

**Response to Comments Memorandum  
Worcester Street Pump Station, Grafton, Massachusetts**

**TO:** Grafton Conservation Commission, Grafton Planning Board  
**FROM:** Timothy J. Grace, Tom Mahanna, P.E., Danielle Teixeira, P.E.  
**COPY:** Joseph Laydon, Town Planner  
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PLANNING BOARD  
GRAFTON, MA

The following memorandum has been prepared in support of the Worcester Street Pump Station Replacement (the Project) on behalf of The Grafton Water District (the Applicant). The Applicant has applied for a Stormwater Management Permit through the Town of Grafton Conservation Commission (Commission) and Site Plan Approval through the Grafton Planning Board. The Commission has employed the assistance of a third-party review, Graves Engineering, Inc. (GEI), to review the technical compliance of the project with the Town of Grafton Zoning By-law and Stormwater Regulations, as well as the Massachusetts Stormwater Standards.

GEI provided initial peer review comments in a letter dated September 30, 2019. This memorandum is intended to address those comments

**Zoning By-law**

1. *The plans must identify the ownership of all abutting land.*

T&B Response: A Locus Plan has been added to Sheet C-101 to address this comment

2. *The plans must include all property lines of the subject property as well as all setbacks and easements (if any). Whereas the project is proposed on a small portion of a large parcel, a separate plan sheet or an inset at a different scale than the construction plans that identifies the project parcel and abutters would be reasonable.*

T&B Response: A Locus Plan has been added to Sheet C-101 to address this comment

**Grafton Regulations Governing Stormwater Management**

3. *The limit of work was used as the subcatchment boundary for stormwater modeling. Upgradient areas draining to a proposed facility need to be included in the model.*

T&B Response: The stormwater model has been updated to include the upgradient areas of the site. Revised drainage area figures and stormwater calculations are included with this letter.

4. *The hydrologic calculations for existing conditions modeled the grass cover and wood in "fair" hydrologic condition. All pervious lands must be assumed to be in "good" hydrologic condition regardless of conditions existing at the time of computation.*

T&B Response: The stormwater model has been updated to address this comment

### **Hydrology & MassDEP Stormwater Management**

5. *GEI reviewed the hydrology computation and found them to be in order except as noted in Comment #3 and #4.*

T&B Response: Acknowledged

6. *Compliance with the MassDEP Stormwater Handbook is reasonable except as noted in the two following comments.*

T&B Response: Acknowledged

7. *The bioretention basin is used to infiltrate the required recharge volume and attenuate peak flows. Soil test pit data (or other groundwater level data) must be provided to demonstrate the basin satisfies the required two-foot separation to seasonal high groundwater.*

T&B Response: Soils data from the NRCS indicates groundwater at greater than 80" below the surface. Test Pits will be performed by a licensed soil evaluator prior to construction to verify a two-foot separation between the seasonal high ground water elevation and the bottom of the basin.

8. *When discharging to an infiltration structure (i.e. the bioretention basin) within a Zone II, at least 44% of the total suspended solids (TSS) must be removed prior to discharge to the infiltration-portion of the structure. The design engineer may wish to consider adding another best management practice (BMP) in series with the pea stone diaphragm (e.g. a sediment forebay such as a stone berm at the inlet-side of the bioretention basin). The Stormwater Report references a vegetated filter strip, but the slope between the pea stone diaphragm and the bioretention basin is too steep to be considered a filter strip.*

T&B Response: A sediment forebay has been added to the bioretention basin to provide the required TSS removal.

9. *The recharge volume and water quality volume provided by the bioretention basin is noted as 3,796 cubic feet in Appendix D of the Stormwater Management Report but the hydrology calculations (also in Appendix D) modeled a volume of 3,277 cubic feet. Nevertheless, enough recharge volume and water quality volume are available in the bioretention basin.*

T&B Response: The calculations have been revised to reflect the revised basin volume

### **General Engineering**

10. *The design intent for the bioretention basin is reasonable, but the proposed topographic contours on Sheet C-104 (the Proposed Grading Plan) show what appears to be a built-up berm around the bioretention basin (the proposed 311*

*contour closes on itself). Based upon the existing 311 and 312 topographic contours, the existing elevation at the bioretention basin is higher than 311 feet but lower than 312 feet. The proposed 311 contour needs to be revised.*

T&B Response: The grading on Sheet C-104 has been revised.

- 11. Stabilized construction entrance details were provided on Sheets C-201 and C-203, however, the location of the construction entrance also needs to be provided in plan-view, perhaps on Sheet C-102.*

T&B Response: A stabilized construction entrance has been added to Sheet C-102

- 12. The size of the precast concrete dry well needs to be specified on the plans. The dry well construction detail on Sheet C-203 lists multiple dry well sizes.*

T&B Response: The detail on Sheet C-203 has been updated to indicate the required dry well size.

- 13. Although not the subject of this review, on Sheet C-105 a gate valve is shown on the water main where a hydrant tee should be. The gate valve should be located either before or after the tee.*

T&B Response: The gate valve has been removed

- 14. Although not the subject of this review, Sheet C-103 specifies three 10" steel bollards whereas the construction detail on Sheet C-201 specifies 6" steel bollards. The information should be consistent.*

T&B Response: Sheet C-103 has been revised to show three 6" steel bollards.