STONEFIELD

STORMWATER MANAGEMENT STATEMENT

RE:	**Spark Car Wash** **Preliminary & Final Major Site Plan** **575 Milltown Road** **Township of North Brunswick, Middlesex County, New Jersey**
DATE:	**11/13/2023**
PROJECT ENGINEER:	**Paul D. Mutch Jr., PE** **New Jersey Professional Engineer License #55094**

INTRODUCTION

This Stormwater Management Statement has been prepared to analyze the anticipated stormwater runoff impacts of the proposed project and discuss the measures proposed to conform to the stormwater management requirements set forth by the Township of North Brunswick, Freehold Soil Conservation District, and the NJDEP. The subject property is located along Milltown Road and is designated Block 203, Lot 4, commonly known as 575 Milltown Road. Project figures can be found in Appendix A of this Statement.

The Applicant, Spark Car Wash is proposing the demolition of the existing 2-story masonry building and the construction of a new 4,841 SF Single-Tunnel Car Wash Facility. The 1.74-acre subject property is currently comprised of primarily (85.2%) impervious surfaces. The proposed development includes the construction of a single-story 4,841 SF Single-Tunnel Car Wash Facility with associated employee & vacuum parking. Existing access to the site is provided via right ingress/egress driveways on Georges Road & right ingress/egress driveways on Milltown Road. The proposed development will close the existing driveways located along Milltown Road & maintain the driveways along Georges Road. Proposed access to the site is provided via one (1) right ingress/egress only driveway on Milltown & the existing right ingress/egress driveways located along Georges Road. Additional site improvements for the project include parking, lighting, soil erosion measures, utilities, stormwater measures, and landscaping.

EXECUTIVE SUMMARY

The project includes 1.75 acres of disturbance, thus classifying the project as a major development by NJAC 7:8. The proposed development results in a reduction of 29,485 square feet (38.8%) of impervious surface and does not result in an increase of more than one quarter acre of motor vehicle surface. Due to the proposed reduction in on-site impervious surfaces, post-construction runoff hydrographs for each of these events do not exceed, at any point in time, the pre-construction runoff hydrographs for the same events – therefore, the proposed design meets State runoff quantity requirements. Due to the reduction in motor vehicle surface, State runoff quality requirements are not applicable. Because the project proposed the development of an existing commercial development within an urban redevelopment area (Planning Area PA-1), State groundwater recharge requirements are not applicable.

Proposed stormwater improvements include an addition to the existing underground system that proposes five (5) Type 'B' Inlets, one (1) trench drain, one (1) stormwater manhole, & 389 linear feet of 12" HDPE connecting to the existing 'B' inlet (E-101), which then connects to the existing drainage system. Additional overland flow is collected in the rear of the site via via existing 'E' inlet (E-100), which then connects to the existing drainage system on Milltown Road.

As the project meets Township and State stormwater management requirements and due to the overall decrease in impervious coverage, no adverse impacts to the municipal drainage system or adjacent properties are anticipated as a result of the proposed development.

PRE-DEVELOPMENT DRAINAGE CONDITIONS

Under existing conditions, drainage sheet flows overland to the existing on-site inlets along the property line shared with Lot 44.01 from the northernmost corner to the southern side of the site. Additional overland flow drains onto Milltown Road and is then collected by the existing type 'B' inlets which connect to the existing drainage system.

Per the National Resource Conservation Service (NRCS) data, the soil underlying the project site consists of the following:

TABLE 1: NRCS PROJECT SOILS

Soil Unit Code	*Soil Description*	*Approximate Project Coverage*	*Hydrologic Soil Group*
NktB	Nixon moderately well drained variant – Urban land complex, 0 to 5 Percent Slopes	100%	C

The hydrologic soil group classifications above have been utilized in the landcover data for the stormwater analysis performed on the project. The NRCS Soil Survey can be found in Appendix B of this report.

The following table summarizes each existing drainage area utilized in the stormwater analysis. Drainage area maps for both pre-development and post-development conditions can be found in Appendix C of this report.

TABLE 2: PRE-DEVELOPMENT DRAINAGE AREAS

Drainage Area	*Description*	*Area Extents*	*Impervious Area*	*Time of Concentration*
E-1	Existing Drainage Area	75,959 SF	64,745 SF	3.1 Minutes

PROPOSED DRAINAGE CONDITIONS

The application proposes a single-story 4,841 square foot Car Wash and associated parking. The proposed development results in a net decrease of impervious area throughout the site. The pre-development impervious area within the site is 64,745 square feet (85.2%), while the post-development impervious area is 35,260 square feet (46.4%). This 29,485 square foot (38.8%) reduction of impervious surface naturally reduces the total runoff produced by the site.

Proposed stormwater improvements include an addition to the existing underground system that proposes five (5) Type 'B' Inlets, one (1) trench drain, one (1) stormwater manhole, and 389 linear feet of 12" HDPE connecting to the existing 'B' inlet (E-101), which then connects to the existing drainage system. Additional overland flow is collected in the rear of the site via via existing 'E' inlet (E-100), which then connects to the existing drainage system on Milltown Road.

The following table summarizes each proposed drainage area utilized in the stormwater analysis. Drainage area maps for both pre-development and post-development conditions can be found in Appendix C of this report.

TABLE 3: POST-DEVELOPMENT DRAINAGE AREAS

Drainage Area	*Description*	*Area Extents*	*Impervious Area*	*Time of Concentration*
P-1	Proposed Drainage Area	75,959 SF	35,260 SF	2.5 Minutes

STORMWATER MANAGEMENT ANALYSIS

The project is a redevelopment that reduces overall impervious surface coverage. The overall land disturbance is over an acre and therefore is defined as a major development by NJAC 7:8. The project is designed to conform to the stormwater management requirements set forth by the Township of North Brunswick, Freehold Soil Conservation District, and the NJDEP.

