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November 5, 2021

Mr. Ross Povenmire
Office of the Conservation Commission
Town of Boxford
7A Spofford Road
Boxford, Massachusetts 01921

Re: **Response to engineering review comments**
Spofford Pond School
Boxford, Massachusetts

Dear Mr. Povenmire:

We are in receipt of technical review comments from third party reviewers for this project. These comments were provided pursuant to our application for a Stormwater Management Permit that is presently being considered by the conservation commission. To date, we have received the following:

- A stormwater engineering review letter from Roux Associates, Inc. to the Office of the Conservation Commission, dated June 16, 2021

- A memorandum to Scott Morrison, Superintendent of Tri Town by Chris Olbrot, PE, Superintendent of Public Works/Town Engineer titled Cole School Parking Lot Improvements (incorporated by reference in the letter from Roux above), dated February 11, 2021

- A memorandum from the Massachusetts Department of Environmental Protection (MADEP) to the applicant, dated March 15, 2021

Our submission materials have been revised as described below to address each review comment and are included with the submission of this letter. The review comments from the documents referenced above have been reproduced below, followed by our response to each comment.

<u>Review comments from Roux Associates, June 16, 2021:</u>

1. Although deep hooded catch basins are specified, no dedicated petroleum (including oil, grease, petroleum hydrocarbon) removal BMPs (e.g., oil water separators) are included in the design, which includes stormwater flows from paved areas. Recommend Designer provide justification for why dedicated petroleum removal is not warranted for the project or if petroleum removal is sufficiently provided in accordance with applicable standards for the proposed improvements.

   Response: The hood component of the deep-sump hooded catch basins constitutes a petroleum capture BMP, performing a function similar to that of an oil baffle in an oil-grit separator. Under the MA Stormwater Handbook, there are a few points to consider on this topic:
   - BMPs such as Oil-Grit Separators that provide extra petroleum removal capacity are generally required for sites considered land uses with higher potential pollutant load (LUHPPLs) under Standard 5 such as industrial sites, large shopping centers, fuel stations, etc. This site is not a LUHPPL.
   - Under Standard 6, structural BMPs must be provided that will result in 44% TSS removal prior to discharge into an infiltration system using acceptable Pretreatment BMPs (Table CA 3, Volume 1, Chapter 1, Page 19) for sites that discharge within Zone Is and/or Zone IIs. This site discharges within a Zone II, however there are no proposed infiltration BMPs within this site. That being said, even for sites with infiltration BMPS, the criteria gives no explicit requirement for added petroleum removal capacity. As acceptable pretreatment strategies it lists deep sump hooded catch basins

and proprietary separators, the latter of which is met by the proposed isolator row devices. These provide the required treatment within this critical area.

- As a redevelopment project, this project is only required to meet the requirements of the MA Stormwater Handbook "to the maximum extent practicable." That being said, we believe that the proposed design fully complies with the standards with only minor exceptions noted in response to arsenic levels in the soil.

In light of the considerations listed above, we do not believe that the installation of additional BMPs is required under the MA Stormwater Handbook.

2. This redevelopment project includes the use of existing stormwater infrastructure (manholes, catchbasins, vaults, pipes, etc.) and (presumably) redirecting flows from the existing networks to new BMPs. The Civil Drawings did not (clearly) depict post-development conditions as the majority of the proposed drawings include features which are presumably being demolished. Recommend Designer simplify proposed condition drawings to only display post-development conditions.

   Response: We have eliminated items to be demolished from the proposed conditions drawings.

3. Topographic maps potentially indicate off-site area may contribute runoff to the site. Specifically, there are potential inflows from portions of Spofford Pond Road (near 2P) and to the west and northwest of the building. Recommend Designer clarify the any catchment areas outside of the project boundary are included with stormwater calculations.

