Project File: REA-0316
Stormwater Pollution Prevention Plan (SWPPP)
Johnson Woods Realty Corp.
Johnson Woods Condominium Phase II
West Street
Reading, Massachusetts 01867

OPERATION AND MAINTENANCE PLAN AND LONG-TERM POLLUTION PREVENTION PLAN

for

Proposed Johnson Woods Condominium Phase II

West Street, Reading, Massachusetts
Date: January 23, 2012
By: Johnson Woods Realty Corp.
c/o Glover Property Management Inc.
8 Doaks Lane
Marblehead, MA 01945

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JOHNSON WOODS CONDOMINIUM
PHASE II
READING, MASSACHUSETTS

OPERATION AND MAINTENANCE PLAN
AND LONG-TERM POLLUTION PREVENTION PLAN

January 23, 2012

GENERAL

The management plan incorporates a combination of the following chain of structural best management practices to improve water quality of the stormwater runoff from the proposed roadway and other impervious surfaces, and control runoff to downgradient areas.

1. Constructed Stormwater Management Areas Designed to Improve Water Quality and Reduce Peak Rates of Runoff and Promote Groundwater Recharge
2. Deep Sump Catch Basin with Gas Traps
3. Subsurface Infiltration Perforated Pipes
4. Stormceptor Chamber
5. Existing Detention Basin
6. Level Spreader and Rip Rap
7. Parking Lot and Road Sweeping

These stormwater management facilities have unique characteristics, uses, planning considerations and maintenance requirements. The maintenance requirements, as suggested by the DEP in "Volume 2, Chapter 2: Structural BMP Specifications for the Massachusetts Stormwater Handbook", and the suggested schedules are summarized in the following sections. It is suggested that the following guidelines be adhered to following completion of the project and then adjusted, as necessary, based on the results of the required inspections and based on evidence of maintenance history. The owner can submit a revised maintenance schedule to the Engineering Division for review and approval. The maintenance and repair reports will be submitted to the Engineering Division and the Conservation Commission annually by January 15th. There will be an inspection conducted for all components of the stormwater management system for major storm events equal to or exceeding 2 inches.

PHASING AND CONSTRUCTION SEQUENCE PLAN

The general construction sequence that will be followed for the Phase II development will be approximately as follows, depending upon the economic conditions at the time:

1. Construct Taylor Drive and associated infrastructure improvements - 2012-2013
2. Construct first garden-style flat building - 2012-2013
3. Construct second garden-style flat building - 2013-2014
4. Construct third garden-style flat building - 2014-2015 and Trevor Lane roadway
5. Complete trail and fitness course
6. Construct Trevor Lane townhouse units as market demands
7. Construct Green Meadow Drive roadway extension
8. Construct Green Meadow Drive townhouse units as market demands

STANDARD 1: No New Untreated Discharges

The proposed stormwater management plan includes treatment for all discharge areas containing pavement impervious areas and includes sedimentation control measures to stabilize land disturbance areas during construction. All flows from pavement areas have at least 80% TSS removal rates.

STANDARD 2: Peak Rate Attenuation

The proposed stormwater management plan outlined in the Mitigative Drainage Study provides information relative to conformance to this standard.

STANDARD 3: Recharge

The proposed stormwater management plan outlined in the Mitigative Drainage Study provides information relative to the proposed recharge. The soil analysis was performed using the double-ring infiltrometer method. The analysis for the sizing of the BMPs was based upon the Dynamic Field Method. The stormwater recharge is designed to infiltrate significantly more volume than the minimum required volume. The system has also been designed to attenuate peak flows so the bottoms of the basins are equal to or greater than four feet above estimated seasonal high groundwater elevations. The Mitigative Drainage Study documents that the basin design storm will drain within 72 hours.

The recharge systems are located upgradient and approximately 80 feet or greater from the identified bordering vegetated wetland system areas. This will help dissipate groundwater flow to these areas. The developer has agreed to a Zone of Natural Vegetation to further protect the wetland system.

