DANA F. PERKINS, inc.
Consulting Engineers & Land Surveyors

May 12, 2025

City of Haverhill
Conservation Commission
4 Summer Street, City Hall, Room 300
Haverhill, MA 01830

Re: Notice of Intent
Singh Realty Trust
1400 Hilldale Avenue
Haverhill, Massachusetts
Assessors Map #585-431-22 (Lot A)

On behalf of our client, Singh Realty Trust, we have submitted the following revised engineering plans and supporting documentation for the subject project:

1. Proposed Industrial Outdoor Storage Yard, 1400 Hilldale Avenue, Haverhill, Massachusetts (10 Sheets), dated February 19, 2025 and last revised May 12, 2025, as prepared by our firm.
2. Revised Stormwater Report.

These plans and documents, and the accompanying response to comments below, address the review letter received from Comprehensive Environmental Incorporated dated March 12, 2025, provide revisions based on comments received from the Conservation Commission meeting dated March 6, 2025, as well as provide revisions based on comments received from MassDEP by email dated March 17, 2025.

On behalf of our client, we provide the following responses to the March 12, 2025 letter from Comprehensive Environmental Incorporated (original comments in standard text, applicant's comments in bold text).

Standard 1: No new stormwater conveyances (e.g. outfalls) may discharge untreated stormwater directly to or cause erosion in wetlands or waters of the Commonwealth.

The subsurface infiltration systems will outlet to the wetlands to the north of the proposed concrete parking lots.

1. Provide calculations that show that inflow velocities are less than 2 feet per second (fps) for the infiltration chambers. If above 2 fps, provide measures to dissipate inlet flow velocities and prevent channeling of the stone media.

Cultec manufacturer design standards recommend the installation of a woven geotextile at system inlets and internal manifold locations to prevent scouring of the system's foundation stone. This provides an area where the concentrated flow coming from the inlet can transition to uniform flow across the full width of the chamber, reducing the velocities and prevent

scour. For the 902HD chamber, Cultec recommends the woven geotextile extend a minimum of 12 feet from the inlet.

2. CEI understands that there are no defined banks at the stream crossing but would like to understand the rationale for the proposed 2' x 8' box culvert. Please provide a rationale for the current configuration.

For a previous design on this same property in 2018, Dana F. Perkins, Inc. worked in conjunction with Comprehensive Environmental Incorporated to revise the design to include a 2' x 8' box culvert. The rationale for the proposed box culvert was to provide additional capacity to convey flows while providing a stone bottom, buried with 6" gravel, to help aid wildlife passage. The previously approved wetland crossing with the proposed box culvert has not been revised as part of this project.

3. Provide calculations that show that the proposed box culvert will not increase velocity in the channel and will not cause erosion.

The existing wetlands in the area of the crossing do not contain a perennial stream and/or a defined channel in order to determine bank-full width. In lieu of being able to provide calculations that require these parameters, Dana F. Perkins, Inc. worked in conjunction with Comprehensive Environmental Incorporated in 2018 to revise the design to include a 2' x 8' box culvert. The rationale for the proposed box culvert was to provide additional capacity to convey flows while providing a stone bottom, buried with 6" gravel, to help aid wildlife passage. The previously approved wetland crossing with the proposed box culvert has not been revised as part of this project.

4. Provide calculations that show that the box culvert will be able to adequately convey runoff without increasing flooding upstream.

The existing wetlands in the area of the crossing do not contain a perennial stream and/or a defined channel in order to determine bank-full width. In lieu of being able to provide calculations that require these parameters, Dana F. Perkins, Inc. worked in conjunction with Comprehensive Environmental Incorporated in 2018 to revise the design to include a 2' x 8' box culvert. The rationale for the proposed box culvert was to provide additional capacity to convey flows while providing a stone bottom, buried with 6" gravel, to help aid wildlife passage. The previously approved wetland crossing with the proposed box culvert has not been revised as part of this project.

5. It appears that the proposed concrete retaining wall in the northwest part of the site will intercept the flow path of subbasin 1A. Please provide more details on how runoff will be directed around or through the retaining wall.

