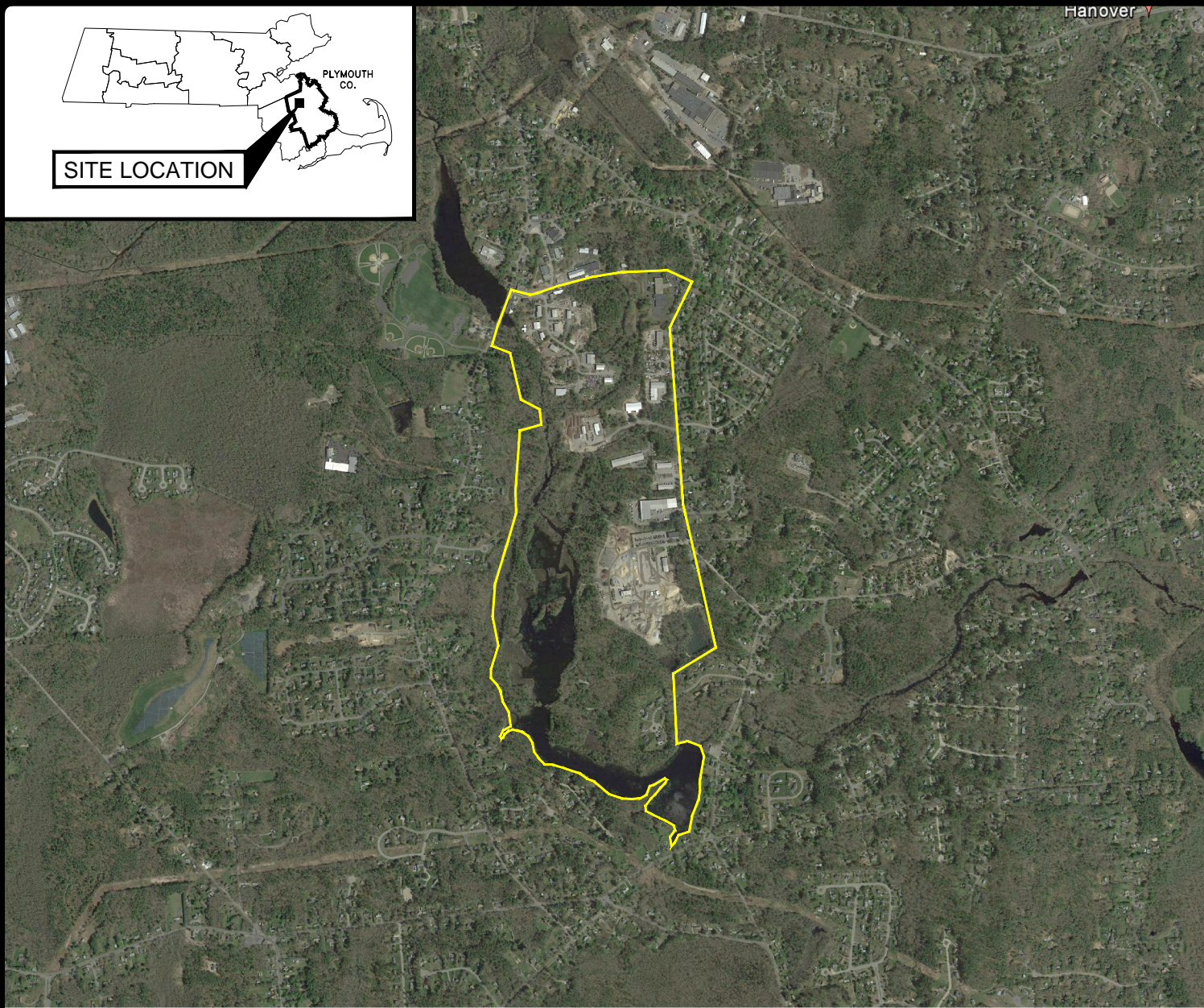
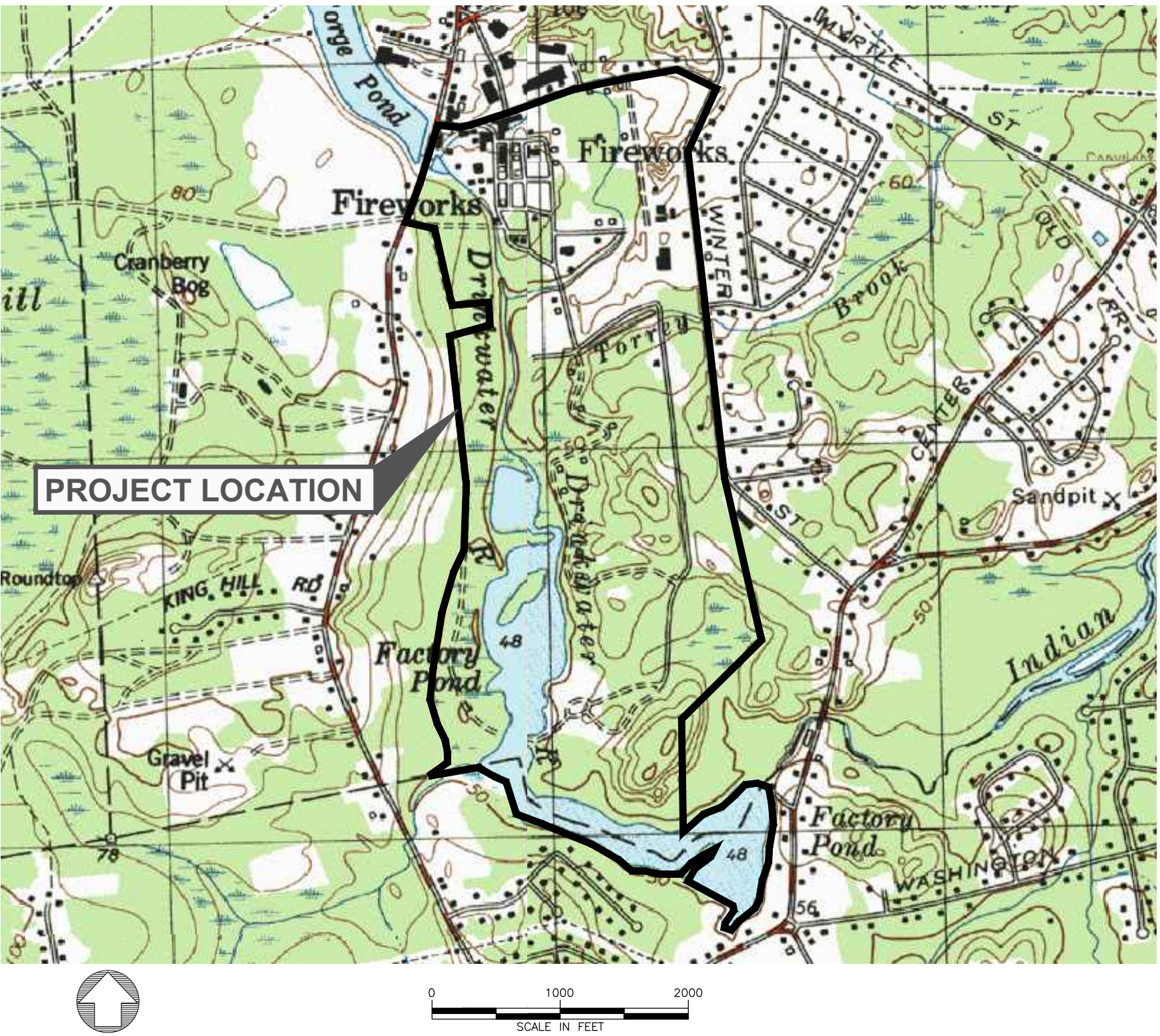
PROJECT LOCATION:  
HANOVER  
MASSACHUSETTS

