Stormwater Management Report

Prepared For

Residential Apartment Building
5 Meadow Street.
Block 460, Lot 1.01
Bayonne, Hudson County,
New Jersey

Prepared by:

DAETEL
ENGINEERING

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New Jersey Professional Engineer
License Number GE05201800
Table of Contents

1. Introduction .................................................................................................................................................. 3
2. Underground Stormwater Management Facility ....................................................................................... 3
   Methodology................................................................................................................................................. 4
3. Conclusions .................................................................................................................................................. 4

Appendices

A. Design Calculations
   ♦ Underground Detention Calculations

B. Stormwater Details
1. **Introduction**

The purpose of this report is to analyze the stormwater drainage conditions that will occur as a result of the construction of a proposed 30,680 sf (6,136 SF Footprint) 5 story Building, 5 Meadow St. in the Bayonne, Hudson County, New Jersey. At this time the proposed site build-out includes the proposed 5 story Building, Concrete Driveway, landscaping areas, stormwater management facility, utilities, and related site improvements.

The site is located at block 460, lot 1.01 of Bayonne, Hudson County, New Jersey. The site under existing conditions, currently has a two story residential building with associated parking and utilities, as part of this application the existing home will be demolished. The proposed development does not disturb more than one Acre or increase the impervious coverage by a quarter acre or more. According to the Township of Bayonne, Hudson County, New Jersey State regulations the project is exempt from the water quality, water quantity and ground water discharge.

In an effort to improve the stormwater conditions of the proposed development, the applicant has chosen to reduce the generated water quantity flows by the proposed development to prevent runoff from affecting surrounding properties by proposing an underground stormwater facility to collect the roof runoff. Calculations documenting the design of the stormwater management system, as illustrated on the Site Plan drawing documents, prepared by DAETEL ENGINEERING, LLC which are accompanying this report.

2. **Underground Stormwater Management Facility**

The stormwater management design for this project consists of a series an underground detention system of to fully detain the roof runoff generated and calculated as 3” multiplied by the square foot of the home, as per Municipal’s stormwater requirements. The design proposes an outlet structure equipped with a 2” orifice & weir to control the flow which outlets through a 6” pipe which connects to the municipal conveyance system located in the roadway.
**Methodology**

The methodology used to design the stormwater management system is in compliance with all jurisdictional agency regulations. Specifically, the proposed design was developed for the site using the Municipal’s stormwater requirements. Design calculations are included within the Appendix of this report.

3. **Conclusions**

The stormwater conveyance system illustrated on the drawings prepared by Daetel Engineering, PE has sufficient capacity to detain the additional flows generated in accordance with Municipal’s requirements. The subject project meets all applicable governing stormwater management design criteria. Therefore, it is anticipated that the project will result in no negative impact to the surrounding neighboring properties.
A. DESIGN CALCULATIONS

♦ Underground Detention Calculations

- **Design Volume Required (3 Inch) Of The Footprint Of The Building:**
  \[0.25 \times 6,136 = 1534\text{ cubic feet} (\text{Required As The Municipal's})\]

- **Provided Volume:** 1,539.40 cubic feet (See attached calculations) - Exceeds Design Volume.
Contech Engineered Solutions, LLC is pleased to offer the following estimate of storage volume for the above named project. The results are submitted as an estimate only, without liability on the part of Contech Engineered Solutions, LLC for accuracy or suitability to any particular application and are subject to verification of the Engineer of Record. This tool is only applicable for rectangular shaped systems.

### Summary of Inputs

<table>
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<tr>
<th>System Information</th>
<th>Backfill Information</th>
<th>Pipe &amp; Analysis Information</th>
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<td>Out-to-out width (ft):</td>
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<td>Number of Manifolds (ea):</td>
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<td>Number of Barrels (ea):</td>
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| Width At Sides (ft): | 1.0 |

### Storage Volume Estimation

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<th>Elevation (ft)</th>
<th>Incremental Storage (cf)</th>
<th>Cumulative Storage (cf)</th>
<th>Incremental Storage (cf)</th>
<th>Cumulative Storage (cf)</th>
<th>Percent Open Storage (%)</th>
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B. STORMWATER DETAILS
NOTE:

1. INJECTION MOLDED FITTINGS ARE AVAILABLE IN TEES, WYSES, REDUCERS, 45° BENDS AND BELL/BELL COUPLERS.

2. WATER TIGHT INJECTION MOLDED FITTINGS AND WATER TIGHT PIPE CAN BE SUBSTITUTED FOR WATER TIGHT APPLICATIONS.

3. CONTRACTOR TO SUBMIT SHOP DRAWINGS TO ENGINEER FOR APPROVAL.

4. CLEANOUTS TO BE 4" MINIMUM SIZE TO ACCOMMODATE ROOF LEADER.

ADS ROOF DOWNSPOUT WITH TEE CLEANOUT DETAIL
UNDERGROUND DETENTION BASIN (CLOSED SYSTEM) DETAIL

OUTLET CONTROL STRUCTURE (SEE DETAIL)

DOUBLE COMPONENT

ACCESS MANHOLE (TYPE)

EXCAVATION TRENCH

FLOW

FLOW

SYSTEM INLET

FILTER FABRIC

SUITABLE FOUNDATION

4" HOPE PIPE

PIVOTAL COVER MARKUP COVER OVER ALLOTTED AREA IN ACCORDANCE WITH AS3I OR I D D A 2006 IN PIPE ZONE

100 YEAR WSS

100 YEAR WSS

P AVEMENT

P AVEMENT

[Diagram showing various components of a detention basin]
NOT TO SCALE

OUTLET CONTROL STRUCTURE (WITH TOP SLAB) DETAIL

1. CONTRACTOR TO SUBMIT SHOP DRAWING FOR REVIEW AND APPROVAL.
2. ALL CONCRETE TO BE NJDOT CLASS "B".