



Saguaro GeoServices, Inc.

RECEIVED

SEP 2 2008

KIEWIT/SUNDT JV
I-10 WIDENING

August 26, 2008
Ref. No. 899-Kiewit-Sundt

Kiewit-Sundt J.V.
5157 North Casa Grande Highway
Tucson, AZ 85743

ATTN: CRAIG MARTIN

**SUBJECT: VIBRATION MONITORING OF SONIC CONCRETE PAVEMENT BREAKER
I-10 MAINLINE WIDENING, TUCSON, AZ
P.O. NUMBER 22032-TB000**

Ladies and Gentlemen:

As requested by Gary Endler, Saguaro GeoServices (SGS) measured vibrations associated with sonic pavement breaking operations for the I-10 Mainline Widening project near Tucson, on August 26, 2008.

SGS was to determine if vibrations from the sonic concrete breaking machine could potentially cause damage to the property at 815 W 18th St. SGS positioned monitoring equipment along the EB I-10 Frontage Rd, next to the property. The sonic concrete breaking machine was directed to the demolition area that was nearest to the property, about 125 ft from the monitor, and made two passes while under operation. The monitor trigger level was set at 0.06 in/s ppv. In general, 0.2 in/s ppv is considered to be a safe limit to preclude threshold damage to a structure. Personnel on site were able to feel the ground vibrations generated by the equipment. However, no ground vibrations were recorded by the monitor as they were below the 0.06 in/s trigger level.

Ground vibrations were measured using a Blastmate III seismograph manufactured by InstanTel (serial number BA5700). Sensor deployment was in conformance with the guidelines for ground vibration monitoring established by the Seismograph Section of the International Society of Explosives Engineers. Specific set-up information can be found in the following field notes. A copy of the Blastmate III certificate of calibration is included. The microphone was engaged for measuring air overpressure but the sonic concrete breaking machine did not generate noise louder than passing traffic.

We thank you for this opportunity to be of service to the Kiewit-Sundt Joint Venture. If you have any further questions, please call.

Sincerely,
SAGUARO GEOSERVICES, INC.



Greta L. Cummings, E.I.T.
Engineering Assistant



STATION	TIME	WORK DESCRIPTION
18 th St.	8:00AM	monitor pavement demo w/sonic concrete breaker
	8:45	start monitored pass - Ran 2 passes at nearest distance to house
		No vibrations recorded reaching 0.06" ppr trigger
	9:30	left site