Tt PROJECT No.:  
106-4383

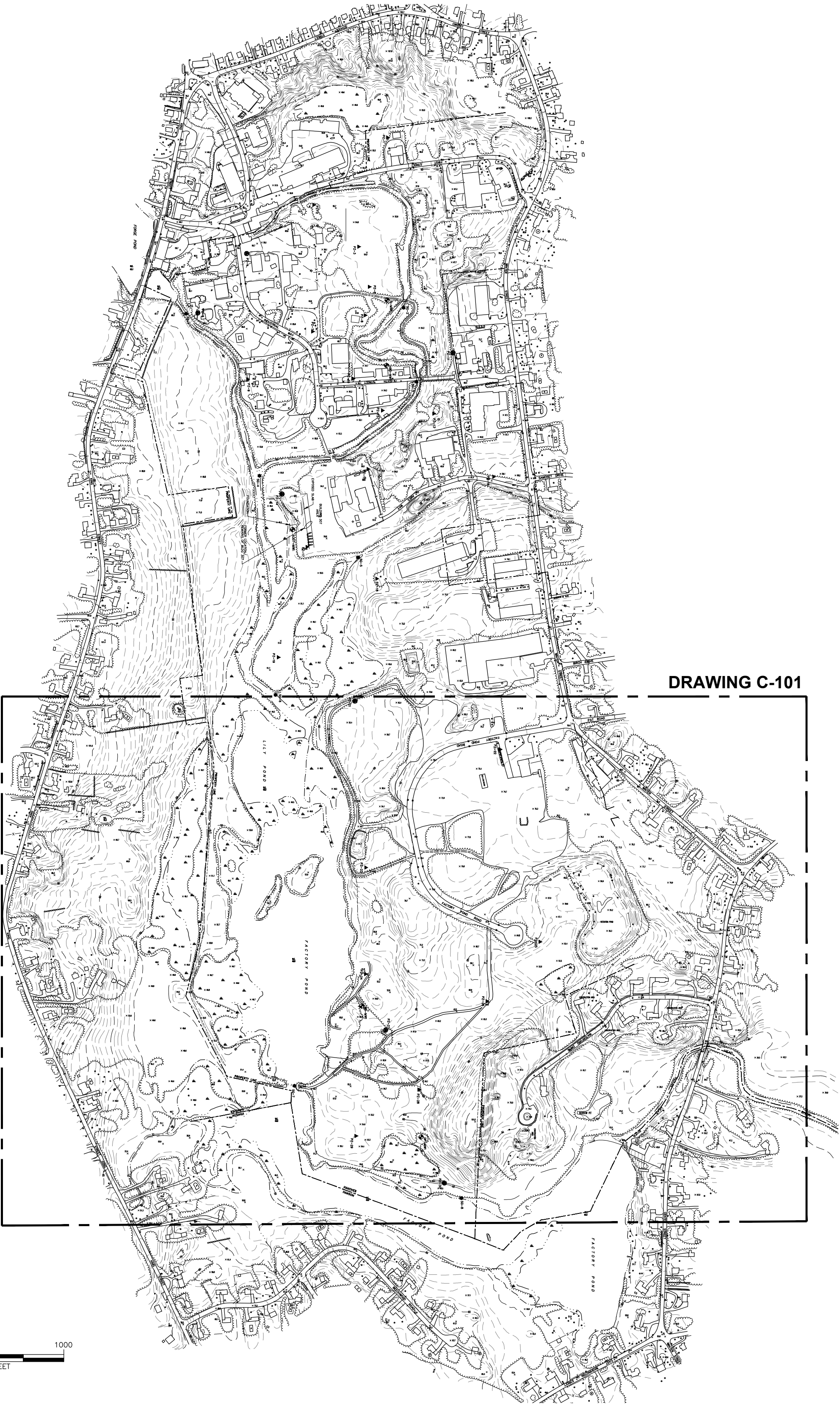
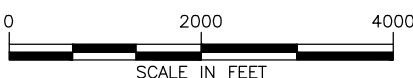
ISSUED:

REV:  
A - JAN. 10, 2017 - DRAFT REVIEW  
B - FEB. 28, 2017 - ISSUED FOR NOI PERMITTING

VICINITY MAP:



