

GEO-TECHNOLOGY ASSOCIATES, INC.

GEOTECHNICAL AND
ENVIRONMENTAL CONSULTANTS

A Practicing Geoprofessional Business Association Member Firm



June 23, 2025

T&M Associates

400 Broadacres Drive, Suite 250
Bloomfield, New Jersey 07003

Attn: Joseph Mele, PE, PLS, PP, LEED-AP
Department Manager

Re: Stormwater Management Testing
Proposed Municipal Building
Borough of Eatontown, Monmouth County, New Jersey

Dear Joe:

Geo-Technology Associates, Inc. (GTA) was requested by T&M Associates (Client) to observe and document test pit excavations and perform preliminary in-situ infiltration testing for the planning and design of stormwater management (SWM) facilities related to the construction of a proposed municipal building complex in the Borough of Eatontown, Monmouth County, New Jersey. The site is located at 47 Broad Street and is identified as Lot 5 through 14 in Block 304 on the Borough of Eatontown tax map.

A draft topographic plan prepared by T&M Associates titled "Boundary and Topography Survey" dated January 29, 2025 and a set of architectural plans prepared by Parallel Architectural Group dated December 17, 2024 were provided to GTA. The plans indicate the site boundaries, existing site features and topography, and the layout and dimensions of the proposed site improvements. The proposed development includes a 2-story municipal building with a basement level and associated parking lot. The topographic plan was marked up to show the requested locations of 4 test pit excavations within potential SWM facility areas.

Test Pit Exploration

On June 2, 2025, GTA observed and logged the excavation of 5 test pits and performed in-situ infiltration testing at the requested locations. Test Pit TP-4 was offset by about 5 feet to the southwest due to existing obstructions. The test pits were excavated by J.A. Neary Excavating using a Case CX580 backhoe and extended to depths ranging from approximately 4 to 12 feet below the existing ground

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surface. Preliminary in-situ infiltration testing was performed adjacent to each of the test pits using a double-ring infiltrometer. The exploration locations were selected by T&M Associates and located in the field by GTA using a hand-held GPS unit and existing site features as reference. The approximate locations of the explorations performed for this study are shown on the attached Test Pit Location Plan. Detailed descriptions of the subsurface conditions encountered in the test pits are indicated on the Logs of Test Pits, which are also attached. The ground surface elevations indicated on the logs were obtained by interpolating between topographic contours indicated on the plan provided to us and should be considered approximate.

Existing Conditions

At the time GTA's exploration was performed, the site was occupied by the existing 2-story Eatontown Municipal building, a 2-story firehouse building, and a single-story library with parking lots serving the public facilities. Access to the site was provided from Throckmorton Avenue and Broad Street from the northern and southern portions of the site, respectively.

Subsurface Conditions

At the ground surface, Test Pits TP-1 and TP-2 encountered about 5 to 6 inches of asphalt, respectively, and Test Pits TP-3, TP-4, and TP-4A encountered about 10 to 12 inches of topsoil. Below the surficial materials, all the explorations encountered existing fill materials that extended to depths ranging from about 3 to 5 feet below the existing surface grades. The fill generally consisted of loamy sand and sandy loam with scrap metals, brick, concrete, and ceramic fragments. Refusal to further advancement was encountered on a concrete slab in Test Pit TP-4 at a depth of about 4 feet below the existing surface grades. The native soils below the fill and surface materials consisted predominantly of interlayered sandy loam and sandy clay loam with varying amounts of gravel.

Groundwater was not observed in the test pits performed for this study and long-term groundwater readings were not obtained because the test pits were backfilled upon completion for safety considerations. Mottling indicative of the estimated seasonal high water table (ESHWT) was observed at a depth of about 10 feet below the ground surface in Test Pits TP-1 and TP-4A.

Infiltration Testing

Preliminary in-situ infiltration tests were performed adjacent to each of the test pits using a double-ring infiltrometer in general accordance with Chapter 12 of the NJDEP Stormwater Best Management Practices Manual (Chapter 12). The results of the infiltration tests are summarized in the following table.

SUMMARY OF INFILTRATION TEST RESULTS

Test Pit Location	Approx. Test Depth (ft.)	Approx. Test Elevation (ft.)	USDA Classification	Measured Infiltration Rate (in/hr)
TP-1	4	27.5	Sandy Loam	6.6
TP-2	4	28	FILL - sandy loam	8.4
TP-2	6	26	Sandy Clay Loam	6.0
TP-3	5	28	Sandy Clay Loam	2.8
TP-4A	4	28.5	Sandy Loam	1.8

Note: A factor of safety of at least 2 should be applied to the measured infiltration rates for design purposes.

