3.8 STORMWATER MANAGEMENT COMMENTS AND RESPONSES

Comment 3.8-1 (Mr. Don Cuomo, Public Hearing, July 14, 2008): And my next question is also one for you which is and I haven't looked, but the stormwater basins, are they wet, and to what degree are they going to remain wet?

> ***Response 3.8-1:*** *Stormwater ponds 1.0P and 1.1P, have been designed as P-1 Micropool Extended Detention Ponds as set forth in the April 2008 New York State Stormwater Management Design Manual (the Manual). A permanent pool of water will be maintained in the micropools of these ponds. Stormwater ponds 2.0P, 2.2P and 3.0P have been designed as W-4 Pocket Wetlands, as defined in the Manual. These wetlands will meet all required elements, and design guidance, for stormwater wetlands set forth in the Manual. Permanent pools of water will be maintained in the micropools in these wetlands. Stormwater pond 2.1P has been designed as an extended detention basin and will remain dry, although depending on the amount of rainfall may detain stormwater for five days following a storm event. Refer to Drawing D-3 of the attached plan set for details of the proposed permanent pools in the stormwater ponds and pocket wetlands.*

Comment 3.8-2 (Mr. Don Cuomo, Public Hearing, July 14, 2008): [T]he first aspect you're going to get of this project is going to be the stormwater basins that's what's out front. What's the plan as far as prettying those up, because we've got some pretty ugly ones around.

> ***Response 3.8-2:*** *Refer to FEIS Appendix C for drawings that show the proposed stormwater management facilities.*
>
> *Various types of wetland vegetation will be planted in the proposed stormwater management facilities in accordance with the planting specifications in the Manual. Proposed plantings will be indigenous to the region, and appropriate for conditions in each of the aquatic zones. Final designs of the basins would include forebays and micropools, aquatic benches, and fringe vegetation. The herbaceous plants to be installed would enhance the treatment of stormwater quality, provide food and cover for birds and other wildlife, and enhance the aesthetics of the basins. Refer to Figures 3.7-1 and 3.7-5 for details of the proposed stormwater basins and wetlands, including elevations and a proposed planting list.*

Comment 3.8-3 (Mr. Dennis Sullivan, Public Hearing, July 14, 2008 and Public Hearing, August 11, 2008): Is there standing water there? Are you saying it's wet? [F]ive days after it rains, will there still be water?

> ***Response 3.8-3:*** *Refer to Response 3.8-1.*

Comment 3.8-4 (Letter #1, Ms. Marilyn Shanahan, NYCDEP, July 23, 2008): In previously submitted comments on the DEIS Scoping, NYCDEP strongly urged that the DEIS demonstrate that the project sponsor consider a layout designed, to the extent possible, to maintain current site groundwater recharge capacity through conserved forested areas, limited site disturbance, limited and disconnected impervious surfaces, and stormwater runoff directed to infiltration practices where feasible. The project, in its current form, does not adequately achieve this goal.

Response 3.8-4: *The adopted Scope did not require the information noted in the comment. Nonetheless, as discussed in the DEIS, more than one third of the roughly 44-acre site, or some 16.9 acres (including approximately 10 forested acres) will remain undisturbed, and nearly two thirds of the site, or 27.8 acres, remain as permanent open space. In addition, just under one acre of porous pavers are proposed throughout the parking areas in order to increase stormwater treatment and encourage infiltration. As such, groundwater recharge will be maximized to the greatest extent possible.*

Only minor areas on the project site are suitable for infiltration practices, and the small areas that are suitable are either too small to treat the proposed water quality volumes as required by the NYSDEC and NYCDEP, or are characterized by conditions that do not satisfy regulatory design criteria.

Some fourteen (14) deep test pits were witnessed on Lot 1, and forty-four (44) deep tests were witnessed on Lot 2 within the proposed limits of disturbance. Of the fourteen deep tests on Lot 1, four (4) holes contained groundwater, four (4) holes contained spot mottling (indicating elevated groundwater), one (1) hole contained ledge, and five (5) holes contained no rock, mottling or groundwater. The five (5) holes that did not reveal groundwater were located directly below three (3) deep tests that did reveal groundwater, and one (1) deep test pit with mottling. As such, these areas were deemed unsuitable for infiltration practices.

Twenty-one of the 44 deep test pits conducted on Lot 2 revealed either indications of spot mottling or evident mottling, at various elevations, five (5) holes contained groundwater, eleven (11) holes contained ledge, and seven (7) holes did not reveal any restrictive layers that would prohibit the construction and operation of stormwater infiltration practices. Of the seven (7) test holes on Lot 2 that did not exhibit any restrictive layers, four (4) are located in cut sections approximately 20 feet deep, and three (3) are located in a development pad in approximately 15 feet of fill. The Applicant notes that the Manual requires 75 percent of an infiltration practice to be installed in in-situ soils and since the bottom of any practice installed in the area of testing would need to be in excess of 15 feet deep, compliance with the Manual would not be possible, nor would maintenance and inspection of the practices.

Comment 3.8-5 (Letter #1, Ms. Marilyn Shanahan, NYCDEP, July 23, 2008): The majority of stormwater management practices are proposed to be located in areas identified by NRCS soil type A (Knickerbocker). Knickerbocker soils are characterized by moderately rapid to very rapid permeability and depths to water table or bedrock at greater than five feet. As such, the project sponsor must revise the conceptual approach to stormwater management by incorporation of infiltration as the primary or, at the very least, the terminal measure in a series to control and treat post-construction runoff. In accordance with the *Hierarchy of Methods for Managing Stormwater Quality* (the Hierarchy) found in New York State GP-93-06 and stormwater industry standards, the benefits of infiltration over detention or "flow thru" stormwater practices include the elimination or minimization of point discharges, effective soluble pollutant removal through soil filtration, post-development volume reductions, and immediate recharge of groundwater resources. The amendment or conversion of highly infiltrative soils to support dry detention and permanent pool-based practices is in direct conflict with both the intent of the Hierarchy and sound engineering practice.

Response 3.8-5: *Refer to Response 3.8-5 concerning the suitability of the on-site soils for infiltration and the use of infiltration practices.*

Two (2) stormwater management facilities and one (1) low gradient grass swale with check dams are proposed to treat stormwater for Design Line 1. Three (3) stormwater management facilities and two (2) low gradient grass swales with check dams are proposed for Design Point 2 and one (1) stormwater management facility is proposed for Design Point 3. As detailed in the Stateline SWPPP, documented in the DEIS, and summarized in Table 3.8-1, after stormwater has been treated in the proposed stormwater management facilities, post construction increases in total phosphorous (TP), total nitrogen (TN), total suspended solids (TSS), and biological oxygen demand (BOD) in stormwater will be significantly reduced.

