

March 10, 2016

Ms. Jean Delios  
Assistant Town Manager  
Town of Reading  
16 Lowell Street  
Reading, MA 01867-2685

RE: Nitsch Project #11455  
Civil Engineering Peer Review  
40B – Reading Village  
Reading, MA

Dear Ms. Delios:

Nitsch Engineering has initiated a civil engineering peer review of materials related to a Comprehensive Permit Application (M.G.L. Chapter 40B) submitted to the Town of Reading (the Town) Zoning Board of Appeals by MKM Reading, LLC (the Applicant). The materials reviewed by Nitsch Engineering included the following items:

1. Digital copy of a document entitled "Site Engineering Report" (the Report), prepared by DeCelle-Burke and Associates, Inc., dated December 22, 2015;
2. Digital copy of a drawing set entitled "Proposed Apartment Building" (the Drawings), Drawings 1-9, prepared by DeCelle-Burke and Associates, Inc., dated December 2, 2015;
3. Digital copy of a document entitled "Unit Mix/Summary," prepared by Cube3 Studio, undated; and
4. Digital copy of a document entitled "Waiver Request – Town of Reading Bylaws," undated.

## **PROJECT UNDERSTANDING**

The proposed project site (the Site) is located at the intersection of Prescott Street and Lincoln Street in Reading, Massachusetts. Based on visual observations made by Nitsch Engineering on March 7, 2016, the surficial characteristics of the Site appear to be generally consistent with the existing conditions description provided in the Report. According to the Report, the Applicant proposes to construct two new multi-family residential buildings that include a total of 77 dwelling units. The buildings are intended to be constructed above an at-grade open-air 80-space parking lot accessed by Prescott Street and Lincoln Street curb cuts. New building utility services are proposed for water, sanitary sewer, gas, power, and tele-communications systems.

The project is subject to the Town Zoning Bylaws; and by reference, the Reading Site Plan Review Guidelines, Regulations, and Standards; and the DEP Stormwater Standards. The purpose of Nitsch Engineering's review was to evaluate the submitted materials in terms of content and technical compliance of site construction elements with the foregoing municipal bylaws and regulations, and standard engineering practice. Nitsch Engineering's peer review did not include evaluation of the project in terms of dimensional compliance of the building, its layout and construction, or resulting off-site traffic impacts. We offer the following comments related to the proposed site construction, development, and utility infrastructure project elements:

### **ZONING COMPLIANCE, PARKING, ACCESS, GRADES**

1. Based on the proposed use, the project is required to provide one and one-half parking spaces per dwelling unit per the parking requirements in the Town Zoning Bylaw. The 77 proposed dwelling units

correspond to a total parking requirement of 116 parking spaces. The Applicant has proposed a total of 80 parking spaces and has requested a waiver from the corresponding bylaw requirement.

2. The Applicant has proposed a total of 80 parking spaces, including two accessible spaces. In accordance with Massachusetts Architectural Access Board regulations (521 CMR 23.2.1), at least four accessible spaces are required.
3. Based on the proposed use, the project is required to provide one loading and unloading space per 20 rental units. The 77 proposed dwelling units correspond to a total loading/unloading space requirement of four 12 feet x 35 feet spaces. Loading/unloading spaces do not appear to be indicated on the drawings and the Applicant has not requested a waiver for this bylaw requirement.
4. The Drawings indicate that the proposed Building A is to be positioned 1.5 feet from the property line along Prescott Street. We recommend that the Applicant indicate whether or not the building roof will extend beyond the property line and into the right-of-way.
5. The Drawings do not include sufficient information to describe entrance conditions with regard to sidewalk configuration, curb cut configuration, or accessibility. We recommend that the Drawings be augmented to reflect proposed construction conditions at the site entrances.
6. It is unclear how emergency vehicles will access the Site. We recommend that the Applicant provide confirmation from the appropriate municipal departments that the proposed project complies with emergency vehicle access requirements.
7. The Drawings do not include information related to the column locations or other aspects of the building support system. We recommend that the Drawings be augmented to include this information to verify that the parking layout is not affected by the building support system.
8. The limit of parking on the south side of the Site is effectively set at the property line. We recommend that the Applicant indicate whether or not any screening is proposed to provide a visual barrier and to protect the abutting residential properties from headlight glare.
9. The Drawings do not include information related to site lighting. We recommend that the Applicant provide information related to proposed site lighting locations, type, and illumination.
10. The Drawings do not include a location for trash storage/receptacle. We recommend that the Applicant provide information related to trash storage and removal needs for the project.
11. Although much of the Site will be occupied by the proposed buildings, there will be some areas that are open to the weather. We recommend that the Applicant provide information related to planned areas for snow storage. Additionally, because the proposed Building A is effectively positioned directly adjacent to the Prescott Street sidewalk, we recommend that the Applicant address the potential for falling ice and snow onto the sidewalk from the sloped roof of the building.
12. The Drawings include several spot grades indicating proposed finish surface grades under and around the proposed buildings. Based on the spot grades shown, the slope of the proposed paved surface beneath the building will be generally less than 1%, and in several areas will be as low as 0.3%. In our opinion, these slopes are insufficient to drain the pavement surface.

