

September 16, 2022

Loretta Taylor, Chairperson
Members of the Planning Board
Town of Cortlandt Planning Board
1 Heady Street
Cortlandt Manor, New York 10567



**RE: Engineering Review
PB 2022-3 Application of James Connolly
49 Dutch Street
Town of Cortlandt, Westchester County, New York
LaBella Project #2221772.01**

Ms. Taylor and Members of the Planning Board,

LaBella Associates, DPC (LaBella) has conducted an engineering review of the submitted engineering plans for PB 2022-3 Application of James Connolly for Preliminary & Final Subdivision approval for a 2-lot minor subdivision of an approximately 1.49-acre parcel of property located at 49 Dutch Street and designated on the Town of Cortlandt Tax Maps as Section 54.12, Block 4, Lot 22, and made a subsequent visit to the site on Thursday, September 15, 2022. LaBella offers the following information for your use in your decision:

1. Ensure that the applicant provides a current Westchester County Department of Health (WCDOH) approval for the installation of the on-site wastewater treatment system (OWTS).
2. All proposed import fill must be tested and certified as unrestricted, suitable for residential use in accordance with Town Policy. Certification must be provided by a licensed professional. All certifications shall be addressed "Joseph M. Fusillo, PE, ENV SP". All soil analytics and reports will be forwarded to LaBella for review and approval.
3. Ensure that the applicant makes application for a road opening permit through the Department of Environmental Services.
4. Applicant understands that, in accordance with Chapter 283 of the Town Code, "All trees which fail to survive for a period of two (2) calendar years following planting shall be replaced by the permit holder at no expense to the Town or the owner of the land, if other than the holder of the permit. Said replacement shall be within 60 days following written demand for such replacement from the Director of Technical Services or within an extended period of time as may be specified."
5. Prior to the issuance of the Certificate of Occupancy (C.O.), the Town will require a certification letter from a NYS Engineer that the completed site work and drainage improvements will not cause an adverse impact to adjoining or downstream properties.
6. The applicant shall install a trench drain at the foot of the driveway in the gravel swale area with a nominal size of 5" x 5" x width of drive. Applicant shall ensure that routine cleaning and maintenance are provided.
7. The applicant shall submit an as-built foundation survey to the Town prior to framing.



8. The applicant shall submit an as-built centerline driveway profile with slopes/grades to the Town prior to paving.
9. Based upon the statements received from the adjoining property owners, LaBella was instructed by the Board to conduct a site visit and stormwater review.
10. Based upon the attached calculations, the increase in flow due to the increase in impervious area is negligible and the existing storm drainage system is sized adequately to handle it. The applicant has included Cultec Infiltration Basins to collect roof runoff and therefore the roof runoff has not been included in the calculations.

Local Law 5 Review – Engineer’s Perspective McManus Drive

1. Current private drive would have to be excavated and all materials disposed of.
2. Road replacement would have to have a minimum width of 20 feet which would in-turn cause the removal of 8 – 10 large diameter trees. Even if the road was to be “snaked” around the existing large diameter trees, the cutting of the roots to a minimum of 5-feet beyond the pavement would eventually kill the trees subsequently.
3. A long water service would have to be installed from Dutch Drive to the location of the building. WCDOH and/or the Town may require the applicant to install a 6-inch diameter pipe along with a blow-off hydrant at the end or “loop” the pipe back down to Dutch Drive. However, if a hydrant is to be required, the minimum road width must be 26 feet in accordance with D103.1 of the 2020 Fire Code of NYS
4. In accordance with the 2020 Fire Code of NYS, Section D103.4 Dead Ends, Table D103.4, turnarounds are required on roads in excess of 150 feet. The required turnaround shall be a 120-foot Hammerhead, 60-foot “Y” or 96-foot diameter cul de sac in accordance with Figure D103.1.

Should you have any questions, comments and/or concerns, please do not hesitate to contact me at your convenience.

Respectfully submitted,

LaBella Associates

Joseph M. Fusillo, PE, ENV SP
Senior Civil Engineer, Regional Leader

Encl: runoff calculations, pipe capacity

$$Q = ciA$$

$$C_{ex} = 0.35 \text{ (APPENDIX 20.A, CERM 10th ED., LAWNS, POOR DRAINAGE, > 7% SLOPE)}$$

$$C_p = 0.85 \text{ (DRIVEWAYS, WALKWAYS)}$$

$$i = 0.24 \text{ in/hr (10-YR, 24 HR EVENT; ny-idt-projections. nccc.cornell.edu)}$$

$$A = 31,000 \text{ sf}$$

EXISTING:

$$Q = ciA = \frac{(0.35)(0.24 \text{ in/hr})(31,000 \text{ sf})}{43,200} = 0.06 \text{ cfs}$$

PROPOSED:

$$Q = ciA = \frac{(0.85)(0.24 \text{ in/hr})(31,000 \text{ sf})}{43,200} = 0.15 \text{ cfs}$$

* $0.15 \text{ cfs} - 0.06 \text{ cfs} = 0.09 \text{ cfs}$ INCREASE IF ENTIRE LOT IS PAVED

$$Q = ciA = \frac{(0.85)(0.24 \text{ in/hr})(3,510 \text{ sf})}{43,200} = \underline{\underline{0.02 \text{ cfs}}}$$

0.02 cfs INCREASE IN DRIVEWAY

$$\therefore Q_{ex} + Q_p = 0.06 \text{ cfs} + 0.02 \text{ cfs} = \boxed{0.08 \text{ cfs}}$$

EXISTING STORM DRAINAGE

15-in HDPE @ 0.60% SLOPE

$n = 0.009$ (CERM 10th ED., APPENDIX 19.A)

$Q = VA$

$V = 17 \text{ fps}$ (CERM 10th ED., APPENDIX 19.B)

$A = 0.6318 \text{ ft}^2$ (CERM 10th ED., APPENDIX 16.A, $e/D = 0.75$)

$Q = VA = (17 \text{ ft/s})(0.6318 \text{ ft}^2) = 10.7 \text{ cfs}$

∴ 15-in HDPE, 75% FULL @ 0.60% SLOPE CAN CARRY 10.7 cfs. OF FLOW.

- CURRENT RUNOFF FROM PROPERTY = 0.06 cfs
- PROPOSED ADDITIONAL RUNOFF = 0.02 cfs
- NO CURRENT HISTORY OF FLOODING OR BACKUP
- 0.02 cfs IS NEGLIGIBLE