

March 10, 2022

To: Alaa M. Abusalah
Director of Development & Inspectional
Services/Town Planner
3 Washburn Square
Leicester, Massachusetts 01524

A&M Project #: 2889-01
Re: Skyview Estates
Special Permit /
Site Plan Review
Town & Engineer Comments
651 Main Street
Map 21/Parcel B5.1

Copy:

Dear Ms. Abusalah,

Please find Allen & Major Associates, Inc. (A&M) responses to the review memo prepared by Quinn Engineering Inc., dated March 7, 2022 which summarized the telephone conference to discuss remaining unresolved comments from the Quinn Review letters addressed to Leicester Planning Board dated 2/12/2022 and to Leicester Zoning Board of Appeals dated 3/2/2022. The comments are reproduced below along with the A&M's response and/or comments.

Plan Comments:

Comments 3, a & 17: Per MM, on Sheet C-001, 12' x 12' decks are called out. In some locations, conflict with rear yard setbacks may make decks impossible to build. Comment "Resolved".

Response: Agreed.

Comment 3, f: Plans will be revised to include coach lamp post detail and luminaire. Also MM will address site lighting intensity. Plans will include a street light at the intersection with Main Street.

Response: The driveway light detail has been provided along with the anticipated light intensity matrix for the driveway lights. Refer to Sheet C-001 for additional information.

Comment 10: Plans will be revised to include subdrains in locations where road will be constructed within cuts.

Response: The plans have been updated to include subdrains in location where the roadway construction is within a cut scenario. Refer to Sheets C-102A, C-102B & C-102C for the location of the subdrains. The locations have been clouded for better clarity.

Comments 11 & 27: MM will request test pit requirement be made a condition of approval. KQ will recommend that if LPB wishes to consider a condition for test pits, they be required within a reasonable time frame. The design of dry wells is dependent on groundwater conditions, which will be determined when the test pits are conducted. The drywell design should also be subject to the same timeline as the test pits themselves.

Response: We respectfully requested that additional test pits be made a condition of approval as noted on Soil Testing Notes on Sheet C-102. We agree that this work should be held to a reasonable time frame and request that the duration to complete this work be set at no more than 60 days unless expressly requested otherwise.

Comment 19: In the absence of a slope stability analysis by a geotechnical engineer, "No Further Comment" will stand.

Response: In our professional opinion, this request is excessive regardless of any presumptions of wet conditions on site. Reasonable measures have been illustrated on the plan (Sheet C-002, C-102 & C-501) for normal slopes and the protection of steeper slopes (2:1 max) through the installation of enhanced seeding and erosion control matting. The obligation for a slope stability analysis by a geotechnical engineer is not a requirement of a traditional subdivision, nor site plan review. This requirement should it be made a condition of this site review process would subject the Applicant to unequal treatment in violation of current statutes.

Comment 21: Plans will be revised to call for drain to enter drain manhole at Colonial Drive, with new catch basin. Drains on Main Street are under the control of Massachusetts Department of Transportation, however, MassDOT will almost certainly prohibit drains from entering catch basins.

Response: The plans have been updated to illustrate all connections be made to a manhole structure. The development team is still in the review process with MassDOT regarding an access permit to Main Street. We respectfully request that obtaining the MassDOT permit be made a condition of approval which is customary for these types of project.

Comment 22: Plans will be revised to require buoyancy calculations submitted to Leicester Planning Board for review and approval, prior to installation.

Response: Agreed. Refer to details 2 & 5 on Sheet C-504

Comment 34: Plans will be revised to depict a future drainage easement, where drains pass over Lot 2, which will become private property.

Response: An easement has been shown on the plans. See Sheet C-102C for additional information.

Comment 36: Plans will be revised to meet standard for removal of 80% of Total Suspended Solids, as required under Massachusetts Stormwater Management Policy.

Response: Agreed. Refer to details 2, 4 & 5 on Sheet C-504 which illustrate that treatment is provided with the precast detention system.

Comment 38: Plans have been revised to require that the Retain-It structure located under the Emergency Access Road is designed to sustain HS-20 traffic loads.

Response: Agreed. Refer to details 2 & 5 on Sheet C-504

Pertaining to the letter to Leicester Zoning Board of Appeals, dated March 2, 2022:

MM will address compliance with the stormwater recharge standard, as enumerated in §7.1.04, 2, a, within the area designated at Water Resources Protection Overlay District.