   Response: We have reviewed this condition. Plans originally submitted proposed a cape cod berm at the edge of the road which would contain runoff from Spofford Pond Road, but this is being eliminated due to comments received by the planning board. This subcatchment condition has been reviewed at both locations referenced above and adjusted as needed.

4. Although the project includes retention BMPs (to delay and slow the peak discharges), the lack of infiltration BMPs results in about a 10% increase in total volume discharged to the wetlands. There was no statement or evaluation included with the Stormwater Report regarding the impact (such as flooding) to the isolated wetland. Although Roux has provided an evaluation (see below) based on information included with the project documents, it is recommended Designer opine about the impact the increased stormwater volume will have on the vernal pool and associated wetland.

   Response: We have revised the stormwater report to clarify the minimal impact of the volume increase.

5. When the information presented in the Civil Drawings (Sheet Nos. C130, C131, C132, C505, L100, L101, and L102) are viewed holistically, the proposed rain gardens (2P and 3P) are inconsistent with the rain garden treatment BMP requirements in the MA SW Handbook:
   - Elements, such as the extent of each bioretention area, the extent of the watertight membranes, and underdrain connections were either not located or not located easily;

     Response: The plans have been edited to make these details more clear and easier to find.

   - There does not appear to be pretreatment for 3P which is necessary to achieve the 90% TSS removal credits for sheet flows to bioretention areas;

     Response: The plans have been revised to provide pretreatment measures consisting of a "grass and gravel combination" as specified in the stormwater handbook.

   - It is uncertain if filtering is occurring because the HydroCAD calculations did not include exfiltration and discharge associated with the soil filter and underdrain; and

Response: The bioretention areas are intended to function as filtering bioretention areas, which are consistent with what is shown in the plans and details (i.e. underdrains and liners provided). Exfiltration was not modeled in the HydroCAD reports which is a conservative approach as it means that peak discharges from the site will potentially be less than what has been modeled if the exfiltration into the underdrain were taken into account.

- The soil layer is less than 2 feet and bushes are shown to be planted within the proposed rain gardens. Recommend Designer provide additional details regarding the construction of the proposed rain gardens and, if necessary, review and revise TSS Removal calculations for flows which are treated by the proposed rain gardens.

  Response: Acknowledged. The stormwater handbook indicates "if trees and shrubs are to be planted the soil media should be at least 3-feet." The detail has been revised to provide for this depth of soil media.

6. The following items were identified with respect to 2P (the rain garden closest to Spofford Pond Road).
   - Sheet No. C131 depicts the Perforated Underdrain (P-22) for 2P as 12-inch HDPE, and the detail sheet (No. C505) depicts the perforated pipe as 6-inch.

     Response: The plans have been revised for consistency to reflect a 6-inch underdrain pipe.

   - Sheet No. C131 depicts the invert for the 18-inch outlet pipe from ORF-1 to DMH-7 as elevation (Elev.) 132.00, the top of the inlet grate for ERF-1 as Elev. 132.95, and the bottom elevation in the area of ORF-1 as Elev. 132. Based on these elevations, the outlet pipe is both above grade and the top of the pipe is above the structure (ORF-1) it originates from.

     Response: The plans have been revised to address this.

   - If 2P is intended to be a filtering BMP, then ideally the majority of the inflow would infiltrate through the soil layer filter and be collected by the Perforated Underdrain for discharge to the nearby wetland. As proposed, a 24" inlet is placed at Elev. 132.95, which would effectively result in the majority of the flows to the bioretention area bypassing the soil filter and discharging directly to the wetland.

     Response: The intent of 2P is for it to be a filtering BMP. The plans have been revised with a rim elevation of the inlet raised to provide for additional water quality volume.

   - The Perforated Underdrain (Elev. 130) is located at a lower elevation than the outlet pipe to DMH-7 (Elev. 132); therefore, the soils within the bioretention area will remain saturated (and some water will likely persist in the bottom of the basin) and rely on evapotranspiration/evaporation to empty the basin.

     Response: Plans have been revised to correct this condition.