815 W 18th St.

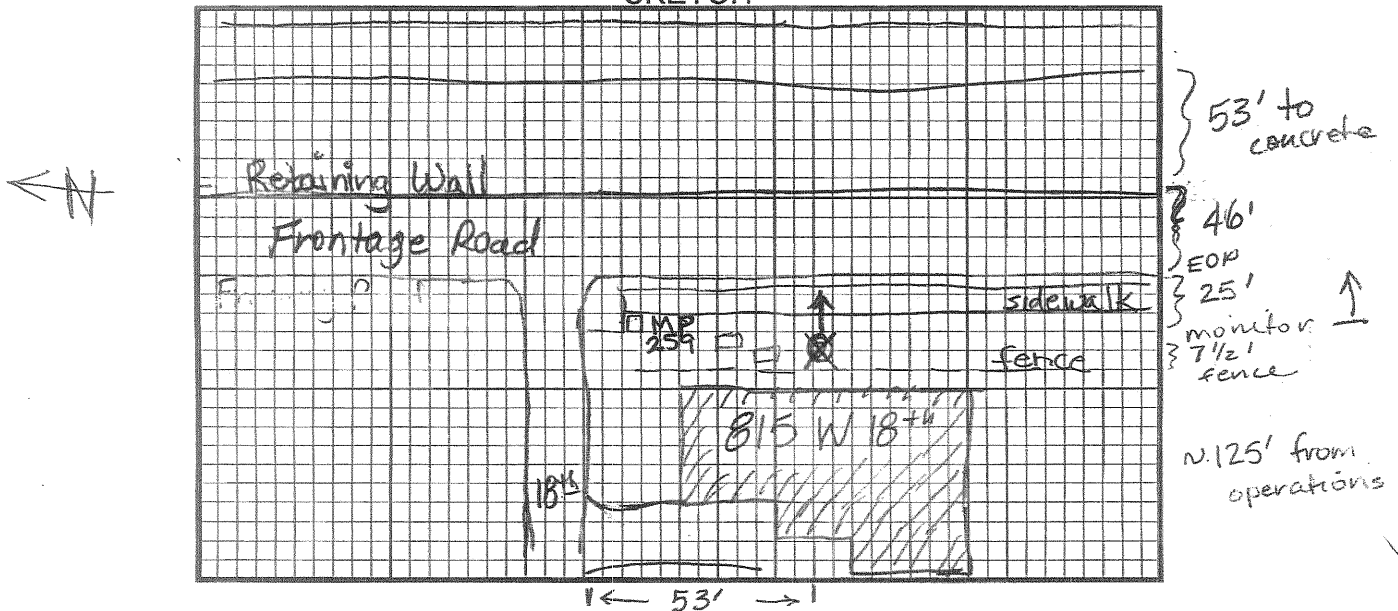
DETAILS OF ABOVE

Set up E side of house - 7 1/2' E of fence, 13 1/2' W of Sidewalk, 25' EOP
 ~ 53' S of EOP 18th St. Total distance ~ 125' from monitor to closest pass.
 0.06" PPV trigger - no trigger when passed by at closest cut
 made 2 passes - did not register any vibrations @ 0.06" ppr.
 • set-up: hard ground w/gravel. Dug hole to try to get below but too hard & rocky for spikes. Used plaster of paris base. Set geophone on it & buried dirt up around to top of geophone. Allowed plaster to set-up - tested firmness - I could not move it w/finger pressure. Microphone engaged.

Blastmate III BA5700

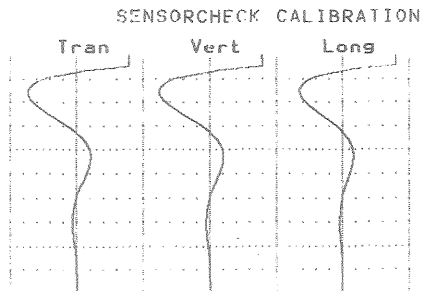
WEATHER: HOT FAIR COLD CLOUDY RAIN ^{v. light} SNOW

SKETCH



PROJECT NAME/NUMBER 899 Kiewit - Sund I-10 Widening Vibration Monitoring
Greta Cummings EMPLOYEE NAME
[Signature] EIT SIGNATURE
Engineering Asst. TITLE
8/26/08 DATE

Blastmate III sensor check printout, shows equipment is set-up and functioning.



FI=7.7 OI=3.4 FV=7.8 OV=3.6
FL=7.8 OL=3.8 FM=20.5 PM=599
Tran, Vert, Long, MicL Passed

Calibration Name Instantel Inc.
Calibration February 25, 2008
Printed: August 26, 2008
Battery Level: 6.6 Volts

Format Copyrighted 1996-2007 Instantel



Calibration Certificate

Part Number: 714A0801

Description: BLASTMATE III

Serial Number: BA5700

Calibration Date: February 25, 2008

Calibration Equipment: 718A1501

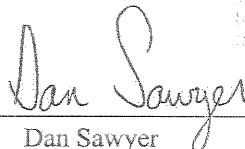
InstanTel certifies that the above product was calibrated in accordance with the applicable InstanTel procedures. These procedures are part of a quality system that is certified to the ISO9001:2000 quality standard, and are designed to assure that the product listed above meets or exceeds InstanTel specifications.

InstanTel further certifies that the measurement instruments used during the calibration of this product are traceable to the National Institute of Standards and Technology; or National Research Council of Canada. Evidence of traceability is on file at InstanTel and is available upon request.

The environment in which this product was calibrated is maintained within the operating specifications of the instrument.

Please note that the sensor check function is intended to check that the sensors are connected to the unit, installed in the proper orientation and sufficiently level to operate properly. This function should not be confused with a formal calibration, which requires the sensors be checked against a reference that is traceable to a known standard. InstanTel recommends that products be returned to InstanTel or an authorized service and calibration facility for annual calibration.

Calibrated By:


Dan Sawyer

 InstanTel