The development reduces overall impervious surface area while maintaining drainage patterns consistent with pre-development conditions. As a result of these improvements, peak runoff rates and runoff volume are naturally reduced. Because the site is located in the "urban redevelopment area," State groundwater recharge requirements are not applicable. Furthermore, groundwater recharge rates and stormwater runoff quality will be naturally enhanced due to the reduction of impervious coverage and the addition of lawn and landscaped areas.

STORMWATER RUNOFF QUANTITY

The project results in a net decrease in impervious surfaces, naturally reducing peak runoff for each of the 2-, 10- and 100-year 24-hour rainfall events. Refer to Tables 5 wherein the pre- and post-development peak flows are compared.

TABLE 4: QUANTITY COMPARISON POINTS OF INTEREST

Point of Interest	*Area Description*	*Existing Tributary Drainage Areas*	*Proposed Tributary Drainage Areas*
POI-1	'B' Inlet - Milltown Road	E-1	P-1

TABLE 5: POI-1 STORMWATER PEAK DISCHARGE SUMMARY

Storm Event	*Pre-Development Peak Discharge*	*Post-Development Peak Discharge*	*Post-Development Peak Discharge Reduction*
2-Year	5.59 CFS	4.67 CFS	16.50%
10-Year	9.11 CFS	8.37 CFS	8.12%
100-Year	16.11 CFS	15.80 CFS	1.92%

As demonstrated in the tables above, peak stormwater discharge rates are reduced for each storm event. As shown in Appendix D, post-construction runoff hydrographs for each of these events do not exceed, at any point in time, the pre-construction runoff hydrographs for the same events – therefore, the proposed design meets State runoff quantity requirements per NJAC 7:8.

STORMWATER RUNOFF QUALITY

The development does not result in an increase of one quarter acre of regulated motor vehicle surface; therefore, stormwater quality requirements per NJAC 7:8 are not applicable. However, the addition of landscaped areas will naturally improve stormwater runoff quality for the proposed site.

GROUNDWATER RECHARGE

The site is located in the "urban redevelopment area"; therefore, groundwater recharge requirements per NJAC 7:8 are not applicable. However, the addition of landscaped areas will naturally improve groundwater recharge rates for the proposed site.

MAINTENANCE

A Stormwater Operations & Maintenance Manual will be submitted for approval to the Township of North Brunswick prior to the start of construction. A copy of this manual will be kept on site at all times. The manual will be recorded to the property deed. Any required easements or covenants associated with the stormwater improvements will be recorded prior to the start of construction.

