

January 2, 2019

Mr. Greg Griffin
EYA (dba RT South Associates, LLC)
4800 Hampden Lane, Suite 300
Bethesda, Maryland 20814

Subject: **Report No. 35, Summary of Seismograph
Monitoring Data, December 1 through 31, 2018,
Robinson Landing – Phase 2 Project,
Alexandria, Virginia (SSI Job No. 15-1080)**

Dear Mr. Griffin:

Seismic Surveys, Inc. (SSI) is pleased to submit this Summary of Seismograph Monitoring Data for the above referenced project. These services are required under DSUP Permit Condition 76 and have been provided in accordance with our contract dated July 22, 2016.

Seismograph Data Summary

Instantel® and Sigicom® seismographs are being used for the monitoring stations. The seismographs are programmed to continuously record ground vibration in Histogram Combo™ Mode (Instantel) and Simultaneous Bargraph and Waveform Registration (SBWR) mode (Sigicom) where a histogram of peak particle velocity (PPV) versus time for every minute is recorded. The seismograph locations and PPV at each location are summarized in Table 1. Seismograph locations are shown in the attached Figure 1 – Cutoff Wall Construction Monitoring Location Plan.

Table 1
Vibration Data Summary

SSI Station No.	Seismograph Serial No.	Location	Date / Time of Maximum Measured Construction Vibration	Maximum PPV (in/sec) / Frequency (Hz)	Vibration Alert Threshold (in/sec)
1	26950	58 Wolfe Street	12-12-18 / 1430	0.024 / 5.0	0.25
3 ^a	68950	311 S. Union Street	N/A	N/A	0.25
6	MP13202	100.5 Duke Street	12-28-18 / 1746	0.068 / 114	0.25
9	MP13057	401 S. Union Street	12-14-18 / 0729	0.025 / 6.6	0.12
11 ^b	65250	2 Wolfe Street	N/A	N/A	0.25
12 ^c	66740	101 Wolfe Street	12-03-18 / 1449	0.174 / 9.5	0.25
			12-29-18 / 1521	0.060 / 46.5	
13	68960	Hotel Indigo – 220 S. Union Street	12-18-18 / 1423	0.020 / 8.0	0.25

- a- The seismograph at Station 3 lost communication on November 11, 2018. We have made several attempts to contact the homeowner to service the seismograph but have not received a response as of this date.
- b- The seismograph at Station 11 lost communication on November 21, 2018. We have made several attempts to contact the homeowner to service the seismograph but have not received a response as of this date.
- c- The seismograph was relocated on December 20, 2018 to move it away from the garage door track. Daily noise from non-construction sources are greatly reduced.

The maximum peak particle velocity (PPV) measured at any conventional dwelling with a PPV threshold of 0.25 in/sec was 0.174 in/sec on December 3, 2018, at approximately 1449 hours. (Note: Peak may have resulted from non-construction source like the garage door. The maximum PPV after the seismograph was moved from the door track was 0.060 in/sec.) The maximum PPV measured in the vicinity of historic dwellings with a PPV threshold of 0.12 in/sec was 0.025 in/sec on December 14, 2018, at approximately 0729 hours.

Conclusion

Based on the analysis presented herein, we offer the following conclusion:

- Measured construction related vibrations during this period were well below established project thresholds.

Limitations

The vibration measurements taken under this agreement and reported herein were conducted in accordance with current standards of the industry. SSI does not warrant that vibration damage to the premises being monitored will not occur even when readings indicate vibration levels or movement below normally accepted threshold values.

We appreciate the opportunity to have been of service on this project. If you have questions or you require additional information, please call.

Sincerely,

SEISMIC SURVEYS, INC.



Brynn K. Harris, C.P.G.
Project Geologist



David K. Miller, P.G.
Principal

Attachment:

- Figure 1 – Cut Off Wall Construction Monitoring Location Plan

DKM/BKH/bms

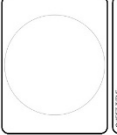
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Vibration Letter 2018.12.03 BKH 15-1080.docx



PROPOSED: EXHIBIT
 DRAWN BY: RT SOUTH ASSOCIATES
 DATE: 06-18-18
 CHECKED BY: RT SOUTH ASSOCIATES
 PROJECT: RT SOUTH ASSOCIATES