Table 3.8-1
Annual Pollutant Load Summary, in lbs/yr

Design Line and Points	***BOD***		***TP***		***TN***		***TSS***	
	Pre	*Post**	*Pre*	*Post**	*Pre*	*Post**	*Pre*	*Post**
DL-1	*442.8*	*650.1 to 265.7*	*2.69*	*3.48 to 1.69*	*51.5*	*44.5 to 25.0*	*3,808.9*	*1092.5 to 648.6*
DP-2	*237.1*	*441.9 to 255.0*	*2.1*	*2.74 to 1.88*	*34.8*	*35.4 to 25.9*	*2072.7*	*1906.2 to 1493.1*
DP-3	*174.1*	*107.4 to 74.4*	*1.61*	*1.01 to 0.71*	*7.5*	*6.3 to 5.2*	*847.8*	*241.5 to 91.8*

Note: Design Point 3 is located off-site and receives runoff from Route 6.
Source: Insite Engineering, Surveying and Landscape Architecture, P.C., 2009
** Range of expected loadings based on pollutant removal efficiencies cited in NYSDEC publications.*

Conservative projections of post-construction loads of the pollutants identified in GP-93-06, including BOD, TN, TP, and TSS, are included in the Stateline SWPPP (Appendix F). The total annual post construction loads, expressed in pounds per year (lbs/yr), for each of these pollutants were calculated at Design Line 1, Design Point 2, and Design Point 3, as shown in Table 3.8-1. Conservative loading coefficients were used for these calculations, in keeping with NYCDEP policy. Based upon the numerous and redundant stormwater management practices proposed as part of the SWPPP, and the proposed use of Low Impact Development (LID) techniques, it is expected that pollutant removal efficiencies would be higher for each constituent. Proposed LID measures include pervious pavement within the perimeter parking, an irrigation storage system and rain gardens. As such, post construction pollutant loading does not represent the potential to significantly impact any receiving wetland or watercourse, the East Branch Reservoir, or Haines Pond into which no stormwater from the site will discharge.

The NRCS soil mapping does depict a band of Knickerbocker soils across the central northern portion of the property. Knickerbocker is typically a well, and sometimes excessively well, drained soil. However, the onsite soil testing discussed previously revealed spotty mottling (indicating the presence of groundwater) at shallow depths, and in some cases the presence of groundwater, particularly in the areas of the proposed stormwater management practices. Based upon the results of the testing it was determined that infiltration practices were not appropriate and that it was more

appropriate to design the stormwater management practices as detention basins. In addition, as noted previously, the areas suitable for infiltration are located in proposed fill sections under proposed parking at a depth of some 15 feet below grade. These areas are too limited to satisfy the water quality volume requirements of the NYSDEC and NYCDEP, and would not be accessible for maintenance and monitoring of the practices.

As discussed above, a subsurface soil investigation, consisting of forty-four test pits, was conducted by the project engineer to determine the suitability of the on-site soil for the proposed stormwater management basins. Test pit locations are shown on DEIS Figure 3.6-4 (Preliminary Deep Test Location Map). Six (6) test pits (D65, D66, D67, D68, D71 and D72) were excavated in the site of the proposed stormwater basin in the western portion of the project site (Pond 2.2P) by the site entrance; two (2) test pits (D74 and D75) were excavated at the site of the proposed stormwater basin in the central portion of the project site (Pond 2.0P); four (4) test pits (D15, D25, D 31, and D32) were excavated in the vicinity of the proposed stormwater basins along the northern boundary of the project site adjacent to US Route 6 (Ponds 1.0P and 2.1P), and two (2) test pits (D22 and D24) were excavated at the site of the proposed stormwater basin in the eastern portion of the project site adjacent to the eastern wetland (Pond 1.1P). Soils found in these test holes were primarily sandy silt and suitable for the proposed stormwater basins.

In the Applicant's view, the proposed stormwater management system satisfies the requirements of both GP-93-06, the Watershed Regulations, and GP-0-08-001, by significantly reducing post construction increases in pollutant loading.

In sum, there are very limited areas on the site where infiltration would be possible. These areas are located behind proposed retail buildings A and D, and off the northeast corner of Building A. As previously discussed, these areas are located in significant cut or fill sections, requiring any infiltration practice to be installed at a depth of 15 feet in order to comply with NYSDEC regulations. Even if sufficient area was present, the installation of an infiltration practice at such a depth, and under a parking area will hamper proper maintenance and monitoring. In the Applicant's opinion, infiltration is not suitable and will not be acceptable to NYCDEP or NYSDEC as a proposed stormwater management practice for the site.

Comment 3.8-6 (Letter #1, Ms. Marilyn Shanahan, NYCDEP, July 23, 2008): Again, given the scale of the project and its proximity to the phosphorus-restricted East Branch Reservoir, it is of vital importance that stormwater runoff rates, pollutant loads and volumes are maintained at or below pre-development levels. The 14+ acres of Knickerbocker soils denote the significant recharge capacity of the site in its current state, suggesting a link to the hydro period, function and overall stability of surrounding wetlands and streams.

Response 3.8-6: *Refer to Response 3.8-6 concerning the Knickerbocker soils and post construction pollutant loading.*

With respect to post construction runoff rates and volumes, the SWPPP accompanying this FEIS has been designed in accordance with Chapter 10, Enhanced Phosphorus Removal Standards, of the Manual. By complying with these regulatory standards the proposed stormwater management practices will achieve enhanced phosphorus

removal, although no pollutant removal credit has been taken in the SWPPP for this enhanced removal. The pollutant loading calculations included in the SWPPP demonstrate that the proposed stormwater management practices will reduce the post-development pollutant loads to within the range of pre-development levels for total nitrogen, total phosphorus, and total suspended sediment. In addition, the stormwater management practices have been designed to attenuate the post-development peak flow rates to pre-development levels from the 2, 10, 25, and 100-year, 24-hour storm events.

The hydro period function, and overall stability of the surrounding wetlands and streams are not expected to be impacted by the project as the plan will control post construction changes in stormwater characteristics and preserve, or restore, over 27 acres of the forty acre site, to permanent, vegetated, open space.

Comment 3.8-7 (Letter #1, Ms. Marilyn Shanahan, NYCDEP, July 23, 2008): The preliminary site plans and drainage maps suggest that runoff from approximately 0.5 acres of the proposed impervious site entrance roads are untreated in the post-development condition. The project SPPP must be redeveloped, in accordance with Section 18-39 of the Watershed Regulations, to capture and treat runoff from all areas where perviousness has been altered from predevelopment conditions. Furthermore, given the assumed high traffic volume associated with a proposed commercial/retail land use, the site entrance roads can be expected to generate significant stormwater pollutant loads. Thus, it is critical that runoff from these areas be addressed accordingly.

Response 3.8-7: *Refer to Responses 3.8-5 and 3.8-6 concerning reductions in post-construction increases in pollutant loads. The proposed action now includes the enhancement of the existing drainage swales along US Route 6 with stone checkdams, thereby creating a low gradient grass swale with stone checkdams as specified in Reducing the Impacts of Stormwater Runoff From New Development. These swales will capture and treat runoff from the site entrance roads noted in the comment. In addition, a stormwater management basin is now proposed north of US Route 6 to capture and treat runoff from the additional pavement associated with the US Route 6 widening. Currently untreated runoff from a significant amount of existing US Route 6 pavement (approximately 0.9 acres) will receive treatment in the proposed stormwater basin 3.0P.*

Comment 3.8-8 (Letter #1, Ms. Marilyn Shanahan, NYCDEP, July 23, 2008): The Stormwater Management section of the DEIS does not include a discussion or analysis of potential drainage impacts relative to the proposed land disturbance at the easternmost portion of the project (wastewater treatment area - Lot #2). While it is acknowledged that the land use cover will be relatively unchanged from pre- to post-development conditions, the FEIS should provide a narrative clearly justifying why no analysis is necessary.

Response 3.8-8: *As specifically discussed in the DEIS, the 2.6 acres in which the eastern most proposed SSTS is located is currently occupied by meadow. Following construction of the system, the area will be restored to a meadow with virtually the same runoff characteristics as the existing meadow. As such, runoff from this area will generate a zero net increase in peak flows and pollutant loadings at Design Line 1. For this reason, runoff from the proposed SSTS area has been omitted from the stormwater quantity and quality analyses in the SWPPP and, as such, this area was not specifically*

considered in the analysis of existing and post-construction stormwater included in the DEIS.