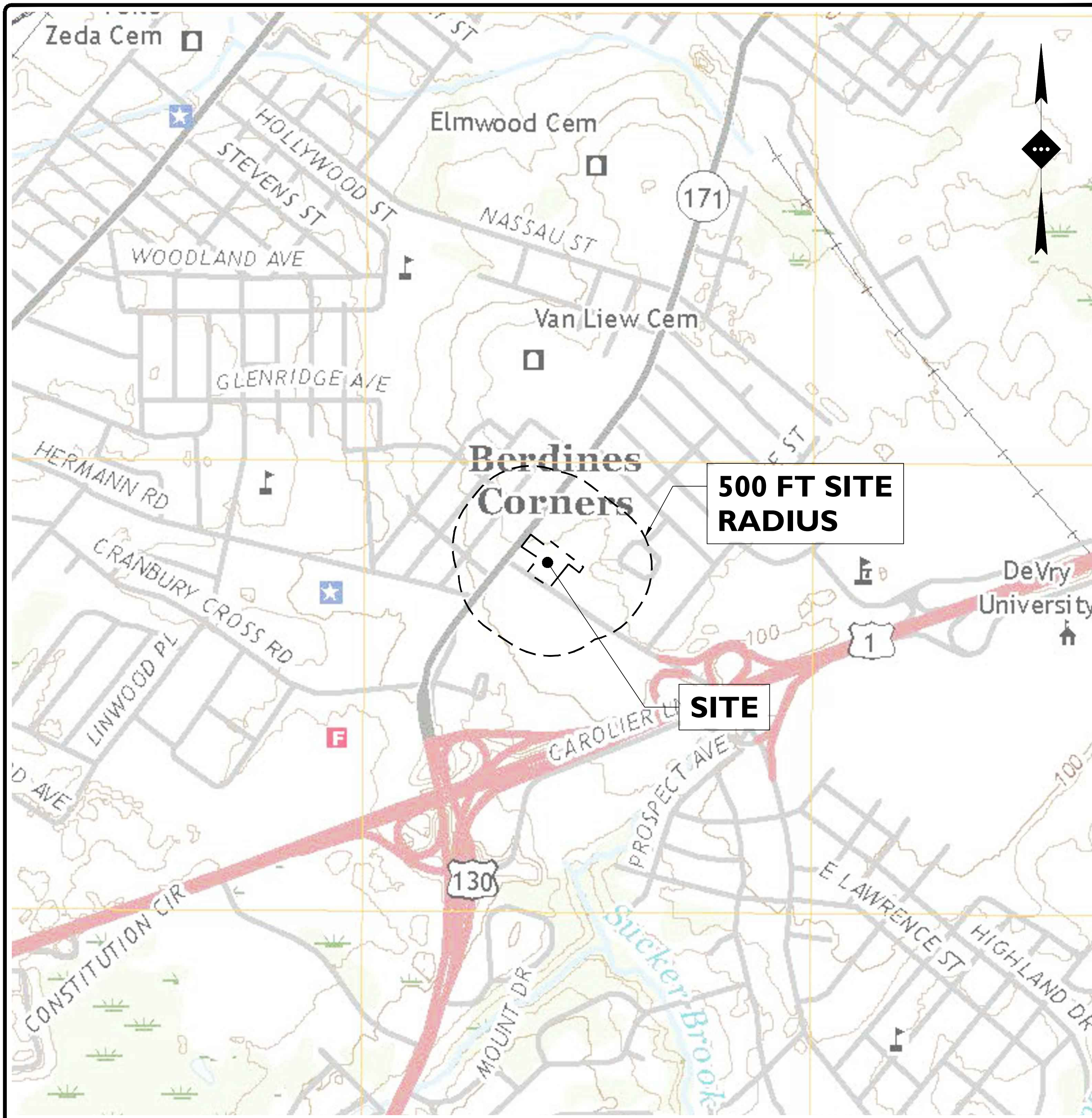
CONCLUSION

The proposed development meets stormwater management requirements set forth by the Township of North Brunswick, Freehold Soil Conservation District, and the NJDEP. Proposed additional green space and landscaping will naturally enhance groundwater recharge rates and stormwater runoff quality. Therefore, no adverse impacts to the municipal drainage system or adjacent properties are anticipated as a result of the proposed improvements.

Prepared by:

Paul Mutch, PE
NJ PE License No. 55094
Stonefield Engineering and Design, LLC

APPENDIX A
PROJECT MAPS



USGS QUADRANGLE MAP

500' 0' 500' 1000'

GRAPHIC SCALE IN FEET

1"= 500'

SOURCE: NEW BRUNSWICK QUADRANGLE, NEW JERSEY 7.5 MINUTE SERIES, DATED 2019

SPARK CAR WASH

PROPOSED CAR WASH

BLOCK 203, LOT 4
575 MILLTOWN ROAD
TOWNSHIP OF NORTH BRUNSWICK, MIDDLESEX COUNTY, NEW JERSEY

DRAWN BY:	JMK
CHECKED BY:	PM
DATE:	11/14/2023
SCALE:	1" = 500'
PROJECT ID:	PRI-220304

STONEFIELD
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www.stonefieldeng.com
15 Spring Street, Princeton, NJ 08542
Phone 609.362.6900

200' 0' 200' 400'

GRAPHIC SCALE IN FEET
1" = 200'

AERIAL MAP

SOURCE: GOOGLE EARTH PRO, RETRIEVED 11/06/2023

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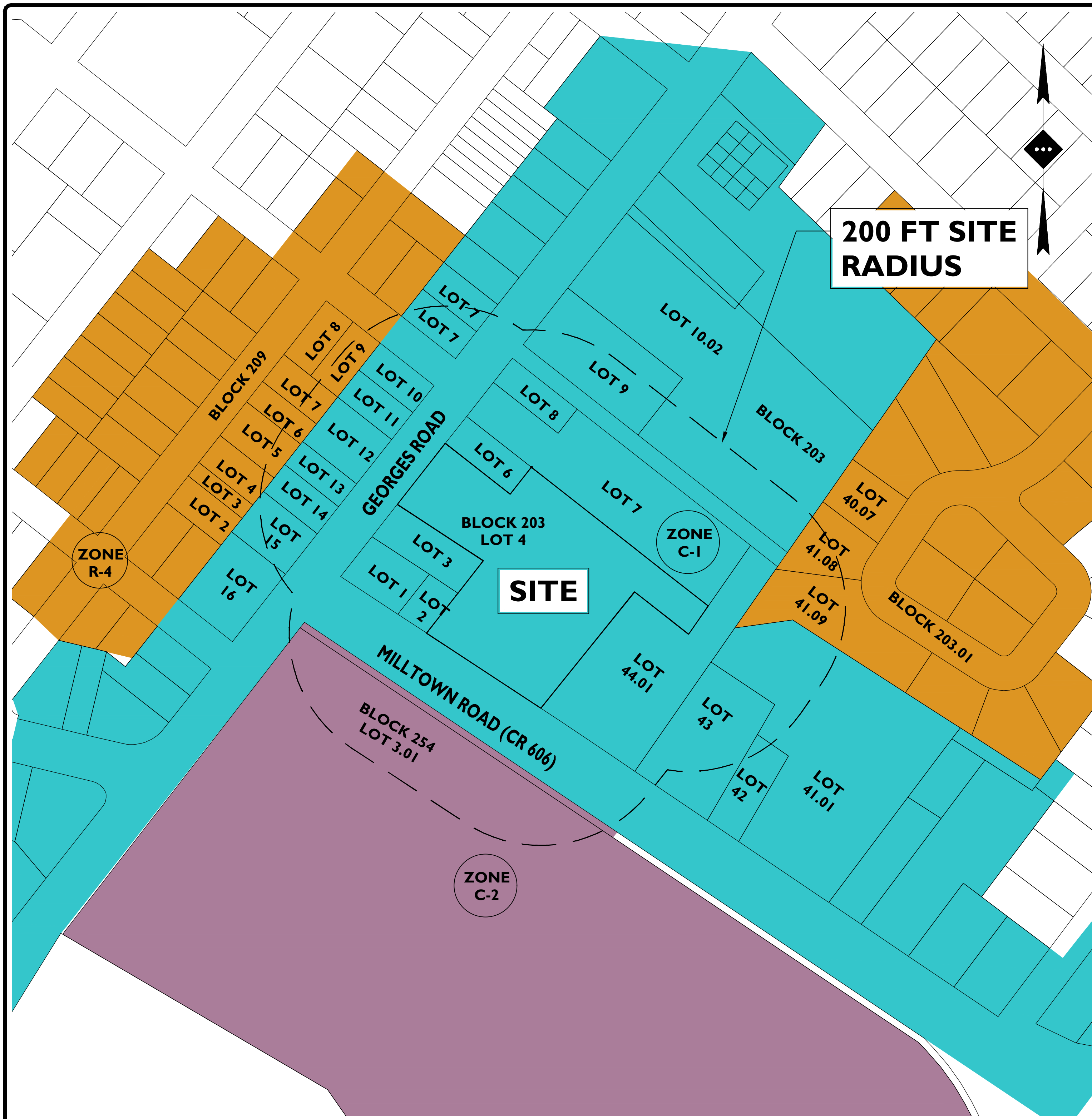