Standard is not met.

A proposed underdrain has been added to the proposed retaining wall to capture flows from the northwest part of the site and direct them away from the proposed parking lot.

Standard 2: Stormwater management systems shall be designed so that post-development peak discharge rates do not exceed pre-development peak discharge rates.
The project proposes a subsurface infiltration system to attenuate peak discharge rates. The post-development peak discharge rates are at or below existing discharge rates.

Standard is not met.

1. It appears that large areas offsite were excluded from the contributing watershed for design point 1 and design point 2.

The proposed design has minimal impacts on the large areas offsite that drain directly into design point 1 and design point 2. The majority of these large areas offsite are not being proposed to be attenuated by the proposed design. It is our opinion that adding these large offsite areas to the hydrological analysis may skew any impacts that the proposed design may have on these design points.

2. Please show the time of concentration path for subbasin 1A to show that the time concentration does not change between pre-and post-development.

The time of concentration path for subbasin 1A has been added to the post-development drainage divide plan. The time of concentration has been revised within the proposed hydrological analysis.

3. It appears that area to the area to the west of the site will drain towards the site and over the proposed concrete berm and into the proposed parking lot. This area needs to be accounted for in the infiltration systems. Please show where this runoff will be directed.

Revisions have been made to the hydrological analysis to account for areas west of the site that will drain into the proposed parking lot.

4. Please provide spot elevations of the curb to show how existing slopes will meet the curb and provide more detail on the retaining walls.

Standard is not met.

Additional top of wall/bottom of wall elevation spot shots have been added to the proposed retaining walls.

Standard 3: Loss of annual recharge to groundwater shall be eliminated or minimized through the use of infiltration measures.

Standard is not met.

The development proposes the installation of a new subsurface infiltration system.

1. Mounding analysis is required when the vertical separation from the bottom of an exfiltration system to seasonal high groundwater is less than four (4) feet *and* the recharge system is proposed to attenuate the peak discharge from a 10-year or higher 24-hour storm.

The proposed infiltration units have not been designed to fully attenuate the 10-year design storm or higher 24-hour storms. The infiltration units have been designed with outlet pipes that provide discharge during these storms.

2. Please provide more information about how the approximate 12-foot retaining wall will handle the increased ground water from infiltration system #1. CEI is worried that if underdrains are used and water is discharged to the surface to dewater behind the wall, runoff rates will be higher than reported and TSS removal may be diminished.

Based on guidance from Cultec, the location of the infiltration chambers has been revised to be a minimum of 10 feet from the retaining walls. This is similar to their guidance for house foundations. By maintaining a 10-foot separation, the infiltration chambers should have minimal impact on the retaining walls.

Standard 4: Stormwater management systems shall be designed to remove 80% of the average annual post-construction load of Total Suspended Solids (TSS).
The project is proposing deep sump catch basins, a hydrodynamic separator, and a subsurface infiltration system for water quality treatment. Total treatment is equivalent to 95% of the required TSS removal.

1. Provide documentation from the manufacturer that shows that the proposed CDS units have the treatment capacity utilized in the TSS removal calculations.

Standard is not met.

Documentation has been provided for the proposed CDS units from the manufacturer.

Standard 5: For Land Uses with Higher Potential Pollutant Loads (LUHPPL), source control and pollution prevention shall be implemented.

The proposed project is discharging to waters of the state and is considered exterior fleet storage area which is classified as a LUHPPL. The design uses BMPs suitable for treating runoff from LUHPPL and meets that standard required by standard 5.

Standard is met.

In addition to the BMPs suitable for treating runoff from LUHPPL, the plans have been revised to include additional safety measures. Proposed slide ditch gates has been added to the proposed drain manholes upstream of the proposed infiltration chambers to help provide an additional safety measure in case of emergency spills on site.

Standard 6: Stormwater discharges near or to any critical area require the use of specific source control and pollution prevention measures and the specific structural stormwater best management practices.
The project site is not located within any critical areas.

Standard is met.

No further comment.

