



# Green International Affiliates, Inc.

100 Ames Pond Drive, Suite 200 Tewksbury, MA 01876

T: (978) 923-0400 | [www.greenintl.com](http://www.greenintl.com)

Open Comments  
Defer to Board  
Conditions of Approval

PROJECT NAME: Spectacle Pond Peer Review

DATE: 6/12/2024

UPDATED: 6/28/2024

PROJECT NO.: 24044

## Peer Review Comment Form

NO.	SHEET NO.	SECTION	GREEN'S COMMENT	Applicant's RESPONSE	CONFIRMED BY	DATE
Site Plans						
1	C1.1		Estimated seasonal high groundwater for deep Test Pit D1 observed to be 213.5', but it is listed at 214.33' in the Subsurface Infiltration System Detail. Please clarify.	The detail on sheet C2.0 has been adjusted to have the correct estimated seasonal high groundwater elevation per Test Pit D1 data.	MW	6/24/2024
2	C2.0		Rims, invert, pipe sizes, and pipe materials are missing. Grading & Drainage Note 2 indicates this information could be on Sheet 8. There is no sheet 8 in the plan set. Please revise to include this information.	Rim, Invert, & pipe size/material information has been added in plan view to sheet C2.0.		
2A			Please provide invert for both ends of 4" roof header to the subsurface system and the 12" header to the subsurface system.	The requested invert have been specified on sheet C2.0.		
3	C2.0		The FEMA flood maps show a 100 year floodplain line around the site but this is not included on the plans. Please show the 100-year floodplain line on plans.	The flood elevation for this site is stated to be elevation 213, which was observed to be mostly within the surrounding wetland. Where encountered, this elevation has been highlighted on the plan set. Also, the label for Bennet's Brook now notes the FEMA AE zone elevation.	MW	6/27/2024
4	C2.0	Town of Littleton Wetland Protection Regulations 4.2	There are proposed grade changes within the 50' No-Disturbance Area. No activities or work is permitted other than foot or non-motorized vehicle passage and removal of invasive vegetation. Please revise to keep work outside the 50' No-Disturbance area or provide reasoning for why this cannot be done.	The portion of this site within the 50' no-disturb being affected is already protected from the adjacent wetland by an existing 2-3'-high berm around the perimeter of the site. We are simply re-grading an existing low point so that it may be better utilized as a small storage area for planned driveway runoff. A waiver will be requested from the conservation commission for this work to be completed.		
4A			We defer to the Conservation Commission if this is acceptable.			
5	C2.0		The 217 contour doesn't match into existing contour on eastern side of project. Please revise and confirm proposed grading limits.	Proposed grading has been revised as noted.	MW	6/24/2024
6	C2.0	Town of Littleton Wetland Protection Regulations 2.3	The 50' wetland buffer should be revised to be named 50' No-Disturb. Please revise.	This has been changed as requested for all labels on the plans.	MW	6/25/2024
7	C2.0		Please verify proposed spot shots on northeastern side of proposed building. Should they be 223.5 instead of 233.5?	The elevation should be 223.5. The elevations should have been update in plan view.	MW	6/24/2024
8	C2.0		Subsurface Infiltration System Detail shows the top of the system at 221. Based on the proposed contours, the cover would be less than 1'. The detail indicates it having 1' to 2' of cover. Please verify the cover and that this meets H-20 loading.	According to specs for the planned system, the manufacturer states that the structure meets H-20 loading with 0 feet of cover. Additional spot grades have been added over the system and the detail has been revised to state "See plan" for cover over the system.	JWT	6/28/2024
9	C2.0		There are no callouts for proposed curb along the edges of the proposed pavement. Please provide callouts and indicate the limits of curb.	Callouts have been added to the plan; additionally, a detail of the curb has been included on sheet C2.0.	MW	6/24/2024
10	C2.0		The existing detention pond was not visible in the field due to construction debris and overgrown vegetation. How will the existing detention pond be remediated? It is clear that it is not currently being maintained and will not function properly unless it is maintained. There are no test pits performed at the detention pond to determine soil type or groundwater elevation. Although it does appear to have adequate separation to groundwater and good soils if other test pits are used on site. Please consider providing an emergency spillway for the detention pond.	The site presently lacks any stormwater management systems and a detention pond is not present.	MW	6/26/2024
11	C2.0		Consider adding a sign to not plow snow into wetland to reinforce the boulders.	This sign has been added to sheet C2.0 as requested; it shall be located in front of the boulders that will be added to stabilize the access road.		



