Attachment D

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TECHNICAL MEMORANDUM

To: Ms. Jennifer Schwaller, STV Inc.

From: Jason Ross, P.E.

Date: August 24, 2012

Subject: CATS Blue Line Extension Final Design - Noise and Vibration Assessment of Clark Interlocking Relocation

Reference: HMMH Job No. 305670.000

This memorandum documents the results of a noise and vibration assessment associated with relocating a number 10 diamond crossover (interlocking) from Clark Boulevard (near Station No. 3037+00) to south of Shopping Center Drive (Station No. 3026+00 to 3028+02). The impact assessment included in the Final Environmental Impact Assessment (FEIS) was based on 65% preliminary engineering design drawings which located the crossover near Clark Boulevard. The results of the FEIS assessment showed that there would be no noise or vibration impact at sensitive receptors near the interlocking location.

Land use near the relocated interlocking is primarily commercial which is not considered sensitive to noise or vibration from transit operations. Land use which is sensitive to noise and vibration according to Federal Transit Administration (FTA) guidelines includes the Intown Suites Hotel at 7706 N. Tryon Street/US-29 (Station No. 3020+00). The interlocking will be located adjacent to the Duke Power Company site and Walmart parking lot which are not considered sensitive to noise and vibration.

Special trackwork (crossovers and turnouts) generally increase noise generated by light rail vehicles up to 6 dBA and vibration levels up to 10 VdB for receptors within 300 feet of the track centerline. With the relocation of the interlocking to between Station No. 3026+00 and 3028+02, the Intown Suites Hotel will be farther than 300 feet away and there would be no increased noise or vibration due to the special trackwork.

Table 1 and Table 2 present the projected noise and vibration levels, respectively, with the relocated interlocking location. Table 1 shows that the project noise levels will be 59.7 dBA which is below the moderate noise impact criterion of 60.1 dBA. Table 2 shows that future vibration levels will be 54 VdB which is below the vibration impact criterion of 72 VdB. Therefore, there would be no noise or vibration impact with the relocated interlocking.

Table 1. Noise Impact Assessment Results

Noise Sensitive Receptor Location	Station Number	Distance to Near Track Centerline (feet)	Speed of LRV (mph)	Existing Noise Level (Ldn)	Project Noise Impact Criteria (Ldn)		Project Noise Level (Ldn)	Future Noise Level (Ldn)	Additional Noise Sources
					Mod.	Sev.			
7706 North Tryon Street/US-29 Intown Suites Hotel	3020+00	140	40	63.9	60.1	65.5	59.7	65.3	

Table 2. Vibration Impact Assessment Results

Vibration Sensitive Receptor Location	Station Number	Distance to Near Track Centerline (feet)	Train Speed (mph)	Maximum Vibration Velocity in any 1/3-octave band from 4 to 80 Hz (VdB re: 1 μ-in/sec)	Projections Based on Vibration Test Site
7706 North Tryon Street/US-29 Intown Suites Hotel	3020+00	140	40	54	Site 4