Standard 7: Redevelopments projects are required to meet the Massachusetts Stormwater Management Standards only to the maximum extent practicable.
The project is considered new development.

Standard is met.

No further comment.

Standard 8: A plan to control construction-related impacts including erosion, sedimentation and other pollutant sources during construction and land disturbance activities.

Standard is not met.

The applicant has provided an Erosion and Soil Control Plan.

1. Catch basins silt sacks should be specified and shown on the plans to prevent sediment from entering the proposed drainage system.

The proposed plans and construction details have been revised to include catch basin silt sacks.

2. Temporary sediment basins have been specified in the general sequence of construction but are not shown on the plan. Please provide details and locations on where the temporary sediment basins are proposed.

Temporary sediment basins will be provided, as necessary, by the site Contractor. Locations of these basins will be best determined by the site Contractor as construction progresses. The project is subject to the NPDES Construction General Permit issued by the EPA. A Stormwater Pollution Prevention Plan (SWPPP) will be prepared as part of this permit, and submitted to the Conservation Commission for approval. Temporary sediment basin locations will be included as part of the SWPPP.

3. Keep the area above and immediately surrounding the subsurface structures roped off to all construction vehicles until the final top surface is installed to minimize compaction.

The Soil Erosion & Sedimentation Control Plan contains a note that the contractor shall be responsible for protecting areas where the proposed infiltration systems are located during the construction period. No storage of material and/or excessive compaction by construction vehicles shall be allowed in areas where infiltration systems are proposed. The plan has been revised to highlight these areas, including a call out to the existing note, in order to create an emphasis on this point.

Standard 9: A long-term operation and maintenance plan shall be developed and implemented to ensure that stormwater management systems function as designed.
The Applicant has provided a Long-Term Operation and Maintenance Plan for the Site.

Standard is not met.

1. Possible snow storage locations were mentioned in the narrative but were not shown on the plan sets.

The plans have been revised to show snow storage locations. Per the Long Term Pollution Prevention Plan, proposed snow storage areas on site are located within impervious areas only.

Standard 10: All illicit discharges to the stormwater management system are prohibited.
The Applicant has provided an Illicit Discharge Compliance Statement.
Standard is met.

No further comment.

Wetland Mitigation

As mitigation for 1,701 square feet proposed wetland impacts associated with the stream crossing, a 3,500 square foot (+-) wetland replication area is proposed. Additional information should be provided by the Applicant to document proposed conditions for the wetland replication area and to ensure conformance with the *Massachusetts Inland Wetland Replication Guidelines*. Additional information should include the following:

1. The target final design elevation(s) for the wetland replication area should be shown on the site plans. To ensure success of the replication area, the design elevation should be no less than six inches below that of the delineated wetland boundary in the vicinity of wetland flags A-21 to A-17.

2. We recommend that a note on the site plans should direct the contractor to excavate to an initial subgrade of at least 12 inches below the final design elevation(s), to allow for backfill with topsoil. Calculation of the area intended as wetland replication should not include any side slopes as needed to tie the wetland replication into the adjacent uplands. Contours associated with such side slopes should be shown on the site plans.

3. The wetland mitigation plan should include soil specifications, which should include a topsoil layer with a thickness of no less than 12-inches, to be applied over the excavated subgrade to achieve the final design elevations. The content of the topsoil layer should be specified to be consistent with the *Massachusetts Inland Wetland Replication Guidelines*, as follows:

• The wetland soil should consist of a mixture of equal volumes of organic and mineral materials which are free from chemical contaminants, seeds or fragments of invasive plants, and foreign material such as woodchips.

• The organic material used should be well or partially decomposed material, such as clean leaf compost. Mineral materials should be predominantly in the loam, loamy sand to silt loam texture range, with minimal quantities of gravel or rock.

4. Woody debris (i.e., branches/logs) should be applied on the surface of the wetland replication areas, to add structure, microtopography, and a long-term source of decaying organic material. We recommend 9 branches/logs (approx. 4 to 8 inch-diameter) for the replication area.

