

PROJECT NARRATIVE

Putnam High School
152 Woodstock Avenue
Putnam, Connecticut

April 28, 2014

MMI #3057-49-4

I. PROJECT OVERVIEW

The proposed project is for renovations and site improvements to Putnam High School, located at 152 Woodstock Avenue in the town of Putnam, Connecticut. The parcel totals 15.27 acres and is surrounded by residential properties. The project proposes to renovate the existing high school and construct an 8,500-square-foot gymnasium. In addition, the existing northern driveway off Woodstock Avenue and the eastern driveway off Milton Street will be reconstructed and curbed while the existing southern entrance and parking area off Vandale Street will be relocated to improve traffic flow and provide a bus queuing lane.

There will be no significant changes to the existing utility services. Sanitary service, water, electric, telephone, and the other utilities will continue to be provided as shown in their current location and capacity.

II. EXISTING SITE CONDITIONS

The project site is Putnam High School, which is on a developed 15.27-acre lot located off Woodstock Avenue. There are currently two watershed areas on the site. Approximately 60% of the site discharges the stormwater runoff off site via overland flow and piped flow into a wetland area and then ultimately to Wheaton Brook, which flows southerly through the northwestern corner of the parcel. The other 40% of the site discharges stormwater to a catch basin in Wicker Street, which is part of the town's existing stormwater drainage system. The undeveloped portion

of this area discharges runoff by overland flow through a wooded area before it is captured in the street curbing, and the developed portion is routed into an existing on-site drainage network that is directly connected to the catch basin in Wicker Street. The site slopes westerly and northwesterly from a high elevation of 302 to a low of 264.

The site lies in the Little River watershed identified as Regional Subbasin 3708 on the Connecticut Department of Energy & Environmental Protection's (CTDEEP) *Atlas of Public Water Supply Sources and Drainage Basins*. This is part of the larger Thames Major Basin. According to the effective Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) Number 0901940002B dated October 18, 1988, there is a small Special Flood Hazard Area (SFHA) associated with Wheaton Brook that extends onto the property. This small SFHA will remain unaltered from its existing conditions as there will be no construction activity in this area as part of the proposed improvements. The proposed improvements are located well above and a significant distance away from the SFHA.

III. SITE IMPROVEMENTS

The proposed improvements will increase the circulation ability of the site, increase available parking, and renovate the existing building. The proposed improvements will account for an increase in stormwater runoff; therefore, a hydrologic analysis has been conducted to analyze the predevelopment and postdevelopment 100-year runoff volume from the entire 15.27-acre site using a volumetric approach. This method was used because the parcel has several small drainage discharges that ultimately drain into Wheaton Brook. In addition to the site runoff volume based on the curve number (CN) values, the water quality volume (WQV) was also calculated by using the criteria stated in the *2004 Connecticut Storm Water Quality Manual*. The WQV is the volume of stormwater runoff generated by 1 inch of rainfall on a site. As stated in the CTDEEP stormwater general permit, this volume must be retained on site. However, this project qualifies for a provision under the CTDEEP stormwater general permit, which allows for the retention requirement to be reduced to 1/2 inch for the redevelopment of an existing site that

has 40% or more impervious land cover. The WQV using the 1/2 inch of runoff was calculated to be 11,677 cubic feet (cf). Since the WQV is larger than the 100-year runoff volume, it served as the basis of the stormwater management design.

Water quality measures or Best Management Practices (BMPs) have been incorporated into the design to maintain water quality and provide protection for the areas downgradient of the proposed development.

In an effort to enhance the WQV and mitigate the entire 1 inch of stormwater runoff to the maximum extent possible, several different BMPs will be utilized. The proposed drainage system will include deep sump catch basins to help trap suspended solids and other pollutants, curbsless parking lot sections routed to an infiltration trench, infiltration basins and drywells to infiltrate captured stormwater into the ground, and grassed swales to convey runoff to the infiltration areas. Several of these BMPs will be used in combination with one another. For example, grassed swales will trap sediment as they convey runoff to drywells where the captured runoff will infiltrate. The drywells will be equipped with a high level overflow, which will route the excess stormwater to infiltration basins to further infiltrate the runoff. Stormwater that is not infiltrated in the basins will be discharged over a long broadcrested weir, acting as a level spreader and returning the discharge to sheet flow and then passing it through vegetated areas.

The main component of the stormwater management system will be the underground infiltration areas with the on-site retention of stormwater from the proposed improvements. The infiltration system was designed to retain and infiltrate the WQV on site. The volume required was determined by 1/2 inch of rainfall over all the impervious area on the site, as stated in the *2004 Connecticut Stormwater Quality Manual*, along with the redevelopment provision detailed in the CTDEEP stormwater general permit.

Through the use of on-site stormwater management control measures, there will be no increase in the postdevelopment stormwater runoff volume up to and including the 100-year storm event.

The on-site stormwater management system meets or exceeds the *2004 Connecticut Stormwater Quality Manual* along with the CTDEEP stormwater general permit standards.

A detailed Sediment and Erosion (S&E) Control Plan has also been developed to mitigate the potential short-term impacts of the development during construction. The S&E controls include a descriptive specification concerning land grading, topsoiling, temporary and permanent vegetative cover, vegetative cover selection and mulching, and erosion checks. Details have been provided for all erosion control measures with corresponding labels on the S&E Control Plan. The S&E controls provided are designed in accordance with the *2002 Connecticut Guidelines for Soil Erosion and Sediment Control*.

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