



**DATE:** November 10, 2022

**TO:** Conservation Commission & Zoning Board of Appeals

**FROM:** Land Use Administrator/Conservation Agent

**RE:** Pine Hill Village Status Report Update

On December 28, 2021 the Harvard Conservation Commission issued a letter to the developer of Pine Hill Village, Peter Cricones, detailing the outstanding items that currently needed to be addressed. On February 4, 2022 the Land Use Administrator/Conservation Agent for the Town of Harvard received responses to the Commission's request. Both the Commission's requests and Mr. Cricones responses are stated below, along with a status update from the Land Use Administrator/Conservation Agent.

**November 10, 2022 UPDATE:** As of this date responses received from Mr. Cricones, along with a status update from the Land Use Administrator/Conservation Agent, from a site inspection with Steve Ventresca, of Nitsch Engineering, and Don Ritchie, chair of the Conservation Commission, are stated below.

**Conservation Request:** Repair the drainage swale at the entrance off of Stow Road as shown in the detail provided by Markey & Rubin, Inc., dated December 1, 2021.

**Answer:** We are in the process of repairing it.

**Conservation Update:** The repair has not been completed. Haybales used to reduce silt from entering the drainage channel cause water to back-up within the swale leading to the channel.

**Updated Answer 10/20/2022:** The swale has been updated (regraded and stone lined) as per plan from Ian Rubin.

**Conservation Update 11/10/2022:** Work completed as requested



**Conservation Request:** Verify material to construct Rain Gardens #22 and 23

**Answer:** Bioretention soil mix was used. Please see attached for the receipts for the material that was used.

**Conservation Update:** The material used to construct the rain gardens includes more than a bioretention seed mix. The Commission is seeking core samples be taken and witnessed by the Commission or the Nitsch Engineering to verify installation was done according to the approved plan.

**Updated Response 10/20/2022:** The rain gardens were constructed per plan.

**Conservation Update 11/10/2022:** Verification of materials used to construct the rain gardens was completed by Steve Ventresca, of Nitsch Engineering



**Conservation Request:** Bioretention cell only has one riser pipe; detail shows two; verify one pipe is sufficient.

**Answer:** Dan Boudreau is working on a letter to verify that one pipe is sufficient.

**Conservation Update:** Verification has not occurred

**Updated Answer 10/0/2022:** See attached letter from Dan Boudreau dated May 25, 2022 for the verification

**Conservation Update 11/10/2022:** The stormwater model used to design the bioretention cell should be run again with only one riser pipe in order to provide clear evidence that one riser pipe is sufficient. This information shall be provided to Nitsch Engineering for review. In addition, the elevation of the forebay shall be compared to that of the rain garden as they appear to be of different elevations. The Notice of Intent Landscape Fencing and Planting Plan shows an elevation of 257 for the bottom of the forebay and rain garden and a rim of 257.8



**Conservation Request:** The rain gardens raisers have flat grates as opposed to rounded grates as shown on the approved detail; verify flat grates are acceptable

**Answer:** Dan Boudreau is working on a letter to verify that flat grates are acceptable.

**Conservation Update:** Verification has not occurred

**Updated Answer 10/20/2022:** The flat grates have been changed so that they are all rounded.

**Conservation Update 11/10/2022:** Request satisfied

**Conservation Request:** The installation of the energy dissipation at the outlet at the constructed wetland should be verified with approved detail

**Answer:** Ian Rubin is working on this; however, he is currently out of the country. Upon his return, we will submit the verification and approved detail from him.

**Conservation Update:** Verification has not occurred

**Updated Answer 10/20/2022:** See attached report from Ian Rubin dated December 1, 2021

**Conservation Update 11/10/2022:** The letter from Ian Rubin did not clarify the issue, which is the Conservation Agent, along with Nitsch Engineering, believes the energy dissipator is not deep enough to function as designed.



**Conservation Request:** Material to construct parabolic swale #8 in front of units 1A and B needs to be verified.

**Answer:** Yes, this will be verified in the spring

**Conservation Update:** Verification has not occurred. The Commission is seeking core samples be taken and witnessed by the Commission or the Nitsch Engineering to verify installation was done according to the approved plan.

**Updated Answer 10/20/2022:** The parabolic swale has been constructed per plan. Please see attached. We can do the core samples next week, please let me know when a good date/time is.

