



January 9, 2024

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Director & City Planner
562 Main Street
Melrose, MA 02176

CDCI File #: 20-10201
22 Montvale Street
Melrose, MA 02176

Civil Design Consultants, Inc. (CDCI) is pleased to provide the following drainage information to address the impact of the proposed construction of a two-story, single-family house located at 22 Montvale Street. The site is currently undeveloped with approximately 60% of the lot having slopes greater than 25%. The goal of the project is to preserve and enhance the landscape by maintaining the surrounding features and minimize impacts to steep slopes. The proposed house has a footprint of approximately 1,360-SF and will have a stepped foundation, with an area of 608-SF, to follow the contour of the land.

The total lot area is approximately 7,750-SF and provides 108-FT± of frontage on Montvale Street. On-site slopes are steep, with elevations ranging from a high of approximately 146-FT at the northwestern corner of the lot, to a low of approximately 111-FT at the southeastern corner of the lot. A stormwater management basin is proposed at the southeast corner of the lot, designed to manage peak flows leaving the site.

In pre-development conditions, runoff flows overland in a southeasterly direction, towards Montvale Street. In post-development conditions, the majority of runoff from the site will flow towards the proposed stormwater management basin, located in the southeast corner of the lot, and runoff from the remaining site will flow overland towards Montvale Street.

The following table illustrates no increase in off-site flows results from the proposed development for up to and including the 100-Year 24-Hour storm event.

	2-YR (3.10-IN)	10-YR (4.50-IN)	25-YR (5.30-IN)	100-YR (6.50-IN)
Pre-Development	0.2-CFS	0.4-CFS	0.5-CFS	0.7-CFS
Post-Development	0.2-CFS	0.4-CFS	0.5-CFS	0.7-CFS

Drainage calculations were performed using the computer program HydroCAD by HydroCAD Software Solutions, LLC based upon Technical Release 20 (TR-20), developed by the NRCS, formerly the Soils Conservation Service. Drainage calculations were prepared for the 2-YR, 10-YR, 25-YR, and 100-YR Type III 24-hour storm events. Rainfall data corresponds with National Weather Service Technical Paper 40 (TP-40) used in Technical Release 55 (TR-55). Curve numbers were generated using the information provided in TR-55 and the SCS Soils Survey.

If you have any additional questions or comments, or require additional information, please do not hesitate to contact this office.

Very Truly Yours,

CIVIL DESIGN CONSULTANTS, INC.

Meera A. Cousens
Project Manager