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January 31, 2018

Conservation Commission
Town Hall
Sherborn, Massachusetts 01770

Reference: 59 North Main Street
Sherborn Village
Sherborn, Massachusetts
EDC Job No.: 3438

Dear Commission Members:

On behalf of Heritage Properties, we would like to respond to comments from a peer review by Professional Services Corporation, PC, dated, December 12, 2017, our responses are in red.

1. Inspection of the of Flood Insurance Rate Map (FIRM), Map Number 25017C00538F, Middlesex County Massachusetts, effective date July 7th, 2014 indicates that the entirety of the site falls outside the 100-year jurisdictional floodplain of the perennial stream. The site is located outside the Zone X, with less than 0.2% chance of annual flooding (500-year floodplain). No reply necessary.
2. The wetlands and resource areas indicated on the drawings should be referenced by date and the delineator. An Order of Resource Area Delineation (ORAD) was issued by the Sherborn Commission (DEP #283-0361) on December 23, 2014 and it should be referenced on the drawing. Wetland Note added to Sheet 4. Although ORAD expired on December 23rd an extension request was filed prior to expiration and Order of Conditions for Lots 1&3 remain valid through May 28, 2018. Weather conditions have not yet been suitable for re-inspection of the wetland line, however once favorable conditions do exist we anticipate being able to reaffirm the wetland boundary with the Commission.
3. Although the drawings indicate twenty-two (22) test pits and eighteen (18) monitoring wells have been advanced on the site, and soils have been discussed in a general manner based upon the NRCS Soils Atlas and mapping, site specific test pit information has not been provided, but will be required beneath the soils absorption systems and the stormwater retention/detention areas. Additional soil testing was completed with Beth Hallal Sherborn Board of Health on January 25th and that test pit data has been included on Sheet 6. The test results support the storm water management system as currently designed.
4. The Infiltration Trench System detail on Plan Sheet 6 provided the design bottom elevation for each of the six (6) Cultec Systems. Estimated Seasonal High Groundwater (ESHGW) beneath each system was provided in this table, but it is not clear which test pits are referenced for each. A minimum 2-foot vertical separation to ESHGW is required beneath the stone for each system, which is not provided for three of the six systems. Because less than four feet is provided for five of the six systems, then groundwater mounding calculations are also required, but have not been provided. Soil

evaluation logs should be provided to support the design of the subsurface systems. Test locations, soil horizons and estimated seasonal high groundwater, based upon redoximorphic characteristics should be provided and reproduced on the drawings. Groundwater mounding calculations are attached.

5. A *Stormwater Pollution Prevention Plan* (SWPPP) was submitted and are generally sufficient. The Project Manager and Person and Entity responsible for plan compliance, as well as the Owner of the Stormwater System, as well as the person responsible for financing maintenance and emergency repairs should be added to the SWPPP when known. The SWPPP should specify weekly street sweeping of North Main Street. A copy of the updated SWPPP should be provided when these items are completed. A copy of the SWPPP is attached, the names will be filled in prior to construction. Item number 11, on the SWPPP plan includes the weekly sweeping of North Main Street.

6. Given the density of this project, snow storage is a significant concern. Snow storage areas should be designated outside paved or on adjacent grassed areas that maximize recharge, outside well setback areas. The interior soil absorption field and all buffer zones should specifically be prohibited for snow storage. Snow Storage is identified on the SWPPP Plan along with a note that excess snow shall be removed from the site and disposed of at a licensed facility.

7. The applicant should be encouraged to limit turf areas due to water demand and requirements for lawn chemicals and fertilizer. A Turf Management plan should be provided that adequately protects the adjacent resource areas from nitrate and phosphate loadings. SWPPP includes restriction that only organic fertilizers are to be used and a turf management plan is included with the attached O&M Plan.

8. The dedicated location provided on the site for equipment fueling operations should be reviewed by the commission and verified that is sited outside the wetland and riverfront buffers and minimizes the potential for contamination of individual wells from spills. Equipment storage and fueling location must be outside the 100-foot wetland buffer zone and is identified on the SWPPP.

9. The landscape design plan should specify the planting and preparation regimes anticipated for each of the naturalization areas and should include a schedule of all wetland and facultative species to supplement each naturalization area. See Cosmos Associates Landscape Plan for planting details. Sheet 6 of 7 includes details for restoration of the affected wetland buffer zone limits.

10. An NPDES General Construction Permit is required for sites involving disturbance greater than or equal to 1 acre. Agreed and the EPA NOI will be filed online once a contractor is selected and the responsible parties can be properly identified for the permit. This task must be completed prior to construction start and the note is also included on the SWPPP.

11. A USGS-mapped intermittent stream flows from a Bordering Vegetated Wetland system and becomes perennial northwest of the project. The US Fish and Wildlife Services National Wetlands Inventory identify this resource as a Freshwater Forested/Shrub Wetland. No reply necessary.

12. Calculations were provided to indicate the design accommodates the annual recharge requirement from impervious surfaces, the TSS removal requirements, First Flush capture and treatment for the first 1-inch of precipitation. The total impervious area to be treated is 41,849 sq-ft or 0.96 acres. Calculations appear consistent with the proprietary

specifications found within the Contech Design Manual for the Vortsentry hydrodynamic water quality separator systems. No reply necessary.

13. Drawdown calculations have been provided, indicating that the basins and recharge facilities empty in less than less than 72 hours for the 100-year storm; however, please verify that the drawdown durations will be maintained based upon the impacts caused by groundwater mounding. Groundwater mounding calculations are attached, mounding does not rise into the infiltration chambers and the drawdown durations are maintained.
14. A checklist for the stormwater management report has been provided, but was not stamped by a Registered Professional Engineer. Checklist Attached.

MASSACHUSETTS STORMWATER MANAGEMENT STANDARDS:

The project indicates work within buffer zone of regulated wetlands areas. The project is therefore subject to the Wetlands Protection Act and requires conformance with the Massachusetts Stormwater Management Standards.

LID Measures: *Stormwater Standards require LID measures to be considered.* The project drainage analysis claims that the LID measures considered include no disturbance of Wetland Resource Areas and site design practices (e.g. clustered development, reduced frontage setbacks. The project does not directly disturb Wetland Resource Areas, however direct impacts within the buffer zone are expected in three locations by the development. Also, extensive areas of vegetation will be disturbed. Minimal LID measures have been employed in the design and appear to be limited to incidental vegetated grass strips.

(Standard No. 1) *No new untreated stormwater conveyances: No new stormwater conveyances (e.g., outfalls) may discharge untreated stormwater directly to or cause erosion in wetlands or waters of the Commonwealth.* The project does not propose new untreated outfalls to wetland resource areas. The various treatment trains include Vortsentry hydrodynamic structural water quality units (VSHS36 units), subsurface infiltration chamber (Cultec 330 C-XLHD units) and limited use of incidental vegetated grass strip and vegetated swales. – **complies with untreated stormwater standard.** No reply necessary.

No outfalls are proposed for the project. Additionally, erosion control seeding and naturalized restoration areas provided for perimeter soils stabilization - **complies with erosion standard.**

(Standard No.2) Post development peak discharge rates: *Stormwater management systems must be designed so that post-development peak discharge rates do not exceed pre-development peak discharge rates.* HydroCAD model calculations were provided for the two design points, using SCS Type III, 24hour events. These indicate peak flow rates for proposed conditions will be less than or equal to existing conditions. – **complies with peak discharge rate standard**
No reply necessary.

Recharge to groundwater (Standard No.3): *Loss of annual recharge to groundwater should be minimized through the use of infiltration measures to maximum extent practicable.* Recharge to groundwater is provided in six (6) subsurface infiltration CulTec Chamber systems on site. The Plan shows representative locations for twenty-one soil test pits and sixteen monitoring well locations.
Much of the project is located within NRCS-mapped Hinckley Loam Sands and Merrimac Fine Sandy Loam, which are designated as Hydrologic Soils Group 'A' soils, Paxton Fine Sandy Loam, which is designated as Hydrologic Soils Group 'C' soils, and Whitman Fine Sandy Loam, which is designated as Hydrologic Soils Group 'D' soils. The Massachusetts Stormwater

Handbook requires testing beneath infiltration basins and subsurface chamber systems, which was not provided or included on the drawings.
The required capture volume for the project for recharge was calculated to be 1,576 cu-ft based upon the total impervious area of 0.96 acres and a required recharge volume of 0.60 inches, over 25,250 sf of impervious 'D' soils, 0.25 inches over 14,045 sq-ft of 'C' soils and 0.10 inches over 2,554 sq-ft of 'A' soils. The project-wide storage available for recharge is 9,500 cu-ft which is in excess of the Standard 3 requirement and in excess of the 2-year storm runoff of 8,689 cu-ft. – **Partial compliance with Standard No. 3 (Full compliance - upon submission of requisite soils tests beneath the six proposed systems).** Supplemental Soil Testing Data and mounding computations are attached.

Total suspended solids (Standard No.4): *For new development, stormwater management systems must be designed to remove 80% of the annual load of Total Suspended Solids (TSS).* The project includes Vortsentry water quality units, and underground infiltration systems. TSS removal calculations indicate at least 91.5% and 91.3% TSS removal from stormwater discharges through the use of

Vortsentry/Infiltration treatment train systems (65% and 80% respectively). – **complies with Standard No. 4**. No reply necessary.

SW1. Isolator rows should be provided for each of the front infiltration systems to provide additional TSS removal.

Higher potential pollutant loads (Standard No.5): *Stormwater discharges from Land Uses with Higher Potential Pollutant Loads require the use of specific stormwater management BMPs.* The project is not a LUHPPL. - **not applicable.** No reply necessary.

Critical areas (Standard No.6): *Stormwater discharges to critical areas must utilize certain stormwater management BMPs approved for critical areas.* The project does not lie within a critical area. – **Complies with Standard 6.** No reply necessary.

