



MEMORANDUM

TO: Marisa Tiberi, P.E.

FROM: Hormoz Pazwash, Ph.D., P.E., D.WRE *HP*

DATE: October 13, 2020

SUBJECT: USRES-540
Self-Storage Facility
100 Route 17 North
Lot 7.01, Block 1304
Borough of Upper Saddle River
Bergen County, New Jersey

I have reviewed the following listed revised plans, calculations report and Manual, prepared by L2A Land Design, LLC:

- * A set of plans, in 14 sheets, entitled "Preliminary & Final Site Plan, Proposed Self Storage Facility, 100 N.J.S.H. Route 17 North, Borough of Upper Saddle River, Bergen County, New Jersey, Block 1304; Lot: 7.01; Tax Map: 13, Zone: H-1R (Highway Retail & Commercial District & R-1 (Residence District)", dated January 17, 2020, last revised October 1, 2020, and consisting of:
- "Cover Sheet," Drawing C-01
 - "Existing Conditions & Demolition Plan," Drawing C-02
 - "Aerial Photography," Drawing C-02A
 - "Site Plan," Drawing C-03
 - "Grading, Drainage & Utility Plan," Drawing C-04
 - "Landscaping Plan," Drawing C-05
 - "Lighting Plan," Drawing C-06
 - "Soil Erosion & Sediment control Plan," Drawing C-07
 - "Truck Turning and Snow Storage Plan," Drawing C-08
 - "Details-1," Drawing C-09
 - "Details-2," Drawing C-10
 - "Details-3," Drawing C-11
 - "Details-4," Drawing C-12
 - "Details-5," Drawing C-13

* "Stormwater Management Report," dated January 17, 2020, last revised October 1, 2020. Included in the report are three (3) drainage area maps, dated January 17, 2020, and consisting of:

- "Existing Drainage Area Map," Drawing DA-01
- "Proposed Drainage Area Map," Drawing DA-02
- "Inlet Drainage Area Map," Drawing DA-03

Also included in the report are:

- A March 22, 2016 memorandum by L2A relating to soil boring test
- A March 9, 2016 Geotechnical Engineering Report by Johnson Soils Company

* "Stormwater Management Maintenance Manual," dated March 16, 2020, last revised October 1, 2020.

Based on my review, I found that the following comments remain outstanding on drainage and stormwater management provisions for the project:

1. The existing drainage area map shows a 12" RCP that emanates from an inlet on the southerly property entering the site. The entire reach of this pipe should be shown on the map to support the proposed diversion of runoff from the southerly lot to the northerly lot (Lot 6).
2. The storage-stage relation for Basin-1 only shows the storage at the top of the basin. The storage at intermediate elevations should be listed to show that the storage is a linear function of stage. Also, the number of Storm Trap Chambers and the storage capacity of each chamber should be indicated in the Pond Report.
3. The proposed outlet structure includes a 2.5" orifice at elevation 283.50', a 6" orifice at elevation 285' and a 1' long weir at elevation 286.25'. It is evident that the 2.5" orifice is highly vulnerable to clogging and since it is hidden over 5' below grade, it can be left undetected. As a result, the detention basin can be nearly one-half filled with water when a storm occurs and discharges at far greater rate than those indicated by the calculations.

Considering functionality and maintenance, this office highly recommends using a 6" orifice as the smallest opening in any underground detention basin. Specifically, a 6" orifice should be substituted for the 2.5" orifice and the 6" orifice at elevation 285.0' should be removed from the design. The overflow weir may be raised to elevation 286.50'. See also the next two (2) comments.

4. The project is required to provide 50% reduction in the peak rate of runoff from the site and cause no increase in runoff at any outfall point. The above recommended modification will meet with both of these requirements and will improve the efficacy of the detention system. The percent reduction on Table 5.1 does not apply.
5. We suggest that all inlets which drain to the detention basin are inserted with Flo-Gard + Plus or the like. This will significantly lesson the maintenance and its cost.

Note that the Stormwater Management Maintenance manual refers to inspection of Flo-Gard inserts (see Tables 1 and 2). However, neither the Grading, Drainage & Utility Plan, nor Detail sheets show any inlet inserts.

6. The Stormwater Management Maintenance Manual should be revised as follows:
 - a. As was previously requested, the storm duration should be defined in Section VII A and B-1 and Table 2. Consistent with Table 1, the duration should be specified as one (1) hour.
7. We suggest that the label "Subsurface Detention Basin" on Tables 1 and 2 is changed to "Stormwater Management System." These tables also include maintenance of inlets and Flo-Gard inserts.

If you have any questions, please contact me.

HP/jmp