

CHAPIN ROAD EXTENSION NEWTON, MASSACHUSETTS

1.0 PROPOSED AMENDMENT SUMMARY

We are requesting an amendment to the originally approved definitive subdivision at 132 Homer Street, Newton Centre, as approved on December 7, 2023. The summary of the requested amendment follows:

- 1) Two SR2 lots to be combined into one SR2 lot, thereby enabling development of one single family dwelling;
- 2) The establishment of a Private Way Chapin Road Extension (straight and shorter), per engineering drawings;
- 3) Right-of-Way for Chapin Road Extension (shorter than the original), per engineering drawings;
- 4) Stormwater management system for the road extension to be re-defined per engineering drawings;
- 5) Four variances (instead of the originally-approved five), which continue to be typical for a small subdivision and which serve the goal of reducing impervious surfaces:
 - a. Section V.B.3.a: Requirement that the minimum width of street's Right-of-Way be forty-five feet;
 - b. Section V.B.5.d: Requirement that dead end streets have a cul-de-sac with a property line diameter of ninety-five feet;
 - c. Section VI.A.1.: Requirement that the minimum pavement width be twenty-four feet;
 - d. Section VI. C.: Requirement for full sidewalk construction

The variance previously granted that is no longer required is:
Section V.B.1.d.: Requirement that the minimum centerline radii of curved streets be 100 feet.

- 6) Removal of all requirements pertaining to the main drain extension under Chapin Road for off-site stormwater management for the Private Way of Chapin Road Extension, and all stormwater from the development will now be managed on-site;

- 7) Removal of HOA requirement, as there will be no common areas or properties.

Conditions of the original approval that remain:

- 1) An O&M plan will define the responsibility of the homeowner to maintain the stormwater management system;
- 2) A utility easement for the city to connect water and sewer is provided by the Right of Way. (A drainage easement to connect to leaching galleries is not required.)

2.0 PROJECT DESCRIPTION

The subject property is located at the easterly end of the dead end of Chapin Road and is bounded by residential properties to the North, East and West and by the Cochituate Aqueduct to the South. The lot slopes from North to South to an existing low area adjacent to the Aqueduct and is currently unimproved with a combination of lawn and wooded areas.

The proposed project is to amend an existing definitive subdivision approved by the Board of Survey on December 7, 2023. The approved subdivision, submitted by the former owners of 132 Homer Street, was to subdivide the original 132 Homer Street property into three (3) lots. The lots included 132 Homer Street with existing frontage on Homer Street (Lot 1) and 2 new lots (Lots 2 & 3) with frontage on a new Chapin Road Extension. The applicant is requesting the amendment due to on-site building constraints as well as the requirement to construct a 518 foot City drain extension in Chapin Road.

The current proposal is to combine the former lots 2 & 3 (now 60 and 61 Chapin Road) into a single lot with frontage on a new Chapin Road Extension. Combining the two (2) previously approved lots into a single lot will allow the proposed 100-year stormwater runoff, both for the roadway and the proposed dwelling, to be infiltrated on-site, as shown in Table1: Drainage Summary.

The Right of Way for the proposed Chapin Road Extension remains 30 feet wide. It will be approximately 40 feet long – thereby 42 feet shorter than the originally approved road extension. The proposed 12 foot wide pavement extension will be approximately 33 feet long and 12 feet wide – thereby 11 feet shorter and 6 feet narrower than originally approved. The proposed extension will reduce impervious area and stormwater runoff, while still providing adequate homeowner and emergency vehicle access. The proposed dwelling will be provided with a residential sprinkler system.

3.0 SOILS

Soil conditions for the area have been mapped by the Natural Resources Conservation Service (NRCS), which indicate that the soil within the site consists of Merrimac-Urban land complex, a soil designated as Hydrologic group A.

The NRCS soil information was supplemented by on-site soil testing completed by this office and witnessed by a Licensed Soil Evaluator on March 3, 2023 and June 13, 2025. The test pit locations and soil logs are shown on Sheet 3 of the Definitive Plans. The soil tests show a sand material with ground water encountered at depths between 22" and 90".

4.0 STORMWATER STRATEGY

The original subdivision required a 518 foot main drain extension under Chapin Road to maintain or reduce peak flow, peak volume and the low area flood elevation for the proposed development. The need for this drain extension is now eliminated, as all stormwater created by the development of a smaller road and single family house will be managed on-site.