Good Housekeeping Practices

Good housekeeping practices can prevent and/or reduce pollutant runoff from the project to the stormwater management facilities through the use of street sweeping, erosion control and general site maintenance, thus reducing the need to clean and remove sediment, trash and deposits upon inspection.

Deep Sump Catch Basin with Gas Traps

The catch basins must be inspected four (4) times a year, including inspections in April and November. Inspections shall consist of two tasks: measuring and recording depth of sediment deposits contained within the basin, and inspecting structural basin, hood, "Snout" and sump components for damage. The inspection frequency may need to be increased if catch basins are regularly found to contain a significant amount of trash and sediment.

- Basins shall be cleaned at least annually using a vacuum truck or when they are found to contain a significant amount of deposits (whenever the deposit depth is greater than or equal to one-half the depth from the bottom of the lowest invert) and there is a significant amount of trash, as specified in the MADEP Stormwater Handbook, Volume 2, Chapter 2, pages 3 through 5.

- Damaged basin components shall be repaired as soon after discovery as possible to ensure that the catch basin functions properly.

- Removed basin deposits must be handled as specified in the attached page (Structural BMPs – Volume 2, Chapter 2, page 5) from the MADEP Stormwater Handbook.

Subsurface Infiltration Perforated Pipe Recharge System

Recharge systems are prone to failure due to clogging. Adherence to this aggressive maintenance plan and schedule preserves effectiveness of the system. Note that the proposed subsurface perforated pipe system will be preceded by deep sump catch basins and Stormceptor units unless the runoff is directly from roof areas. In that case, the runoff will not be pretreated prior to entering the subsurface management system.

- The subsurface system will be inspected after every major storm for the first few months after construction to ensure that proper function has been achieved. Thereafter, the area will be inspected at least four times a year. Water levels in the pipes should be recorded over several days to check drainage.

- The inspection ports for the recharger pipe system will be inspected after every major storm and the collected debris removed.

- Any required cleaning or other action will be documented and completed within seven business days.

- Ponded water inside the pipes (as visible from the inspection ports) after 24 hours or several days most likely indicates that the bottoms of the pipes are clogged.

- The inspection, cleaning and maintenance responsibility for the site drainage system shall belong to the owner.

- If inspection indicates that replacement or major repair is required, a work plan will be submitted within 7 days to the Engineering Division for review and repair.

STC Stormceptor Chambers

Regulating the sediment and petroleum product input to the proposed subsurface water quality system is the priority maintenance activity. Sediments and any oil spillage should be trapped and removed before they reach the chambers.

- Stormceptor chamber maintenance shall be performed on a regular basis as recommended by the manufacturer (described in the attached excerpt from the Stormceptor Maintenance Brochure obtained from the Stormceptor website www.stormceptor.com) and as summarized herein.

- Sediment removal will be done at least annually, but is likely to vary widely based on site conditions and loadings. Typical maintenance cleaning can be done with a vacuum truck. Inspection for each of the Stormceptor units will include a quantification of the sediment load and oil and grease volumes. This is easily made from the surface with a tube dipstick with ball valve inserted through the cleanout pipe or other access port. Depths of sediment indicating maintenance are presented in the following table for the various models. Inspection of the internal structure will be part of the routine inspection plan. The units are designed to accept 15% of their capacity in solids annually based on maximum drainage area loading. Removal of sediment, oils and grease from the system will depend on rates of accumulation. All sediment and oil waste materials shall be disposed of in accordance with all Federal, State and Local regulations.

REQUIRED MAINTENANCE *

Model	Sediment Depth (in.)
STC 450i STC 900	8 *15

* based on 15% of the interceptor's sediment storage

Existing Detention Basins

- Careful observation of the system over time is required. The constructed basins will continue to have twice-a-year inspections to ensure that the existing basin vegetation is maintained and stable. Inspect basins during and after major storms to determine if the basins are meeting the expected detention times. Examine the control structures and stability of the basins to ensure that they are functioning and stable. Regular mowing will be accomplished, with the grass clippings removed each time. In addition, leaf accumulation, debris, tree growth and litter will be removed each time or at least twice per year or more regularly if required. Remove sediment from the extended dry basin as necessary, and schedule once every five years if conditions require it.