Redevelopment (Standard No.7): *Redevelopment of previously developed sites must meet the Stormwater Management Standards to the maximum extent practicable.* The project does not meet the definition of a redevelopment – **not applicable**. No reply necessary.

Erosion and sediment controls (Standard No.8): *Erosion and sediment controls must be implemented to prevent impacts during construction or land disturbance activities.* The project is proposing to disturb more than one acre of land and therefore a Stormwater Pollution Prevention Plan (SWPPP) and Notice of Intent with EPA are required. The Applicant will need coverage under the National Pollution Discharge
Elimination System (NPDES) Construction General Permit and a Stormwater Pollution Prevention Plan (SWPPP) will be required. Although a document entitled "Construction Period Pollution Prevention and Erosion and Sedimentation Control" is provided it does not contain required information.

SW2. The stormwater checklist references the attached SWPPP in the stormwater report. Update the SWPPP in accordance with the following EPA guidance
http://www3.epa.gov/npdes/pubs/sw_swppp_guide.pdf
SW3. Prior to construction provide copy of Notice of Intent filed with EPA and final signed SWPPP to Town.

SW4. The Town should reserve the right to review and comment on the SWPPP prior to construction.

1. An updated SWPPP is attached and EPA NOI will be filed online once a contractor is selected and the responsible parties can be properly identified for the permit. This task must be completed prior to construction start and the note is also included on the SWPPP.

Operations/maintenance plan (Standard No.9): *A Long-Term Operation and Maintenance Plan shall be developed and implemented to ensure that stormwater management systems function as designed.* An Operation and Maintenance Plan was not provided and should be developed to include the following:

SW5. Stormwater management system(s) owners;
SW6. The party or parties responsible for operation and maintenance, including how future property owners will be notified of the presence of the stormwater management system and the requirement for proper operation and maintenance;
SW7. The routine and non-routine maintenance tasks to be undertaken after construction is complete and a schedule for implementing those tasks;
SW8. A plan that is drawn to scale and shows the location of all stormwater BMPs in each treatment train along with the discharge point;
SW9. A description and delineation of public safety features; and

SW10. An estimated operations and maintenance budget.

All the above is contained on the SWPPP plan, the parties responsible for operation and maintenance & owners names will be added prior to construction.

Illicit discharges (Standard No.10): *All illicit discharges to the stormwater management system are prohibited.* An illicit discharges statement should be provided in the Stormwater Pollution Prevention Plan and Construction Management Plan and properly executed. – **Does not comply with Standard.** Illicit discharge statement included with SWPPP and on the SWPPP Plan.

SUMMARY

Additional documentation and design as noted above is required to show compliance with the MassDEP Stormwater Management Standards. Documentation provided as outlined above.

Very truly yours,

ENGINEERING DESIGN CONSULTANTS, INC.

Peter Bemis

Illicit Discharge Compliance Statement

Responsibility:

The Owner is responsible for ultimate compliance with all provisions of the Massachusetts Stormwater Management Policy, the USEPA NPDES Construction General Permit and responsible for identifying and eliminating illicit discharges (as defined by USEPA).

OWNER NAME:	HERITAGE PROPERTIES
ADDRESS:	490-B BOSTON POST ROAD
	SUDBURY, MA 01776
TEL. NUMBER:	(508)314-6959

Owner's Compliance Statement:

To the best of my knowledge, the attached plans, computations and specifications meet the requirements of Standard 10 of the Massachusetts Stormwater Handbook regarding illicit discharges to the stormwater management system and that no detectable illicit discharges exist on the site. All documents and attachments were prepared under my direction and qualified personnel gathered and evaluated the information submitted, to the best of my knowledge.

Included with this statement are site plans, drawn to scale, that identify the locations of systems for conveying stormwater on the site and show that these systems do not allow the entry of any illicit discharges into the stormwater management system. The plans also show any systems for conveying wastewater and /or groundwater on the site and show that there are no connections between the stormwater and wastewater systems.

Signature 

8

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands Program

Checklist for Stormwater Report

B. Stormwater Checklist and Certification

The following checklist is intended to serve as a guide for applicants as to the elements that ordinarily need to be addressed in a complete Stormwater Report. The checklist is also intended to provide conservation commissions and other reviewing authorities with a summary of the components necessary for a comprehensive Stormwater Report that addresses the ten Stormwater Standards.

Note: Because stormwater requirements vary from project to project, it is possible that a complete Stormwater Report may not include information on some of the subjects specified in the Checklist. If it is determined that a specific item does not apply to the project under review, please note that the item is not applicable (N.A.) and provide the reasons for that determination.

A complete checklist must include the Certification set forth below signed by the Registered Professional Engineer who prepared the Stormwater Report.

Registered Professional Engineer's Certification

I have reviewed the Stormwater Report, including the soil evaluation, computations, Long-term Pollution Prevention Plan, the Construction Period Erosion and Sedimentation Control Plan (if included), the Long-term Post-Construction Operation and Maintenance Plan, the Illicit Discharge Compliance Statement (if included) and the plans showing the stormwater management system, and have determined that they have been prepared in accordance with the requirements of the Stormwater Management Standards as further elaborated by the Massachusetts Stormwater Handbook. I have also determined that the information presented in the Stormwater Checklist is accurate and that the information presented in the Stormwater Report accurately reflects conditions at the site as of the date of this permit application.

Registered Professional Engineer Block and Signature

7-25-17

Signature and Date

Checklist

Project Type: Is the application for new development, redevelopment, or a mix of new and redevelopment?

☒ New development

☐ Redevelopment

☐ Mix of New Development and Redevelopment

Area 1

This spreadsheet will calculate the height of a groundwater mound beneath a stormwater infiltration basin. More information can be found in the U.S. Geological Survey Scientific Investigations Report 2010-5102 "Simulation of groundwater mounding beneath hypothetical stormwater infiltration basins".

The user must specify infiltration rate (R), specific yield (Sy), horizontal hydraulic conductivity (Kh), basin dimensions (x, y), duration of infiltration period (t), and the initial thickness of the saturated zone (hi(0), height of the water table if the bottom of the aquifer is the datum). For a square basin the half width equals the half length (x = y). For a rectangular basin, if the user wants the water-table changes perpendicular to the long side, specify x as the short dimension and y as the long dimension. Conversely, if the user wants the values perpendicular to the short side, specify y as the short dimension, x as the long dimension. All distances are from the center of the basin. Users can change the distances from the center of the basin at which water-table aquifer thickness are calculated.
Cells highlighted in yellow are values that can be changed by the user. Cells highlighted in red are output values based on user-specified inputs. The user MUST click the blue "Re-Calculate Now" button each time ANY of the user-specified inputs are changed otherwise necessary iterations to converge on the correct solution will not be done and values shown will be incorrect. Use consistent units for all input values (for example, feet and days)

use consistent units (e.g. feet & days **or** inches & hours)

Input Values		
4.8200	*R*	**Recharge (infiltration) rate (feet/day)**
0.300	Sy	**Specific yield, Sy (dimensionless, between 0 and 1)**
148.00	K	**Horizontal hydraulic conductivity, Kh (feet/day)***
32.000	x	**1/2 length of basin (x direction, in feet)**
7.000	y	**1/2 width of basin (y direction, in feet)**
1.000	t	**duration of infiltration period (days)**
15.000	hi(0)	**initial thickness of saturated zone (feet)**

15.680	h(max)	**maximum thickness of saturated zone (beneath center of basin at end of infiltration period)**
0.680	Δh(max)	**maximum groundwater mounding (beneath center of basin at end of infiltration period)**

Conversion Table

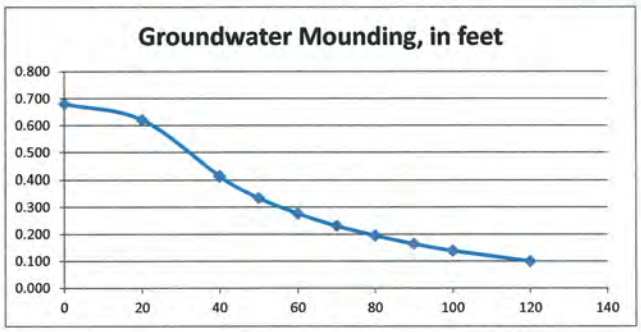
inch/hour	feet/day
0.67	1.33
2.00	4.00

hours	days
36	1.50

In the report accompanying this spreadsheet (USGS SIR 2010-5102), vertical soil permeability (ft/d) is assumed to be one-tenth horizontal hydraulic conductivity (ft/d).

Ground-water Mounding, in feet	Distance from center of basin in x direction, in feet
0.680	0
0.621	20
0.413	40
0.334	50
0.276	60
0.231	70
0.194	80
0.164	90
0.138	100
0.099	120

Re-Calculate Now



Disclaimer

This spreadsheet solving the Hantush (1967) equation for ground-water mounding beneath an infiltration basin is made available to the general public as a convenience for those wishing to replicate values documented in the USGS Scientific Investigations Report 2010-5102 "Groundwater mounding beneath hypothetical stormwater infiltration basins" or to calculate values based on user-specified site conditions. Any changes made to the spreadsheet (other than values identified as user-specified) after transmission from the USGS could have unintended, undesirable consequences. These consequences could include, but may not be limited to: erroneous output, numerical instabilities, and violations of underlying assumptions that are inherent in results presented in the accompanying USGS published report. The USGS assumes no responsibility for the consequences of any changes made to the spreadsheet. If changes are made to the spreadsheet, the user is responsible for documenting the changes and justifying the results and conclusions.

Area 2

This spreadsheet will calculate the height of a groundwater mound beneath a stormwater infiltration basin. More information can be found in the U.S. Geological Survey Scientific Investigations Report 2010-5102 "Simulation of groundwater mounding beneath hypothetical stormwater infiltration basins".