Comment 3.8-9 (Mr. Dennis Sullivan, Public Hearing, August 11, 2008): We're going to have water retention in the front [stormwater management ponds]...can we expect that there would be ducks there and geese there and maybe even insects. I mean, what is it that you might do to prevent that?

Response 3.8-9: *Refer to Response 3.8-2 concerning the fringe vegetation that will be planted around the proposed stormwater facilities. This vegetation is expected to discourage use of the facilities by waterfowl. In addition, as discussed in the DEIS, the proposed detention ponds are designed to retain stormwater for less than 24 hours, thereby discouraging mosquitos, and other aquatic dependent species, which utilize standing water to complete their life cycles. However, standing water would be retained in the micropools of the wet ponds. These pools could persist long enough to be populated by a variety of local aquatic species, including mosquitoes. This condition is typical of many stormwater management structures throughout southeastern New York State. The Applicant notes that the proposed basins are designed to retain stormwater for less than twenty-four hours, and as such, would not encourage use by species dependent upon standing water to complete their life cycles.*

The stormwater management basins at the Stateline Retail Center would be landscaped to encourage use by a variety of wildlife. Generally, such basins are colonized by balanced communities of species, including both predator and prey organisms, and this balance results in natural control of nuisance insects to the greatest extent possible. Natural mosquito control can be built into the final design of the wet basins on the site if required.

Comment 3.8-10 (Mr. Dennis Sullivan, Public Hearing, August 11, 2008): How long is that pool in the front -- looks like it's in the front of the parking area? How wide is it; is it 10 feet, 20 feet?

Response 3.8-10: *There are two separate stormwater basins proposed in front of proposed Buildings A, B, and C.. The interior of the eastern most basin (Pond 1.0P) is approximately 680 feet in length and between 20 and 50 feet in width at the natural water level. This basin will be wet. The interior of the western-most basin (Pond 2.1P) is approximately 240 feet in length and 50 feet in width at the berm, and 190 feet in length and ten feet in width at the bottom. This basin will be dry. Refer to Figures 3.7-1 and 3.7-5 for basin dimensions.*

Comment 3.8-11 (Mr. Dennis Sullivan, Public Hearing, August 11, 2008): [I]s anything done to control algae growth?

Response 3.8-11: *The growth of algae is possible in the permanent pools of water in the stormwater management basins. Typically, algae in stormwater basins such as those proposed is controlled by storm events. Storm events cause the periodic movement of water through the basins. These events tend to discourage algae growth. In addition, accumulated sediments, which could promote the growth of algae, will be periodically removed during maintenance operations. The use of low phosphorous content fertilizers will also reduce the potential for algae growth. In the event algae*

growth becomes a nuisance, the use of alternative controls such as mechanical aerators and fountains, could be pursued.

Comment 3.8-12 (Mr. Dennis Sullivan, Public Hearing, August 11, 2008): [The water in the stormwater management ponds] turn[s] over quickly because?

Response 3.8-12: *The four foot deep permanent pools of water in the stormwater management ponds and stormwater wetlands will turn over during and following rainfall events as runoff from the site moves through the stormwater practices.*

Comment 3.8-13 (Ms. Lynne Eckhart, Public Hearing, August 11, 2008): I was a little confused. I understand how the ponds can be an asset to the project, but then we're talking about berms in front of the ponds. So I was a little confused; are berms going to hide the ponds because they're not really an asset, or are we going to really show off the ponds? I'm not sure why both.

Response 3.8-13: *Refer to Response 3.8-2. The proposed berms will shield portions of the stormwater basins from various view points. However, the landscaping proposed on the side slopes of the basins, and the varying elevations of the basins, will enhance the overall aesthetics of the site.*

Comment 3.8-14 (Mr. Edwin Alvarez, Public Hearing, August 11, 2008): Talking about still water and water being able to move, I don't know about putting that humongous pond in, but I've seen in other small ponds where they have like a pipe that comes out and water's flowing out; would that be something that you would be able to do?

Response 3.8-14: *The primary treatment for stormwater runoff discharging from the subject project will be provided in stormwater basins, stormwater wetlands and low gradient swales. The SWPPP specifies that the stormwater management practices will include engineered outlets to discharge the 1-year and 2-year, 24-hour storm events over 24 hours, or more, from the basins as required by NYCDEP regulations. These outlets will consist of an outlet pipe and a stabilized outfall. Refer to Drawing D-3 of the attached plan set for details of the proposed pond outlets.*

Comment 3.8-15 (AKRF, Letter #4, September 29, 2008): The text of the DEIS states that the stormwater management system was designed in conformance with NYSDEC Stormwater GP-0-08-001 but Appendix K states that the system was designed in conformance with GP-02-01. As the new General Permit for Construction Activities (GP-0-08-001) has a chapter specific to the NYC East-of-Hudson watershed (Chapter 10, Enhanced Phosphorous Removal), the Applicant should address how these goals will be met.

Response 3.8-15: *Since the proposed project is located in New York City's East of Hudson watershed, the post construction stormwater management practices specified in the SWPPP have been designed in conformance with the Enhanced Phosphorus Removal Standards included in Chapter 10 of the Manual. All references in the SWPPP have been revised to reference the current general permit (GP-0-08-001). The proposed stormwater ponds, stormwater wetlands, and low gradient swales are designed to meet the water quality and quantity control goals set forth in the Manual.*

Comment 3.8-16 (AKRF, Letter #4, September 29, 2008): Have the watercourses and reservoir stems been certified or verified by NYCDEP?

Response 3.8-16: *As documented in the DEIS, "There are three watercourses on the property designated as NYC-A, NYC-B and NYC-C. All three watercourses have been identified, delineated and their locations validated by the NYCDEP (November, 8 2006)."*

Refer to Figures 3.8-1 (Watercources and Wetlands) and 3.8-2 (NYCDEP Signed Watercourse Map), versions of which were included in the DEIS, for depictions of each of the watercourses and the NYCDEP signed version of the watercourse delineation map respectively. Please note that the watercourses are part of the baseline drawings for this project. As such, they are shown on all the appropriate figures and drawings in both the DEIS and FEIS.

The confirmed survey map, dated November 8, 2006, is binding upon the NYCDEP for five years following the date of the confirmation or November 2011.

Comment 3.8-17 (AKRF, Letter #4, September 29, 2008): Based on the modeling presented in Appendix K there are some issues with regard to the post development flows:

a. DP1 was evaluated as a design line along the watercourse on the eastern portion of the property. However, this does not appear to be accurate, especially in existing conditions. It appears that a significant portion of the catchment area drains towards the existing drainage system within Route 6. Therefore, it would appear that there may be three design points. It would be necessary for the Applicant to analyze all of the potential impacts to the existing drainage system along Route 6. While this system may ultimately drain to the stream, the applicant should analyze whether this system is capable of handling the proposed design flows.

b. The tabular hydrograph should be provided.

c. The model should be over a shorter time period. It is currently modeled over 400 hours. While it is necessary to demonstrate that there is adequate detention time for treatment, this long term discharge can impact the receiving waters and wetland system. There is also concern that the volume will be not be available by the time the next storm event occurs. Therefore the system should be modeled over a 72 hour period or less. The applicant's design team may need to evaluate the size of the basins to increase the storage volume, which may maximize the detention time and decrease the overall release time. Alternatively, the applicant may evaluate the downstream impacts to the receiving wetland system and watercourse. A water balance may be used to evaluate the potential impacts to the wetland system.

d. Pond 1.0P appears to provide detention for only 68 percent of the required treatment volume which does not meet NYCDEP or NYSDEC requirements. Similarly, Ponds 2.2P and 2.0 do not treat 100 percent of the incoming flow.