TAX & ZONING MAP

200' 0' 200' 400'

GRAPHIC SCALE IN FEET

1" = 200'

SOURCE: TOWNSHIP OF NORTH BRUNSWICK TAX MAP SHEET 50 AND 69. TOWNSHIP OF NORTH BRUNSWICK ZONING MAP DATED FEBRUARY 20, 2007

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APPENDIX B
NRCS COUNTY SOIL SURVEY

United States Department of Agriculture

NRCS

Natural Resources Conservation Service

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

Middlesex County, New Jersey

October 19, 2022

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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Contents

How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

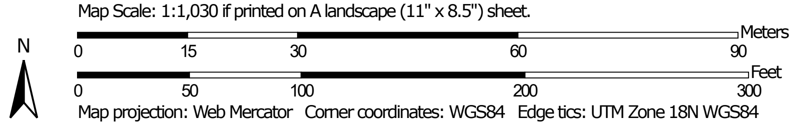
After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Soil Map

Map Scale: 1:1,030 if printed on A landscape (11" x 8.5") sheet.



Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 18N WGS84

MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Map Unit Polygons

Soil Map Unit Lines

Soil Map Unit Points

Special Point Features

Blowout

Borrow Pit

Clay Spot

Closed Depression

Gravel Pit

Gravelly Spot

Landfill

Lava Flow

Marsh or swamp

Mine or Quarry

Miscellaneous Water

Perennial Water

Rock Outcrop

Saline Spot

Sandy Spot

Severely Eroded Spot

Sinkhole

Slide or Slip

Sodic Spot

Spoil Area

Stony Spot

Very Stony Spot

Wet Spot

Other

Special Line Features

Water Features

Streams and Canals

Transportation

Rails

Interstate Highways

US Routes

Major Roads

Local Roads

Background

Aerial Photography

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: Middlesex County, New Jersey
Survey Area Data: Version 18, Aug 30, 2022

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

Date(s) aerial images were photographed: Sep 14, 2020—Oct 8, 2020

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
NktB	Nixon moderately well drained variant-Urban land complex, 0 to 5 percent slopes	1.9	100.0%
Totals for Area of Interest		**1.9**	**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.

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.

Middlesex County, New Jersey

NktB—Nixon moderately well drained variant-Urban land complex, 0 to 5 percent slopes

Map Unit Setting

National map unit symbol: 1jwqm
Elevation: 0 to 330 feet
Mean annual precipitation: 28 to 59 inches
Mean annual air temperature: 46 to 79 degrees F
Frost-free period: 161 to 231 days
Farmland classification: Not prime farmland

Map Unit Composition

Nixon, moderately well drained, and similar soils: 45 percent
Urban land: 40 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Nixon, Moderately Well Drained

Setting

Landform: Flats
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Old fine-loamy alluvium derived from arkose and/or shale

Typical profile

A - 0 to 8 inches: loam
AB - 8 to 16 inches: loam
Bt - 16 to 30 inches: loam
BC - 30 to 38 inches: sandy loam
C - 38 to 60 inches: sandy loam

Properties and qualities

Slope: 0 to 5 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)
Depth to water table: About 12 to 48 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Moderate (about 6.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: C
Hydric soil rating: No

Description of Urban Land

Setting

Landform: Flats

Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Surface covered by pavement, concrete, buildings, and other structures underlain by disturbed and natural soil material

Typical profile

C - 0 to 60 inches: variable

Interpretive groups

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

Minor Components

Fallsington, bedrock substratum, rarely flooded

Percent of map unit: 5 percent
Landform: Depressions
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Sassafras

Percent of map unit: 5 percent
Landform: Knolls, hills
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex
Across-slope shape: Linear
Hydric soil rating: No