- The outflow control structure shall be inspected at least twice per year and after heavy rainfall events. The discharge rip rap protection will be reviewed to insure no erosion is present.

Level Spreader

The level spreader will be checked periodically after every major storm to determine if the area has been damaged, and to determine if the design conditions have not changed. Any detrimental sediment accumulation should be removed. If rilling has taken place downgrade or adjacent to the level spreader, the damage should be repaired. Leaf litter shall be removed from the level spreader area. The vegetation in the vicinity downgradient of the spreader will be periodically inspected and fertilized to maintain healthy, dense growth.

Parking Lot and Roadway Sweeping

In order to minimize the TSS load to the deep sump catch basins and those BMPs downgradient, it is planned to sweep the parking lot and site drive areas four (4) times per year or more frequently if conditions require. Again, based upon actual experience and documentation, a revised schedule may be submitted to the Engineering Division for approval.

Removal of Siltation Controls

All siltation controls, including, but not limited to, hay bales and silt fence, shall be removed, with the approval of the Reading Town Engineering Department, as soon as practical after paving, re-vegetation and total stabilization of the site. Unvegetated areas remaining in the area of the siltation controls shall be loamed and seeded with the appropriate groundcover to insure re-vegetation as rapidly as possible after the removal of the siltation controls. In the case of all proposed stormwater management facilities, during construction of the proposed stormwater management system the developer shall be the owner and party responsible for maintenance.

Outlet Protection

The outlet protection shall be checked the first few months after construction and after any major storm event during the site construction. Thereafter, inspect the channel twice a year, as well as after every major storm, for slope integrity soil moisture, vegetated health, soil stability, soil compaction, soil erosion, ponding and sediment accumulation. If the rip rap has been displaced, undermined or damaged, it should be repaired immediately. The channel immediately below the outlet should be checked to see that erosion is not occurring. The downstream channel will be kept clear of obstructions, such as fallen trees, debris, leaves and sediment that could change flow patterns and/or tailwater depths in pipes. Repairs must be carried out immediately to avoid additional damage to the outlet protection apron.

Ownership / Maintenance Responsibility

The developer/owner (Johnson Woods Realty Corp. c/o Glover Property Management Corp. and/or future owner(s)) shall be the owner and party responsible for maintenance of the stormwater management facilities during development construction and post construction long-term maintenance. The Condominium Fees will include the appropriate budget for all the housekeeping and maintenance functions.

STANDARD #4: Water Quality

The Long-Term Pollution Prevention Plan

- Good housekeeping practices: Prevent or reduce pollutant runoff from the project development through the use of street sweeping, erosion and catch basin cleaning. It should be noted that we are seeking credit for TSS removal with street sweeping for this project.

- Provisions for storing materials and waste products inside or under cover: All materials stored on site shall be stored in a neat and orderly fashion in their appropriate containers and under a roof or other secure enclosure. Waste products should be placed in secure receptacles until they are emptied by a licensed solid waste management company in Massachusetts.

- Requirements for routine inspections and maintenance of stormwater BMPs: Follow the guidelines outlined above.

- Spill prevention and response plans:

- Prevention: All materials stored on site shall be stored in a neat and orderly fashion in their appropriate containers and under a roof or other secure enclosure. Products will be kept in their original containers with the original manufacturer's label. Products should not be mixed with one another unless recommended by the manufacturer. If possible, all of the product should be used up before disposing of the container. The manufacturer's recommendations for proper use and disposal should be followed.

- Response: Manufacturer's recommended methods for cleanup shall be followed. Spills should be cleaned up immediately after discovery. The spill area shall be kept well ventilated and personnel shall wear appropriate protective clothing to prevent injury from contact with a hazardous substance. Spills of toxic or hazardous material shall be reported to the appropriate State and/or local authority in accordance with local and/or State regulations.

- Provisions for maintenance of lawns, gardens and other landscaped areas: The project owner is responsible for these activities.

