

CONSTRUCTION PERIOD
POLLUTION PREVENTION AND
EROSION & SEDIMENT CONTROL PLAN
FOR
128 TOWN STREET
BRAintree, MA

December 21, 2015

Prepared By:



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249 South Street, Unit 1

Plainville, MA 02762

LDG Project #: 1410.00

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INTRODUCTION

This Construction Period Pollution Prevention and Erosion & Sediment Control Plan (CPPP&E&SCP) is prepared in accordance Massachusetts Department of Environmental Protection (MADEP) Stormwater Guidelines. The construction activities will include the construction of a newly paved parking area and second floor building addition with associated parking, driveways, utilities and site grading. This CPPP&E&SCP must be retained on-site during construction and available for the viewing of permitting authorities as appropriate at the site construction trailer located off of Town Street, Braintree, MA during construction or within the main building, as specified or within the Engineering Department at Town of Braintree Town Hall.

The storm water permitting is necessary due to the total area of disturbance during construction is greater than one acre which requires a Construction General Permit requiring a Notice of Intent for Stormwater Discharges Associated with Construction Activity under the NPDES General Permit. The total area to be disturbed for overall site development includes approximately 12± acres, including the building, driveways, parking area, drainage, utilities, landscaping and associated grading.

SECTION 1 – SITE & ACTIVITY DESCRIPTION

1.1 PROJECT SITE OPERATOR

Town of Braintree
1 JFK Memorial Drive
Braintree, MA 02184

1.2 SITE AND PROJECT DESCRIPTION

PRE-DEVELOPMENT CONDITIONS

The existing site consists of a single user, the Braintree High School, with existing sports fields and parking. The existing drainage system details within the development at the High School was taken from record plans and field survey.

The parking lot and the existing soccer field drain through a closed pipe system under the existing turf football field towards the on-site pond located to the east. The closed pipe system as it leaves the parking area and soccer field is the system control point. There are three main pipe runs which collect the overland flow from the existing soccer field, edge of the existing track and football field as well as two main runs within the existing parking lot. These pipe runs and the associated infrastructure, catch basins, and manholes, were field verified for connection point.

The on-site soils as classified by the Soil Survey for Norfolk/Suffolk County Massachusetts are:

Norfolk and Suffolk Counties, Massachusetts (MA616)

Map Unit Symbol	Map Unit Name
312B	Woodbridge fine sandy loam, 0 to 8 percent slopes, extremely stony
603	Urban land, wet substratum, 0 to 3 percent slopes
623C	Woodbridge-Urban land complex, 3 to 15 percent slopes
654	Udorthents, loamy

Please see the attached SCS soils documentation attached herein. Through on-site soil observation test pits, the soils are coarse gravel with groundwater table consistent at 5' and redox for ESHGW at 34".

POST-DEVELOPMENT CONDITIONS

The proposed project will consist of a 87,710± sf commercial recreational building with associated utilities and parking (collectively the “Facility”) consisting of the following: two (2) hockey rinks; a 25-yard indoor swimming pool; indoor skills/fitness training facilities; wellness/sports medicine facilities; pro-shop; family fun entertainment areas; café/food concessions, and office space. As more fully shown on the Plans and renderings by Studio Troika, the proposed pool will have ten (10) lanes that are regulation length – 82’ long. The two (2) NHL sized ice rinks will house programming for learn to skate, learn to play, youth town programs of all ages, and elite leagues men’s and women’s league. Both the aquatics area and hockey rinks will have spectator viewing and seating areas and private locker rooms. Both the main hockey rink and pool will meet Massachusetts Interscholastic Athletic Association (MIAA) requirements so high school and other privately organized hockey tournaments or swim meets may be held at the proposed Facility. The project will redevelop a portion of the existing parking lot, the existing soccer field and drainage system.

The proposed main building has a standard pitched roof line where water collects along the edge of the roofline and collects in gutters and downspouts as detailed in the architectural plans and is collected via downspout and directed to the on-site drainage system as detailed on the site plans. There are two locations for proposed on-site drainage systems but three systems total which discharge to one a new main drain line along the north side of the existing athletic fields.