   - Sheet No. C131 does not list an invert for the outlet pipe to 3L from DMH-7.

     Response: Plans have been revised to correct this condition.

   - Rain Garden 2P accepts flows from both impervious surfaces and vegetated surfaces. The HydroCAD report indicates there are no off-site stormwater discharges associated with the 2- year and the 10-year design storms. Recommend Designer determine if treating the impervious inflows separately is appropriate.

Response: This condition has been reviewed. Adjustments have been made to the design of this rain garden in light of other comments above and has affected this condition.

Recommend Designer evaluate and update the design of 2P.

7. The following items were identified with respect to 3P (the rain garden closest to the wetland).
   - The HydroCAD reports indicate the proposed raingarden (3P) overflows during all design year storms (including the 2 year storm).

     Response: The rain garden was designed primarily for the water quality volume which is less than the 2-year storm, with allowance for overflow for 2-year and greater storms. This design approach is consistent with our intent.

   - The storage table included with the HydroCAD reports indicates the basin has storage between Elev. 133 to 134.45; however, Sheet No. C131 indicates the basin bottom contour is Elev. 132.

     Response: This has been reviewed and revised in the calculations.

   - Electrical components, including handholes for electrical vehicle charges, light poles, conduits, and (most critically), what appears to be the main electrical feed to the SP School, traverse beneath or through 3P. Recommend Designer evaluate whether these design elements present a conflict or may interfere with rain garden functionality.

     Response: Components on the electrical plans have been reviewed and adjusted as needed.

   Recommend Designer evaluate and update the design of 3P.

8. The following items were identified with respect to 4P (the Stormtech MC-3500 subsurface detention system).
   - The TSS Removal Calculation Worksheet for 4P is mislabeled “Infiltration Chamber Area”.

     Response: This has been revised.

   - For the outlet of 4P, drawing C132 specifies the baffle invert for OCS-1 as Elev. 132.0, but the HydroCAD report lists the “long Sharp-Crested Rectangular Weir” as Elev. 128.25. If the baffle invert is Elev. 132, then there may be additional subsurface storage.

     Response: This has been revised.

   - Elements, such as the extent of the watertight membrane, the underdrain, underdrain connections, and manifold were either not located or not located easily on drawings for the MC- 3500 and/or OCS-1. Recommend Designer depict these elements in drawings associated with the MC-3500 and the Outlet Control Structure.

     Response: The plans have been revised to clarify these details.

   - A plan view and profile view of the MC-3500 (3P) was not found in the detail sheets. Recommend Designer include at least a plan view for the MC-3500.

     Response: Plans have been revised to include a detailed plan view in the detail sheets.

   Recommend Designer evaluate and update the design of 4P.

9. The following items were identified with respect to the Operations and Maintenance Plan (Attachment H).
   - Item 4.2 states, "The site is considered a land use with a higher potential pollutant load, therefore if catch basins are found to be filled to capacity with sediment during a cleaning, the frequency of cleaning shall be increased." Recommend Designer address this statement which is inconsistent with the Standard 5 statement in the Stormwater Report ("This site is not considered a LUHPPL, as such, Standard 5 does not apply.").

     Response: The Operations and Maintenance Plan has been revised to delete the reference to the site being a LUHPPL.

   - Operations and Maintenance plan does not include considerations for pre-treatment BMPs for the bioretention areas (beyond catch basin cleaning).

     Response: The Operations and Maintenance Plan has been revised to provide maintenance language related to the bioretention area pretreatment BMPs.

   - The inspection for the bioretention basin (Item 4.7) states, "Basin inspection should include checking for rilling and other signs of erosion." Recommend Designer add "and gullying" to the inspection criteria.

     Response: The inspection criteria referenced above has been revised to add "gullying".

