

Erosion and Sediment Control Notes

Reference: Massachusetts Erosion and Sediment Control Regulations, 801 CMR 2.00, as amended. Prepared by Department of Environmental Protection, Bureau of Resource Protection, One Winter Street, 5th floor, Boston, MA 02108  
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The purpose of this plan is to 1. keep disturbed areas small, 2. stabilize and protect disturbed areas from storm water runoff, and 3. retain sediment with the site area and from adversely impacting the wetland resource area.

Best Management Practices (BMPs)

1. Non-Structural BMP
2. Minimize disturbance
3. Preserve natural vegetation

Erosion Control (to keep soil from leaving site or entering wetlands)

1. Stockpile covers
2. Mulch, grass, vegetation, geo-textiles

Sediment Controls (defensive, trapping soil particles from flowing water after dislodgement) may be achieved by two methods: filtering runoff so it flows and designing sediment-basin runoff for a period of time so that the soil particles settle out. The best way to control sediment, however, is to prevent erosion.

1. Stabilize construction entrances/exits  
Install the 20'x 75' gravel pad. Remove all vegetation and other objectionable material from the foundation area. Grade the foundation for positive drainage away from the resource area. A geo-textile filter fabric shall be placed between the gravel pad and the existing surface below. No loose stones should be placed at the base of the gravel pad. The gravel pad shall be placed on a firm surface or heavy use. Reshape/repair pad as needed for drainage and runoff control.

2. Silt/sediment fence  
Silt/sediment fence is generally six months. To use sediment fences effectively, provide access to the locations where sediment accumulates and provide reinforced, stabilized outlets for emergency overflow.  
Drainage area: Limited to 1/4 acre per 100 ft. of fence, and no more than 1.5 acres per 100 ft. of fence.  
Further restricted by slope steepness as shown in the following table.

Land Slope (%)	Maximum Slope Distance (ft)
20	250
10	180
5	100
20	100
30	30

The fence line should be neatly laid, through most of its length to impound a berm of sediment. The fence should be installed at least 10 feet from the edge of the disturbed area. The fence should be installed at least 16 inches into the ground, on the down-slope side of the trench. Space posts a minimum of 8 feet. If fence is installed in a trench, the fence should be installed at least 16 inches into the ground. Adapt spacing to place posts at low points along the fence line. Wire fence (14 gauge with 6-inch mesh) is required to support standard stretch fabric.

Allow for safe bypass of storm flow to prevent overtopping failure of fence. Dig a trench approximately 8 inches deep and 4 inches wide, or a V-shape, along the line of the fence, up-slope side, fasten support wire fence securely to the up-slope side of fence posts with wire ties or staples.

Attach continuous length of fabric to up-slope side of fence posts. Avoid joints, particularly at low points in the fence line. Where joints are necessary, fasten fabric securely to support posts and overlap to the next post. Place the bottom edge of the fabric at least 16 inches into the ground. The bottom edge of the fabric should be fastened securely to the fence line. The bottom edge of the fabric should be fastened securely to the fence line. The bottom edge of the fabric should be fastened securely to the fence line.

Silt fences should be inspected immediately after each rainfall and, at least daily during prolonged rainfall. Repair as necessary. Remove sediment deposits promptly to provide adequate storage volume for the next rain and to reduce pressure on fence. Take care to avoid undermining fence during cleanup.

The temporary stormwater basins shall be cleaned by the contractor and observed by the engineer prior to construction of the constructed wetland and rain gardens in their respective locations.

All temporary erosion and sediment control measures shall be removed within 30 days after final site stabilization is achieved or after the temporary practices are no longer needed. Disturbed soil areas resulting from removal shall be permanently stabilized.

Inspection Program  
Essential parts of an inspection program include:  
1. Inspection following severe rainstorms to check for damage to controls.  
2. Inspection following severe rainstorms to check for damage to controls.  
3. Final inspection of projects nearing completion to ensure that temporary controls have been removed, stabilization is complete, drainage ways are in proper condition, and that the final contours agree with the proposed contours on the approved plan.



NOTICE OF INTENT  
EROSION CONTROL  
PLAN

FOR  
PINE HILL VILLAGE  
IN

HARVARD, MASS.