Response: Agreed. Refer to attached supplemental calculations which illustrate that the required infiltration is achieved within the area of the overlay district.

Very Truly Yours,
ALLEN & MAJOR ASSOCIATES, INC.



Michael A. Malynowski, PE
Senior Project Manager



Project No.	2889-01	Sheet	1 of 1
Project Description	Skyview Estates		
	Leicester, MA		
Calculated By	JG	Date	03/10/22
Checked By	MAM		

Standard # 3: Groundwater Recharge

Proposed recharge system: Dry Well

In accordance with *MADEP – Volume 2, Technical Guide for Compliance with Massachusetts Stormwater Management Standards*, dated January 2008

A soils require a Volume to recharge of	0.60	inches
B soils require a Volume to recharge of	0.35	inches
C soils require a Volume to recharge of	0.25	inches
D soils require a Volume to recharge of	0.10	inches

Impervious area within: A-soils =	0	sf	Weighted Groundwater Recharge Depth	=	0.25	in
Impervious area within: B-soils =	566	sf				
Impervious area within: C-soils =	171,496	sf				
Impervious area within: D-soils =	0	sf				

Total Site Volume required to be recharged =

$$172,062 \text{ sf} \times 1" / 12 \times 0.25 \text{ in} = \mathbf{3,589 \text{ cf}}$$

Site volume recharge provided by = volume within residential drywells

House Drywell = 196

DW-3: House Drywell

14 Drywells at each grouping of homes Volume= 2,744 cf

DW-4: House Drywell

10 Drywells at each grouping of homes Volume= 1,960 cf

DW-5: House Drywell

8 Drywells at each grouping of homes Volume= 1,568 cf

DW-6: House Drywell

8 Drywells at each grouping of homes Volume= 1,568 cf

DW-1: House Drywell

6 Drywells at each grouping of homes Volume= 1,176 cf

Total Volume= 9,016

$$= \mathbf{9,016} \text{ c.f. Total Volume Recharged} > \mathbf{3,589 \text{ cf}} \quad (\text{ OK })$$



Subcat WRPOD



P1-F: House Drywell



P-2F: House Drywell



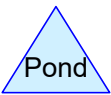
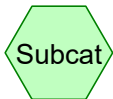
P-3F: House Drywell



P-3E: House Drywell



P-3D: House Drywell



2889-01 - Proposed HydroCAD-WRPOD

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Area Listing (selected nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.026	61	>75% Grass cover, Good, HSG B (WRPOD)
6.095	74	>75% Grass cover, Good, HSG C (WRPOD)
1.791	65	Brush, Good, HSG C (WRPOD)
0.013	98	Paved parking, HSG B (WRPOD)
1.839	98	Paved parking, HSG C (WRPOD)
2.098	98	Roofs, HSG C (WRPOD)
1.434	70	Woods, Good, HSG C (WRPOD)
13.295	79	TOTAL AREA

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Type III 24-hr 2-year Rainfall=3.23"

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Time span=0.00-36.00 hrs, dt=0.05 hrs, 721 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

SubcatchmentWRPOD: Subcat WRPOD

Runoff Area=579,126 sf 29.70% Impervious Runoff Depth=1.36"
Tc=0.0 min CN=79 Runoff=24.03 cfs 1.506 af

Pond DW-1: P1-F: House Drywell

Peak Elev=0.00' Storage=0 cf
Discarded=0.00 cfs 0.000 af Primary=0.00 cfs 0.000 af

Pond DW-3: P-3D: House Drywell

Peak Elev=0.00' Storage=0 cf
Discarded=0.00 cfs 0.000 af Primary=0.00 cfs 0.000 af

Pond DW-4: P-3E: House Drywell

Peak Elev=0.00' Storage=0 cf
Discarded=0.00 cfs 0.000 af Primary=0.00 cfs 0.000 af

Pond DW-5: P-2F: House Drywell

Peak Elev=0.00' Storage=0 cf
Discarded=0.00 cfs 0.000 af Primary=0.00 cfs 0.000 af

Pond DW-6: P-3F: House Drywell

Peak Elev=0.00' Storage=0 cf
Discarded=0.00 cfs 0.000 af Primary=0.00 cfs 0.000 af

Total Runoff Area = 13.295 ac Runoff Volume = 1.506 af Average Runoff Depth = 1.36"
70.30% Pervious = 9.346 ac 29.70% Impervious = 3.949 ac

