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PLANNING BOARD
GRAFTON, MA

Project Narrative for Proposed Site Development
104 Creeper Hill Road, Grafton, MA

The subject parcel (Map 17, Lot 8A) has an area of 661,270 square feet (15.30 acres) and is presently vacant. A gravel driveway currently passes through the subject property, running from the north side of Creeper Hill Road to a point on the westerly boundary line, approximately 635-feet north of Creeper Hill Road. The northerly part of the property is currently wooded and the southern portion has been historically cleared and contains some groundcover. The site slopes gradually downhill in a northeasterly direction toward the shore of Flint Pond, a great pond. The locus is bordered on the south by Creeper Hill Road, westerly by a power transmission right-of-way, northerly and easterly by Flint Pond and commercial and residential properties.

A portion of the site was formerly developed in association with the pre-existing ice house near Flint Pond located northwest of the property. A rail spur line formerly crossed through the property to access the former ice house located near the shoreline of Flint Pond. Earth moving activities have taken place historically along the southerly portion of the property adjacent to Creeper Hill Road

The shore line of Flint Pond is the northerly boundary and majority of the easterly boundary of the subject parcel. Accordingly, inland bank and adjacent bordering vegetated wetlands are associated with the shore line of Flint Pond. An existing unnamed stream is located in the southeastern portion of the property. This stream is shown as perennial on the U.S.G.S. Quadrangle and is assumed to be perennial. A 200-foot Riverfront Area extends westerly on the property covering a portion of the southeastern corner of the lot. The 100-year Flood Hazard Area encroaches on to the easterly portion of the property and is not defined by elevation.

The proposed scope of work involves clearing approximately 3.2-acres of land adjacent to Creeper Hill Road followed by the construction of a 12,000-square foot building, storage shed, gravel and paved areas for material storage, supporting utilities and a stormwater management system. Russo Brothers Inc., a local site contractor, will utilize the newly developed facility as their, office, shop and storage yard. A 20-foot wide gravel driveway is proposed along the westerly side of the property to provide access for residents living to the north of the property and for the new wireless service tower located on the northerly portion of the site.

Proposed site development for this project will be limited to approximately 140,000 square feet (3.2-acres) of area located along Creeper Hill Road and the easement associated with the wireless service tower. The remainder of the parcel, approximately 12.2-acres will remain undeveloped. An application for Site Plan Review and Special Permit for proposed use of the property as a contractor's yard. A site plan set, hydrologic analysis, stormwater report and supporting applications have been submitted herewith for review.

The property currently contains approximately 8,033 square feet of impervious area. Development of the property will increase impervious area on the site by 81,286 square

feet for a total of 89,319 square feet. The new building, shed and majority of parking areas will be located outside of the 100-foot Wetland Buffer Zone and 200-foot Riverfront Area. Approximately 6,430 square feet of impervious area will be located north of the proposed building within the 100-foot Wetland Buffer Zone. No work is proposed within the 200-foot Riverfront Area. All proposed improvements will be located outside the 25 foot No-Disturb Zone.

Proposed Site Development

The proposed site development for the project involves clearing approximately 3.2-acres of land directly north of Creeper Hill Road. Land clearing will be followed by the installation of a filter mitt erosion control barrier. The erosion control barrier shall serve as the limits of work for the project and to provide erosion control to adjacent undisturbed portions of the site.

Construction activities will begin with construction of the new access driveway along the westerly side of the property. A new building, subsurface sewage disposal system, stormwater management system, utilities, supporting paved parking and storage areas will be constructed and installed at the site.

A list of the construction sequence is shown below:

Construction Sequence

- Remove trees and brush
- Installation of erosion control measures
- Construction of new access drive for abutters and wireless service tower
- Excavation and grading for new building site
- Construct and backfill new foundation
- Drainage and utility installation according to the proposed plans Backfill drainage systems and utilities
- Rough grade the site to sub grade
- Fine grading of parking area and pavement with binder course
- Excavation for soil absorption system
- Import and place sewer gravel for soil absorption system
- Construct soil absorption system
- Install septic system components
- Final paving of parking areas
- Final grade and seed loam over soil absorption system and site
- Install landscape materials

All unpaved areas that are disturbed will be stabilized with permanent seeding and/or landscaping prior to removal of any erosion controls. Erosion controls shall not be removed until all seeded areas have been mowed at least twice.

Drainage Approach

The property is presently undeveloped and has no stormwater controls in place to manage stormwater runoff. Runoff drains in easterly and northerly directions to Flint Pond and abutting properties. The goal of the proposed stormwater management system is to reduce runoff rates and volumes for all design storms compared to the existing condition and to promote groundwater recharge using an infiltration basin for storage and recharge of runoff from the developed portion of the site.

The proposed stormwater management system will collect, treat and recharge runoff from all paved areas and half of the proposed roof surfaces on the site. The system consists of a network of drainage catch basins, proprietary treatment units and drain lines for the capture, routing and treatment of stormwater runoff prior to discharge into an infiltration basin. The system has been designed to be in full compliance with all local and state regulations.

The proposed sediment forebay and infiltration basin are located approximately 300-feet north of the proposed building, west of Flint Pond. The forebay will provide treatment of runoff prior to discharge into the infiltration basin for storage and recharge. The infiltration basin has been designed to store and infiltrate runoff from the 25-year storm with no overflow.

The model results for the total peak runoff rates and volumes leaving the project site are shown in Tables One and Two. Overall reductions in runoff rates and volumes can be found in the Model Results section of the Hydrologic Assessment Report and detailed hydrologic analysis and basin models can be found in Appendix A. Please note that the following precipitation rates were used for the analysis:

Two-Year Storm – 3.2 inches
Ten-Year Storm – 4.7 inches
Twenty Five-Year Storm - 6.0 inches
One Hundred-Year Storm – 8.5 inches

Table One: Comparison of Pre and Post Development Peak Runoff Rates Leaving the Project Site

Drainage Basin	2-year storm	10-year storm	25-year storm	100-year storm
Total Pre-Development	0.30 CFS	1.04 CFS	2.70 CFS	7.39 CFS
Total Post-Development	0.11 CFS	0.38 CFS	2.18 CFS	6.17 CFS
Difference	-0.19 CFS	-0.66 CFS	-0.52 CFS	-1.22 CFS

Table Two: Comparison of Pre and Post-Development Runoff Volumes Leaving the Project Site

Drainage Basin	2-year storm	10-year storm	25-year storm	100-year storm
Total Pre-Development	2,396 CF	9,302 CF	18,374 CF	41,804 CF
Total Post-Development	693 CF	3,209 CF	11,910 CF	34,259 CF
Difference	-1,703 CF	-6,093 CF	-6,464 CF	-7,545 CF

The results provided in Tables One and Two demonstrate that the project, with the stormwater controls in place, will result in an overall decrease both in peak runoff rates and total runoff volume discharged from the project site. The project will impact neither abutting properties or the municipal stormwater drainage system.

Runoff from the proposed paved and roof surfaces will be collected and recharged. The stormwater management system as designed is consistent with MADEP Stormwater Management Policy and accepted design practice.

The project will have a subsurface sewage disposal system for treatment of wastewater from the proposed building. The proposed system has been designed to be in full compliance with the Massachusetts State Environmental Code, 310 CMR and local Rules and Regulations of the Grafton Board of Health. The proposed building will also connect to municipal water service and local electric and gas services.

Conclusion

Development of the site will occur on approximately 20 percent of the lot, leaving the majority of the lot undeveloped. The proposed development will be supported by a stormwater management system, subsurface sewage disposal system and supporting utilities and will be in full compliance with applicable state and local regulation.