DEFINITIVE PLANS, FOR THE  
COMPREHENSIVE PERMIT APPLICATION

PREPARED FOR:

PINE HILL VILLAGE LLC

P.O. BOX 468 THINGSBORO, MA REV. 4/16/19

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FILE NO. 1009/5086 DWG: 1009-5086 SITE 2018 R2 SWPPP SHEET 7

Construction Phase 1 –  
Development of Roadway Infrastructure and  
Pine Bank Neighborhood

1. Install Erosion Control Measures per Order of Conditions Plan and SWPPP (Plans), for all areas within or directly down-gradient of center Pine Hill Village land-alteration, construction, and stockpiling areas.
2. Cut and remove trees from Slow Rd to roadway station 9+00 including full width of work area defined by proposed tree edge/limit of clearing in Plans, then beyond sta. 9+00 clearing roadway to Public Water Supply (PWS) Pump House and areas of Sunrise Tucks Way drainage and Septic Systems to tree edge/limit of clearing in Plans, trees on East and West Serrapine Way neighborhoods will not be cut at this time.
3. Stump and grub roadway from Slow Road to cut-ditch, including brookside cut.
4. Install 3-sided concrete culvert at intermittent stream crossing near roadway sta. 3+00.
5. Stump and grub for Lot 1 - Pine Bank Neighborhood. Constructed Wetlands, and material stock-pile areas. Remove all stumps.
6. Construct the Phase 1 Rain Gardens (RGs #22 and #23) and install in-situ measures to prohibit soil compaction.
7. Construct the Brookstone C&I near roadway sta. 1+00 and the Constructed Wetlands near roadway sta. 4+00, and their footways. Plant seed these stormwater features. Allow time for basins to become vegetated.
8. Stump and grub for Public Water Supply (PWS) Pump House, sub-surface water supply storage tank, access. Remove all stumps.
9. Install drainage infrastructure (piping system and cut-ditch cell) within first 830 feet of roadway 1/4 mile from Brookstone C&I and Constructed Wetlands, up to Brain Manhole #2 (at roadway sta. 8+30, inclusive of DMHs #1 and #2, CBs #1 and #2, and associated drain pipe, riprap, and sediment control measures.
10. Construct Roadway from Slow Road to sta. 7+20, completing road cross section up through gravel base and swale along north side of road. Include construction of a humpback road for turn-around at sta. 7+00, consisting of roadway right-of-way entrance as humpback road. Improve roadway curb and gutter. PWS pump house and water storage tank.
11. Install Pine Bank Neighborhood Waste Water Treatment and Septic System. 12. Install Foundations for all five buildings in Pine Bank Neighborhood.
13. Construct install PWS pump house, water storage tank, and connections with wells.
14. Install PWS water distribution line and laterals to curb-steps from Pump House to Pine Bank with flushing head and stormwater tank. 5+00. into and around Pine Bank Neighborhood, and ending with flushing head and stormwater tank. 5+00.
15. Complete rough grading of Pine Bank Neighborhood and Roadway from Slow Road to sta. 7+20.
16. Install underground electrical/telephone cable service to Pine Bank Neighborhood and PWS Pump House.
17. Build Model Home in Pine Bank Neighborhood, followed by remaining four buildings in Pine Bank Neighborhood.
18. Complete PWS system, test, have inspected, and make operational to service Pine Bank Neighborhood. Trucks Way, and Sunrise Way houses.
19. Complete PWS system, test, have inspected, and make operational to service Pine Bank Neighborhood. Trucks Way, and Sunrise Way houses.
20. Install roadway binder pavement, curbing, and sidewalk base, from Slow Road to sta. 7+20.
21. Install driveways and parking in Pine Bank Neighborhood; complete to binder and curbing.
22. Construct Phase 1 Rain Gardens (RGs #22 and #23).
23. Complete Phase 1 Rain Gardens (RGs #22 and #23).