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11A	C2.0		The applicant should provide a detail or specifications for the sign. The specifics of the sign shall be coordinated with the Conservation Commission.			
12	C2.0		Please provide the drilling and installation procedure for the private well.	Note 11 on Sheet C2.0 has been added to refer to the town code section 226-7 for well construction standards. An additional erosion control barrier has been depicted on sheet C3.0 for installation of the well.		
12A			The Town code section 226-7 doesn't provide detailed information for the drilling and dewatering operations for the installation of the well. We defer to the Conservation Commission if more detail is required.			
13	C2.0	Wells 226-6.B.	The symbol for the well is drawn on the 100 foot wetland buffer line. Please move the symbol completely outside the buffer zone and confirm that construction of the well will not disturb area within the 100' wetland buffer.	The planned well location has been adjusted to be completely outside of the 100-foot buffer.	MW	6/26/2024
14	C2.0	Wells 226-6.B.	The neighboring property is identified as an inactive landfill on Mass mapper. The plans shall be updated to show the proposed well meets the minimum setback of 400 feet to an active or closed landfill.	The location of the line of the impervious barrier of the capped landfill is now shown on sheet C1.1, and the 400-foot offset line from this barrier is now shown on the plan set.	MW	6/25/2024
15	C2.0	Wells 226-6.D.	The well should be upgradient from runoff from the surrounding land unless adequately protected. It appears based on the grading it is located on a slope which allows runoff to run over it. Please clarify. Was moving the well to a ridge line in the grading to minimize runoff considered?	Due to the overlapping 100' buffer and 400' offset from the capped landfill, the location of the well is the furthest point from the planned SDS in order to meet its 150' offset per board of health regulations. However, boulders have been added to protect the wellhead.		
15A			It is understood that the well location could not be moved, but could additional grading be provided to direct runoff away from the well? We defer to the Board of Health for approval.			
16	C2.0	Town of Littleton Wetland Protection Regulations 4.9	Snow Storage locations shall be shown on the plans. The snow storage shall be stored outside the No Disturbance Area and Buffer Zone. Please revise.	Snow storage is now included on sheet C2.0.		
16A			Snow storage is shown behind the bituminous berm. We have some concerns that the berm may get damaged by the snow plows. If plows damage the berm it could allow runoff to leave the parking area untreated. Please add inspection of the berm as part of the O&M plan.	The inspection of the berm has been added to the O&M manua for the site.		
17	C2.1		Proposed RFA Restoration Area is within the 50' No Disturbance Area. Please provide information on what will be done for restoration in this area.	EcoTech has submitted a letter to the Conservation Commission dated 5/22/2024 stating specifications of what will be done for remediation in this area.		
17A			We defer to the Conservation Commission if the restoration work within the 50' No Disturb area is acceptable.			
18	C2.1		Please show existing and proposed tree line so, it is clear where there will be tree clearing. Limit of tree clearing should be clear since there are rare and endangered species in the area. Please revise.	Both the existing and proposed tree lines are now shown on the plan set.		
18A			We defer to Natural Heritage & Endangered Species Program for acceptance of the tree removal.			
19	C3.0	Town of Littleton Wetland Protection Regulations 4.7	Erosion control should be installed at the 50' no disturb line to limit disturbance within the 50' no disturb. If work has to be done within the 50' no disturb area, then additional perimeter controls should be installed between the work and the wetland. Consider phasing this work to limit disturbance time within the 50' no disturbance buffer. Please revise.	Additional erosion controls have been added for this area on sheet C3.0.	JWT	6/28/2024
19A			We recommended phasing to limit time of work within the no disturb area. It appears the plans have not been updated to include this phasing. If work within the 50' no disturb area is allowed, phasing may not be necessary.		JWT	6/28/2024
20	C3.0	Town of Littleton Wetland Protection Regulations 4.7	Erosion control shall be placed around the entire site. The Erosion control plan is cut off so it is not clear the limits of erosion control. Please revise.	The erosion control plan has been adjusted to better show the limits of the barriers around the site on sheet C3.0.		



