

## Susan Carter

---

**From:** James Thorne <jthorne@greenintl.com>  
**Sent:** Thursday, August 04, 2022 9:53 AM  
**To:** Susan Carter  
**Cc:** Kyle Raynor; Tom Bigelow; Maren Toohill; 22015.04XX Monarch Drive  
**Subject:** RE: Monarch Drive  
**Attachments:** Monarch Drive Peer Review -PLACES Response\_Green .xlsx; Monarch Drive Peer Review -PLACES Response\_Green .pdf

Hi Sue,

We have reviewed the revised materials and feel that our comments have been addressed. We have highlighted a few comments in yellow that we feel we can close out but might not have been fully addressed. So, we wanted to highlight our responses for your use.

Thanks,

Jim

---

**From:** Susan Carter <scarter@placesassociates.com>  
**Sent:** Monday, August 1, 2022 2:55 PM  
**To:** James Thorne <jthorne@greenintl.com>  
**Cc:** Kyle Raynor <kraynor@vmdcompanies.com>; Tom Bigelow <tbigelow@greenintl.com>; Maren Toohill <MToohill@littletonma.org>  
**Subject:** RE: Monarch Drive

Jim,

Please find attached the revised plans and HydroCAD.

For the outlet of the Tree Box Filter where the outlet was several feet below the medium, we ended up adding a 12x12 tee with a grate on the bottom and a riser to the surface. When I ran the HydroCAD it had no impact on the POA for any of the storms so I did not re-print all the info in the drainage report. If we are all set, I will print a complete hard copy for Maren for the official record.

Maren-

How many hard copies would you like for your files or where we have 2 weeks til the meeting, do you want to get Green's blessing first?

Sue



# GREEN INTERNATIONAL AFFILIATES, INC.

100 AMES POND DRIVE, SUITE 200 TEWKSBURY, MA 01876

T: (978) 923-0400 | WWW.GREENINTL.COM

Open Comments	
Defer to the Board	

PROJECT NAME MONARCH DRIVE PEER REVIEW

DATE 7/8/2022, 7/21/2022, 8/4/2022

UPDATED:

PROJECT NO. 22015.0406

## Peer Review Comment Form

NO.	SHEET NO.	SECTION	GREEN'S COMMENT	Applicant's RESPONSE	CONFIRMED BY	DATE
		APPLICATION				
1	6	Special Permit Application Submission Requirements	Existing sewer, gas, and telecom are not provided on the plans. The plans should show all existing utilities. Please confirm all existing utilities are included in the existing plan.	The plans have been updated to show all known existing utilities	SP	7/7/2022
2	6	Special Permit Application Submission Requirements	In the application the summary table is checked indicating all of the information has been provided. The summary table on the plans is missing gross floor area, density, trip generation and open space. Please provide this information or why this has been omitted from the summary table.	The Cover Sheet has been updated to include the applicable information.	SP	7/7/2022
		TRAFFIC IMPACT STUDY				
3			Traffic counts were conducted in March 2022 and compared to those collected in 2019. As the 2019 volumes were higher, they were used to provide a conservative analysis. This is consistent with the MassDOT directive that considers 2019 to be existing due to COVID-19 pandemic	Acknowledged. No response required.	ANA	7/6/2022
4			We concur with the seasonal adjustment rate and annual background growth rate used by the Applicant.	Acknowledged. No response required.	ANA	7/6/2022
5			Because the exact future land use is not known, the Applicant evaluated multiple land uses and used LUC 140, Manufacturing, which generated the highest number of trips. We concur that this approach is appropriate and provides the most conservative analysis.	Acknowledged. No response required.	ANA	7/6/2022
6			The minimum required stopping sight distance (SSD) is available at the intersection of Taylor Street and Monarch Drive. The Applicant should include desired Intersection Sight Distance (ISD) in the sight distance analysis.	The desirable ISD for Monarch Drive is 500 feet looking right (south) and 430 feet looking left (north). The available ISD is approximately 400 feet looking south and over 500 feet looking north. The desirable ISD is met for right turning vehicles looking north. The ISD for left turning vehicles looking south is restricted by the I-495 overpass crest. However, the minimum SSD requirement of 360 feet is met.	ANA	7/6/2022
