June 7, 2022

Paul Danneberg
Infinigy
2255 Sewell Mill Road, Suite 130
Marietta, GA 30062

Re: Acoustical Report – AT&T SN2975 Smokey Point North
Site: 17306 Smokey Point Drive, Arlington, WA 98223

Dear Paul,

This report presents a noise survey performed in the immediate vicinity of the proposed AT&T telecommunications facility at 17306 Smokey Point Road in Arlington, Washington. This noise survey extends from the proposed equipment to the nearest properties. The purpose of this report is to document the existing conditions and the impacts of the acoustical changes due to the proposed equipment. This report contains data on the existing and predicted noise environments, impact criteria and an evaluation of the predicted sound levels as they relate to the criteria.

Code Requirements

The site is located within the City of Arlington Zoning jurisdiction on property with an HC zoning designation. All of the receiving properties are zoned HC and CC. Arlington Code 20.44.210 identifies HC and CC as Class B EDNA.

The proposed new equipment includes equipment support cabinets and an emergency generator. The equipment support cabinets are expected to run 24 hours a day. The generator will run once a week during daytime hours for maintenance and testing purposes only.

Arlington Municipal Code 20.44.210 adopts WAC 173-60-020by reference. Under WAC 173-60-040, noise from equipment on a Class B EDNA property is limited as follows:

Class B EDNA Receiver: Noise is limited to 60 dBA 24 hours a day. The cabinets must meet this limit.

Additionally, WAC 173-60-040 allows that during any one-hour period, the maximum permissible noise level may be exceeded by 5 dBA for a 15 minute period. Therefore, the generator must not exceed 65 dBA when running during daytime hours for maintenance testing. The generator is exempt during emergency operation.

Ambient Conditions

Existing ambient noise levels were measured on site with a Svantek 971 sound level meter on May 18, 2022. Measurements were conducted as close to the proposed location as possible and the property lines in accordance with the State of Washington code for Maximum Environmental Noise Levels WAC 173-60-020. The average ambient noise level was 61 dBA, due primarily to local traffic.

Predicted Equipment Sound Levels

24-Hour Operation Equipment
The following table presents a summary of the equipment and their associated noise levels:

Table 1: Equipment Noise Levels

Equipment	dBA (each)	Quantity	Combined dBA @ 5 ft
Delta ESOF030	65 dBA @ 5 ft	1	65
Total dBA (All cabinets combined)			**65**

Methods established by ARI Standard 275-2010 and ASHRAE were used in predicting equipment noise levels to the receiving properties. Application factors such as location, height, and reflective surfaces are accounted for in the calculations.

The equipment will be located at grade surrounded by a chain-link fence. The nearest receiving property is approximately 12 feet southeast of the equipment. The following table presents the predicted sound levels at the nearest receiving property:

Table 2: Predicted Noise Levels: Proposed Equipment Cabinets

Line	Application Factor	SE
1	Sound Pressure Level at 5 ft (dBA), Lp1	65
2	Distance Factor (DF) Inverse-Square Law (Free Field): DF = 20*log (d1/d2)	-8 (12 ft)
3	New Equipment Sound Pressure Level at Receiver, Lpr (Add lines 1 and 2)	**57**

As shown in Table 2, the sound pressure level from the proposed equipment is predicted to be 57 dBA at the nearest receiving property to the southeast, which meets the 60 dBA code limit. Noise levels at other receiving properties, which are further away, will be lower and within code limits.

