



# City of Methuen, Massachusetts

## Department of Public Works

### Engineering Division

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Neil Perry  
*Mayor*

July 12, 2022

To: Community Development  
City of Methuen

From: Stephen J. Gagnon, PWM *SJG*  
Engineering Department Administrator

Subject: 80 Hampstead Street  
Guzman Lane  
Definitive Subdivision Plan

As requested, I have reviewed the plan set and Stormwater Report prepared by Andover Consultants Inc., all dated May 6, 2022. Based on my review of the above, I have the following comments to offer:

#### GENERAL

1. The documentation provided does not indicate if the roadway is to be public or private. The cover sheet of the plan set should be revised to clearly state the intent.
2. The plan set cover sheet lists at least 12 waivers the Applicant is requesting. What benefit would the city receive for granting any or all the waivers?
3. The waiver list does not include 5.6.1. – Looped water main.
4. The roadway cross section detail on sheet 10 of 10 of the plan set does not conform to the City's construction standards for the following reasons:
  - a. Pavement width
  - b. Curbing
  - c. Sidewalks.
  - d. Standard drainage system
  - e. Utility location

5. The Project Engineer should provide documentation confirming sight distance is adequate at the intersection with Hampstead Street.
6. Subdrains should be provided where the roadway profile is cut.
7. The Utility sheet depicts the electric utility run under the approximate center of the roadway surface. The electric, telephone and cable should be run in the shoulder in accordance with the City's typical secondary roadway cross section.
8. The page labeled MassGIS in the Stormwater Report depicts a split labeled "Open" and 'Subdivision" on either side of a line. Is this an offer of open space to the city? If so the "Open" area seems to include part of two building lots. Please clarify.

## WATER

1. A looped water system has not been provided as required in section 5.6.1. of the Subdivision Rules and Regulations. Consequently, the proposed water main will be subject to poor water quality, low residual chlorine levels and will conflict with DEP's Municipal Water Distribution Standards.
2. Three-way gating should be provided at the connection with Hampstead Street.
3. An additional hydrant should be provided to reduce the spacing to less than 500'.

## SEWER

1. Two segments of the proposed sewer main are depicted with a slope of 0.005. The Project Engineer should confirm the minimum self-cleaning velocity of 2.5 FPS is achieved with the proposed flow.
2. The plan depicts a sewer service connection from a proposed dwelling connecting directly to SMH-1. The plan should be revised to depict the service connecting directly to the main with a tee/wye fitting.
3. The plan does not indicate if SMH-5 is existing or proposed. If proposed, a suitable construction detail should be provided.

## DRAINAGE

1. I do not recommend approving the proposed drainage system for several reasons including:
  - Excessive maintenance burden.
  - Questionable functionality in winter conditions.

- Detention facilities under the roadway.

I recommend a conventional catch basin and pipe system be provided.

2. The plan proposes constructing a field of detention structures under the roadway. Locating features such as this under the roadway is unacceptable. The structure should be relocated out of the roadway right of way.
3. Reduced scale drainage maps have been provided; however, the text is too small to be useful. Full size maps depicting the reach routing should be provided.
4. The Stormwater Report states subcatchment DEV1 will discharge only to Pond 1. How is this possible if the roadway is crowned? Please clarify.
5. The Stormwater Report stated Pond 1 will discharge directly into Hampstead Street in a storm event larger than 2-year. This is not acceptable; stormwater discharges should not impact existing roadways.
6. In the Stormwater Report, Ponds 2 & 3 are modeled without any outlets. By not modeling an outlet, we do not know if any of the proposed stormwater storage volume will be available in recurring storm events. More importantly, in winter conditions any remaining water will become ice and occupy needed storage volume.
7. The Stormwater Report indicates discharge from Pond 7 will be controlled by a series of 1" & 2" diameter orifices. Outlets this small will become fouled by virtually any small piece of debris that enters the drainage system. Typically, 4" is the smallest diameter allowable.
8. The description of the Pond 7 outlet does not agree in the Stormwater Report and sheet 10 of the plan set.
9. The primary outlet for Pond 7 is a 10" diameter pipe. The minimum diameter for storm drainpipe is 12". The plan should be revised accordingly.
10. According to the elevation information provided, there will be just over 5" of gravel between the top of the chambers and the bottom of the hot top. This is not acceptable.
11. The proposed Stormwater Chambers are depicted with a 3' inside height and smaller "windows" connecting one unit to another. How are these units maintained forever?

12. The downstream end of the outlet from the Stormwater Chambers is proposed at elevation 140.40, slightly above the elevation of the wetland. What is the maximum water surface elevation in the wetland?
13. It appears the 15" RCP cross culvert will be exposed where it crosses the roadway drainage swales. Minimum cover on drainpipes is 3'. The plan should be revised accordingly.
14. A retaining wall is depicted at the north end of the 15" cross culvert. A design of this wall should be provided.
15. It is not clear what type of treatment is proposed for the south end of the 15" cross culvert.
16. Culverts are proposed at each driveway, however no design information has been provided.

(MEI), submitted electronically on June 22, 2022. The revised information addresses the items remaining from my memo dated June 14, 2022. Based on the above I have no objection to endorsing the plans.