## SEDIMENT AND EROSION CONTROLS

1. The Applicant proposes to install 25-foot long crushed stone aprons at the construction entrances for the project. We recommend that the apron length be increased to 50 feet to accommodate large construction vehicles and that a mountable berm be included at the entrance to inhibit conveyance of sediment onto public ways.
2. The Erosion and Sediment Control Plan (document) included in the Report indicates that drainage inlet protection ("silt sacks") will be installed in existing catch basins around the Site. We recommend that the Drawings be augmented to indicate all the existing and new catch basins that are to be protected, and that the Drawings include a corresponding construction detail.

## SITE UTILITY SYSTEMS

1. Daily and peak sanitary sewage flow estimates for the development have not been provided. We recommend that the Applicant submit corresponding flow estimates and demonstrate that capacity to accept these flows is available in the existing municipal sewer infrastructure, including any downstream pump stations and force mains.
2. Daily and peak water (fire and domestic) demand estimates for the development have not been provided. We recommend that the Applicant submit corresponding demand estimates and demonstrate that capacity for provision of these demands is available in the existing municipal water system infrastructure.
3. The Drawings do not indicate provision of power and telecommunications services for the proposed buildings. We recommend that the Applicant provide this information, and specifically whether or not a transformer will be required. If a transformer is required to facilitate the proposed development, we recommend that the Drawings be augmented to include its location.
4. The Drawings do not include sufficient information (pipe invert elevations) related to the existing municipal drain and sewer systems to verify feasibility of proposed service connections.
5. The Drawings do not include pipe invert information for the proposed sanitary sewer service connection. We recommend that the Drawings be augmented to include this information. The Drawings indicate that the proposed sanitary sewer service connection will be a 6-inch pipe. We recommend that the Applicant verify that a 6-inch pipe is consistent with the USPC requirement for service pipe diameter for the proposed buildings.
6. Several monitoring wells are located on the Site. We recommend that the Applicant provide information related to the wells relative to their purpose and planned disposition. We also recommend that the Applicant verify that there are no soil or groundwater contamination conditions that would preclude or be exacerbated by the implementation of the proposed groundwater recharge systems.
7. The Drawings indicate that the majority of surface drainage generated by the parking surface below Building A will be collected by a single catch basin and then directed to the municipal drainage system in Lincoln Street. The westerly portion of the Building A parking surface will drain directly to the Prescott Street right-of-way. The parking surface below Building B and the eastern access drive will drain directly to the Lincoln Street right-of-way.

Because the surface parking is situated beneath the proposed building structure, collected drainage from the paved surfaces may be subject to the Uniform State Plumbing Code (USPC) regulations for

Interceptors, Separators, and Holding Tanks (248 CMR 10.09). If the Town Building Division determines that the proposed parking area is classified as a "residential garage" (248 CMR 10.09.1(b).3), all drainage generated within the garage must be segregated from exterior drainage, directed to floor drains, treated by a gas/oil separator, and discharged to the sanitary sewer system.

Further, in order to comply with the DEP Stormwater Standards, run-off generated by all exterior paved/trafficked surfaces, including access drives, should be collected and treated prior to discharge from the Site.

8. The Report states that run-off generated by the building roof areas will be conveyed to the proposed recharge systems by internal roof drains. The materials provided by the Applicant indicate that the building will be constructed with pitched roofs. The Drawings do not include sufficient information to verify feasibility of connecting roof drain downspouts to the recharge systems. We recommend that the Drawings be augmented to include this information.
9. The Report notes that the recharge systems are designed to overflow via downspout bypass wyes during the 100-year design storm event. The drainage calculations included in the Report indicates that the recharge system beneath Building A will surcharge/overflow during the 25-year design storm. The calculations also indicate that during the 100-year design storm, both recharge systems will surcharge and the system beneath Building A surcharge will result in a peak water elevation (in the corresponding downspouts) of over 5 feet above the pavement surface. Because this will create hydrostatic pressure beneath the pavement surface, we recommend that the Applicant verify that periodic surcharge of these systems will not adversely affect the pavement, or building foundation systems.
10. The downspouts that connect to the recharge system beneath Building A appear to be positioned within proposed parking spaces. In general, we recommend that the Drawings be augmented to show all downspout locations and connective piping, sufficient to verify feasibility of construction of the roof run-off collection and recharge systems.
11. The drainage calculations in the Report include an assessment of pre- and post-development run-off conditions in terms of run-off discharged from the Site as a whole. The development will result in run-off discharges in various directions and by varied means including piped discharge into the municipal drain system, surface discharge from paved areas, and surface discharge from open areas toward abutting properties. We recommend that the drainage calculations be revised to evaluate the pre- and post-development run-off conditions in terms of changes in discharge to applicable post-development design points.
12. The Report does not include volume calculation information related to compliance with DEP Stormwater Standard 3 (groundwater recharge) or Standard 4 (water quality). We recommend that the Applicant revise the Report to include this information.

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Several of the above comments include recommendations for the provision of additional drawing and document information. The updated information may result in the generation of additional comments once received and reviewed. We hope you find the above information useful. If you have any questions, please contact us at your convenience.

Very truly yours,

**Nitsch Engineering, Inc.**



Matthew T. Brassard, PE  
Executive Project Manager

MTB/vas/aab