- Requirements for storage and use of fertilizers, herbicides and pesticides will be in compliance with all applied laws:

  - Fertilizers: Fertilizers shall be applied in the minimum amounts recommended by the manufacturer. Once applied, fertilizers shall be worked into the soil to limit exposure to stormwater. Storage shall be under a roof or other secure enclosure. The contents of any partially-used bags of fertilizer shall be transferred to a sealable plastic bag or bin to avoid spills.

  - Herbicides and Pesticides: Store herbicides and pesticides in original containers that are closed and labeled, in a secure area out of reach of children and pets. Avoid storing in damp areas where containers may become moist or rusty. Herbicides and pesticides shall not be stored near food. Follow the label instructions strictly about where and how much to apply. Do not put herbicides and pesticides in the trash or down the drain. Use rubber gloves when handling, and use an appropriate cartridge mask if using products extensively.

- Provisions for solid waste management: Waste products shall be placed in secure receptacles until they are emptied by a licensed solid waste management company in Massachusetts.

- Snow disposal and plowing plans relative to Wetland Resource Areas: Snow disposal will be in accordance with the Department of Environmental Protection, Bureau of Resource Protection, Snow Disposal Guidelines, Guideline No. BRPG01-01, effective March 8, 2001. In general, snow will be plowed in accordance with standard operating procedures. During construction, snow will be plowed and stored in designated areas adjacent to the parking lots and roadways.

- Winter road salt and/or sand use and storage restrictions:
    - Salt/Sand: Whenever possible, use of environmentally friendly alternatives, i.e. calcium chloride and sand instead of salt for melting ice, will be considered.
- Street sweeping schedules: In order to minimize the Total Suspended Solids (TSS) load to the deep-sump catch basins and those BMPs down gradient, street sweeping will be performed at least four (4) times per year, primarily in spring and fall.

STANDARD 5: Land Uses with Higher Potential Pollutant Loads (LUHPPLs)

Provisions for prevention of illicit discharges to the stormwater management systems: **There are no proposed illicit discharges to the proposed stormwater management systems**. However, by definition, an illicit discharge does not include discharges from the following activities or facilities: firefighting, water-line flushing, landscape irrigation, uncontaminated groundwater, potable water sources, foundation drains, air conditioning condensation, footing drains, water used for street washing and water used to clean buildings without detergents. See the information presented in the Johnson Woods Condominium Phase II plans for the proposed locations of the utilities. Upon review of said plans, it is evident that there are no entries of illicit discharges into the stormwater management system. The owner shall be responsible for verifying that there are no illicit discharges to the stormwater management system (discharges of water into the system other than stormwater) after the system has been constructed.

- Documentation that stormwater BMPs are designed to provide for shutdown and containment in the event of a spill or discharges to or near critical areas, or from land uses with higher potential pollutant loads (LUHPPL): The project does not discharge to or near critical areas and is not a LUHPPL.
- Training for staff or personnel involved with implementing Long-Term Pollution Prevention Plan: The responsibility lies with the property owner – Johnson Woods Realty Corp.
- List of emergency contacts for implementing Long-Term Pollution Prevention Plan for roadway: The responsibility lies with the property owner/developer during construction – Johnson Woods Realty Corp. and Glover Property Management Inc.

STANDARD 6: Critical Areas

The proposed project is not near a critical area. There are no certified vernal pools adjacent to the property and the applicant has agreed to a Zone of Natural Vegetation to further protect the wetland system.

STANDARD 7: Redevelopment and Other Projects Subject to the Standards Only to the Maximum Extent Practicable

The proposed project is not a redevelopment site.

STANDARD 8: Construction Period Pollution Prevention, and Erosion and Sedimentation Control

This document is the Stormwater Pollution Prevention Plan (SWPPP). Efforts will be made to construct the project in phases as noted above in the Phasing section on page 2 to minimize the areas of disturbance and to control the surface runoff from areas of construction. Sedimentation control measures are shown on the plans but should conditions warrant supplementary measures will be added as needed. The major portion of the site disturbance will be significantly setback from the identified wetland areas.