The primary conditions that affect the capacity of soil to infiltrate water are the soil gradation and density properties and the presence of hydraulically restrictive layers such as silt or clay (fines), rock, or groundwater, each of which would restrict the flow of water into the underlying aquifer. The subsurface profile at the site generally consisted of interlayered sandy loam and sandy clay loam with varying amounts of gravel.

The preliminary infiltration testing performed for this study resulted in measured infiltration rates ranging from about 1.8 to 8.4 inches per hour.

LIMITATIONS

This letter, including all supporting test pit logs, field data, and other documents prepared by GTA in connection with this project have been prepared for the exclusive use of T&M Associates pursuant to the agreement between GTA and the Client. All terms and conditions set forth in the Agreement and the General Provisions attached thereto are incorporated herein by reference. No warranty, express or implied, is made herein. Use and reproduction of this letter by any other person without the expressed written permission of GTA and the Client is unauthorized and such use is at the sole risk of the user. Test pits indicate soil conditions only at specific locations and times and only at the depths penetrated. They do not necessarily reflect strata or variations that may exist between the exploration locations.

GTA is not responsible for any claims, damages, or liability associated with interpretation of subsurface data or reuse of the subsurface data without the expressed written authorization of Geo-Technology Associates, Inc.

This letter and the attached logs are instruments of service. The subject matter of this report is limited to the facts and matters stated herein. Absence of a reference to any other conditions or subject matter shall not be construed by the reader to imply approval by the writer.

GTA appreciates the opportunity to have been of assistance to you on this project. Please contact our office at (732) 271-9301 if you have questions or require additional information. Please note that, unless you make other arrangements, GTA will discard all soil samples obtained from the explorations 60 days after the date of this report.

Sincerely,

GEO-TECHNOLOGY ASSOCIATES, INC.



Kyle T. Plaza, P.E.
Associate



Robert Dykstra, P.E.
Vice President

Attachments:

- Site Location Map*
- Test Pit Location Plan*
- Logs of Test Pits (5 pages)*



Note: Site boundary is approximate.

SITE LOCATION MAP



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fax (732) 271-9306

PROPOSED MUNICIPAL BUILDING

Borough of Eatontown,
Monmouth County, New Jersey

Prepared For: T&M Associates

SOURCE: Google Maps

SCALE: NTS

DATE: JUN. 2025

PROJECT#: 31251263

Figure 1



*Base plan prepared by Parallel Architectural Group titled "Site Plan" dated Decemeber 17, 2024, overlaid in Google Earth.

LEGEND:

TP-X Indicates the numbers and approximate locations of test pits performed for this study.

TEST PIT LOCATION PLAN



14 Worlds Fair Drive, Suite A
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PROPOSED MUNICIPAL BUILDING

Borough of Eatontown,
Monmouth County, New Jersey

Prepared For: T&M Associates

DESIGN BY: *	DRAWN BY: AFS	REVIEWED BY: KTP
SCALE: NTS	DATE: JUNE 2025	PROJECT #: 31251263

Figure 2

LOG OF TEST PIT NO. TP-1

Sheet 1 of 1

PROJECT: **Proposed Municipal Building**
 PROJECT LOCATION: **Borough of Eatontown, Monmouth County, New Jersey**
 CLIENT: **T&M Associates**
 DATE STARTED: **6/2/2025**
 DATE COMPLETED: **6/2/2025**
 CONTRACTOR: **J.A. Neary Excavating**
 EQUIPMENT: **Case CX580**

PROJECT NO.: **31251263**
 GROUNDWATER ENCOUNTERED: **N/E**
 GROUND SURFACE ELEVATION: **31.5 Ft.**
 DATUM: **Topo**
 LOGGED BY: **AFS**
 CHECKED BY: **KTP**

ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL	DESCRIPTION		REMARKS
				DESCRIPTION		
31.1	0			5 In. of Asphalt		
				FILL- Dark yellow-brown (10YR 4/6), moist, 15% gravel, loose, loamy sand		
	2			- Dark brown (10YR 3/3), moist, single grain, loose, sandy loam with concrete fragments at 1-1/2 Ft. - with ceramic fragments and scrap metals at 2 Ft.		
28.5	4	SM		Dark yellow-brown (10YR 4/4), moist, single grain, loose, Sandy Loam		
	6			- Yellow-brown (10YR 5/6), 10% gravel at 5-1/2 Ft.		
	8			- Yellow-brown (10YR 5/4), gravel grades out at 7 Ft.		
	10	SC		- Brown (10YR 4/3) at 9-1/2 Ft.		
	12			Gray-brown (10YR 5/2) and dark yellow-brown (10YR 4/6), faint mottling, moist, single grain to subangular blocky, loose to friable, Sandy Clay Loam		
	14			Test pit complete at 12 Ft. Estimated seasonal high water table encountered at about 10 Ft.		
	16					
	18					