FIREWORKS GENERAL LOCATION

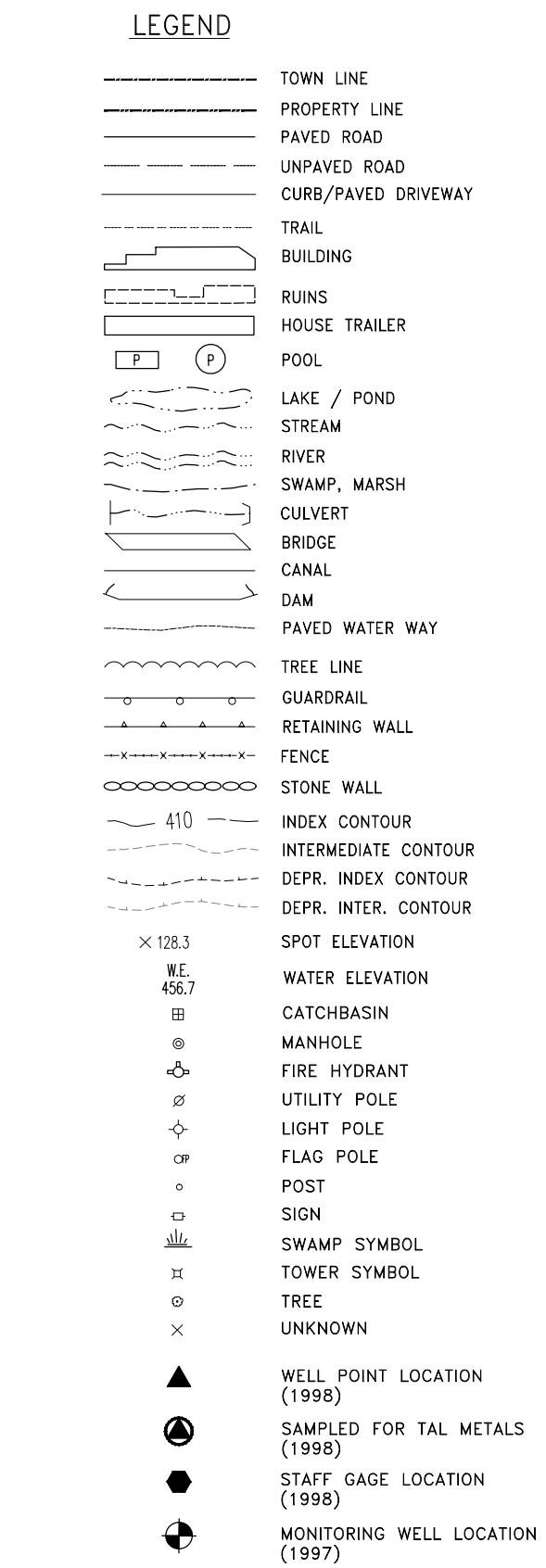


DRAWING C-101



INDEX TO DRAWINGS	
DRAWING NO.	DRAWING TITLE
G-101	COVER SHEET AND INDEX TO DRAWINGS
C-101	SITE OVERVIEW
C-102	EXISTING CONDITIONS PLAN
C-103	PROPOSED CONDITIONS PLAN
C-104	DETAILS