7			The crash data reviewed was obtained from the MassDOT. We recommend obtaining and reviewing crash records from the Town of Littleton Police Department in addition to the MassDOT crash data.	A total of five crashes were recorded throughout the study area in the most recent three years (three at the Taylor Street / Foster Street intersection and one each at the Route 2 intersections). All intersections have crash rates well below the District and Statewide averages. No discernable crash trends were indicated due to the low number of crashes. No further safety evaluation is necessary.	ANA	7/6/2022
8			Trip distribution percentages were estimated using 2011-2015 US Census data. We recommend using the most recently available US Census OnTheMap data for more updated distributions.	The more recent census data was reviewed. The percentage of traffic destined to/from Route 2 is anticipated to be the same as detailed in the report, with 75% of employee trips distributed to this roadway. Distribution of new site traffic to the local roadways will not change significantly or impact the results of the analyses found in the report.	ANA	7/6/2022
9			As part of Transportation Demand Management (TDM) strategy, the Applicant should commit to implementing a traffic monitoring program following 12 months of full occupancy. This monitoring program should collect traffic count data at the site driveway and the study intersections included in the TIAS. The program should include a report comparing traffic volumes generated by the occupied facility to the ITE trip generation estimates.	The Applicant will commit to performing a traffic monitoring program following 12 months of full occupancy at the site driveway. A technical memorandum will be prepared comparing the traffic volumes generated by the facility with the ITE trip generation estimates.	ANA	7/6/2022
10			We concur that the proposed development is not expected to adversely impact traffic safety or operations within the study area.	Acknowledged. No response required.	ANA	7/6/2022
		SITE PLAN				
11	2 Notes and Legend plan		The legend has lines types for different resource areas. The legend appears to have more linetypes than are shown on the plans and some the linetypes look very similar. For example the 75' buffer and 100' buffer for wetland has the same linetype in the legend. For clarity, please label the resource lines on the plans.	The legend has been updated. The resource areas have been labeled on the plans.	SP	7/6/2022
12	3 Existing Condition Plan		There is a cart path shown on the pre and post development drainage plans but is not shown on the existing or proposed site plans. The drainage and site plans should be consistent with features shown. Please revise plans accordingly.	The drainage plans and site plans have been coordinated to match features shown on each.	JWT	7/21/22
12a			Cart path has not been added on the existing and proposed site plans.	The cart path has been added to sheets C-2, C-3, C-4, C-5, C-6, C-7, and C-11.	JWT	7/21/22
13	3 Existing Condition Plan/Utility Plan		The existing water line on the plans is not clear. The label pointing to the existing water line is not touching a line and the tapping sleeve and gate is not pointing to a line. Please clearly show the existing water line.	The plans have been updated to clearly show the existing water line.	SP	7/7/2022
14	4 Site Plan		Snow storage locations should be identified on the plans.	Snow storage locations have been added to the Layout and Materials Plan, Sheet C-4.	JWT	7/5/22
15	5 Layout and Material Plan	ADA	It appears that only two of the 6 handicap parking spaces have a curb cut at the access aisle. An accessible route to the entrance should be provided for all handicap parking spaces.	The plans have been updated to clarify the design of the accessible route from the handicap accessible spaces on the Layout and Materials Plan, C-4.	JWT	8/3/22