Emergency Equipment

The proposed equipment includes one Kohler 30REOZK 30 KW generator with a sound enclosure which has a sound level of 65 dBA at 23 feet. The generator will be located at grade surrounded by a chain-link fence. The nearest receiving property is approximately 13 feet southeast of the generator. The following table presents the predicted sound levels at the nearest receiving properties:

Table 3: Predicted Noise Levels: Proposed Emergency Generator

Line	Application Factor	SE
1	Equipment Sound Pressure Level at 23 ft. (dBA), Lp1	65
2	Distance Factor (DF) Inverse-Square Law (Free Field): DF = 20log (d1/d2)	+5 (13 ft)
3	New Equipment Sound Pressure Level at Receiver, Lpr	**70**

As shown in Table 3, the sound pressure level from the proposed generator during test cycle operation is predicted to be 70 dBA at the nearest receiving property to the southeast, which exceeds the 65 dBA code limit. In order for the equipment to meet code, the following noise mitigation measures must be implemented:

Noise Mitigation

Noise levels will need to be reduced by 5 dB for the generator to meet code at the southeast receiving property. To provide the noise reduction, a noise barrier will need to be installed between the equipment and the receiving properties as follows:

Noise Barrier

- Install a noise barrier around the southeast side of the equipment as indicated by the bold **red** line in Figure 2.

- The top of the noise barrier shall be 6'-0" above grade.

- Construct the noise barrier with a solid material that has a surface mass of at least 2.5 lbs/sq ft. The following are common barrier materials that meet this requirement:

    - 3/4-inch exterior grade plywood
    - 16-gauge sheet metal
    - HardiPanel Vertical Siding or HardiBacker 1/2-inch

- Install sound absorbing material inside of the barrier with a minimum NRC rating of 0.80. The material should be installed between 1'-0" and 5'-0" above grade. The following are recommended products for this application:

    - 1" thick F-Sorb
    - 1" thick Polysorb
    - Soundseal Quilted Fiberglass Absorber (QFA-10 Silicone-coated-fiberglass-cloth faced).

- A detail of the barrier construction is presented in the following figure.