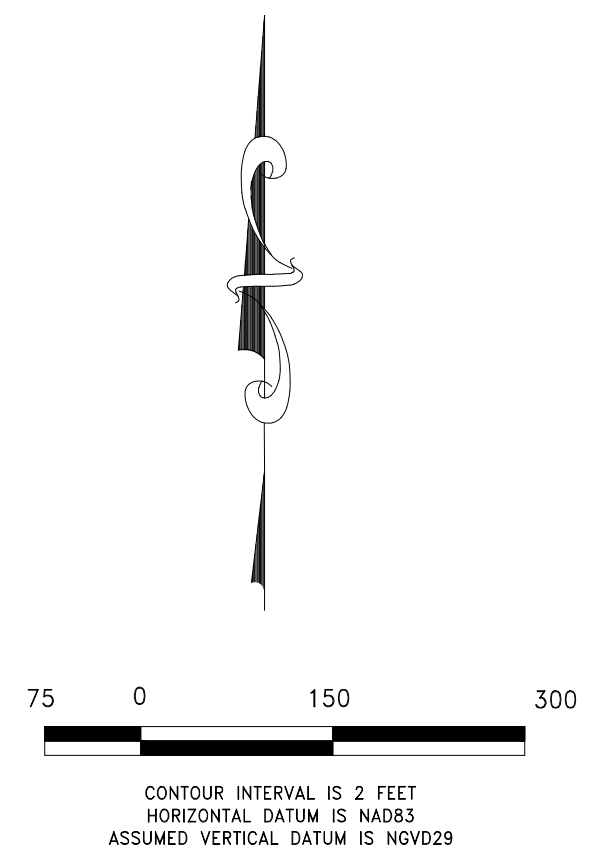




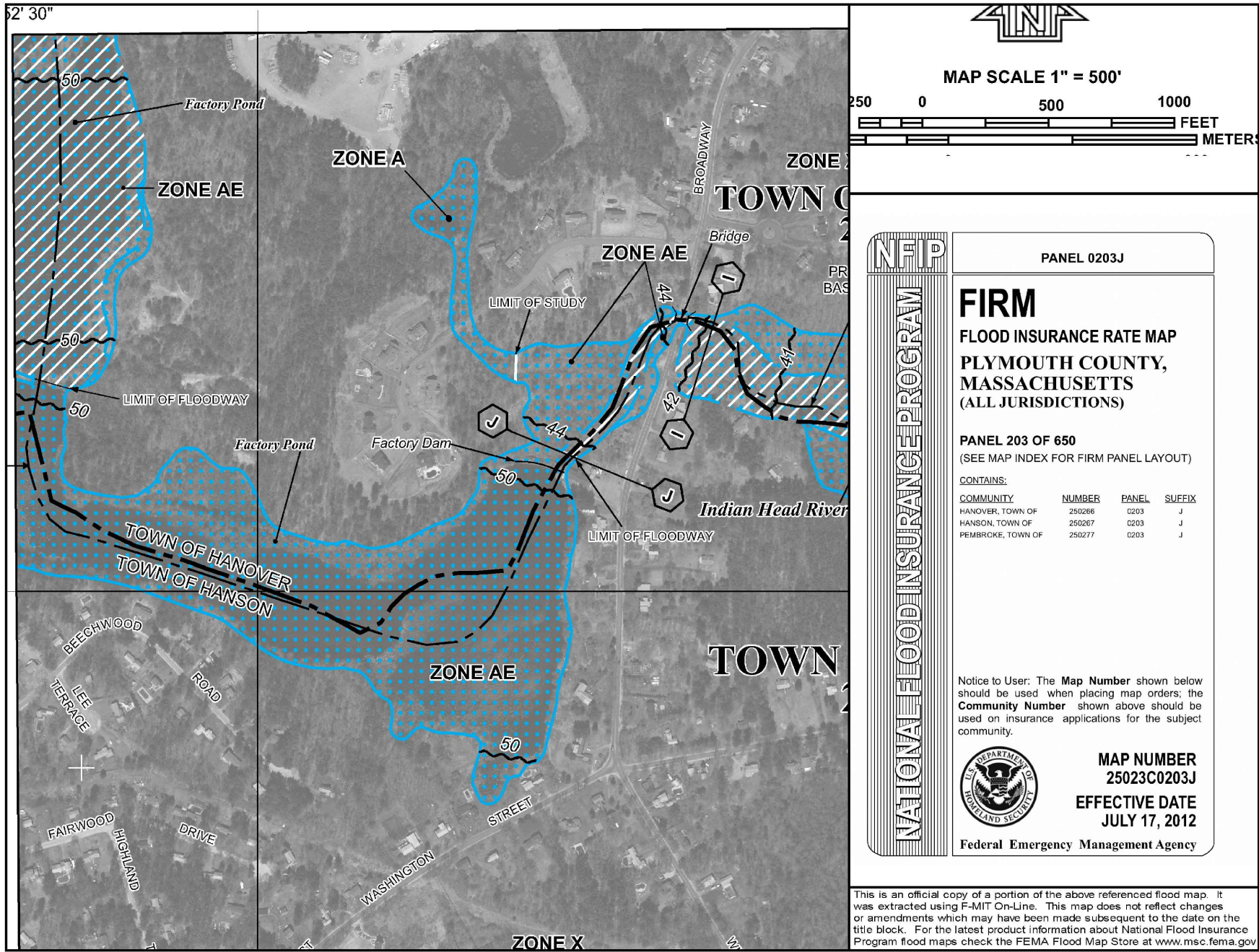
**NOTES:**

1. BASE MAP MEETS NATIONAL MAP ACCURACY STANDARDS FOR 1"=100' MAPS WITH 2' CONTOURS. STANDARD PROCEDURE DICTATES THAT PHOTOGRAMMETRIC MAPS BE FIELD-CHECKED PRIOR TO USE. IN AREAS WHICH ARE OBTAINED BY VISUAL OR PHYSICAL FEATURES, CONTOURS AND DETAILS MAY ONLY BE APPROXIMATE, COMPILED AND CONTROLLED BY JAMES W. SEWALL COMPANY, OLD TOWN MAINE BY PHOTOGRAMMETRIC METHODS FROM AERIAL PHOTOGRAPHS DATED APRIL 15, 1999.

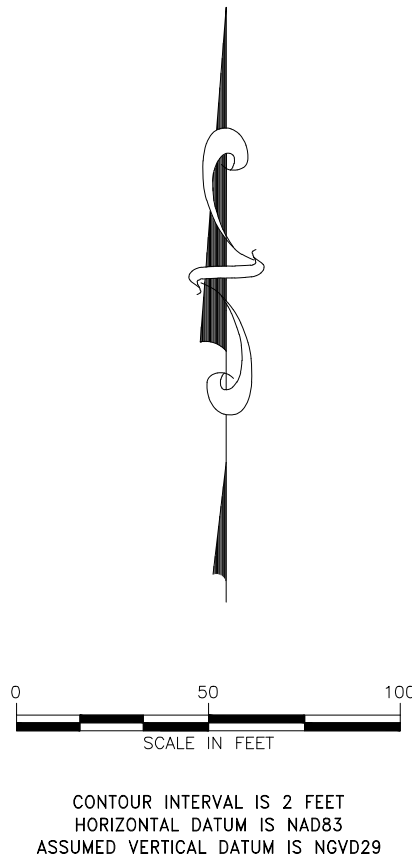
2. WELL POINTS, STAFF GAGE AND PIEZOMETER LOCATIONS WERE SURVEYED IN 1999 BY KERR MCGEE CHEMICAL LLC.



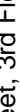




- |  |                                    |
|--|------------------------------------|
|  | TOWN LINE                          |
|  | PROPERTY LINE                      |
|  | PAVED ROAD                         |
|  | UNPAVED ROAD                       |
|  | CURB/PAVED DRIVEWAY                |
|  | TRAIL                              |
|  | BUILDING                           |
|  | RUINS                              |
|  | HOUSE TRAILER                      |
|  | POOL                               |
|  | LAKE / POND                        |
|  | STREAM                             |
|  | RIVER                              |
|  | SWAMP, MARSH                       |
|  | CULVERT                            |
|  | BRIDGE                             |
|  | CANAL                              |
|  | DAM                                |
|  | PAVED WATER WAY                    |
|  | TREE LINE                          |
|  | GUARDRAIL                          |
|  | RETAINING WALL                     |
|  | FENCE                              |
|  | STONE WALL                         |
|  | INDEX CONTOUR                      |
|  | INTERMEDIATE CONTOUR               |
|  | DEPR. INDEX CONTOUR                |
|  | DEPR. INTER. CONTOUR               |
|  | SPOT ELEVATION                     |
|  | WATER ELEVATION                    |
|  | CATCHBASIN                         |
|  | MANHOLE                            |
|  | FIRE HYDRANT                       |
|  | UTILITY POLE                       |
|  | LIGHT POLE                         |
|  | FLAG POLE                          |
|  | POST                               |
|  | SIGN                               |
|  | SWAMP SYMBOL                       |
|  | TOWER SYMBOL                       |
|  | TREE                               |
|  | UNKNOWN                            |
|  | WELL POINT LOCATION<br>(1998)      |
|  | SAMPLED FOR TAL METALS<br>(1998)   |
|  | STAFF GAGE LOCATION<br>(1998)      |
|  | MONITORING WELL LOCATION<br>(1997) |

