

Request for bid waiver to repair stone work at the Ledyard Up-Down Sawmill

Request

The Historic District Commission requests an expedited process to hire a stone mason to address problems in the stone-lined tail race and exterior stone stairway on the east side of the Ledyard Up-Down Sawmill. The need to urgently address these issues was confirmed in a 2023 report from James K. Grant Associates. The next few months are an ideal time to perform the work since pond and brook water levels will increase in the fall and winter, and the work could be completed prior to the sawmill fall visitor season which starts in October.

Tail race stone walls

The tailrace with stone retaining walls was rebuilt during the major restoration of the sawmill in the early 1970s. Photos from the 1970s show the newly rebuilt structure with tight-fitting and plumb stone walls. In the ensuing decades, rain runoff drainage issues near the tailrace has likely contributed to the deteriorating condition of the stone walls. We have already taken the first steps in addressing the runoff drainage issues with grading work (November 2022) and installation of a new drainpipe for the mill north side gutter (May 2023).

The award of a grant from the Connecticut State Office of Historic Preservation/Preservation CT allowed us to hire James K. Grant Associates (who are included in the state's list of qualified Historic Engineering/Architect firms). Grant Associates completed a survey of the sawmill building and surround (including the tail race) in late 2022 and we were provided with their report in spring 2023. Although Grant Associates suggested that a temporary solution is to add structural struts across the tail race, we prefer their recommended long-term fix which is to rebuild the tail race walls and address runoff drainage issues around the tail race. (See below for a brief description of the scope of work.)

From the James K. Grant Associates 2023 report:

Stone Tail Race. A significant bulge is present in the dry laid stone tail race wall just to the east of the exterior stair. As part of its function, the wall also retains the earth behind the the tail race. The bulge is located at the most downstream end of the water flow and is likely caused by the same drainage path from the water pressure that builds up behind the wall. The bulge and poor drainage could lead to instability and should be addressed by rebuilding the wall and adding a curtain drain and weep holes.

Recommendation: The condition could lead to instability and should be addressed. The most effective solution is to locally rebuild the wall in a plumb condition. This would also allow the opportunity to excavate behind the wall and improve drainage by adding a curtain drain wrapped with filter fabric. Weep holes through the wall could also be added to ensure overflow drainage in case the curtain drain becomes clogged in the future. Installing struts across the tailrace could provide temporary stabilization and/or a lower cost but less effective alternative to rebuilding.

Stone stairway on east side of mill near tailrace

The east exterior stone stairs were added to the site during the 1970s sawmill restoration and provide visitor access along the mill exterior and to the stone bridge across the tailrace. Erosion along and under the steps has significantly shifted the slopes of individual steps both across and along the length of the stairs. A number of these wide steps now drain toward, rather than away from the building. The erosion has also resulted in uneven step heights.

In addition to the rebuilding work on the stone steps and stone tailrace walls, we plan to re-set the one-piece stone bridge that spanning the tail race to ensure adequate support on both sides. Currently, the bridge is offset with a significantly narrower area of support on the north than the south end.

From the James K. Grant Associates 2023 report:

Foundation and Stairs along East End / Site Drainage. Erosion has occurred below the bottom three steps allowing them to rotate out of place. The lowest step has settled into a significant hole. Long standing issues with site drainage and gutter discharge onto the east exterior stairs are apparent. The issues noted in the stairs and foundation wall are consistent with erosion that might occur due to washout of soils from water flowing through and below the affected components.

Status of Securing bids

In July 2023, we selected three stone mason contractors all of whom we consider qualified to do the work based upon their extensive experience with these types of dry stone structures. All three contractors inspected the tail race and stairs area in-person. Subsequently, all three were sent a scope of work document that described the work to be included in a bid for the job. We have received bids from the three vendors of \$25,000, \$34,660, and \$38,000.

The Commission requests the Council for a waiver of the advertised bid requirement due to the potential of a near term collapse of the race retaining walls and the need to make the stone steps to the lower level safe. If granted the waiver, the Commission plans to execute a contract to Kenneth Geer Stonewall Construction in the amount of \$25,000 to rebuild the retaining wall of the race and reset the steps to divert water away from the building and make them safe for foot traffic.

Summary of Scope of work

1. Rebuild the bulging tailrace north and south walls for about 35 feet using larger stones as needed for the base layers. Ensure there is adequate drainage through rebuilt walls to minimize hydrostatic pressure.
2. Re-set exterior stone steps to drain away from building and to provide a safe stairway for the public. The top step should be set to prevent runoff from draining down the steps.
3. Re-set stone bridge to be slightly raised with top stones of tail race and have similar length of contact with the north and south sides.
4. Complete surface grade along top stair and east side of steps so drainage is away from building foundation.