TRAFFIC NOISE REPORT ADDENDUM

Complete 540
Triangle Expressway Southeast Extension

Wake and Johnston Counties

STIP Project Nos. R-2721, R-2828, and R-2829
State Project Nos. 6.401078, 6.401079, and 6.401080
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Executive Summary

The North Carolina Department of Transportation (NCDOT) is proposing the completion of the 540 Outer Loop by way of the Southeast Extension of the Triangle Expressway in Wake and Johnston Counties. The project is included in the TIP as No. R-2721, R-2828 and R-2829. Seventeen Detailed Study Alternatives (DSAs) were investigated in the 2015 Draft Environmental Impact Statement (DEIS) and DSA2 was selected as the Preferred Alternative. For the Final Environmental Impact Statement (FEIS), the design year has been changed from 2035 to 2040 and additional traffic data for the 2016 existing condition and the 2040 Build condition have been developed. Minor revisions to the preliminary design of DSA2 have occurred and NCDOT has updated its noise policy.

This traffic noise analysis was completed using the NCDOT Traffic Noise Policy (October 6, 2016) (Appendix 5) and the NCDOT Traffic Noise Manual (October 6, 2016).

Long-term noise measurements were taken at three locations and short-term measurements were collected at twenty locations in September of 2013. An additional seven short term measurements were collected in May of 2014. The noise measurements were used to identify loudest-hour ambient noise levels and validate use of the FHWA Traffic Noise Model.

Traffic noise levels for the base year (2016) and design year (2040) were predicted using the FHWA Traffic Noise Model®, Version 2.5.

Along the Preferred Alternative (DSA 2), 2,639 residential receptors, 4 schools, 8 recreational facilities, 8 places of worship and 1 commercial receptors were identified. Overall 132 receptors are predicted to experience only Noise Abatement Criteria impacts, 473 receptors are predicted to experience only a substantial increase impact, and 213 receptors will experience both types of impact.

Noise abatement in the form of traffic management, alteration of alignments, buffer zones and building insulation was found not to be feasible. Noise barriers were studied in 42 locations. Of these, 22 barriers were preliminarily found to be both feasible and reasonable and are likely to be constructed. The other 20 barriers were preliminarily found to be either not feasible or not reasonable and are not likely to be constructed. A final determination of noise barrier feasibility and reasonableness will be made upon completion of project design and public involvement process.

Since the project area is predominately residential and commercial, construction is not expected to be disruptive for typical daytime, mid-week activities. Construction should be coordinated with the places of worship and schools along the project to avoid interrupting activity at any locations.

The final design traffic noise analysis, documented in a Design Noise Report, will re-evaluate feasible and reasonable noise abatement for the entire project corridor and not just in areas where noise abatement has been identified in this Traffic Noise Report as being preliminarily feasible and reasonable (i.e. likely).

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1 Introduction

The North Carolina Department of Transportation (NCDOT) State Transportation Improvement Program (STIP) includes a project that addresses the proposed completion of the 540 Outer Loop by means of constructing the Southeast Extension of the Triangle Expressway in Wake and Johnston Counties. The project is included in the TIP as No. R-2721, R-2828 and R-2829. Seventeen Detailed Study Alternatives (DSAs) were developed and investigated in a Draft Environmental Impact Statement (DEIS) that was completed in 2015. See Exhibit 1 for a project location map which shows the Preferred Alternative (DSA 2). The Preferred Alternative will be a 6 lane fully-controlled access expressway, with a design speed of 70mph. DSA 2 was selected as the Preferred Alternative.

This traffic noise analysis is part of the Final Environmental Impact Statement (FEIS) and is a revision of the traffic noise analysis completed for the DEIS. Since the DEIS was completed, the existing year was changed from 2012 to 2016, the design year was changed from 2035 to 2040, the NCDOT Traffic Noise Policy and the NCDOT Traffic Noise Manual were both revised, there has been additional development in the project area and various geometric changes to the project design have been made. These changes are all reflected in this traffic noise analysis.

Current land use along the project alternates is predominantly residential and undeveloped with a few commercial and agricultural areas. Federal and state guidelines establish certain noise level criteria for these different land uses, and this study will determine whether these criteria will be approached or exceeded due to the improvement, or whether there will be a substantial increase in noise due to the project.

Ambient noise measurements were collected in September 2013 and May 2014. Weather conditions during both periods of field work were clear with dry pavement and low wind speeds.

This study reveals that for the design year (2040) traffic volumes, 818 receptors will be impacted by traffic noise by the Preferred Alternative.

2 Characteristics of Noise

Noise is defined as unwanted or irritating sound. It is emitted from numerous sources, including airplanes, factories, railroads, animals, construction activity, trucks and automobiles. On-road vehicle noise is primarily comprised of noises from engine exhaust, drive train, and the tire/roadway interaction.

The magnitude of noise is usually described by its sound pressure. Because the range of sound pressure varies greatly from object to object, a logarithmic scale is used to relate sound pressures to a common

reference pressure, yielding the sound pressure level. Sound pressures levels are expressed in units of decibels (dB) and are often modified by frequency-weighted scales (e.g., A- or C-weighted scales). The A-weighted scale is used almost exclusively when measuring vehicle noise because it places a stronger emphasis on the frequency range to which the human ear is most sensitive (approximately 1,000 to 6,000 hertz). Sound levels filtered with the A-weighed scale are expressed as dB(A). Throughout this report, all noise levels will be expressed in dB(A). Examples of common indoor and outdoor noise levels are listed in Table 1.

Table 1: Common Indoor and Outdoor Noise Levels

Common Outdoor Noise Levels	Noise Level dB(A)	Common Indoor Noise Levels
	110	Rock Band
Jet Flyover at 1000 feet	100	Inside Subway Train (NY)
Gas Lawn Mower at 3 feet		
Diesel truck at 50 feet	90	Food Blender at 3 feet
Noisy Urban Daytime	80	Garbage Disposal at 3 feet
Gas Lawn Mower at 100 feet	70	Vacuum Cleaner at 10 feet
Commercial area		Normal Speech at 3 feet
	60	
		Large Business Office
Quiet Urban Daytime	50	Dishwasher in the Next Room
Quiet Urban Nighttime	40	Small Theater Large Conference Room (Background)
Quiet Suburban Nighttime		Library
	30	
Quiet Rural Nighttime		Bedroom at Night Concert Hall (Background)
	20	
		Broadcast and Recording Studio
	10	
	0	Threshold of Hearing

Adapted from Guide on Evaluation and Attenuation of Traffic Noise, American Association of State Highway and Transportation Officials (AASHTO). 1974 (revised 1993).

Since most environmental noise fluctuates from moment to moment, it is common practice to condense all of this information into a single number called the equivalent sound level (Leq). The Leq is the value of a steady sound level that would represent the same sound energy as the actual time-varying sound levels evaluated over the same period. For highway traffic noise assessment, Leq is typically evaluated over a one-hour period, and is denoted as Leq(h). Throughout this report, all noise levels are expressed in a one hour equivalency.

3 Guidelines

The noise impacts for the proposed improvements have been assessed in accordance with Federal Highway Administration (FHWA) regulations published in 23 Code of Federal Regulations, Part 772, and the NCDOT Traffic Noise Policy, October 6, 2016 (Appendix 5).

There are two types of traffic noise impacts: Noise Abatement Criteria and substantial increase.

The Noise Abatement Criteria (NAC) established by Part 772 and listed in Table 2 represent the noise level at which noise abatement must be considered. The NAC primarily apply to exterior areas of frequent human use. They do not apply to the entire tract of land on which the activity is based, but only to that portion where the activity takes place. The NAC are given in terms of the A-weighted, hourly equivalent sound level in decibels or dB(A).

The noise impact assessment is made using the criteria listed in Table 2. If, for a given activity, the design year noise levels "approach or exceed the NAC", then the activity is impacted and abatement measures must be considered. The North Carolina Department of Transportation has defined approach as one decibel less than the NAC.

The Federal guidelines provide a second criterion for assessing impact. For some locations, a project may impose a large increase in noise levels over existing levels, although the levels may not reach the NAC. The NCDOT Traffic Noise Policy defines a "substantial increase" that justifies consideration of noise abatement measures as a 10 dB(A) increase over the existing noise level.

When traffic noise impacts are identified, noise abatement measures shall be considered for feasibility and reasonableness and may include traffic management measures, alteration of horizontal and vertical alignments, establishment of buffer zones, noise insulation for Activity Category D land uses and the construction of noise barriers. The final decision to construct noise abatement measures will be made upon completion of the project design and the public involvement process.

Table 2: FHWA Noise Abatement Criteria

Activity Category	Leq (h)[1] dB(A)[2]	Description of Activity
A	57 (Exterior)	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.
B[3]	67 (Exterior)	Residential
C[3]	67 (Exterior)	Active sports areas, amphitheaters, auditoriums, campgrounds, cemeteries, daycare centers, hospitals, libraries, medical facilities, parks, picnic areas, places of worship, playgrounds, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, recreation areas, Section 4(f) sites, schools, television studies, trails and trail crossings.
D	52 (Interior)	Auditoriums, day care centers, hospitals, libraries, medical facilities, places of worship, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, schools, and television studies
E[3]	72 (Exterior)	Hotels, motels, offices, restaurants/bars and other developed lands, properties or activities not included in A-D or F.
F	----	Agricultural, airports, bus yards, emergency services, industrial, logging, maintenance facilities, manufacturing, mining, rail yards, retail facilities, shipyards, utilities (water resources, water treatment, electrical), and warehousing
G	----	Undeveloped lands that are not permitted

Source: *NCDOT Traffic Noise Policy*, October 6, 2016

[1]The equivalent steady-state sound level which in a stated period of time contains the same acoustic energy as the time-varying sound level during the same period of time, with Leq(h) being the hourly value of Leq.
[2]The Leq(h) activity criteria values are for impact determination only, and are not design standards for noise abatement measures.
[3]Includes undeveloped lands permitted for this activity category.

4 Ambient Noise Levels

Ambient noise is the combination of all noise sources that occur in an area and can include noise generated from human-influenced sources such as vehicle traffic, air conditioners, aircraft, construction, and recreation. Ambient noise can also include natural sources such as wildlife, insects, wind through leaves and running water. In the project area there are areas of development separated by natural and agricultural areas. Each area has its own ambient noise composition.

Noise monitoring was performed in September 2013 and May 2014 along the project corridors. The short term data collected was used in the validation of the noise model and to establish loudest-hour ambient noise levels where traffic is not the major noise source. Long term measurements were taken in order to establish a diurnal curve and find the loudest hour of the day for rural and suburban locations. The short term ambient measurements were normalized to reflect the loudest hourly Leq for each location. See

Appendix 1 for detailed information for each measurement including start and stop times of the measurements, durations, weather conditions, traffic data collected during the measurements, photographs of the meter set-ups and documentation of any other contributing noise sources or events. Ambient noise levels ranged from 44 dB(A) to 57 dB(A).

The short-term measurements that were completed in 2013 were performed with Larson-Davis Model 824 Type I Sound Level Meters and the long-term measurements were performed with a Larson-Davis Model 870 Type I Sound Level Meter equipped with an external battery. The short-term measurements that were completed in 2014 were performed with Larson-Davis Model 820 Type I Sound Level Meters. Calibration certificates are included in Appendix 1.

The noise measurements validated use of the FHWA Traffic Noise Model, Version 2.5 (TNM) as appropriate for use in determining the traffic generated noise levels. The model accounts for such factors as ground absorption, roadway geometry, receptor distance, existing buildings, topography, vehicle volumes and speeds, and volumes of medium trucks (vehicles with 2 axles/6 tires) and heavy trucks (3 axles or more). At measurement locations further from the roadway where TNM did not validate, the ambient noise was dominated by non-traffic sources such as insects and air conditioners. These locations where ambient noise was dominant were used as the ambient levels throughout the project and were normalized using the diurnal curve. The ambient levels were normalized by adding the difference between the hour of the short term measurement and the loudest hour of long term measurements to the ambient levels. See Appendix 1 for the results of the field measurements, TNM validation results, and adjusted ambient measurements.

5 Procedure for Predicting Future Noise Levels

Traffic noise emissions are composed of several variables, including the number, types, and travel speeds of the vehicles, as well as the geometry of the roadways on which the vehicles travel. Additionally, variables such as weather and intervening topography affect the transmission of traffic noise from the vehicles to noise sensitive receptors.