   - The inspection for the bioretention basin (Item 4.7) states, "Care must be taken to maintain the plants in the basin. Salt use must be restricted where runoff flows to the bioretention areas to maintain the plantings." At the same time, however, the Long Term Pollution Prevention Plan (Attachment F) states, "The operation will utilize salt and sand to treat the paved surfaces of the site during snow and ice events." Recommend Designer address this conflict.

     Response: The LTPPP has been revised to indicate that salt use must be restricted within areas where stormwater drains to the bioretention area.

   - Item 5 states, "The onsite stormwater basins will be shielded from public access by fencing." However, no fencing was observed around bioretention areas in the Civil Drawings.

     Response: This is a reference that we often use relative to deep detention or infiltration basins. In this case we are creating a shallow bioretention area, so the O&M plan has been revised to eliminate this reference.

   - The Operations and Maintenance Plan does not include a plan showing the location of all stormwater BMPs.

     Response: A BMP location plan has been added to the O&M plan.

   - It is unclear if an operation and maintenance plan exists for current stormwater infrastructure and if the Operations and Maintenance Plan included with the stormwater report addresses existing BMPs. Recommend Designer include pre-existing BMPs (such as features labeled "Stormwater Vaults" that appear to be retained) in the final Operations and Maintenance Plan.

     Response: The O&M plan has been revised to include existing infrastructure.

- The BMP inspection checklists for the Operations and Maintenance Plan are appended to the Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan. Recommend Designer move the checklist to the Operations and Maintenance Plan.

  Response: This correction has been made.

Recommend Designer address these items.

10. The Illicit Discharge Compliance Statement (Attachment I) included with the Stormwater Report does not make a statement that no illicit discharges exist nor document efforts to investigate illicit discharges. We recommend Designer provide a signed statement which states there are no illicit discharges that meets the requirements outlined in the MA SW Handbook.

    Response: The illicit discharge compliance statement contains a statement that prohibits the discharge of "any materials" that are other than stormwater (with certain specific exceptions as allowed by the standards as listed). This implies that if illicit discharges, if such were to exist, would also be prohibited. Based upon information to date we are not aware of any existing illicit discharges into the onsite stormwater system. We have revised the illicit discharge compliance statement to clarify that, to the best of the project proponent's knowledge and belief, no illicit discharges currently exist at the site.

    To be clear, Weston & Sampson will not be issuing a statement signed by our company that makes the certification referenced above. Weston & Sampson is a third-party consultant and exercises no operational control over the subject property. Certification by a third-party consultant is not required by the referenced standard. The standard requires that this verification should be issued by the project proponent, which in this case is the Tri-Town School Union.

11. With respect to the above recommendation, a sanitary sewer line is shown (Sheet No. C132) crossing the MC-3500 (4P) detention system. Recommend Designer evaluate whether these design elements present a conflict or may interfere with detention system functionality.

    Response: To err on the safe side we have revised the plans and shifted the chamber layout to avoid being over the top of the sewer line.

12. By reference, Roux includes recommendations presented in the Town Letter

    Response: Comments from the referenced letter are reproduced below, followed by our responses. It should be noted that the town letter was based upon a review of a prior version of the plans, and the version of the plans that Roux Associates reviewed had already substantially addressed the comments in the letter.

<u>Review comments from Chris Olbrot, February 11, 2021:</u>

<u>Site/Plan Review and General Comments:</u>

1. A comprehensive investigation and verification of the existing subsurface utilities that are to remain in place in post construction conditions (Post) is completed. It appears that much of storm sewer lines (ST) and sewer (S) lines are to remain under the reconstructed areas. The integrity of these pipes and structures should be verified by video inspection toc confirm their integrity. Failure of any of these pipes and numerous structures compromises the longevity of this significant reconstruction investment.

   Response: Weston & Sampson has undertaken a limited investigation of underground pipes within the facility, primarily focusing on stormwater infrastructure. The investigation consisted of inserting a

specialized camera into manhole and catch basin structures and capturing video imaging of pipes. The camera is capable of providing imagery of pipe interiors for a distance of approximately 50-feet. We also discussed history of storm drain backups and failures with the director of facilities as a means of evaluating potential problem areas. Based upon this collective information we believe that the storm drain pipes that we intend to re-use are in serviceable condition.