# GREEN INTERNATIONAL AFFILIATES, INC.

100 AMES POND DRIVE, SUITE 200 TEWKSBURY, MA 01876

T: (978) 923-0400 | WWW.GREENINTL.COM

Open Comments	
Defer to the Board	

PROJECT NAME MONARCH DRIVE PEER REVIEW

DATE 7/8/2022, 7/21/2022, 8/4/2022

UPDATED:

PROJECT NO. 22015.0406

## Peer Review Comment Form

NO.	SHEET NO.	SECTION	GREEN'S COMMENT	Applicant's RESPONSE	CONFIRMED BY	DATE
15a	5 Layout and Material Plan	ADA	Plans do not appear to have been updated to identify the accessible route. Grading plan and the detail indicate there is a curb at the access aisles. Please clarify.	<b>Curbs have been removed in front of the handicap accessible spaces.</b>	JWT	8/3/22
15b		ADA	The layout and material plan has removed the curb symbol at the access aisles. The detail still notes curb or berm as depicted on the plan. The grading for the access aisles to the sidewalk is not clear. The symbols indicate a ramp down for the two van parking. Should the ramp down be at the EV 12 spot and the first handicap parking spot on the south side so, the sidewalk will be flush to provide an accessible route? The grading plan should indicate slopes or spot grades to confirm an accessible route is provided. If the sidewalk is flush will wheel stops be needed?	<b>The plans have been modified to show the adjusted handicap ramp locations with no berm between, expansion of the accessible route designation and the addition of wheel stops to the Layout and Materials plan as well as a detail on sheet C-8.</b>	JWT	8/3/22
15c			Wheel stops were not added to the layout plan but a detail was added. We believe the Applicant will add these to the final design. This comment is closed.		JWT	8/3/22
16	5 Layout and Material Plan		The layout and material plans do not indicate where standard duty vs heavy duty paving will be located. Please clarify.	<b>The Layout and Materials plan has been updated to label the location of heavy duty and standard pavement locations.</b>	JWT	8/3/22
16a	5 Layout and Material Plan		Two labels have been added for heavy duty pavement. The limits of heavy duty are not clear. Are the north and south parking lots heavy duty starting at the label? Is the west parking lot standard duty? Please clarify.	<b>Heavy Duty paving is indicated with a solid hatch on the Layout and Material Plan.</b>	JWT	8/3/22
16b			Why is the south loading bay area using standard duty paving instead of heavy duty paving like the north loading bay?	<b>The heavy duty pavement is required for the entire south loading and parking area.</b>	JWT	8/3/22
17	6 Grading Plan		It appears there is disturbance within the wetland resource areas. This will require a review from the Conservation Commission. Has this been reviewed by the Conservation Commission?	<b>A Notice of Intent will be filed with the Conservation Commission for this project. Work is proposed only in the buffer zones, not directly in the resource areas.</b>	JWT	7/1/22
18	6 Grading Plan	MA Stormwater Handbook Vol 2. Chp 2.	Per the MA Stormwater Handbook, one soil sample for every 5,000 ft of basin area is recommended, with a minimum of three samples for each infiltration basin. Samples should be taken at the actual location of the proposed infiltration basin so that any localized soil conditions are detected. The test pits aren't shown on the grading plan where the stormwater bmps are located. Please confirm.	<b>Recent Soil Testing and borings, previous testing on the site, and Soil Conservation Service soil maps, indicate soils within the work area are consistently a fine to coarse sand. Blanding's Turtles are present on-site. We request this MA Stormwater Handbook recommendation be waived or made a condition of approval so testing can be scheduled to avoid the Blanding's Turtle active period.</b>		
18a			Since no test pits were performed within any of the infiltration basins, we recommend the contractor to perform at least one test pit per infiltration basin to confirm soil type and groundwater elevation is consistent with nearby test pits prior to the start of construction. We recommend this to be a condition of approval and require the test pits be approved before building permits are approved. The results shall be submitted to the Town.	<b>Utility work will be required prior to the commencement of the building so equipment will be on site to facilitate additional soil testing at that time</b>		
19	7 Drainage plan		The drainage plan has a detail for flared end rip rap inlet/outlet. This is not labeled on the plan. Please clarify where this is being used.	<b>Flared end sections are shown graphically on the Grading and Drainage plans at each pipe outlet. The legend on the Notes and Legend Plan lists a flared end section.</b>	JWT	7/1/22
20	7 Drainage plan	§38-17.C.2.	The drainage plan and landscape plan doesn't have a north arrow and scale bar. Please provide scale bar and north arrow.	<b>North arrows have been added to the plans where they were missing.</b>	JWT	7/5/22
21	7 Drainage plan	MA Stormwater Handbook Vol 2. Chp 2.	The bump out in the building on the east side appears to be at a similar elevation to the natural overflow nearby. Are there concerns with stormwater backing up to the building?	<b>The proposed floor elevation is 236.0, above the proposed grade on the east side of the building. Stormwater backing up into the building is not a concern.</b>	JWT	7/5/22
22	7 Drainage plan	MA Stormwater Handbook Vol 2. Chp 2.	The setback requirements of an infiltration basin to any building foundation including slab foundations without basements is a minimum of 10 feet down slope. Please confirm this has been met with Pond 300.	<b>Pond 300 is a minimum of 10 feet down slope of the building.</b>	JWT	7/1/22
23	7,11 Drainage plan, Detail Plan		The detail page has details for leaching trench, catch basin, drain manhole, and trench drain but these are not called out on the drainage plans. Please show and label the structures on drainage plan.	<b>Additional labels have been added to the Drainage Plan, Sheet C-6 and the details have been modified to clarify the structures on the plans.</b>	SP	7/7/22



## GREEN INTERNATIONAL AFFILIATES, INC.

100 AMES POND DRIVE, SUITE 200 TEWKSBURY, MA 01876

T: (978) 923-0400 | WWW.GREENINTL.COM

Open Comments	
Defer to the Board	

PROJECT NAME MONARCH DRIVE PEER REVIEW

DATE 7/8/2022, 7/21/2022, 8/4/2022

UPDATED:

