



Geotechnical
Foundations
Land Planning
Geo-Structural
Environmental
Water Resources

Principals:

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via email: srmtns@gmail.com

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River Park Business Center, Inc.
47 Parsippany Road
Whippany, NJ, 07981

RE: **Deep Dynamic Compaction Summary**
River Park Business Center
39 Parsippany Road
Hanover Township, NJ
SESI Project No. 10746

Gentlemen:

SESI prepared the "Geotechnical Investigation Report for River Park Business Center East, Building 1 Parcel," dated June 25, 2020, based on borings and test pits performed between May 18 and May 28, 2020. The subsurface conditions at the site generally consist of a topsoil surface layer overlying a six (6) to 13-foot-thick uncontrolled fill layer. The uncontrolled fill material was not considered suitable for support of the foundations without improvement. A ground improvement program consisting of dynamic compaction was considered the most viable option to adequately densify the miscellaneous uncontrolled fill to provide suitable bearing and permit the use of conventional spread foundations and an at-grade floor slab system for the proposed structures.

The primary goal of dynamic compaction is to change an uncontrolled fill into a controlled fill. This is done by providing sufficient energy at the ground surface to cause densification of the underlying fill deposits, thereby reducing the compressibility of these deposits and providing suitable bearing for building foundations.

The dynamic compaction is performed using a traditional crawler crane (such as an American Model 7250, 60-ton crane) with a boom length typically on the order of 90 to 100 feet. The crane lifts a concrete and steel tamper (10-tons) into the air and lets it freefall. Support equipment for the dynamic compaction process includes a dozer and roller for backfilling of the craters and levelling the site.

In accordance with your request, we have prepared a response to the following list of questions. It should be noted that these answers specifically address the dynamic compaction process, not all of the construction operations and procedures that will be implemented.

Q: What weight will be used in the drops?

A: Approximately 10-tons.

Q: What height will they be dropped from?

A: Approximately 50 to 60 feet.

Q: How frequent will the drops be made?

A: About every 1 to 2 minutes.

Q: What is the maximum sound level allowed? What is the highest expected sound level?

A: In accordance with the Hanover Township noise Ordinance No. 17-16, Section 184-9.B.3, if construction work takes place between the hours of 7am and 6pm during weekdays, the limits in Tables 1, 2 and 3 do not apply. Since the work will take place during workday hours, there are no noise limits for construction activities. The expected sound level will vary by distance from the work area and is unknown. The crane used to lift the weight will be similar to other construction equipment. When the weight hits the ground, it will create a thud sound.

Q: What is the maximum vibration level allowed? What is the highest expected vibration level?

A: The maximum level allowed is 2.0 inches per second at the property lines. The highest level expected is about 1.0 in/sec. These levels are within acceptable standards.

Q: How will sound and vibration be monitored?

A: A portable Minimate or Micromate by Instanetel that will be setup daily and read by SESI.

Q: Will monitoring prevent sound and vibration limits from being exceeded or only provide notification after they have already been exceeded?

A: Monitoring is intended to prevent the maximum levels from being exceeded. A trigger level is set below the maximum level to provide data to keep the maximum level from being exceeded.

Q: River Park has had pictures taken of neighboring foundations; this action indicates the potential for liability issues. Have there been any studies completed to assure that there will be no damage to foundations of homes or buildings?

A: Based on the distance to the existing buildings, no damage to the foundations should occur.

Q: Is there a contingency plan in place if there is damage to foundations or buildings?

A: Based on the distance to the existing buildings, no damage to the foundations should occur.

Q: Is there a contingency plan in place if there is damage to sewer lines?

A: Any damage will be repaired by the Owner.

Q: Has there been any study regarding the effect dynamic compaction will have on the stability of the deteriorating river bank by Oak Ridge?

A: No study has been done; however, given the distance of over 600± feet, the DC will not affect the current slope.

Q: What is the shortest distance between planned dynamic compaction and each of the following... Eden Lane, Oak Ridge, and the Arden Court facility respectively?

A: Eden Lane is about 50 feet; Oak Ridge is about 650 feet; Arden Court facility is about 300 feet.

Q: What is the shortest distance between planned dynamic compaction and town sewer lines?

A: About 22 feet.

Q: What is the duration of the project?

A: The dynamic compaction will take about 3 weeks, but is weather dependent.

Q: What are the proposed hours of operation, and can they be limited?

A: The intended work hours are Monday through Friday between 7am and 5pm. If weekend work is needed, it will comply with the Town ordinance.

If you have any questions, please call.

Sincerely,

SESI CONSULTING ENGINEERS



Michael St. Pierre, P.E.
President