Stormwater Management Report
Proposed Dry Well

1246 SEQUOIA ROAD
Cherry Hill Township
Camden County, New Jersey

Prepared by

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Discussion

The purpose of this report is to provide a stormwater management analysis for the proposed improvements at 1246 Sequoia which demonstrates compliance with the Cherry Hill Township ordinance. According to the County Soil Survey, the portion of the site within the work area consists of soils from the Freehold loamy fine sand (map unit FrgB) series which contains soils from the hydrological group "B". The soils in this map unit generally consist of loamy sand to loamy fine sand soils with a depth to restrictive horizons typically more than 80-inches. According to NRCS data, the conductive capacity (Ksat) for these soils is typically 2-6 in/hr.

The project proposes to install an inground pool and associated improvements. Under the proposed conditions, the total lot coverage increases by **563** sq. ft. The project proposes stormwater management measures to mitigate the increase in runoff associated with the 10-year storm.

A subsurface infiltration system (dry well) is proposed to compensate for the increase in runoff in the post-developed condition. The system consists of **four (4)** 24" diameter subsurface dry wells; NDS Flo-well systems, or approved equal. (See plan for detailed info). The proposed system is designed to reduce the runoff volume from the proposed increase in impervious area to less than the pre-developed conditions. The dry wells will collect an equivalent area of impervious from the roof drains which currently runs off undetained.

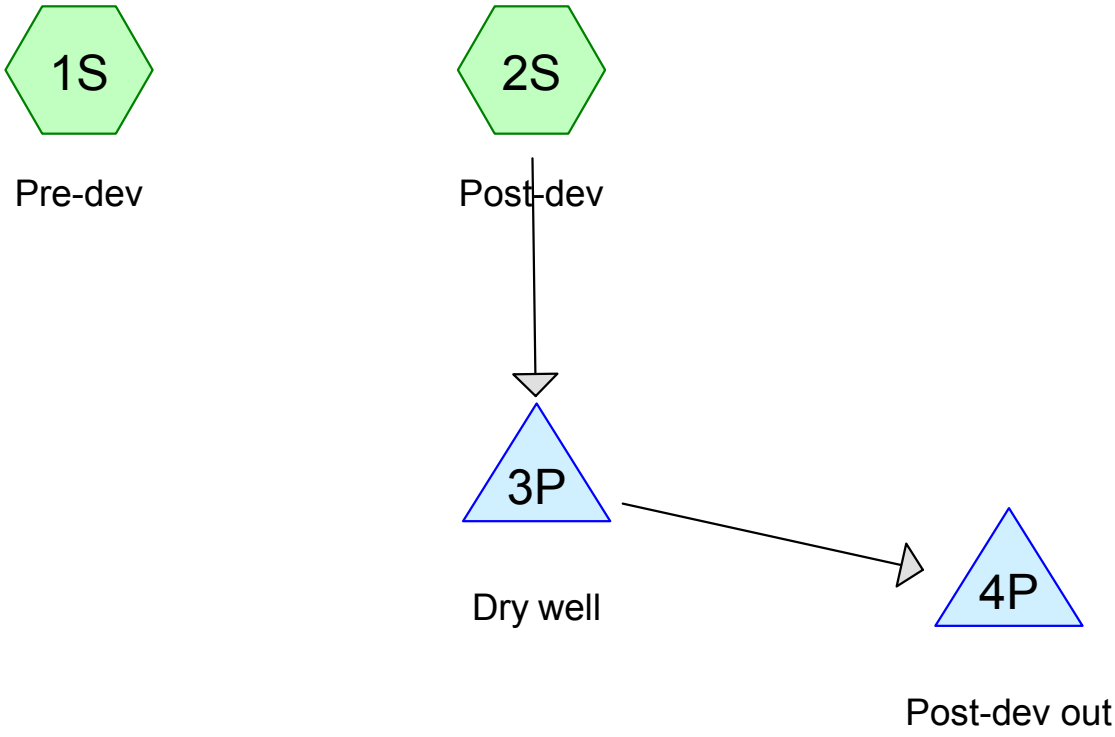
A review of the soils on-site indicates that the depth to restrictive features and permeability rate at the subject property are consistent with the County soil survey and the soils can adequately accommodate the proposed dry well system.

Volume calculations for the proposed dry wells were performed within the *Hydrocad v10.00-25* computer program.

The dry well system reduces the post developed runoff to 63 cu. ft. as compared to the pre-developed condition which produces 66 cu. ft. of runoff; therefore the above requirement is met.

The dry well system details are depicted on the *Plot/Grading Plan* (revised 10/04/21) prepared by Tri-State Engineering & Surveying Project No. 20-123.

DRY WELL SIZING CALCULATIONS



Subcat Reach Pond Link

Routing Diagram for 21-007
Prepared by TSE, Printed 11/10/2021

Area Listing (all nodes)

Area (sq-ft)	CN	Description (subcatchment-numbers)
563	61	>75% Grass cover, Good, HSG B (1S)
563	98	Unconnected pavement, HSG B (2S)

Time span=0.00-30.00 hrs, dt=0.05 hrs, 601 points
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Pre-dev Runoff Area=563 sf 0.00% Impervious Runoff Depth=1.41"
Tc=6.0 min CN=61 Runoff=0.02 cfs 66 cf

Subcatchment 2S: Post-dev Runoff Area=563 sf 100.00% Impervious Runoff Depth=4.82"
Tc=6.0 min CN=98 Runoff=0.06 cfs 226 cf

Pond 3P: Dry well Peak Elev=2.99' Storage=65 cf Inflow=0.06 cfs 226 cf
Discarded=0.00 cfs 163 cf Primary=0.07 cfs 63 cf Outflow=0.07 cfs 226 cf

Pond 4P: Post-dev out Inflow=0.07 cfs 63 cf
Primary=0.07 cfs 63 cf

Total Runoff Area = 1,126 sf Runoff Volume = 292 cf Average Runoff Depth = 3.11"
50.00% Pervious = 563 sf 50.00% Impervious = 563 sf

Pond 3P: Dry well - Chamber Wizard Field A

Chamber Model = ADS N-12 24" (ADS N-12® Pipe)
Inside= 23.8"W x 23.8"H => 3.10 sf x 20.00'L = 62.0 cf
Outside= 28.0"W x 28.0"H => 3.92 sf x 20.00'L = 78.4 cf
Row Length Adjustment= -17.60' x 3.10 sf x 4 rows

28.0" Wide + 6.0" Spacing = 34.0" C-C Row Spacing

1 Chambers/Row x 20.00' Long -17.60' Row Adjustment = 2.40' Row Length +6.0" End Stone x 2 = 3.40' Base Length
4 Rows x 28.0" Wide + 6.0" Spacing x 3 + 6.0" Side Stone x 2 = 11.83' Base Width
6.0" Base + 28.0" Chamber Height + 6.0" Cover = 3.33' Field Height

4 Chambers x 62.0 cf -17.60' Row Adjustment x 3.10 sf x 4 Rows = 29.8 cf Chamber Storage
4 Chambers x 78.4 cf -17.60' Row Adjustment x 3.92 sf x 4 Rows = 37.6 cf Displacement

134.1 cf Field - 37.6 cf Chambers = 96.5 cf Stone x 40.0% Voids = 38.6 cf Stone Storage

Chamber Storage + Stone Storage = 68.3 cf = 0.002 af
Overall Storage Efficiency = 51.0%
Overall System Size = 3.40' x 11.83' x 3.33'

4 Chambers
5.0 cy Field
3.6 cy Stone