STANDARD 9: Operation and Maintenance Plan

This document includes the construction and long-term maintenance requirements.

STANDARD 10: Prohibition of illicit Discharges

This document includes provisions relative to this item, as well as providing good housekeeping items both during and after construction.

Current Owner Contact Information:

Johnson Woods Realty Corp.
c/o Glover Property Management Inc.
8 Doaks Lane
Marblehead MA 01945
Tel. (781) 639-1113
E-fax (781) 583-0471
www.gloverproperty.com

JOHNSON WOODS CONDOMINIUM PHASE II

INSPECTION AND MAINTENANCE REPORT FORM

TO BE COMPLETED EVERY 14 DAYS DURING CONSTRUCTION AND WITHIN 24 HOURS OF A RAINFALL EVENT OF 2.0 INCHES OR GREATER. FOUR TIMES YEARLY THEREAFTER OR WHEN SEDIMENT ACCUMULATES TO A DEPTH OF 12 INCHES OR GREATER

Project: **Johnson Woods Phase II** Date: _____
West Street, Reading, Massachusetts

Inspected By: _____

Days Since Last Rainfall: _____ Amount of Last Rainfall: _____

Deep Sump Catch Basin - Yard Drain - Trench Drain – Outlet Control Structure

Talbot Lane	Type	Hood in Place	Sediment Build-Up
CB-56A	Sta 0+55 Lt Catch Basin (CB)		
CB-56B	Sta 0+55 Rt Catch Basin		
Taylor Drive			
CB-56E& 56L	Sta 3+20 Lt CB's		
CB-56G	Sta 5+18 Rt CB		
DGCB-56i & 56M	Sta 6+12 Lt CB's		
CB-6A	Sta 8+87 Lt CB		
CB-6B	Sta 8+87 Rt CB		
Building 68 CB 8A Building 68 CB 8B Building 68 CB 8C	CB near lawn area CB at Taylor Drive entrance CB in parking area		
Building 66 CB 13A Yard CB at Inwood Drive	CB at garage entrance CB near Inwood Drive		
Green Meadow Drive			
DGCB3A	Sta 0+57 Lt Double CB		
DGCB3B	Sta 0+57 Rt Double CB		

Remarks:

_____

_____

_____

JOHNSON WOODS CONDOMINIUM PHASE II

LONG TERM INSPECTION AND MAINTENANCE REPORT FORM

TO BE COMPLETED EVERY 14 DAYS DURING CONSTRUCTION AND WITHIN 24 HOURS OF A RAINFALL EVENT OF 2.0 INCHES OR GREATER. FOUR TIMES YEARLY THEREAFTER, AFTER 2.0 INCH RAINFALL EVENT, OR WHEN SEDIMENT ACCUMULATES TO A DEPTH OF 8 INCHES OR GREATER

Project: **Johnson Woods Condominium Phase II** Date: _____
West Street, Reading, Massachusetts

Inspected By: _____

Days Since Last Rainfall: _____ Amount of Last Rainfall: _____

Stormceptor STC 450i & 900 (STC)	
Pipe Conditions	Sediment Depth
450i Stormceptor 13B near Building 66 garage 450i Stormceptor 8C near Building 68 entrance to parking 900 Stormceptor 56J Sta 6+15 Taylor Drive 900 Stormceptor 6C Sta 8+75 Taylor Drive	

Remarks:

_____

_____

_____

JOHNSON WOODS CONDOMINIUM PHASE II

LONG TERM INSPECTION AND MAINTENANCE REPORT FORM

TO BE COMPLETED EVERY 14 DAYS DURING CONSTRUCTION AND
WITHIN 24 HOURS OF A RAINFALL EVENT OF 2.0 INCHES OR GREATER.
FOUR TIMES YEARLY THEREAFTER, AFTER 2.0 INCH RAINFALL EVENT OR WHEN
SEDIMENT ACCUMULATES TO A DEPTH OF 8 INCHES OR GREATER.

