

March 2, 2022

Ms. Michelle Tyler
Randolph Planning Board
Town Planner
41 South Main Street
Randolph, MA 02368

RE: Nitsch Project #11123.8
Perry Estates
Site Plan Review
Randolph, MA

Dear Ms. Tyler:

Nitsch Engineering reviewed the revised plan set for the proposed Perry Estates subdivision located at 297 Chestnut Street in Randolph, Massachusetts (the Town).

Nitsch Engineering received the following documents:

1. A plan entitled, "Perry Estates 297 Chestnut Street Subdivision," dated December 20, 2021, prepared by Munden Engineering (6 Sheets); and
2. A letter entitled, "Modification to Approved Definitive Subdivision Submittal" dated January 11, 2022, prepared by Munden Engineering; and
3. A document entitled, "Form C2 Request for Modification, Recission or Amendment to a Definitive Subdivision Plan" dated January 11, 2021 (2022), prepared by Munden Engineering; and
4. A document entitled, "Form D Request for Waivers in a Definitive Subdivision Plan" dated January 10, 2022, prepared by Munden Engineering.

Nitsch Engineering reviewed this information to determine conformance to the Town of Randolph Planning Board Rules and Regulations governing the Subdivision of Land, effective January 28, 2020, and Procedural rules of the Planning Board of Randolph, Massachusetts, the Massachusetts Department of Environmental Protection's (MassDEP) Stormwater Handbook (current edition), and for standard engineering practice.

OVERVIEW

The Applicant proposes to subdivide an existing parcel into two (2) lots, 8-B1 and 8-B2, and modify the existing roadway to provide access to both parcels.

The existing home and all utility connections at 297 Chestnut Street are to remain. The existing roadway includes a 6" sanitary sewer main and two sewer manholes that are also to remain. The Applicant proposes to install a new sanitary sewer lateral and water lateral for the proposed single-family dwelling at lot 8-B1. The sanitary sewer lateral will connect to the existing 6" sanitary in the road and the water service will connect to the 6" water main on Chestnut Street. In addition, the Applicant proposes stormwater infiltration chambers with an overflow to a perforated pipe and stone system. Minor tree clearing will occur within the site to accommodate the road, utility, and residential construction.

The site is within the Residential Single Family High Density Zoning District. The site does not appear to be within a Priority or Estimated Seasonal Habitat, Zone II, Flood Zone or other protected areas.

WAIVERS

The Applicant is requesting the following waivers, which are also listed on Sheet 4 of the plan set:

1. Section VIII.B4e states that all corners of street intersections shall be rounded or cut back to provide for a minimum radius.
2. Section VIII.B5 states that ways shall be laid out to widths of forty feet (40') or fifty feet (50') based on type. Ways of greater width may be required by the Board where traffic or other considerations warrant.
3. Section VIII.B6 states that streets having a grade of less than one percent (1%) shall be approved only in the Board's discretion.
4. Section VIII.D3 states that the design storm should have a rainfall frequency of occurrence of once in ten (10) years shall be used for design computations for street drainage.
5. Section VIII.D4 states that runoff for any area shall be calculated using the Rational Formula.
6. Section VIII.D6 states that all storm drains shall be reinforced concrete except that in off-street locations bituminous coated, galvanized, corrugated metal pipe or pipe arch may be used if approved by the Planning Board. All pipes shall conform to the Massachusetts Highway Department Standard Specifications for Highstreets and Bridges.
7. Section VIII.D19 states that drainage facilities in the form of detention or retention basins or subsurface infiltration systems may not be located within any street right-of-way, nor on any proposed building lot, nor within any open space area intended to be conveyed to the Town. Such facilities, if required as part of a subdivision, shall be located on separate parcels which are to be retained by the Applicant or conveyed to a successor organization.
8. Section VIII.BE3a states that all subdivisions shall provide for the installation of water mains, including all related apparatus, and fire hydrants to meet the requirements of fire safety and of anticipated water consumption.
9. Section VIII.BE4a requires that hydrants shall be provided every five hundred running feet (500') or portion thereof on one (1) side of each street unless a greater distance is approved by the Fire Department in writing.
10. Section VIII.H1 thru H9 include design criteria related to sidewalks.
11. Section VIII.I includes design criteria related to curbing.
12. Section VIII.M covers requirements for street trees.