In accordance with industry standards and accepted best-practices, detailed computer models were created using the FHWA TNM 2.5. The computer models were validated to within acceptable tolerances of field-monitored traffic noise data, and were used to predict traffic noise levels for receptor locations in the vicinity of the proposed project. Traffic noise consists of three primary parts: tire/pavement noise, engine noise, and exhaust noise. Of these sources, tire/pavement noise is typically the most offensive at highway travel speeds. Sporadic traffic noises such as horns, squealing brakes, screeching tires, etc. are considered aberrant and are not included within the predictive model algorithm. Traffic noise is not constant; it varies in time depending upon the number, speed, type, and frequency of vehicles that pass by a given receptor.

Furthermore, since traffic noise emissions are different for various types of vehicles, the TNM algorithm distinguishes between the source emissions from the following vehicle types: automobiles, medium trucks, heavy trucks, buses, and motorcycles, as shown in Table 3. The computer traffic noise prediction model uses the number and type of vehicles on the planned roadway, vehicle speeds, the physical characteristics of the road (curves, hills, depressions, elevations, etc.), receptor location and height, and, if applicable, barrier type, barrier ground elevation, and barrier segment top elevations.

Table 3: Traffic Noise Model (TNM) Vehicle Classification Types

TNM Vehicle Type	Description
Autos	All vehicles with two axles and four tires, including passenger cars and light trucks, weighing 9,900 pounds or less
Medium Trucks	All vehicles having two axles and six tires, weighing between 9,900 and 26,400 pounds
Heavy Trucks	All vehicles having three or more axles, weighing more than 26,400 pounds
Buses	All vehicles designed to carry more than nine passengers
Motorcycles	All vehicles with two or three tires and an open-air driver / passenger compartment

Sources: FHWA Measurement of Highway-Related Noise, § 5.1.3 Vehicle Types.
FHWA Traffic Monitoring Guide, § 4.1 Classification Schemes

Noise levels have been predicted for that hour of the day when the vehicle volume, operating speed and number of heavy trucks combine to produce the worst traffic noise conditions. This condition usually occurs at Level of Service (LOS) C. An analysis showed that the existing year (2016) and design year (2040) DHV will generally operate at LOS C or better in the PM peak period.

Highway Capacity Software (HCS) was used to calculate LOS C volumes for the intersection of Holly Springs Road with Kildaire Farm Road for the existing year (2016) and at the intersections of Holly Springs Road with Kildaire Farm Road and NC 50 with Cleveland School Road for the design year (2040) build condition. Those intersections are predicted to operate at a condition worse than LOS C with the DHV.

A design speed of 70 mph was used in the modeling for the Preferred Alternative and posted speed limits were used for all side roads. See Appendix 5 for the traffic data used in this study.

Noise levels in this study have been determined for base year (2016) conditions and the design year (2040) build conditions.

6 Impact Assessment

The initial task in determining noise impacts is to identify activity areas along the project corridor that are sensitive to noise. Impact assessments have been performed for 2,660 receptors within the project corridor which represent 2,639 residential receptors, 1 commercial receptor, 4 schools, 8 recreational facilities and 8 places of worship. These areas are shown in Exhibit 2. Any properties that were not represented were determined to be Activity Category F, which are areas that are not sensitive to noise and therefore do not have NAC impact criteria.

Along the Preferred Alternative there are three Historic Properties that were included in the study. These properties consist of an historic house, a school and one country club. These properties were determined to be activity categories B, C and D. They were included because of their outside land use or their historic status. Two of the properties are listed on the National Register of Historic Places and the other is eligible for listing on the National Register of Historic Places. The three Historic Properties in the study area can be found in the Table 4.

Table 4: Summary of Historic Properties

Property Name	Survey Site Number	Eligibility Criteria	Listed ?	Receptor Number	Land Use	Existing Noise Level	Build Noise Level	Noise Level Increase	Substantial Increase	Barrier Proposed	Barrier Likely?
John Strain House	22	C	No	R1749	B	55	63	8	NO		
Meadowbrook Country Club	188	A	Yes	R2315	C	50	65	15	**YES**	NW68	YES
Panther Branch School	56	A	Yes	R0543	D	40	43	3	NO	NW52	NO

Note: Red highlights denote noise levels and noise level increases that are considered impacted.

Traffic noise abatement must be considered when traffic noise impacts are created by either of the following two conditions:

- The predicted traffic noise levels for the design year approach (reach one decibel less than) or exceed the Noise Abatement Criteria (NAC) contained in 23 CFR 772 and in Table 2 of this report.
- The predicted traffic noise levels for the design year substantially exceed base year (2016) noise levels by 10 dB(A) or more.

For each analysis receptor, a representative field measurement site was chosen based on proximity and area characteristics for comparison purposes. An explanation of the ambient measurements can be found in Section 4 of this report. The adjusted ambient measurement noise level for the representative site was

compared to the level that was predicted by TNM and the higher of the two was used in the analysis. This comparison was performed for both the base year (2016) and design year (2040).

The results of the noise analysis are summarized in Table 5 which include the number of noise impacts for different land uses and the range of noise levels associated with the Preferred Alternative. The noise prediction results are detailed for each noise sensitive area in Appendix 2. Included for each study area are the applicable NAC category and the worst hourly equivalent sound level for the base year and build conditions.

Table 5: Impact Summary per Land Use

Land Use Type	Impact Type	Preferred Alternative
Residence	NAC	132
	Increase	471
	Both	211
School	NAC	0
	Increase	0
	Both	0
Place of Worship	NAC	0
	Increase	0
	Both	0
Recreational	NAC	0
	Increase	2
	Both	2
Commercial	NAC	0
	Increase	0
	Both	0
Overall	NAC	132
	Increase	473
	Both	213
Totals		**818**

NAC – Only impacts caused by levels that approach or exceed the Noise Abatement Criteria
Increase – Only impacts caused by increases which equal or exceed the substantial noise level increase criteria of 10 dB(A)
Both – Impacts caused by both NAC and substantial increase

A comparison of the design year (2040) build noise levels (Appendix 2) with the applicable NAC, as shown in Table 2, reveals that 132 receptors will receive traffic noise levels which approach or exceed the NAC. A comparison of the design year build noise level increases with the substantial increase criteria reveals that 473 receptors will experience design year build noise levels that will be substantially higher than base year levels. In addition, 213 receptors will experience both NAC impacts as well as a substantial noise

increase. See Exhibit 2 for a map of specific receptor locations. See Appendix 2 for an Impact Analysis Table, which shows the specific receptors based on the different segments.

7 Potential Noise Abatement Measures

Section 23 Code of Federal Regulations, Part 772 identifies certain noise abatement measures that may be considered in the project design to reduce traffic noise impacts. These abatement measures include: traffic management, alteration of alignments, buffer zones, building insulation and the construction of noise barriers.

Traffic Management

Traffic management is not a feasible option because reduced speed limits will not likely be observed. Limiting truck access is contrary to the purpose of the project and a function of the roadway. The purpose of the project is to increase mobility for people and the movement of goods. Restricting truck traffic would limit the mobility of goods and would not increase mobility.

Alignment Shifts

Shifting horizontal alignments is not feasible because moving the roadway away from an impacted receptor typically creates on impact on the opposite side of the road. Shifting vertical alignments can have a positive effect on noise levels but due to the terrain in the project area would result in excessive grading costs.

Buffer Zones

Buffer zones are not possible since the impacted receptors are located adjacent to the preliminary right of way and there is an inadequate amount of land available for use as a buffer.

Building Insulation

There are no interior impacts due to this project, so therefore building insulation did not need to be considered.

Noise Barriers

The only remaining abatement measure is the construction of noise barriers. To be considered for construction, a noise barrier must be both feasible and reasonable according to NCDOT policy.

The feasibility of a noise barrier is based on its effectiveness in reducing traffic noise levels as well as any adverse impacts to property access, drainage, topography, utilities, safety and maintenance requirements. A

reduction in noise levels by five dB(A) for at least two impacted receptors is required for a barrier to be considered feasible.

A noise abatement measure is considered reasonable by NCDOT policy if the area of the abatement measure does not exceed a set allowance. For each benefited receptor, 1,500 square feet of barrier is allowed plus an additional allowance based on the average dB(A) increase over the base year noise level for all impacted receptors. See Table 6 for the allowable noise barrier base quantities. The area of noise barrier per benefited receptor calculation considers all benefitted receptors without regard to whether they are predicted to be impacted or not.

The barrier must also provide a 7 dB(A) reduction in noise to at least one benefited receptor. A barrier should also break the line-of-sight between the impacted receptors and the exhaust stacks of passing trucks. A barrier was investigated at each cluster of impacted receptors (i.e., two or more impacted receptors in close proximity).

Table 6: Allowable Noise Barrier Base Quantities

Maximum Allowable Base Quantity	Noise Level Consideration	Noise Wall	Earthen Berm
		1,500 ft^2	4,200 yd^3
Average dB(A) Increase Between Existing and Future Build for All Impacted Receptors	< 5 dB(A)	+ 0 ft^2	+ 0 yd^3
	5-10 dB(A)	+ 500 ft^2	+ 1,400 yd^3
	> 10 dB(A)	+ 1,000 ft^2	+ 2,800 yd^3
Average Exposure to Absolute Noise Levels for All Impacted Receptors	< 5 dB(A) Over NAC Activity Category	+ 0 ft^2	+ 0 yd^3
	5-10 dB(A) Over NAC Activity Category	+ 500 ft^2	+ 1,400 yd^3
	> 10 dB(A) Over NAC Activity Category	+ 1,000 ft^2	+ 2,800 yd^3

Noise barriers were investigated at 42 locations along the Preferred Alternative. For each barrier investigated, multiple heights, lengths and locations were studied. Appendix 3 contains the results of the investigations including three variations of each barrier. In general, the optimal version of each barrier is presented in this report, but during the design phase of this project it likely will be possible to refine the end points, variations in height and the locations of the barriers relative to the proposed roadways in order to maximize their efficiency and enhance their aesthetics. During the design phase of the project there may also be modifications to the horizontal and vertical alignments which could change the effectiveness of the barriers. The investigations completed for this phase of the analysis were intended to identify the likelihood

of a barrier being both feasible and reasonable and not to identify its final configuration. Exhibit 2 shows the locations of the 42 barrier locations that were investigated. Many investigated barriers correspond to potential barriers studied in the 2015 DEIS analysis; Table 7 identifies correlation between 2015 barrier naming conventions and current barriers studied.

Table 7: Correlation Between 2015 DEIS and 2017 FEIS Barrier Naming

R-2721		R-2828		R-2829	
2017 FEIS Name	**2015 DEIS Name**	**2017 FEIS Name**	**2015 DEIS Name**	**2017 FEIS Name**	**2015 DEIS Name**
NW1	Barrier 1	NW41	Barrier 19	NW83	Barrier 63
NW2	Barrier 2	NW43	Barrier 20	NW90	Barrier 64
NW3	Barrier 2	NW49-1	n/a	NW92	Barrier 65
NW5	Barrier 3	NW49-2	Barrier 22	NW97	Barrier 66
NW6	n/a	NW50	Barrier 21	NW98	Barrier 107
NW7	Barrier 108	NW52	Barrier 23		
NW8	n/a	NW53	Barrier 24		
NW11	Barrier 4	NW54	Barriers 26 & 28		
NW13	Barrier 109	NW55-1	Barriers 25		
NW16	Barriers 5 & 110	NW55-2	Barriers 27		
NW18	Barrier 6	NW58	Barrier 29		
NW19-1	Barrier 7	NW60	Barrier 30		
NW19-2	Barrier 111	NW67	Barrier 32		
NW20	Barrier 113	NW68	Barrier 33		
NW21-1	Barrier 8				
NW21-2	Barrier 9				
NW22	Barrier 10				
NW24	Barrier 12				
NW25	Barrier 11				
NW27	Barrier 13				
NW28	Barrier 14				
NW32	Barrier 16				
NW35	Barrier 17				

Noise Study Area 1 - Barrier NW1

A noise barrier was investigated to abate the predicted traffic noise impacts at 117 impacted residential receptors (R0054A-H, R0054J, R0054L, R0055B-C, R0055E-F, R0055H-L, R0055N-O, R0055Q-X, R1605, R1705C-F, 1705I-L, R1705P-R, R1705V-X, R1706A-F, R1706H-I, R1706K-L, R1706O, R1706X, R1707A-L, R1707O, R1707R, R1707U, R1707W-X, R1708B-C, R1708E-I, R1708K-L, R1708N-O, R1708Q-R, R1708T-U, R1708X, R1709A-F, R1710A-H, R5004, R5063B-D, R5064D-E, R5065A-D, R5059, R5060, R5061, and R5062) along DSA2 in Noise Study Area (NSA) 1, located north of the proposed route, east of the interchange with NC55 Bypass.