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20A			The linetypes for limit of gravel pit and erosion control are similar and it is not clear if the erosion control goes around the existing gravel pit. Please revise and confirm that erosion control includes the entire limits of the existing gravel pit. At a minimum the erosion control should include what is currently being called out, around the restoration area, along the low point for Pre A.2, and at the gravel removal from snow plow location by the wetland.	The limit of the berm surrounding the gravel pit has been revised to be depicted as a dash-dot linetype. Erosion control barriers terminate at the berm due to the area subject to alterations being at a lower elevation than the top of the berm.		
21	C3.0	38-16.C.7.	Erosion control shall be provided at gravel removal from plows and boulder protection installation area. The limits of erosion control blanket should be shown and a detail should be provided. Please revise.	An erosion control blanket detail is now included on the plans, and the blanket is shown in the requested area on Sheet C3.1.	MW	6/26/2024
22	C3.0	Town of Littleton Wetland Protection Regulations 4.9	The fill remaining onsite and proposed stockpile area shall be surrounded by erosion control.	This addressed by adjustments for line item #20 above.	JWT	6/28/2024
22A			Plans were not updated to reflect the comment as the response indicated. But, note 1.3.5 addresses that comment that stockpiles will have erosion control when stored for longer than 21 days. Therefore, this comment is closed.		JWT	6/28/2024
23	C3.0	Town of Littleton Wetland Protection Regulations 4.10	The site currently has construction debris within the buffer zone based on our site visit. There shall be no disposal or burial of construction debris within the buffer zone. Please add to the plans that all construction debris will be legally disposed and will not be located within the buffer zone.	The site is utilized for the temporary storage of earthen materials. Note 1.1.8 within the general requirements section of the erosion & sedimentation control notes has been added.	MW	6/26/2024
24	C3.0	38-16.C.5	Provide a delineation and number of square feet of the land area to be disturbed. The disturbance line should include the slope restoration work along wetlands south of the site.	The requested areas have been tabulated on sheet C2.0	MW	6/26/2024
25	C3.0		Does the stormceptor unit have a grate? If it does, provide inlet protection during construction.	The Stormceptor unit is not planned to have a grate; its plan symbol has been updated accordingly.	MW	6/24/2024
Stormwater Report						
26	13, 43, 72, & 95		In various locations of the application (SW Checklist, recharge calculations, HydroCAD, etc) there is conflicting information noting whether impervious areas are being entirely or partially treated. Please clarify.	This information has been clarified within the latest version of the drainage report.	MW	6/26/2024
27	Recharge/WQ Calcs		The recharge and water quality calcs do not indicate if they are for the subsurface infiltration system or for the detention basin. Please clarify.	The recharge and water quality calculations are for the subsurface infiltration system; this note has been added on the sheet in the drainage report.	MW	6/26/2024
27A	Recharge/WQ Calcs		Water Quality and recharge calculations should be provided for the detention basin as well.	The recharge and WQ calcs have been included in the revised stormwater report.		
28	HydroCAD	MA Stormwater Handbook V2Ch2	The detention basin is being modeled in HydroCAD as an infiltration basin. The setbacks include being 50 feet from any slope greater than 15%, 50 feet from surface water of the commonwealth, and 100 foot from a private well. The side slopes down to the wetland appear to be over 15%, please confirm. Bennett's Brook is less than 50 feet from the basin. The top of the basin is within the 100 ft buffer of the private well. The basin appears to not meet the setback requirements of an infiltration basin. Please revise.	The shallow basin has been sized to capture runoff from the planned new development driveway		
28A			The applicant has not provided sufficient setbacks to meet the requirements of the Massachusetts SW Handbook. We defer to the Conservation Commission if this is acceptable.			
29	HydroCAD/Recharge Calcs	Rawls Rate Table	Based on Deep Test Pit D1, the area where the subsurface infiltration system is proposed the soil is LS (loamy-sand). Per the Rawls Rate table loamy sand has an infiltration rate of 2.41 in/hr but 8.270 in/hr is being used in HydroCAD and recharge calculations. Please revise.	This information was a typo on the soils evaluation table; the soil should have had its texture listed as sand which would be appropriate for the 8.27 in/hr Rawls rate. This is consistent with the recently approved abutting project at #6 Spectacle Pond Road and soil test pits on site.	MW	6/27/2024
30	HydroCAD/Watershed Plans		The areas in square feet from the existing and proposed HydroCAD don't match the areas in square feet noted on the existing and proposed watershed plans. Please revise so they are consistent.	These areas have been revised as requested	MW	6/27/2024



