

GEOTECHNICAL DATA REPORT

(Stormwater Infiltration Testing)

February 27, 2025

40 Eagle Ridge Way
Block 106; Lot 20.03
Township of West Orange
Essex County, New Jersey

Prepared for:

TheWaymaker LLC
40 Eagle Ridge Way
West Orange, NJ 07052

Prepared by:



Francisco Sanchez-Dominici
New Jersey Professional Engineer
License No. GE061874



Ahmed Elmekati
New Jersey Professional Engineer
License No. GE053487

Colliers Engineering & Design, Inc.

300 Tice Blvd, Suite 101
Woodcliff Lake, NJ 07677
Main: 845-352-0411
Colliersengineering.com

Project No. 24006174A

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Introduction

In accordance with our proposal dated February 17, 2025, Colliers Engineering & Design, Inc. (CED), performed a subsurface exploration program for the proposed stormwater infiltration BMP areas of the site located at 40 Eagle Ridge Way, Township of West Orange, Essex County, New Jersey.

This report presents a summary of the data collected during CED's field presence and result of the performed in-situ infiltration test.

Available Information

1. Drawing titled, "Demolition Plan", by Colliers Engineering & Design, dated September 17, 2024.

Site and Project Description

The project site is located at 40 Eagle Ridge Way, Township of West Orange, Essex County, New Jersey. The site is identified as Block 106, Lot 20.03 on the corresponding tax map. The site is bound by Eagle Ridge Way towards West. A residential development is located towards North, and wooded areas are located towards East. A vacant lot bounds the south side of the site. The site is currently occupied by a residential development with several structures and appurtenant site features. Surface grades generally slope downward from El. 628± towards West to El. 603± towards East.

We understand stormwater management facilities are proposed at several locations on the eastern side of the site.

Stormwater Subsurface Exploration

CED performed a subsurface exploration program consisting of five test pits, TP-01 through TP-05. The test pits were performed at locations selected by the site-civil engineer and extended up to 12.5 ft below existing surface grades. Drawing B-01-ELP presents the location of the test pits.

The test pits were performed by Grabowski Construction, Inc. of West Orange, New Jersey, on February 18, 2025, under the continuous observation of CED representative, Mr. Francisco Sanchez-Dominici, PE. Our representative located the test pits based on existing site features and handheld GPS equipment. The test pits were backfilled upon completion.

Subsurface Conditions

USDA Web Soil Survey

Available information from the Web Soil Survey Tool provided by the United States Department of Agriculture Natural Resources Conservation Service suggests that there are up to two soil types and reports depths to the water table, noted as rating, within the project site limits as presented in Figure 1.

Soil Stratification

The test pits encountered the site soils exposed at the surface. The site soils generally consist of silt loam, silt clay loam, loamy sand, varying amounts of gravel/boulders. The test pits were terminated within these soils.

The test pit logs are presented in Appendix A. Soils encountered were classified in the field in general accordance with the USDA Soil Classification System, a summary of which is presented in Appendix A.

General Groundwater Observations

Groundwater conditions were not encountered within the test pits during the time of our exploration.

Groundwater observations noted above reflect the conditions at the time of our onsite presence. Note that groundwater levels can fluctuate with locations, seasonal changes, precipitation, nearby construction activities, foreign influences such as leakage into and out of utilities, and other factors. Pockets or seams of gravels, sands, silts, or open fractures and joints can store and transmit “perched” groundwater flow or seepage.

In-situ Infiltration Testing

Proposed Stormwater Facilities

Test pit TP-01 was terminated before reaching the bottom of the proposed stormwater facility due to concerns of damaging existing subsurface utilities at the request of the general contractor.

Test Pits TP-04 and TP-05 were terminated before reaching the bottom of the proposed stormwater facility due to refusal on bedrock at depths ranging up to 12.5 ft below existing grades.

Test Pits TP-02 and TP-03 were terminated at depths ranging up to 9 ft below existing grades due to refusal on bedrock. A single ring infiltrometer test was performed within Test Pit TP-03. The single ring infiltrometer test was performed in accordance with Chapter 12 of the New Jersey BMP Manual. A summary of the single ring infiltrometer test is presented in Table 1.

Measured Field Intake Rate

Table 1 presents a summary of the in-situ infiltration test performed and corresponding result. The result of the in-situ infiltrations test is presented in Appendix B.

