

UTILITY ENGINEERING REPORT

84-88 Beacon Avenue Multi-Family Building
Block 5705, Lots 26, 27 & 28
Jersey City, Hudson County, NJ

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Prepared for:

84-88 Beacon Development, LLC.
390 Central Avenue, Top Floor
Jersey City, NJ 07307

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INTRODUCTION

84-88 Beacon Development, LLC (applicant), proposes to construct a new four-story, multi-family building on a corner lot located at the intersection of Beacon Avenue and Oakland Avenue in Jersey City, New Jersey. The property is identified as Lots 26, 27 & 28 of Block 5705 and contains 8,821 square feet (0.203 acres). The street address of the property is 84-88 Beacon Avenue. This report describes the stormwater runoff, sanitary sewer and water demands of the proposed development and addresses compliance with the stormwater management regulations of Jersey City.

The site is situated within Zone R-1, One and Two Family Housing Zone of Jersey City. The property is rectangular in shape with 78 feet of frontage along Beacon Avenue and 113 feet of frontage along Oakland Avenue. The site is currently occupied by three building and concrete slabs. The site is located in a combined sewer area. According to the most recent "Revised Preliminary" FEMA Flood Insurance Rate Maps, the property lies in Zone X, outside the 100-year flood zone.

PROPOSED DEVELOPMENT

The subject development entails demolition of the existing buildings and all remnant slabs and construction of a new four-story building with ground floor parking and 24 residential apartment units on the floors above. The unit mix will consist of 18 one-bedroom apartments, 3 two-bedroom units and 3 three-bedroom unit. Parking for 17 vehicles will be provided within the building at ground level, accessible from a driveway on Beacon Avenue. New water, sewer and storm connections are proposed. The building footprint will occupy approximately most of the property with landscaped strips along the westerly and northerly property lines. Upon completion, the site will be 93.5% rooftop and 6.5% landscaping.

STORMWATER

As stated in the Residential Improvement Standards (RSIS) N.J.A.C. 5:21-7.5, storm water design shall comply with the New Jersey Department of Environmental Protection (NJDEP) Stormwater Management Rules (N.J.A.C. 7:8). The NJDEP regulations for quantity control, quality treatment and groundwater recharge stipulated in N.J.A.C. 7:8 only apply if the project is a "major development". The NJDEP rules define major development as a project that either increases impervious area by 1/4 acre or entails an acre of disturbance. The Jersey City stormwater ordinance define a major development as one that "adds or replaces" more than 1/4 acre of impervious area. The total project area is 0.203 acres, and impervious area will be reduced. Therefore, the project is not a major development under the NJDEP rules or the Jersey City stormwater ordinance.

Under the Jersey City stormwater, a major development is one that adds or replaces more than 5,000 square feet. Since the project will replace over 8,200 square feet of roof area, this project does meet the definition of "major development" under the municipal ordinance. According to the municipal ordinance, a major development in a combined sewer area must reduce the peak rate of runoff for the 2-year, 10-year and 100-year design storms to 50%, 75% and 80%, respectively, of existing peak runoff rates.

The proposed development will provide detention along the side yard in combination with extensive green roof areas. Approximately 3,100 square feet of roof will consist of green roof with 6" deep planters. The green roof effectively reduces the peak rate and volume of

runoff from the roof as compared to a conventional roof. All roof runoff will be directed to a bio-retention rain garden along the westerly side of the building. The rain garden will consist of a 2-foot deep growing media that can store water and allow recharge in the soil. Planting suitable to wet conditions will also absorb water and promote transpiration, thus further decreasing the volume of runoff. In addition, approximate 440 cubic feet of storage will be provided within the planter above the soil complex. Runoff of this surface stored water will be regulated by the size and height of inlet grates in the rain garden. Overflow captured by the inlets will discharge into the 24" brick combined sewer in Beacon Avenue. Thus, the proposed design, by incorporating these green infrastructure elements, will meet or exceed the peak runoff reductions required by the municipal ordinance.

The Jersey City municipal ordinance specifically exempts projects served by the combined sewer system from water quality requirements. Also, since all runoff consists of rooftop runoff, which is considered clean and not requiring water quality treatment.

The proposed site is delineated on the State Plan Policy Map as a Metropolitan Planning Area 1 (PA-1). Consequently, according to the Jersey City stormwater ordinance section 345-74.4.-F.1b(2), the groundwater recharge requirement does not apply to this project.

SANITARY SEWER

The proposed project will include a total of 18 one-bedroom apartments, 3 two-bedroom apartments, and 3 three-bedroom apartment. In accordance with New Jersey Department of Environmental Protection (NJDEP) standards in NJAC 7:14A-23, the projected average daily flow from this project will be 4,275 gallons per day (gpd). Assuming the ratio of peak flow to average daily flow is 4, the peak sanitary flow from the site will be approximately 17,100 gpd or 0.026 cubic feet per second (cfs).

It is proposed to construct a new 4" PVC sanitary sewer lateral connecting to the new storm lateral, which will discharge into the combined sewer in Beacon Avenue. Connection permits from the Jersey City Municipal Utilities Authority (JCMUA) and the Passaic Valley Sewerage Commission will be required for the new sewer lateral. Since proposed average daily demand will be less than 8,000 gpd, a Treatment Works Approval (TWA) from the New Jersey Department of Environmental Protection will not be required.

WATER

It is proposed to connect a 6" combined fire/domestic water service to the existing 8" water main in Oakland Avenue. Based on New Jersey Residential Site Improvement Standards (RSIS) Table 5.1 for "garden apartments", the proposed project will generate an average domestic water demand of approximately 3,500 gpd. In accordance with standard procedure, fire demand will be calculated and furnished to the JCMUA with the water connection application. At that time, the required size of the water service lateral will be verified.

Hydrant flow tests will be performed prior to applying for connection permits to verify adequate pressure and flow is available for fire suppression needs. If needed, a booster pump will be provided within the building to achieve the required fire demand flow.