Woodstown

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

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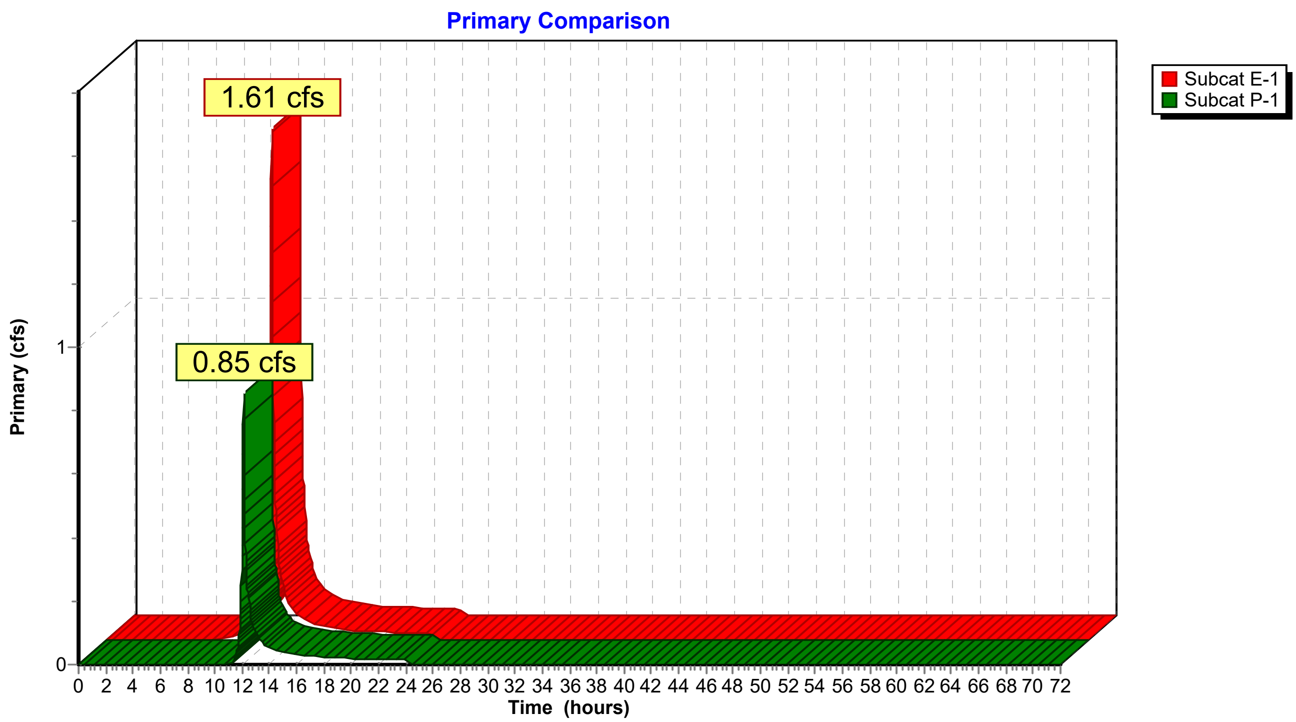