A stormwater management plan was developed to mitigate impacts created by the proposed development and construction activities. Stormwater runoff from the rooftop of the 87,710± sf s.f. building will be collected by roof drain header pipes located around the proposed building. The roof drain headers shall discharge to a new system of subsurface chambers to maximize groundwater recharge of the clean rooftop flow. The proposed on-site mitigation measures directly address recharge to groundwater standards and mitigation of construction.

The new parking areas were evaluated within the infrastructure and the south side of the existing parking lot is not modified, with the exception of two small areas of pavement removal and the addition of a sidewalk evenly traded with pavement area being removed from the pipe system, as detailed in the HydroCAD design. The remainder of new impervious, parking and the building, is placed into one of three subsurface detention basins which will provide groundwater infiltration and recharge. The modification of pavement/impervious is fully mitigated through the stormwater system.

There are no proposed new stormwater pre-treatment devices proposed for the existing outlet of the main parking area because the discharge for this flow is not modified in the proposed plan set. There is a new connection from the south portion of the parking lot to the proposed stormtech system pond 6P which will allow the water to overflow from the existing drain system into this proposed pond without surcharging the system. This is a mitigation of an existing problem with this drain system according to the calculations. The existing parking lot is diverted through a weir manhole and when flow reaches a point within the existing system it will be diverted into the StormTech system and through the Isolator Row within the StormTech chambers for treatment.

The portion of the parking lot and the existing field which is removed is also being disconnected from the existing drainage system. This area is now being routed through one of three subsurface drainage systems and into the proposed main discharge line to the existing wetland area to the west.

1.3 CONSTRUCTION SEQUENCING

1. Install all Sediment and Erosion Controls;
2. Clear and Grub Site;
3. Rough grade site;
4. Install Foundation;
5. Install utilities;
6. Install Stormwater Management System;
7. Place binder coat pavement and bring drainage system on line, with inlet protection installed for all newly installed catch basins;
8. Fine grade site and loam and seed all disturbed areas;
9. Place top coat pavement;
10. Project close out.

1.4 ESTIMATED DISTURBANCE

The total area expected to be disturbed by excavation, grading, or other construction activities is approximately 12± Ac. The area includes required disturbance for excavation, building and utility construction, and site grading for the new parking areas and driveways.

1.5 APPROVED STATE OR LOCAL PLANS

The project requires a Stormwater Management Permit from the Conservation Commission, Special Permit from the City Council. This CPPP&E&SCP will be modified accordingly once all approvals are obtained.

SECTION 2 – CONTROLS TO REDUCE POLLUTANTS

2.1 POLLUTION CONTROL & STABILIZATION MEASURES

The area which will be disturbed during construction activities will hereafter be referred to as the 'Site'. Areas where no earthwork is proposed shall be protected from disturbance with construction fencing, or other physical demarcation in the field to prevent unnecessary disturbance. Once Site earthwork begins, it should progress without delay until disturbed areas are stabilized. Soil shall be stockpiled outside of the resource areas and their associated buffer zone and be surrounded by staked or ballasted hay bales. If the stockpile will not be disturbed for 30 days or more, temporary seeding shall be spread over it within 7 days of the last disturbance.

The scope of the proposed project renders permanent stabilization more practical than temporary measures. Disturbed areas not proposed to be paved or occupied by buildings shall be loamed and seeded upon completion of the subgrade and any utility excavation. Diversion swales shall be installed around the perimeter of the site to collect stormwater runoff during construction. The swales are to be constructed during the "rough grading" phase of the site work. The diversion swales are to be constructed in a manner where they do not intercept ground water and shall discharge to the on-site settling dewatering basin.

Completion of sub-grade driveway and parking areas shall be followed immediately by the placement of the pavement binder course (finished paving may be delayed to prevent damage during other activities). Stabilization must be in place within 14 days of a temporary or permanent stop of construction activity, unless precluded by snow cover or if work is scheduled to restart within 21 days.