PLANNING BOARD SITE PLAN RULES AND REGULATIONS

The plans are in general conformance with the Rules and Regulations except for the following.

SITE PLAN CONTENT

1. Section V.A3 requires the Applicant submit two (2) sets of drainage calculations signed and stamped by a Registered Professional Engineer. Nitsch recommends the Applicant submit the required information.
2. Section V.A6 requires the Applicant submit a certified list of abutters within 300 feet of the subject property. Nitsch recommends the Applicant submit the required information.

3. Section V.D1 requires the plans be drawn to a horizontal scale of 1"=40' and vertical scale of 1"=4'. In addition it requires a cover sheet that includes a locus at a scale of 1"=800', subdivision name, zoning compliance table, etc. The plans appear to be drawn at a horizontal scale of 1"=20' and the profile is not to scale, Nitsch recommends the Applicant request a waiver for this requirement, or update the plans to be the scale required by the regulations. Nitsch also recommends the Applicant submit a cover sheet with all required information in section V.D1.
4. Section VIII.BE3a states that all subdivisions shall provide for the installation of water mains, including all related apparatus, and fire hydrants to meet the requirements of fire safety and of anticipated water consumption. A waiver has been requested for this work. The proposed water service from Lot 8 B1 appears to be approximately 220 feet in length and the existing service to Lot 8 B2 is approximately 400 feet. The Applicant should comment on the length of the water services and explain the decision to not install a new water main. In addition, Nitsch recommends the Applicant confirm with the Randolph Fire Department that an additional Hydrant on the proposed roadway is not needed.
5. Section VIII.B4f states that intersections greater or less than ninety degrees, the radius on each corner of the intersection will be increased one foot for each two degrees greater or less than ninety degrees. Nitsch recommends the Applicant request a waiver for this section.
6. Section VIII.B7a states that any street designed to be a permanent dead-end shall be not less than 250' and shall have a paved turn-around at the closed end as specified below. In addition, Section VIII.B7b states that the length of the dead-end street shall be measured from the intersection with a street providing alternate access to the beginning of the cul-de-sac. Nitsch recommends that the Applicant confirm the 250' minimum requirement is met per the standard.
7. Section VIII.C2 requires that secondary streets in Residential Zoning Districts shall have a minimum radius for a circular turnaround of 50 feet. Nitsch recommends the Applicant submit a fire truck turning radius plan for Nitsch and the Randolph Fire Department to review.
8. Section VIII.D12 states that the full length of pipe, except the bell, must rest upon undisturbed soil except as hereinafter specified. The '*12" storm drainpipe trench detail*' on Sheet 5 shows the pipe laid on 6" of $\frac{3}{4}$ " crushed stone. Nitsch recommends the Applicant revise the detail to show the pipe resting on undisturbed soil or explain why the 6" of crushed stone is better suited for design. In addition, there does not appear to be 12" drainpipes used in the design, therefore, Nitsch recommends updating the detail to reflect the size of pipes used in the design.
9. Section VIII.E3f requires a 1000 gallon per minute minimum flow shall be required for all new subdivisions. Nitsch recommends the Applicant confirm this requirement is met.
10. Section VIII.E4c requires all residential units shall be serviced by a water supply that provides a minimum flow in gallons per minute at 20 psi or current ISO and NFPA standards, whichever is more restrictive. In addition, Nitsch recommends the Applicant confirm the minimum flow requirement is met.
11. Section VIII.K states that prior to submission of a Definitive Plan to the Planning Board, the Applicant should contact the local postmaster to determine the location of collection units and note the approved location on the plans. Nitsch recommends the Applicant confirm this was completed.