**Conservation Update 11/10/2022:** Verification of materials used to construct the rain gardens was completed by Nitsch Engineering.

**Conservation Request:** Plantings around the constructed wetland are not consistent with the approved plan and some of the trees are dead; replacement plantings shall be in a random pattern.

**Answer:** Any dead trees or shrubs will be replaced in the spring and will be replaced in a random pattern.

**Conservation Update:** Plantings have been replaced, however the area is well over grown and should be maintained to help reduce the spread on invasive plants.

**Updated Answer 10/20/2022:** Weed whacking and will continue to do so.

**Conservation Update 11/10/2022:** Recommend this area be periodically mowed along with lawn areas around the units as part of the routine maintenance of the site and reduce the growth and spread of invasive plants.





**Conservation Request:** Additional planting required in front of Units 1A and B as shown on the approved plan.

**Answer:** Yes, this will be done per plan.

**Conservation Update:** Plantings are still not in accordance with the approved plan.

**Updated Answer 10/20/2022:** The plantings have been installed.

**Conservation Update 11/10/2022:** Work completed as requested



**Conservation Request:** Silt on the driveway for units 5 and 7 shall be removed before occupancy.

**Answer:** This has been done

**Conservation Update:** Although a berm was installed at the entrance to the driveway silt continues to collect on the driveway between units 5 and 7 as water pools in that area during heavy rain events. The silt sock installed on the edge of the driveway near unit 5 has been removed without approval from the Commission. Silt laden waste is passing over grassy area before accumulating at the edge of the existing erosion control barrier.

**Updated Answer 10/20/2022:** A new hay wattle has been installed. Will install check dams on the shoulders of the roadway between stations 7+00 to +950. See Ian's plan page when the final coat of pavement gets put on.

**Conservation Update 11/10/2022:** Improvements made up hill of this site have eliminated silt accumulating in the driveway. The pooling of water will continue until the final coat is installed on the driveway. The silt sock has been replaced as requested.



**Conservation Request:** An additional parking space has been installed at units 5 and 7 this pavement shall be removed and replaced with loam and seed as well as the planting as shown on the approved plan.

**Answer:** The pavement at the additional parking space that was installed at units 5 and 7 has been removed. It will be replaced with loam and seed as well as the planting as shown on the approved plan weather dependent.

**Conservation Update:** Although the excess pavement was removed in early 2022 no other activity has occurred to rectify the issue.

**Updated Answer 10/20/2022:** This area has been hydroseeded and the tree has been installed.

**Conservation Update 11/10/2022:** In September when the Conservation Agent was on site the area had been stabilized with grass, however during review of the site on November 10, 2022 the Agent observed the newly planted tree, but there was no longer any grass. Re-hydroseed area for compliance.



**Additional comment in the letter from the Commission dated December 28, 2021:**



**Conservation Request:** Please be reminded that any changes to the approved plan require either Conservation Commission and/or Zoning Board of Appeal approval prior to the change occurring.

**Answer:** Also, any changes to the approved plans will be presented to Conservation Commission and/or Zoning Board of Appeal for approval prior to the change occurring.

**Conservation Update:** A mail kiosk has been added to the west side of the visitor park at the entrance to the development, but was not on the approved plan. This addition was not approved by the Commission, nor the Zoning Board of Appeals.

**Updated Answer 10/20/2022:** Apologies for not seeking approval of the Commission nor the Board. This location was requested by the USPS.

**Conservation Update 11/10/2022:** The Conservation Commission will be issuing a fine in the amount of \$300.00 for this violation of the approved plans under the Order of Conditions.



**Conservation Request:** To ensure proper installation of any additional rain gardens, please contact this office to arrange an inspection during the installation of these stormwater features.

**Answer:** And finally, to ensure proper installation of any additional rain garden, you will be contacted to arrange an inspection during the installation of these stormwater features.

**Conservation Update:** According to the weekly reports from the Developer, rain gardens 16 and 21 were to be worked on the weeks of June 20 and 27, 2022, however no inspection of the installation of these gardens was arranged as previously requested.

**Updated Answer 10/20/2022:** We were under the impression that the notification of the weekly updates would serve as the notification and then the inspection would follow. Please see attached pictures of rain garden 16.