The user must specify infiltration rate (R), specific yield (Sy), horizontal hydraulic conductivity (Kh), basin dimensions (x, y), duration of infiltration period (t), and the initial thickness of the saturated zone (hi(0), height of the water table if the bottom of the aquifer is the datum). For a square basin the half width equals the half length (x = y). For a rectangular basin, if the user wants the water-table changes perpendicular to the long side, specify x as the short dimension and y as the long dimension. Conversely, if the user wants the values perpendicular to the short side, specify y as the short dimension, x as the long dimension. All distances are from the center of the basin. Users can change the distances from the center of the basin at which water-table aquifer thickness are calculated.
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use consistent units (e.g. feet & days **or** inches & hours)

Input Values		
4.8200	*R*	**Recharge (infiltration) rate (feet/day)**
0.300	Sy	**Specific yield, Sy (dimensionless, between 0 and 1)**
148.00	K	**Horizontal hydraulic conductivity, Kh (feet/day)***
16.000	x	**1/2 length of basin (x direction, in feet)**
4.000	y	**1/2 width of basin (y direction, in feet)**
1.000	t	**duration of infiltration period (days)**
15.000	hi(0)	**initial thickness of saturated zone (feet)**

Conversion Table

inch/hour	feet/day
0.67	1.33
2.00	4.00

hours	days
36	1.50

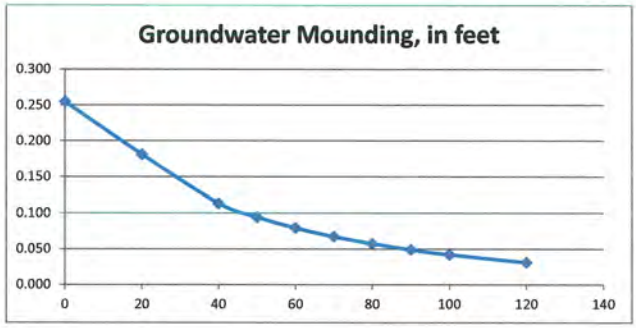
In the report accompanying this spreadsheet (USGS SIR 2010-5102), vertical soil permeability (ft/d) is assumed to be one-tenth horizontal hydraulic conductivity (ft/d).

15.255	h(max)
0.255	Δh(max)

maximum thickness of saturated zone (beneath center of basin at end of infiltration period)
maximum groundwater mounding (beneath center of basin at end of infiltration period)

Ground-water Mounding, in feet	Distance from center of basin in x direction, in feet
0.255	0
0.181	20
0.113	40
0.094	50
0.079	60
0.067	70
0.057	80
0.049	90
0.042	100
0.031	120

Re-Calculate Now



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This spreadsheet solving the Hantush (1967) equation for ground-water mounding beneath an infiltration basin is made available to the general public as a convenience for those wishing to replicate values documented in the USGS Scientific Investigations Report 2010-5102 "Groundwater mounding beneath hypothetical stormwater infiltration basins" or to calculate values based on user-specified site conditions. Any changes made to the spreadsheet (other than values identified as user-specified) after transmission from the USGS could have unintended, undesirable consequences. These consequences could include, but may not be limited to: erroneous output, numerical instabilities, and violations of underlying assumptions that are inherent in results presented in the accompanying USGS published report. The USGS assumes no responsibility for the consequences of any changes made to the spreadsheet. If changes are made to the spreadsheet, the user is responsible for documenting the changes and justifying the results and conclusions.

Area 3

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use consistent units (e.g. feet & days **or** inches & hours)

Input Values		
4.8200	*R*	**Recharge (infiltration) rate (feet/day)**
0.300	Sy	**Specific yield, Sy (dimensionless, between 0 and 1)**
148.00	K	**Horizontal hydraulic conductivity, Kh (feet/day)***
16.000	x	**1/2 length of basin (x direction, in feet)**
10.000	y	**1/2 width of basin (y direction, in feet)**
1.000	t	**duration of infiltration period (days)**
15.000	hi(0)	**initial thickness of saturated zone (feet)**

Conversion Table

inch/hour	feet/day
0.67	1.33
2.00	4.00

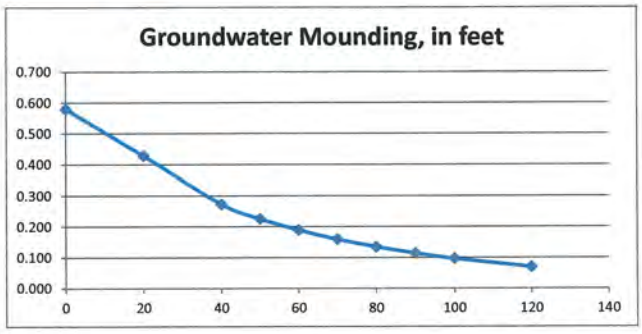
hours	days
36	1.50

In the report accompanying this spreadsheet (USGS SIR 2010-5102), vertical soil permeability (ft/d) is assumed to be one-tenth horizontal hydraulic conductivity (ft/d).

15.579	h(max)	**maximum thickness of saturated zone (beneath center of basin at end of infiltration period)**
0.579	Δh(max)	**maximum groundwater mounding (beneath center of basin at end of infiltration period)**

Ground-water Mounding, in feet	Distance from center of basin in x direction, in feet
0.579	0
0.428	20
0.273	40
0.226	50
0.189	60
0.159	70
0.135	80
0.114	90
0.097	100
0.070	120

Re-Calculate Now



Disclaimer

This spreadsheet solving the Hantush (1967) equation for ground-water mounding beneath an infiltration basin is made available to the general public as a convenience for those wishing to replicate values documented in the USGS Scientific Investigations Report 2010-5102 "Groundwater mounding beneath hypothetical stormwater infiltration basins" or to calculate values based on user-specified site conditions. Any changes made to the spreadsheet (other than values identified as user-specified) after transmission from the USGS could have unintended, undesirable consequences. These consequences could include, but may not be limited to: erroneous output, numerical instabilities, and violations of underlying assumptions that are inherent in results presented in the accompanying USGS published report. The USGS assumes no responsibility for the consequences of any changes made to the spreadsheet. If changes are made to the spreadsheet, the user is responsible for documenting the changes and justifying the results and conclusions.

Area 4

This spreadsheet will calculate the height of a groundwater mound beneath a stormwater infiltration basin. More information can be found in the U.S. Geological Survey Scientific Investigations Report 2010-5102 "Simulation of groundwater mounding beneath hypothetical stormwater infiltration basins".

The user must specify infiltration rate (R), specific yield (Sy), horizontal hydraulic conductivity (Kh), basin dimensions (x, y), duration of infiltration period (t), and the initial thickness of the saturated zone (hi(0), height of the water table if the bottom of the aquifer is the datum). For a square basin the half width equals the half length (x = y). For a rectangular basin, if the user wants the water-table changes perpendicular to the long side, specify x as the short dimension and y as the long dimension. Conversely, if the user wants the values perpendicular to the short side, specify y as the short dimension, x as the long dimension. All distances are from the center of the basin. Users can change the distances from the center of the basin at which water-table aquifer thickness are calculated.
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use consistent units (e.g. feet & days **or** inches & hours)

Input Values		
4.8200	*R*	**Recharge (infiltration) rate (feet/day)**
0.300	Sy	**Specific yield, Sy (dimensionless, between 0 and 1)**
148.00	K	**Horizontal hydraulic conductivity, Kh (feet/day)***
81.000	x	**1/2 length of basin (x direction, in feet)**
4.000	y	**1/2 width of basin (y direction, in feet)**
1.000	t	**duration of infiltration period (days)**
15.000	hi(0)	**initial thickness of saturated zone (feet)**

Conversion Table

inch/hour	feet/day
0.67	1.33
2.00	4.00

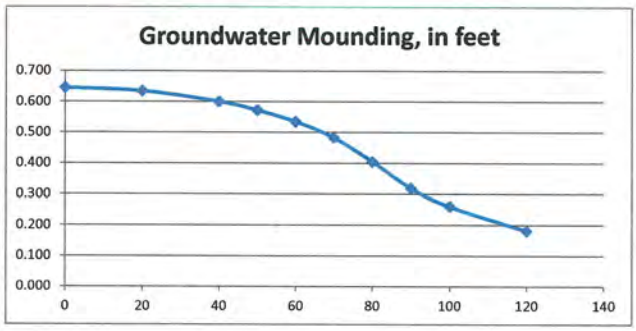
hours	days
36	1.50

In the report accompanying this spreadsheet (USGS SIR 2010-5102), vertical soil permeability (ft/d) is assumed to be one-tenth horizontal hydraulic conductivity (ft/d).

15.645	h(max)	**maximum thickness of saturated zone (beneath center of basin at end of infiltration period)**
0.645	Δh(max)	**maximum groundwater mounding (beneath center of basin at end of infiltration period)**

Ground-water Mounding, in feet	Distance from center of basin in x direction, in feet
0.645	0
0.634	20
0.600	40
0.572	50
0.535	60
0.483	70
0.405	80
0.319	90
0.261	100
0.181	120

Re-Calculate Now



Disclaimer

This spreadsheet solving the Hantush (1967) equation for ground-water mounding beneath an infiltration basin is made available to the general public as a convenience for those wishing to replicate values documented in the USGS Scientific Investigations Report 2010-5102 "Groundwater mounding beneath hypothetical stormwater infiltration basins" or to calculate values based on user-specified site conditions. Any changes made to the spreadsheet (other than values identified as user-specified) after transmission from the USGS could have unintended, undesirable consequences. These consequences could include, but may not be limited to: erroneous output, numerical instabilities, and violations of underlying assumptions that are inherent in results presented in the accompanying USGS published report. The USGS assumes no responsibility for the consequences of any changes made to the spreadsheet. If changes are made to the spreadsheet, the user is responsible for documenting the changes and justifying the results and conclusions.

Area A

This spreadsheet will calculate the height of a groundwater mound beneath a stormwater infiltration basin. More information can be found in the U.S. Geological Survey Scientific Investigations Report 2010-5102 "Simulation of groundwater mounding beneath hypothetical stormwater infiltration basins".