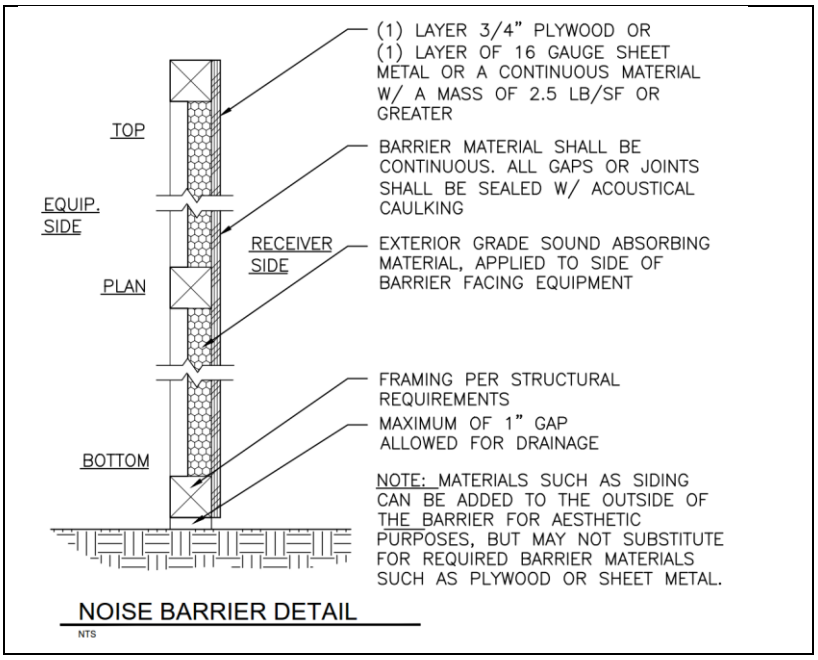

Figure 1: Noise Barrier Detail

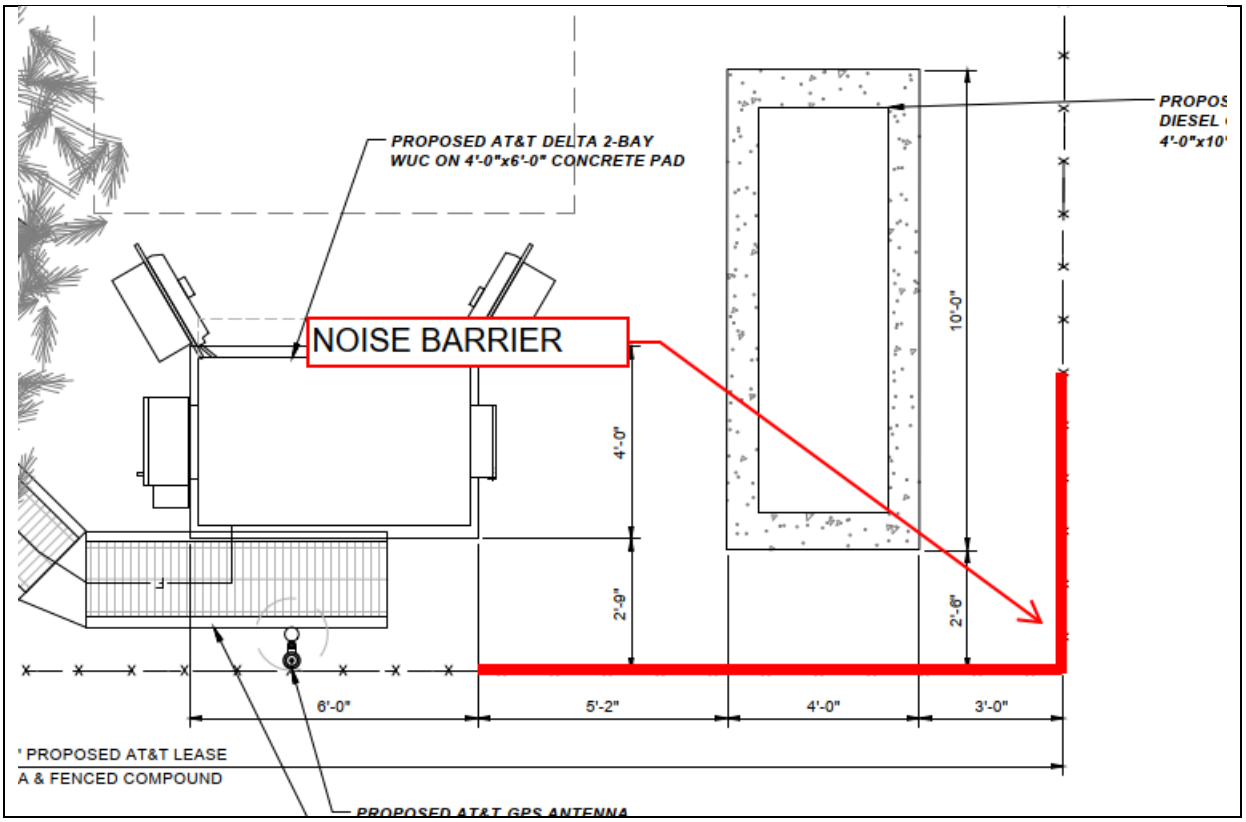

Figure 2: Noise Barrier - Plan

Predicted Noise Levels With Mitigation

The following tables present the predicted noise levels with the noise mitigation implemented.

Table 4: Predicted Noise Levels: Proposed Emergency Generator

Line	Application Factor	SE
1	Equipment Sound Pressure Level at 23 ft. (dBA), Lp1	65
2	Noise Reduction – Noise Barrier	-5
3	Distance Factor (DF) Inverse-Square Law (Free Field): DF = 20log (d1/d2)	+5 (13 ft)
4	New Equipment Sound Pressure Level at Receiver, Lpr	**65**

As shown in Table 4, the sound pressure level from the proposed generator during test cycle operation with the proposed mitigation is predicted to be 65 dBA at the nearest receiving property to the southeast, which meets the 65 dBA code limit.

Please contact us if you have any questions or require further information.

Sincerely,
SSA Acoustics, LLP

Steven Hedback
Acoustical Consultant