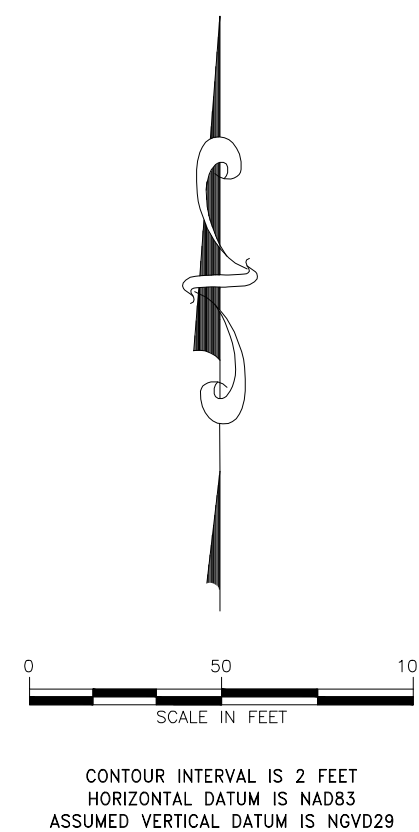
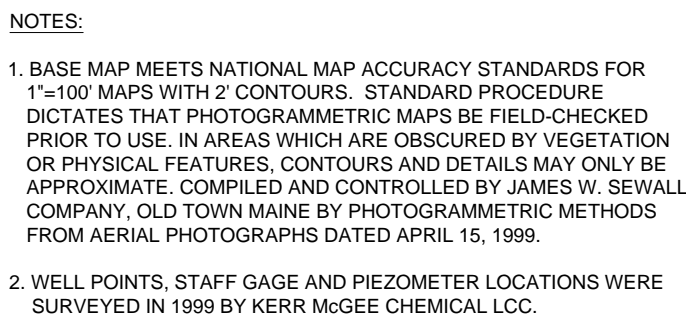
PRELIMINARY REVIEW  
NOT FOR CONSTRUCTION

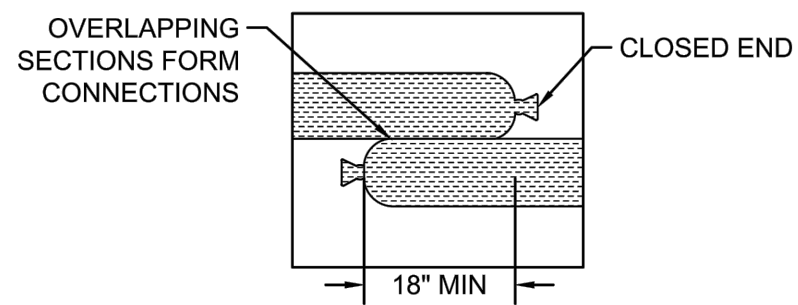
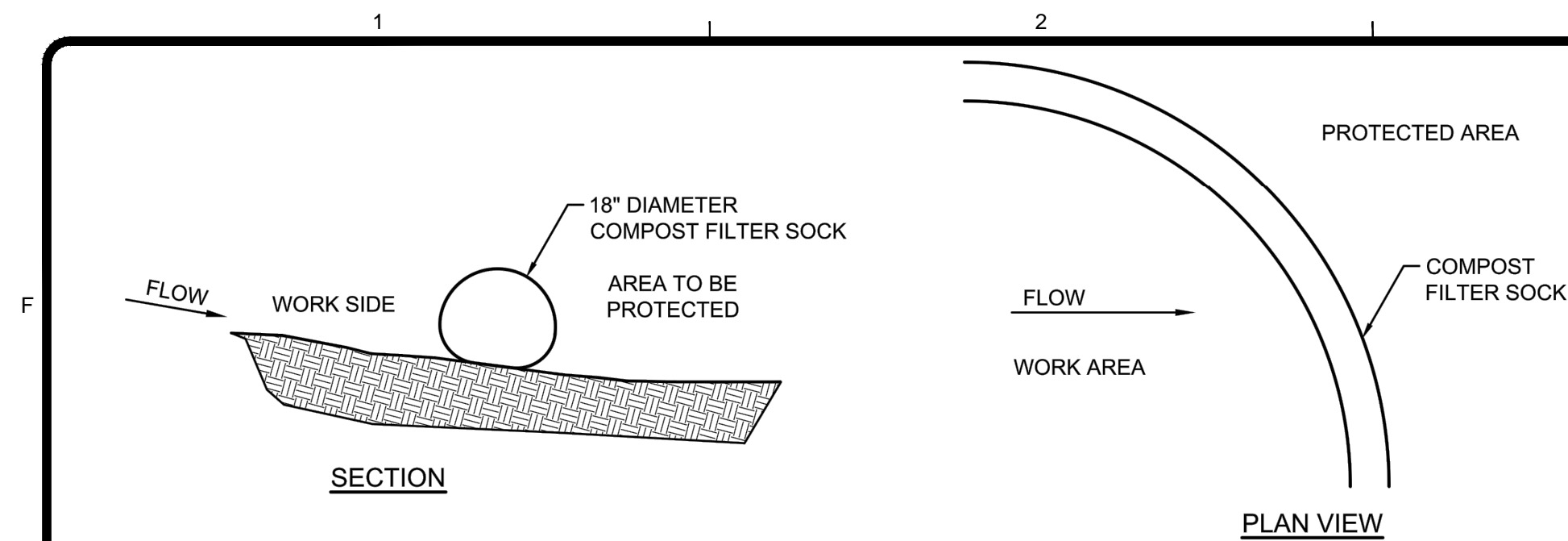
**TETRA TECH**