The user must specify infiltration rate (R), specific yield (Sy), horizontal hydraulic conductivity (Kh), basin dimensions (x, y), duration of infiltration period (t), and the initial thickness of the saturated zone (hi(0), height of the water table if the bottom of the aquifer is the datum). For a square basin the half width equals the half length (x = y). For a rectangular basin, if the user wants the water-table changes perpendicular to the long side, specify x as the short dimension and y as the long dimension. Conversely, if the user wants the values perpendicular to the short side, specify y as the short dimension, x as the long dimension. All distances are from the center of the basin. Users can change the distances from the center of the basin at which water-table aquifer thickness are calculated.
Cells highlighted in yellow are values that can be changed by the user. Cells highlighted in red are output values based on user-specified inputs. The user MUST click the blue "Re-Calculate Now" button each time ANY of the user-specified inputs are changed otherwise necessary iterations to converge on the correct solution will not be done and values shown will be incorrect. Use consistent units for all input values (for example, feet and days)

use consistent units (e.g. feet & days **or** inches & hours)

Input Values		
4.8200	*R*	**Recharge (infiltration) rate (feet/day)**
0.300	Sy	**Specific yield, Sy (dimensionless, between 0 and 1)**
148.00	K	**Horizontal hydraulic conductivity, Kh (feet/day)***
15.000	x	**1/2 length of basin (x direction, in feet)**
10.000	y	**1/2 width of basin (y direction, in feet)**
1.000	t	**duration of infiltration period (days)**
15.000	hi(0)	**initial thickness of saturated zone (feet)**

15.552	h(max)	**maximum thickness of saturated zone (beneath center of basin at end of infiltration period)**
0.552	Δh(max)	**maximum groundwater mounding (beneath center of basin at end of infiltration period)**

Conversion Table

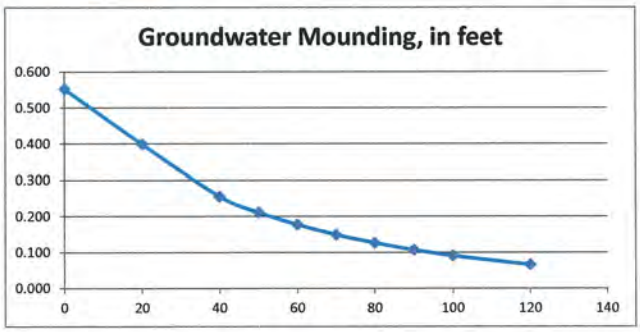
inch/hour	feet/day
0.67	1.33
2.00	4.00

hours	days
36	1.50

In the report accompanying this spreadsheet (USGS SIR 2010-5102), vertical soil permeability (ft/d) is assumed to be one-tenth horizontal hydraulic conductivity (ft/d).

Ground-water Mounding, in feet	Distance from center of basin in x direction, in feet
0.552	0
0.399	20
0.255	40
0.212	50
0.177	60
0.149	70
0.126	80
0.107	90
0.091	100
0.066	120

Re-Calculate Now



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Area B

This spreadsheet will calculate the height of a groundwater mound beneath a stormwater infiltration basin. More information can be found in the U.S. Geological Survey Scientific Investigations Report 2010-5102 "Simulation of groundwater mounding beneath hypothetical stormwater infiltration basins".

The user must specify infiltration rate (R), specific yield (Sy), horizontal hydraulic conductivity (Kh), basin dimensions (x, y), duration of infiltration period (t), and the initial thickness of the saturated zone (hi(0), height of the water table if the bottom of the aquifer is the datum). For a square basin the half width equals the half length (x = y). For a rectangular basin, if the user wants the water-table changes perpendicular to the long side, specify x as the short dimension and y as the long dimension. Conversely, if the user wants the values perpendicular to the short side, specify y as the short dimension, x as the long dimension. All distances are from the center of the basin. Users can change the distances from the center of the basin at which water-table aquifer thickness are calculated.
Cells highlighted in yellow are values that can be changed by the user. Cells highlighted in red are output values based on user-specified inputs. The user MUST click the blue "Re-Calculate Now" button each time ANY of the user-specified inputs are changed otherwise necessary iterations to converge on the correct solution will not be done and values shown will be incorrect. Use consistent units for all input values (for example, feet and days)

use consistent units (e.g. feet & days **or** inches & hours)

Input Values		
4.8200	*R*	**Recharge (infiltration) rate (feet/day)**
0.300	Sy	**Specific yield, Sy (dimensionless, between 0 and 1)**
148.00	K	**Horizontal hydraulic conductivity, Kh (feet/day)***
47.000	x	**1/2 length of basin (x direction, in feet)**
13.000	y	**1/2 width of basin (y direction, in feet)**
1.000	t	**duration of infiltration period (days)**
15.000	hi(0)	**initial thickness of saturated zone (feet)**

16.482	h(max)	**maximum thickness of saturated zone (beneath center of basin at end of infiltration period)**
1.482	Δh(max)	**maximum groundwater mounding (beneath center of basin at end of infiltration period)**

Conversion Table

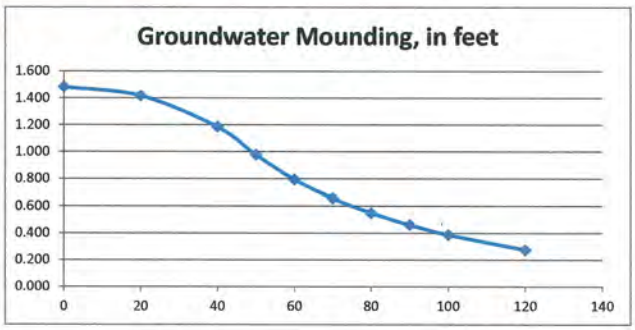
inch/hour	feet/day
0.67	1.33
2.00	4.00

hours	days
36	1.50

In the report accompanying this spreadsheet (USGS SIR 2010-5102), vertical soil permeability (ft/d) is assumed to be one-tenth horizontal hydraulic conductivity (ft/d).

Ground-water Mounding, in feet	Distance from center of basin in x direction, in feet
1.482	0
1.416	20
1.185	40
0.977	50
0.793	60
0.656	70
0.548	80
0.460	90
0.387	100
0.275	120

Re-Calculate Now



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#59 North Main Street
Sherborn, MA

JOB #3438
12/18/2017
1/30/2018

DRAWDOWN CALCULATIONS

LOCATION	"A"SOIL IMP AREA SF	Rv	BOTTOM AREA SF	DRAWDOWN TIME HR
1	7656	382.80	672	2.83
2	1730	86.50	256	1.68
3	3681	184.05	640	1.43
4	9006	450.30	648	3.46
A	6319	315.95	600	2.62
B	12801	640.05	2350	1.36

Rv=("A"SOIL x 0.60/12)
DRAWDOWN TIME = Rv/[(2.41/12) x BOTTOM AREA]
RAWLS RATE FOR "A"SOIL IS 2.41 INCHES PER HOUR
NOTE: ALL INFILTRATION UNITS ARE LOCATED IN "A" SOIL

STORMWATER POLLUTION PREVENTION PLAN (SWPPP) for SITE CONSTRUCTION ACTIVITIES at 59 NORTH MAIN STREET SHERBORN, MASSACHUSETTS

January 31, 2018

Prepared for:

Heritage Properties
490-B Boston Post Road
Sudbury, MA 01776
(General Contractor)

Heritage Properties
490-B Boston Post Road
Sudbury, MA 01776
(Property Owner)

Document Prepared By:

ENGINEERING DESIGN CONSULTANTS, INC.
32 TURNPIKE ROAD
SOUTHBOROUGH, MA 01772

Estimated Project Dates
Project Start Date: Project Start May 1, 2018
Project Completion Date: December 30, 2018

Table of Contents

Appendices:

Plans in Appendix A:

Stormwater Pollution Prevention Plan ("The Drawing")

The project has been designed with roof stormwater runoff flowing into underground infiltration chambers. The driveway is provided with Contech structural treatment units and will infiltrate as well. This project consists of twelve (12) residential units. The project is located on a soil, "Merrimac fine sandy loam," with a hydrologic "A" rating, very little change in runoff is expected from this site as it currently has a house and barn located there, and has little tree cover with the lands prior use as a farm.

Every effort has been made on the plan and in this Stormwater Pollution Prevention Plan to protect the adjacent wetland.

Section 1: Contact Information/Responsible Parties

1.1 Operators / Subcontractors:

- Identify the operator(s) who will be engaged in construction activities at the site. Indicate respective responsibilities, where appropriate. Also include the 24-hour emergency contact.
- List subcontractors expected to work on-site. Notify subcontractors of stormwater requirements applicable to their work.
- Use Subcontractor Agreements included in Appendix G.

Operators:

Heritage Properties
490-B Boston Post Road
Sudbury, MA 01776
E-mail:

Area of Control: *General contractor is responsible for overseeing and performing all aspects of construction.*

Subcontractors:

Area of Control:

Emergency 24-Hour Contact:

Heritage Properties
490-B Boston Post Road
Sudbury, MA 01776

1.2 Stormwater Team:

- Identify the staff members (by name or position) that comprise the project's stormwater team as well as their individual responsibilities. At a minimum the stormwater team is comprised of individuals who are responsible for overseeing the development of the SWPPP, any later modifications to it, and for compliance with the requirements in this permit (i.e., installing and maintaining stormwater controls, conducting site inspections, and taking corrective actions where required).

- Each member of the stormwater team must have ready access to either an electronic or paper copy of applicable portions of the this SWPPP.

Role or Responsibility:
Position:
Person:
Tele #:
E-mail:

Role or Responsibility:
Position:
Person:
Tele #:
E-mail:

Role or Responsibility:
Position:
Person:
Tele #:
E-mail:

Role or Responsibility:
Position:
Person:
Tele #:
E-mail:

Section 2: Site Evaluation, Assessment, and Planning

2.1 Project Site Information:

Project Name and Address:

59 North Main Street
Sherborn, MA 01770
Middlesex County

Project Latitude/Longitude:

Latitude: *42° 15' 07.28"N*

Longitude: *071° 22' 14.42"W*

Source:

USGS Topographic Map (scale: 1"=2083')

Horizontal Reference Datum:

NAD 83

Additional Project Information:

Is the project/site located on Indian country lands, or located on a property of religious or cultural significance to an Indian tribe?