In addition, Receptor R1705 is an impacted recreational area (community pool area) behind barrier NW1. The pool area is shared by the nearby residential units during daylight hours every day of the week for five months of the year. A property manager indicated the typical number of pool users is 20. This equates to 1

residential equivalent for receptor R1705. The receptor will be treated as 1 residential equivalent in the barrier analysis. A calculation of the residential equivalents is included in Appendix 3.

Barrier NW1 is 4,004 feet long with a height of 14 feet and would provide a 5 dB(A) to 12 dB(A) reduction at 110 impacted receptors, with 144 total receptors benefitted including 114 receptors achieving at least 7 dB(A) reduction. The maximum wall allowance per benefited receptor for this barrier is 2,500 square feet and the wall would be 389 square feet per benefited receptor which is less than the allowance. This barrier is preliminarily considered feasible and reasonable and is recommended for further consideration.

See Exhibit 2.1 and 2.3 for a location map of this barrier and Appendix 3 for the noise barrier analysis details.

Noise Study Areas 2 and 3 - Barrier NW2 and NW3

Noise barriers NW2 and NW3A abate noise in NSAs 2 and 3. These noise barriers were investigated to abate the predicted traffic noise impacts at 92 impacted residential receptors (R0001B, R0006A-B, R0007A-B, R5005, R1626, R0014B, R0015A-B, R0016A-B, R0017A-B, R0018A-B, R0019A-B, R0020A, R0020C, R0021A-B, R0022A-B, R0023A-B, R0024A-B, R0025A-B, R0026, R0027A, R0028A-B, R0030A-B, R0031A-B, R0032A-B, R0033A-B, R0034A, R0039A-B, R0040A-B, R0041A-C, R0042A-B, R0043A-B, R0044A-B, R0045A-B, R0046A-B, R0047A-B, R0048A-B, R0049A-B, R0050A, R0056A-C, R0057A-B, R0058A-C, R1627A-B, R1711A-B, R1714A-B, R1715A-B, R1918B, R1922A, R5072, R5073, and R5074) along DSA2, located south of DSA2 in Noise Study Areas (NSA) 2 and 3, east of the interchange with NC55 Bypass.

Barriers NW2 and NW3 combined are 5,828 feet long with a height of 16 feet and would provide a 5 to 12 dB(A) reduction in noise at 86 of the impacted receptors, with 66 receptors receiving at least a 7 dB(A) reduction. The maximum wall allowance per benefited receptor for this barrier is 2,500 square feet and the wall would be 972 square feet per benefited receptor which is less than the allowance. This barrier is preliminarily considered feasible and reasonable and is recommended for further consideration. See Exhibit 2.2 and 2.3 for a location map of this barrier and Appendix 3 for the noise barrier analysis details.

The average height of NW1, NW2 and NW3 is 15 feet and they are approximately 190 feet apart. This distance is greater than a 10:1 ratio and a degradation in noise reduction is unlikely.

Noise Study Area 4 – No Barrier

Within Noise Study Area 4, located south of DSA 2 and west of Sunset Lake Road, 13 residential receptors and one commercial receptor were studied. One residential receptor (R5077E) is predicted to be

impacted. Since only one traffic noise impact is predicted, noise abatement would not be feasible because the NCDOT policy requires at least two impacted receptors be benefited by abatement to meet feasibility requirements. See Exhibit 2.4 for a location map of this Noise Study Area.

Noise Study Area 5 - Barrier NW5

A noise barrier was investigated to abate the predicted traffic noise impacts at 12 impacted residential receptors (R0061A-C, R0062A-B, R0065A-B, R0066A-B, R0069A-B, and R0070A) along DSA2 in Noise Study Area (NSA) 5, located north of the proposed route, north and east of the western Sunset Lake Road overpass. Barrier NW5 is 2,604 feet long, with a height of 22 feet and would provide a 5 to 7 dB(A) reduction in noise at 2 of the impacted receptors, with 7 total receptors benefitted including 2 receptors receiving at least a 7 dB(A) reduction. The maximum wall allowance per benefited receptor for this barrier is 2,500 square feet and the wall would be 8,182 square feet per benefited receptor which is greater than the allowance. This barrier is preliminarily considered feasible but not reasonable and is not recommended for further consideration. See Exhibit 2.4 for a location map of this barrier and Appendix 3 for the noise barrier analysis details.

Noise Study Area 6 - Barrier NW6

A noise barrier was investigated to abate the predicted traffic noise impacts at eleven residential receptors (R5083, R5084, R5085, R5086, R5100, R5101, R5102, R5103, R5104, R5105, and R5106), located north of DSA 2 in Noise Study Area (NSA) 6, east of the western Sunset Lake Road overpass. Barrier NW6 is 1,760 feet long with a height of 12 feet and would provide a 6 to 10 dB(A) reduction in noise at 9 of the impacted receptors, representing all receptors benefitted including 8 receptors achieving at least 7 dB(A) reduction. The maximum wall allowance per benefited receptor for this barrier is 3,000 square feet and the wall would be 2,347 square feet per benefited receptor which is less than the allowance. This barrier is preliminarily considered feasible and reasonable and is recommended for further consideration. See Exhibit 2.4 and 2.5 for a location map of this barrier and Appendix 3 for the noise barrier analysis details.

Noise Study Area 7 - Barrier NW7

A noise barrier was investigated to abate the predicted traffic noise impacts at 38 impacted residential receptors (R0085A-B, R2287A-B, R2342B, R2347A-D, R2348A-F, R2349A-E, R2350A-F, R2351A-D, R5124, R5125, R5126, R5127, R5128, R5129, R5130, and R5131) along DSA2, located north of DSA 2 in Noise Study Area (NSA) 7 on the east side of Holly Springs Road.

Receptor 75 is a recreational area (community pool, fields and playground area) behind Barrier NW7. Repeated attempts were made to contact the manager of the recreational area and no response was received. The area is used by the adjacent residential development during daylight hours every day of the week for

five months of the year. The pool area is 4,500 square feet which translates to a maximum bather load of approximately 300 users. Assuming half the pool area users are in the pool at any given moment, the total number of pool area users can be estimated at 600. The play area, tennis courts and basketball court can be estimated to be used by 125 people at any given time. This comes to 50 residential equivalents for R0075, represented by 10 receptors in a nodal array. Each receptor in the array will be treated as 5 residential equivalents in the barrier analysis. A calculation of the residential equivalents is included in Appendix 3.

Barrier NW7 is 4,434 feet long, with a height of 14 feet and would provide a 5 dB(A) to 11 dB(A) reduction in noise at 34 of the 38 impacted receptors, with 94 total receptors benefitted including 30 receptors achieving at least 7 dB(A) reduction. The maximum wall allowance per benefited receptor for this barrier is 2,500 square feet and the wall would be 660 square feet per benefited receptor which is less than the allowance. This barrier is preliminarily considered feasible and reasonable and is recommended for further consideration. See Exhibits 2.4, 2.5 and 2.6 for a location map of this barrier and Appendix 3 for the noise barrier analysis details.

The average height of NW6 and NW7 is 13 feet and they are approximately 275 feet apart. This distance is greater than a 10:1 ratio and a degradation in noise reduction is unlikely.

Noise Study Area 8 - Barrier NW8

A noise barrier was investigated to abate the predicted traffic noise impacts at five impacted residential receptors (R0083, R5168, R5169, R5170, and R5173) along DSA2 in Noise Study Area (NSA) 8, located north of the proposed route, east of the eastern Sunset Lake Road overpass. Barrier NW8 is 1,000 feet long, with a height of 20 feet and would provide a 5 dB(A) to 7 dB(A) reduction in noise at 3 of the impacted receptors, with 5 total receptors benefitted and including one receptor achieving at least 7 dB(A) reduction. The maximum wall allowance per benefited receptor for this barrier is 2,500 square feet and the wall would be 3,997 square feet per benefited receptor which is greater than the allowance. This barrier is preliminarily considered feasible but not reasonable and is not recommended for further consideration. See Exhibit 2.6 for a location map of this barrier and Appendix 3 for the noise barrier analysis details.

Noise Study Area 9 – No Barrier

Within Noise Study Area 9, located south of DSA 2 and east of Sunset Lake Road, 12 residential receptors and one place of worship were studied. None is predicted to be impacted. Since no impacts are predicted in this NSA, abatement does not need to be considered. See Exhibit 2.6 for a location map of this Noise Study Area.

Noise Study Area 10 – No Barrier

Within Noise Study Area 10, located south of DSA 2 and west of Holly Springs Road, 15 residential receptors were studied. None is predicted to be impacted. Since no impacts are predicted in this NSA, abatement does not need to be considered. See Exhibit 2.8 for a location map of this Noise Study Area.

Noise Study Area 11 - Barrier NW11

A noise barrier was investigated to abate the predicted traffic noise level impacts at twelve impacted residential receptors (R0118, R0119A-B, R1628C, R1718A-B, R1719A-B, R5610, R5611, R5612 and R5614) along DSA2 in Noise Study Area (NSA) 11, located south of the proposed route, in the southeast quadrant of the Holly Springs Road interchange. Barrier NW11 is 2,805 feet long, with a height of 14 feet and would provide a 5 dB(A) to 7 dB(A) reduction in noise at all of the impacted receptors, with 15 total receptors benefitted including 5 receptors achieving at least 7 dB(A) reduction. The maximum wall allowance per benefited receptor for this barrier is 2,500 square feet and the wall would be 2,128 square feet per benefited receptor which is less than the allowance. This barrier is preliminarily considered feasible and reasonable and is recommended for further consideration. See Exhibits 2.8 for a location map of this barrier and Appendix 3 for the noise barrier analysis details.

Noise Study Area 12 – No Barrier

Within Noise Study Area 12, located north of DSA 2 and west of Holly Springs Road, four residential receptors were studied. None is predicted to be impacted. Since no impacts are predicted in this NSA, abatement does not need to be considered. See Exhibit 2.7 for a location map of this Noise Study Area.

Noise Study Area 13 - Barrier NW13

A noise barrier was investigated to abate the predicted traffic noise impacts at 9 impacted residential receptors (R0131A-F,) located north of DSA2 in Noise Study Area (NSA) 13, along the west side of Kildaire Farm Road. Barrier NW13 is 549 feet long, with a height of 12 feet and would provide a 5 dB(A) to 10 dB(A) reduction in noise at all 9 of the impacted receptors, with 12 total receptors benefitted receptors including 10 receptors achieving at least 7 dB(A) reduction. The maximum wall allowance per benefited receptor for this barrier is 2,000 square feet and the wall would be 549 square feet per benefited receptor which is less than the allowance. This barrier is preliminarily considered feasible and reasonable and is recommended for further consideration. See Exhibit 2.7 for a location map of this barrier and Appendix 3 for the noise barrier analysis details.

Noise Study Area 14 – No Barrier

Within Noise Study Area 14, located north of relocated Kildaire Farm Road and west of Holly Springs Road, 23 residential receptors were studied. One receptor (R0132A) is predicted to be impacted. Since

only one traffic noise impact is predicted, noise abatement would not be feasible because the NCDOT policy requires at least two impacted receptors be benefited by abatement to meet feasibility requirements. See Exhibit 2.7 for a location map of this Noise Study Area.

Noise Study Area 15 – No Barrier

Within Noise Study Area 15, located north of Sancroft Drive and east of Holly Springs Road, nine residential receptors were studied. None is predicted to be impacted. Since no impacts are predicted in this NSA, abatement does not need to be considered. See Exhibit 2.7 for a location map of this Noise Study Area.