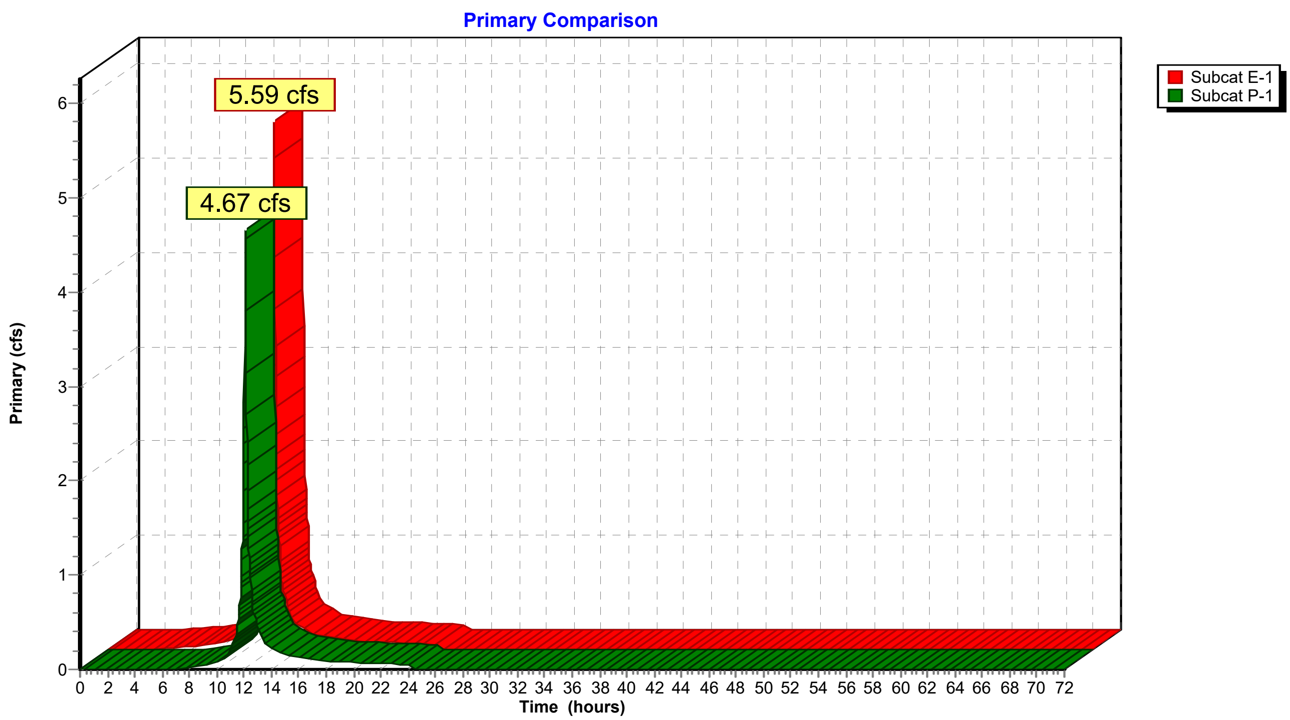
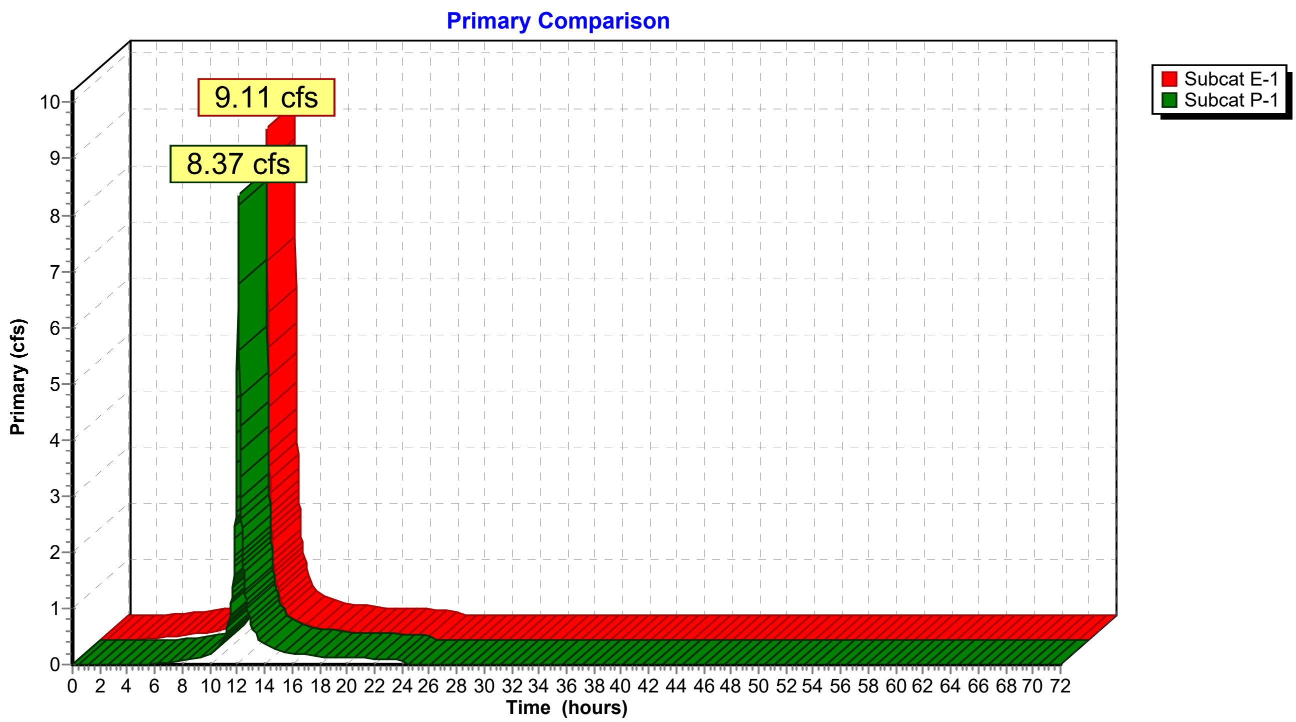
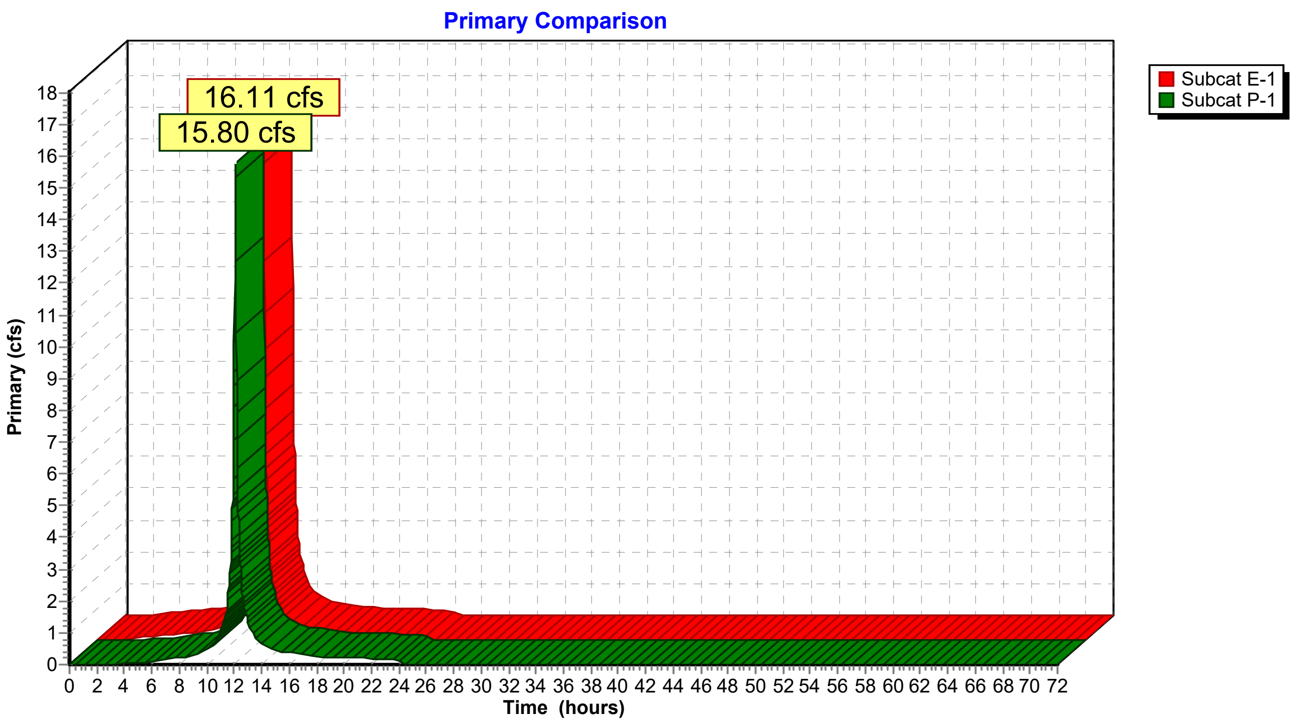
APPENDIX C
POINT OF INTEREST COMPARISON HYDROGRAPHS