Response 3.8-17a: *Based upon discussions between representatives of the Applicant and AKRF staff, it was determined Design Line 1 and Design Points 2 and 3 used in the stormwater quality and quantity models are acceptable. However, as requested by AKRF staff, a discussion has been added to the SWPPP concerning the existing*

drainage swales along US Route 6, the proposed enhancement of the swales to low gradient grass swales with stone checkdams (as set forth in Reducing the Impacts of Stormwater Runoff From New Development), and the proposed reduction in peak flows to the existing drainage swales based on a reduction in the post construction tributary area.

Response 3.8-17b: *Tabular hydrographs have been provided in the SWPPP.*

Response 3.8-17c: *It was necessary to extend the stormwater model to 400 hours in order to obtain accurate detention times. This extension is based upon the HydroCAD program designer recommendations relative to extending the model's time span so that the inflow volume, less the permanent pool volume, equals the volume associated with the percent of inflow used in the plug flow detention time calculation. The plug flow detention time calculation method is a "first in – first out" method of calculating detention times; the first incoming plug (finite portion of the inflow volume where all plugs are of equal volume) must displace all the water present in the pond at t = 0 before it can discharge from the pond. Thus the total inflow volume is the sum of the permanent pool volume plus the percentage of the inflow volume used in the detention time calculation. (Inflow Volume equals Permanent Pool Volume plus (percent of Inflow used in detention time calculation) (Inflow Volume).*

When establishing the length of time over which to run the hydrologic model, the design engineer must iterate to the length of time that satisfies the previous equation. Based upon the design engineer's analysis the most accurate detention times were obtained by extending the hydrograph routing to approximately 600 hours. However the additional detention time acquired from the additional 200 hours would not result in any modifications to the pond sizes or outlet structures, and as such, the routings were maintained at 400 hours. The Applicant notes that extending the hydrograph does not affect the peak flows, and an analysis of the outflow hydrograph from the proposed stormwater management basins at t = 72 hours reveals negligible flows. The table below provides the outflows from each basin at t = 72 hours:

Table 3.8-2
Stormwater Management Basin Outflow at t = 72 Hours for the 100-yr Design Storm Event

Stormwater Management Basin	*Outflow at t = 72 hours*
1.0P	*0.02 c.f.s.*
1.1P	*0.11 c.f.s.*
2.0P	*0.09 c.f.s.*
2.1P	*0.10 c.f.s.*
2.2P	*0.02 c.f.s.*
3.0P	*0.01 c.f.s.*

Outflow velocities as low as those indicated in the table will have negligible effects on the receiving wetland and watercourse systems, particularly on Wetland A, the wetland to which Pond 1.0P and Pond 1.1P discharge.

Comments also questioned whether there was enough volume present in the stormwater management basins in the event of back-to-back storm events. The percentage of available to total storage in stormwater management basins 1.0P, 2.0P, 2.2P and 3.0P at t = 72 hours is listed below for the 100-yr storm event:

Table 3.8-3
Percentage of Available Storage to Total Storage at t = 72 Hours for the 100-yr Design Storm Event

Stormwater Management Basin	*% of Available Storage to Total Storage*
1.0P	*78%*
2.0P	*87%*
2.2P	*74%*
3.0P	*84%*

The stormwater management basins identified in the table are critical basins with respect to detention of the second storm event during back to back storm events. They provide initial detention of the second storm event since they are either the only basin in the subcatchment, or the first basin in a series, and will provide the initial detention of the runoff. This runoff will be slowly released to downstream stormwater management basins. The available storage presented in the table is for the 24-hour, 100-year design storm event, which has only a one percent probability of occurring in a given year. By sizing stormwater management basins to attenuate such a low probability event, there is typically ample storage present to accommodate the more frequently occurring, much less intense, back-to-back rainfall events.

The stormwater management basins for the Stateline Retail Center have been designed in accordance with the latest NYSDEC and NYCDEP guidelines including Chapter 10 of the Manual, and as such, are designed to treat and attenuate the latest rainfall data issued by the Northeast Regional Climate Center. This new data represents higher 24-hour rainfall values, and results in more conservative designs than previously required. For this reason, extending the model to 400 hours in order to obtain accurate detention times, and to demonstrate compliance with regulatory standards, outweighs unnecessary disturbance caused by increasing stormwater management basin sizes based on arbitrary time spans.

Response 3.8-17d: *The 68 percent of inflow in the plug flow detention time calculation for stormwater management basin 1.0P does not represent the amount of water volume treated, but is the percentage of the inflow used to calculate the plug flow detention time. As previously mentioned, the plug flow method is a "first in – first out" method. In other words, the first incoming plug of water must displace all water present in the permanent pool before that first plug can discharge from the basin. Therefore the 68 percent of inflow represents the percentage of incoming stormwater that passes through the outlet structure after the onset of the storm event. The remaining 32 percent represents the portion of the inflow volume that does not pass through the outlet structure because it displaces the permanent pool volume present in the stormwater management basin prior to the storm event occurring.*

Comment 3.8-18 (AKRF, Letter #4, September 29, 2008): There is concern that the proposed pond designs are within the groundwater table. In some cases the proposed pond bottom will be excavated 10 feet below the existing grade. Typically, NYCDEP does not allow ponds to be constructed more than 1 foot below the groundwater table. The designs presented are possibly more than 8 feet below the groundwater table.

Response 3.8-18: *Neither New York City's Watershed Rules and Regulations, nor GP-0-08-001, prohibit construction of stormwater management basins in groundwater, and neither NYCDEP or NYSDEC have raised the issue of the basins being in groundwater. The New York State Stormwater Management Design Manual (NYSSWDM) does not prohibit or even discourage construction of stormwater management basins within the groundwater table. It has been the engineer's experience that it is often advantageous to locate stormwater ponds within the groundwater table. This is because of the importance of maintaining a permanent pool to establish landscaping for both aesthetic reasons, and to enhance the treatment of phosphorus as required by the Enhanced Phosphorus Removal Standards (Chapter 10). During dry seasons the risk presents itself to negatively impact the plants located in Zones 2 through 5, also know as the shallow water bench and the floodplain terrace. Provision of the groundwater table within the limits of the permanent pool serves as an added factor of safety in maintaining healthy vegetation during dry periods. Therefore, the location of the groundwater table within the permanent pool does not conflict with any requirements of the NYSSWDM or Chapter 10, but only serves to improve the design for future longevity.*

In order to avoid dewatering the groundwater table, and prevent the establishment of a base flow from the proposed stormwater management practices, the engineer's office has field determined the approximate elevations of the groundwater table via soil testing, and designed all permanent pool elevations above the groundwater table elevations. A large source of pollutant removal in stormwater ponds is achieved through particulate settling. Therefore the intent of the permanent pools is to provide a permanent water column (volume equivalent to 50% of the water quality volume) to encourage the removal of pollutants through particulate settlement. The NYSSWDM does not specify any requirement for the makeup of the permanent pool with regard to the ratio of groundwater to stormwater, but instead specifies the ratio of the permanent pool volume and extended detention volume to the total water quality volume. Per Chapter 10 the permanent pool is required to be 50% of the total water quality volume for P-1 (micropool extended detention) and P-4 (pocket wetland) SWB designs. The Stateline Retail Center SWPPP complies with this requirement. Thus the permanent pool elevations as related to the groundwater elevations do not conflict with any requirements of the NYSSWDM or Chapter 10.

It should be noted the New York City Department of Environmental Protection (NYCDEP) witnessed all stormwater testing, and is currently reviewing the project for SWPPP Approval. During the testing the proposed permanent pool elevations versus groundwater elevations were examined, and no exception to the design as proposed was noted by the NYCDEP.