Noise Study Area 16 - Barrier NW16

A noise barrier was investigated to abate the predicted traffic noise level impacts at five impacted residential receptors (R0138A-C, R0139A, and R1043B) along DSA2 in Noise Study Area (NSA) 16, located north of the proposed route, east of the Holly Springs Road interchange. Barrier NW16 is 1,000 feet long with an average height of 16 feet and would provide an 5 d(B)A to 9 dB(A) reduction in noise at 3 of the impacted receptors, with 4 total receptors benefitted including 2 receptors achieving at least 7 dB(A) reduction. The maximum wall allowance per benefited receptor for this barrier is 2,500 square feet and the wall would be 4,000 square feet per benefited receptor which is greater than the allowance. This barrier is preliminarily considered feasible but not reasonable and is not recommended for further consideration. See Exhibits 2.7 and 2.8 for a location map of this barrier and Appendix 3 for the noise barrier analysis details.

Noise Study Area 17 – No Barrier

Within Noise Study Area 17, located south of DSA 2 and west of Pierce Olive Road, one residential receptor was studied. It is not predicted to be impacted. Since no impacts are predicted in this NSA, abatement does not need to be considered. See Exhibit 2.9 for a location map of this Noise Study Area.

Noise Study Area 18 - Barrier NW18

A noise barrier was investigated to abate the predicted traffic noise impacts at 20 impacted residential receptors (R0161A, R0164A-B, R0167A-B, R0168A-C, R0169A-B, R0170A-B, R171A-B, R172A-B, R0173, R5191, R5192, and R5193) along DSA2 in Noise Study Area (NSA) 18, located north of the proposed route between the Holly Springs Road interchange and the West Lake Road overpass. Barrier NW18 is 2,039 feet long, with a height of 20 feet and would provide a 5 to 9 dB(A) reduction in noise at 15 of the impacted receptors, with 15 total receptors benefitted including 7 receptors achieving at least 7 dB(A) reduction. The maximum wall allowance per benefited receptor for this barrier is 2,500 square feet and the wall would be 2,720 square feet per benefited receptor which is greater than the allowance. This barrier is preliminarily considered feasible but not reasonable and is not recommended for further

consideration. See Exhibit 2.10 for a location map of this barrier and Appendix 3 for the noise barrier analysis details.

Noise Study Area 19 - Barrier NW19-1

A noise barrier was investigated to abate the predicted traffic noise impacts at 35 impacted residential receptors (R0174A-B, R0176A-B, R0179A-B, R0180A-B, R0182A-C, R0184, R0186A-B, R0187A-B, R0188A-B, R1722B, R1723A-B, R1724A, R1923, R1924A, R1925C, R5210, R5213, R5214, R5215, R5216, R5217, R5218, and R5219) along DSA2 in Noise Study Area (NSA) 19, south of the proposed route between the Holly Springs Road interchange and the West Lake Road overpass. Barrier NW19-1 is 3,896 feet long, with a height of 16 feet and would provide a 5 to 11 dB(A) reduction in noise at 26 of the impacted receptors, with 32 total receptors benefitted including 15 receptors achieving at least 7 dB(A) reduction. The maximum wall allowance per benefited receptor for this barrier is 2,500 square feet and the wall would be 1,946 square feet per benefited receptor which is less than the allowance. This barrier is preliminarily considered feasible and reasonable and is recommended for further consideration. See Exhibit 2.10 and 2.11 for a location map of this barrier and Appendix 3 for the noise barrier analysis details.

Noise Study Area 19 - Barrier NW19-2

A noise barrier was investigated to abate the predicted traffic noise impacts at seven impacted residential receptors (R0192A-B, R5217, R5639, R5640, R5641, and R5642) along DSA2 in Noise Study Area (NSA) 19, south of the proposed route and west of the West Lake Road overpass. Barrier NW19-2 is 1,363 feet long, with a height of 22 feet and would not provide at least a 5 dB(A) reduction in noise at any of the impacted receptors. The maximum wall allowance per benefited receptor for this barrier is 2,500 square feet. This barrier is preliminarily considered neither feasible nor reasonable and is not recommended for further consideration. See Exhibit 2.11 for a location map of this barrier and Appendix 3 for the noise barrier analysis details.

Noise Study Area 20 - Barrier NW20

A noise barrier was investigated to abate the predicted traffic noise level impacts to five impacted residential receptors (R0189A-C, R0191A, and R5226) along DSA2 in Noise Study Area (NSA) 20, north of the proposed route and west of the West Lake Road overpass. Barrier NW20 is 2,126 feet long, with a height of 20 feet and would provide a 6 dB(A) reduction in noise at 3 of the impacted receptors, representing all receptors benefitted but with no receptor achieving at least 7 dB(A) reduction. The maximum wall allowance per benefited receptor for this barrier is 2,500 square feet and the wall would be 14,175 square feet per benefited receptor which is greater than the allowance. This barrier is preliminarily considered feasible but not reasonable and is not recommended for further consideration. See Exhibit 2.11 for a location map of this barrier and Appendix 3 for the noise barrier analysis details.

Noise Study Area 21 - Barrier NW21-1

A noise barrier was investigated to abate the predicted traffic noise impacts at twelve impacted residential receptors (R0196, R0197B, R1726, R1727, R1728, R1729, R1730, R1731, R1927, R5228, and R5237) along DSA2 in Noise Study Area (NSA) 21, south of the proposed route and east of the West Lake Road overpass. Barrier NW21-1 is 1,846 feet long with a height of 20 feet and would provide a 6 to 13 dB(A) reduction in noise at 7 of the impacted receptors, with 7 total receptors benefitted including five receptors achieving at least a 7 dB(A) reduction. The maximum wall allowance per benefited receptor for this barrier is 2,500 square feet and the wall would be 5,278 square feet per benefited receptor which is greater than the allowance. This barrier is preliminarily considered feasible but not reasonable and is not recommended for further consideration. See Exhibits 2.11 and 2.13 for a location map of this barrier and Appendix 3 for the noise barrier analysis details.

Noise Study Area 21 - Barrier NW21-2

A noise barrier was investigated to abate the predicted traffic noise impacts at eleven impacted residential receptors (R0198A-C, R0203, R0204, R0205, R1731, and R5255) along DSA2 in Noise Study Area (NSA) 21, south of the proposed route in the southwest quadrant of the Bells Lake Road interchange. Barrier NW21-2 is 1,578 feet long with a height of 22 feet and would provide a 5 to 6 dB(A) reduction in noise at four of the impacted receptors, representing all receptors benefitted but with no receptors achieving at least a 7 dB(A) reduction. The maximum wall allowance per benefited receptor for this barrier is 2,500 square feet and the wall would be 8,681 square feet per benefited receptor which is greater than the allowance. This barrier is preliminarily considered feasible but not reasonable and is not recommended for further consideration. See Exhibit 2.13 for a location map of this barrier and Appendix 3 for the noise barrier analysis details.

Noise Study Area 22 - Barrier NW22

A noise barrier was investigated to abate the predicted traffic noise impacts at four impacted residential receptors (R0214A-B and R0215A-B) along DSA2 in Noise Study Area (NSA) 22, north of the proposed route in the northwest quadrant of the Bells Lake Road interchange. Barrier NW22 is 1,725 feet long, with a height of 24 feet and would not provide at least a 5 dB(A) reduction in noise at any of the impacted receptors. Six total receptors would be benefitted, including 5 achieving at least a 7 dB(A) reduction. The maximum wall allowance per benefited receptor for this barrier is 2,500 square feet and the wall would be 6,909 square feet per benefited receptor which is greater than the allowance. This barrier is preliminarily considered neither feasible nor reasonable and is not recommended for further consideration. See Exhibit 2.12 for a location map of this barrier and Appendix 3 for the noise barrier analysis details.

Noise Study Area 23 – No Barrier

Within Noise Study Area 23, located north of DSA 2 and east of Bells Lake Road, 11 residential receptors were studied. None is predicted to be impacted. Since no impacts are predicted in this NSA, abatement does not need to be considered. See Exhibit 2.12 for a location map of this Noise Study Area.

Noise Study Area 24 - Barrier NW24

A noise barrier was investigated to abate the predicted traffic noise impacts at 21 impacted residential receptors (R0243, R0244A-B, R0245A-B, R0246A-B, R0247A-C, R0248, R1733, R1737A-B, R2323A-D, R5262, R5266, R5310, and R5316) along DSA2 in Noise Study Area (NSA) 24, south of the proposed route and west of the Deer Meadows Drive overpass. Barrier NW24 is 2,308 feet long with a height of 20 feet and would provide a 5 to 12 dB(A) reduction in noise at 16 of the impacted receptors, with 21 total receptors benefitted including 8 receptors achieving at least a 7 dB(A) reduction. The maximum wall allowance per benefited receptor for this barrier is 2,500 square feet and the wall would be 2,199 square feet per benefited receptor which is less than the allowance. This barrier is preliminarily considered feasible and reasonable and is recommended for further consideration. See Exhibit 2.14 for a location map of this barrier and Appendix 3 for the noise barrier analysis details.

Noise Study Area 25 - Barrier NW25

A noise barrier was investigated to abate the predicted traffic noise impacts at 33 impacted residential receptors (R0233, R0234A-C, R0235A-B, R0236A-B, R0236F-G, R0237A-C, R0238A-C, R0239A-B, R0241A-B, R0242A-B, R0255, R0256A-B, R5281, R5282, R5284, R5288, and R5289) along DSA2 in Noise Study Area (NSA) 25, north of the proposed route between the Bells Lake Road interchange and Deer Meadows Drive. Barrier NW25 is 1,344 feet long, with a height of 22 feet and would provide a 6 to 13 dB(A) reduction in noise at 14 of the impacted receptors, with 14 total receptors benefitted including 10 receptors achieving at least a 7dB(A) reduction. The maximum wall allowance per benefited receptor for this barrier is 2,500 square feet and the wall would be 2,113 square feet per benefited receptor which is less than the allowance. This barrier is preliminarily considered feasible and reasonable and is recommended for further consideration. See Exhibit 2.14 for a location map of this barrier and Appendix 3 for the noise barrier analysis details.

Because Rhodes Road is being bisected by DSA 2, the removal of through traffic on Rhodes results in noise levels at Receptors R5285 and R5286 being lower under the Build condition than the existing condition.

The average height of NW24 and NW25 is 21 feet and they are approximately 270 feet apart. This distance is greater than a 10:1 ratio and a degradation in noise reduction is unlikely.

Noise Study Area 26 – No Barrier

Within Noise Study Area 26, located south of Ten-Ten Road and east of Deer Meadows Road, 19 residential receptors were studied. None is predicted to be impacted. Since no impacts are predicted in this NSA, abatement does not need to be considered. See Exhibit 2.14 and 2.15 for a location map of this Noise Study Area.

Noise Study Area 27 - Barrier NW27

A noise barrier was investigated to abate the predicted traffic noise impacts at 21 impacted residential receptors (R0260B, R0261A-C, R0267A-B, R0268A-C, R0269, R0270, R0271A-B, R0272, R0273A-B, R0280, R1746A-B, R1747 and R1748) along DSA2 in Noise Study Area (NSA) 27, north of the proposed route between the Deer Meadows Drive and Johnson Pond Road overpasses. Barrier NW27 is 2,033 feet long, with a height of 22 feet and would provide a 5 to 14 dB(A) reduction in noise at 15 of the impacted receptors, with 15 total receptors benefitted including 9 receptors achieving at least a 7dB(A) reduction. The maximum wall allowance per benefited receptor for this barrier is 2,500 square feet and the wall would be 2,986 square feet per benefited receptor which is greater than the allowance. This barrier is preliminarily considered feasible but not reasonable and is not recommended for further consideration. See Exhibit 2.15 for a location map of this barrier and Appendix 3 for the noise barrier analysis details.

Noise Study Area 28 - Barrier NW28

A noise barrier was investigated to abate the predicted traffic noise impacts at 15 impacted residential receptors (R0249, R0250A-C, R0253A-B, R0274A-C, R0277, R1744A, R1745A, R1745C, R1745F, and R1745I) along DSA2 in Noise Study Area (NSA) 28, south of the proposed route between the Deer Meadows Drive and Johnson Pond Road overpasses. Barrier NW28 is 2,036 feet long, with a height of 18 feet and would provide a 5 to 12 dB(A) reduction in noise at 13 of the impacted receptors, with 16 total receptors benefitted including 6 receptors achieving at least a 7dB(A) reduction. The maximum wall allowance per benefited receptor for this barrier is 2,500 square feet and the wall would be 2,291 square feet per benefited receptor which is less than the allowance. This barrier is preliminarily considered feasible and reasonable and is recommended for further consideration. See Exhibit 2.15 for a location map of this barrier and Appendix 3 for the noise barrier analysis details.

