Schnabel ENGINEERING

January 12, 2016

Ms. Melissa Matthews
700 Penn, LLC
c/o EastBanc, Inc.
3307 M Street, NW, Suite 400
Washington, DC 20007

Subject: **Project 15614002.00, Vibration Monitoring Summary Report #13, Hine Jr High Project, Washington, DC**

Dear Ms. Matthews:

SCHNABEL ENGINEERING CONSULTANTS, INC. (Schnabel) is pleased to present the results of vibration monitoring during construction from December 12, 2015 through January 8, 2016. These services are provided according to our agreement signed January 15, 2015.

PROJECT DESCRIPTION

This project consists of the demolition of the existing structure by conventional methods and construction of a new multi-use development up to 9-stories high, with 2 levels of below grade parking. The excavation support piers will be pre-drilled and grouted in-place. The proposed structure will be supported on a spread-footing foundation. Rock excavation is not anticipated.

VIBRATION MONITORING

The purpose of the vibration monitoring is to record the vibration levels generated from the demolition and construction activities, so as to minimize excessive vibrations that might damage the adjacent structures, and/or annoy the residents. Five (5) seismic stations were originally installed on three sides (East, North and West) of the project in mid-April. Three of those stations (Stations 1, 4 and 5) have been removed at your request. A plan showing the seismograph equipment locations is attached. Table 1 summarizes the seismograph locations, with recommended trigger levels. The recommended trigger level is lower on the north side of the site, because this station is next to residential properties. The station on the west side is adjacent to commercial properties.

Table 1 – Seismograph Locations

Station	Location Description	Vibration Trigger Level (mms)
2	West – 301 7th Street, Basement	12.7
3	North – 239 8th Street, Back Yard	6.4

T/ 410-944-6170 F/ 410-944-1162
1504 Woodlawn Drive / Baltimore, MD / 21207

The stations are equipped with a cellular modem for communications with our computer network. The seismographs are recording vibrations in three perpendicular planes of movement: longitudinal, vertical, and transverse. They are set to monitor the vibrations from 5:00 AM to 7:30 PM daily. The station on the North side of the project will generate an event report with the vibration waveform, if the peak particle velocity exceeds 6.4 millimeters per second (mms). The seismograph on the West side (on 7th Street) will record an event report when the vibration level exceeds 12.7 mms. When vibrations exceed these criteria, the seismographs are also programmed to "Call Home" to Schnabel's server to download the vibration data. The "Call Home" feature allows automatic notification to anyone on the distribution list that vibration levels exceeding the allowable criterion have been recorded.

CONSTRUCTION MONITORING ANALYSIS

The table below summarizes the daily peak vibration levels if the vibrations exceeded the respective trigger levels of 6.4 and 12.5 mms. There was 1 vibration event recorded during this monitoring period that exceeded the 12.7 mms trigger level at Station 2. There were no events that exceeded the 6.4 mms trigger level at Station 3. A copy of the vibration event report is enclosed. The peak particle velocity of the recorded event was:

- Station 2: 15.6 mms at >100 Hz on December 16th at 4:44 PM (Trigger 12.7 mms)

Table 2 – Recorded Vibration Data

Date	Daily Peak Vibrations (mms/Hz)	
	Station 2 (West)	**Station 3 (North)**
12/12	No Triggers	No Triggers
12/13	No Triggers	No Triggers
12/14	No Triggers	No Triggers
12/15	No Triggers	No Triggers
12/16	**1 Trigger (15.6 mms)**	No Triggers
12/17	No Triggers	No Triggers
12/18	No Triggers	No Triggers
12/19	No Triggers	No Triggers
12/20	No Triggers	No Triggers
12/21	No Triggers	No Triggers
12/22	No Triggers	No Triggers
12/23	No Triggers	No Triggers
12/24	No Triggers	No Triggers

Date	Daily Peak Vibrations (mms/Hz)	
	Station 2 (West)	Station 3 (North)
12/25	No Triggers	No Triggers
12/26	No Triggers	No Triggers
12/27	No Triggers	No Triggers
12/28	No Triggers	No Triggers
12/29	No Triggers	No Triggers
12/30	No Triggers	No Triggers
12/31	No Triggers	No Triggers
1/1	No Triggers	No Triggers
1/2	No Triggers	No Triggers
1/3	No Triggers	No Triggers
1/4	No Triggers	No Triggers
1/5	No Triggers	No Triggers
1/6	No Triggers	No Triggers
1/7	No Triggers	No Triggers
1/8	No Triggers	No Triggers

CONCLUSIONS

The seismograph records indicate that 1 vibration event was recorded at Station 2 that exceeded the trigger level of 12.7 mms during this monitoring period. The highest recorded event was 15.6 mms.

We have endeavored to provide the professional services as reported herein in accordance with generally accepted geosciences practices, and make no other warranties, either express or implied, as to the services provided under the terms of this agreement and included in this report.

We appreciate the opportunity to be of service. Please feel free to contact us if you have questions concerning this report.

Sincerely,

SCHNABEL ENGINEERING CONSULTANTS, INC.

Benjamin R. Like
Associate

Jeffrey Y. Sewell, PE
Senior Associate

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Enclosures
Figure 1 – Seismograph Location Plan
Vibration Event Reports (1 sheet)