

December 3, 2018

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

Subject: **Report No. 34, Summary of Seismograph
Monitoring Data, November 1 through 30, 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® seismographs 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	11-20-18 / 1346	0.026 / 5.5	0.25
3 ^a	68950	311 S. Union Street	11-02-18 / 1256	0.052 / 68.5	0.25
6	MP13202	100.5 Duke Street	11-13-18 / 0813	0.035 / 57	0.25
9	MP13057	401 S. Union Street	11-02-18 / 0906	0.027 / 4.9	0.12
11 ^b	65250	2 Wolfe Street	11-21-18 / 1012	0.016 / 4.0	0.25
12 ^c	66740	101 Wolfe Street	11-03-18 / 1137	0.186 / 29.5	0.25
13	68960	Hotel Indigo – 220 S. Union Street	11-05-18 / 1245	0.054 / 55.5	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- There is limited seismograph data for Station 11 for this monitoring period. We gained access to the property on November 21, 2018 and confirmed that the seismograph is monitoring; however, with limited communications, the seismograph is unable to call in the data. We are continuing the attempt to access the unit but have not been granted access as of this date.
- c- The garage door opening may be causing elevated readings on the vertical channel. This seismograph will be relocated

The maximum peak particle velocity (PPV) measured at any conventional dwelling with a PPV threshold of 0.25 in/sec was 0.186 in/sec on November 3, 2018, at approximately 1137 hours. The maximum PPV measured in the vicinity of historic dwellings with a PPV threshold of 0.12 in/sec was 0.027 in/sec on November 2, 2018, at approximately 0906 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
Project Geologist



David K. Miller, P.G.
Principal

Attachment:

- Figure 1 – Cut Off Wall Construction Monitoring Location Plan

DKM/BKH/bms

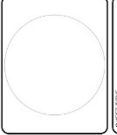
S:\SSI\SEISMIC SURVEYS\CLIENTS\EYA\15-1080 Robinson Landing\Monitoring\Reports\Phase 2\Report 34\Report No. 34
Vibration Letter 2018.12.03 BKH 15-1080.docx



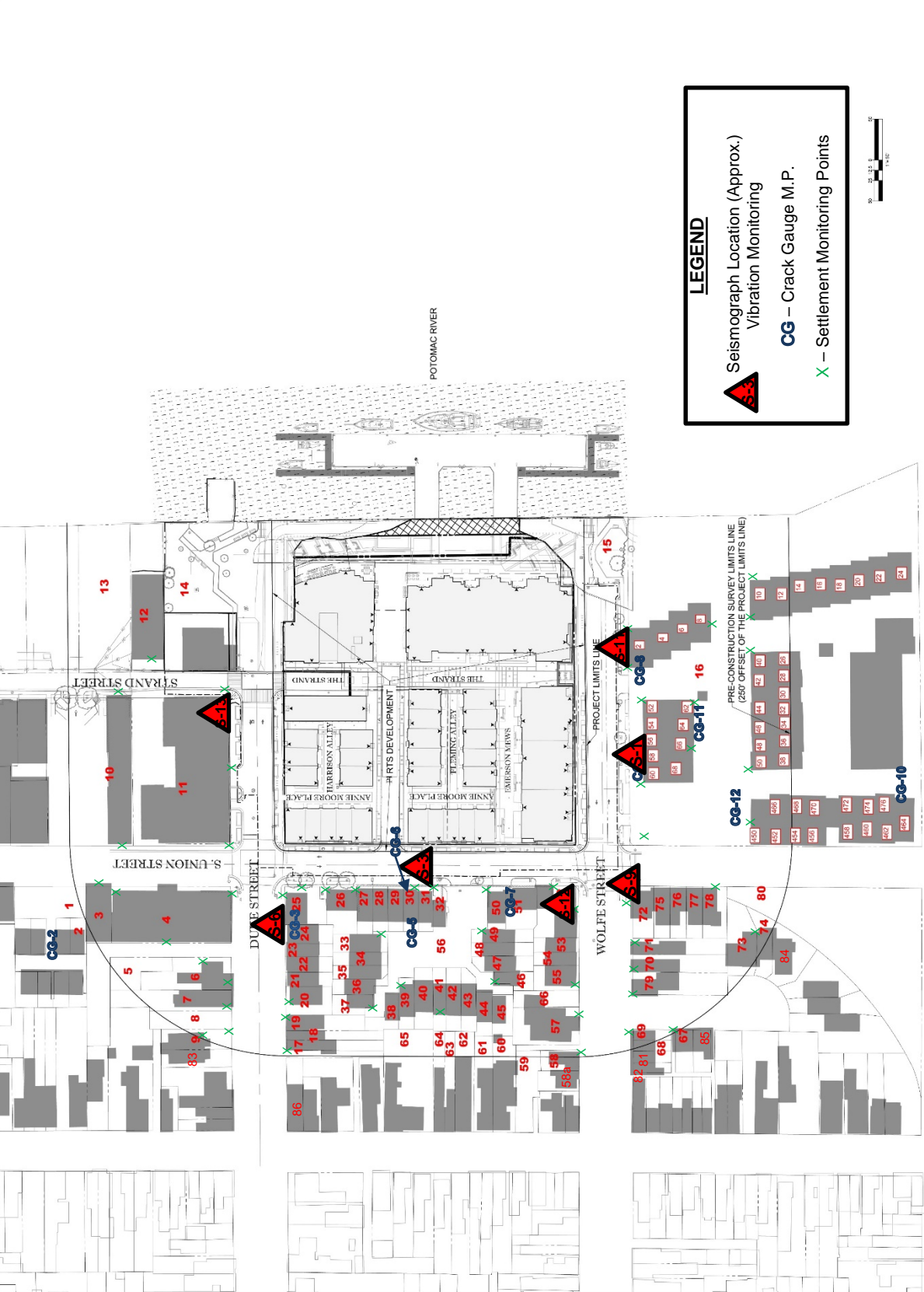
PROPOSED: EXHIBIT
 DRAWN BY: RT SOUTH ASSOCIATES
 DATE: 06-18-18
 CHECKED BY: RT SOUTH ASSOCIATES
 PROJECT: RT SOUTH ASSOCIATES

RT SOUTH ASSOCIATES
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PROJECT: PRE-CONSTRUCTION SURVEY LIMITS
 SHEET NUMBER: 1 of 1



LEGEND

- Seismograph Location (Approx.)
Vibration Monitoring
- CG – Crack Gauge M.P.
- X – Settlement Monitoring Points

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