2. The *Site Preparation and Erosion Control Plan (C110)* shall include the following at a minimum:
    a. Stockpile areas
    b. Protection of subsurface drainage areas
    c. Construction entrance details
    d. Describe what to do with each casting (ie, remove and reset, remove and replace)
    e. Describe what to do with bollards
    f. Reassess what trees can remain based on design (some appear to need to be removed that are being protected)
    g. Construction Sequence
    h. Fencing for protection of public from construction zones

    The edits above have been incorporated into the plans. Project sequencing requirements will be stipulated in the project specifications prior to construction.

3. The *Overall Materials & Layout Plan (C120)* shall include the following at a minimum:
    a. A consideration shall be made to differentiate the material type of the parking lot in the north side of the building and the ADA accessible path that leads to the play area. This is the only path to the play area and shall be ADA compliant.

        It is presumed that this is a reference to a painted striped pathway through the paved portion of the schoolyard to the rear of the building. This has been addressed by proposing the re-grading of the whole paved schoolyard area in order to make it accessible in its entirety so that there will no longer need to be a dedicated striped area traversing an otherwise non-accessible paved schoolyard.

    b. Note 3 is too vague and problematic. Granite curb shall be inspected and either directed to remove & reset or furnish & install with clear locations and quantities.

        Plans have been revised to show specific curbs to be removed and relocated so as to establish the baseline quantity for the contractor.

4. The *Overall Grading & Drainage Plan (C130)* shall include the following at a minimum:
    a. All accessible ramps and sidewalks/walkways shall show spot grades. Additionally, walkways (i.e. BSW, TOC/BOC) shots shall be shown at no more than 25' intervals to ensure proper construction and compliance.

        Plans have been revised to add additional spot elevations.

    b. Unnecessary "bump-outs" should be removed. These complicate construction methods and snow removal operations for no benefit. Some examples of these are at the entrance and egress ways to the school. Those in LOT A shall be evaluated for need as well.

        The plans have been reviewed with the project workgroup consisting of school officials and plans have been revised to strike a balance between landscaping needs and "bump-out" reduction.

    c. Grading of the lot shall have slopes lines from relative high points to low points or drainage areas.

Annotated slope arrows have been added to the plans.

d. Grade lines, particularly across vertical edges (AutoCAD boundaries) shall be re-evaluated. Many areas do not depict accurate grades. Particularly those in the north east and east parking areas.

Grading has been adjusted and refined since this comment was made.

5. The *Grading & Drainage Enlargement Plan I & II(C131 & C132)* shall include the following at a minimum:
   a. Storm Water Bio-Retention Area-1 shall be re-evaluated. This is an infiltration BMP within a Zone I. Under Standard 6 of the MA-Stormwater Standards this should be considered a "discharge". Untreated runoff from the parking lot is being routed to this BMP.

      The BMP is designed as a "filtering" bioretention area, not an "infiltrating" bioretention area, and is therefore acceptable for placement in the Zone I under the MA stormwater handbook.

   b. The slope, integrity and location of the pipes to remain shall be verified. Many structures have the designation of CNO or "could not open". To maintain these structures without the benefit of evaluation, this puts undue burden on the town to make a decision with respect to the design. More information is necessary to approve the design.

      See response to comment no. 1 above.

   c. All accessible ramps and sidewalks/walkways shall show spot grades. Additionally, walkways (i.e. BSW, TOC/BOC) shots shall be shown at no more than 25' intervals to ensure proper construction and ADA compliance. Details of the ramps shall be provided at this scale should the previous scale not be beneficial.