5. The proposed seed mix for the wetland replication area is noted on the Site Layout Plan (Sheet 5 of 10) as "New England Conservation Seed Mix". Assuming that the specified seed mix is the "New England Conservation/Wildlife Mix" from New England Wetland Plants, Inc., CEI notes that this seed mix includes both upland and wetland species, with fewer than half of the listed species having a wetland indicator status of FAC or wetter. We recommend that either New England Wetmix or a 50/50 blend of New England Wetmix and New England Conservation/Wildlife Mix would be more suitable options for the proposed wetland replication area.

6. The wetland mitigation plan should include the following additional information:

• Proposed seasonal timing (date ranges) for seeding.

• Proposed post-construction monitoring and reporting protocols, consistent with the *Massachusetts Inland Wetland Replication Guidelines.*

A "Wetland Replication Plan" has been provided by Seekamp Environmental Consulting, Inc.

On behalf of our client, we provide the following responses to the comments from the Conservation Commission from the meeting on March 6, 2025 (original comments in standard text, applicant's comments in bold text).

Haverhill Conservation Comments

1. Singh is the new owner of this site, which was previously approved for the development of a commercial trade school facility (agenda item #4.1). The previous owner performed some temporary grading to accommodate trailer storage. The scope of the area is evident on Plan Sheet 2. Otherwise, the site remains undeveloped.

No further comment.

2. This new project is similar in footprint to the prior project. However, Singh will not be constructing a building. The planned use is paved surface for outdoor storage.

No further comment.

3. Notable at the site is Certified Vernal Pool #7695 off the southern sideline of the parcel. The limit of disturbance will be about 100' away from the Pool and downgradient.

No further comment.

4. Also noted during my field visit yesterday was the lack of a defined stream channel within the wetland system at the crossing location. A surficial flow path was observed in the melting snow.

No further comment.

5. I would request the applicant address the following items:
   - Show drainage systems associated with the retaining walls

A proposed 12" underdrain has been added to the plans in the vicinity of the retaining wall located at the bottom of the slope to the west of the property. Additionally, a construction detail has been added for the concrete block retaining walls. All proposed walls over four feet in height will be required to be designed qualified structural engineer.

- Provide a detailed description of the proposed storage uses, along with an updated LongTerm Pollution Prevention Plan as may be necessary. The previous on-site storage and that at the applicant's adjacent facility consists primarily of empty trailers and their tractors. During my site visit yesterday, two tanker trucks were observed on site.

All site storage will continue to consist of empty trailers and their tractors. Any tanker trucks parked on site are required to be empty.

- Provide a wetland impact and restoration narrative to acknowledge the related performance standards and design guidelines. Narrative should include restoration at the bases of the crossing walls (note this disturbance should be represented in the total proposed BVW impact) and restoration within the box culvert.

A "Wetland Replication Plan" has been provided by Seekamp Environmental Consulting, Inc.

- I requested emergency gates, like those installed at the tractor trailer school on Hilldale Ave, be provided as an option to protect the infiltration galleries and underlying groundwater in the event of a spill.

Slide ditch gates have been proposed to be installed in the drain manholes upstream of the infiltration chambers. Construction details have been added to the plans.

- In recent commercial reviews, the Commission has requested fencing to contain windblown debris and to ensure a firm boundary of land usage, particularly near the resource areas.

A proposed chain link fence has been added to the plans. Near the resource areas, the chain link fence is proposed to be in the vicinity of the erosion control line.

- What is the intent of the flat area off the NW parking lot corner? Can these be "closed off' to prevent snow from being plowed into the isolated wetland? There's a break in the 114-contour coming in from the slope.

The isolated wetland is located uphill of the proposed parking. Due to the elevation change, it is our opinion that it is unlikely that snow will be plowed into this area. All snow storage areas are proposed within the proposed paved areas.

- It appears the regraded areas outside the parking lots will be unmanaged. Please provide seed specifications for stabilization and native species restoration.

Peripheral areas adjacent to the proposed parking lots will be restored to a rough meadow condition and seeded with a mix of upland conservation seed mix and pollinator seed mix to promote areas of upland meadow. Further description of these areas is included within the "Wetland Replication Plan" provided by Seekamp Environmental Consulting, Inc.