PROJECT NO. 22015.0406

### Peer Review Comment Form

NO.	SHEET NO.	SECTION	GREEN'S COMMENT	Applicant's RESPONSE	CONFIRMED BY	DATE
24	7,11 Drainage plan, Detail Plan		The drainage plans call for CTB with solid cover and eliminator hood. The detail for the catch basin has a grate and no hood. Please revise detail to be consistent with plans.	The detail has been updated to specify "The Eliminator" Oil and Grease hood on Detail Sheet C-10.	SP	7/7/22
25	7,11 Drainage plan, Detail Plan		The drainage plans call for infiltration trench but there are no details for infiltration trench. Is the leaching trench the infiltration trench? Please use consistent naming.	The labels and details have been updated to match each other.	SP	7/7/22
26	7,11 Drainage plan, Detail Plan		The drainage plans call for an outlet control structure but no detail is provided. Please provide a detail.	A drain Manhole is proposed for the outlet control structure. A drain manhole detail is provided on Detail Sheet C-10.	SP	7/7/22
27	7,11 Drainage plan, Detail Plan		The inspection ports for the recharge area/cultec system are not labeled. Please include inspection ports for maintenance.	Inspection port locations have been added to the Drainage Sheet, C-6, and labeled on the detail on Detail Sheet C-10.	SP	7/7/22
28	8 Utility Plan		The utility plan does not have a scale bar. Please add.	A scale bar has been added to the Utility Plan.	SP	7/7/22
29	8 Utility Plan		The plans call for installing the building within the LELWD electrical main easement. The plans call to relocate the electrical main around the building. Has this been coordinated with LELWD? Will there be a new easement following the new electrical route?	An electric easement is proposed around the relocated electrical main and shown on the Utility Plan, Sheet C-7.	JWT	7/21/22
29a	8 Utility Plan		Electric line is shown under parking spaces and close to the proposed stairs. This may limit access for maintenance. Please confirm this has been coordinated with LELWD.	The exact location of the relocated electric line is being coordinated with LELWD. Currently LELWD has indicated the relocation will be in the existing Monarch Drive. The previous relocation of the electric easement will most likely not be necessary and has been removed from the plans.	JWT	7/21/22
30	8 Utility Plan		Plans call for relocating septic field for lot 1. Has this been coordinated with lot 1? Will there be a utility easement for maintenance for lot 1?	This has been coordinated with the owners of Lot 1 and an easement for the septic system components installation and maintenance will be provided. See Utility Plan, Sheet C-7.	JWT	7/1/22
31	8 Utility Plan		Hydrants are not provided on all sides of the building. Please confirm this is acceptable with the Littleton Water and Fire department.	The plans have been reviewed by Littleton Water and the proponent met with the Littleton Fire Department to confirm the proposed number and location of fire hydrants is acceptable.	JWT	7/1/22
32	11 Detail Plan		The Vortsentry has been discontinued by Contech. Please revise detail to include a water quality structure that is available.	CDS units have been added to the plans.	JWT	7/1/22
33	11 Detail Plan		The Vortsentry details show all different sizes and models. This should be revised to show the exact model/size being proposed for the project.	A specific detail for the CDS unit has been added to Detail Sheet C-10.	JWT	7/1/22
34	11 Detail Plan		The detail for the recharge area notes that the chamber size varies. Please clarify.	The recharge system uses the Cultec R-280HD chambers. See Detail Sheet C-10.	JWT	7/1/22
35	11 Detail Plan	H-20 Loading	The detail for the trench drain does not indicate loading requirement. Will the trench drain be sized for H-20 loading?	The trench drain has been designed to be "heavy duty" for H-20 loading. See Detail Sheet C-10.	JWT	7/1/22
36	11 Detail Plan		There is a detail for standard duty paving and heavy duty paving. They appear to be the same detail please clarify.	The details for standard duty and heavy duty have been updated to incorporate the recommendations of the Geotechnical Report. See Detail Sheet C-8.	JWT	7/1/22
37	12 Erosion and Sediment Plan		The silt fence appears to not wrap around the reserved septic areas. Please confirm there will be no construction disturbance in this area.	The erosion control barrier shown is correct. The reserve areas of the septic system will not be built.	JWT	7/1/22

**GREEN INTERNATIONAL AFFILIATES, INC.**

100 AMES POND DRIVE, SUITE 200 TEWKSBURY, MA 01876

T: (978) 923-0400 | WWW.GREENINTL.COM

Open Comments	
Defer to the Board	

PROJECT NAME MONARCH DRIVE PEER REVIEW

DATE 7/8/2022, 7/21/2022, 8/4/2022

UPDATED:

PROJECT NO. 22015.0406

**Peer Review Comment Form**

NO.	SHEET NO.	SECTION	GREEN'S COMMENT	Applicant's RESPONSE	CONFIRMED BY	DATE
38	12 Erosion and Sediment Plan	§38-17.C.5.	A delineation and number of square feet of the land area to be disturbed shall be added to the plans.	The delineation and land area to be disturbed is labeled on the Erosion and Sedimentation Control Site Plan, Sheet C-11.	SP	7/7/22
<b>ZONING BYLAWS</b>						
39			The project narrative doesn't mention type of use for the proposed building and there is no secured tenant yet. We defer to the board whether the defining the use of building will be used as a condition of approval.	The tenant has not been determined at this time. The use of the building will comply with the Zoning Bylaw.		
39a			We defer to the board if this should be a condition of approval.			
40		§173-18.D.	Adequate access to each structure for fire and service equipment shall be provided. Confirm this has been reviewed and coordinated with the Littleton Fire Department.	The proponent met with the Littleton Fire Department to confirm the proposed location of building and structures is acceptable.	JWT	7/1/22
41		§173-32.B.	Parking calculations do not include gross floor area or number of employees for the largest shift. Please clarify to determine if parking requirement have been met.	Parking calculations have been added to the Cover Sheet.	SP	7/7/2022
41a		§173-32.B.	Parking space requirement for industrial building is one space per 1.25 employees according to zoning bylaw but one space per 2.5 employees is provided on the plans. We defer to the board if less than the required minimum is acceptable. Our recommendation is to condition the approval to confirm adequate parking is available when the final use/occupancy is reviewed by the Board.			
41b		ADA/MAAB	According to handicapped parking regulations per MAAB, 7 spaces shall be provided for 202 parking spaces, but 6 handicap parking spaces are provided on the plans. Per Access Board Chapter 5, accessible parking spaces at EV charging stations cannot count toward the minimum number of accessible car and van parking spaces required in a parking facility. Therefore, two additional handicap parking spaces shall be provided.	The EV charging station has been reconfigured. This brought the total number of parking spaces to 199. 199 spaces require 6 handicap spaces. 6 handicap spaces are provided, not including the EV charging station space.	JWT	7/21/22
<b>Aquifer and Water Resource District Special Permit</b>						
42		§ 173-63.A	Provision shall be made to protect against toxic or hazardous materials discharge or loss through corrosion, accidental damage, spillage or vandalism through such measures as provision for spill control in the vicinity of chemical or fuel delivery points, secure storage areas for toxic or hazardous materials and indoor storage provisions for corrosible or dissolvable materials. There is no current tenant but this requirement shall be met once a tenant is secured. It is recommended that this is a condition of approval.	We would accept this as a condition of approval.		
42a			We defer to the board if this should be a condition of approval.			
43		§ 173-63.C	Provisions shall be made to assure that any waste containing toxic or hazardous materials disposed on the site is within quantities specified in and in accordance with 310 CMR 30.353, regarding insignificant waste, or subsequent equivalent regulation(s) currently in effect. There is no current tenant but this requirement shall be met once a tenant is secured. It is recommended that this is a condition of approval.	We would accept this as a condition of approval.		
43a			We defer to the board if this should be a condition of approval.			
44		§ 173-63.D/§173-32.C.5	Aquifer District 173-63: Where dry wells or leaching basins are used, they shall be preceded by oil, grease and sediment traps. Parking Requirements 173-32: Parking areas for eight or more vehicles shall be drained through catch basins equipped with oil and grease traps and sediment traps unless the topography of the site prevents their use. The infiltration basins are being preceded by tree filters not oil and grease traps which are designed to infiltrate. Can the applicant provide information on how the tree filters will handle oil and grease?	Please see attached Tree Filter document to explain oil and grease treatment in Tree Filters.		
44a			The supplemental information did indicate that the tree filter is designed to remove oil and grease. This appears to be an acceptable option to handle oil and grease. If the board would like a catch basin prior to entering the tree filter, the supplemental material did show an option where runoff could enter a sediment catch basin then overflow to the tree filter which would provide some additional pretreatment. We defer to the board if a catch basin is required.			
45		§ 173-63.E	Monitoring wells shall be constructed onsite; a monitoring schedule will be determined by the Planning Board in consultation with the Littleton Water Department. We recommend that the number and location of these monitoring wells be coordinated with the Town of Littleton Water Department.	The monitoring well locations recommended by the Planning Board and Littleton Water Department will be reviewed and implemented.		
45a			We defer to the board if this should be a condition of approval.			



# GREEN INTERNATIONAL AFFILIATES, INC.

100 AMES POND DRIVE, SUITE 200 TEWKSBURY, MA 01876

T: (978) 923-0400 | WWW.GREENINTL.COM

Open Comments	
Defer to the Board	

PROJECT NAME MONARCH DRIVE PEER REVIEW

DATE 7/8/2022, 7/21/2022, 8/4/2022

UPDATED:

PROJECT NO. 22015.0406

## Peer Review Comment Form

NO.	SHEET NO.	SECTION	GREEN'S COMMENT	Applicant's RESPONSE	CONFIRMED BY	DATE
STORMWATER REPORT						
46			The narrative notes the proposed site is comprised of Lots 2A and 2B containing ??? acres of land. The applicant should provide the area of land.	The Narrative now has the number of acres included in the text.	SP	7/7/2022
47		Pretreatment Requirements	The stormwater report did not provide any pretreatment calculations for the hydrodynamic separator. Please provide calculations based on the receiving area showing the hydrodynamic separator's TSS removal and the water quality flow rate to confirm the hydrodynamic separator model that is being proposed.	TSS removal for the CDS hydrodynamic separators is included in the Stormwater Report.	JWT	7/5/2022
48		Pretreatment Requirements	The stormwater report did not provide any pretreatment calculation for the tree filter. Please clarify how these were sized to confirm adequate pretreatment is provided.	See attached documentation from the UNH Stormwater Center.	JWT	7/21/2022
48a			The UNH tree filter in the supplemental documents is 6' diameter with 3' of media resulting in 85 cf. The plans call for 4'x4' structure with 4' media and 4'x4' structure with 3' of media resulting in 64 cf and 48 cf respectively. Please revise the design to match the UNH documentation or provide documentation showing it will provide the required treatment.	The treatment is achieved by filtering the stormwater vertically through the media. The proposed design provides the 3 feet of vertical media the UNH documents specify and will treat the stormwater runoff as expected.	JWT	7/21/2022
49		TSS	Tree filters are not in the MA SW Handbook, please provide supporting documentation that shows it can provide at least 44% TSS removal in an online system (tree filter to tree filter).	See attached documentation from the UNH Stormwater Center.	JWT	7/21/2022
49a			The UNH tree filter has a different ratio of sand and compost 80% and 20% respectively. The proposed project has 50% sand, 25% topsoil, 25% compost. Please revise design to match the UNH documentation or provide documentation showing it will provide the required treatment.	The Tree filter has been modified to specify 80% sand and 20% compost to match the UNH specification.	JWT	7/21/2022
50	SW Checklist	SW Checklist	SW Checklist needs to be signed and stamped by a professional engineer.	The checklist has been signed and stamped by a professional engineer.	JWT	7/5/2022
51	SW Checklist	SW Checklist	No disturbance to any wetland resource areas is checked. It appears that there is work within the wetland resource buffers. Please clarify.	Work is proposed within the wetland resource buffers. No disturbance to the wetland resource areas is proposed. An application to the Conservation Commission will be filed for the work proposed.	JWT	7/5/2022
52	SW Checklist	SW Checklist	The illicit discharge statement should be signed.	The illicit discharge statement has been signed.		
52a			Under standard 10 in the SW report, the illicit discharge statement is not signed.	A signed Illicit Discharge Statement will be provided prior to commencement of construction.		
52b			We defer to the board if this should be a condition of approval.			
53	Test Pits	Seasonal High Groundwater	Test pit information does not include existing ground elevation and test pits are not shown on the plans. Please provide information on how seasonal high groundwater of 224 was determined.	The test pit locations and ground elevation are shown on the plans.	JWT	7/5/2022
54	Pre Development Drainage Plan	§38-17.C.2.	The pre development drainage plan doesn't have a north arrow and scale bar. Please revise.	A north arrow and scale bar has been added to the plan.	JWT	7/5/2022
55	Pre Development Drainage Plan		The HydroCAD model for pre development shows the subcatchment 2 discharging to the wetland 1R. But Tc path indicates it discharges offsite to the east. Please clarify.	The drainage maps have been updated to clarify and match the HydroCAD model.	JWT	7/21/2022
55a			It doesn't appear revisions have been made to the drainage map. The subcatchment discharges to the east to catch basins. The closed drainage system connecting the catch basins is not plotted. There is no existing outfall shown to confirm this subcatchment discharges to 1R. Please clarify.	The Existing Drainage Map has been updated to reflect the existing closed pipe system in Monarch Drive. The closed drainage system is now shown on the plan.	JWT	7/21/2022



## GREEN INTERNATIONAL AFFILIATES, INC.

100 AMES POND DRIVE, SUITE 200 TEWKSBURY, MA 01876

T: (978) 923-0400 | WWW.GREENINTL.COM

Open Comments	
Defer to the Board	

PROJECT NAME MONARCH DRIVE PEER REVIEW

DATE 7/8/2022, 7/21/2022, 8/4/2022

UPDATED:

PROJECT NO. 22015.0406

### Peer Review Comment Form

NO.	SHEET NO.	SECTION	GREEN'S COMMENT	Applicant's RESPONSE	CONFIRMED BY	DATE
56	Pre/Post Development Drainage Plan		What are green lines in the plan? Please clarify.	The green lines depict the treeline.	SP	7/7/2022
57	Pre and Post Development Watershed Plan	§38-17.C.6.	The Applicant is required to add the existing and proposed ground surfaces with runoff coefficient for each on a site plan.	Existing and proposed ground surface information used in the HydroCAD analysis has been added to the drainage maps.	SP	7/7/2022
58	Post-Develop/HydroCAD		HydroCAD shows subcatchment area 331 entering pond 300 but in the post development drainage plan there is no pond 300. Also, there are two 301 ponds in the post development drainage area plan. Please clarify.	The drainage maps have been updated to match the HydroCAD model.	JWT	7/5/2022
59	HydroCAD/Drainage Plan		How does Tree filter 332/TFB2-A outlet to the ditch? The plans do not show an outlet pipe and the detail doesn't show the 8" orifice modelled in HydroCAD.	Tree Filter TFB2-A discharges to an underground infiltration trench.	JWT	8/3/2022
59a			HydroCAD should be updated per the Applicant's response. The Tree filter is modeled discharging to the ditch not the infiltration trench.	Tree Box Filter discharges through an 8" orifice to the ground on the south side of the treebox filter and to the infiltration trench.	JWT	8/3/2022
59b			The plans do not detail the 8" orifice modelled in HydroCAD. Based on elevations it appears the orifice is within the media. How will this work? There is no pipe with flared end and rip rap at the outlet, is there concerns of erosion at the outlet? Should the underdrain be the outlet and daylight with a flared end section?	Additional notes have been added below the Tree Box Filter Type 2 Schedule of Elevations (Sheet C-4) indicating that within 6" of the orifice, the planting medium shall be depressed to 1" below the orifice.	JWT	8/3/2022
59c			This is acceptable as long as 3' min feet of media is provided as stated in response 48a and the Applicant confirms there are no concerns for erosion. This comment is closed.		JWT	8/3/2022
60	HydroCAD/Grading Plan		The limits of Pond 300 is not clear. Is this only accounting for area within the proposed grading? Or does this take into account the whole area east of the building?	Pond 300 is a minimum of 10 feet down slope of the building.	JWT	7/5/2022
61	Plans/HydroCAD		Pond 301 and Pond 300 appear to overflow into an upland area. The overflow weirs for both ponds are set at elevation 228.50 but grading plan notes the area that the ponds discharge to has a natural overflow at 228.65. Please clarify.	The HydroCAD analysis of the ponds has been updated to match the natural overflow elevation of 228.65.	JWT	7/5/2022
62	HydroCAD		Tree filter calculations indicate 40% voids within the media which seems high. Please provide supporting documentation that the media will have 40% voids.	The tree filter box media has an organic content which typically has a greater void percentage than granular soil that has a 40% void percentage.	JWT	7/21/2022
62a	HydroCAD		MA stormwater Manual does not give guidance on void percentage within the media. RI Stormwater Manual indicates porosity of 0.33 or voids of 33% within the media. Please revise to 33% voids or provide supporting documentation that the media has 40% voids.	The HydroCAD output has been changed to a 33% void ratio.	JWT	7/21/2022
63	HydroCAD		Tree filter pond 321 has two outlets in HydroCAD but only one is shown on the plan. Please clarify.	The HydroCAD analysis has been updated to show a single outlet.	JWT	7/5/2022
63a	Drainage Plan		The HydroCAD model calls for a 24" pipe but the plans show a 15" pipe at a different elevation. The plans shall be updated to match the revised HydroCAD model.	The Drainage plan has been updated per comment.	JWT	8/3/2022
63aa	Drainage Plan		This has not been addressed. Tree filter 302 (used to be 321) still shows 24" pipe in HydroCAD but 15" pipe on the plans at different elevations. Please revise.	The outlet has been modified to reflect a 12" outlet with a 12x12 tee with a screen on the bottom and a riser with cap as an inspection port. HydroCAD has been changed accordingly with no impact to the pre and post runoff rates.	JWT	8/3/2022
63aaa			The concept is acceptable and it is called out on the plans. It is recommended this be detailed on the final design plans so, the contractor can install properly. This comment is closed.		JWT	8/3/2022
63b	Detail		The outlet pipe per HydroCAD will be higher than the underdrain elevation. How will this work? Will the pipe outlet be in the media? This should be in the tree filter detail.	The HydroCAD analysis for the outlet pipe has been changed to match the underdrain elevation.	JWT	8/3/2022
63bb			This has not been addressed. Tree filter 302 (used to be 321) still shows 24" pipe in HydroCAD at a higher elevation than the underdrain. Even if the pipe were to match the invert of the underdrain, part of the pipe would be within the media because the pipe is larger than the underdrain. Please revise.	See response to 63aa above	JWT	8/3/2022



# GREEN INTERNATIONAL AFFILIATES, INC.

100 AMES POND DRIVE, SUITE 200 TEWKSBURY, MA 01876

T: (978) 923-0400 | WWW.GREENINTL.COM

Open Comments	
Defer to the Board	

PROJECT NAME MONARCH DRIVE PEER REVIEW

DATE 7/8/2022, 7/21/2022, 8/4/2022

UPDATED:

PROJECT NO. 22015.0406

## Peer Review Comment Form

NO.	SHEET NO.	SECTION	GREEN'S COMMENT	Applicant's RESPONSE	CONFIRMED BY	DATE
64	HydroCAD		There is a subcatchment on the post development plan labeled at 100 and there is no 100 included in the HydroCAD calculations.	The post development drainage plan has been updated to match the HydroCAD analysis.	JWT	7/5/2022
65	HydroCAD/Drainage Plan		The infiltration trench 222 is set to elevation 227 in the plans but is set at elevation 228.50 in HydroCAD. Please clarify.	The HydroCAD analysis for the infiltration trench has been updated to match the 227 elevation on the plans.	JWT	7/21/2022
65a	HydroCAD/Drainage Plan		The trench is now set to elevation 227 but still does not match the plans. The pipe storage is set to 227 but the outlet is set to 228. The outlet and the storage should be set to the same elevation. Also, please confirm voids in the crushed stone section is being taken into account. There is no indication of % voids in HydroCAD.	The pipe storage and outlet has been changed in HydroCAD and on the plans to be the same elevation. A void ratio of 33% has been input into HydroCAD.	JWT	7/21/2022
66	HydroCAD		Why was the tree filters not modelled in HydroCAD for infiltration trench 222? Why were the infiltration trenches not modelled for the other tree filters?	As a conservative measure, to compare the pre- and post-construction stormwater runoff, the infiltration trenches were not modeled. The peak discharge did not increase for the post-development conditions compared to the existing peak discharge.	JWT	7/21/2022
66a	HydroCAD		Tree filters TFB2-E, F and G were not modelled and infiltration trench was modelled instead. This is not consistent with the rest of the project's modelling and disagrees with the applicant's response. Please clarify.	The HydroCAD analysis has been updated to model all the Tree Box filters and model them the same way.	JWT	7/21/2022
67	HydroCAD		On recent past projects the Conservation Commission requested the use of NOAA Atlas 14 rainfall data. The Applicant states that NOAA rainfall data is being used. But, the HydroCAD model appears to use NRCC rainfall data. Please clarify and provide the NOAA rainfall data.	NOAA Atlas 14 rainfall data is used in the current stormwater analysis.	JWT	7/5/2022
<b>O&amp;M Plan</b>						
68	O&M/Stormwater Checklist	Stormwater Checklist/§38-18.B.3	Name of the stormwater management system owners and parties responsible for operation and maintenance is not provided in the O&M but is checked. There is no signature on the O&M Plan and the responsible parties are to be determined. We recommend that this is a condition of approval.	The owners of the property or their assigned agent will be responsible for the operation and maintenance of the stormwater management system during construction until further notice.		
68a			We defer to the board if this should be a condition of approval.			
69	O&M/Stormwater Checklist	Stormwater Checklist	Plan showing the location of all stormwater BMPs maintenance access areas is not provided in the O&M but is checked. How will infiltration basin 300 be maintained?	A BMP plans has been added to the Stormwater Report showing the BMPs and proposed access routes for maintaining the BMPs.	JWT	7/21/2022
69a			Plan indicates the access to Infiltration basin 300 involves driving over the emergency spillway for infiltration basin 165. Per the emergency spillway detail, the emergency spillway will consist of rip rap with 3:1 side slopes. Are there any concerns with maintenance vehicles driving over the emergency spillway?	It is anticipated the maintenance vehicle will have to pass over the emergency spillway. The 3:1 riprap slope does not have a significant elevation drop and will be traversable by the maintenance vehicles.	JWT	7/21/2022
70			O&M plan is missing maintenance of tree filters, hydrodynamic separators, subsurface infiltration chamber system, 24" culvert, trench drain, infiltration trench, outlet control structure, emergency gate valve, and CTB with solid cover and hood.	The Operation and Maintenance Plan has been updated to include the BMPs cited in the comments.	JWT	7/5/2022
71	O&M/Stormwater Checklist	Stormwater Checklist	O&M budget should be revised to include maintenance of all drainage systems.	The Operation and Maintenance Plan budget has been updated.	JWT	7/5/2022
72			Septic systems appear to be inaccessible. How will the septic systems be maintained?	The septic systems are accessible through the existing path along the existing easement.	JWT	7/21/2022
72a			Similar comment to 69a, will this require driving over the emergency spillway for infiltration basin 165 to access the septic systems?	It is anticipated the maintenance vehicle will have to pass over the emergency spillway. The 3:1 riprap slope does not have a significant elevation drop and will be traversable by the maintenance vehicles.	JWT	7/21/2022
73	LTPPP	LTPPP	Long term pollution prevention plan should describe what needs to be done if there is a spill.	The Operation and Maintenance Plan explains the procedures if a spill occurs.	JWT	7/5/2022
<b>New Comments</b>						
74	ADA	Access Board Chapter 5	Accessible EV Charging stations should have a 10-13' min space with two 3' min access aisles. The one accessible EV parking spot does not meet these requirements. Please revise.	The accessible EV station has been modified per comment.	JWT	7/21/2022
75	HydroCAD		Tree Filter Pond 151 is no longer connected to infiltration basin 165 in HydroCAD. The tree filter has an outlet and on the plans it is shown discharging to infiltration basin 165. Please revise HydroCAD model to be consistent with the plans.	Tre Filter 151 has been connected to Infiltration Basin 165 in HydroCAD to match the design depicted in the drawings.	JWT	7/21/2022
76	HydroCAD		Tree Filter Pond 151 has a sharp crested weir in HydroCAD. How will this work? This should be detailed on the plans.	The sharp crested weir has been removed from the HydroCAD analysis.	JWT	7/21/2022

**GREEN INTERNATIONAL AFFILIATES, INC.**

100 AMES POND DRIVE, SUITE 200 TEWKSBURY, MA 01876

T: (978) 923-0400 | WWW.GREENINTL.COM

Open Comments	
Defer to the Board	

PROJECT NAME MONARCH DRIVE PEER REVIEW

DATE 7/8/2022, 7/21/2022, 8/4/2022

UPDATED:

PROJECT NO. 22015.0406

**Peer Review Comment Form**

NO.	SHEET NO.	SECTION	GREEN'S COMMENT	Applicant's RESPONSE	CONFIRMED BY	DATE
77	Landscape Plan		There are three different trees proposed for the tree filters. None of the three trees proposed were included in the supplemental information on tree filters which had a recommended tree list. Please clarify if these trees will be acceptable for the tree filters.	The trees shown were selected by a registered landscape architect and are appropriate for use in a tree box filter.	JWT	7/21/2022
78	HydroCAD/Watershed plan		There is a watershed boundary separating receiving area between pond 300 and 301. The catchment area going to Pond 301 is not identified on the drainage map or modelled in HydroCAD. Please revise.	The hydroCAD analysis and Post Development Drain Map have been updated to reflect this watershed boundary.	JWT	7/21/2022