Project: **Johnson Woods Condominium Phase II** Date: _____
West Street, Reading, Massachusetts

Inspected By: _____

Days Since Last Rainfall: _____ Amount of Last Rainfall: _____

Subsurface Stormwater Management Area Maintenance Requirements and Sample Log		
Pipe Conditions	Maintenance Performed	Sediment Depth
RES 05		
RES 06		
RES 07		
RES 08		

Remarks:

_____

_____

_____

SITE DESCRIPTION

Project Name and Location:
Johnson Woods Condominium
West Street
Reading, MA

Owner Name and Address
Johnson Woods Realty Corp.
c/o Glover Property Management Inc.
8 Doaks Lane
Marblehead, MA 01945

Description: (Purpose and Types of Soil Disturbing Activities)

Existing Conditions:

The site presently is undeveloped and contains existing meadow and tree areas and drainage structures and utilities on one portion of the site.

Proposed Conditions:

Proposed construction consists of Phase II residential condominium development. Work will include such activities as structure, pavement and soil removal, building construction, grading, drainage and stormwater management system installation, paving and landscaping. The development activities will include measures to treat stormwater runoff to improve water quality treatment of site runoff, as well as to encourage groundwater recharge.

Runoff Coefficient:

The final composite runoff coefficient for the site is approximately 0.4.

Sequence of Major Activities

The order of activities shall be as follows:

1. Prior to the start of earthwork, the Contractor shall arrange an on-site meeting with the Municipal Departments, Owner and Engineer for the purpose of establishing Contractor's schedule of operation and scheduling inspection procedures and requirements.

2. Install erosion and sediment control devices.

3. Prepare stabilized construction entrances.

4. Stabilize exposed surfaces where the period of exposure shall be more than two months but less than twelve months, within 14 days of last construction activity in that area.

5. Install stormwater management drainage systems, other utilities, and proposed roadways.

6. Construct buildings and install parking lot staging area to gravel elevations.

7. Install binder coat of pavement, including curbing.

8. Loam and seed all disturbed areas.

9. Install final pavement course and final inspection.

CONTROLS

Erosion and Sediment Controls Stabilization Practices

Temporary Stabilization – On sediment producing areas, where the period of exposure is more than two months but less than 12 months, the following procedures should be followed:

a. install needed surface water control measures,
b. perform all cultural operations at right angles to the slope,
c. apply seed uniformly to the rate indicated by broadcasting or hydraulic application, and
d. cover seed with mulch as needed.

Permanent Stabilization – To reduce damages from sediment and runoff to downstream areas, and to avoid erosion on the site itself, a permanent type cover shall be established as soon as possible. Seeding herbaceous cover is usually the most economical and practical way to stabilize any large area. On this site, a permanent cover utilizing standard commercial seed mixes containing species similar to Mixtures #3, #4 and #7 is appropriate. Sod or erosion control blanket infused with one of the aforementioned seed mixtures may be installed as permanent cover on the site at the Owner's discretion (See **Table 2**).

Structural Practices

Silt Fencing – shall be installed as shown on the Storm Water Pollution Prevention Plan to help prevent erosion and sedimentation.

CONTROLS (Continued)

Catch Basins – shall be fitted with filter fabric during construction to prevent the accumulation of sediments in the catch basin sumps. Catch basins are to be cleaned as needed during construction using a truck-mounted vacuum device.

TABLE 2

MIXTURE NO. 1 - Dry to Very Dry Sites

Switchgrass – 20 lbs. (Blackwell or Nebraska 28)
Redtop – 3 lbs; or Annual Ryegrass – 15 lbs.

Switchgrass seed requires a chilling period of three (3) weeks or longer at common household refrigerator temperatures, except when seeded in late fall or winter. Regular mowing should not be practiced. Very slow growing the first year.

MIXTURE NO. 2 – Dry to Very Dry Sites

Weeping Lovegrass – 5 lbs.

Cape and the Islands only. May be killed by severe winters and should not be seeded where regular mowing will be practiced. Spring seeding only between April 15 and May 15. Should not be used for sand dune stabilization.