DRAINAGE

12. Section VIII.D1 states that each drainage plan submitted for approval shall be accompanied by a design analysis prepared by a qualified Registered Professional Civil Engineer. The analysis shall clearly indicate all the computations for the drain including determination of pipe size and strength, and a statement concerning the disposition of flow. Nitsch recommends that the Applicant provide storm calculations for the 25- and 100-year events and provide analysis indicating that there are no local or downstream impacts during these storms. Nitsch recommends the Applicant submit pipe sizing calculations, or the Applicant should submit a waiver.
13. Section VIII.D2 states that a drainage area map shall be prepared for each section of a subdivision and all other watershed areas tributary to the subdivision drainage system. Nitsch recommends the Applicant submit a drainage area map with the drainage calculations.
14. Section VIII.D5 states that the proper drain size shall be calculated by using the "Manning's Formula" with a Kutter's n value of 0.013 for concrete pipe, and 0.024 for corrugated metal pipe. Nitsch recommends the Applicant provide drainage calculations.
15. Section VIII.D7 states that all pipes shall be laid out on a slope so that the minimum velocity with the pipe flowing full shall be two feet per second (2.0 ft/sec). Please confirm the pipes were designed to meet this standard.
16. Section VIII.D9a states that drain inlets located in streets shall be catch basins with a sump 24" or more lower than the invert of the outlet pipe. Nitsch recommends the Applicant confirm this requirement is met and update the detail to show at least a 24" sump.
17. Section VIII.D9d states that catch basins shall be 4 feet in diameter. Nitsch recommends the Applicant update the detail to show the dimension of the catch basin and thickness of the catch basin walls.
18. Section IX.D requires the Applicant submit a long-term Operation & Maintenance plan for stormwater management. Nitsch recommends the Applicant provide an Operation & Maintenance plan.

GENERAL COMMENTS

19. The proposed CB rim does not appear to be at a low point. The proposed Stormceptor DMH located 10 feet from the CB has a rim elevation of 197.10' whereas the CB has an elevation of 197.60'. Please confirm this is the design intent.
20. The stormwater calculations in the Stormwater Report provide calculations for the 2 and 10-year storms. Nitsch recommends the Applicant also run the 25 and 100-year storm and include the perforated pipe & stone in the model.
21. Nitsch recommends the Applicant add proposed rim elevations to the existing CB and the existing SMH to remain in the roadway.
22. The Filtrex Catch Basin Inlet Protection detail is duplicated on Sheet 6.
23. Nitsch recommends adding a driveway curb cut detail.

24. Please update the callouts for the water service and sanitary sewer service to point to the correct service.
25. The proposed 1" water service should maintain a minimum 10' offset from the sanitary sewer line within the proposed roadway.
26. Nitsch recommends the Applicant submit a wye-connection detail for the connection of the 6" sanitary lateral to the main.
27. Nitsch recommends the Applicant submit a sanitary sewer cleanout detail.
28. Section 200-10.C of the zoning regulations state that in a residential district, no one-family dwelling house shall cover more than twenty percent of the lot area. Please confirm that this requirement is met.
29. The proposed roadway appears to travel along the eastern property line. Please refer to the Board as to whether this is acceptable.
30. Nitsch recommends the Applicant submit a curb cut detail for the driveways. The current layout does not include radii at the curb openings. The driveway for Lot 8 B1 may be difficult to access without first turning around in the cul-de-sac. Nitsch recommends the Applicant submit a vehicle turning radius diagram showing a passenger car entering from the road and pulling into the driveway of Lot 8 B1.
31. There appears to be an existing sidewalk on Chestnut Street that will be affected by the widened roadway layout. Nitsch recommends the Applicant clearly show the extents by which the sidewalk will be altered and confirm with the Board that this is acceptable.

RECOMMENDATION

The plans and calculations appear to conform to the Town of Randolph Subdivision Regulations and Procedural Rules of the Planning Board of the Town of Randolph and the Stormwater Handbook, except as noted. Nitsch Engineering recommends that the Applicant revise and re-submit the plan set to include additional items noted in the letter or requested by the Board for review. If the Board has any questions, please call.

Very truly yours,

Nitsch Engineering, Inc.



Brian Biagini, EIT
Senior Project Designer

Approved by:



Steven Ventresca, PE, LEED AP BD+C
Senior Project Manager

BB/SV