Table 7.2 in the Manual (Physical Feasibility Matrix) identifies various stormwater management practice designs, including Micropool Extended Detention Ponds and Pocket Wetlands, and the required minimum depth to the seasonally high water table

from the bottom elevation, or floor, of those practices. The table indicates that two feet of separation is required between the floor of a stormwater pond and the seasonally high water table only if the pond is within a stormwater hotspot or a sole source aquifer. Stormwater ponds 1.0P and 1.1P, have been designed as P-1 Micropool Extended Detention Ponds, and since they are not located in a hotspot or a sole source aquifer, the Manual imposes no minimum separation distance to groundwater.

Stormwater ponds 2.0P, 2.2P and 3.0P have been designed as W-4 Pocket Wetlands. Table 7.2 indicates that, like the Micropool Extended Detention Ponds, two feet of separation to groundwater is required only if the Pocket Wetlands are located in a sole source aquifer or stormwater hotspot. Since they are not located in either a stormwater hotspot or a sole source aquifer, separation between the floor of the Pocket Wetlands and groundwater is not required.

Comment 3.8-19 (AKRF, Letter #4, September 29, 2008): The emergency overflow for the basins proposed along Route 6 are going to convey water across Route 6, the applicant should address the impacts of flooding Route 6 and the impacts this may have on traffic.

Response 3.8-19: *The emergency spillways proposed in the stormwater basin 1.0 will not discharge stormwater onto US Route 6. Instead, stormwater discharged from the spillway will enter an existing swale adjacent to US Route 6. The swale, which will be enhanced to a low gradient swale with stone checkdams, will convey the treated stormwater to an existing 18 inch culvert under the highway. Stormwater will discharge from the culvert on to lands owned by the Applicant on the north side of US Route 6.*

The Applicant notes that the emergency spillway will only function in storm events exceeding the 100-year design storm, which is the largest storm event for which stormwater infrastructure is typically designed.

Comment 3.8-20 (AKRF, Letter #4, September 29, 2008): The stormwater management system should be separate from any drains required for the retaining walls, footings or other structural measures. The capacity of the stormwater management system is based on the stormwater runoff from the surfaces areas. This long term discharge will also affect the treatment mechanisms of the proposed stormwater basins. Currently the proposed design shows that the drains from the retaining walls and other structure measures are discharging to the proposed stormwater management system.

Response 3.8-20: *The stormwater management system has been designed to accommodate stormwater volumes generated from the design storms modeled in the SWPPP.*

Section 3.0 of the SWPPP has been revised to indicate the relationship between the stormwater collection and management systems versus the retaining wall drains. In all instances where a retaining wall exhibits the potential to intercept groundwater, the retaining wall drains have been separated from the stormwater collection and management systems. This particularly applies to the retaining walls located in the cut slopes to the south of the proposed buildings. Where the retaining walls are located in fill, north of the proposed buildings, the interception of groundwater is not anticipated, and weep holes are anticipated to be provided in the retaining walls, to minimize piping and unnecessary disturbance. The proposed building construction is anticipated to

consist of slabs on grade. Therefore footing drains are not anticipated, and as such are not shown on the drawings, or addressed in the SWPPP.

Comment 3.8-21 (AKRF, Letter #4, September 29, 2008): The inspection and maintenance plan is vague and currently does not comply with the NYSDEC requirements.

Response 3.8-21: *The inspection and maintenance plan in the SWPPP has been revised to comply with current NYSDEC standards by referencing the applicable Maintenance and Management Inspection Checklists from the Manual. The checklists have also been incorporated into the SWPPP.*

Comment 3.8-22 (AKRF, Letter #4, September 29, 2008): The pollutant loading calculations demonstrate that the post-development loadings are greater than pre-development. However, the applicant is taking the highest pollutant removal credit to show that the proposed development can meet the pre-development loads. The rationale that a permanent pool and pond maintenance will increase the basin treatment levels is not sufficient as these are required elements to pond design.

Response 3.8-22: *The pollutant loading calculations demonstrate a range of post-development pollutant loads within the range of pre-development loads. The rationale for applying the pollutant removal credit, and determining post construction pollutant loads, is based not only on the proposed permanent pools and pond maintenance, but also upon the enhanced measures and adjunct stormwater practices that have been incorporated into the project design but were not considered in the calculation of pollutant loading. These measures include specific plantings in ponds 1.0P, 1.1 P, 2.0P and 2.2P to increase pollutant removal; a subsurface stormwater storage facility, preserving the existing wooded filter strips below the proposed low gradient grass swales with check dams to further polish runoff; catch basin/drain inlet sumps, pervious pavement in the parking areas, and where possible, rain gardens in the curbed islands. In addition, preliminary on-site soil investigations indicate that percolation rates in the soils underlying the proposed swales exceed the minimum of 0.5 inches per hour set forth in NYSDEC "Reducing the Impacts of Stormwater Runoff from New Developments". As such, adequate infiltration of stormwater through the swales is expected to achieve the pollutant removal credit specified in the SWPPP.*

Comment 3.8-23 (AKRF, Letter #4, September 29, 2008): The backup water quality calculations demonstrate two alternatives where credit was taken for pollutant removal with and without swales. The rationale for taking credit for pollutant removal is that treatment is achieved through infiltration. Since some of the swales are located in areas where infiltration may not be possible, due to high groundwater or impermeable soils, this credit may not be taken for all for all of the catchment areas. The applicant should address how other practices may be implemented to address pollutant removal if infiltration swales cannot be constructed due to high groundwater conditions.

Response 3.8-23: *There are three locations where the existing drainage ditches would be converted to low gradient grass swales with stone checkdams as specified in the Manual. In the first location, just east of the site entrance on Lot 1, two deep tests were performed. Neither groundwater, nor mottling, was encountered in either test pit. The second swale is located just to the west of the western site entrance on Lot 2. Here too the closest deep test performed, D75, revealed no indication of groundwater. The last*

swale is located immediately east of the eastern site entrance on Lot 2. Testing in the vicinity of this ditch, just west of the site entrance, did not reveal indicators of groundwater, See results for test pits D15 and D25. Testing adjacent to the proposed swale did indicate the presence of groundwater six feet below grade (refer to test pit D24).

Given the absence of groundwater, the minor cuts that are proposed to convert the drainage ditch to a low gradient grass swale, and the minimal required percolation rate of 120 minutes per inch, the proposed swales meet all requirements for low gradient grass swales with stone checkdams as set forth in the Reducing the Impacts of Storm-water Runoff From New Development. As such, these practices qualify for the pollutant removal credit taken in the SWPPP.

Comment 3.8-24 (AKRF, Letter #4, September 29, 2008): According to Table 3.8-7, the post-development pollutant loading for BOD at DL-2 has not been reduced to pre-development conditions. The report does not adequately address this potential increase in BOD.

Response 3.8-24: *As discussed in the DEIS, in aquatic systems, most organic constituents may be degraded over time by bacterial metabolism. The amount of oxygen used in the metabolism of biodegradable organics is termed Biological Oxygen Demand (BOD). Therefore, the BOD loads measured in water samples are commonly used as an indirect indicator of the total organic load carried in water.*

According to Lake Access (an EPA funded cooperative project among the University of Minnesota, the Deluth Natural Resources Research Institute and Department of Education, and Minnesota Sea Grant) "BOD is introduced into surface water through inputs of organic matter such as sewage effluent, surface runoff, and decomposition. If BOD is high, low dissolved oxygen levels result. Low dissolved oxygen levels can lead to mortality of aquatic life. Wetlands remove BOD from surface water through decomposition of organic matter or oxidation of inorganics. BOD removal by wetlands may approach 100%." Accordingly, it is anticipated that the wetlands into which stormwater from the project discharges will assimilate the modest increase in BOD discharged from the site.