2.2 CONSTRUCTION RECORDS

A record of the dates of key site activities shall be kept on the note pages provided in Appendix A of this document. The record shall include the following:

1. Dates when the site is cleared and grubbed.
2. Dates when major grading activities occur.
3. Dates when construction activities temporarily or permanently cease on a portion of the site.
4. Dates when stabilization measures are initiated.

2.3 STRUCTURAL PRACTICES

The erosion control plan shows silt fence and/or haybales along the bottom of all proposed slopes and erosion checks at all proposed outlet structures with rip-rap dispersions blankets installed when each outlet is installed. The erosion control line is to be inspected by the applicants engineer and/or the Conservation Agent after installation and prior to site work commencing on site.

Installation of a silt-sac or similar sediment control devices are to be installed at all existing catch basins on-site, as shown on the attached Erosion Control Plan.

Any catch basins completed before the entire site is stabilized, and appropriate existing adjacent catch basins, shall be protected from sediment with the installation of a silt-sac or similar sediment control device. All silt-sacks shall be removed and the structures cleaned prior to the system going on-line following final paving.

2.4 STORM WATER MANAGEMENT

The proposed stormwater management system will collect roof drainage prior to discharge to a Stormtech Subsurface Infiltration System. Due to the rapid permeability of the parent material the Stormtech System was designed to capture and treat stormwater from the building rooftops. With the existing site overlaying a sand/gravelly sand parent material and containing optimal conditions for groundwater recharge, the Stormtech System is designed to infiltrate the maximum quantity of stormwater feasible but contain outlets directed towards the existing discharge points which allow the systems to discharge during large storm events.

2.5 DISCHARGE OF SOLID MATERIALS

A construction dumpster or other suitable receptacle shall be provided on-site for solid waste accumulation to preclude its entry into storm water systems.

Appropriate portable toilets shall be available at the site from the time when construction commences until the end of construction.

2.6 SEDIMENT TRACKING AND DUST CONTROL

Trucks are expected to arrive and leave the site with construction materials. The exit is to be established to control both dust and the tracking of soils onto public ways. After binder coat pavement has been placed all vehicles entering and exiting the site will be required to travel over the stabilized entrance/exit. If sediment accumulation is evident truck will be required to be rinsed off prior to exiting the site. Dust shall be controlled with limited amounts of water; calcium chloride shall not be utilized.

2.7 CONSTRUCTION WASTE STORAGE

Due to the existing site constraints and with the existing Facility remaining functional throughout construction the storage of construction waste on-site will not be allowed. A construction dumpster will be available at all times on-site throughout the construction process. If the need to store construction waste arises during construction the Project Site Operator will notify the Conservation Agent in writing as to what materials are to be stored and what controls will be put in place to minimize exposure of the materials to storm water.

2.8 POLLUTANT SOURCES FROM NON-CONSTRUCTION AREAS

There are no anticipated pollutant sources from areas other than the proposed construction.

2.9 CONSTRUCTION DEWATERING

A dewatering stilling basin will be constructed outside of the 100-buffer zone to the on-site bordering vegetated wetlands. The basin shall not be excavated into the groundwater table where it would intercept groundwater. The basin will contain three separate chambers separated by gabion sediment baffles to allow for the settling of solids with the outlet of the basin being a spillway with rip-rap apron to prevent erosion from the discharge. The location, size, and materials needed to construct the basin are shown on the attached Erosion Control Plan. The basin shall be inspected visually on a daily basis to ensure proper functionality.

SECTION 3 – MAINTENANCE OF CONTROLS

3.1 STANDARD MAINTENANCE

The Erosion and Sedimentation Controls, Storm Water Management Controls and Other Controls implemented as part of the work should be expected to require maintenance. The installed Siltation Control Fence with Haybales may also require maintenance after significant storms or inadvertent disturbance by construction equipment.

