

NORTHEASTERN CONNECTICUT COUNCIL OF GOVERNMENTS

ENGINEERING PLAN REVIEW PERTAINING TO 4-LOT SUBDIVISION (ASSESSOR'S MAP 7, LOT 12-1) TRIPP HOLLOW ROAD BROOKLYN, CT (September 5, 2020)

The comments contained herein pertain to my review of the revisions made to plans, consisting of eight (8) sheets, entitled "Subdivision Application, 4 Lot Subdivision, Tripp Hollow Road, Brooklyn, Connecticut, Property Owner/Applicant, Square One Building Associates," prepared by Archer Surveying, LLC and CLA Engineers, Inc., dated September 1, 2020. Most recent Town of Brooklyn Zoning, Subdivision and Wetlands Regulations and Public Improvement Specifications were researched for this review as well as the engineer's application of recognized civil engineering practice.

SHEET 2 of 8 – EXISTING CONDITION PLAN

1. The plans I reviewed did not bear the signature of the certified soil scientist.
2. Note 2 under "Notes" is incorrect and must be corrected to identify the correct town, assessor's map and lot number.
3. Note 3 under "Notes" needs correcting because those named have nothing to do with this project.
4. Due to the discrepancies in Notes 2 and 3 under "Notes," Note 1 needs to be verified to be sure everything stated in it is applicable to this project. If it is not, it needs to be corrected.
5. The sequential numbering of wetland flags appears to be incorrect on Lot 12-1 and the flag line that skirts the property line common to Lot No. 12 and 12-1 and then terminates on Lot No. 7. The flag line that begins with #1c and terminates at a stone wall with #18, appears to be numbered correctly, however, why isn't this line connected to the end of the first flag line mentioned in this paragraph? All flags need to be numbered.
6. The wetland areas need labeling. Without any notation it is unclear where they exist on which side of the flag line.
7. USDA NRCS soil types, with their boundaries, need to be shown on the plan.

SHEET 3 of 8 – SUBDIVISION PLAN

1. Note 6 under "NOTES" states that the parcel is not within 500' of a town line. This note needs to be revised to state that the parcel IS within 500' of a town line (Canterbury). Considering this, have the

plans been submitted to the town of Canterbury for review and comment by their respective commissions?

2. Note 8 under "NOTES" states that wetlands shown on Sheet Nos. 2 and 5 of 8 were delineated and located by Archer Surveying, LLC (AS). I am unaware that AS has a certified soil scientist on staff that could do this. If this is not the case, the certified soil scientist who delineated the wetlands needs to be identified on the plan.
3. The front property line of proposed Lot 12-8 does not appear to be in conformity with Subdivision Regulation 10.6. The first paragraph of this regulation states "*Existing Streets: Proposed subdivisions abutting an existing Town street shall provide for proper widening of the right-of-way of such street to the width appropriate for the classification give such street in accordance with the Town Plan of Development.*" To conform to this regulation, the distance from the centerline of Tripp Hollow Road to the property line needs to be no more than 25' (see Public Improvement Specifications Figure No. 7, "Improvements to Existing Town Roads," on Page 29). The property line orientation in question needs verification by the Applicant's land surveyor and, if necessary, be brought into compliance with the regulation and the lot area recalculated to ensure compliance with minimum lot size.
4. At the northeast corner of Lot 12-8 there is a delineation of a 5,700± sq. ft. parcel. Is this part of Lot 12-8 and included in the 90,983± sq. ft. lot area? If not, why has this delineation been made and its purpose needs to be noted.

SHEET 4 of 8 – GRADING & CONCEPT DESIGN

1. Additional silt fence is needed along the north side of the entire length of common driveway.
2. How is the entrance to the gravel driveway serving Lot No. 12-9 going to be protected from erosion caused by runoff from the common driveway, which is shown to have a 4% grade toward this driveway? From proposed grading and existing contour lines depicted on the plan it appears that the flow could become a shallow concentrated flow during heavy storm events and cause soil erosion.