Table 1. Summary of In-Situ Infiltration Test

Location ID	Test Depth (ft)	Soil Description (see logs for full description)	Test Type	Measured Field Intake Rate (in/hr)
TP-03	3.5	Loamy Sand	Single Ring	6.2 in/hr

Closing

The data presented in this report is based on field observations and measured test results. The number, location, and depth of the explorations were completed as requested by the project team.

Limitations

This data report and all supporting documentation have been prepared exclusively for the use of **TheWaymaker LLC** pursuant to the Agreement between Colliers Engineering & Design (DBA Maser Consulting) and **TheWaymaker LLC**. All provisions set forth in the Agreement and the General Terms and Conditions attached thereto are incorporated herein by reference. No warranty, express or implied, is made herein.

The field observations and data contained in this report are based on limited exploration and testing of the subsurface at the referenced project site, at the locations and depths indicated in this report. The explorations indicate subsurface conditions at the specific locations, depths, and times explored.

This report is intended to serve as a data report. CED is not responsible for any claims, damages, or liability associated with interpretation of subsurface data or reuse of the subsurface data or engineering analysis without the expressed written authorization of CED.

This data report and related documentation are instruments of service. The subject matter of this data report is limited to the facts and matters stated herein.

The scope of this subsurface exploration did not include geotechnical interpretation or evaluation of the findings, or investigation or evaluation of any environmental issues, such as wetlands, or hazardous or toxic materials on, below, or in the vicinity of the subject site. Any statements in this report or supporting documentation regarding odors or unusual or suspicious items or conditions observed are strictly for information only.