**Conservation Update 11/10/2022:** The remaining rain gardens requires a member of the Commission, its Agent and/or an employee of Nitsch Engineering to be on site during installation. Mr. Cricones is to make direct contact with the Conservation Agent in order to arrange these inspections. ***The submittal of the weekly reports will not be considered notification.***



#### **Additional Comments from the Land Use Administrator/Conservation Agent**

In general, the common areas on the site are not being maintained cause unwanted over growth around the

installed landscaping.

**Answer:** We are in the process of weed whacking and will continue to do so

**Conservation Update 11/10/2022:** The Commission recommends these areas be maintained with mowing at the same time the lawn areas of the units are mowed as part of the routine maintenance of the site, as well as to reduce the growth and spread of invasive plants.



Members of the Conservation Commission along with its Agent had spent a considerable amount of time on the site over the years prior to development. The site was originally free from invasive plant species. Since the addition of fill onto the site invasive plant species have been identified on the site, including Japanese Knotweed, Garlic Mustard and Black Locust. The Commission is concerned these invasives will spread into the wetland resource areas on and off the site, including a vernal pool on the adjacent lot, as well as the forested area around the development. The Commission is requesting a plan be prepared to rectify the issue.

**Answer:** Ruby Environmental Services Inc. has been contracted to provide annual invasive species management plan, which includes spraying/cutting. This plan has been presented and approved to the Commission and the first treatment (fall portion of the contract) was done on 10/3/2022.

**Conservation Update 11/10/2022:** Management Plan by Ruby Environmental was approved by the Commission. Photos above show areas that previously included invasive plant species. As stated above the Commission recommends these areas be maintained with mowing at the same time the lawn areas of the units are mowed in order to reduce the growth and spread of invasive plants. A progress report from Ruby Environmental shall be provided for the Commission's review.

The lower Bio-Retention Cell is receiving silt during rain events. Areas in which stormwater is flowing shall be



stabilized to reduce silt from entering this cell.

**Answer:** Waddles were removed out of the pipes and the pipes were cleaned

**Conservation Update 11/10/2022:** Outfall remains free of silt; continue to monitor for compliance.



The constructed wetland is acting a sediment basin during construction, however silt in this basin has reached levels that should be addressed to avoid adverse impacts to the wetland resource areas.

**Answer:** A dewatering plan of this area has been approved by the Conservation Commission to allow for the removal of silt within this basin.

**Conservation Update 11/10/2022:** A dewatering plan has been approved by the Commission and may proceed.



Parabolic Channel (PS8) in front of Building #1 is constantly full of silt. Stabilization of issue with riprap, erosion control barriers and silt sacks have only exacerbated the problem. Proper installation and maintenance of this and all of the Parabolic Channels shall be adhered to.

**Answer:** Pipes were cleaned, wattles were removed, and a new wattle will be added further away from the pipe.

**Conservation Update 11/10/2022:** Outfall remains free of silt; continue to monitor for compliance.



Parabolic Channel 7 (PS7) was designed to be a series of step pools along the main road of the development. As constructed this channel is one long channel that has been stabilized sporadically similar to PS8. Proper installation and maintenance of this and all of the Parabolic Channels shall be adhered to.

**Answer:** The swale has been cleaned and the check dams have been installed in a series of step pools.



**Conservation Update 11/10/2022:** Outfall remains free of silt; continue to monitor for compliance. The swale itself had originally been proposed as step pool. Although the check dams installed along the swale will slow the flow of water during heavy rain events the Agent would recommend the step pools be installed to better control water within the swale. If it is the desire of Mr. Cricones to keep the swale as constructed the stormwater model shall be run again to prove it will function to control stormwater.



A major cause of siltation with the Parabolic Channels and Constructed wetland is the uncontrolled runoff from the upper portion of the site. A plan to properly control stormwater runoff shall be submitted to the Commission for their review.

**Answer:** We have added more check dams every couple hundred feet up the roadway on the side along with adding 3" crushed gravel on the right side of the road going up the hill. The fact that the driveways have been paved and the whole site has been hydro seeded has also greatly reduced this issue. Any material that ends up in the parabolic swale 1 has been and will continued to be cleaned out if anything goes in there. We have also added more check dams in front of it and within it

**Conservation Update 11/10/2022:** These areas have stabilized as detailed above. Monitor for continued compliance.