A discussion has been added to the SWPPP further addressing the potential increase in BOD.

Comment 3.8-25 (AKRF, Letter #4, September 29, 2008): The report states that cisterns may be used to irrigate, however, there does not appear to be any significant landscaped areas where irrigation would be needed.

Response 3.8-25: *As shown on the plans accompanying this FEIS, two, five thousand gallon cisterns are proposed in an effort to employ green building techniques where possible. The Applicant proposes the underground storage tank for general irrigation of the 0.6 acres of interior planted islands and the 5.8 acres of lawn and other landscaped areas on the site. As the underground storage tanks will capture rainwater and reduce runoff at certain times, the tank would reduce potential adverse impacts associated with post development changes in stormwater characteristics and on groundwater from the use of well water for irrigation.*

Comment 3.8-26 (AKRF, Letter #4, September 29, 2008): Approximately 1 acre of pervious pavement is specified, however, there is concern that this may not be an appropriate practice given the existing soils, the proposed cuts, and the high groundwater conditions. Other LID practices should be investigated.

Response 3.8-26: *In addition to the pervious pavement, rain gardens are now proposed to further reduce post construction increases in pollutants at the site. The Applicant notes that with the exception of the pervious pavement proposed to the west of Retail Building D, all pervious pavement will be used in areas of fill where groundwater is not anticipated to affect infiltration. The retaining wall drainage system will alleviate any groundwater that may potentially impact the performance of the pervious pavement proposed west of Retail Building D.*

Comment 3.8-27 (AKRF, Letter #4, September 29, 2008): The Erosion & Sediment Control plan should address the dewatering methodologies for the high groundwater table. The temporary sediment basins should not be used for dewatering activities. The temporary sediment basins are sized to handle the stormwater runoff and cannot accommodate the flow from the dewatering activities. Because of the large cuts and amount of regrading at the site, dewatering activities will potentially pose problems to water quality in the receiving water bodies.

Response 3.8-27: *Any necessary dewatering operation will be conducted in accordance with the New York State Standards and Specifications for Erosion and Sediment Control. As discussed in the DEIS, a construction phasing and sequencing plan has been prepared as part of the Erosion and Sediment Control Plan included in the SWPPP. Overall, a total of nine phases are proposed in sequence, from initial construction of two temporary sediment basins to the completion of the proposed subsurface sewage treatment system. Each phase, the extent of which is depicted on Sheet SP-4.1 of the attached plan set, includes specific erosion controls and site stabilization measures. The plan is intended to meet the requirements of GP-0-08-001 and NYCDEP Watershed Regulations which incorporates GP-93-06 by reference. The phasing plan, which has been amended to provide additional detail, was prepared based upon existing and proposed site characteristics, including proposed cuts in rock and the presence of groundwater.*

Cut and fill in each of the nine construction phases will be balanced to the fullest extent possible to minimize erosion and sedimentation as the plans are further developed. Erosion of rock exposed during any phase of construction is not expected to result in any significant impacts. Should groundwater be exposed during excavation on the site, dewatering of the excavation(s) will be conducted in accordance with the New York State Standards and Specifications for Erosion and Sediment Control, which specifies 1) the use of upstream and downstream berms (sandbags or inflatable dams), 2) that clean water from the upstream pool be pumped to the downstream pool, 3) that sediment laden water from work area will be discharged to a silt-trapping device and 4) that a berm with one foot minimum freeboard be constructed upstream of the excavation. Temporary sediment basins will not be used for dewatering activities. The Erosion and Sediment Control Plan has been revised to further address potential dewatering operations.

In addition to the measures noted above, the construction contractor will maintain a stock of contingency erosion control materials, including crushed stone, rip rap, silt fence, dewatering pumps and piping, hay bales, and seed, on the site. These materials will be stored for immediate use to address unanticipated conditions.

Finally, an Excavation Dewatering Contingency Plan has been prepared and is now included on the Erosion and Sediment Control Drawings. Anticipated locations of dewatering pumps, and discharge points, have been specified on the plans, along with the necessary notes to implement the contingency plan.

Comment 3.8-28 (Mr. Don Cuomo, Letter #3, September 16, 2008): Finally, alternatives to the proposed impervious macadam parking should be investigated and submitted for review. Reducing storm water runoff will reduce the overall environmental impact of the project, with the added benefit of reducing the size of the associated storm water detention basins.

Response 3.8-28: *See Response 3.8-29. Porous pavement is proposed along the outskirts of the parking area in order to reduce stormwater runoff, to help minimize the size of the proposed stormwater management basins, and to promote groundwater recharge.*

Comments 3.8-29 through 3.8-40 are from the AKRF 3/6/08 completeness review memo, pages 17 and 18. Some of these comments were addressed in the DEIS, while others were addressed by revisions to the plan of the development and the SWPPP subsequent to the acceptance of the DEIS.

Comment 3.8-29 (AKRF, Letter #5, March 6, 2008): The area of the proposed on-site wastewater treatment system should be included in the analysis of the effects of change in land use. This area was not included in the analysis, therefore, the applicant should investigate the effects of the disturbance on water quantity and quality.

Response 3.8-29: *Refer to Response 3.8-9.*

Comment 3.8-30 (AKRF, Letter #5, March 6, 2008): The applicant has demonstrated that the post-development peak flows cannot be detained to pre-development peak flow at Design Line 1. While the report states that calculations were performed to demonstrate that the project meets the NYSDEC criteria for waiver of this requirement, it does not meet the requirements of the Town nor the NYCDEP. For this relatively small drainage area, approximately 17 acres, the proposed stormwater basins should be sized to detain the peak flows to pre-development flows. The applicant should reevaluate the design to attenuate peak flows to pre-development conditions on-site.

Response 3.8-30: *The calculations included in the revised SWPPP confirm that post-construction peak discharge rates at Design Line 1 and Design Points 2 and 3 have been attenuated to below pre-development rates.*

Comment 3.8-31 (AKRF, Letter #5, March 6, 2008): The NYSDEC downstream analysis should be performed at a point where the contributing drainage area is 170 acres, not 500 acres. Based on the NYSDEC criteria, the analysis should occur at a point where the drainage area is approximately 10 percent of the overall contributing area. The analysis should compute the pre- and post- development flows and velocities for the design storms. The water surface

elevations at each culvert or obstruction within the downstream channel should also be investigated.

Response 3.8-31: *As noted in Response 3.8-34, the revised stormwater management system achieves post construction peak rates of discharge that are below existing rates. As such, the downstream analysis noted in the comment is not required.*

Comment 3.8-32 (AKRF, Letter #5, March 6, 2008): The pollutant loading calculations demonstrate that the post-development loadings are greater than pre-development. However, the applicant has taken the highest pollutant removal credit to show that the proposed development can meet the pre-development loads. The justification for taking the higher level of pollutant removal is that catch basins will be installed with deep sumps and hoods and that the ponds will have permanent pools. As permanent pools are a required part of the pond design and deep sump catch basins are typical, therefore, additional justification should be provided.