Figure

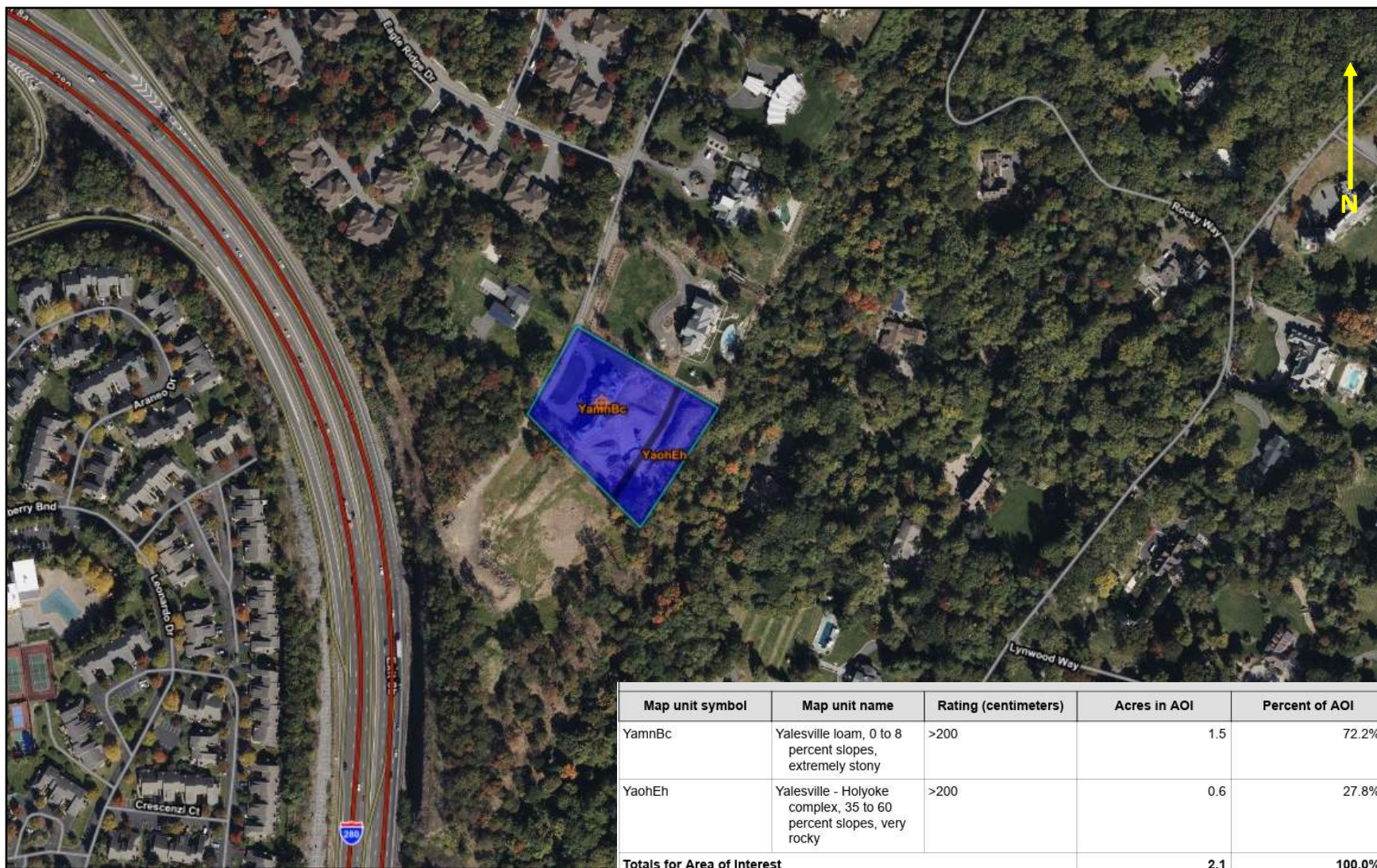


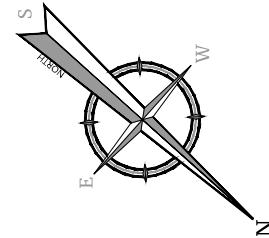
Figure 1

Hydrogeologic Map (NRCS Web Soil Survey)

PROJECT:
40 EAGLE RIDGE WAY
TOWNSHIP OF WEST ORANGE,
ESSEX COUNTY, NEW JERSEY

Project No.: 24006174A

Drawing



1. BASE PLANS BASED ON DRAWING TITLED "DEMOLITION PLAN" DATED SEPTEMBER 17, 2024, BY COLLIERS ENGINEERING & DESIGN.
2. THIS DRAWING IS PART OF COLLIERS ENGINEERING & DESIGN'S REPORT (PROJECT NO. 24006174A) AND SHOULD ONLY BE USED IN CONJUNCTION WITH THE REPORT.
3. TEST PIT SERIES TP-XX PERFORMED BY GRABOWSKI CONSTRUCTION, INC. ON FEBRUARY 18, 2025, UNDER CONTINUOUS OBSERVATION OF CED.
4. TEST PITS BACKFILLED WITH CUTTINGS UPON COMPLETION.

TP-XX

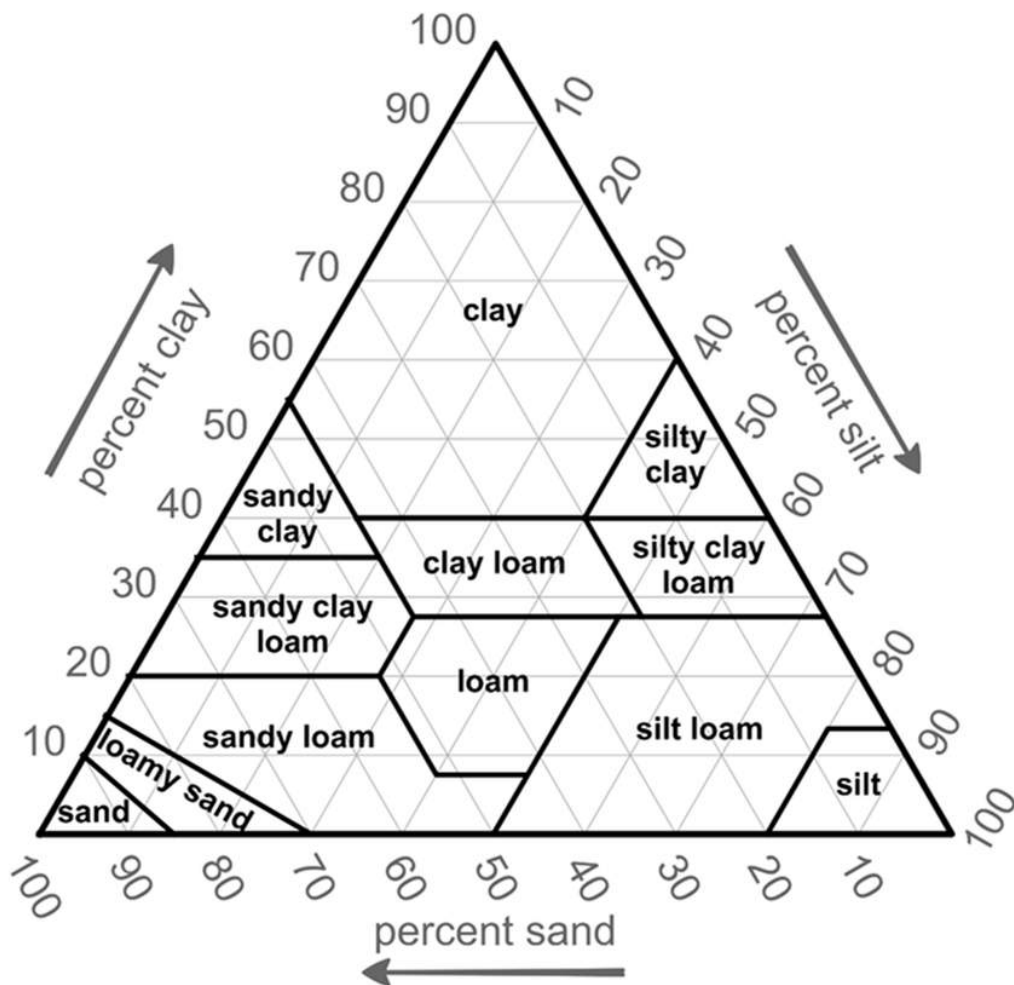
Linear unit of measure: US Survey Foot (1 ft = 1200/3937 m)