[www.tetratech.com](http://www.tetratech.com)  
 160 Federal Street, 3rd Floor  
 Boston, MA 02110  
 Phone: (617) 443-7500 Fax: (617) 737-3480







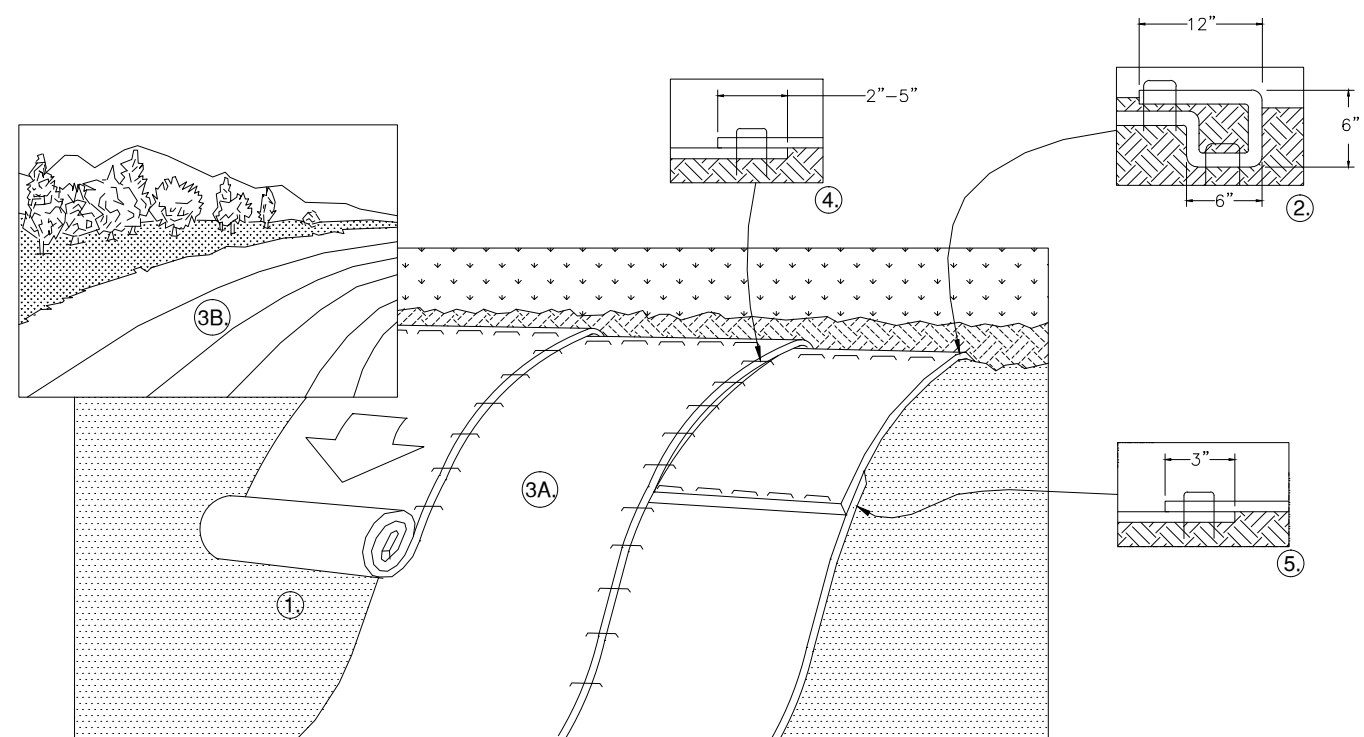
CONNECTION/ATTACHMENT DETAIL

NOTES:

1. PREFABRICATED COMPOST SOCK SHALL BE FILTREXX SOXX OR APPROVED EQUAL.
2. MATERIAL FOR SOCKS SHALL CONSIST OF SANITIZED MATURE COMPOST, FREE OF VIABLE WEED SEEDS AND FOREIGN DEBRIS SUCH AS GLASS AND PLASTIC. COMPOST SHALL BE IN SHREDDED OR GRANULAR FORM AND FREE FROM HARD LUMPS. IN ADDITION, NO KILN-DRIED WOOD OR CONSTRUCTION DEBRIS SHALL BE ALLOWED. CONTRACTOR SHALL REFER TO MASSDOT SPECIFICATIONS M1.06.0 FOR MATERIAL SPECIFICATIONS.
3. SOCK SHALL CONSIST OF JUTE MESH OR OTHER APPROVED BIODEGRADABLE MATERIAL.

NOTE:  
NO STAKES SHALL BE INSTALLED.

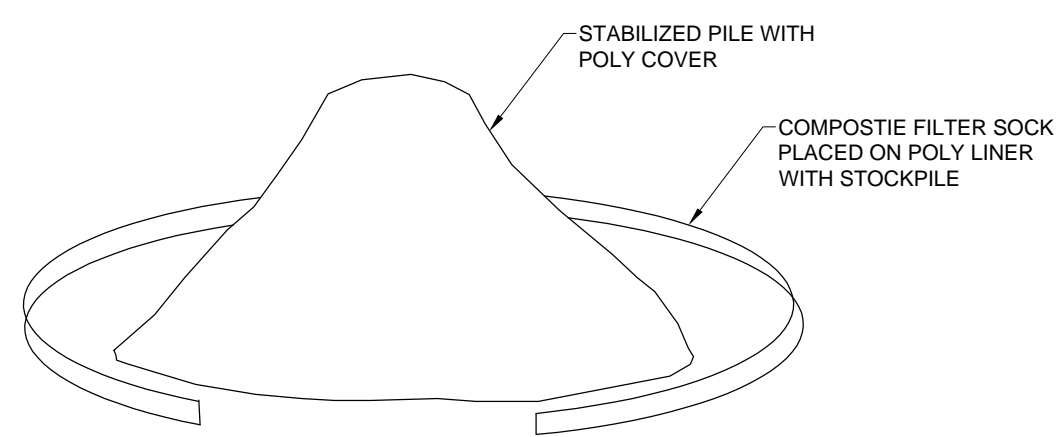
COMPOSITE FILTER SOCK  
NOT TO SCALE (NTS)



