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MEMORANDUM

TO: Ed Olsen – Superintendent, Parks and Forestry Division, Carys Lustig – Director of Public Works, Stacey Mulroy – Director of Park and Recreation (Town of Needham)

FROM: Cass Chroust (Weston & Sampson)

DATE: January 27, 2022

SUBJECT: Claxton Field Environmental Summary and Improvement Recommendation

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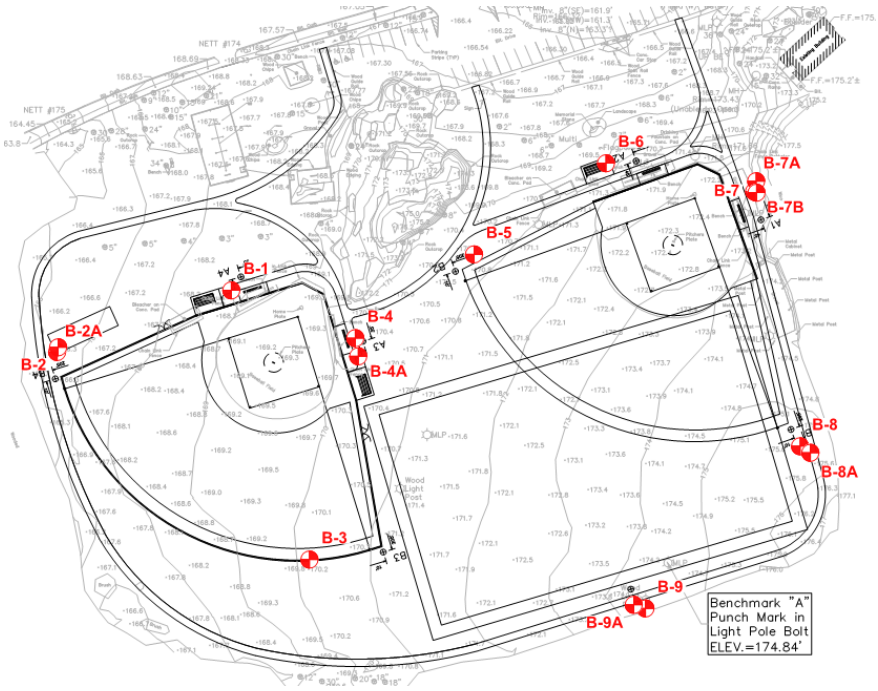
The Town of Needham retained Weston & Sampson to provide design services for improvements at Claxton Field, located at 1421 Central Avenue. The site is the location of two (2) softball fields with an overlapping rectangular field in the eastern outfield area, sports field lighting, a playground area, a support building, and parking lot. The Town is looking to renovate the athletic facilities at Claxton to be on par with the performance of other facilities in Town which includes grading refinements to the infields and outfields, new dugouts and player benches, new backstops, new outfield fencing, and ADA improvements including a new perimeter pathway for multi-generational use.

Investigation Results Summary

As part of the geotechnical analysis related to new sports lighting foundations, a series of eleven (11) subsurface soil boring explorations were conducted across the site on December 7th, 2021, by Seaboard Drilling and observed by a Weston & Sampson geotechnical engineer. The borings were advanced to depths of up to eighteen (18) feet below current grade and were logged in the field by the geotechnical engineer during advancement. Approximate boring locations are depicted on the figure below.



Prior to initiating the field investigation program, Weston & Sampson was provided anecdotal information from Town representatives regarding the site's historical use as the Town's burn dump prior to the development of the Needham Recycling and Transfer Station in the 1950s / 1960s. The site was never registered with the MassDEP Solid Waste Division either during its operation or following redevelopment as a recreational facility approximately 60 years ago.

The geotechnical engineer observed the subsurface materials to be fairly consistent across all locations. The top six (6) to twelve (12) inches below the grass surface appeared to be comprised of typical topsoil. Below the topsoil, ash and various solid waste materials (glass, metal fragments, ceramic, wood) were observed intermixed with granular fill. The percentage of these components significantly increased at four feet below grade, at which point distinct layers of ash were observed in select boring locations, at depths of up to approximately fourteen (14) feet below grade. Groundwater was observed at depths between eight (8) to ten (10) feet.