Noise Study Area 29 – No Barrier

Within Noise Study Area 29, located north of DSA 2 and east of Johnson Pond Road, four residential receptors were studied. None is predicted to be impacted. Since no impacts are predicted in this NSA, abatement does not need to be considered. See Exhibit 2.15 for a location map of this Noise Study Area.

Noise Study Area 30 – No Barrier

Within Noise Study Area 30, located north of DSA 2 and west of Lake Wheeler Road, two residential receptors were studied. One receptor (R0289) is predicted to be impacted. Since only one traffic noise impact is predicted, noise abatement would not be feasible because the NCDOT policy requires at least two impacted receptors be benefited by abatement to meet feasibility requirements. See Exhibit 2.16 for a location map of this Noise Study Area.

Noise Study Area 31 – No Barrier

Within Noise Study Area 31, located north of DSA 2 and east of Lake Wheeler Road, one residential receptor (R0290) was studied, which is predicted to be impacted. Since only one traffic noise impact is predicted, noise abatement would not be feasible because the NCDOT policy requires at least two impacted receptors be benefited by abatement to meet feasibility requirements. See Exhibit 2.16 for a location map of this Noise Study Area.

Noise Study Area 32 - Barrier NW32

A noise barrier was investigated to abate the predicted traffic noise impacts at 27 impacted residential receptors (R0283B, R0284A-B, R0285A-B, R0286A-B, R0287A-B, R0288, R1753A-B, R1754, R5332, R5333, R5334, R5336, R5337, R5339, R5340, R5341, R5342, R5343, and R5344) along DSA2 in Noise Study Area (NSA) 32, south of the proposed route at the bridge over Lake Wheeler Road. Barrier NW32 is 3,036 feet long with a height of 18 feet and together would provide a 5 to 10 dB(A) reduction in noise at 18 of the impacted receptors, with 20 total receptors benefitted, including 8 receptors achieving at least a 7dB(A) reduction. The maximum wall allowance per benefited receptor for this barrier is 2,500 square feet and the wall would be 2,733 square feet per benefited receptor which is greater than the allowance. This barrier is preliminarily considered feasible but not reasonable and is not recommended for further consideration. See Exhibit 2.16 and 2.17 for a location map of this barrier and Appendix 3 for the noise barrier analysis details.

Noise Study Area 33 – No Barrier

Within Noise Study Area 33, located north of DSA 2 and west of Fayetteville Road, 32 residential receptors were studied. One receptor (R5353) is predicted to be impacted. Since only one traffic noise impact is predicted, noise abatement would not be feasible because the NCDOT policy requires at least two impacted receptors be benefited by abatement to meet feasibility requirements. See Exhibit 2.17 and 2.19 for a location map of this Noise Study Area.

Noise Study Area 34 – No Barrier

Within Noise Study Area 34, along relocated Donny Brook Road west of Fayetteville Road, 29 residential receptors were studied. None is predicted to be impacted. Since no impacts are predicted in this NSA,

abatement does not need to be considered. See Exhibit 2.17 and 2.18 for a location map of this Noise Study Area.

Noise Study Area 35 - Barrier NW35

A noise barrier was investigated to abate the predicted traffic noise impacts at 21 impacted residential receptors (R0341F, R0341H-I, R0341K-L, R0346B-C, R0346K-L, R0347B-C, R0347K-L, R0349F, R0350A-C, R0350E-F, and R0350H-I) located along US401 in Noise Study Area (NSA) 35, south of the proposed DSA2 route at the entrance to a residential complex off Education Road. Barrier NW35 is 694 feet long, divided between two segments. Each has a height of 18 feet and together would provide a 5 to 15 dB(A) reduction in noise at 16 of the impacted receptors, with 34 total receptors benefitted including 19 receptors achieving at least a 7 dB(A) reduction. The maximum wall allowance per benefited receptor for this barrier is 2,000 square feet and the wall would be 367 square feet per benefited receptor which is less than the allowance. This barrier is preliminarily considered feasible and reasonable and is recommended for further consideration. See Exhibit 2.18 for a location map of this barrier and Appendix 3 for the noise barrier analysis details.

Noise Study Area 36 – No Barrier

Within Noise Study Area 36, located north of DSA 2 and east of Fayetteville Road, 12 residential receptors were studied. None is predicted to be impacted. Since no impacts are predicted in this NSA, abatement does not need to be considered. See Exhibit 2.19 for a location map of this Noise Study Area.

Noise Study Area 37 – No Barrier

Within Noise Study Area 37, located north of DSA 2 and west of Old McCullers Road, four residential receptors were studied. One receptor (R5361) is predicted to be impacted. Since only one traffic noise impact is predicted, noise abatement would not be feasible because the NCDOT policy requires at least two impacted receptors be benefited by abatement to meet feasibility requirements. See Exhibit 2.19 for a location map of this Noise Study Area.

Noise Study Area 38 – No Barrier

Within Noise Study Area 38, located south of DSA 2 and east of Fayetteville Road, three institutional receptors (school buildings) and one residential receptor were studied. One receptor (R5362) is predicted to be impacted. Since only one traffic noise impact is predicted, noise abatement would not be feasible because the NCDOT policy requires at least two impacted receptors be benefited by abatement to meet feasibility requirements. See Exhibit 2.18 for a location map of this Noise Study Area.

Noise Study Area 39 – No Barrier

Within Noise Study Area 39, located north of DSA 2 and west of Fanny Brown Road, three residential receptors were studied. None is predicted to be impacted. Since no impacts are predicted in this NSA, abatement does not need to be considered. See Exhibit 2.20 for a location map of this Noise Study Area.

Noise Study Area 40 – No Barrier

Within Noise Study Area 40, located south of DSA 2 and west of Fanny Brown Road, one residential receptor (R0359) was studied, which is not predicted to be impacted. Since no impacts are predicted in this NSA, abatement does not need to be considered. See Exhibit 2.20 for a location map of this Noise Study Area.

Noise Study Area 41 - Barrier NW41

A noise barrier was investigated to abate the predicted traffic noise impacts at two impacted residential receptors (R0363B-C) along DSA2 in Noise Study Area (NSA) 41, located south of the proposed route and east of the Fanny Brown Road overpass. Barrier NW41 is 887 feet long, with a height of 13 feet and would provide a 5 dB(A) to 7 dB(A) reduction in noise at both of the impacted receptors, with 4 total receptors benefitted but including 2 achieving at least a 7dB(A) reduction. The maximum wall allowance per benefited receptor for this barrier is 3,000 square feet and the wall would be 2,889 square feet per benefited receptor which is greater than the allowance. This barrier is preliminarily considered feasible and reasonable and is recommended for further consideration. See Exhibit 2.20 and 2.21 for a location map of this barrier and Appendix 3 for the noise barrier analysis details.

Noise Study Area 42 – No Barrier

Within Noise Study Area 42, located south of DSA 2 and west of Old Stage Road, 35 residential receptors were studied. None is predicted to be impacted. Since no impacts are predicted in this NSA, abatement does not need to be considered. See Exhibit 2.21 and 2.22 for a location map of this Noise Study Area.

Noise Study Area 43 - Barrier NW43

A noise barrier was investigated to abate the predicted traffic noise impacts at three impacted residential receptors (R0387A-B, and R0388B) along DSA2 in Noise Study Area (NSA) 43, located north of the proposed route in the northwest quadrant of the Old Stage Road interchange. Barrier NW43 is 1,141 feet long with a height of 16 feet and would provide a 5 dB(A) reduction in noise at two impacted receptors, with 2 total receptors benefitted but no receptors achieving at least a 7dB(A) reduction. The maximum wall allowance per benefited receptor for this barrier is 2,500 square feet and the wall would be 9,135 square feet per benefited receptor which is greater than the allowance. This barrier is preliminarily considered feasible but not reasonable and is not recommended for further consideration. See Exhibits 2.21 and 2.23 for a location map of this barrier and Appendix 3 for the noise barrier analysis details.

Noise Study Area 44 – No Barrier

Within Noise Study Area 44, located north of DSA 2 and east of Old Stage Road, 11 residential receptors were studied. None is predicted to be impacted. Since no impacts are predicted in this NSA, abatement does not need to be considered. See Exhibit 2.23 for a location map of this Noise Study Area.

Noise Study Area 45 – No Barrier

Within Noise Study Area 45, located south of DSA 2 and east of Old Stage Road, three residential receptors and one place of worship were studied. None is predicted to be impacted. Since no impacts are predicted in this NSA, abatement does not need to be considered. See Exhibit 2.22 for a location map of this Noise Study Area.

Noise Study Area 46 – No Barrier

Within Noise Study Area 46, located north of DSA 2 and west of Holland Church Road, two residential receptors were studied. One receptor (R5374) is predicted to be impacted. Since only one traffic noise impact is predicted, noise abatement would not be feasible because the NCDOT policy requires at least two impacted receptors be benefited by abatement to meet feasibility requirements. See Exhibit 2.24 for a location map of this Noise Study Area.

Noise Study Area 47 – No Barrier

Within Noise Study Area 47, located north of DSA 2 and east of Holland Church Road, three residential receptors were studied. None is predicted to be impacted. Since no impacts are predicted in this NSA, abatement does not need to be considered. See Exhibit 2.24 for a location map of this Noise Study Area.

Noise Study Area 48 – No Barrier

Within Noise Study Area 48, located south of DSA 2 and west of Old Stage Road, one residential receptor was studied, which is not predicted to be impacted. Since no impacts are predicted in this NSA, abatement does not need to be considered. See Exhibit 2.25 for a location map of this Noise Study Area.

Noise Study Area 49 - Barrier NW49-1

A noise barrier was investigated to abate the predicted traffic noise impacts to nine impacted residential receptors (R0483A-B, R5379, R5380, R5381, R5382, R5383, R5384, R5385, and R5628) along DSA2 in Noise Study Area (NSA) 49, located south of the proposed route, west of the Sauls Road overpass. Barrier NW49-1 is 1,841 feet long, with a height of 22 feet and would provide a 5 to 6 dB(A) reduction in noise at 8 of the impacted receptors, with 8 total receptors benefitted but no receptors achieving at least a 7dB(A) reduction. The maximum wall allowance per benefited receptor for this barrier is 2,500 square feet and the wall would be 5,065 square feet per benefited receptor which is greater than the allowance. This barrier is

preliminarily considered feasible but not reasonable and is not recommended for further consideration. See Exhibit 2.25 for a location map of this barrier and Appendix 3 for the noise barrier analysis details.

Noise Study Area 49 - Barrier NW49-2

A noise barrier was investigated to abate the predicted traffic noise impacts at 17 impacted residential receptors (R0517, R0518A-C, R0519A-B, R0520A-B, R0521A-B, and R1653A-C) along DSA2 in Noise Study Area (NSA) 49, south of the proposed route and west of the Sauls Road overpass. Barrier NW49-2 is 2,130 feet long, with a height of 16 feet and would provide a 5 to 7 dB(A) reduction in noise at 6 of the impacted receptors, representing all receptors benefitted including one receptor achieving at least a 7dB(A) reduction. The maximum wall allowance per benefited receptor for this barrier is 2,500 square feet and the wall would be 5,678 square feet per benefited receptor which is greater than the allowance. This barrier is preliminarily considered feasible but not reasonable and is not recommended for further consideration. See Exhibits 2.25 and 2.26 for a location map of this barrier and Appendix 3 for the noise barrier analysis details.

Noise Study Area 50 - Barrier NW50

A noise barrier was investigated to abate the predicted traffic noise impacts at 25 impacted residential receptors (R0497A-C, R0498A-C, R0499A-C, R0500A-B, R0501A-B, R0502A-B, R0503A-B, R504A, R0505A-B, R0506A-B, R1764A-B, and R1765) along DSA2 in Noise Study Area (NSA) 50, located north of the proposed route, east of the Sauls Road overpass. Barrier NW50 is 2,708 feet long, with a height of 14 feet and would provide a 5 to 9 dB(A) reduction in noise at 14 of the impacted receptors, representing all receptors benefitted and including six receptors achieving at least a 7dB(A) reduction. The maximum wall allowance per benefited receptor for this barrier is 2,500 square feet and the wall would be 2,474 square feet per benefited receptor which is less than the allowance. This barrier is preliminarily considered feasible and reasonable and is recommended for further consideration. See Exhibit 2.25 and 2.26 for a location map of this barrier and Appendix 3 for the noise barrier analysis details.