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Doing Business as				
		PROTECT YOURSELF ALL STATES REQUIRE NOTIFICATION OF EXCAVATORS, DESIGNERS, OR ANY PERSON PREPARING TO DISTURB THE EARTH'S SURFACE ANYWHERE IN ANY STATE. STATE REQUIRED FILE NUMBER FOR STATE SPECIFIC DIRECT PHONE NUMBERS VISIT: WWW.CALL811.COM		
	REV	DATE	DRAWN BY	DESCRIPTION
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	-	-	-	-
	-	-	-	-
EXPLORATION LOCATION PLAN FOR THEWAYMAKER LLC BLOCK 106; LOT 20.03 40 EAGLE RIDGE WAY TOWNSHIP OF WEST ORANGE ESSEX COUNTY, NEW JERSEY				
 Engineering & Design		WOODCLIFF LAKE 300 Tice Boulevard Suite 101 Woodcliff Lake, NJ 07677 Phone: 845.352.0411 COLLIERS ENGINEERING & DESIGN, INC. DOING BUSINESS AS MASER CONSULTING		
SCALE: AS SHOWN	DATE: 02/27/25	DRAWN BY: FSD	CHECKED BY: AHE	
PROJECT NUMBER: 24006174A	DRAWING NAME: B-EPL			
SHEET TITLE:		FIELD BOOK: XX		PAGE: XX
EXPLORATION LOCATION PLAN				
SHEET NUMBER:		B-01-ELP		

Appendix A

Test Pit Logs

USDA Classification System





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PROJECT: 40 Eagle Ridge Way

LOCATION: West Orange, NJ

PROJECT NO. 24006174A

TEST PIT: TP-01

PAGE 1 OF 1

GROUND ELEVATION (ft): +/-622
ELEV. FROM: Survey

GROUNDWATER: DEPTH (ft) DATE
First Encountered  N/E
At Completion (0 hrs.)  N/E

CONTRACTOR: Grabowski Construction, Inc.
EQUIPMENT: Excavator

FIELD OBSERVER: FSD
CHECKED BY: AHE

DATE STARTED 02/18/25

DATE FINISHED 02/18/25

DEPTH (ft.)	WATER SYMBOL	DESCRIPTION
0		10YR 3/6 Silt Clay Loam, 40% coarse fragments, subangular blocky, friable. (moist)
5		
10		120" -10.0 END OF TEST PIT AT 120 INCHES
15		
20		
25		
30		

NOTES: Exposed soils at surface.
Boulders encountered from the ground surface up to 10 ft below existing grades.
Stone backfill encountered at 10 ft below existing grades. Test pit terminated at the request of the general contractor.