1. PREPARE SOIL BEFORE INSTALLING BLANKETS, INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED. NOTE: WHEN USING CELL-O-SEED DO NOT SEED PREPARED AREA. CELL-O-SEED MUST BE INSTALLED WITH PAPER SIDE DOWN.
2. BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE BLANKET IN A 6" DEEP X 6" WIDE TRENCH WITH APPROXIMATELY 12" OF BLANKET EXTENDED BEYOND THE UP-SLOPE PORTION OF THE TRENCH. ANCHOR THE BLANKET WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO COMPACTED SOIL AND FOLD REMAINING 12" PORTION OF BLANKET BACK OVER SEED AND COMPACTED SOIL. SECURE BLANKET OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" APART ACROSS THE WIDTH OF THE BLANKET.
3. ROLL THE BLANKETS (A.) DOWN OR (B.) HORIZONTALLY ACROSS THE SLOPE. BLANKETS WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL BLANKETS MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS SHOWN IN THE STAPLE PATTERN GUIDE. WHEN USING OPTIONAL DOT SYSTEM, STAPLES/STAKES SHOULD BE PLACED THROUGH EACH OF THE COLORED DOTS CORRESPONDING TO THE APPROPRIATE STAPLE PATTERN.
4. THE EDGES OF PARALLEL BLANKETS MUST BE STAPLED WITH APPROXIMATELY 2"-5" OVERLAP DEPENDING ON BLANKET TYPE. TO ENSURE PROPER SEAM ALIGNMENT, PLACE THE EDGE OF THE OVERLAPPING BLANKET (BLANKET BEING INSTALLED ON TOP) EVEN WITH THE COLORED SEAM STITCH ON THE PREVIOUSLY INSTALLED BLANKET.
5. CONSECUTIVE BLANKETS SPICED DOWN THE SLOPE MUST BE PLACED END OVER END (SHINGLE STYLE) WITH AN APPROXIMATE 3" OVERLAP. STAPLE THROUGH OVERLAPPED AREA, APPROXIMATELY 12" APART ACROSS ENTIRE BLANKET WIDTH.

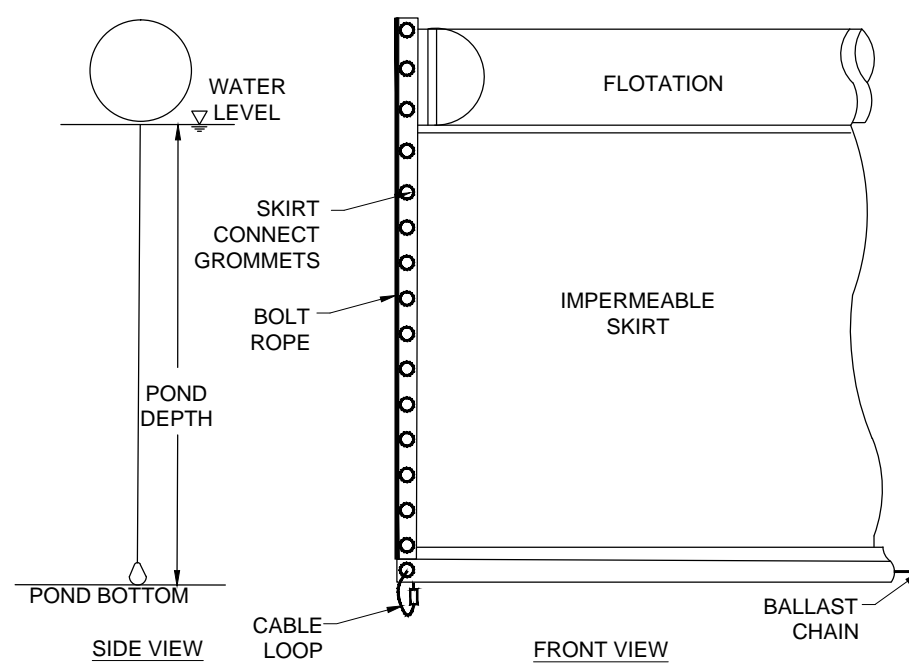
NOTE: IN LOOSE SOIL CONDITIONS, THE USE OF STAPLE OR STAKE LENGTHS GREATER THAN 6" MAY BE NECESSARY TO PROPERLY SECURE THE BLANKETS.

EROSION CONTROL BLANKET DETAIL FOR SLOPE INSTALLATION  
NOT TO SCALE (NTS)



NOTE:  
STOCKPILES MUST BE PHYSICALLY SEPARATED  
FROM OTHER STORMWATER CONTROLS.

SOIL STOCKPILE CONTROL  
NOT TO SCALE (NTS)



**SILT CURTAIN DETAIL**  
**NOT TO SCALE (NTS)**

## SEEDING

SEEDING RATES			
SPECIES	LBS/1000 S.F.	LBS/ACRE	RECOMMENDED SEEDING DATES
ANNUAL RYEGRASS	1	40	APRIL 1 TO JUNE 1 AUG 1 TO SEPT 15
FOXTAIL MILLET	0.7	30	MAY 1 TO JUNE 30
OATS	2	80	APRIL 1 TO JULY 1 AUG 15 TO SEPT 15
WINTER RYE	3	120	AUG 15 TO OCT 15

## MULCHING

**MULCH APPLICATION RATES:**

HAY OR STRAW MULCH SHALL BE AIR-DRYED, FREE OF UNDESIRABLE SEEDS AND COARSE MATERIALS. APPLICATION RATE MUST BE 2 BALES (70-90 LBS) PER 1,000 SQUARE FEET OR 1.5 TO 2 TONS PER ACRE. NO BARE SPOTS SHOWING AND SHALL ONLY BE APPLIED TO SLOPES 3:1 OR FLATTER. ANCHORING METHODS INCLUDING NETTING WITH JUTE, WOOD FIBER OR PLASTIC, OR APPLY MULCH AND TRACK SURFACE UP AND DOWN THE SLOPE SO CLEAR MATS REMAIN FLAT TO THE CONTOURS. FOR OVERWINTER APPLICATION THE RATE SHALL BE 150 LBS PER 1,000 SQUARE FEET OR 3 TONS/ACRE. MULCH SHALL NOT BE SPREAD ON TOP OF SNOW; SNOW MUST BE REMOVED DOWN TO A ONE-INCH DEPTH OR LESS PRIOR TO APPLICATION.