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Summary for Subcatchment WRPOD: Subcat WRPOD

Runoff = 24.03 cfs @ 12.01 hrs, Volume= 1.506 af, Depth= 1.36"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-year Rainfall=3.23"

Area (sf)	CN	Description
80,096	98	Paved parking, HSG C
555	98	Paved parking, HSG B
1,130	61	>75% Grass cover, Good, HSG B
265,494	74	>75% Grass cover, Good, HSG C
62,470	70	Woods, Good, HSG C
78,003	65	Brush, Good, HSG C
91,378	98	Roofs, HSG C
579,126	79	Weighted Average
407,097		70.30% Pervious Area
172,029		29.70% Impervious Area

Summary for Pond DW-1: P1-F: House Drywell

System sized based on standard 1,000g drywell at each dwelling unit.

Storage multiplier added to account for number of dwelling units with subcatchment.

Area multiplier adjusted to the account for the percentage of roof area within subcatchment.

Volume	Invert	Avail.Storage	Storage Description
#1A	0.00'	68 cf	7.67'W x 12.50'L x 3.50'H Field A 335 cf Overall - 166 cf Embedded = 169 cf x 40.0% Voids
#2A	0.67'	129 cf	Shea Dry Well 1000gal Inside #1 Inside= 62.0"W x 30.0"H => 12.86 sf x 10.00'L = 128.6 cf Outside= 68.0"W x 34.0"H => 15.80 sf x 10.50'L = 165.9 cf
		196 cf	x 6.00 = 1,178 cf Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#0	Primary	3.50'	Automatic Storage Overflow (Discharged without head)
#1	Discarded	0.00'	0.600 in/hr Exfiltration over Wetted area
#2	Primary	2.50'	4.0" Round Culvert L= 10.0' Ke= 0.500 Inlet / Outlet Invert= 2.50' / 2.40' S= 0.0100 ' /' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.09 sf

Discarded OutFlow Max=0.00 cfs @ 0.00 hrs HW=0.00' (Free Discharge)↑ **1=Exfiltration** (Passes 0.00 cfs of 0.01 cfs potential flow)**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=0.00' (Free Discharge)↑ **2=Culvert** (Controls 0.00 cfs)**Summary for Pond DW-3: P-3D: House Drywell**

System sized based on standard 1,000g drywell at each dwelling unit.

Storage multiplier added to account for number of dwelling units with subcatchment.

Area multiplier adjusted to the account for the percentage of roof area within subcatchment.

Volume	Invert	Avail.Storage	Storage Description
#1A	0.00'	68 cf	7.67'W x 12.50'L x 3.50'H Field A 335 cf Overall - 166 cf Embedded = 169 cf x 40.0% Voids
#2A	0.67'	129 cf	Shea Dry Well 1000gal Inside #1 Inside= 62.0"W x 30.0"H => 12.86 sf x 10.00'L = 128.6 cf Outside= 68.0"W x 34.0"H => 15.80 sf x 10.50'L = 165.9 cf
		196 cf	x 14.00 = 2,748 cf Total Available Storage

Storage Group A created with Chamber Wizard

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Device	Routing	Invert	Outlet Devices
#0	Primary	3.50'	Automatic Storage Overflow (Discharged without head)
#1	Discarded	0.00'	0.600 in/hr Exfiltration over Wetted area
#2	Primary	2.50'	4.0" Round Culvert L= 10.0' Ke= 0.500 Inlet / Outlet Invert= 2.50' / 2.40' S= 0.0100 '/ Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.09 sf

Discarded OutFlow Max=0.00 cfs @ 0.00 hrs HW=0.00' (Free Discharge)↑**1=Exfiltration** (Passes 0.00 cfs of 0.02 cfs potential flow)**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=0.00' (Free Discharge)↑**2=Culvert** (Controls 0.00 cfs)**Summary for Pond DW-4: P-3E: House Drywell**

System sized based on standard 1,000g drywell at each dwelling unit.

Storage multiplier added to account for number of dwelling units with subcatchment.

Area multiplier adjusted to the account for the percentage of roof area within subcatchment.