Noise Study Area 51 – No Barrier

Within Noise Study Area 51, located north of DSA 2 and east of Sauls Road, 18 residential receptors were studied. None is predicted to be impacted. Since no impacts are predicted in this NSA, abatement does not need to be considered. See Exhibit 2.26 for a location map of this Noise Study Area.

Noise Study Area 52 - Barrier NW52

A noise barrier was investigated to abate the predicted traffic noise impacts at seven impacted residential receptors (R0544A-B, R0545, R0546, R5414, R5415, and R5430) along DSA2 in Noise Study Area (NSA) 52, located south of the proposed route and east of the Sauls Road overpass. Barrier NW52 is 1,748 feet long, with a height of 22 feet and would provide a 5 to 12 dB(A) reduction in noise at 6 of the

impacted receptors, representing all receptors benefitted and including four receptors achieving at least a 7dB(A) reduction. The maximum wall allowance per benefited receptor for this barrier is 2,500 square feet and the wall would be 6,414 square feet per benefited receptor which is greater than the allowance. This barrier is preliminarily considered feasible but not reasonable and is not recommended for further consideration. See Exhibit 2.26 and 2.27 for a location map of this barrier and Appendix 3 for the noise barrier analysis details.

Noise Study Area 53 - Barrier NW53

A noise barrier was investigated to abate the predicted traffic noise impacts at 23 impacted residential receptors (R0547, R0551A-B, R0552, R0553, R0554A-B, R0555A, R0556A-C, R0557A-B, R0558A-B, R0559A-C, R0562, and R0563A-B) along DSA2 in Noise Study Area (NSA) 53, north of the proposed route and east of the Sauls Road overpass. Barrier NW53 is 3,844 feet long, with a height of 21 feet and would provide a 5 to 13 dB(A) reduction in noise at 22 of the impacted receptors, with 32 total receptors benefitted including 16 receptors achieving at least a 7 dB(A) reduction. The maximum wall allowance per benefited receptor for this barrier is 2,500 square feet and the wall would be 2,500 square feet per benefited receptor which is less than the allowance. This barrier is preliminarily considered feasible and reasonable and is recommended for further consideration. See Exhibits 2.26 and 2.27 for a location map of this barrier and Appendix 3 for the noise barrier analysis details.

Noise Study Area 54 - Barrier NW54

A noise barrier was investigated to abate the predicted traffic noise impacts at nine impacted residential and recreational receptors (R0644, R0645A-B, R0646, R0647, R0652A-B, R1632, and R2281) along DSA2 in Noise Study Area (NSA) 54, located south of the proposed route in the vicinity of the Jordan Road overpass. Barrier NW54 is 2,335 feet long, with a height of 16 feet and would provide a 5 to 9 dB(A) reduction in noise at 8 of the impacted receptors, with 8 total receptors benefitted including 3 receptors receiving at least a 7 dB(A) reduction. The maximum wall allowance per benefited receptor for this barrier is 2,500 square feet and the wall would be 4,667 square feet per benefited receptor which is greater than the allowance. This barrier is preliminarily considered feasible but not reasonable and is not recommended for further consideration. See Exhibit 2.29 for a location map of this barrier and Appendix 3 for the noise barrier analysis details.

Noise Study Area 55 - Barrier NW55-1

A noise barrier was investigated to abate the predicted traffic noise impacts at 14 impacted residential receptors (R0637, R0638, R0641A-C, R0642A-B, R0643, R2282A-B, R5438, R5439, R5443, and R5444) along DSA2 in Noise Study Area (NSA) 55, located north of the proposed route at the Jordan Road overpass. Barrier NW55-1 is 1,971 feet long, with a height of 14 feet and would provide a 5 to 8 dB(A) reduction in noise at 6 of the impacted receptors, with 7 total receptors benefitted including 2

receptors receiving at least a 7 dB(A) reduction. The maximum wall allowance per benefited receptor for this barrier is 2,500 square feet and the wall would be 3,944 square feet per benefited receptor which is greater than the allowance. This barrier is preliminarily considered feasible but not reasonable and is not recommended for further consideration. See Exhibit 2.28 and 2.29 for a location map of this barrier and Appendix 3 for the noise barrier analysis details.

Noise Study Area 55 - Barrier NW55-2

A noise barrier was investigated to abate the predicted traffic noise impacts at 8 impacted residential receptors (R0745A-B, R0746A-C and R0747A-C) along DSA2 in Noise Study Area (NSA) 55, located north of the proposed route and west of the NC50 Benson Road interchange. Barrier NW55-2 is 1,948 feet long with a height of 14 feet and would provide a 5 to 8 dB(A) reduction in noise at 7 of the impacted receptors, with 7 total receptors benefitted including 4 receptors receiving at least a 7 dB(A) reduction. The maximum wall allowance per benefited receptor for this barrier is 2,500 square feet and the wall would be 3,895 square feet per benefited receptor which is greater than the allowance. This barrier is preliminarily considered feasible but not reasonable and is not recommended for further consideration. See Exhibit 2.29 and 2.30 for a location map of this barrier and Appendix 3 for the noise barrier analysis details.

Noise Study Area 56 – No Barrier

Within Noise Study Area 56, located north of DSA 2 and west of Benson Road, 12 residential receptors were studied. None is predicted to be impacted. Since no impacts are predicted in this NSA, abatement does not need to be considered. See Exhibit 2.30 for a location map of this Noise Study Area.

Noise Study Area 57 – No Barrier

Within Noise Study Area 57, located north of DSA 2 and east of Benson Road, four residential receptors were studied. None is predicted to be impacted. Since no impacts are predicted in this NSA, abatement does not need to be considered. See Exhibit 2.30 for a location map of this Noise Study Area.

Noise Study Area 58 - Barrier NW58

A noise barrier was investigated to abate the predicted traffic noise impacts at three impacted residential receptors (R5457, R5458, and R5459) along DSA2 in Noise Study Area (NSA) 58, south of the proposed route in the southwest quadrant of the NC50 Benson Road interchange. Barrier NW58 is 1,551 feet long, with a height of 18 feet and would provide a 5 dB(A) reduction in noise at one of the impacted receptors, with 4 total receptors benefitted but no receptors receiving at least a 7 dB(A) reduction. The maximum wall allowance per benefited receptor for this barrier is 2,500 square feet and the wall would be 6,976 square feet per benefited receptor which is greater than the allowance. This barrier is preliminarily considered neither feasible nor reasonable and is not recommended for further consideration. See Exhibit 2.31 for a location map of this barrier and Appendix 3 for the noise barrier analysis details.

Noise Study Area 59 – No Barrier

Within Noise Study Area 59, located south of DSA 2 and east of Benson Road, 3 residential receptors were studied. None is predicted to be impacted. Since no impacts are predicted in this NSA, abatement does not need to be considered. See Exhibit 2.31 for a location map of this Noise Study Area.

Noise Study Area 60 - Barrier NW60

A noise barrier was investigated to abate the predicted traffic noise impacts at 22 impacted residential receptors (R0723A-B, R0724A-B, R5472, R5473, R5474, R5477, R5478, R5479, R5480, R5481, R5482, R5683, R5484, R5485, R5486, R5487, R5488, R5489, R5490, R5491, R5492, R5494, R5496, and R5608) along DSA2 in Noise Study Area (NSA) 60, located north of the proposed route and east of the interchange with NC50 Benson Road. Barrier NW60 is 3,430 feet long, with a height of 20 feet and would provide a 5 to 10 dB(A) reduction in noise at 20 of the impacted receptors, with 29 total receptors benefitted, including 19 receptors receiving at least a 7 dB(A) reduction. The maximum wall allowance per benefited receptor for this barrier is 2,500 square feet and the wall would be 2,365 square feet per benefited receptor which is less than the allowance. This barrier is preliminarily considered feasible and reasonable and is recommended for further consideration. See Exhibits 2.30 and 2.32 for a location map of this barrier and Appendix 3 for the noise barrier analysis details.

Noise Study Area 61 – No Barrier

Within Noise Study Area 61, located south of DSA 2 near Reca Road, 3 residential receptors were studied. Two receptors (R5497 and R5499) are predicted to be impacted, but are separated by over 1,200 feet. Since these two impacts are effectively isolated impacts and the likelihood of a noise wall being both feasible and reasonable is extremely low, a barrier was not studied at this location. See Exhibit 2.32 for a location map of this Noise Study Area.

Noise Study Area 62 – No Barrier

Within Noise Study Area 62, south of US 70 and east of New Bethel Road, eight residential receptors were studied. One receptor (R5506) is predicted to be impacted. Since only one traffic noise impact is predicted, noise abatement would not be feasible because the NCDOT policy requires at least two impacted receptors be benefited by abatement to meet feasibility requirements. See Exhibit 2.40 and 2.41 for a location map of this Noise Study Area.

Noise Study Area 63 – No Barrier

Within Noise Study Area 63, located north of I-40 along Willis Road, one residential receptor (R5507) was studied, which is not predicted to be impacted. Since no impacts are predicted in this NSA, abatement does not need to be considered. See Exhibit 2.41 for a location map of this Noise Study Area.

Noise Study Area 64 – No Barrier

Within Noise Study Area 64, located west of DSA 2 along New Bethel Church Road, four residential receptors were studied. None is predicted to be impacted. Since no impacts are predicted in this NSA, abatement does not need to be considered. See Exhibit 2.37 for a location map of this Noise Study Area.

Noise Study Area 65 – No Barrier

Within Noise Study Area 65, located east of DSA 2 along New Bethel Church Road, 24 residential receptors were studied. One receptor (R0806) is predicted to be impacted. Since only one traffic noise impact is predicted, noise abatement would not be feasible because the NCDOT policy requires at least two impacted receptors be benefited by abatement to meet feasibility requirements. See Exhibit 2.37 and 2.42 for a location map of this Noise Study Area.

Noise Study Area 66 – No Barrier

Within Noise Study Area 66, located west of I-40 along Win Road, three residential receptors were studied. None is predicted to be impacted. Since no impacts are predicted in this NSA, abatement does not need to be considered. See Exhibit 2.38 for a location map of this Noise Study Area.

Noise Study Area 67 - Barrier NW67

A noise barrier was investigated to abate the predicted traffic noise impacts at 16 impacted residential receptors (R0856, R0857, R0858A, R0859, R0860A-B, R1843A, R5523, R5524, R5525, R5527, R5528, and R5529) along the east side of I-40 north of DSA2 in Noise Study Area (NSA) 67, approaching the northern project improvement limits. Barrier NW67 is 3,990 feet long, with a height of 16 feet and would provide a 5 to 13 dB(A) reduction in noise at 16 of the impacted receptors, with 16 total receptors benefitted including 11 receiving at least a 7 dB(A) reduction. The maximum wall allowance per benefited receptor for this barrier is 2,500 square feet and the wall would be 1,941 square feet per benefited receptor which is less than the allowance. This barrier is preliminarily considered feasible and reasonable and is recommended for further consideration. See Exhibits 2.38 and 2.39 for a location map of this barrier and Appendix 3 for the noise barrier analysis details.

Noise Study Area 68 - Barrier NW68

A noise barrier was investigated to abate the predicted traffic noise impacts at 18 impacted residential receptors (R0916A-C, R0918A-C, R0922A-B, R0923A-B, and R0931A-B) along the west side of I-40 north of DSA2 in Noise Study Area (NSA) 68, approaching the northern project improvement limits.

Further, Receptor R2315 is an impacted recreational area (Meadow Brook Country Club golf course) near Barrier NW68. There are 6 locations (3 greens and 3 tee boxes) in the vicinity of the barrier. It can be

assumed that one group of four golfers is located at each of these 6 places at any given time, during daylight hours for ten months of the year. This comes to 3 residential equivalents for receptor 2315, represented by 6 receptors in a nodal array. Each receptor in the array will be treated as 1 residential equivalent in the barrier analysis. A calculation of the residential equivalents is included in Appendix 3.

Barrier NW68 is 2,811 feet long, with a height of 10 feet and would provide a 7 to 10 dB(A) reduction in noise at 12 of the impacted receptors, with 12 total receptors benefitted, including 9 achieving at least a 7 dB(A) reduction. The maximum wall allowance per benefited receptor for this barrier is 2,500 square feet and the wall would be 2,345 square feet per benefited receptor which is less than the allowance. This barrier is preliminarily considered feasible and reasonable and is recommended for further consideration. See Exhibit 2.39 for a location map of this barrier and Appendix 3 for the noise barrier analysis details.

