ANCHOR
a Barton&Loguidice company

October 28, 2020

Mr. Don Nolte, Engineering Operations Manager
Town of Cheshire
84 South Main Street
Cheshire, CT 06410

Re: Subdivision & Storm Drainage Review
Orchard View Subdivision
Academy Road & Wiese Road, Cheshire, CT

Dear Mr. Nolte:

Anchor Engineering Services, Inc. received the following information prepared by Milone & MacBroom:

- Plan set sheets 1-17 dated October 14, 2020.
- Drainage Report dated September 25, 2020.

Based on a review of the submitted information, we offer the following comments:

1. There is an existing dam on lot 3 along the property line with lot 4 which controls the discharge from the pond on lots 1-3. The dam should be evaluated and the following should be provided:
    - Last inspection report;
    - List of any necessary repairs. There appears to be a scour hole in the existing riprap and large broken limbs immediately downstream. These items should be addressed in accordance with the recommendations of the engineer of record;
    - Schedule of required maintenance;
    - Name of who will be responsible for the maintenance of the dam;
    - Any necessary easement(s) for access and maintenance of the dam.
2. Basin 310 is proposed within the 100 year floodplain with a bottom elevation at 201.0 when the adjacent brook elevation is 198-202. This basin is proposed with a bottom that is a 6'-11' cut from the existing grade. Water was not found in the upgradient test pits but they are located at an elevation 10 foot higher than the area of the proposed basin and were 8-9 feet deep. If this basin is to remain in this area:
    - The elevation of high groundwater within the area of the basin should be determined;
    - An underdrain should be installed since the lowest outlet proposed from the basin is 2.4 feet above the bottom of the basin and no infiltration is anticipated;
    - The basin depth is 7 feet with an additional 7 foot slope on the south side of the basin toward the proposed house. Fall protection should be considered;
    - Consider armouring the outside slope of Detention Basin 310 with riprap/geotextile to discourage future vegetation on this berm within the floodplain;
    - The cut and fill volumes proposed within the floodplain should balance.

3. Verify the lengths and types of weirs as input into the stormwater analyses:
    - What type of weir is "type 1" in the analysis?;
    - DET 310 – should this length of weir be 14 feet total (11.0 feet across the V notches and an additional 3 feet)?
    - Basin 320 – two standpipes are proposed, weir types in analysis are "1" and "rect". Recommend one larger standpipe or other type of structure to eliminate having two structures.
    - Basin 330/emergency spillways are trapezoidal weirs not broad;
4. An underdrain should also be installed at basins:
    - Basin 320 – The bottom is proposed with an average 6 foot cut into soils identified as atypical ledge and the outlet is 2.5 feet above the bottom of the basin to provide WQV storage;
    - Basin 330 – The outlet is proposed 2.5 feet above the bottom of the basin and the soils are not conducive to infiltration;
    - Basin 110 - The soils/groundwater elevation within the basin area should be reviewed during construction to determine need for an underdrain.
5. It is recommended that erosion control blankets be installed on all slopes greater than 3:1 and on the slopes of the detention basins.
6. A right to drain to the Town of Cheshire should be acquired and shown from Basin 110 to the adjacent property to the east. The existing pipe on the adjacent property should be shown on the plans.
7. A drainage easement (25 foot wide) should be included to the Town of Cheshire for the existing 15" diameter pipe and flared end outlet at the northeast corner of the property.
8. Once the roadway is accepted by the Town, the storm drainage will be owned by the Town. Therefore it is recommended that the proposed drainage easements shown to the Homeowner's Association should also be granted to the Town of Cheshire. The Town's drainage easement would grant Town agents the right of access for inspection purposes to determine whether the area is being properly maintained, and to sample outfall water quality. If deficiencies are present (and after proper notice to correct any problems), the Town would then have the right to take corrective action and recover expenses from including attorney's fees. The Town will have the right, without the obligation to maintain the drainage systems if the Association fails to do so, or if required in an emergency to protect public safety.
9. There is an existing 12" CM pipe located across lots 20 and 21 which collects flow from the wetland corridor on the adjacent properties and outlets to the Town owned storm drainage in Wiese Road. Since Basin 110 is proposed to collect roadway drainage and outlets to this wetland corridor, the Homeowner's Association should have a drainage easement for access and maintenance. The esement shall also be granted to the Town of Cheshire for inspection purposes (See #7 above.).