☐ Yes ☒ No

2.2 Discharge Information:

Does your project/site discharge stormwater into a Municipal Separate Storm Sewer System (MS4)?

☐ Yes ☒ No

Are there any surface waters that are located within 50 feet of your construction disturbances?

☐ Yes ☒ No

Name(s) of the first surface water that receives stormwater directly from your site and/or from the MS4 (note: multiple rows provided where your site has more than one point of discharge that flows to different surface waters)

2.3 Nature of Construction Activity:

General Description of Project:

The proposed project includes the construction of twelve multi-family residential units including septic system, driveways and infiltration systems along with other utility services and site improvements.

Size of Construction Project:

Size of Property:

6.35+/- Acres

Total Area of Construction Disturbance:

2.87+/- Acres

Maximum Area to be Disturbed at Any One Time:
Less than 2.87± Acres

Construction Support Activities:
Describe any construction support activities for the project (e.g., concrete or asphalt batch plants, equipment storage yards, material storage areas, excavated material disposal areas, borrow areas)

Concrete or asphalt batch plants:
Not Applicable.
Equipment Storage Yards:
Not Applicable.
Material storage areas:
See Stormwater Pollution Prevention Plan *for 59 North Main Street*
Excavated material disposal areas:
All excavated materials to remain onsite. Spread loam and seed as soon as practicable in order to prevent erosion.
Borrow areas:
Not Applicable, as the site has been designed as a balanced cut to fill site.

Contact Person responsible construction support activities:

Name of contact person to be determined

Heritage Properties
490-B Boston Post Road
Sudbury, MA 01776

2.4 Sequence and Estimated Dates of Construction Activities:

Overall Projected Start Date:
Project to commence May 1, 2018
Overall Projected End Date:
December 30, 2018.

Project Schedule:

Phase I: Project Setup

1. *Post a sign with contact name and phone number.*

Phase II: Install Erosion Control Measures

2. Start Date: *May 1, 2018 or as weather may permit*
   End Date: *May 8, 2018 or as weather may permit*
   Stormwater Controls Installation and date to be installed:
   a. *Erosion Control Barriers*
   b. *Silt Fence*
   c. *Siltation Fabric installed in catch basin grates(3 basins)*
   d. *Construction entrance protection (To be swept at the end of each day and closed with erosion controls)*

   Site Stabilization and date to be installed:
   Not Applicable, control measures to be installed
   Stormwater Control Removal Date:
   All controls to be removed prior to completion of project – with Con. Com sign-off on or about December 30, 2018

Phase III: Tree Clearing, Grub and Stump Wooded Areas

3. Start Date: *May 8, 2018 or as weather may permit*
   End Date: *May 15, 2018 or as weather may permit*
   Stormwater Controls Installation and date to be installed:
   Construction Entrance Apron – May 8, 2018 or as weather may permit
   Site Stabilization and date to be installed:
   Erosion Control Measures
   Stormwater Control Removal Date:
   All controls to be removed prior to completion of project – with Con. Com sign-off on or about December 30, 2018

Phase IV: Strip & Stockpile Topsoil Areas

4. Start Date: *May 15, 2018 or as weather may permit*
End Date: *May 22, 2018 or as weather may permit*
Stormwater Controls Installation and date to be installed:
All stockpile locations present for more than a day, shall be covered and surrounded with erosion control protection, locations as shown on the plan.
Site Stabilization and date to be installed:
Maintain control measures.
Stormwater Control Removal Date:
All controls to be removed prior to completion of project – with Con. Com sign-off on or about December 30, 2018

Phase V: Perform Grading & Paving Operations

9. Start Date: *May 23, 2018*
End Date: *July 1, 2018*
Stormwater Controls Installation and date to be installed:
Maintain all storm water control measures
Site Stabilization and date to be installed:
Maintain control measures as currently installed.
Stormwater Control Removal Date:
All controls to be removed prior to completion of project – with Con. Com sign-off on or about December 30, 2018

Phase X: Loam and Seed All Disturbed Areas

10. Start Date: *May 23, 2018*
End Date: *June 15, 2018*
Stormwater Controls Installation and date to be installed:
Maintain all storm water control measures
Site Stabilization and date to be installed:
Maintain control measures.
Stormwater Control Removal Date:
All controls to be removed prior to completion of project – with Con. Com sign-off on or about December 30, 2018

Phase XI: Remove Erosion Control Provisions

11. Start Date: *November 15, 2018*
End Date: *December 30, 2018*
Stormwater Controls Installation and date to be installed:
Removal with Con. Com. sign-off
Site Stabilization and date to be installed:
Completed in order to obtain Con. Com. sign-off
Stormwater Control Removal Date:

All controls to be removed prior to completion of project – with Con. Com sign-off on or about December 30, 2018

2.5 Allowable Non-Stormwater Discharges

Type of Allowable Non-Stormwater Discharge	**Likely to be Present at Your Site?**
Discharges from emergency fire-fighting activities	☐ YES ☒ NO
Fire hydrant flushings	☐ YES ☒ NO
Landscape irrigation	☒ YES ☐ NO
Waters used to wash vehicles and equipment	☐ YES ☒ NO
Water used to control dust	☒ YES ☐ NO
Potable water including uncontaminated water line flushings	☐ YES ☒ NO
Routine external building wash down	☐ YES ☒ NO
Pavement wash waters	☐ YES ☒ NO
Uncontaminated air conditioning or compressor condensate	☐ YES ☒ NO
Uncontaminated, non-turbid discharges of ground water or spring water	☐ YES ☒ NO
Foundation or footing drains	☒ YES ☐ NO
Construction dewatering water	☐ YES ☒ NO

(Note: You are reminded of the requirement to identify the likely locations of these allowable non-stormwater discharges on your site map.

2.6 Site Maps

The Site Plan attached to this SWPPP are located in Appendix A.

The site plans were prepared by Engineering Design Consultants, Inc. and are entitled "Sherborn Village," "59 North Main Street, in Sherborn, MA", dated, July 25, 2017 and revised through January 31, 2018.

This is the Plan List:

1 Stormwater Pollution Prevention Plan

These plans may be updated from time to time based upon site conditions unknown at the time of issuance. The contractor and responsible parties shall communicate all construction that conflict with the known conditions of property prior to construction.

Section 3: Documentation of Compliance with Other Federal Requirements:

3.1 Endangered Species Protection

Eligibility Criterion

The Subdivision is eligible for coverage under criterion A for this permit.

☒ **A** ☐ **B** ☐ **C** ☐ **D** ☐ **E**

Criterion A. No federally-listed threatened or endangered species or their designated critical habitat(s) are likely to occur in the site's "action area" as defined in Appendix A of this permit.

Supporting Documentation

Provide in Appendix D is the documentation for the eligibility criterion selected.

3.2 Historic Preservation

Step 1

The following stormwater controls will be installed at the site.

- ☐ Dike
- ☐ Berm
- ☒ Catch Basin
- ☐ Pond
- ☒ Stormwater Conveyance Channel (e.g., ditch, trench, perimeter drain, swale, etc.)
- ☐ Culvert
- ☒ Other type of ground-disturbing stormwater control:

Step 2

In Step 1, three stormwater controls were identified, and the site engineer performed an evaluation and determined that historic properties do not exist on-site.

☐ YES ☒ NO

Step 3

The site engineer determined that the installation of subsurface earth-disturbing stormwater controls will have no effect on historic properties? ☒ YES ☐ NO

The site engineer performed research of the National Historic Registered and contacted local historic authorities to confirm the site contains no known historic properties.☒ YES ☐ NO

3.3 Safe Drinking Water Act Underground Injection Control Requirements

The proposed project does not apply.

Section 4: Erosion and Sediment Controls

The following is a list of all erosion and sediment controls that will be installed and maintained at the site:

- Erosion Control Barrier consisting of staked compost sock.
- Stand alone Silt Fence.
- Construction Entrance Apron.
- Catch basin filter fabric.
- Dust Control.
- Stockpile Protection.
- Slope Stabilization.

4.1 Natural Buffers or Equivalent Sediment Controls

Buffer Compliance Alternatives
Are there any surface waters within 50 feet of your project's earth disturbances? ☐ YES ☒ NO

☒ I will provide and maintain an undisturbed natural buffer that is less than 50 feet and is supplemented by additional erosion and sediment controls, which in combination achieves the sediment load reduction equivalent to a 50-foot undisturbed natural buffer.

Width of Natural Buffer:

The natural buffer identified on the plan that provides more than 50-feet of natural buffers to resource areas, a waiver is requested for the razing of a barn within the 50 foot zone. In this area a double row of siltation barrier will be placed.

Calculations showing the combination of the buffer area and the additional erosion and sediment controls to be installed will meet or exceed the sediment removal efficiency of a 50 foot buffer:

Slopes within 50 foot buffer area are generally less than 7 percent.

Table G – 4. Risk Levels for Sites with Average Slopes of > 6 Percent and ≤ 9 Percent

	Soil Type				
Location	Clay	Silty Clay Loam or Clay Loam	Sand	Sandy Clay Loam, Loamy Sand or Silty Clay	Loam, Silt, Sandy Loam or Silt Loam
Massachusetts	Moderate	Moderate	Moderate	Moderate	High

The sites risk level within the 50 foot buffer is high as the soils consist of Sandy Loam.

Table G – 7. Additional Controls Needed				
Risk Level	Retain ≥50' Buffer	Retain <50' and >30' Buffer	Retain ≤30' and >10' Buffer	Retain ≤10' Buffer
Low Risk	No Additional Requirements	No Additional Requirement	Double Perimeter Control	Double Perimeter Control
Moderate	No Additional Requirements	Double Perimeter Control	Double Perimeter Control	Double Perimeter Control and 7-day Site Stabilization
High	No Additional Requirements	Double Perimeter Control	Double Perimeter Control and 7-day Site Stabilization	Double Perimeter Control and 7-day Site Stabilization

Calculate Estimated % Sediment Removal Prior to Construction.