The average height of NW67 and NW68 is 13 feet and they are approximately 175 feet apart. This distance is greater than a 10:1 ratio and a degradation in noise reduction is unlikely.

Noise Study Area 69 – No Barrier

Within Noise Study Area 69, located east of DSA 2 along Redpath Road and Hillington Road, five residential receptors were studied. None is predicted to be impacted. Since no impacts are predicted in this NSA, abatement does not need to be considered. See Exhibit 2.43 for a location map of this Noise Study Area.

Noise Study Area 70 – No Barrier

Within Noise Study Area 70, located east of DSA 2 and north of White Oak Road, five residential receptors were studied. None is predicted to be impacted. Since no impacts are predicted in this NSA, abatement does not need to be considered. See Exhibit 2.44 for a location map of this Noise Study Area.

Noise Study Area 71 – No Barrier

Within Noise Study Area 71, located east of DSA 2 and south of White Oak Road, one residential receptor was studied, which is not predicted to be impacted. Since no impacts are predicted in this NSA, abatement does not need to be considered. See Exhibit 2.44 for a location map of this Noise Study Area.

Noise Study Area 72 – No Barrier

Within Noise Study Area 72, located west of DSA 2 and south of White Oak Road, 12 residential receptors were studied. One receptor (R1636) is predicted to be impacted. Since only one traffic noise impact is predicted, noise abatement would not be feasible because the NCDOT policy requires at least two impacted receptors be benefited by abatement to meet feasibility requirements. See Exhibit 2.45 for a location map of this Noise Study Area.

Noise Study Area 73 – No Barrier

Within Noise Study Area 73, located west of DSA 2 near Mustard Seed Lane, 20 residential receptors were studied. None is predicted to be impacted. Since no impacts are predicted in this NSA, abatement does not need to be considered. See Exhibit 2.45 for a location map of this Noise Study Area.

Noise Study Area 74 – No Barrier

Within Noise Study Area 74, located east of DSA 2 near Escondido Farm Road, five residential receptors were studied. None is predicted to be impacted. Since no impacts are predicted in this NSA, abatement does not need to be considered. See Exhibit 2.44 for a location map of this Noise Study Area.

Noise Study Area 75 – No Barrier

Within Noise Study Area 75, located west of DSA 2 and north of White Oak Road, 13 residential receptors and one place of worship were studied. None is predicted to be impacted. Since no impacts are predicted in this NSA, abatement does not need to be considered. See Exhibit 2.45 for a location map of this Noise Study Area.

Because Raynor Road will not have a connection to White Oak Road, the removal of through traffic on Raynor Road results in noise levels at Receptors R0905 being lower under the Build condition than the existing condition.

Noise Study Area 76 – No Barrier

Within Noise Study Area 76, located east of DSA 2 near Cabin View Lane, one residential receptor was studied, which is not predicted to be impacted. Since no impacts are predicted in this NSA, abatement does not need to be considered. See Exhibit 2.46 for a location map of this Noise Study Area.

Noise Study Area 77 – No Barrier

Within Noise Study Area 77, located west of DSA 2 along Lane of Sir Kay, 12 residential receptors were studied. None is predicted to be impacted. Since no impacts are predicted in this NSA, abatement does not need to be considered. See Exhibit 2.47 for a location map of this Noise Study Area.

Noise Study Area 78 – No Barrier

Within Noise Study Area 78, located west of DSA 2 and south of US 70, three residential receptors were studied. None is predicted to be impacted. Since no impacts are predicted in this NSA, abatement does not need to be considered. See Exhibit 2.48 for a location map of this Noise Study Area.

Noise Study Area 79 – No Barrier

Within Noise Study Area 79, located west of DSA 2 and north of US 70, 24 residential receptors were studied. One receptor (R1414B) is predicted to be impacted. Since only one traffic noise impact is predicted, noise abatement would not be feasible because the NCDOT policy requires at least two impacted receptors be benefited by abatement to meet feasibility requirements. See Exhibit 2.48 for a location map of this Noise Study Area.

Noise Study Area 80 – No Barrier

Within Noise Study Area 80, located east of DSA 2 and north of US 70, seven residential receptors were studied. One receptor (R1620) is predicted to be impacted. Since only one traffic noise impact is predicted, noise abatement would not be feasible because the NCDOT policy requires at least two impacted receptors be benefited by abatement to meet feasibility requirements. See Exhibit 2.49 for a location map of this Noise Study Area.

Noise Study Area 81 – No Barrier

Within Noise Study Area 81, located west of DSA 2 along East Garner Road, four residential receptors were studied. None is predicted to be impacted. Since no impacts are predicted in this NSA, abatement does not need to be considered. See Exhibit 2.49 for a location map of this Noise Study Area.

Noise Study Area 82 – No Barrier

Within Noise Study Area 82, located west of DSA 2 and north of Rock Quarry Road, three residential receptors were studied. None is predicted to be impacted. Since no impacts are predicted in this NSA, abatement does not need to be considered. See Exhibit 2.51 for a location map of this Noise Study Area.

Noise Study Area 83 - Barrier NW83

A noise barrier was investigated to abate the predicted traffic noise impacts at three impacted residential receptors (R1469, R1470, and R5552) along DSA2 in Noise Study Area (NSA) 83, east of the proposed alignment between Rock Quarry Road interchange and Battle Bridge Road. Barrier NW83 is 1,999 feet long, with a height of 24 feet and would provide an 8 to 12 dB(A) reduction in noise at 2 of the impacted receptors, with 3 total receptors benefitted, including 2 achieving at least a 7 dB(A) reduction. The maximum wall allowance per benefited receptor for this barrier is 2,500 square feet and the wall would be 15,978 square feet per benefited receptor which is greater than the allowance. This barrier is preliminarily considered feasible but not reasonable and is not recommended for further consideration. See Exhibit 2.53 or a location map of this barrier and Appendix 3 for the noise barrier analysis details.

Noise Study Area 84 – No Barrier

Within Noise Study Area 84, located east of DSA 2 and south of Battle Bridge Road, 30 residential receptors were studied. None is predicted to be impacted. Since no impacts are predicted in this NSA, abatement does not need to be considered. See Exhibit 2.53 and 2.54 for a location map of this Noise Study Area.

Noise Study Area 85 – No Barrier

Within Noise Study Area 85, the Neuse River Trail (R5607) was studied. 1,700 feet of the trail is predicted to be impacted. During field review the trail was observed and users were canvased to establish a typical usage level. The trail was used by 25 people during the field visit over the course of an hour and most trail users confirmed the number of people using the trail was typical. The corresponding number of residential equivalents is 1 and it is highly unlikely that the 2,500 square feet allowance would provide the minimum reduction in noise levels to be considered reasonable since a barrier would be required on each side of DSA 2. Also, since only one traffic noise impact is predicted, noise abatement would not be feasible because the NCDOT policy requires at least two impacted receptors be benefited by abatement to meet feasibility requirements. The calculation of the residential equivalents is included in Appendix 3. See Exhibit 2.55 for a location map of this Noise Study Area.

Noise Study Area 86 – No Barrier

Within Noise Study Area 86, located west of DSA 2 and south of Auburn Knightdale Road, 3 residential receptors were studied. None is predicted to be impacted. Since no impacts are predicted in this NSA, abatement does not need to be considered. See Exhibit 2.55 for a location map of this Noise Study Area.

Noise Study Area 87 – No Barrier

Within Noise Study Area 87, located west of DSA 2 and north of Auburn Knightdale Road, three residential receptors were studied. None is predicted to be impacted. Since no impacts are predicted in this NSA, abatement does not need to be considered. See Exhibit 2.55 for a location map of this Noise Study Area.

Noise Study Area 88 – No Barrier

Within Noise Study Area 88, located east of DSA 2 and north of Auburn Knightdale Road, one residential receptor was studied, which is not predicted to be impacted. Since no impacts are predicted in this NSA, abatement does not need to be considered. See Exhibit 2.56 for a location map of this Noise Study Area.

Noise Study Area 89 – No Barrier

Within Noise Study Area 89, located west of DSA 2 near Sidecreek Drive, one residential receptor was studied, which is not predicted to be impacted. Since no impacts are predicted in this NSA, abatement does not need to be considered. See Exhibit 2.56 for a location map of this Noise Study Area.

Noise Study Area 90 - Barrier NW90

A noise barrier was investigated to abate the predicted traffic noise impacts at nine impacted residential receptors (R1491, R1493A, R1495A-B, R1496B, R1497A-B, and R1499C-D) along DSA2 in Noise Study Area (NSA) 90, west of the proposed route and south of the Poole Road interchange. Barrier NW90 is 2,400 feet long, with a height of 16 feet and would provide a 7 to 12 dB(A) reduction in noise at all 9 of the impacted receptors, with 21 total receptors benefitted, including 16 receptors achieving at least 7 dB(A) reduction. The maximum wall allowance per benefited receptor for this barrier is 3,000 square feet and the wall would be 1,827 square feet per benefited receptor which is less than the allowance. This barrier is preliminarily considered feasible and reasonable and is recommended for further consideration. See Exhibits 2.57 and 2.58 for a location map of this barrier and Appendix 3 for the noise barrier analysis details.

Noise Study Area 91 – No Barrier

Within Noise Study Area 91, located east of DSA2 and south of Poole Road, 35 residential receptors and one recreational receptor were studied. None is predicted to be impacted. Since no impacts are predicted in this NSA, abatement does not need to be considered. See Exhibit 2.59 for a location map of this Noise Study Area.

Noise Study Area 92 - Barrier NW92

A noise barrier was investigated to abate the predicted traffic noise impacts at 25 impacted residential receptors (R1515A-B, R1516A-B, R1526, R1527, R1528A-B, R1529A-C, R1530A, R1533A-C, R1534C, R1539A-C, R1540B, R1543A-B, R1547A-B, R1548, and R5577) along DSA2 in Noise Study Area (NSA) 92, west of the proposed route between the Poole Road and I-495 interchanges. Barrier NW92 is 4,733 feet long, with a height of 18 feet and would provide a 5 to 13 dB(A) reduction in noise at 22 of the impacted receptors, with 52 total receptors benefitted, including 35 receptors achieving at least 7 dB(A) reduction. The maximum wall allowance per benefited receptor for this barrier is 3,000 square feet and the wall would be 1,638 square feet per benefited receptor which is less than the allowance. This barrier is preliminarily considered feasible and reasonable and is recommended for further consideration. See Exhibits 2.58, 2.59 and 2.60 for a location map of this barrier and Appendix 3 for the noise barrier analysis details.

Noise Study Area 93 – No Barrier

Within Noise Study Area 93, located east of DSA2 and north of Poole Road, 22 residential receptors and one recreational receptor were studied. None is predicted to be impacted. Since no impacts are predicted in this NSA, abatement does not need to be considered. See Exhibit 2.59 for a location map of this Noise Study Area.

Noise Study Area 94 – No Barrier

Within Noise Study Area 94, located east of DSA 2 and south of I-64, two residential receptors were studied. One receptor (R1551) is predicted to be impacted. Since only one traffic noise impact is predicted, noise abatement would not be feasible because the NCDOT policy requires at least two impacted receptors be benefited by abatement to meet feasibility requirements. See Exhibit 2.62 for a location map of this Noise Study Area.

Noise Study Area 95 – No Barrier

Within Noise Study Area 95, located east of DSA 2 and north of I-64, six residential receptors were studied. None is predicted to be impacted. Since no impacts are predicted in this NSA, abatement does not need to be considered. See Exhibit 2.62 for a location map of this Noise Study Area.

Noise Study Area 96 – No Barrier

Within Noise Study Area 96, located north of I-64 and west of DSA 2, five residential receptors were studied. One receptor (R1557C) is predicted to be impacted. Since only one traffic noise impact is predicted, noise abatement would not be feasible because the NCDOT policy requires at least two impacted receptors be benefited by abatement to meet feasibility requirements. See Exhibit 2.63 for a location map of this Noise Study Area.