The presence of these materials is consistent with the known site history as a municipal burn dump. Note that samples of the materials were not collected for laboratory analysis at the time of boring advancement, and as such, specific information / knowledge regarding the chemical makeup of the materials has not been obtained for the site and is currently unknown. However, based on our experience with similar sites it is likely that metals (lead, arsenic, chromium, etc.) and / or Polycyclic Aromatic Hydrocarbons (PAHs), commonly associated with ash deposits will be present at concentrations in excess of concentrations requiring reporting to MassDEP.

Regulatory Implications

As laboratory analytical results for the subsurface materials have not been obtained, a reporting obligation to MassDEP does not currently exist. However, should earthwork associated with the project require excess materials to be disposed off-site, analytical testing would be required to support acceptance at a disposal facility. Based on this need for sampling, the initially proposed park design (including deeper excavations for light poles, backstops, fencing, etc.) is likely to result in reporting to MassDEP. Following reporting, MassDEP would assign a Release Tracking Number (RTN) and the site would be regulated going forward under the Massachusetts Contingency Plan (MCP). The MCP would require additional assessment, and potentially remediation, to achieve site closure. From our experience with similar projects, this process would likely require multiple years, with considerable cost implications for the Town.

Reporting to MassDEP could be avoided by eliminating off-site disposal of excess materials.

Recommendations and Potential Path Forward

Based on the findings for the site as described above, we recommend the following:

1. Excavation of additional shallow test pits (approximately 12 inches below grade) to better define the thickness of topsoil materials throughout the site, including if ash and solid waste materials are present. We recommend that these test pits also include excavations in the playground area of the site since the final condition and thickness of the existing engineered wood fiber mulch and presence of any other materials is unknown.

2. Modify proposed project design to limit the depth of excavation to approximately six inches, reuse existing topsoil, and import new fill material to build up the finished grade above current elevations. When subgrade is exposed, install a geotextile membrane across the site and limit site improvements to above this membrane. Exclude deeper excavations related to fencing, backstops, and sports lighting.

3. Based on this assessment, the Town should consider expanding the scope of work to include improvements to the playground and new poured-in-place rubber surfacing to serve as a more durable surface above potential waste materials that may be present below the playground.

Risk to Current Park Users

As specific chemical concentrations have not been obtained for the site, a detailed risk calculation for current park users cannot be performed. Based on the observed presence of competent natural turf and underlying topsoil, contact with waste materials by children or other park users is considered unlikely, but cannot be ruled out. The additional test pitting will serve to confirm that this separation exists under current conditions. Note that the test pitting in the playground (and potential future improvements to this area) is recommended as a conservative measure. The proposed geotextile membrane is a proven strategy to further mitigate risks posed by the solid waste materials, which has been implemented in numerous parks and other settings throughout the state effectively. As such, this alteration to design would be considered sufficient for risk mitigation within the limits of the covered area assuming the current use of the fields continues.

Impacts to Project Schedule

The original project schedule intended to develop a complete and detailed scope with cost estimate for funding applications through the Community Preservation Committee by February 2022 and contract level design documents for permitting review in March 2022, all of which would enable the Town to go out to bid in June 2022 after Town Meeting approval in order to complete construction by the Spring of 2023. However, the information discovered through the field investigation requires additional consideration by the Town to determine appropriate next steps related to short- and long-term utilization of the facility and disrupts the funding and permitting process required to keep this project on that accelerated timeline.

Modifying the design approach as recommended above could reduce the impact to the project schedule and cost overages and a complete and detailed scope with cost estimate may be available for review by the Community Preservation Committee for the Special Fall Town Meeting in 2022 should the committee accept the application off-cycle. This would allow for bidding and construction to commence in November or December of 2022, pending results of the hand-dug test pits. If the Town elects to pursue the recommended approach, Weston & Sampson would provide a more detailed project schedule for consideration.