

July 30, 2021

Ms. Kathleen Colwell  
Planning Division Director  
Department of Economic and Community Development  
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Methuen, MA 01844

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**Re: 33 Danton Drive Methuen, MA****Site Plan Review Comment Response (City Engineer)**

Dear Ms. Colwell:

This intent of this letter is to respond to the July 13, 2021, review letter from Stephen Gagnon of Methuen the Engineering Department.

The original comments from Mr. Gagnon are shown in standard arial font.

***DCI's response to these comments is shown in a bold and italic rust color.***

1. Full size pre and post development drainage area maps should be provided.  
***Full size drainage area maps have been provided***
2. The stormwater analysis indicates an increase in the peak rate of stormwater runoff and volume. The project should be revised to provide an increase in runoff for all storm events up to 100-year.  
***The rates and volumes have been reduced for all storm events. Please see the provided updated stormwater calculations.***
3. A TSS Removal worksheet should be provided for the system associated with DMH-4, as this system does not utilize deep sump catch basins.  
***The proposed subsurface infiltration chamber system provides the required water quality volume providing 80% TSS removal for all paved areas. The deep sump catch basins and water quality units provide the required 44% TSS pretreatment removal. As a redevelopment project the proposed design treats 100% of the paved areas well more than the required full treatment of expanded paved areas and best extent practical for the remaining areas.***
4. A turning analysis should be provided for WB-50 vehicles.  
***The turning movement has been added to the site layout plan.***

5. The diameter and material of proposed water connections should be provided.  
*The water service is 2" and fire is 6" with this added to the plans.*
6. Grading changes are proposed within the Danton Drive right of way. The Grading changes should be limited to the subject site.  
*The previously approved site plan indicated grading in the right of way. There is exiting paved parking that requires some grading in here but the filling along the new parking has been removed from the plan.*
7. The material of proposed drainage pipes should be specified.  
*Pipe material labels have been added to the Utility Plan.*
8. A note on sheet C103 labels existing sewer main as 12" diameter, this should be revised to 24" diameter.  
*The note has been changed to 24" diameter*
9. The proposed drainage system is depicted connecting to the existing drainage system in Danton Drive. The Project Engineer should confirm the existing drainage system has sufficient capacity to accommodate the proposed connection.  
*The approved project reduces the 10-yr peak discharge rate from 6.3 cfs to 3.3 cfs and maintains the existing 100-yr peak discharge rate of 16.6 cfs. The new design reduces the 10-yr peak discharge rate from 6.3 cfs to 2.4 cfs and the 100-yr peak discharge rate from 16.6 cfs to 11.7 cfs. The project is reducing flow to the Danton Drive drainage system for all storm events. Therefore we do not believe a system wide analysis is required.*
10. The slope of the proposed sewer service connection is specified as 0.005. The slope should be revised to a minimum of 0.020.  
*The sewer service slope has been adjusted.*
11. A proposed drainpipe capacity analysis should be provided.  
*A proposed drainpipe capacity analysis has been provided as Appendix J to the Stormwater Management Report.*
12. A construction detail of the outlet control structure should be provided.  
*The outlet structure is a standard manhole with 3 inlets from the chamber system and one outlet. A detail (#4) has been added on sheet C503.*
13. The elevations for the outlet control structure do not agree in the drainage calculations and the plan set.  
*All elevations have been checked and now in agreement with the provided revised documents.*

14. The discharge pipe from the outlet control structure is depicted as 15" diameter in the plan set and 18" diameter in the calculations.

***The discharge pipe is 15". The HydroCAD calculations have been updated.***

15. The test pit locations depicted on the plan set should be identified so the corresponding soil logs can be associated.

***Test pit locations with numbers are now shown on the plan. A soil profile of TP8, which is where the infiltration system is located, has been added as detail #5 on sheet C503.***

16. The infiltration rate for the infiltration structure should be determined according to the DEP Stormwater Manual.

***Per the DEP Stormwater Manual, we have used 8.27" per hour as indicated in the Rawl's Table for sand material as shown in the results from test pit 8 in the report.***

17. The peak water surface elevation in the infiltration system exceeds the invert elevations for the upstream drainage system. The drainage system should be free flowing to the infiltration system for all storm events.

***Considering required offsets to groundwater and the chamber system mitigating peak flow conditions, surcharging of the system is required for the extreme 100-year storm event. The system flows freely for the 2-year and 10-year event. The infiltration system has been increased from 30 chambers to 42 units, compared to the previous submission, to reduce occurrence of surcharging within the system.***

18. The plan should be revised to provide unique identifiers for each pipe entering/exiting manholes. The jurisdiction of the Plumbing Code extends 10' from the outside face of the foundation, consequently some of the proposed drainage system would be subject. The Engineer should confirm the design is consistent with the Massachusetts Plumbing Code

***The Utility Plan has been updated to indicate unique identifiers for inlets and outlets for all manholes with multiple orifices. Also, pipe materials are called out to be cast iron within 10 feet of the building.***

If you have any questions, please do not hesitate to contact me on my office (617)776-3350.

Sincerely,  
Design Consultants, Inc.

Stephen Sawyer  
Project Manager