Volume	Invert	Avail.Storage	Storage Description
#1A	0.00'	68 cf	7.67'W x 12.50'L x 3.50'H Field A 335 cf Overall - 166 cf Embedded = 169 cf x 40.0% Voids
#2A	0.67'	129 cf	Shea Dry Well 1000gal Inside #1 Inside= 62.0"W x 30.0"H => 12.86 sf x 10.00'L = 128.6 cf Outside= 68.0"W x 34.0"H => 15.80 sf x 10.50'L = 165.9 cf
196 cf x 10.00 = 1,963 cf Total Available Storage			

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#0	Primary	3.50'	Automatic Storage Overflow (Discharged without head)
#1	Discarded	0.00'	0.600 in/hr Exfiltration over Wetted area
#2	Primary	2.50'	4.0" Round Culvert L= 10.0' Ke= 0.500 Inlet / Outlet Invert= 2.50' / 2.40' S= 0.0100 '/ Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.09 sf

Discarded OutFlow Max=0.00 cfs @ 0.00 hrs HW=0.00' (Free Discharge)↑**1=Exfiltration** (Passes 0.00 cfs of 0.01 cfs potential flow)**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=0.00' (Free Discharge)↑**2=Culvert** (Controls 0.00 cfs)**Summary for Pond DW-5: P-2F: House Drywell**

System sized based on standard 1,000g drywell at each dwelling unit.

Storage multiplier added to account for number of dwelling units with subcatchment.

Area multiplier adjusted to the account for the percentage of roof area within subcatchment.

Volume	Invert	Avail.Storage	Storage Description
#1A	0.00'	68 cf	7.67'W x 12.50'L x 3.50'H Field A 335 cf Overall - 166 cf Embedded = 169 cf x 40.0% Voids
#2A	0.67'	129 cf	Shea Dry Well 1000gal Inside #1 Inside= 62.0"W x 30.0"H => 12.86 sf x 10.00'L = 128.6 cf Outside= 68.0"W x 34.0"H => 15.80 sf x 10.50'L = 165.9 cf
196 cf x 8.00 = 1,570 cf Total Available Storage			

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#0	Primary	3.50'	Automatic Storage Overflow (Discharged without head)
#1	Discarded	0.00'	0.600 in/hr Exfiltration over Wetted area
#2	Primary	2.50'	4.0" Round Culvert L= 10.0' Ke= 0.500

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Inlet / Outlet Invert= 2.50' / 2.40' S= 0.0100 '/ n= 0.010 PVC, smooth interior, Flow Area= 0.09 sf

Discarded OutFlow Max=0.00 cfs @ 0.00 hrs HW=0.00' (Free Discharge)

↑**1=Exfiltration** (Passes 0.00 cfs of 0.01 cfs potential flow)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=0.00' (Free Discharge)

↑**2=Culvert** (Controls 0.00 cfs)

Summary for Pond DW-6: P-3F: House Drywell

System sized based on standard 1,000g drywell at each dwelling unit.

Storage multiplier added to account for number of dwelling units with subcatchment.

Area multiplier adjusted to the account for the percentage of roof area within subcatchment.

Volume	Invert	Avail.Storage	Storage Description
#1A	0.00'	68 cf	7.67'W x 12.50'L x 3.50'H Field A 335 cf Overall - 166 cf Embedded = 169 cf x 40.0% Voids
#2A	0.67'	129 cf	Shea Dry Well 1000gal Inside #1 Inside= 62.0"W x 30.0"H => 12.86 sf x 10.00'L = 128.6 cf Outside= 68.0"W x 34.0"H => 15.80 sf x 10.50'L = 165.9 cf
196 cf x 8.00 = 1,570 cf Total Available Storage			

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#0	Primary	3.50'	Automatic Storage Overflow (Discharged without head)
#1	Discarded	0.00'	0.600 in/hr Exfiltration over Wetted area
#2	Primary	2.50'	4.0" Round Culvert L= 10.0' Ke= 0.500 Inlet / Outlet Invert= 2.50' / 2.40' S= 0.0100 '/ n= 0.010 PVC, smooth interior, Flow Area= 0.09 sf

