

MEMORANDUM - 01

TO: Alvaro Gonzalez, Ph.D., P.E.

FROM: Sarfeen Tanweer, P.E.

DATE: December 2, 2025

SUBJECT: **Review of the Stormwater Management Report**
21-25 Grove Avenue
Block 1702, Lot 22
Township of Verona
Essex County – New Jersey
Our File No. 25VAZ107

We have reviewed the Applicant's submitted documents listed in Table 1. Please, see below for our comments:

Documents Reviewed

Name	Dated	Comments
"Stormwater Management Report"	Oct. 6, 2025	Prepared by Petry Engineering, LLC, and signed by J. Michael Petry, PE (NJ Professional Engineer License No. 36662).
"Preliminary & Final Site Plan"	Sep. 19, 2025	"Preliminary and Final Major Site Plan Prepared for Mohammad Abbasi (17 Sheets). Prepared by Petry Engineering, LLC, and signed by J. Michael Petry, PE (NJ Professional Engineer License No. 36662). <i>Relevant Sheets:</i> Sheet SP-2 – Existing Conditions and Demo Plan, Sheet SP-4.1 – Grading and Drainage Plan, SP-4.4 Utility Plan, Sheet SP-4.5 – Storm and Sanitary Sewer Profiles, Sheet SP-7.1 Soil Erosion and Sediment Control Plan, and Sheet SP-8.3 - Storm Details

Please see below for our comments:

1. The proposed project is considered a Major Development, per Township Ordinance §150-25.2 (Definitions), as it will disturb more than 0.5 acres of land. Thus, the Applicant must comply with the corresponding stormwater requirements for said category (Major Development), regarding water quantity, water quality, and groundwater recharge.
2. In accordance with N.J.A.C. 7:8 -5.5 (Stormwater Runoff Quality Standards), the Applicant does not have to comply with the stormwater runoff quality standards as the proposed development decreases the regulated motor vehicle surface on site. However, per Section 150-25.4R (Stormwater



Runoff Quality Standards) of the Township Code, stormwater runoff quality standards are applicable when the project meets the definition of a major development. This project qualifies as a major development due to increase in regulated impervious surface of more than 5,000 SF. Therefore, the Applicant must indicate compliance with the more stringent stormwater quality regulations of the Township Code.

3. The proposed development is within the Metropolitan Planning area. As per N.J.A.C 7:8-5.4 (b) 2., the groundwater recharge requirement does not apply to this project.
4. The drainage report makes multiple references to Technical Release 55 (TR-55). It should be noted that TR-55 has been superseded by the National Engineering Handbook NEH Part 630 – Hydrology. The reference in the report shall be revised to indicate the same.
5. The Applicant has provided the existing and proposed drainage area maps. However, the Applicant shall include an inlet area map for the proposed conditions as well.
6. Pipe capacity calculations shall be provided for all stormwater pipes at every proposed slope. We recommend the pipes shall be designed to convey the 100-year rainfall intensity. Velocities in the pipes shall be at least 1.4 fps (self-cleansing velocity).
7. The Applicant proposed 6-inch PVC pipes to convey the runoff generated at each of the units' roof, which are later connected to a 12-inch PVC pipe and finally to an existing 8-inch pipe. This office recommends to change the 6-inch PVC pipes for 8-inch, instead.
8. Sheet SP-2 of the Full Set of Plans (Existing Conditions and Demo Plan) displays an 8-inch PVC discharging west-to-east into a type A inlet pipe, which, in turn, also features an 18-inch Reinforced Concrete Pipe (RCP) draining in the same direction towards another type A inlet located at the northeastern corner of the lot. This last inlet discharges into an 8-inch PVC pipe. There are several issues with the existing stormwater pipe system that should be clarified and addressed in the newly proposed system:

8.1 The layout of the existing conveyance system is not hydraulically recommended as it ends in a pipe (8-inch) with a smaller diameter than the one immediately upstream (12-inch). Generally, outlets of a smaller diameter than the ones upstream are not recommended (unless the outlets are part of a detention or retention system) because they cause backup conditions.

8.2 Both, the Township Code and N.J.A.C. 7:8 aim at protecting the negative impacts to adjacent sites. Ideally, all runoff shall be managed within the property to precisely avoid such scenario. Thus:

- (a) The Applicant shall clarify/establish where the 8-inch PVC pipe at the northeastern portion discharges into; and



- (b) If the existing west-to-east runoff flow pattern is to be kept, the Applicant should consider installing an infiltration or detention BMP measure as part of the solution to manage the lot's stormwater in order to reduce/mitigate possible current adverse impacts to adjoining lots.
9. The Applicant is proposing a drop curb at the rear parking space to convey —via sheet flow— all runoff from the parking lot to the existing type A inlet located at the northeastern portion of the lot (which was not even modeled). This layout not only might create impoundments, but also promote erosion downstream of the drop curb. The Applicant shall install inlets to capture all parking runoff and then pipe it. Water quality measures shall be part of the solution (see item 2 of this technical memorandum).
10. Please, provide a brief description of the maintenance of the proposed drainage system along with the frequency of the maintenance activities and yearly costs. Maintenance manual shall be submitted per N.J.A.C. 7:8-5.8.

If you have any questions, please advise me.