GROVE

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November 8, 2022

Mr. Doug Finch, Town Manager
Town of Canandaigua
5440 Routes 5 & 20 West
Canandaigua, New York 14424

RE: Parrish Residence
       Hickox Rd
       TM # 96.00-1-50.100

Dear Mr. Fitch,

This letter includes responses to MRB's project review letter dated November 4, 2022.

1. The water service crossing the road shall be done in conformance with Town Highway and Water Department requirements. A note has been added to the plan. ROW width has been added to the plan.
2. The propane tank will be buried. The tank was moved slightly easterly so that the shallow swale will not interfere with the propane tank placement.
3. General note #3 was revised.
4. I do not agree that the swale needs to have a flow spreader or other suitable device installed at the terminus. The swale is a very shallow relative low point around the house, required by building code so that water does not flow toward the building foundation, and will only conduct water during heavy rain events. The terminus of the swale is at the exiting swale along the hedgerow, so it doesn't warrant converting to sheet flow just to have it immediately enter the existing swale. There is no minimum depth for this low point across the front of the house, as it is just the area where the slope transitions from 10% easterly to 3% westerly.
5. The roof drainage pipe to the rain garden was revised to show outlet protection before entering the rain garden. The top of bank elevation is noted in the rain garden section detail at 959.5'. With the proposed rain garden being located in a flat area, a maximum ponding depth of 6", a spillway elevation at 959.5', and site plan contour increments of 2', there are no proposed contours (958' or 960') that will occur in the area of the rain garden.
6. A leader was added that directs the reader's eye to the rain garden notes located elsewhere on the page.
7. The rain garden size was checked and found to be too small for a proposed house with a roof area of 5130 sf. The rain garden has been adjusted to 400 sf and a note has been added stating that a minimum of 16 plantings shall be installed in the rain garden. Rain garden sizing calculations are attached. Soil tests were

performed on May 26, 2022 in the area of the rain garden, and that soil investigation information has been added to the plan. At an infiltration rate of 2" per hour, the rain garden at maximum capacity should completely drain within 15 hours.

Please let me know if you have any questions, comments or require additional information.

Sincerely,

William J. Grove, P.E.

Enc.   Revised plans dated 11/8/22

Cc: Shawna Bonshak, Planner
               Lance Brabant, MRB Group

▷ ROOF AREA = 5130 SF

1. CALCULATE WQv

$$WQv = \frac{P \cdot R_v \cdot A}{12}$$

$P = 90\% \text{ RAINFALL} = 0.9"$
$R_v = 0.05 + 0.009 (I) = 0.95$
$A = 5130 \text{ SF}$

$$WQv = \frac{0.9 \cdot 0.95 \cdot 5130}{12} = 365.5 \text{ ft}^3 \blacktriangleleft$$

2. CALCULATE RAIN GARDEN STORAGE

- PROPOSE 400 SF RAIN GARDEN $= A_{RG}$
- 18" SOIL MEDIA DEPTH $= D_{SM}$
- 6" DRAINAGE MEDIA DEPTH $= D_{DL}$
- STORAGE MEDIA POROSITY = 0.2 (ASSUMED) $= P_{SM}$
- DRAINAGE MEDIA POROSITY = 0.4 (ASSUMED) $= P_{DL}$
- PONDING DEPTH = 6" = 0.5' $= D_P$

$V_{SM} = A_{RG} \times D_{SM} \times P_{SM}$ VOLUME OF STORAGE MEDIA

$V_{SM} = 400 \text{ ft}^2 \times 1.5 \text{ ft} \times 0.2$

$V_{SM} = 120 \text{ ft}^3$ ◄

$V_{DL} = A_{RG} \times D_{DL} \times P_{DL}$ VOLUME OF DRAINAGE LAYER

$V_{DL} = 400 \text{ ft}^2 \times 0.5 \text{ ft} \times 0.4$

$V_{DL} = 80 \text{ ft}^3$ ◄

TOTAL STORAGE VOLUME $= V_{SM} + V_{DL} + (D_P \times A_{RG})$
$= 120 \text{ ft}^3 + 80 \text{ ft}^3 + (0.5' \times 400)$
$= 400 \text{ ft}^3$ ◄

$WQv = 365.5 \text{ ft}^3 \leq 400 \text{ ft}^3$ ∴ 400 SF RAIN GARDEN EXCEEDS THE WQv REQUIREMENT