RT SOUTH ASSOCIATES
 1001
 LOCATIONS OF SITE
 ROBINSON TERMINAL SOUTH
 CITY OF ALEXANDRIA, VA

BOHLER ENGINEERING
 2028 WAYS DRIVE, SUITE 111
 FALLS CHURCH, VIRGINIA 22034
 703.261.8800
 WWW.BOHLERENGINEERING.COM



PROJECT TITLE: PRE-CONSTRUCTION SURVEY LIMITS
 SHEET NUMBER: 1 of 1

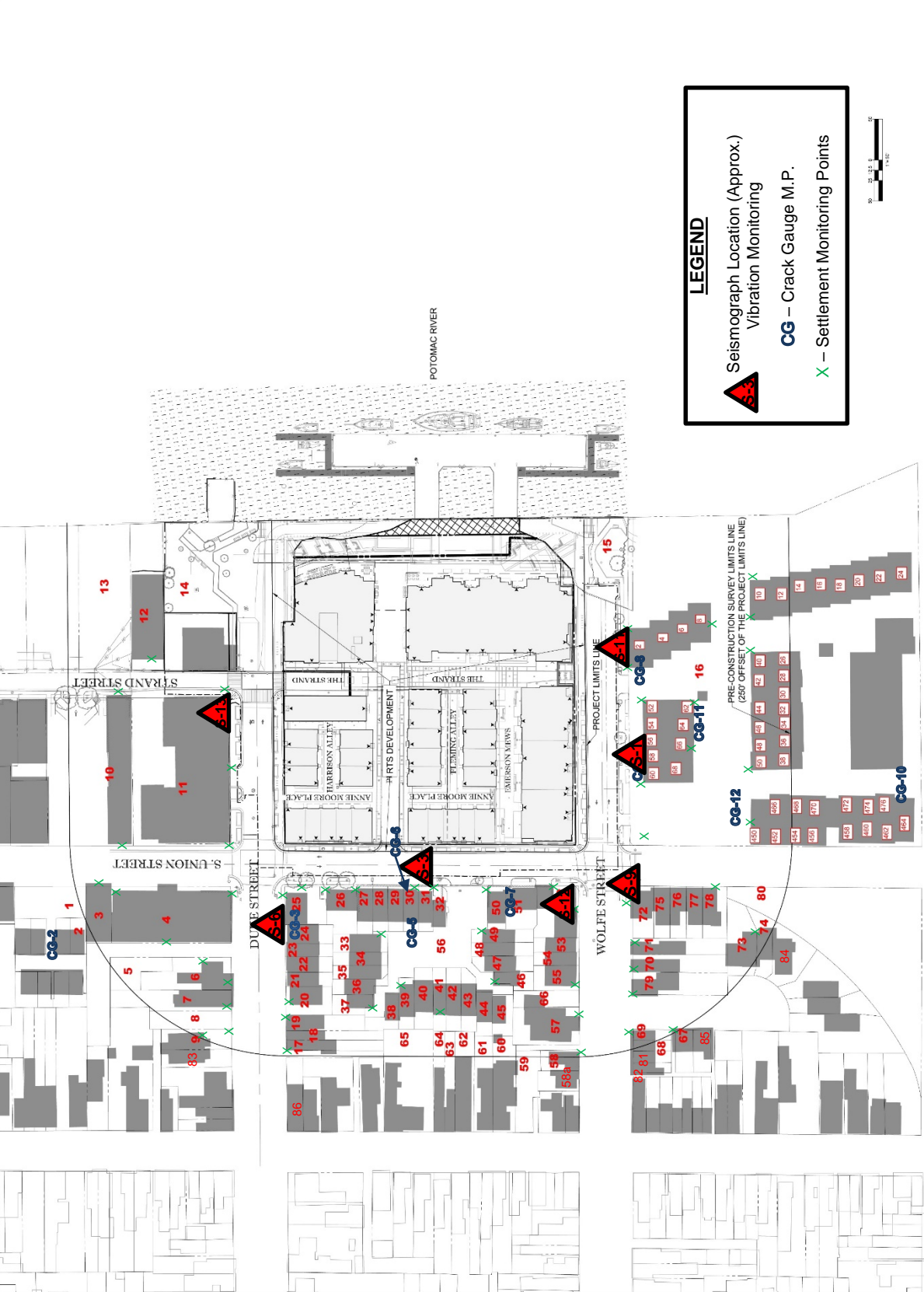


Figure 1 – Cutoff Wall Construction Monitoring Location Plan
 Robinson Landing Project Phase 2 (After 06-18-18)
 Alexandria, Virginia