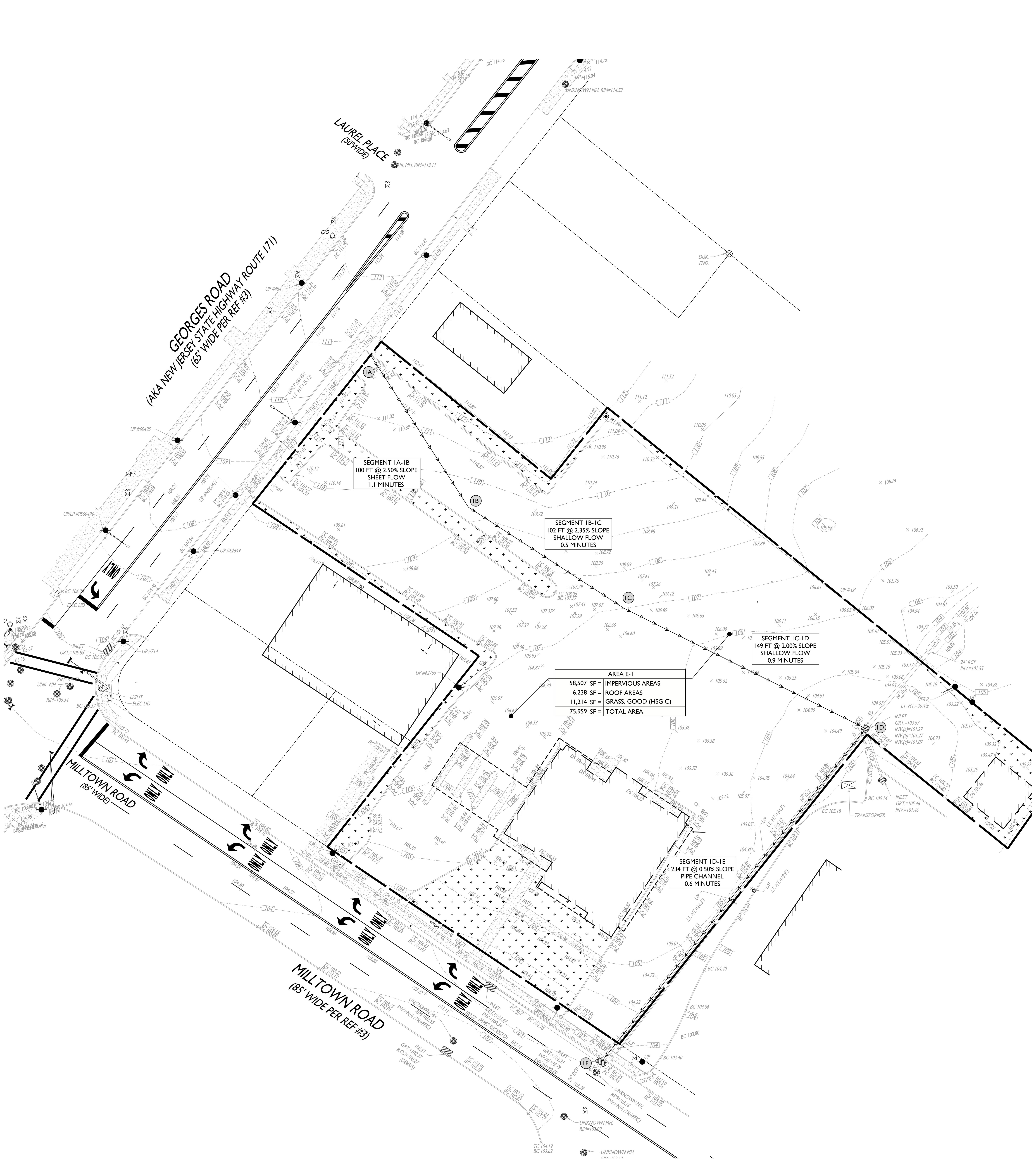

Primary Comparison
1.61 cfs
0.85 cfs
Subcat E-1
Subcat P-1
Primary (cfs)
0
1
0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48 50 52 54 56 58 60 62 64 66 68 70 72
Time (hours)


Primary Comparison
5.59 cfs
4.67 cfs
Subcat E-1
Subcat P-1
Primary (cfs)
0
1
2
3
4
5
6
Time (hours)
0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48 50 52 54 56 58 60 62 64 66 68 70 72


Primary Comparison
9.11 cfs
8.37 cfs
Subcat E-1
Subcat P-1
Primary (cfs)
Time (hours)
0
1
2
3
4
5
6
7
8
9
10
0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48 50 52 54 56 58 60 62 64 66 68 70 72


Primary Comparison
16.11 cfs
15.80 cfs
Subcat E-1
Subcat P-1
Primary (cfs)
Time (hours)
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48 50 52 54 56 58 60 62 64 66 68 70 72

APPENDIX D
DRAINAGE AREA MAPS



SYMBOL	DESCRIPTION
	EXISTING DRAINAGE AREA
	EXISTING WOODED AREA
	EXISTING GRASSED AREA
	EXISTING TIME OF CONCENTRATION

30' 0' 30' 60'
GRAPHIC SCALE IN FEET
1" = 30'