    We recommend that the piped and filled wetland over the easterly portions of Lots 20 & 21 be considered for restoration as mitigation. It appears that a portion of the pipe and associated fill could be removed and a flared end or headwall installed at the street line.

This drain, which is not a Town drain and does not meet the minimum 15" diameter would remain a private, and the responsibility of the Association to maintain.

10. A paved apron and graveled access to the detention basins 110 & 310 should be provided for maintenance purposes.
11. The gutter flow spread at catch basins 11/12 and 17/18 are too large.
12. There are several building drains outleting close to the sidewalk, which may cause icing (especially if combined with curtain drains), and should be relocated. Footing drain connections into the road drainage system may be allowed under certain circumstances. Roof leader drains should be indicated on the conceptual plans if they are not proposed to be discharge at house corners.
13. We recommend that the proposed building drains that pass within 50' feet down-gradient of a proposed primary or reserve leaching area be inspected by the engineer at the time of septic system installations to ensure that they are water-tight and cannot possibly convey effluent into the Town drainage system in the future. These pipe locations should be indicated on the septic as-builts.
14. Sightline distances should be annotated with minimum distance dimensions based upon an actual profile indicated. Provide sight line easements over lots at both proposed roadway intersections. It appears that the removal of a few trees that are overhanging the road the north of the Wiese Road may be required.
15. Verify that septic locations meet the required setbacks from property lines (lots 2, 4, 6, 12, 15 & 17) and for footing drain (lot 10).
16. Provide concrete ramp detail with detectable warning pad.
17. The headings for the dimensions of the riprap splash pad need to be added to the detail.
18. Add baseline geometry information to the plan and profiles.
19. Label the pavement radii at intersections and for the cul-de-sac.
20. There are no non-encroachment limits or markers proposed on the plan.
21. A proposed concrete monument should be added to the SE corner of Lot 20.
22. Underdrains may be needed in the roadway in the areas of cut. Add an underdrain detail and a note that the requirement for underdrains will be determined in the field by the Town.
23. An Encroachment Permit from CT DOT will be required for the proposed work on Academy Road. It is recommended that coordination with DOT be ongoing during the Town permitting process for any required modifications.
24. The eastern corner of the proposed roadway at Academy Road is very close to an existing guide rail end anchorage and includes fill in this area. Confirm no relocation will be required.
25. Note on the plans the end of the new road's concrete curb at Academy Road and provide a curb transition detail since there is no curbing on Academy Road.
26. Include a detail for concrete curb.
27. Sediment filter fence should be added downgradient of the proposed basin DET 110.
28. Does the area used to size the sediment traps include all proposed cleared/disturbed areas shown on the plans? Please note that one of the sediment traps is mislabeled as TST #2 on sheet SE-1.
29. An additional sediment trap should be included on the Erosion and Sediment Control Plan sized for the area disturbed from Academy Road to the high point to the north.

30. A silt sack should be provided in the existing catch basin on Wiese Road north of the proposed roadway.
31. A detail for a detention basin outlet control sediment filters to remain in place during the construction period should be provided.
32. A sequence of construction should be added to the plans.
33. Please add the wetland flag numbers to Sheets SP-1, SP-2 and SE-1.
34. Adjoiner information and street addresses should be added to the site development plans.
35. Street excavation permits are required for all utility connections and driveways within a Town R.O.W., waivers of claim for any proposed private drain connections into the public drainage system is required along with documentation of proper separation from any primary or reserve septic leaching area.
36. Proposed streetlights should be provided by the developer at intersections, curves, and cul-de-sac per Town streetlight policy and specifications.
37. The plans and report submitted for review should be signed and sealed by a CT licensed professional engineer. The record map and the existing conditions plan need to certified by a CT licensed land surveyor.

If you have any questions regarding the above comments, please don't hesitate to contact me at (860) 633-8770.

Sincerely,

Denise P. Lord, P.E.
Senior Civil Engineer