Response 3.8-32: *Refer to Response 3.8-25. As discussed on DEIS page 3.8-21, the stormwater treatment practices specified in the SWPPP for the project are expected to achieve better than the calculated phosphorus removal due to the enhanced measures and adjunct stormwater practices that have been incorporated into the project design, but were not considered in the calculation of pollutant loading. These measures and adjuncts include a detailed maintenance program to ensure optimum long term pollutant removal efficiency; specific plantings in ponds 1.0P, 2.0P, 1.1P, and 2.2P to increase pollutant removal; preserving the existing wooded filter strips below the proposed low gradient grass swales with check dams to further polish runoff; catch basin/drain inlet sumps; a subsurface stormwater storage facility; pervious pavement in the parking areas; where possible rain gardens in curbed islands; and the addition of permanent pools in the stormwater basins. These permanent pools will include landscaping that will also remove dissolved phosphorus.*

Comment 3.8-33 (AKRF, Letter #5, March 6, 2008): Unless this site is currently being actively farmed, pre-development pollutant loading values for pasture should not be used. While portions of the site may be meadow, using values for pasture does not accurately reflect the water quality of the runoff. Unfortunately, there may not be values available for meadow but, because these areas are relatively undisturbed and not actively being used (only mowed one or twice a year) values for forested land should be used.

***Response* 3.8-33:** *As noted in DEIS Table 3.8-4, estimates of existing pollutant loads are based, in part, on loads from nine acres of pasture contributing to DL-1 and 2.80 acres of pasture contributing to DP-2. Applying the loading rate for pasture is acceptable to NYSDEC and NYCDEP, and accurately represents the loads expected from the existing on-site meadows.*

Comment 3.8-34 (AKRF, Letter #5, March 6, 2008): The backup water quality calculations demonstrate two alternatives where credit was taken for pollutant removal with and without swales. The rationale for taking credit for pollutant removal is that treatment is achieved through infiltration. Since some of the swales are located in areas where infiltration may not be possible due to high groundwater or impermeable soils, this credit may not be taken for all of the catchment areas.

Response 3.8-34: *Refer to Responses 3.8-25 and 3.8-35.*

Comment 3.8-35 (AKRF, Letter #5, March 6, 2008): The erosion and sediment control plan is insufficient, especially considering the high groundwater table in certain portions of the site and the considerable rock cuts. Additional detail should be provided to the phasing plan and the sequence of construction should be further discussed (see Comment 1 under Section 3.12). The subcatchment areas and the cut and fill balances of each area should be considered when designing the sequence plan.

Response 3.8-35:: *Refer to Response 3.8-30.*

Comment 3.8-36: (AKRF, Letter #5, March 6, 2008): The erosion and sediment control plan does not address the dewatering operations associated with the construction activities. The proximity to the reservoir, the high groundwater table and the 40 foot cuts are all factors that affect the erosion and sediment control during the construction activities.

Response 3.8-36: *Refer to Response 3.8-30.*

Comment 3.8-37: (AKRF, Letter #5, March 6, 2008): Pocket pond and micropool extended detention are the types of ponds proposed for treatment. Because the proposed ponds are close to existing wetlands and streams, created wetlands should be considered.

Response 3.8-37: *As discussed in the DEIS, the Manual identifies five types of stormwater practices (ponds, wetlands, infiltration practices, filters, and open channels) and presents a series of matrices that were used to select and site the practices proposed for the Stateline Retail Center project. Stormwater ponds 1.0P and 1.1P, have been designed as P-1 Micropool Extended Detention Ponds as set forth in the Manual. Stormwater ponds 2.0P and 3.0P have been designed as W-4 Pocket Wetlands, as defined in the Manual. These practices will meet all required elements, and design guidance, for stormwater ponds and wetlands set forth in the Manual. Refer to Drawing D3 for details of the proposed pocket wetlands.*

Comment 3.8-38 (AKRF, Letter #5, March 6, 2008): Generally stormwater ponds are located along the proposed contours. Proposed Pond 1.0P is located perpendicular to the contours. A retaining wall should not be used along sidewalls of a Basin.

Response 3.8-38**:** *Neither New York State, nor New York City regulations prohibit the use of retaining walls in conjunction with stormwater management basins. The walls reduce on-site grading and allow for the required stormwater volumes in Pond 1.0P and preserve the area available for the required number of parking spaces.*

Stormwater Pond 1.0P has been designed with a natural water elevation of 473.0 feet, which is equal to the elevation of the proposed retaining wall only near the forebay. Following storm events, ponding will occur on a small portion (approximately seven percent) of the basin's perimeter and against the wall in that area. With the exception of this small area, the base of the proposed wall has been designed with an elevation equal to the top of the pond berm, and as such, will not come in contact with any detained water.

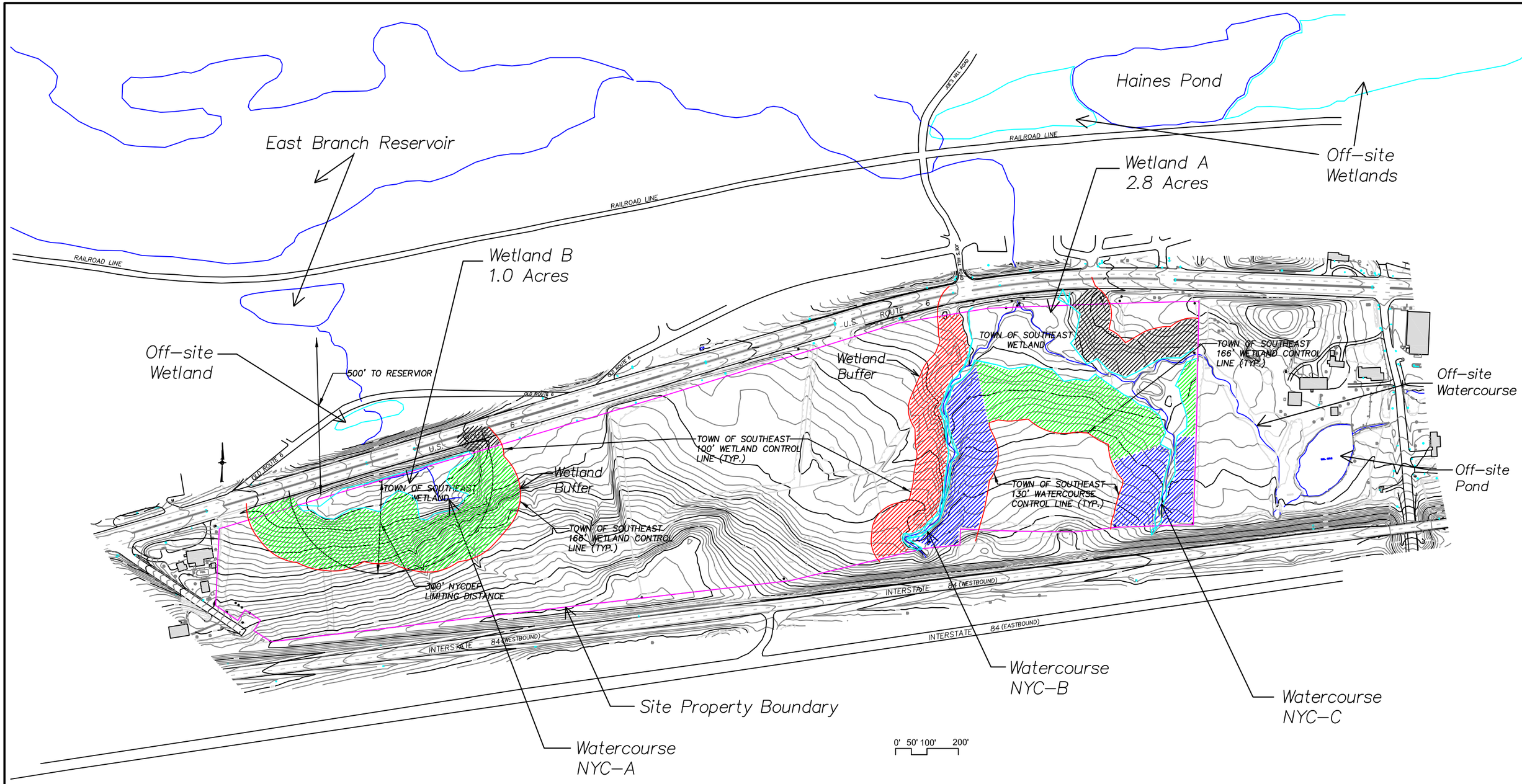
Comment 3.8-39 (AKRF, Letter #5, March 6, 2008): Please discuss the long term impacts associated with the access road for the wastewater absorption fields. The drawings only show

the temporary access for the construction of the force main and an existing path. The applicant should evaluate the condition of the existing stream crossing to determine whether it is traversable by construction equipment.