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31	Watershed Plan/TSS Calcs	MA Stormwater Handbook V2Ch2	Per the watershed plan the detention pond receives impervious area. But, there is no pretreatment for the detention pond. The detention pond shall have pretreatment to function properly. The detention pond should also be included in the TSS calculations. Please revise.	A forebay has been added to shallow basin in order to provide pretreatment for this area on sheet C2.0. Additionally, this forebay has been added to the TSS calculations on a third worksheet.		
31A	Watershed Plan/TSS Calcs	MA Stormwater Handbook V2Ch2	The forebay shall be sized to hold 0.1 in/impervious acre to pretreat the water quality volume. Please provide back up calculation showing the forebay is adequately sized. The volume of the detention pond remained the same in HydroCAD even though a portion of the volume is lost due to the forebay. Please revise to include the revised volume for the detention pond. Per Standard 4 pretreatment shall provide 44% TSS removal within soils with an infiltration rate greater than 2.4 in/hr and the Applicant is using a 8.27 in/hr infiltration rate. The detention basin currently is only receiving 25% TSS removal based on the calculations. Please revise. The elevation of the check dam/stone wier shall be provided on the plans. Please revise.	The forebay sizing calculation has been added to sheet C2.0. A grass channel swale has been added to provide additional TSS removal. Updated TSS calculations are included in the revised Stormwater Report.		
32	Watershed Plans		Please explain why Pre A.2 will discharge to DP-A instead of DP-B. It appears most of this area would discharge south of wetland flag AA29 which would be part of DP-B. This also applies to the similar portion of Post A.3.	For Pre A.2, as there is currently a low spot nearest to flag AA31, it is believed that groundwater will eventually make its way north of this point toward DP-A. For Post A.3, this will be remedied by planned site grading that will result in water flowing northward to the low point near the planned RFA restoration area.	MW	6/27/2024
33	Watershed Plans		Post B.2 should be renamed to Post A.4 because it would discharge to DP-A if the detention basin overflowed. Please revise.	This has been changed on the post map and updated in the drainage report.	MW	6/25/2024
34	Watershed Plans		There is limited grading for the roadway shown on the plans. Based on our site visit it appeared the roadway sloped down to the north. Therefore a portion of the roadway would enter the swale that leads to the detention basin. This area should be included in the detention basin HydroCAD model. Also, additional grading should be provided to confirm the area in B.2 will actually get to the detention basin and not continue down the road to DP-A. Please revise.	Planned site grading has been adjusted to keep a gutter line along the access road so that the riprap and added forebay are only for new construction onsite.	MW	6/27/2024
35	Watershed Plans		A-2 does not appear to be fully curbed and therefore some of the area would not enter the CB and stormceptor. The parking lot should be curbed to confirm the runoff will enter the structures. Please revise.	The parking area is now fully curbed in order for the catch basin to receive area Post A.2 better.	MW	6/25/2024
O&M Plan						
36			In the subsurface infiltration system maintenance, it mentions that there is a proposed trench drain. There is no trench drain in the plans. Please clarify.	This note has been removed from the document.	MW	6/25/2024
37			In the subsurface infiltration system maintenance, it mentions that there is an isolator row. Is this true? The plans do not indicate an isolator row being proposed.	No isolator row is planned for the infiltration system; this has been removed from the documentation.	MW	6/25/2024
38		MA Stormwater Handbook V2Ch2	Once the detention basin is remediated, inspect it after every major storm for the first few months to ensure it is stabilized and functioning properly and if necessary take corrective action. Please include in O&M.	If this refers to the existing detention basin from line item #10, there are no stormwater management systems properly located onsite.		
38A			It is understood that the detention basin is proposed not existing. Since it is designed to infiltrate and is being used for peak rate attenuation please add inspect the detention basin after every major storm for the first few months to ensure it is stabilized and functioning properly and if necessary take corrective action.	The requested inspection requirements have been added to 1.2.6 of the revised O&M Plan.		
39			Please include manufacturers O&M for subsurface infiltration system and stormceptor.	This information will now be included in the O&M plan.		
39A			Please include manufacturers O&M for subsurface infiltration system.	The manufacturer does not provide an O&M for the concrete galleys. Appendix B has been added to the O&M to specify galley operation and maintenance.		
40		38-18.B.3.	Please sign the Operation & Maintenance Manual.	The applicant will provide a signed copy of the O&M plan.		