Development of Tucks Way and Sunrise Way

1. Maintain and/or augment Erosion Control Measures per Order of Conditions Plan and SWPPP (Plans), for all areas within or directly down-gradient of Phase 2 land-alteration, construction and stockpiling areas.
2. Construct Phase 2 Rain Gardens (RGs #10, #11, #16 and #20-21) and install in-situ measures to prohibit soil compaction.
3. Construct the Brookstone C&I in center of cut-ditch, initially as a sedimentation basin.
4. Install drainage infrastructure (piping system and cut-ditch cell) in upper roadway above sta. 8+30, inclusive of structures and piping for CBs, MHs, CBs, and Septic Systems.
5. Construct Roadway, including driveways and parking for MHs, MHs, and laterals to rain gardens.
6. Construct Road from sta. 7+20 through cut-ditch, with completion of gravel base and grading of swale along north side of road.
7. Install Trucks Way Waste Water Treatment and Septic System.
8. Complete construction of Trucks Way Common Driveway and parking, with completion of gravel base.
9. Install Foundations for all five buildings in Trucks Way and rough-grade neighborhood.
10. Complete Trucks Way house connections to PWS.
11. Complete Trucks Way house connections to PWS.
12. Construct Rain Gardens for Trucks Way houses (RGs # 3-5).
13. Install underground electrical/telephone cable service to Trucks Way and Sunrise Way.
14. Build Model Home in Trucks Way followed by construction of remaining four buildings in Trucks Way.
15. Complete Trucks Way Septic System, test, have inspected, and make operational.
16. Complete Trucks Way house connections to electrical/telephone cable services.
17. Install pavement binder, curbing, and sidewalk base, for roadway sta. 7+20 to around cut-ditch, and prevent binder for Trucks Way common driveway and parking.
18. Construct remaining Trucks Way Rain Gardens (RGs #10, #11, and #16).
19. Install Trucks Way Septic System, test, have inspected, and make operational.
20. Install Sunrise Way Waste Water Treatment and Septic System.
21. Construct Sunrise Way Common Driveway and parking, with completion of gravel base.
22. Install Foundations for all four buildings in Sunrise Way and rough-grade lot.
23. Complete Sunrise Way house connections to PWS.
24. Construct three buildings in Sunrise Way.
25. Complete Sunrise Way Septic System, test, have inspected, and make operational.
26. Complete Sunrise Way house connections to electrical/telephone cable services.
27. Install pavement binder and curbing for Sunrise Way common driveway and parking.
28. Construct Sunrise Way Rain Gardens (RGs #20 and #21).
29. Within Sunrise Way and upper 650 feet of roadway: Finish Grade, plant street trees, complete Rain Gardens, lawn & seed, and install Landscaping.
30. Install Bus Shelter at entrance from Slow Road to c&I cut-ditch.
31. Install sidewalk binder for sidewalk from Slow Road to c&I cut-ditch.

Construction Phase 3 – East Serrapine Way

1. Maintain and/or augment Erosion Control Measures per Order of Conditions Plan and SWPPP (Plans), for all areas within or directly down-gradient of Phase 3 land-alteration, construction, and stockpiling areas.
2. Cut and remove trees, stump and grub construction areas within East and West Serrapine Way. Remove stumps.
3. Mark the locations for the Phase 3 Rain Gardens (RGs # 12-15, and #19) and install in-situ measures to prohibit soil compaction.
4. Install East Serrapine Way Waste Water Treatment component (below parking).
5. Install PWS water distribution line and laterals to curb-steps in East and West Serrapine Way common driveway, to end at flushing hydrant. Test, have inspected, and make operational to support East and West Serrapine Way houses.
6. Install drainage infrastructure (piping system) in East and West Serrapine Way Common driveway, including driveways and parking for CBs, MHs, CBs, and Septic Systems.
7. Construct East and West Serrapine Way Common Driveway and parking with completion of gravel base.
8. Install East Serrapine Way Waste Water Treatment and Septic System.
9. Install Foundations for all four buildings in East Serrapine Way and rough-grade lot.
10. Complete East Serrapine Way house connections to PWS.
11. Complete East Serrapine Way house connections to PWS.
12. Install underground electrical/telephone cable service to East and West Serrapine Way.
13. Construct four buildings in East Serrapine Way.
14. Complete East Serrapine Way Septic System, test, have inspected, and make operational.
15. Complete East Serrapine Way house connections to electrical/telephone cable services.
16. Install Foundations for all three buildings in West Serrapine Way.
17. Complete West Serrapine Way house connections to PWS.
18. Install pavement binder and curbing for East and West Serrapine Way common driveway and parking.
19. Construct remaining Phase 3 Rain Gardens (RGs #12-15).
20. Within East Serrapine Way: Finish Grade, plant street trees, complete Rain Gardens, lawn & seed, and install Landscaping.
21. Install West Serrapine Way Septic System and connections with West Serrapine Way Waste Water Treatment.
22. Construct three buildings in West Serrapine Way.
23. Complete West Serrapine Way Septic System, test, have inspected, and make operational.
24. Complete West Serrapine Way house connections to electrical/telephone cable services.
25. Complete Sunrise Way: Finish Grade, complete Rain Gardens, lawn & seed and complete landscaping.
26. Within entire Pine Hill Village, install final paving on roadway and common driveways and parking.