

530 PROSPECT AVENUE, SUITE 2C
LITTLE SILVER, NEW JERSEY, 07739
PHONE (732)747-6530 • FAX (732)747-6778
OFFICE EMAIL: EMWASSOC@AOL.COM



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E. M. WATERBURY & ASSOCIATES, P.A.
ENGINEERING • PLANNING • LAND USE & DEVELOPMENT

STATEMENT OF DRAINAGE
Kristall LLC Car Wash Expansion
1111-1115 Main Street; Block 32, Lots 4&5
Bradley Beach, NJ
Statement of Drainage
December 23, 2024

The project is located on Lot 4&5, Block 32 on Main Street in the Borough of Bradley Beach. The project consists of two lots; lots 4 & 5. Lot 4 currently contains a car wash facility. This is proposed to remain. Lot 4 currently contains an auto body repair use. This is proposed to be removed. The site is located on Main Street which is a state highway. The majority of both lots slope toward the rear with only the portions of the lots forward of the buildings slopes toward Main Street. The railroad right-of-way is to the rear of both properties. The lot will be redeveloped to provide vacuum stations for the car wash use on lot 4.

Lot 4 containing the Car wash facility is proposed to remain mainly as it exists. The lot contains 90.8% coverage of impervious surfaces. 930 SF of coverage is proposed to be removed from Lot 4. However, in the existing condition 753 SF of grass area from lot 4 and 214 SF of asphalt area is proposed to drain from lot 5 onto lot 4, or a total of 967 SF. The proposed area draining to Lot 4 from Lot 5 and the areas removed on lot 4 are close in area and cancel out any impacts which may be created by the proposed project.

Lot 5 is proposed to have all improvements removed above and below grade. The existing site contains 32.3% lot coverage. In the proposed condition the lot coverage is 66.6%. To mitigate the additional coverage the applicant proposes to direct a majority of the proposed paved area to a porous surface proposed at the parking spaces. The drainage area of the proposed asphalt is 6175 SF. The plans indicate 3067 SF of the asphalt drainage area is proposed to be constructed of the porous surface. The NJDEP permits the porous surface to be 1/3 of the area drainage to it. In this case the porous surface is $3067/6175 = 50\%$ of the drainage area. Therefore, the asphalt to porous surface area is within the permit ratio. The porous surface is shown to be either permeable pavers or porous concrete. There is a stone bed proposed beneath the surface to store runoff while it drains into the soils below. I have attached a copy of the NRCS Soils survey for the property. The soil is shown as urban soils. The storage provided without recharge will handle to 2-year storm. The NJDEP requires soil logs to be performed between January and April to confirm the seasonal high-water table. The applicant proposes to obtain soil logs in the month of January 2025 to confirm soils. The porous area is the low point for the proposed drive. The area is surrounded with full face curb. Any water collected will remain on site until discharged into the porous surface. The bottom of the recharge is required to be 2' above seasonal high-water table. The height to the water table will be confirmed by the soil logs and provided under a separate cover.

The portion of lot 5 that does not drain toward Main Street drains to the rear and the Railroad right-of-way. In the existing condition Lot 5 has 7453 SF of pervious area and 2215 sf of impervious area draining toward the Railroad right-of-way. In the proposed condition the site will have 759 SF of impervious and 2607 SF of pervious drainage to the same area. This is a reduction of 65% of area drainage to the rear. This is achieved by the redirection of runoff to the porous surface in the parking spaces.

The NJDEP requires projects meeting their definition of a 'Major Development' provide water quantity and possibly water quality mitigation. The thresholds which would define the site as a Major Development per



NJDEP Stormwater Best Management Practices Manual are:

- a. The site increases the Motor Vehicle Surface $\geq \frac{1}{4}$ acre
- b. The site increases Total Lot Coverage $\geq \frac{1}{4}$ acre
- c. The project proposes to disturbance ≥ 1 acre of land.

The plan contains the calculation for a Major Development. The site is not a Major Development by NJDEP stormwater Management Regulations. However, the site reduces runoff to the adjacent area by the proposed design. Therefore, the site will have no impact to surrounding areas.