NOTES: **Location and elevation are approximate.
Backfilled on completion.**



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LOG OF TEST PIT NO. TP-1

Sheet 1 of 1

LOG OF TEST PIT NO. TP-2

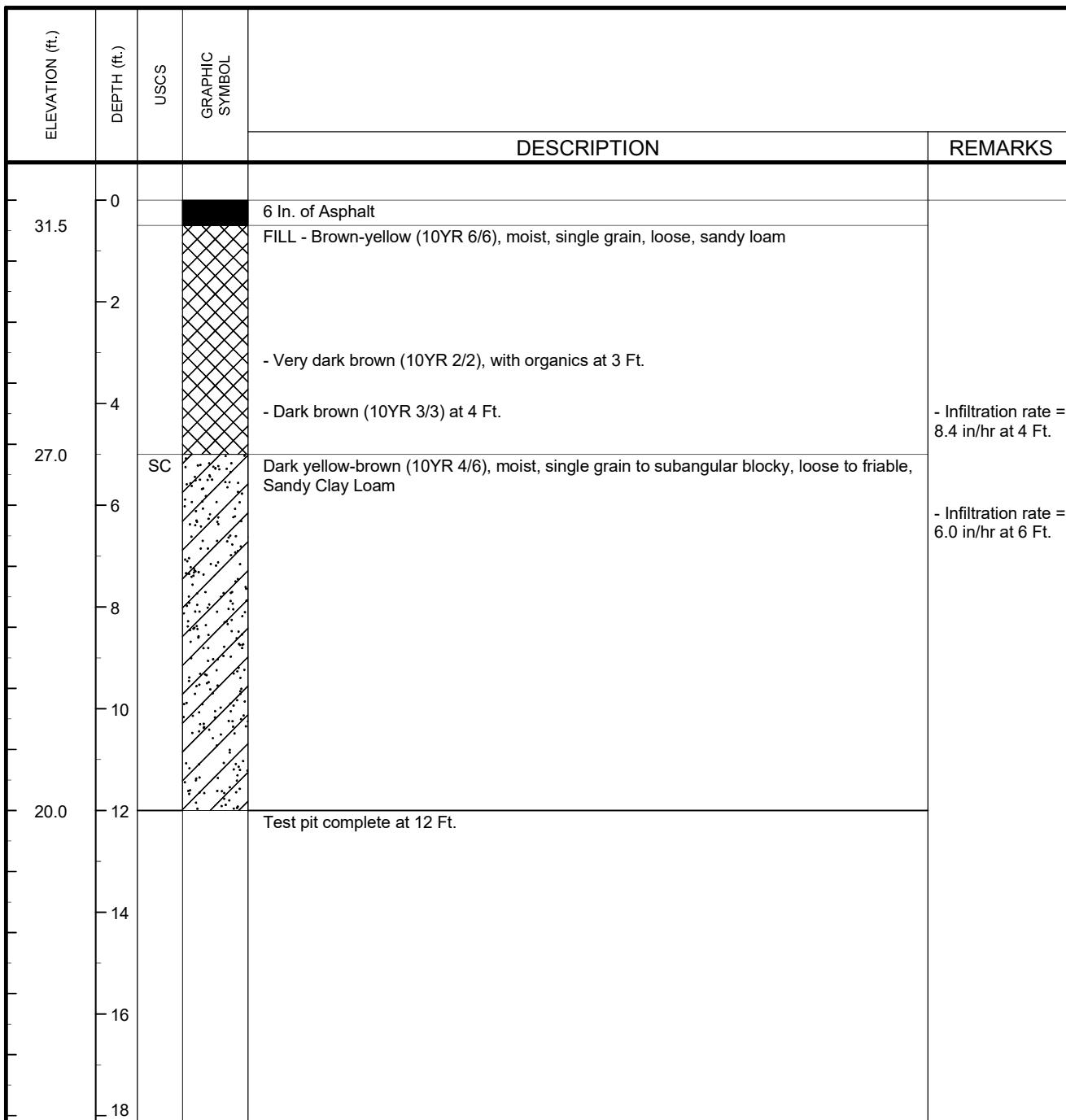
Sheet 1 of 1

PROJECT: **Proposed Municipal Building**
 PROJECT LOCATION: **Borough of Eatontown, Monmouth County, New Jersey**
 CLIENT: **T&M Associates**

PROJECT NO.: **31251263**

DATE STARTED: **6/2/2025**
 DATE COMPLETED: **6/2/2025**
 CONTRACTOR: **J.A. Neary Excacating**
 EQUIPMENT: **Case 580**

GROUNDWATER ENCOUNTERED: **N/E**
 GROUND SURFACE ELEVATION: **32 Ft.**
 DATUM: **Topo**
 LOGGED BY: **AFS**
 CHECKED BY: **KTP**



NOTES: **Location and elevation are approximate.**
Backfilled on completion.