The stormwater control strategy for the proposed development is to maintain or reduce peak flow, peak volume and the low area flood elevation for the 2-, 10-, 25- and 100-year storm events, in accordance with the Newton Stormwater Ordinance. The calculations were analyzed in two ways: 1) for the subdivision roadway itself; and 2) for the subdivision roadway and an illustrative house. The subdivision analysis shows that the drainage for the roadway shall be infiltrated on-site for the 100-year storm. The second analysis – for the subdivision roadway and an illustrative house – also demonstrates the ability to infiltrate on-site all stormwater runoff for the 100-year storm.

In addition, the removal of one house from the subdivision plan will provide more area for stormwater infiltration. The proposed scheme does not require the removal of additional trees, which will also help infiltration.

There will be no adverse effect to all abutting properties, as demonstrated in the attached Table 1. Drainage Summary.

Subdivision Roadway Analysis

The proposed stormwater control for the subdivision is to collect the roadway and tributary watershed area in two (2) on-site catch basins discharging to a pump chamber that will pump the stormwater to an on-site leaching galley infiltration system sized for the 100-year storm and located 2' above the mean annual high ground water, as required by the Stormwater Ordinance.

The detailed calculations for the subdivision hydrologic study are contained in this report. The results of the existing and proposed conditions are summarized in Table 1, Part A.

This data demonstrates a *decrease* in peak flow and volume from the subdivision watershed for the 25- and 100-year storm events. In 2- and 10-year storm events there is no change in the peak flow and volume.

The data in Table 1, Part C. demonstrates there is no change to the Low Area Flood Elevation in any storm event.

Subdivision Roadway and Illustrative House Analysis

The proposed stormwater control for the illustrative house is to collect all roof runoff and discharge to two (2) on-site leaching galley systems sized for the 100-year storm and located 2' above the mean annual high ground water, as required by the Stormwater Ordinance.

The detailed calculations for the subdivision and illustrative house are summarized in Table 1, Part B.

Similar to the roadway-only analysis, adding an illustrative house demonstrates a *decrease* in peak flow and volume in the 25- and 100-year storm events and no change for the 2- and 10-year storm events.

Table 1, Part C. again demonstrates there is no change in the Low Area Flood Elevation in any storm event.

Table 1: Drainage Summary

A: Subdivision Watersheds

100 – Year Storm Event	Existing Conditions	Proposed Conditions
Peak Flow	0.55 cfs	0.48 cfs
Peak Volume	0.074 af	0.064af
25 – Year Storm Event	Existing Conditions	Proposed Conditions
Peak Flow	0.08 cfs	0.07 cfs
Peak Volume	0.023 af	0.020 af
10 – Year Storm Event	Existing Conditions	Proposed Conditions
Peak Flow	0.01 cfs	0.01 cfs
Peak Volume	0.008 af	0.007 af
2 – Year Storm Event	Existing Conditions	Proposed Conditions
Peak Flow	0.00 cfs	0.00 cfs
Peak Volume	0.000 af	0.000 af

B: Subdivision Watersheds with Developed Lot

100 – Year Storm Event	Existing Conditions	Proposed Conditions
Peak Flow	0.55 cfs	0.43 cfs
Peak Volume	0.074 af	0.058 af
25 – Year Storm Event	Existing Conditions	Proposed Conditions
Peak Flow	0.08 cfs	0.07 cfs
Peak Volume	0.023 af	0.018 af
10 – Year Storm Event	Existing Conditions	Proposed Conditions
Peak Flow	0.01 cfs	0.01 cfs
Peak Volume	0.008 af	0.006 af
2 – Year Storm Event	Existing Conditions	Proposed Condition
Peak Flow	0.00 cfs	0.00 cfs
Peak Volume	0.000 af	0.000 af

C: Watersheds to Low Area Flood Elevations

	Existing Conditions	A: Proposed Subdivision	B: Proposed Subdivision with Developed Lot
100 -Year Storm	130.55	130.55	130.55
25 - Year Storm	130.03	130.01	130.01
10 - Year Storm	129.76	129.74	129.74
2- Year Storm	129.41	129.41	129.41