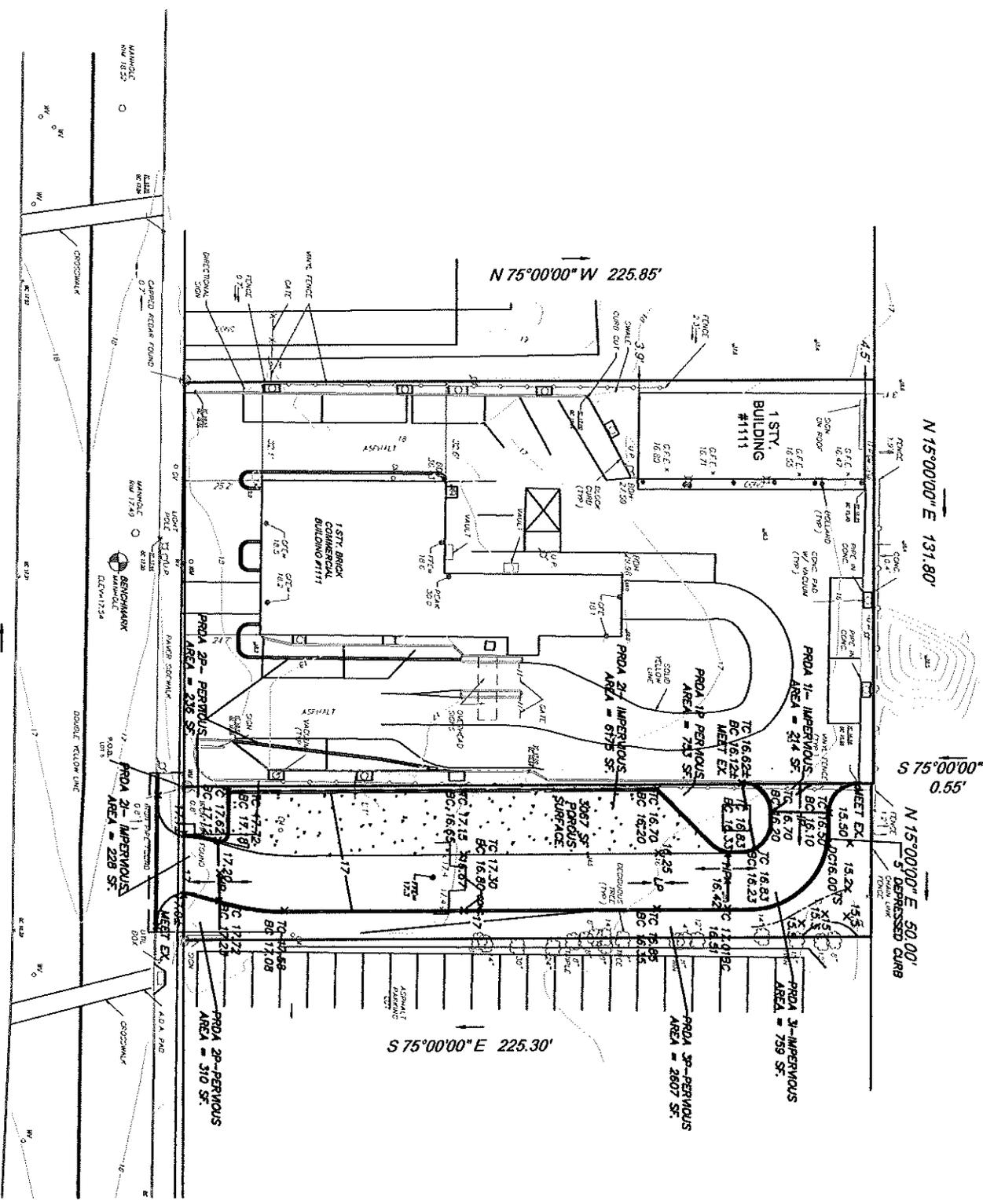
Prepared by,

Elizabeth M. Waterbury

Elizabeth M. Waterbury, PE, PP, CME
Project Engineer License No. GE 31645



PROPOSED DRAINAGE AREA MAP



S 15°00'00" W 181.80'
MAIN STREET
(SEE PLAN 125.4)



SCALE: 1 in. = 20 ft.