6. I have already engaged CEI to commence a review of the stormwater management design.

No further comment.

7. The applicant has requested a COC for the original Order, below. I requested the design engineer also review the applicant's facility at 6 Fondi Road and pursue a COC for that Order of Conditions (#33-1473).

No further comment.

On behalf of our client, we provide the following responses to the March 17, 2025 letter from MassDEP (original comments in standard text, applicant's comments in bold text).

MassDEP Comments

Plans are insufficient for complete review. The proponent must submit a written narrative explaining how the project meets the BVW performance standards in 310 CMR 10.55(4), including providing an alternatives analysis explaining how BVW alterations can be avoided and minimized to the maximum extent (i.e., explaining the need for the BVW crossing, relocating the crossing to the narrowest part of the BVW to reduce alterations, narrowing the 30- foot-wide driveway crossing to the minimum allowed width allowed.) There appears to be additional alteration that the proponent has not quantified between the erosion control line and the retaining wall along the BVW crossing. This must be calculated and added into the overall alteration amounts and specify if they're temporary or permanent, that would require restoration or additional replication.

The proponent must submit a wetland delineation report, written replication and planting plan that provide details required by the "Massachusetts Inland Replication Guidelines" (second edition, September 2022), including but not limited to, explaining what proposed target hydroperiod was used (based on the assessment of the impacted/referenced wetland) to design the replication area according to the Novitski classification for wetland types; a water budget; soil profile information of the impacted BVW; cross-sections of the replication area to show surface and subsurface features. The plans must be revised to show more information for the BVW replication area, including proposed access, topography, and erosion controls.

A "Wetland Replication Plan" has been provided by Seekamp Environmental Consulting, Inc.

A written narrative should explain how the size of the culvert was determined and how this size culvert will not cause upstream alteration and downstream flooding. The plans provide limited information associated with the culvert crossing, except for a profile; therefore, site plans should be revised, particularly the grading plan sheet and include a profile to scale showing the size, the profile should be to be to scale. Proponent should explain why the substrate within the culvert with 6-inches of gravel. The proponent must explore if this is an intermittent stream and if so, delineate Bank and demonstrate how the MA Stream Crossing Standards are being met (310 CMR 10.54(4)6)

The existing wetlands in the area of the crossing do not contain a perennial or intermittent stream and/or a defined channel in order to determine bank-full width. In lieu of being able to provide calculations that require these parameters, Dana F. Perkins, Inc. worked in

conjunction with Comprehensive Environmental Incorporated in 2018 to revise the design to include a 2' x 8' box culvert. The rationale for the proposed box culvert was to provide additional capacity to convey flows while providing a stone bottom, buried with 6" gravel, to help aid wildlife passage. The previously approved wetland crossing with the proposed box culvert has not been revised as part of this project.

The infiltration subsurface structures must be located a minimum of 50-feet from the BVW. Test pits must be shown on the plan and infiltration structure detail to ensure there is a minimum 2-foot vertical separation from ESHGW and if it's within 4-feet that a mounding analysis is submitted.

Infiltration chambers have been relocated to be a minimum of 50-feet from the bordering vegetated wetlands. Soils information was included with the Stormwater Report. The Site Drainage Plan has been revised to also show the test pit locations. In addition, the proposed infiltration units have not been designed to fully attenuate the 10-year design storm or higher 24-hour storms. The infiltration units have been designed with outlet pipes that provide discharge during these storms.

Since the site is a LUHPPL, emergency shut off valves are required and should be shown where on the treatment train they're proposed.

Slide ditch gates have been proposed to be installed in the drain manholes upstream of the infiltration chambers. Construction details have been added to the plans.

The TSS Chart is incorrect- the subsurface infiltration unit plus the deep sump CB combined received 80% TSS removal credit.

The TSS Chart has been revised. TSS removal rates are still greater than the required 80% removal rate.

Please feel free to contact our office at (978) 858-0680 should you have any questions or require additional information.

Very truly yours,
Dana F. Perkins, Inc.

Andrew Pojasek, P.E.