Perched Water Conditions - Not Encountered
Est. Seasonal High Groundwater - Not Detected

TEST PIT: TP-01

PAGE 1 OF 1



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300 Tice Blvd., Suite 101, Woodcliff Lake, NJ 07677

PROJECT: 40 Eagle Ridge Way

LOCATION: West Orange, NJ

PROJECT NO. 24006174A

TEST PIT: TP-02

PAGE 1 OF 1

GROUND ELEVATION (ft): +/-624
ELEV. FROM: Survey

GROUNDWATER: DEPTH (ft) DATE
First Encountered  N/E
At Completion (0 hrs.)  N/E

CONTRACTOR: Grabowski Construction, Inc.
EQUIPMENT: Excavator

FIELD OBSERVER: FSD
CHECKED BY: AHE

DATE STARTED 02/18/25

DATE FINISHED 02/18/25

DEPTH (ft.)	WATER SYMBOL	DESCRIPTION
0		10YR 3/6 Silt Clay Loam, 20% coarse fragments, subangular blocky, friable. (moist)
5		
10		108" -9.0 END OF TEST PIT AT 108 INCHES DUE TO REFUSAL ON BEDROCK
15		
20		
25		
30		

NOTES: Exposed soils at surface.

Perched Water Conditions - Not Encountered
Est. Seasonal High Groundwater - Not Detected

TEST PIT: TP-02

PAGE 1 OF 1



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300 Tice Blvd., Suite 101, Woodcliff Lake, NJ 07677

PROJECT: 40 Eagle Ridge Way

LOCATION: West Orange, NJ

PROJECT NO. 24006174A

TEST PIT: TP-03

PAGE 1 OF 1

GROUND ELEVATION (ft): +/-625
ELEV. FROM: Survey

GROUNDWATER: DEPTH (ft) DATE
First Encountered  N/E
At Completion (0 hrs.)  N/E

CONTRACTOR: Grabowski Construction, Inc.
EQUIPMENT: Excavator

FIELD OBSERVER: FSD
CHECKED BY: AHE

DATE STARTED 02/18/25

DATE FINISHED 02/18/25

DEPTH (ft.)	WATER SYMBOL	DESCRIPTION
0		10YR 3/6 Brown Loamy Sand, 50% coarse fragments, subangular blocky, friable. (moist)
5		66"
	-5.5	END OF TEST PIT AT 66 INCHES DUE TO REFUSAL ON BEDROCK
10		
15		
20		
25		
30		

NOTES: Exposed soils at surface.
Boulders encountered from the ground surface to 5.5 ft below existing grades.
Single ring infiltration test performed at 3.5 ft below existing grades.

Perched Water Conditions - Not Encountered
Est. Seasonal High Groundwater - Not Detected

TEST PIT: TP-03

PAGE 1 OF 1



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300 Tice Blvd., Suite 101, Woodcliff Lake, NJ 07677

PROJECT: 40 Eagle Ridge Way

LOCATION: West Orange, NJ

PROJECT NO. 24006174A

TEST PIT: TP-04

PAGE 1 OF 1

GROUND ELEVATION (ft): +/-622
ELEV. FROM: Survey

GROUNDWATER: DEPTH (ft) DATE
First Encountered ∇ N/E
At Completion (0 hrs.) ∇ N/E

CONTRACTOR: Grabowski Construction, Inc.
EQUIPMENT: Excavator

FIELD OBSERVER: FSD
CHECKED BY: AHE

DATE STARTED 02/18/25

DATE FINISHED 02/18/25

DEPTH (ft.)	WATER SYMBOL	DESCRIPTION
0		10YR 3/6 Silt Clay Loam, 40% coarse fragments, blocky, friable. (moist)
5		
10		108" -9.0 END OF TEST PIT AT 108 INCHES DUE TO REFUSAL ON BEDROCK
15		
20		
25		
30		

NOTES: Exposed soils at surface
Boulders encountered from the ground surface to 9 ft below existing grades.