United States
Department of
Agriculture

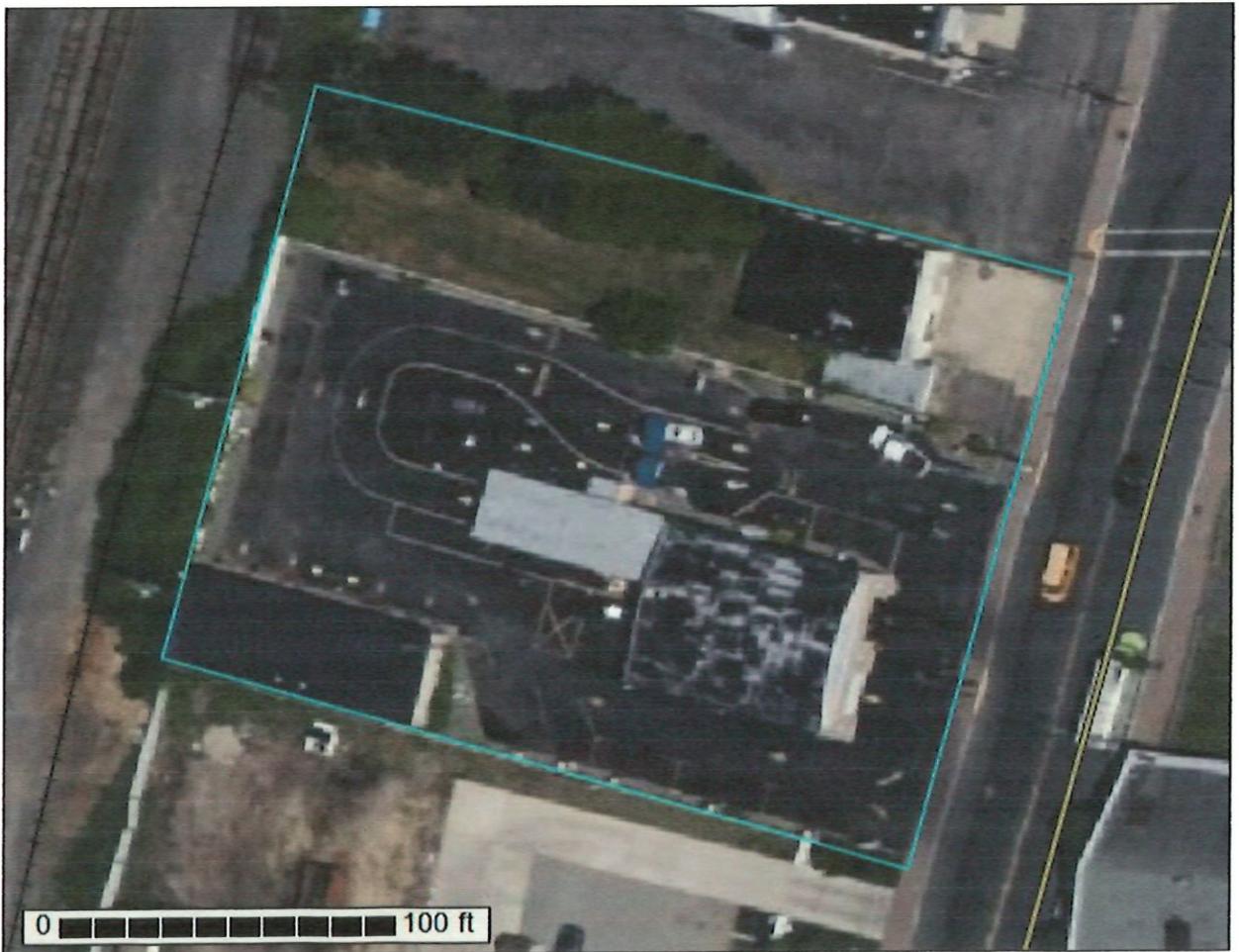
NRCS

Natural
Resources
Conservation
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A product of the National
Cooperative Soil Survey,
a joint effort of the United
States Department of
Agriculture and other
Federal agencies, State
agencies including the
Agricultural Experiment
Stations, and local
participants

Custom Soil Resource Report for Monmouth County, New Jersey

Kristall LLC- Bradley Beach



December 23, 2024

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (<http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/>) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (<https://offices.sc.egov.usda.gov/locator/app?agency=nrcs>) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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Custom Soil Resource Report Soil Map



MAP LEGEND

 Area of Interest (AOI)	 Spoil Area
 Soils	 Stony Spot
 Soil Map Unit Polygons	 Very Stony Spot
 Soil Map Unit Lines	 Wet Spot
 Soil Map Unit Points	 Other
 Special Point Features	 Special Line Features
 Blowout	 Water Features
 Borrow Pit	 Streams and Canals
 Clay Spot	 Transportation
 Closed Depression	 Rails
 Gravel Pit	 Interstate Highways
 Gravelly Spot	 US Routes
 Landfill	 Major Roads
 Lava Flow	 Local Roads
 Marsh or swamp	 Background
 Mine or Quarry	 Aerial Photography
 Miscellaneous Water	
 Perennial Water	
 Rock Outcrop	
 Saline Spot	
 Sandy Spot	
 Severely Eroded Spot	
 Sinkhole	
 Slide or Slip	
 Sodic Spot	

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
 Web Soil Survey URL:
 Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Monmouth County, New Jersey
 Survey Area Data: Version 18, Sep 3, 2024

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jun 4, 2022—Jul 22, 2022

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
UR	Urban land	1.0	100.0%
Totals for Area of Interest		1.0	100.0%

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Custom Soil Resource Report

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Monmouth County, New Jersey

UR—Urban land

Map Unit Setting

National map unit symbol: 4j92
Elevation: 0 to 170 feet
Mean annual precipitation: 30 to 64 inches
Mean annual air temperature: 46 to 79 degrees F
Frost-free period: 131 to 178 days
Farmland classification: Not prime farmland

Map Unit Composition

Urban land: 95 percent
Minor components: 5 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Urban Land

Setting

Parent material: Surface covered by pavement, concrete, buildings, and other structures underlain by disturbed and natural soil material

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8s
Hydric soil rating: Unranked

Minor Components

Udorthents

Percent of map unit: 5 percent
Landform: Low hills
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No