Table G – 9-1. Estimated 50 foot Buffer Performance Prior to Construction in Massachusetts					
	Estimated % Sediment Removal				
Type of Buffer Vegetation	Clay	Silty Clay Loam or Clay Loam	Sand	Sandy Clay Loam, Loamy Sand or Silty Clay	Loam, Silt, Sandy Loam or Silt Loam
Medium-Density Weeds	66	76	60	72	.....66.....

Calculate Estimated % Sediment Removal During Construction. Minimum 90% required.

Table G – 9-2. Estimated 50 foot Buffer Performance During Construction in Massachusetts	
Type of Buffer Vegetation	Loam, Silt, Sandy Loam or Silt Loam
Double Perimeter Control and 7-Day Site Stabilization	.....99.....

4.2 Perimeter Controls

General Perimeter Controls:

Prior to earth disturbing activities all erosion control barriers will be installed. They consist of:

- *Erosion Control Barrier consisting of staked compost sock.*

Specific Perimeter Controls:

Perimeter Control # 1

- *Erosion Control Barrier: Erosion Control Barrier consisting of compost sock staked in place.*
  - *Refer to the drawing for location and detail*
- *Installation date: May 1, 2018*
- *Maintenance Requirements: At a minimum, CGP Part 2.1.2.2.b requires removal of sediment before it has accumulated to one-half of the above-ground height of any perimeter control."*

4.3 Sediment Track-Out

General Description:

A construction entrance apron is to be installed to minimize the track-out of sediment onto Atwood Road. All construction vehicles are to utilize the entrance as defined on the drawing.

Specific Track-Out Controls:

Track-Out Control # 1

- *Construction Entrance Apron*
- *Installation date: May 8, 2018*
- *Maintenance Requirements: Where sediment has been tracked-out from our site to North Main Street or other paved areas, we must remove the deposited sediment by the end of the same work day in which the track-out occurs or by the end of the next work day if track-out occurs on a non-work day. We will remove the track-out by sweeping, shoveling, or vacuuming these surfaces, or by using other similarly effective means of sediment removal. We are prohibited from hosing or sweeping tracked-out sediment into any stormwater conveyance (unless it is connected to a sediment basin, sediment trap, or similarly effective control), storm drain inlet, or surface water.*

4.4 Stockpiled Sediment or Soil:

General Description:

Loam stockpile area will be located on the central portion of the project adjacent to the soil absorption system as shown on the drawing. The Stockpile will be covered upon establishing the quantity required for re-use. A silt fence will be installed along the down-gradient side of the stockpile.

Specific Stockpile Controls:

Stockpile Control # 1

- *Seed or install blanket*
- *Standard fast growing seed mixture*
- *Installation date: May 1, 2018*
- *Maintenance Requirements: Not Applicable*

Stockpile Control # 2

- *Silt Fence*
- *See the drawing for detail*
- *Installation date: upon completion of stockpiling*
- *Maintenance Requirements: At a minimum, we will comply with following requirement in CGP Part 2.1.2.4.d: We will not hose down or sweep soil or sediment accumulated on pavement or other impervious surfaces into any stormwater conveyance (unless connected to a sediment basin, sediment trap, or similarly effective control), storm drain inlet, or surface water.*

4.5 Minimize Dust:

General Description:

The site will be treated with water and or calcium in order to minimize dust.

Specific Dust Controls:

Stockpile Control # 1

- *Schedule as needed*
- *Installation date: as needed*
- *Maintenance Requirements: N.A.*

4.6 Minimize the Disturbance of Steep Slopes:

General Description:

All site slopes 3:1 or steeper will be treated with the slope stabilization as noted on the drawing or an approved equal. No slopes are proposed steeper than 3:1 requiring specialized treatment.

Steep Slope Control # 1

- *Slope Stabilization*
- *See the drawing for notes*

- *Installation date: upon completion of loaming*
- *Maintenance Requirements: Water appropriately to maintain seed mixture moist, but not over watering to generate erosion.*

4.7 Topsoil:

General Description:

Refer to discussion of topsoil throughout this SWPPP.

4.8 Soil Compaction:

General Description:

The areas of the site to be loamed and seeded are on the outside of the driveways. Once these areas are treated, access will not be necessary for any reason.

4.9 Storm Drain Inlets:

General Description:

Once the contech units are installed, the grates shall be protected from silt intrusion by placement of haybales around the grates.

4.10 Constructed Stormwater Conveyance Channels:

General Description:

Not Applicable

4.11 Sediment Basins:

General Description:

Not Applicable

4.12 Chemical Treatment:

General Description:

Not Applicable

4.13 Dewatering Practices:

General Description:

Not Anticipated

4.14 Other Stormwater Controls:

General Description:

Not Anticipated

Section 5: Pollution Prevention Standards

5.1 Potential Sources of Pollution:

Pollutant-Generating Activity	**Pollutants or Pollutant Constituents** (that could be discharged if exposed to stormwater)	**Location on Site** (or reference SWPPP site map where this is shown)
Equipment Fueling	Fuels and oils	Work Limits – Described Below
Earth Excavation	Sediment Transport	Work Limits – Described Below

[Include additional rows as necessary.]

5.2 Spill Prevention and Response:

1. All petroleum-based products stored on-site will be in durable containers with tight threaded lids or caps under cover.

2. Petroleum based products will be poured by competent and experienced personnel using funnels or appropriate nozzles, and done away from any natural or manmade stream, water source, conduit, or pipeline.

3. A spill kit or sufficient supply of absorbent diaper rags, goggles, gloves and other necessary supplies necessary will be present on site, with the location made known to all contractor employees and personnel.

4. The trained site supervisor, foreman, or designated competent man will direct clean up operations, and ensure they are done safely, properly and expeditiously.

5.3 Fueling and Maintenance of Equipment or Vehicles

General Description:

Equipment shall be fueled and serviced only by trained personnel and shall be completed only on flat durable surfaces that can be properly protected in the event of a spill.

5.4 Washing of Equipment and Vehicles:

General Description: Construction Equipment shall not be washed on this project site.

5.5 Storage, Handling, and Disposal of Construction Products, Materials, and Wastes:

General Description: All excavated materials shall be re-deposited onsite. In the event unsuitable materials are discovered then these materials would be hauled to an approved site for deposition.

5.5.1 Building Products:

General Description: Building materials shall be installed and all waste products disposed in waste containers and hauled by licensed service providers.

5.5.2 Pesticides, Herbicides, Insecticides, Fertilizers, and Landscape Materials:

General Description:

When in use these materials shall only be used by authorized individuals trained in the application of these products in accordance with the manufacturer's guidelines.

5.5.3 Diesel Fuel, Oil, Hydraulic Fluids, Other Petroleum Products, and Other Chemicals:

General Description: used for construction equipment only by trained personnel as provided above.

5.5.4 Hazardous or Toxic Waste:

General Description: None proposed or allowed.

5.5.5 Construction and Domestic Waste:

General Description: Waste products disposed in waste containers and hauled by licensed service providers.

5.5.6 Sanitary Waste:

General Description: onsite porta potty by licensed provider

5.6 Washing of Applicators and Containers used for Paint, Concrete or Other Materials:

General Description: not applicable to this project

5.7 Fertilizers:

General Description:

When in use these materials shall only be used by authorized individuals trained in the application of these products in accordance with the manufacturer's guidelines

5.8 Other Pollution Prevention Practices:

General Description: to be observed when applicable.

Section 6: Inspection and Corrective Action

6.1 Inspection Personnel and Procedures:

Personnel Responsible for Inspections

Heritage Properties, Site Contact Person
To be determined, General Contractor
Peter Bemis, Project Engineer

Note: All personnel conducting inspections must be considered a "qualified person." CGP Part 4.1.1 clarifies that a "qualified person" is a person knowledgeable in the principles and practices of erosion and sediment controls and pollution prevention, who possesses the skills to assess conditions at the construction site that could impact stormwater quality, and the skills to assess the effectiveness of any stormwater controls selected and installed to meet the requirements of this permit.

Inspection Schedule
Specific Inspection Frequency
Inspection after each rainfall event and weekly inspections to ensure the integrity of the erosion control system.

Rain Gauge Location (if applicable): not applicable

Reductions in Inspection Frequency (if applicable)

- For the reduction in inspections resulting from stabilization: no reduction not applicable
- For the reduction in inspections in arid, semi-arid, or drought-stricken areas: no reduction not applicable
- For reduction in inspections due to frozen conditions: no reduction not applicable

Inspection Report Forms: Attached

6.2 Corrective Action:

Instructions (CGP Parts 5 and 7.2.12):

- Describe the procedures for taking corrective action in compliance with CGP Part 5.

Personnel Responsible for Corrective Actions: Thomas Coder Lic, No. 40610

Corrective Action Forms: Attached

6.3 Delegation of Authority: To be determined

Instructions:

- Identify the individual(s) or positions within the company who have been delegated authority to sign inspection reports.
- Attach a copy of the signed delegation of authority (see example in Appendix J of the Template.
- For more on this topic, see Appendix I, Subsection 11 of EPA's CGP.

Duly Authorized Representative(s) or Position(s):

Insert Company or Organization Name:
Insert Name:
Insert Position:
Insert Address:
Insert City, State, Zip Code:
Insert Telephone Number:
Insert Fax/Email:

Section 7:
Training

Instructions (see CGP Part 6 and 7.2.13):

- Complete the table below to provide documentation that the personnel required to be trained in CGP Part 6 completed the appropriate training
- If personnel will be taking course training (which is not required as part of the CGP), consider using Appendix I to track completion of this training
- The following personnel, at a minimum, must be receive training, and therefore should be listed out individually in the table below:
    - Personnel who are responsible for the design, installation, maintenance, and/or repair of stormwater controls (including pollution prevention measures);
    - Personnel responsible for the application and storage of treatment chemicals (if applicable);
    - Personnel who are responsible for conducting inspections as required in Part 4.1.1; and
    - Personnel who are responsible for taking corrective actions as required in Part 5.
- CGP Part 6 requires that the required personnel must be trained to understand the following if related to the scope of their job duties:
    - The location of all stormwater controls on the site required by this permit, and how they are to be maintained;
    - The proper procedures to follow with respect to the permit's pollution prevention requirements; and
    - When and how to conduct inspections, record applicable findings, and take corrective actions.

