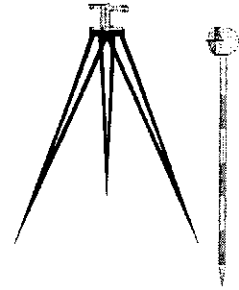




**SPARACO & YOUNGBLOOD, PLLC**  
CIVIL ENGINEERING \* LAND SURVEYING \* SITE PLANNING  
P.O. Box #818; 18 N. Main Street Harriman, N.Y. 10926  
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March 2, 2021

Planning Board  
Town of Haverstraw  
1 Rosman Road  
Garnerville NY 10923

Att: Annette Hendrie, Chief Clerk to Planning Board

Re: Response to MSA, LLP letter dated 2-25-21  
Oak Tree Site Plan (SY#1385)  
1-72 Oak Tree Lane and 22 Rosman Road, Haverstraw, NY 10962  
Tax Lots # 26.05-1-42 & 26.09-2-8

Dear Ms. Hendrie:

We reviewed the letter from John Cirilli, AIA of MSA referenced above (and attached) for the 14.3-acre Oak Tree project located in the Town of Haverstraw, NY and offer the following responses in like manner they appear in the letter:

**Comments in italics, responses in bold text:**

*Our office has advised the Village of concerns regarding the impact of the proposed drainage system on the adjacent and abutting lands within the Village of West Haverstraw and more particularly the roadways and residents on Barnes Drive and Captain Shankey Drive.*

*We note that a portion of the site that presently drains to the West is now diverted to the storm drainage structures that flow toward areas in the Village. Further, natural drainage from the site flows overland (sheet flow) toward the homes on Barnes Drive. The proposal indicates the drainage to be concentrated and directed toward the drainage structures in the Village.*

Yes, some of the areas on site were redirected on site to areas with good soil permeability so that proper water quality compliance with NYSDEC GP-0-20-001 could be achieved. This was mitigated with a reduction of peak discharges offsite as described below, in addition to a reduction in stormwater volumes as well due to the permeability benefits in conjunction with on site infiltration.

Reduction in peak discharges offsite were demonstrated in the drainage summaries, analyses and maps provided in the 2-6-20 drainage report. In this report, two key areas of study toward West Haverstraw were considered.

Study Point #3 was evaluated at the catch basin just downstream of the Shop Rite developed area. The applicant is proposing to connect the site outflows from the proposed infiltration/detention basin into an existing 36-inch RCP. This existing field inlet and storm drainage system collects stormwater from the site and the Shop Rite developed area and then drains toward the Barnes Drive municipal drainage system and eventually to the next key collection point (Study Point #4) at its intersection with Captain Shankey Drive.

The following two tables (copied from the approved 2-6-20 drainage report) detail the existing versus proposed hydrologic peak discharge flows ranging from the 1-year through the 100-year design storm frequencies:

Summary Table # 3 – Oak Tree and offsite drainage to the East (Pt. #3) to a field inlet conveying discharges through an existing 36-inch RCP toward Barnes Avenue for Existing and Developed Conditions:

Conditions	Storm Frequency (in years)					
	1	2	5	10	25	100
Pre-Dev. Discharges (cfs)	11.95	19.43	29.95	36.30	45.62	75.83
Post-Dev. Discharges (cfs)	9.69	15.19	22.90	27.30	33.70	73.67
Net Change:	- 2.26	- 4.24	- 7.05	- 9.00	- 11.92	- 2.16

Summary Table # 4 – Oak Tree and offsite drainage toward the Northeast (Pt. #4) to a common municipal drainage point (Curb Inlet) at the NE corner of Barnes Avenue for Existing and Developed Conditions:

Conditions	Storm Frequency (in years)					
	1	2	5	10	25	100
Pre-Dev. Discharges (cfs)	16.12	27.58	44.98	55.27	70.59	121.08
Post-Dev. Discharges (cfs)	12.85	21.67	34.43	41.90	53.01	102.91
Net Change:	-3.27	- 5.91	- 10.55	- 13.37	- 17.58	- 18.17

**As can be observed above, as a result of the retention and detention benefits from the proposed on site drainage systems, there are substantial reductions in peak discharges offsite for all studied storms, thereby providing a significant benefit to the receiving offsite existing municipal drainage systems in Barnes and Captain Shankey Drives.**

*We request that an analysis of the existing storm drainage structure which will receive this flow and locate on Barnes Drive and Captain Shankey Drive be provided. The analysis should include all of the contributing drainage areas including the proposed Oak Tree Apartments as well as drainage contributed from the "Shoprite Shopping Center" and any other area.*