Any Siltation Control Fence with Haybales displaced from its intended location shall be replaced and re-staked to maintain a continuous barrier. Siltation Control Fence with Haybales not properly anchored at its bottom edge shall be reset as shown on the construction detail drawings. At the completion of the project, all new on-site and adjacent off-site catch basins shall be inspected for sediment in the sumps, and the sediment shall be removed, if present.

The control of dust will require frequent maintenance efforts to dampen disturbed areas as they are exposed or dry out. The crushed stone blanket to control the tracking of sediment onto the roadway leaving the site from the truck tires is expected to require periodic replacement as the voids become 80% full.

Portable toilets shall be maintained according to applicable local state and federal regulations, and the recommendations of the service employed for the maintenance.

Loamed and seeded areas may require periodic irrigation depending upon weather conditions during the several weeks after planting. The site shall not be considered stabilized until the seeded areas are well established.

A regular maintenance program for the storm water management system has been included as with the Stormwater Management Report filed with the Stormwater management permit package to the Braintree Conservation Commission.

3.2 MODIFICATIONS OR ADDITIONAL BMPs

Any modifications to this CPPP&E&SCP or additional required BMPs that appear to be necessary must be approved by the Design Engineer and the Town of Braintree Conservation Agent. Approved changes must be completed prior to the next storm event when practicable. If implementation before the next storm event is impracticable, the event must be recorded in the CPPP&E&SCP and alternative BMPs must be implemented as soon as possible.



SECTION 4 - INSPECTIONS

Bi-weekly inspections, no more than 14 days apart, shall be performed on the pollution prevention controls, and the conditions of the site environs relating to erosion, dust, mud tracking, and materials storage. These inspections shall begin the first week of site construction and continue throughout the project until all areas are permanently stabilized, including seeded areas becoming well established. The EPA, MADEP and other state and local agencies may visit the site and ask to inspect these logs along with this CPPP&E&SCP. Inspections are also required within 24 hours of a major storm event, producing a total rainfall greater than 0.25 inches. All inspection must be followed by a report made on the pages bound in Appendix A. This report is to be kept on the site.

Inspections are to be made by qualified personnel. All site inspections will be performed by Level Design Group, L.L.C. personnel, whom prepared this CPPP&E&SCP, and were responsible for the design and permitting of the project.

Inspections shall include all of the specified Erosion and Sedimentation Controls, Storm Water Management Controls and Other Controls. The report shall describe the scope of the inspection, the name and qualifications of the person making the inspection and the date of the inspection. Notes shall be taken describing the condition of disturbed areas and areas recently stabilized to assess the adequacy of the controls and/or the success of the permanent stabilization measures. Comments shall be entered regarding any major rainfall events and the success or problems with the control measures. Records of repairs or improvements shall also be made.

Any problems identified during the inspection shall be rectified by maintaining or repairing the controls specified in this CPPP&E&SCP. If the controls are in good repair, but failing to effectively control pollution, this CPPP&E&SCP must be revised within seven days of an unsatisfactory inspection, and noted in the inspection report.

SECTION 5 - NON-STORM WATER DISCHARGES

This CPPP&E&SCP does not provide for the discharge of any flows other than storm water, with the exception of firefighting water, which is excluded from the regulations.

The proponent and contractor shall develop a spill management plan for and hazardous materials that may be stored on-site or employed during work in or around the buffer adjacent to the wetlands. Specifically, the proponent should be prepared to effectively deal with spillage of fuel or hydraulic fluids from equipment. A quick-absorbent material, such as Speedy Dry® or equivalent, will be stored in a dry readily available area, and used in the event petroleum-based fluids are spilled or leaked. The spent material is then to be containerized and disposed of properly. An emergency fuel boom or absorbent pads shall be readily available in case any such spill threatens the wetlands or surrounding waterways

No storage of hazardous materials shall take place within 50-feet of any installed and active drainage structure. If such storage takes place on a temporary basis, oil and sediment rolls shall be placed around such structure to prevent the movement of such materials into the structure.

APPENDIX A

NOTE PAGES FOR PROJECT DOCUMENTATION