Name	Date Training Completed
To be determined	INSERT COMPLETION DATE HERE
INSERT NAME OF PERSONNEL HERE	INSERT COMPLETION DATE HERE
INSERT NAME OF PERSONNEL HERE	INSERT COMPLETION DATE HERE
INSERT NAME OF PERSONNEL HERE	INSERT COMPLETION DATE HERE
INSERT NAME OF PERSONNEL HERE	INSERT COMPLETION DATE HERE
INSERT NAME OF PERSONNEL HERE	INSERT COMPLETION DATE HERE
INSERT NAME OF PERSONNEL HERE	INSERT COMPLETION DATE HERE
INSERT NAME OF PERSONNEL HERE	INSERT COMPLETION DATE HERE

Section 8: Certification and Notification

Instructions (CGP Appendix I, Part I.11.b):

- The following certification statement must be signed and dated by a person who meets the requirements of Appendix I, Part I.11.b.
- This certification must be re-signed in the event of a SWPPP Modification.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Name: _____ Title: _____

Signature: _____ Date: _____

[Repeat as needed for multiple construction operators at the site.]

SWPPP APPENDICES

Attach is the following documentation to the SWPPP:

Appendix A – Site Maps

Appendix B – Inspection Form

Appendix C – SWPPP Amendment Log

Appendix D – Subcontractor Certifications/Agreements

Appendix E – Grading and Stabilization Activities Log

Appendix F – Training Log

Appendix G – Delegation of Authority

Appendix H – Endangered Species Documentation

Appendix I – Historic Preservation Documentation

Appendix A – Site Maps

See Stormwater Pollution Prevention Plan

Appendix B – Copy of Inspection Form

Stormwater Construction Site Inspection Report

General Information			
Project Name			
NPDES Tracking No.		**Location**	
Date of Inspection		**Start/End Time**	
Inspector's Name(s)			
Inspector's Title(s)			
Inspector's Contact Information			
Describe present phase of construction			
Type of Inspection **❑ Regular ❑ Pre-storm event ❑ During storm event ❑ Post-storm event**			
Weather Information			
Has it rained since the last inspection? ❑Yes ❑No **If yes, provide:** **Storm Start Date & Time:** **Storm Duration (hrs):** **Approximate Rainfall (in):**			
Weather at time of this inspection?			
Do you suspect that discharges may have occurred since the last inspection? ❑Yes ❑No			
Are there any discharges at the time of inspection? ❑Yes ❑No			

Appendix C – Sample SWPPP Amendment Log

Instructions (see CGP Part 7.4):

- Create a log here of changes and updates to the SWPPP. You may use the table below to track these modifications.
- SWPPP modifications are required pursuant to CGP Part 7.4.1 in the following circumstances:
  - 3.3 Whenever new operators become active in construction activities on your site, or you make changes to your construction plans, stormwater control measures, pollution prevention measures, or other activities at your site that are no longer accurately reflected in your SWPPP;
  - 3.4 To reflect areas on your site map where operational control has been transferred (and the date of transfer) since initiating permit coverage;
  - 3.5 If inspections or investigations determine that SWPPP modifications are necessary for compliance with this permit;
  - 3.6 Where EPA determines it is necessary to impose additional requirements on your discharge; and
  - 3.7 To reflect any revisions to applicable federal, state, tribal, or local requirements that affect the stormwater control measures implemented at the site.
- If applicable, if a change in chemical treatment systems or chemically-enhanced stormwater control is made, including use of a different treatment chemical, different dosage rate, or different area of application.

No.	Description of the Amendment	Date of Amendment	Amendment Prepared by [Name(s) and Title]

Appendix D – Sample Subcontractor Certifications/Agreements

SUBCONTRACTOR CERTIFICATION
STORMWATER POLLUTION PREVENTION PLAN

Project Number: _____

Project Title: _____

Operator(s): _____

As a subcontractor, you are required to comply with the Stormwater Pollution Prevention Plan (SWPPP) for any work that you perform on-site. Any person or group who violates any condition of the SWPPP may be subject to substantial penalties or loss of contract. You are encouraged to advise each of your employees working on this project of the requirements of the SWPPP. A copy of the SWPPP is available for your review at the office trailer.

Each subcontractor engaged in activities at the construction site that could impact stormwater must be identified and sign the following certification statement:

I certify under the penalty of law that I have read and understand the terms and conditions of the SWPPP for the above designated project and agree to follow the practices described in the SWPPP.

This certification is hereby signed in reference to the above named project:

Company: _____

Address: _____

Telephone Number: _____

Type of construction service to be provided: _____

_____

_____

Signature: _____

Title: _____

Date: _____

Appendix E – Sample Grading and Stabilization Activities Log

Date Grading Activity Initiated	**Description of Grading Activity**	**Description of Stabilization Measure and Location**	**Date Grading Activity Ceased** (Indicate Temporary or Permanent)	**Date When Stabilization Measures Initiated**

Stormwater Pollution Prevention Plan
59 NORTH MAIN STREET
SHERBORN, MASSACHUSETTS

Appendix F – Sample SWPPP Training Log

Stormwater Pollution Prevention Training Log

Project Name:

Project Location:

Instructor's Name(s):

Instructor's Title(s):

Course Location: _____ Date: _____

Course Length (hours): _____

Stormwater Training Topic: *(check as appropriate)*

- ❑ **Sediment and Erosion Controls**
- ❑ **Emergency Procedures**
- ❑ **Stabilization Controls**
- ❑ **Inspections/Corrective Actions**
- ❑ **Pollution Prevention Measures**

Specific Training Objective:_____

_____

Attendee Roster: *(attach additional pages as necessary)*

No.	Name of Attendee	Company
1		
2		
3		
4		
5		
6		
7		
8		

Appendix G – Sample Delegation of Authority Form

Delegation of Authority

I, _____ (name), hereby designate the person or specifically described position below to be a duly authorized representative for the purpose of overseeing compliance with environmental requirements, including the Construction General Permit, at the _____ construction site. The designee is authorized to sign any reports, stormwater pollution prevention plans and all other documents required by the permit.

_____ (name of person or position)
_____ (company)
_____ (address)
_____ (city, state, zip)
_____ (phone)

By signing this authorization, I confirm that I meet the requirements to make such a designation as set forth in Appendix I of EPA's Construction General Permit (CGP), and that the designee above meets the definition of a "duly authorized representative" as set forth in Appendix I.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Name: _____

Company: _____

Title: _____

Signature: _____

Date: _____

Appendix H – Endangered Species Documentation

There are no reported Endangered Species located in or within 100-feet of the subject property as reported by the Massachusetts Division of Natural Heritage.

Appendix I – Historic Properties Documentation

There are no reported Historic Properties located in or within 100-feet of the subject property as reported by the Town of Sherborn.

Construction Period Pollution Prevention and Erosion and Sedimentation Control

1. NAME OF PERSON AND ENTITY RESPONSIBLE FOR PLAN COMPLIANCE:_____.

2. PROJECT MANAGER OF SHERBORN VILLAGE IS THE CONTACT PERSON. CONTACT NUMBER IS _____..

3. CONSTRUCTION PERIOD POLLUTION PREVENTION MEASURES: AS DEFINED WITHIN.

4. EROSION AND SEDIMENTATION CONTROL PLAN DRAWINGS: REFER TO PLAN VIEW FOR EROSION CONTROL MEASURE LOCATIONS.

5. DETAIL DRAWINGS AND SPECIFICATIONS FOR EROSION CONTROL: REFER TO INDIVIDUAL DETAILS FOR INSTALLATION OF EROSION CONTROL MEASURES.

6. VEGETATION PLANNING: THE PROPOSED CONSTRUCTION ACTIVITIES WILL BE PERFORMED WITHIN THE LIMITS OF WORK AREA (SILTATION BARRIER BEING THE LIMIT OF WORK). THE FINAL PROPOSED SURFACE WILL CONSIST OF PAVING, TREES/SHRUBS/MULCH AND GRASSED AREAS (REFER TO SEQUENCING BELOW).

7. SITE DEVELOPMENT PLAN: REFER TO PLAN VIEW & APPROVED SITE PLANS.

8. CONSTRUCTION SEQUENCING PLAN: THE FOLLOWING CONSTRUCTION SEQUENCE SHALL BE FOLLOWED:

a. EROSION CONTROL PROVISIONS IN PLACE AND INSPECTED PRIOR TO ANY AND ALL CONSTRUCTION.
b. EROSION CONTROL MEASURES AT EXISTING CATCH BASINS IN NORTH MAIN STREET.
c. CLEAR AND GRUB WOODED AREAS, REMOVE ALL UNUSABLE MATERIAL FROM SITE.
d. STRIP AND STOCKPILE TOPSOIL. PROVIDE TEMPORARY SEEDING OF STOCKPILE, PLACE SILTATION BARRIER AROUND STOCKPILE AND PLACE TARPS OVER THE STOCKPILE IF NECESSARY.
e. ROUGH GRADE LOT AND DRIVES. REMOVE UNUSABLE MATERIAL FROM SITE.
f. INSTALL ALL UTILITIES & INFILTRATIVE DRAINAGE SYSTEMS, PROTECT THE INFILTRATION AREA FROM STORMWATER RUNOFF, NO SILT OR TOPSOIL IS TO BE DEPOSITED IN THIS AREA, THE INFILTRATION CAPACITY OF THE NATIVE SOIL MUST BE PROTECTED.
g. PERFORM BINDER BASE PAVING OPERATIONS.
h. CONSTRUCTION OF BUILDING UNITS.
i. EROSION CONTROL MEASURES AT NEW DRAINAGE INLET UNITS.
j. FINAL GRADING.
k. LOAM AND SEED ALL DISTURBED AREAS & LANDSCAPE.
l. PERFORM FINAL PAVING OPERATIONS.
m. REMOVE EROSION CONTROL PROVISIONS UPON STABILIZATION AND FINAL SITE INSPECTION.