Perched Water Conditions - Not Encountered
Est. Seasonal High Groundwater - Not Detected

TEST PIT: TP-04

PAGE 1 OF 1



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PROJECT: 40 Eagle Ridge Way

LOCATION: West Orange, NJ

PROJECT NO. 24006174A

TEST PIT: TP-05

PAGE 1 OF 1

GROUND ELEVATION (ft): +/-617
ELEV. FROM: Survey

GROUNDWATER: DEPTH (ft) DATE
First Encountered  N/E
At Completion (0 hrs.)  N/E

CONTRACTOR: Grabowski Construction, Inc.
EQUIPMENT: Excavator

FIELD OBSERVER: FSD
CHECKED BY: AHE

DATE STARTED 02/18/25

DATE FINISHED 02/18/25

DEPTH (ft.)	WATER SYMBOL	DESCRIPTION
0		10YR 3/6 Silt Loam, 20% coarse fragments, subangular blocky, friable. (moist)
5		
10		120"
		10YR 6/4 Silt Clay Loam, 0% coarse fragments, subangular blocky, friable. (GLE1 8/N soil staining)(moist)
		150"
		-12.5
15		END OF TEST PIT AT 150 INCHES DUE TO REFUSAL ON BEDROCK
20		
25		
30		

NOTES: Exposed soils at surface.
Boulders encountered from the ground surface to 10 ft. below existing grades.

Perched Water Conditions - Not Encountered
Est. Seasonal High Groundwater - Not Detected

TEST PIT: TP-05

PAGE 1 OF 1

Appendix B

In-situ Infiltration Test Result

Colliers Engineering & Design Project Number: 24006174A
Location: TP-03

Page: 1 of 1

Single Ring Infiltration Test Data:

Date: 2/18/2025

1. Test No.: TP-03

2. Depth: 42" (3.5 ft) Soil Description:

Loamy Sand

3. Presoak: Time Elapsed to Drain Completely (3"):

15 min

4. Rate of Fall Data For 1" Drop:

(Min. of 3 Meas. & Elapsed Time has Stabilized; min. 2 consecutive meas. within 5 sec.)

Meas. #	Elapsed Time		Observed Field Intake Rate (in/hr)
	(min)	(sec)	
1	10	37	5.7
2	9	40	6.2
3	9	37	6.2
4	9	40	6.2

If 2 consecutive meas. are >60 min, the test is ended & Observed Field Intake Rate is <1 in/hr.

5. Conversion to Hydraulic Conductivity (per chart below):

a. Average Stabilized Observed Field Intake Rate (in/hr):

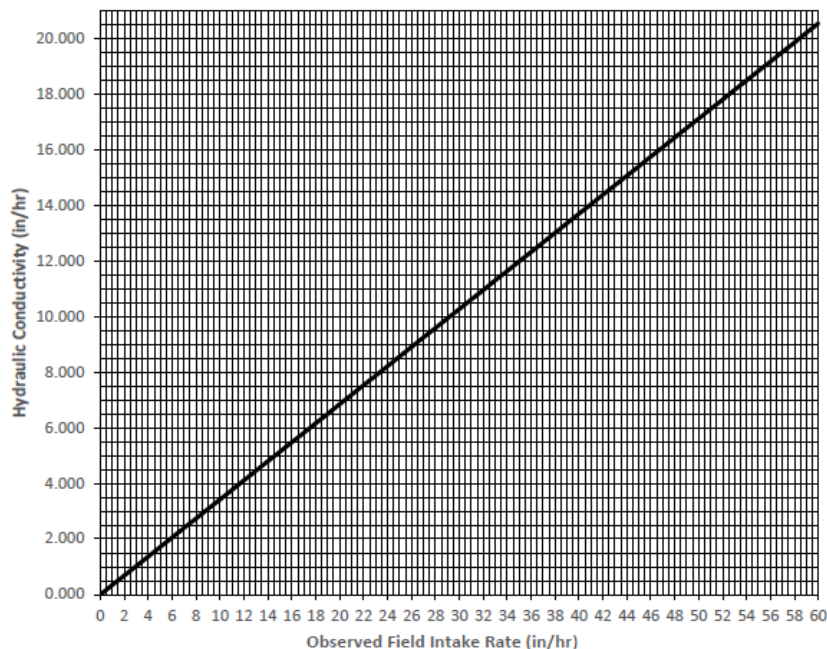
6.1

b. Soil Hydraulic Conductivity (in/hr):

2.1

(5a. x 0.3424 = 5b.)

Single Ring Test Conversion of
Observed Field Intake Rate to Hydraulic Conductivity



Source: New Jersey
Stormwater Best
Management Practices
Manual, Chapter 12: Soil
Testing Criteria, pg. 47,
(April 2022).

Notes: Test performed in 6" dia. metal ring with height of 6", set 3" into undisturbed soil layer.



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