MIXTURE NO. 3 – Moderately Moist to Dry Sites

Red fescue – 30 lbs.
Redtop – 3 lbs.; or Perennial Ryegrass – 15 lbs.

Resistant to foot traffic. Tolerant of shade. Good for lawn type cover.

MIXTURE NO. 4 – Moderately Moist to Very Dry Sites

Tall Fescue – 40 lbs.
Redtop – 3 lbs.; or Perennial Ryegrass – 15 lbs.

Resistant to foot traffic when well established. Tolerant of shade.

CONTROLS (Continued)

MIXTURE NO. 5 – Very Moist to Dry Sites

Reed canarygrass – 20 lbs.
Redtop – 3 lbs.; or Perennial Ryegrass – 15 lbs.

On moist and very moist sites, reed canarygrass can be established quicker by planting rootstocks.

MIXTURE NO. 6 – Moderately Moist to Dry Sites

Crown Vetch – 15 lbs.
Redtop – 3 lbs.; or Perennial Ryegrass – 15 lbs.

Crown vetch should not be seeded as the basic species where regular mowing will be practiced. Spring seeding is preferred.

MIXTURE NO. 7 – Moderately Moist to Dry Sites

Standard commercial grass or grass-legume mixtures used for lawns or long-term forage crop production. Mixtures should contain at least 75% perennial grasses or legumes. Annual fertilization should be planned.

MIXTURE NO. 8 – Moderately Moist Sites

Kentucky Bluegrass – 20 lbs.
Redtop – 2 lbs.; or Perennial Ryegrass – 15 lbs.

Cape and the Islands only, and seeded only in the spring. Should not be seeded where regular mowing will be practiced.

REFERENCE

United States Department of Agriculture, Soil Conservation Service, 1977. Guidelines for Soil and Water Conservation in Urbanizing Areas of Massachusetts. U.S.D.A. Soil Conservation Service, Amherst, Massachusetts, 88 pages.

CONTROLS (Continued)

Dust Control

Minimizing wind erosion and controlling dust will be accomplished by one or more of the following methods:

A. Covering 30% or more of the soil surface with a non-erodible material.
B. Roughening the soil to produce ridges perpendicular to the prevailing wind. Ridges should be about six (6) inches in height.
C. Frequent watering of excavation and fill areas.

Minimizing and controlling dust resulting from building demolition shall be accomplished by continual misting with a fire hose as necessary, and by providing gravel (tracking pad) or paving at entrance/exit drives, parking areas and transit paths.

Waste Disposal

Waste Materials - all waste material shall be collected and stored in secure metal dumpsters rented from a licensed solid waste management company in Massachusetts. The dumpsters shall meet all local and State solid waste management regulations as outlined in 310 CMR 19.00. All trash and construction debris generated on site shall be disposed of in the dumpsters. The dumpsters shall be emptied as often as necessary during construction and transferred to an approved solid waste facility licensed to accept municipal solid waste and/or construction and demolition debris. No construction waste shall be buried on site. All personnel shall be instructed regarding the correct procedure for waste disposal.

Hazardous Waste - All hazardous waste materials shall be disposed of in a manner specified by local or State regulation or by the manufacturer. Site personnel shall be instructed in these practices.

Sanitary Waste - All sanitary waste shall be collected from portable units, as needed, by a septage hauler licensed in Massachusetts, in accordance with the requirements of the local Board of Health.

Offsite Vehicle Tracking

Construction entrance and exit shall be via the site access drive to Johnson Woods Drive and then West Street. Accumulated sediments shall be removed from the site section of Johnson Woods Drive via street sweeping operations as necessary. It is not expected that any offsite tracking will be present on West Street. The intersection of Taylor Drive and Johnson Woods Drive will have a crushed stone construction access to minimize tracking.

TIMING OF CONTROLS/MEASURES

As indicated in the Sequence of Major Activities, the installation of erosion and sediment control shall be completed prior to major earth excavation activities. Areas where construction activities are exposed for more than two months but less than 12 months shall be stabilized with the temporary stabilization practices referred to above. Once construction activity is completed in an area, that area shall be stabilized with permanent seed and mulch.