> ***Response 3.8-39*****:** *As discussed on page 3.8-24 of the DEIS, construction of the proposed gravel access road to the eastern most SSTS involves minor clearing and stabilization, and replacing an existing crossing over a NYCDEP flagged watercourse. Potential short term impacts on surface water associated with the road could result from sedimentation during construction. To avoid short term impacts, the Erosion and Sediment Control Plan includes measures to prevent erosion of soil disturbed during construction of the road, and subsequent sedimentation. These controls include sediment barriers at the toe of all cut and fill slopes, temporary diversion of any stream flows during improvement of the crossing, and stabilization of all disturbed soil with seed and mulch immediately following construction of the road.*

Comment 3.8-40 (AKRF, Letter #5, March 6, 2008): The 'Grading and Utilities Plan' should include the top and bottom wall elevations along the retaining walls.

> ***Response:*** **3.8-40*****:*** *As discussed in the DEIS, during construction, areas of disturbance would be limited and runoff from areas outside of disturbances would be diverted away from erodable soils. Retaining walls, the top and bottom elevations of which were shown on the Grading and Utilities Plan that accompanied the DEIS, would also be constructed to reduce slope lengths and the potential impacts associated with erosion of the slopes.*



Legend

- Area with 100' Wetland Buffer
- Area with 166' Wetland Buffer
- Area with 130' Watercourse Buffer
- Area with 100' Wetland Buffer

North

Figure 3.8-1: Watercourse and Wetlands

Stateline Retail Center

Town of Southeast, Putnam County, New York

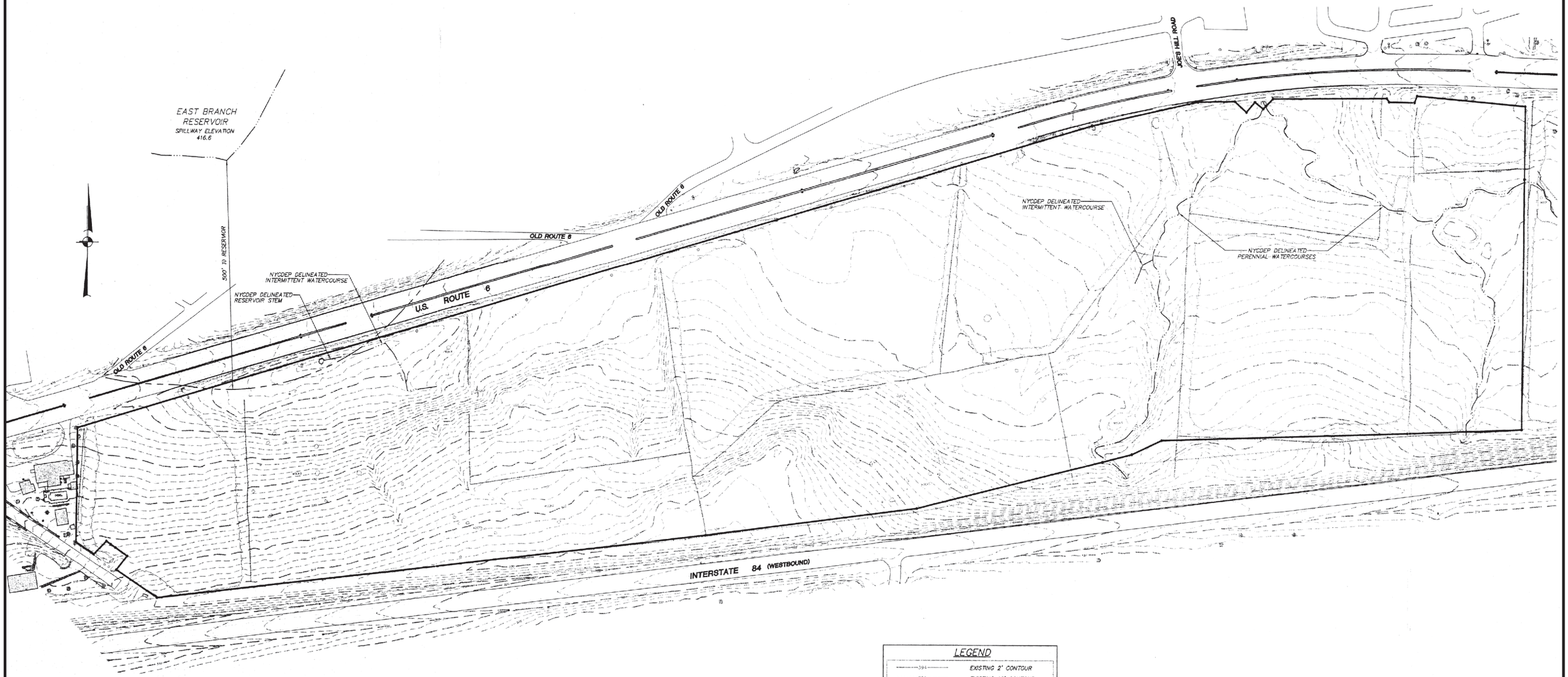
Source: Insite Engineering, Surveying & Landscape Architecture, P.C.

Date: March 30, 2006

Scale: 1 inch = 300 feet

File: 05065 3/26/09
JS/05065

Tim Miller Associates, Inc., 10 North Street, Cold Spring, New York 10516 (845) 265-4400 Fax (845) 265-4418



NYCDEP Watercourse Delineation Validation

The watercourse delineations as represented on this plan accurately depicts the limits of the NYCDEP watercourses as delineated by MATTHEW GIANNETTA on July 6, 2006

NYCDEP Representative Signature Matthew J. Giannetta Date 11/8/2006

Watercourse delineations as validated by NYCDEP remain valid for five years from date of flagging or revalidation. For official use of the watercourse delineations after this five year period, the delineations must be revalidated by NYCDEP staff. This may include reflagging and survey of the watercourse delineations if changes are noted.

GRAPHIC SCALE

100 0 50 100 200 400

(IN FEET)

LEGEND

- EXISTING 2' CONTOUR
- EXISTING 10' CONTOUR
- EXISTING PROPERTY LINE
- EXISTING STONEWALL
- EXISTING WIRE FENCE
- EXISTING BOARD FENCE
- EXISTING GUIDERAIL
- EXISTING STRUCTURE
- EXISTING DRAINAGE MANHOLE
- EXISTING UTILITY POLES W/OVERHEAD LINES
- EXISTING DRAINAGE PIPE
- EXISTING EDGE OF PAVEMENT

Figure 3.8-2: NYSDEC Signed Watercourse Map
Stateline Retail Center
Town of Southeast, Putnam County, New York
Source: Insite Engineering, Surveying & Landscape Architecture, P.C., 11/03/06
Scale: As shown

File 05065 3/16/09
JS/05065/Updates 3/09

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