      Additional spot grades have been added to the plans as requested.

   d. All high points, changes in grade, and slopes from these points shall be shown on the plans to ensure proper drainage and grading to the CBs. QA/QC of all drainage slopes shall be evaluated. It appears some grades do not slope properly for drainage. An example of this is the SW entrance on sheet *C132.* The south-east grade is shown as 137.85 which drains to a CB at rim elevation of 137.29 over the course of apx 150 ft. this does not appear to meet minimum drainage or constructability standards. The parking lots shall be evaluated for these grading inaccuracies.

      Plans have been reviewed and revised to provide the requested level of detail.

   e. Review CB inverts as they relate to depth of pipe and sump. Many CB appear to be un-necessarily deep thereby complicating installation and escalating costs.

      This has been reviewed and revised where possible.

   f. Review grading and inverts of the Bio-Retention Area-2. The grades inverts and pipe slopes don't appear to coincide or be constructable. It also does not match the drainage design. The entire BRA-2 should be re-evaluated and a thorough QA/QC should be completed.

      This has been reviewed and revised.

   g. A plan view detail shall be provided for the underground detention area.

      A plan view detail has been added.

h. The drainage channel to the vernal pool shall be reconstructed and reinforced to alleviate erosion problems and improve water quality. Rip rap with erosion resistant growth or another acceptable method should be used.

A plunge pool at the upstream end of the channel as well as check dams have been proposed.

i. A detail and cross section should be shown of the Bio-Retention Area(s).

A typical detail/cross section for the bioretention areas has been included in the plans.

6. The *Landscaping Plans* shall include the following at a minimum:
   a. Review the critical root zones (CRZ). It appears several trees are affected by the proposed drainage systems that are not shown properly on the south side of the building.

      This issue has been reviewed and trees to be protected vs. removed have been identified on the plans.

7. The *Details Plans* (C500-504) shall include the following at a minimum:
   a. Sidewalk Scupper Detail calls for porous pavement. This appears to be an error.

      This has been corrected.

   b. The detectable warning panels shall be cast iron and not composite plastic.

      This has been edited.

   c. The outlet control structure detail shall be accurate to the current design with appropriate invert elevations and pipe sizes, etc.

      This has been edited.

   d. The infiltration area detail shall have a plan view detail clearly showing design intent.

      No infiltration is proposed on this site, however it is presumed that this is a reference to the underground chamber system. A plan view detail has been added to the plan set.

   e. Details Shall be provided for both bio-retention areas (if used) and shall clearly show OCS with associated inverts.

      These details have been added to the plans.

8. A *Construction Sequence Plan* should be incorporated into the plan set.

   Construction sequencing remains to be discussed with school officials and may very depending on the timing of when they intend to start the construction project. The desired construction schedule has not been determined yet. Once this has been determined, this information will be furnishped as part of the construction set.

<u>Drainage Report Review and Comments:</u>

9. Due to the large number of inconsistencies between the plan set and drainage report, the stormwater mitigation calculations need to be revised and resubmitted for review. Upon closer QA/QC, WSE will find

that pipe inverts and slopes, rim elevations, constructability, etc. is not consistent. These inconsistencies in design will need to be rectified for the stormwater calculations to be accepted and ensure no negative down-stream impacts.

The calculations and plans have been reviewed and edited for consistency.

10. The offsite drainage contribution should be evaluated further. It is unclear from the plans if the area to the North contributes to the runoff entering the school site. Should the runoff enter the site, it shall be included in stormwater mitigation calculations. Additionally, Spofford Rd should be included. It appears that some if not all of the roadway frontage enters the site, but it is unclear in the plan if this is the case. This should be evaluated.

    This has been reviewed using LiDAR topography data for offsite areas. The offsite area to the north does not appear to contribute to runoff entering the school. Spofford Road will contribute runoff and this has been included in the analysis.

11. As mentioned previously, it is imperative that WSE receive clarification from the DEP and provide documentation to the town that an infiltration BMP (rain garden) which mitigates runoff from a parking area is acceptable under stormwater Standard 6. Should it not be permitted, the drainage report and calculations shall be revised and resubmitted to demonstrate no negative downstream impacts.