SHEET 5 of 8 – GRADING & CONCEPT DESIGN

1. The area of the wetland eliminated by the proposed driveway construction and culvert installation with riprap needs to be noted on the plan.
2. The majority of wetland flag numbers are missing. Some sequential numbering of wetland flags is incorrect. All wetland flag numbers need to be verified and noted on the plans where they appear.
3. Additional silt fence needs to be extended along the north side of the common driveway, easterly, from STA 3+00 to STA 5+85±.
4. How is the entrance to the gravel driveway serving Lot No. 12-10 going to be protected from erosion caused by runoff from the common driveway, which is shown to have a 8%± grade toward this driveway? From proposed grading and existing contour lines depicted on the plan it appears that the flow could become a shallow concentrated flow during heavy storm events and cause soil erosion.
5. The common driveway wetland crossing cross-section indicates that the twin 15" HDPE pipes will be laid on the existing ground without any bedding or other special preparation. How was it determined that the existing ground in the wetland can provide adequate support without for the pipes without them deforming when subjected to dead and live loads (H20)? What is the consistency of the existing ground?

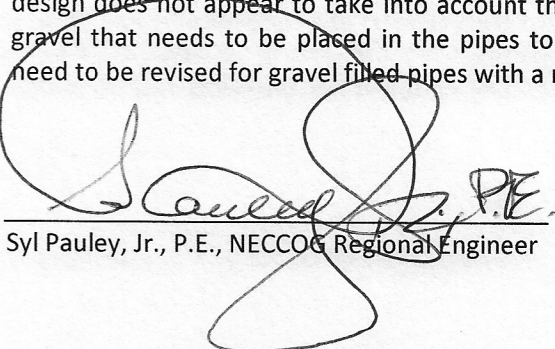
6. The twin pipes need to have a gravel bottom to connect the wildlife corridor of wetlands remaining on each side of the proposed common driveway. A detail showing this will need to be added to the Construction Details plan.
7. Flared end sections are needed on the ends of each 15" HDPE pipe to improve flow into and out of the pipes as well as protecting the ends of the pipe from scour. A flared end detail is needed to be included on the Construction Details plan.
8. A construction detail showing the separation between the 15" pipes needs to be included on the Construction Details plan.
9. Underground electric, telephone and cable service is shown on the plan crossing the proposed twin 15" HDPE pipes. How this crossing will be made is not shown in the wetlands crossing driveway cross-section. If the services are installed over the pipes, there appears to only be about 16" cover over the crowns of the pipes for that installation. If service lines are to be enclosed in a conduit, telephone and cable cannot be in the same conduit as electric. The driveway wetland crossing cross-section needs modification to show how underground utilities will cross the twin pipes.

SHEET 7 of 8 – CONSTRUCTION DETAILS

1. The "Typical Driveway Cross Section" shown is for a paved driveway. The detail needs to be changed to a gravel driveway. The gradation of the gravel needs to be specified, too.
2. The "Drainage Pipe Bedding Detail" specifies 3/4" crushed stone for bedding and fill around the twin pipes up to the underside of the gravel surface of the driveway. Change this to a well-graded gravel material to prevent water from flowing under and around the outside of the pipe, due to large spaces between stones. Also, change the pipe inside diameter to 15".

DRAINAGE CALCULATIONS

1. It is customary for culverts crossing a road to be designed to accommodate a 25-year storm. The twin 15" cross-culvert drainage calculations presented for review are for a 10-year storm. Furthermore, the design does not appear to take into account the decrease in the area of the pipe due to the volume of gravel that needs to be placed in the pipes to allow for the passage of wildlife. The pipe calculations need to be revised for gravel filled pipes with a minimum 25-year design storm.

By:  P.E.
Syl Pauley, Jr., P.E., NECCOG Regional Engineer