NOTES:

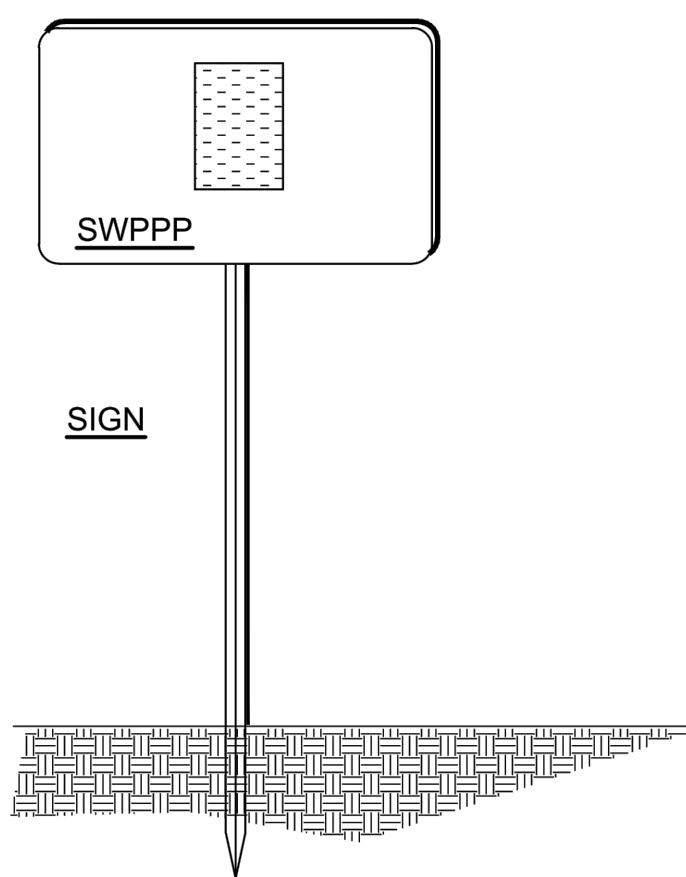
**PRACTICE MULCHING:** MULCHING IS AN EROSION CONTROL PRACTICE THAT INVOLVES USING MATERIALS SUCH AS STRAW MULCH DERIVED FROM WHEAT, RICE OR BARLEY OR WOOD MULCH CONSISTING OF SHREDDED OR CHIPPED WOOD, BARK OR COMPOST. MULCHING IS HIGHLY EFFECTIVE, AND WHEN APPLIED CORRECTLY PROVIDES A LEVEL OF PROTECTION COMPARABLE TO DENSE VEGETATIVE COVER. MULCH IS ALSO VERY BENEFICIAL FOR RECENTLY PLANTED AREAS HOLDING SEEDS, FERTILIZERS, AND TOPSOIL IN PLACE, RETAINING MOISTURE, AND INSULATING PLANT ROOTS AGAINST EXTREME TEMPERATURES.

**INSTALLATION:** MULCH MUST BE APPLIED UNIFORMLY TO THE SOIL AND PROPERLY ANCHORED (USING STUDDED ROLLERS, TACKIFIERS OR AN ANCHORING TOOL). MULCH SHOULD NOT BE APPLIED ON SLOPES STEEPER THAN 3:1 AND SHOULD NOT BE USED IN AREAS OF CONCENTRATED FLOWS. AREA SHOULD BE ROUGHENED OR TRACKED PRIOR TO APPLICATION. AVOID APPLYING MULCH DURING OR IMMEDIATELY BEFORE RAINFALL. THERE SHOULD BE NO BARE SPOTS SHOWING EXPOSED SOILS.

\*\* HYDRAULICALLY APPLIED MULCHES SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS.

**MAINTENANCE.** MULCH SHALL BE REAPPLIED TO ANY BARE SPOTS. MAINTAIN AN UNBROKEN GROUND COVER AND REPAIR ANY DAMAGED GROUND COVER AND RE-MULCH EXPOSED AREAS. INSPECT AFTER EACH RAINFALL EVENT TO MAKE SURE THE MULCH IS NOT DISLODGED OR CAUSING EROSION.

## TEMPORARY STABILIZATION MULCHING

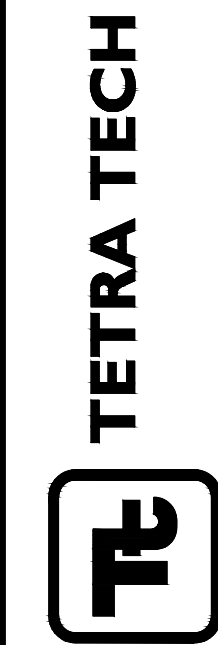


SIGN

NOTES:

1. CONSTRUCTION SITE NOTICE SHALL BE POSTED.
2. POSTING IS TO BE AT JOB SITE ENTRANCE WHERE IT WILL BE VISIBLE AND LEGIBLE FROM THE PUBLIC WAY.
3. POSTING IS REQUIRED FROM THE DAY CONSTRUCTION ACTIVITIES START UNTIL THE NOTICE OF TERMINATION (NOT) IS FILED.

**JOB SITE PERMIT POSTING DETAIL**  
NOT TO SCALE (NTS)



MARK	DATE	DESCRIPTION	BY
B	2/28/17	ISSUED FOR NOI PERMITTING	JS
A	1/10/17	DRAFT REVIEW	JS

FIREWORKS SITE  
MOUNTAIN COUNTY, MASSACHUSETTS  
ABATEMENT MEASURES  
ETRB AND CWA

## DETAILS

Project No.: 106-4383

Designed By: P. DILLON

Drawn By:	D. LUCAS
Checked By:	J. SCARAMUZZO

C-104