ISSUE	DATE	BY	DESCRIPTION
01	11/14/2023	JMK	FOR MUNICIPAL SUBMISSION

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SPARK CAR WASH

DRAINAGE AREA MAPS
SPARK CAR WASH
PROPOSED CAR WASH

BLOCK 203, LOT 4
575 MILLTOWN ROAD
TOWNSHIP OF NORTH BRUNSWICK
MIDDLESEX COUNTY, NEW JERSEY

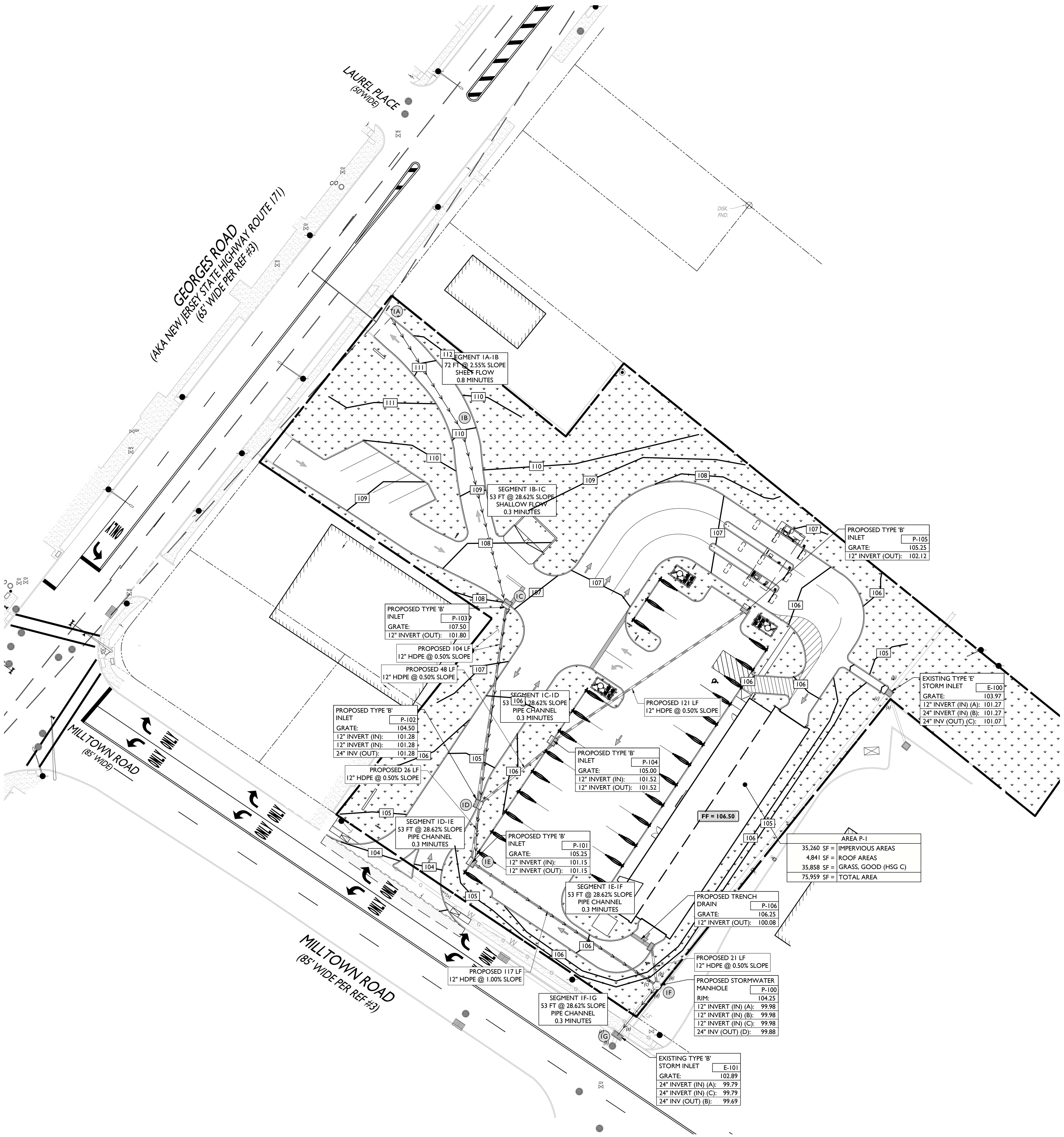
PAUL D. MUTCH Jr., P.E.
NEW JERSEY LICENSE No. 55094
LICENSED PROFESSIONAL ENGINEER

STONEFIELD engineering & design

SCALE: 1" = 30' PROJECT ID: PRI-220304

TITLE:
EXISTING DRAINAGE AREA MAP

DRAWING:
1 OF 2



SYMBOL	DESCRIPTION
(long dashed line)	PROPOSED DRAINAGE AREA
(stippled box)	PROPOSED GRASSED AREA
(line with arrows)	EXISTING TIME OF CONCENTRATION

30' 0' 30' 60'
GRAPHIC SCALE IN FEET
1" = 30'

ISSUE	DATE	BY	DESCRIPTION
01	11/14/2023	JMK	FOR MUNICIPAL SUBMISSION

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DRAINAGE AREA MAPS

SPARK CAR WASH

PROPOSED CAR WASH

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STONEFIELD
engineering & design

SCALE: 1" = 30' PROJECT ID: PRI-220304

TITLE:

PROPOSED DRAINAGE AREA MAP

DRAWING:

2 OF 2