CERTIFICATION OF COMPLIANCE WITH FEDERAL, STATE AND LOCAL REGULATIONS

The stormwater pollution prevention plan reflects the requirements of the Massachusetts Wetlands Protection Act (MGL c.131, section 40) as administered by the Department of Environmental Protection (DEP). Note that there are no other applicable State or Federal requirements for sediment and erosion control plans (or permits) or stormwater management plans (or permits) required for this project to the best of our knowledge.

SPILL PREVENTION

The following are the material management practices that shall be used to reduce the risk of spills or other accidental exposure of materials and substances to stormwater runoff.

Good Housekeeping:

The following good housekeeping practices will be followed on site during the construction project and continued upon completion of the construction activities.

1. A concerted effort shall be made to store only enough product required to complete a particular task.

2. All materials stored on site shall be stored in a neat and orderly fashion in their appropriate containers and, if possible, under a roof or other secure enclosure.

3. Products shall be kept in their original containers with the original manufacture's label.

4. Substances shall not be mixed with one another unless recommended by the manufacturer.

5. Whenever possible, all of a product shall be used up before disposing of the container.

SPILL PREVENTION (Continued)

6. Manufacture's recommendations for proper use and disposal shall be followed.

7. The site superintendent shall inspect daily to ensure proper use and disposal of materials on site.

Hazardous Products:

The following practices are intended to reduce the risks associated with hazardous materials.

1. Products shall be kept in original containers unless they are not re-sealable.

2. Where feasible, the original label and material safety data shall be retained, whereas they contain important product information.

3. If surplus product must be disposed of, follow manufacturers or local and State recommended methods for proper disposal.

PRODUCT SPECIFIC PRACTICES

The following product-specific practices shall be followed on site:

Petroleum Products:

All on site vehicles shall be monitored for leaks and receive regular preventative maintenance to reduce the risk of leakage. Petroleum products shall be stored in tightly sealed containers which are clearly labeled. Any bituminous concrete or asphalt substances used on site shall be applied according to the manufacturer's recommendations.

Fertilizers:

Fertilizers shall be applied in the minimum amounts recommended by the manufacturer. Once applied, fertilizers shall be worked into the soil to limit exposure to stormwater. Storage shall be in a covered shed or trailer. The contents of any partially-used bags of fertilizer shall be transferred to a sealable plastic bag or bin to avoid spills.

SPILL PREVENTION (Continued)

Paints:

All containers shall be tightly sealed and stored when not required for use. Excess paint shall not be discharged into any catch basin, drain manhole or any portion of the stormwater management system. Excess paint shall be properly disposed of according to manufacturer's recommendations or State and local regulations.

Concrete Trucks:

Concrete trucks shall not be allowed to wash out or discharge surplus concrete or drum wash water on site.

SPILL CONTROL PRACTICES

In addition to the good housekeeping and material management practices discussed in the previous sections of this plan, the following practices shall be followed for spill prevention and cleanup:

1. Manufacturer's recommended methods for cleanup shall be readily available at the on-site trailer, and site personnel shall be made aware of the procedures and the location of the information.

2. Materials and equipment necessary for spill clean up shall be kept in the material storage area on site. Equipment and materials shall 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.

3. All spills shall be cleaned up immediately after discovery.

4. The spill area shall be kept well ventilated, and personnel shall wear appropriate protective clothing to prevent injury from contact with hazardous substance.

5. Spills of toxic or hazardous material shall be reported to the appropriate State and/or local authority in accordance with local and/or State regulations.

6. The spill prevention plan shall be adjusted to include measures to prevent a particular type of spill from reoccurring and instructions on how to clean up the spill if there is another occurrence. A description of the spill, what caused it, and the clean up measures shall also be included.

7. The "Manager" shall be the spill prevention and cleanup coordinator. The "Manager" shall designate at least three other site personnel who will be trained in the spill control practices identified above.