9. SEQUENCING OF EROSION AND SEDIMENTATION CONTROLS: EROSION CONTROL PROVISIONS IN PLACE AND INSPECTED PRIOR TO ANY AND ALL CONSTRUCTION.

10. OPERATION AND MAINTENANCE OF EROSION AND SEDIMENTATION CONTROLS:THE CONTRACTOR/OPERATOR IS RESPONSIBLE FOR MAINTAINING A STABLE SITE. THE OPERATOR SHALL EMPLOY EROSION AND SEDIMENTATION CONTROLS TO PREVENT EROSION AND SEDIMENT RELEASES BEYOND THE SEDIMENT BARRIER. THE EROSION CONTROL MEASURES INDICATED ARE THE MINIMUM THAT SHOULD BE EMPLOYED. THE CONTRACTOR/OPERATOR SHALL EMPLOY ADDITIONAL CONTROLS AS THE ON-

SITE CONSTRUCTION EXPERIENCE DICTATES.

11. INSPECTION SCHEDULE:

a. INSPECTIONS SHALL TAKE PLACE AT LEAST ONCE EVERY 7 CALENDAR DAYS OR WITHIN 24 HOURS OF THE END OF A STORM EVENT OF 0.25" OF RAIN OR GREATER.
b. INSPECTION FREQUENCY MAY BE REDUCED TO ONCE A MONTH IF THE ENTIRE SITE IS TEMPORARILY STABILIZED OR RUNOFF IS UNLIKELY DUE TO WINTER CONDITIONS.
c. INSPECTIONS MUST BE CONDUCTED BY A PROPERLY AUTHORIZED QUALIFIED PERSONNEL.
d. INSPECTIONS SHALL INCLUDE ALL AREAS OF THE SITE DISTURBED BY CONSTRUCTION ACTIVITIES. INSPECTIONS MUST LOOK FOR EVIDENCE OF POLLUTANTS OR POTENTIAL POLLUTANTS ENTERING THE STORM WATER SYSTEM. SEDIMENT AND EROSION CONTROL MEASURES SHALL BE INSPECTED TO ENSURE PROPER OPERATION. LOCATIONS WHERE VEHICLES ENTER OR EXIT THE SITE MUST BE INSPECTED FOR EVIDENCE OF OFF-SITE SEDIMENT TRACKING.

12. MAINTENANCE SCHEDULE: REPORTS SUMMARIZING THE INSPECTIONS SHOULD BE KEPT AS PART OF THIS CONSTRUCTION PERIOD POLLUTION PREVENTION AND SOIL EROSION AND SEDIMENTATION CONTROL PLAN. AT A MINIMUM THE INSPECTION REPORTS SHALL INCLUDE:

a. INSPECTION DATE;
b. NAME, TITLE AND QUALIFICATIONS OF THE PERSONNEL MAKING THE INSPECTION;
c. WEATHER CONDITIONS AT THE TIME OF INSPECTION AND SINCE THE PREVIOUS INSPECTION, INCLUDING A BEST ESTIMATE OF THE BEGINNING OF EACH STORM EVENT THAT OCCURRED, DURATION OF EACH STORM EVENT, APPROXIMATE AMOUNT OF RAINFALL FOR EACH STORM EVENT, AND WHETHER ANY DISCHARGES HAVE OCCURRED;
d. DISCHARGES THAT OCCUR AT THE TIME OF INSPECTION;
e. LOCATION OF DISCHARGES OR SEDIMENTATION FROM THE SITE;
f. LOCATION OF "BMPs" THAT NEED TO BE MAINTAINED;
g. LOCATION OF "BMPs" THAT FAILED TO OPERATE AS DESIGNED OR PROVED INADEQUATE FOR A PARTICULAR LOCATION;
h. LOCATIONS WHERE ADDITIONAL "BMPs" ARE NEEDED THAT DID NOT EXIST AT THE TIME OF INSPECTION; AND
i. CORRECTIVE ACTION REQUIRED INCLUDING ANY CHANGES TO THIS PLAN.
j. ALL REPORTS SHALL BE SUBMITTED TO THE DIRECTOR OF COMMUNITY MAINTENANCE AND DEVELOPMENT ON A MONTHLY BASIS DURING CONSTRUCTION PERIOD, AND MAINTAINED FOR THREE YEARS AFTER FINAL CONSTRUCTION PROJECT CLOSEOUT IS COMPLETE.

TURF MANAGEMENT PLAN

BACKGROUND

Landscape management activities include vegetation removal, pesticide application, organic fertilizer application, watering, and other gardening and lawn care activities. Weed control typically involves a combination of chemical (herbicide) application and mechanical methods. These practices may contribute pollutants to the storm drain system. Landscape chemicals and wastes can pollute storm water with sediments and toxics that can kill fish and wildlife and can harm humans. Fertilizers can contribute to algae blooms, increase nutrient concentrations, and deplete oxygen in receiving waters.

BEST MANAGEMENT PRACTICES

Landscaping and Lawn Maintenance

- Mulch-mow grasses whenever possible.
- Sweep grass clippings from sidewalks or streets back on to grassy areas.
- Do not wash down or dispose of lawn clippings, leaves, tree trimmings, or other landscape waste in or near a storm drain, drainage ditch, or open body of water.
- Use mulch or other erosion control methods to prevent erosion of exposed soils and flowerbeds.
- Do not apply bark on top of plastic sheeting unless the area is enclosed by a barrier-like lawn edging or it is far away from a storm drain inlet. Bark on plastic is easily washed off by heavy rainfall.
- Irrigate with the minimal amount of water needed. Never water at rates that exceed the infiltration rate of the soil.

Application of Pesticides and Organic Fertilizer

- Develop and implement an Integrated Pest Management (IPM) Plan.
    - Use manual and/or mechanical methods for weed/pest control and vegetation removal rather than chemical methods.
    - When chemicals are required, use the least toxic method to control animal and plant pests. Pheromone-based traps and sticky paper are often more effective than chemicals.
    - Beneficial organisms and biological control should be promoted.
- When chemical pesticides are used, use the most biodegradable pesticide that will accomplish the desired control.
- Pesticide application should be done only under the supervision of a Certified Pesticide Applicator.
- Follow all federal and state regulations governing use, storage and disposal of pesticides, herbicides and fertilizers and training of pesticide applicators ("Read the Label").
- Follow all manufacturers' recommendations for mixing, applying, cleaning-up, storage and handling of pesticides and fertilizers. Never over-apply.
- Time the application of pesticides and fertilizers to coincide with the manufacturer's recommendation for best results.
- Do not apply fertilizers during a heavy rainfall or if a heavy rainfall is expected.
- Do not apply a pesticide immediately before an irrigation cycle or when heavy rainfall is expected.
- Till fertilizers into the soil rather than broadcasting them.
- Use granular pesticides whenever possible since they result in lower application losses.
- Sweep pavement and sidewalks where fertilizers or other solid chemicals have fallen. Sweep the chemicals back onto grassy areas.
- Avoid broadcast spraying of pesticides. Choose an appropriate method of application such that application does not exceed the problem area. (Do not over-apply.)
- Fertilizer may be broadcast applied but apply at the proper application rate as recommended by manufacturer.
- Spot spray pesticides on infested areas whenever possible rather than treating a larger area.

- Regularly inspect, maintain and calibrate all pesticide and fertilizer application equipment to ensure proper application rate.

Storage and Handling of Fertilizers and Pesticides

- Store and mix fertilizers and pesticides inside a covered area with impervious secondary containment (preferably indoors) so that spills or leaks will not contact soils.
- Clean up any spills or leaks of pesticides and fertilizers promptly.
- Mix only the minimum amount of pesticide that will be needed for the immediate job.
- Triple rinse all pesticide application containers or sprayers. Dispose of rinsate properly.
- Do not pour rinsate onto ground or into any drainage system.
- Use rinse water from cleaning of containers and application equipment as a diluent for the next batch of that pesticide or apply to target areas.
- Dispose of excess or leftover chemicals and empty expired pesticide containers according to instructions on the label –preferably on the target pest or vegetated area or as hazardous waste at a licensed disposal facility.
- Do not dispose of excess, expired or waste pesticides or fertilizers in storm sewers, drainage ditches or any surface waters.

REQUIRED STRUCTURES AND EQUIPMENT

- All pesticide application equipment must be capable of immediate shut-off in the event of an emergency.

REQUIRED EMPLOYEE AND CONTRACTOR TRAINING

- Train all current and new employees and contractors who conduct mowing or landscaping activities on this BMP.
- Conduct refresher training on this BMP for all employees and contractors who do mowing or landscaping activities as needed.
- Contracts should stipulate that all contracted employees have been trained in proper stormwater management BMPs.
- Contracts should stipulate that all contracted employees have been trained in proper stormwater management BMPs.
- Pesticide application should be done only under the supervision of a "certified pesticide applicator".
- All employees who handle or apply pesticides or herbicides should be trained on the most recent Material Safety Data Sheets (MSDSs).
- Train employees on the proper methods for cleaning up spills or leaks of pesticides, herbicides and fertilizers.

REQUIRED MAINTENANCE

- Regularly inspect, maintain and calibrate all pesticide and fertilizer application equipment so that it can be set at the correct application rates.

RECORDS

- Keep records of employees and contractors trained.
- Keep records of fertilizer and pesticide purchases, amounts and locations used.
- Keep an inventory of fertilizers and pesticides including expiration dates.