**As described in the response to the first comment, this analysis was already provided in the Drainage Report dated 2-6-20 referenced above. The applicant has demonstrated a net reduction in peak discharges offsite for all studied storms.**

*The analysis should include the capacity of the existing storm drainage as well as any required improvements to the existing system to ensure it will have sufficient capacity as necessary to avoid any damage to the surrounding neighborhood and not be overloaded.*

**As noted in the earlier responses, there is no need for the applicant to provide any further evaluation downstream as it has been demonstrated that there is a substantial reduction in offsite peak discharges for all studied storms at these key study points.**

*There are further concerns regarding how the developer will maintain the Detention Infiltration System including a description of access for equipment to the system. We also recommend guarantees that should the detention system not be properly maintained, then the Town would provide necessary maintenance to avoid any damage to the downstream areas.*

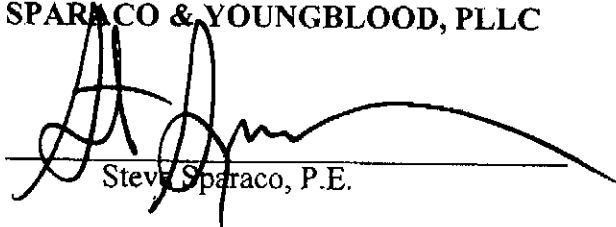
**These comments relate directly to compliance with NYSDEC GP-0-20-001 and all maintenance measures will require the applicant to comply with a Storm Water Pollution Prevention Plan (SWPPP) which will be prepared during the final site plan process at a later date. When the SWPPP is prepared, a stormwater maintenance agreement will be drafted which will give the Town the legal authority to enforce storm water maintenance on site.**

Please let us know if there are any further storm water concerns in conjunction with this proposal.

Thank you for your assistance.

Very truly yours,

**SPARACO & YOUNGBLOOD, PLLC**



Steve Sparaco, P.E.

cc.: Jake Berdugo  
Terry Rice  
John Lange

February 25, 2021

**Town of Haverstraw Planning Board  
Annette Hendrie, Planning Board Clerk  
1 Rosman Road  
Garnerville, NY 10923**

**Re: Oak Tree Apartments  
Town of Haverstraw  
MSA Project No. 41024**

**Drainage Calculations**

Ms. Hendrie,

The Village of West Haverstraw has asked our office to review the referenced project and more particularly its potential impact on the Village of West Haverstraw.

Documents reviewed include:

- Site Plan Documents consisting of Sheets 1 of 15 through 15 of 15, dated 02-06-20
- Drainage Report – Oak Tree by Sparaco & Youngblood, dated 02-06-20
- Offsite Drainage Area Map, dated 09-19-19
- Preliminary, Existing Onsite Conditions Area Map for Oak Tree Apartments, dated 09-19-19
- Developed Conditions Drainage Map for Oak Tree Apartments, dated 02-06-20
- All Documents prepared by Sparaco & Youngblood, PLLC

Our office has advised the Village of concerns regarding the impact of the proposed drainage system on the adjacent and abutting lands within the Village of West Haverstraw and more particularly the roadways and residents on Barnes Drive and Captain Shankey Drive.

We note that a portion of the site that presently drains to the West is now diverted to the storm drainage structures that flow toward areas in the Village. Further, natural drainage from the site flows over land (sheet flow) toward the homes on Barnes Drive. The proposal indicates the drainage to be concentrated and directed to the storm drainage structures in the Village.

We request that an analysis of the existing storm-drainage structure which will receive this flow and located on Barnes Drive and Captain Shankey drive be provided. The analysis should include all contributing areas including the proposed Oak Tree Apartments as well as drainage contributed from the "Shoprite Shopping Center" and any other area.

The analysis should include the capacity of the existing storm drainage as well as any required improvements to the existing system to ensure it will have sufficient capacity as necessary to avoid any damage to the surrounding neighborhood and not be overloaded.

There are further concerns regarding how the developer will maintain the Detention Infiltration System including a description of access for equipment to the system. We also recommend guarantees that should the detention system not be properly maintained, then the Town would provide necessary maintenance to avoid any damage to the downstream areas.

Please forward any response together with the requested information to all copied on this letter at your earliest convenience.

Sincerely,

**MICHAEL SHILALE ARCHITECTS, LLP**



John P. Cirilli, AIA, LEED, Partner

Encl:

CC: Mayor Robert D'Amelio (VOWH)  
Katie Welsh (VOWH)  
John Edwards, Esq. (VOWH)  
Catherine Kopf (VOWH)  
Fred Viohl (VOWH)  
Rockland County Planning Department  
Rockland County Drainage Agency  
Michael Shilale, AIA, LEED, CPHC (MSA)

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