    No infiltration BMPs are currently proposed at this site, therefore this comment is not applicable.

12. The calculations for the Diversion Weir shall be provided for review to ensure it is designed as described in the Technical Memorandum attached, dated 03/05/2010.

    The calculations for the diversion weir elevation has been set to be just above the water quality volume stage for water in the isolator rows per the isolator row calc. A diversion weir calculation has been provided to confirm capacity for higher flows.

13. WSE shall provide adequate documentation describing how item number 4 of the letter dated July 29, 2016 signed by Mr. Mark Bergeron, PE is being achieved with respect to pre-treatment prior to an infiltrative BMP. This item describes how the isolator row does not provide adequate pre-treatment of hydrocarbons from the parking lot area. Documentation of what acceptable device or practice is being proposed to meet the 44% pre-treatment as necessary to meet Standard 4, for rapid infiltrative soils.

    There are no longer any infiltration BMPs being proposed as part of this project, therefore this comment is somewhat inapplicable. As further described in the response to the Roux comments above, deep sump hooded catch basins will provide for hydrocarbon removal, which is a separate matter unrelated to the TSS removal rate. Overall the deep sump hooded catch basins and isolator row system will provide 80% TSS removal in keeping with DEP requirements.

14. The LTOMP shall be revised to omit the Boxford DPW from item 6 as being the Owner/Responsible Party to maintain any of the stormwater BMPs other than Deep Sump CB annual cleaning. DPW does not have the resources or funding to absorb the requirements of the LTOMP.

    The Long Term Pollution Prevention and Operations and Maintenance Plans have been revised to list the Tri-Town School Union as the responsible party with respect to maintenance. By virtue of this approach the Tri-Town School Union can delegate whatever portion of its maintenance responsibility to the DPW that is amenable to both parties under a separate agreement.

Review comments from MADEP, March 15, 2021:

1. Velocity computations should be provided (Standard 1. See pg. 2 of Vol 3, Ch. 1 of MA Stormwater Handbook)

   Response: Velocity computations have been added to the stormwater report.

2. If the bioretention is going to provide any recharge, it must be relocated outside of the Zone I radius.

   Response: The proposed bioretention pond, indicated as pond 2P in the HydroCAD report, is a stormwater filtering bioretention pond. This pond does not provide any infiltration.

3. According to the computations for Standard 3, the Required Rv is 9,058 c.f.; however, the computations say 7,137 c.f is being provided. This should be clarified.

   Response: The proposed Spofford Pond School Grading & Drainage Plan and HydroCAD report have been revised per comments provided by the Town and DPW Superintendent. The Recharge calculations Required to meet the Standard 3 requirements have been updated to reflect these revisions.

4. The proponent is taking 90% TSS removal credit for the bioretention area; however, 90% credit can only be claimed if a deep sump CB to a sediment forebay is used prior to flows being discharged to the bioretention area. (See pg 25 in Vol 2, Ch 2 of the MA Stormwater Handbook).

   Response: According to pg 25, Vol 2, Ch 2 there are other pretreatment methods allowed in order to take 90% TSS removal credit. A deep sump catch basin and forebay is only required in instances where runoff is directed to the bioretention area by via pipe flow. In this case we are introducing runoff to the bioretention area via sheet flow and using “A grass and gravel combination” as pretreatment, citing the above section of the handbook.

5. Since the site is discharging stormwater near or to a Certified VP, the site is considered a Critical Area (Standard 5) and requires 44% TSS removal pretreatment prior to discharging into an infiltration BMP. Therefore, the stormwater design should be revised to incorporate additional treatment.

   Response: The project has been revised such that it no longer provides infiltration BMPs as was the case when this review occurred.

Sincerely,

WESTON & SAMPSON ENGINEERS, INC.

James I. Pearson
Technical Specialist