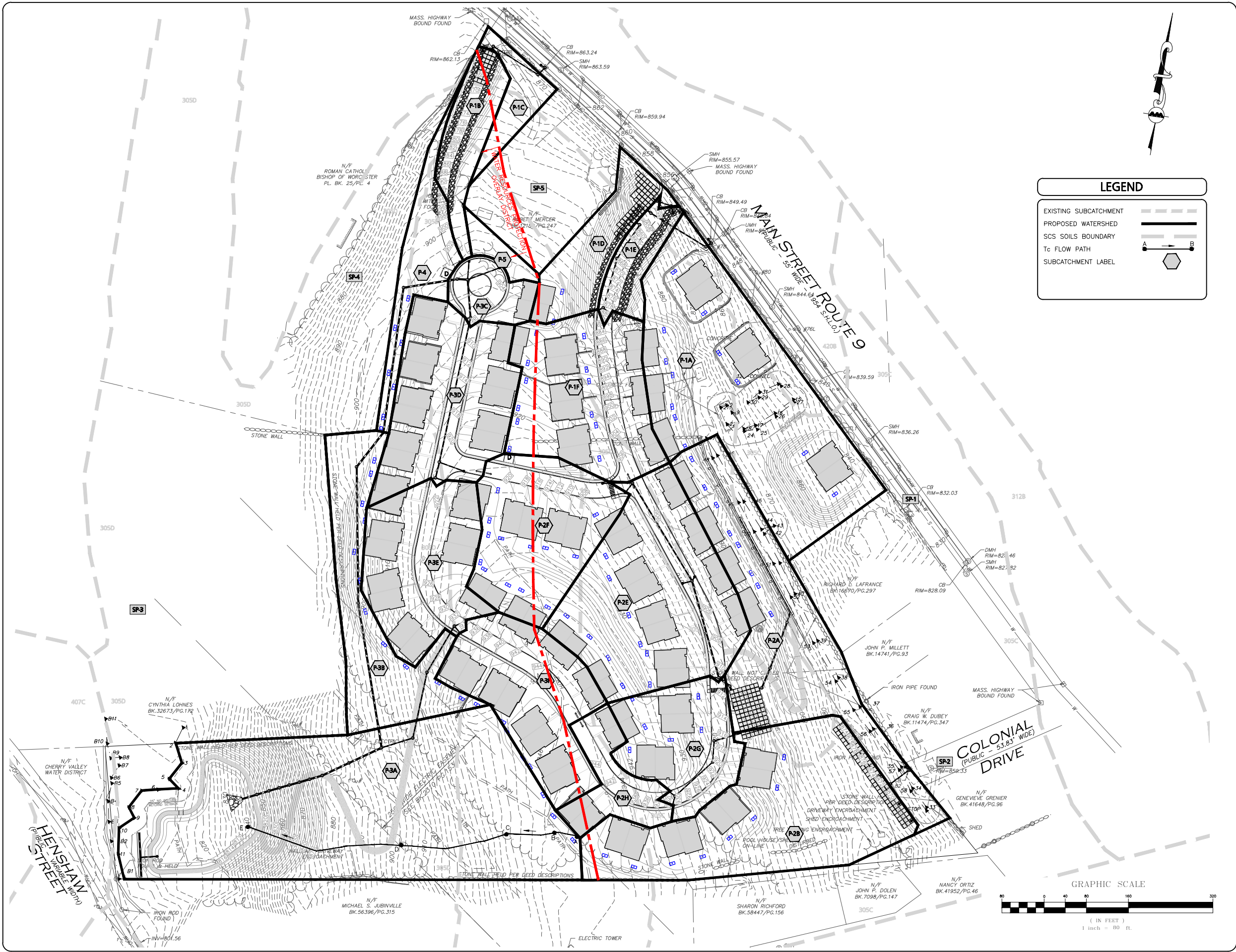
Discarded OutFlow Max=0.00 cfs @ 0.00 hrs HW=0.00' (Free Discharge)

↑**1=Exfiltration** (Passes 0.00 cfs of 0.01 cfs potential flow)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=0.00' (Free Discharge)

↑**2=Culvert** (Controls 0.00 cfs)

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REV DATE DESCRIPTION

APPLICANT:

MKEP 770 LLC
265 SUNRISE HIGHWAY, SUITE 1368
ROCKVILLE CENTER, NY 11570

PROJECT:

SKYVIEW ESTATES
RESIDENTIAL DEVELOPMENT
MAIN STREET
LEICESTER, MA

PROJECT NO. 2889-01 DATE: 06-23-21

SCALE: 1" = 80' DWG.: C2889-01_Watershed-Proposed

DESIGNED BY: SM CHECKED BY: MAM

PREPARED BY:

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DRAWING TITLE: PROPOSED WATERSHED PLAN

SHEET NO. WS-2

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