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LOG OF TEST PIT NO. TP-2

Sheet 1 of 1

LOG OF TEST PIT NO. TP-3

Sheet 1 of 1

PROJECT: **Proposed Municipal Building**
 PROJECT LOCATION: **Borough of Eatontown, Monmouth County, New Jersey**
 CLIENT: **T&M Associates**

PROJECT NO.: **31251263**

DATE STARTED: **6/2/2025**
 DATE COMPLETED: **6/2/2025**
 CONTRACTOR: **J.A. Neary Excavating**
 EQUIPMENT: **Case 580**

GROUNDWATER ENCOUNTERED: **N/E**
 GROUND SURFACE ELEVATION: **33 Ft.**
 DATUM: **Topo**
 LOGGED BY: **AFS**
 CHECKED BY: **KTP**

ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL	DESCRIPTION		REMARKS
				DESCRIPTION		
32.2	0			10 In. of Topsoil		
	2			FILL - Dark yellow-brown (10YR 4/6), moist, single grain, loose, sandy loam - with topsoil at 2-1/2 Ft.		
29.5	4	SM		Dark yellow-brown (10YR 4/4), moist, single grain, loose, Sandy Loam		
28.0	6	SC		Dark yellow-brown (10YR 4/6), moist, single grain to subangular blocky, loose to friable, Sandy Clay Loam		- Infiltration rate = 2.8 in/hr at 5 Ft.
27.0	8	SM		Dark yellow-brown (10YR 4/6), moist, 10% gravel, single grain, loose, Sandy Loam		
	10					
21.0	12			Test pit complete at 12 Ft.		
	14					
	16					
	18					

NOTES: **Location and elevation are approximate.
Backfilled on completion.**



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LOG OF TEST PIT NO. TP-3

Sheet 1 of 1

LOG OF TEST PIT NO. TP-4

Sheet 1 of 1

PROJECT: **Proposed Municipal Building**
 PROJECT LOCATION: **Borough of Eatontown, Monmouth County, New Jersey**
 CLIENT: **T&M Associates**

PROJECT NO.: **31251263**

DATE STARTED: **6/2/2025**
 DATE COMPLETED: **6/2/2025**
 CONTRACTOR: **J.A. Neary Excacating**
 EQUIPMENT: **Case 580**

GROUNDWATER ENCOUNTERED: **N/E**
 GROUND SURFACE ELEVATION: **32 Ft.**
 DATUM: **Topo**
 LOGGED BY: **AFS**
 CHECKED BY: **KTP**

ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL	DESCRIPTION		REMARKS
				DESCRIPTION		
31.0	0			12 In. of Topsoil		
31.0	2			FILL - Dark yellow-brown (10YR 4/6), moist, single grain, loose, sandy loam - with bricks and concrete fragments at 1-1/2 Ft.		
27.9	4			- with ceramic fragments at 3-1/2 Ft. - with a concrete slab at 4 Ft. Test pit complete at 4 Ft. due to bucket refusal on a concrete slab.		
18						

NOTES: **Location and elevation are approximate.
Backfilled on completion.**



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LOG OF TEST PIT NO. TP-4

Sheet 1 of 1

LOG OF TEST PIT NO. TP-4A

Sheet 1 of 1

PROJECT: **Proposed Municipal Building**
 PROJECT LOCATION: **Borough of Eatontown, Monmouth County, New Jersey**
 CLIENT: **T&M Associates**

PROJECT NO.: **31251263**

DATE STARTED: **6/2/2025**
 DATE COMPLETED: **6/2/2025**
 CONTRACTOR: **J.A. Neary Excavating**
 EQUIPMENT: **Case 580**

GROUNDWATER ENCOUNTERED: **N/E**
 GROUND SURFACE ELEVATION: **32.5 Ft.**
 DATUM: **Topo**
 LOGGED BY: **AFS**
 CHECKED BY: **KTP**

ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL	DESCRIPTION		REMARKS
				DESCRIPTION		
31.5	0			12 In. of Topsoil		
	2			FILL - Dark yellow-brown (10YR 4/4), moist, single grain, loose, sandy loam - with bricks at 2 Ft.		
29.0	4	SM		Dark yellow-brown (10YR 4/6), moist, single grain, loose, Sandy Loam - with 15% gravel at 7 Ft. - gravel grades out at 8 Ft.		- Infiltration rate = 1.8 in/hr at 4 Ft.
22.5	10	SC		Strong brown (7.5YR 4/6) and gray (7.5YR 5/1), faint mottling, moist, single grain, loose, Sandy Clay Loam		
20.5	12			Test pit complete at 12 Ft. Estimated seasonal high water table encountered at about 10 Ft.		
	14					
	16					
	18					

NOTES: **Location and elevation are approximate.**
Backfilled on completion.



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LOG OF TEST PIT NO. TP-4A

Sheet 1 of 1