Noise Study Area 97 - Barrier NW97

A noise barrier was investigated to abate the predicted traffic noise impacts at eight impacted residential receptors (R1559B, R1561A-B, and R1562A-C) along DSA2 in Noise Study Area (NSA) 97, west of the proposed route approaching the northern project improvement limits. Barrier NW97 is 1,362 feet long, with a height of 16 feet and would provide a 5 to 10 dB(A) reduction in noise at all of the impacted receptors, with 9 total receptors benefitted, including 3 receptors achieving at least a 7 dB(A) reduction. The maximum wall allowance per benefited receptor for this barrier is 2,500 square feet and the wall would be 2,423 square feet per benefited receptor which is less than the allowance. This barrier is preliminarily considered feasible and reasonable and is recommended for further consideration. See Exhibit 2.63 for a location map of this barrier and Appendix 3 for the noise barrier analysis details.

Noise Study Area 98 - Barrier NW98

A noise barrier was investigated to abate the predicted traffic noise impacts at 42 impacted residential receptors (R2303C, R2304A-C, R2305A-C, R2306A-C, R2307A-C, R2308A-B, R2309A-B, R2310A-C, R2334A-C and R8001-R8019) along DSA2 in Noise Study Area (NSA) 98, east of the proposed route approaching the northern project improvement limits. Barrier NW98 is 2,389 feet long, with a height of 18 feet and would provide a 5 to 9 dB(A) reduction in noise at 34 of the impacted receptors, with 35 total benefitted receptors, including 22 receptors achieving at least a 7 dB(A) reduction. The maximum wall allowance per benefited receptor for this barrier is 2,000 square feet and the wall would be 1,229 square feet per benefited receptor which is less than the allowance. This barrier is preliminarily considered feasible and reasonable and is recommended for further consideration. See Exhibit 2.63 and 2.64 for a location map of this barrier and Appendix 3 for the noise barrier analysis details.

The average height of NW97 and NW98 is 17 feet and they are approximately 300 feet apart. This distance is greater than a 10:1 ratio and a degradation in noise reduction is unlikely.

8 Construction Noise

The predominant construction activities associated with this project are expected to be earth removal, hauling, grading, and paving. Temporary and localized construction noise impacts will likely occur as a result of these activities. During daytime hours, the predicted effects of these impacts will be temporary speech interference for passers-by and those individuals living or working near the project. During evening and nighttime hours, steady-state construction noise emissions such as from paving operations will be audible, and may cause impacts to activities such as sleep. Sporadic evening and nighttime construction equipment noise emissions such as from backup alarms, lift gate closures ("slamming" of dump truck gates), etc., will be perceived as distinctly louder than the steady-state acoustic environment, and will likely cause impacts to the general peace and usage of noise- sensitive receptors – particularly residences, hospitals, and hotels. Extremely loud construction noise activities such as usage of pile-drivers and impact-hammers (jack hammer, hoe-ram) will cause temporary, sporadic, and acute construction noise impacts in isolated areas.

Generally, low-cost and easy-to-implement construction noise control measures should be incorporated into the project plans and specifications (e.g. work-hour limits, equipment exhaust muffler requirements, haul-road locations, elimination of "tail gate banging", ambient-sensitive backup alarms, construction noise complaint mechanisms, and consistent and transparent community communication and rapport).

While discrete construction noise level prediction is difficult for a particular receptor or group of receptors, it can be assessed in a general capacity with respect to distance from known or likely project activities. For

this project, earth removal, grading, hauling, and paving is anticipated to occur in the near vicinity of many residential neighborhoods, four schools, and nine places of worship. Although construction noise impact abatement should not place an undue burden upon the financial cost of the project or the project construction schedule, pursuant to the requirements of 23 CFR 772.19, it is the recommendation of this traffic noise report that:

1. Earth removal, grading, hauling, and paving activities in the vicinity of the residential neighborhoods and eight places of worship (New Breed Baptist Church, Church of God in Christ Jesus, Word of Truth Church of God, Church of St. Peter's Consecrated Way, Triangle Baptist Church of Raleigh, Juniper Level Baptist Church, Mt. Herman Christian Church, Calvary Deliverance Church of Apostolic Faith) should be limited to weekday daytime hours.

2. Earth removal, grading, hauling, and paving activities in the vicinity of the Wake Technical Community College and the Panther Branch School should be performed during evening and nighttime hours, or any hours during weekends and/or holidays.

3. If meeting the project schedule requires that earth removal, grading, hauling and/or paving must occur during nighttime hours in the vicinity of one or more of the nearby residential neighborhoods, the Contractor shall notify NCDOT as soon as possible. In such instance(s), all reasonable attempts shall be made to notify and to make appropriate arrangements for the abatement of the predicted construction noise impacts upon the affected property owners and residents.

4. If construction noise activities must occur during context-sensitive hours in the vicinity of noise-sensitive areas, discrete construction noise abatement measures including, but not limited to portable noise barriers and other equipment-quieting devices shall be considered.

9 Coordination with Local Officials

The 23 CFR Part 772 states that in order to minimize future traffic noise impacts on currently undeveloped lands in the vicinity of Type I projects, a highway agency shall inform local officials within whose jurisdiction the highway project is located the distance to the exterior noise abatement criteria in Table 2. The Preferred Alternative is located in multiple local jurisdictions which are listed in Table 8.

Table 8: Local Jurisdictions within Project Area

Local Jurisdiction
Town of Apex
Town of Fuquay-Varina
Town of Cary
Town of Garner
Town of Holly Springs
Johnston County
Town of Knightdale
Wake County

To assist local authorities in exercising land use control over the undeveloped lands adjacent to the roadways proposed for this project, land use compatibility noise data was developed. Table 9 provides the typical distance at which the 66 dB(A) and 71 dB(A) noise levels occur. If no distance is provided, the contour is predicted to fall within the preliminary proposed right of way.

Although the information contained in Table 9 is based on the results of the noise modeling, it is not site-specific for any area along the proposed Preferred Alternative. Variations in terrain and the roadway profile can result in changes to the distances to these noise contours. This information is intended to provide a general guide for future planning, but should not be used in the final design or layout of future development.

Table 9: Typical Distances to 66 and 71 dB(A) Noise Contours

Segment	Distance[1] to 66 dB(A) Contour (feet)	Distance[1] to 71 dB(A) Contour (feet)
NC 55 Bypass to Holly Springs Road	300	175
Holly Springs Road to Bells Lake Road	350	250
Bells Lake Road to Fayetteville Highway	325	175
Fayetteville Highway to Old Stage Road	350	Inside Proposed ROW
Old Stage Road to Benson Highway	175	Inside Proposed ROW
Benson Highway to I 40	300	Inside Proposed ROW
White Oak Road to US 70	175	Inside Proposed ROW
US 70 to Old Baucom Road	250	175
Old Baucom Road to Auburn Knightdale Road	175	Inside Proposed ROW
Auburn Knightdale Road to Poole Road	250	175
Poole Road to US 64	300	175

[1]Distances measured from centerline of roadway

10 Conclusion

This traffic noise analysis for the Complete 540 project (STIP R-2721, R-2828 and R-2829) was conducted according to the requirements of 23 CFR 772, the NCDOT Traffic Noise Policy (October 6, 2016) and the NCDOT Traffic Noise Manual (October 6, 2016). Noise levels for noise-sensitive land uses

along the proposed improvements were calculated using the FHWA's Traffic Noise Model, Version 2.5. Noise impacts were predicted to occur at 818 receptors under the Preferred Alternative.

Noise abatement was considered at each impact. The findings of the abatement study are:

- Traffic management, alignment alterations, buffer zones and building insulation are not feasible abatement measures.
- Three barriers of 42 investigated were found not to be feasible.
- In total, 17 barriers were found to be feasible but were above the maximum allowable wall area per benefited receptor and are therefore not considered reasonable.
- In total, 22 barriers were preliminarily found to be both feasible and reasonable and are likely to be included in the final design.
- A Design Noise Report containing a detailed analysis and design of the reasonable and feasible barriers will be completed as part of the final design of the project.

Table 10 summarizes the noise barriers that were found to be likely to be constructed and Table 11 summarizes the noise barriers that were found to be unlikely to be constructed.

Table 10: Noise Barriers Likely to be Constructed

Barrier	Location	Feasible	Reasonable	Likely
NW1	North and East of NC 55 Bypass	Yes	Yes	Yes
NW2 and NW3	South and East of NC 55 Bypass	Yes	Yes	Yes
NW6	North and East of Sunset Lake Road	Yes	Yes	Yes
NW7	North and East of Holly Springs Road	Yes	Yes	Yes
NW11	South and East of Holly Springs Road	Yes	Yes	Yes
NW13	North and West of Kildaire Farm Road	Yes	Yes	Yes
NW19-1	Near Grandbridge Drive	Yes	Yes	Yes
NW24	South and West of Deer Meadows Drive	Yes	Yes	Yes
NW25	North and West of Deer Meadows Drive	Yes	Yes	Yes
NW28	South and East of Deer Meadows Drive	Yes	Yes	Yes
NW35	Along Fayetteville Road	Yes	Yes	Yes
NW41	South and East of Fanny Brown Road	Yes	Yes	Yes
NW50	North and West of Sauls Road	Yes	Yes	Yes
NW53	North and West of Sauls Road	Yes	Yes	Yes
NW60	North and East of Benson Road	Yes	Yes	Yes
NW67	Near Hicks Road	Yes	Yes	Yes
NW68	Near Battlefield Drive	Yes	Yes	Yes
NW90	South and West of Poole Road	Yes	Yes	Yes
NW92	North and West of Poole Road	Yes	Yes	Yes
NW97	North and West of Old Faison Road	Yes	Yes	Yes
NW98	North and East of Old Faison Road	Yes	Yes	Yes

Table 11: Noise Barriers Unlikely to be Constructed

Barrier	Location	Feasible	Reasonable	Likely
NW5	North and East of Sunset Lake Road	Yes	No	No
NW8	North and East of Sunset Lake Road	Yes	No	No
NW16	North and East of Holly Springs Road	Yes	No	No
NW18	Near Sky Meadow Drive	Yes	No	No
NW19-2	South and West of West Lake Road	No	No	No
NW20	North and West of West Lake Road	Yes	No	No
NW21-1	South and East of West Lake Road	Yes	No	No
NW21-2	South and West of Bells Lake Road	Yes	No	No
NW22	North and West of Bells Lake Road	No	No	No
NW27	North and East of Deer Meadows Drive	Yes	No	No
NW32	At Lake Wheeler Road	Yes	No	No
NW43	North and West of Old Stage Road	Yes	No	No
NW49-1	South and East of Holland Church Road	Yes	No	No
NW49-2	South and West of Sauls Road	Yes	No	No
NW52	South and West of Sauls Road	Yes	No	No
NW54	At Jordan Road - South	Yes	No	No
NW55-1	At Jordan Road - North	Yes	No	No
NW55-2	North and West of Benson Road	Yes	No	No
NW58	South and West of Benson Road	No	No	No
NW83	Near Ferndale Road	Yes	No	No

A final decision of noise barrier feasibility and reasonableness will be made upon completion of the project design and the public involvement process, concurrence with the NCDOT Policy and FHWA acceptance (as applicable). Barriers identified as "Likely" are barriers which have been preliminarily shown to be both feasible and reasonable. However, a finding of "Likely" is not a commitment to build a barrier.

The final design traffic noise analysis, documented in a Design Noise Report, will re-evaluate feasible and reasonable noise abatement for the entire project corridor and not just in areas where noise abatement has been identified in this Traffic Noise Report as being preliminarily feasible and reasonable (i.e. likely).

11 References

Federal Highway Administration. March 13, 1984. *"Analysis of Highway Construction Noise,"* Technical Advisory T6160.2, 4 pages.

Federal Highway Administration. December 2011. "*Highway Traffic Noise: Analysis and Abatement Guidance.*"

Federal Highway Administration. May 1996. *Measurement of Highway-Related Noise*, Report Number FHWA-PD-96-046, Cynthia S.Y. Lee and Gregg Fleming, 206 pages. Available from National Technical Information Service (NTIS), 5285 Port Royal Road, Springfield, VA 22161.

Federal Highway Administration. February 2000. *FHWA Highway Noise Barrier Design Handbook*, Gregg G. Fleming, Harvey S. Knauer, Cynthia S.Y. Lee, and Soren Pedersen. Available at https://www.fhwa.dot.gov/environment/noise/noise_barriers/design_construction/design/index.cfm

Federal Highway Administration. July 2010. *"Procedures for Abatement of Highway Traffic Noise and Construction Noise,"* 23 Code of Federal Regulations Part 772.

Federal Highway Administration. February 2003. "*Traffic Noise Model (TNM) Version 2.5 and User Guide*".

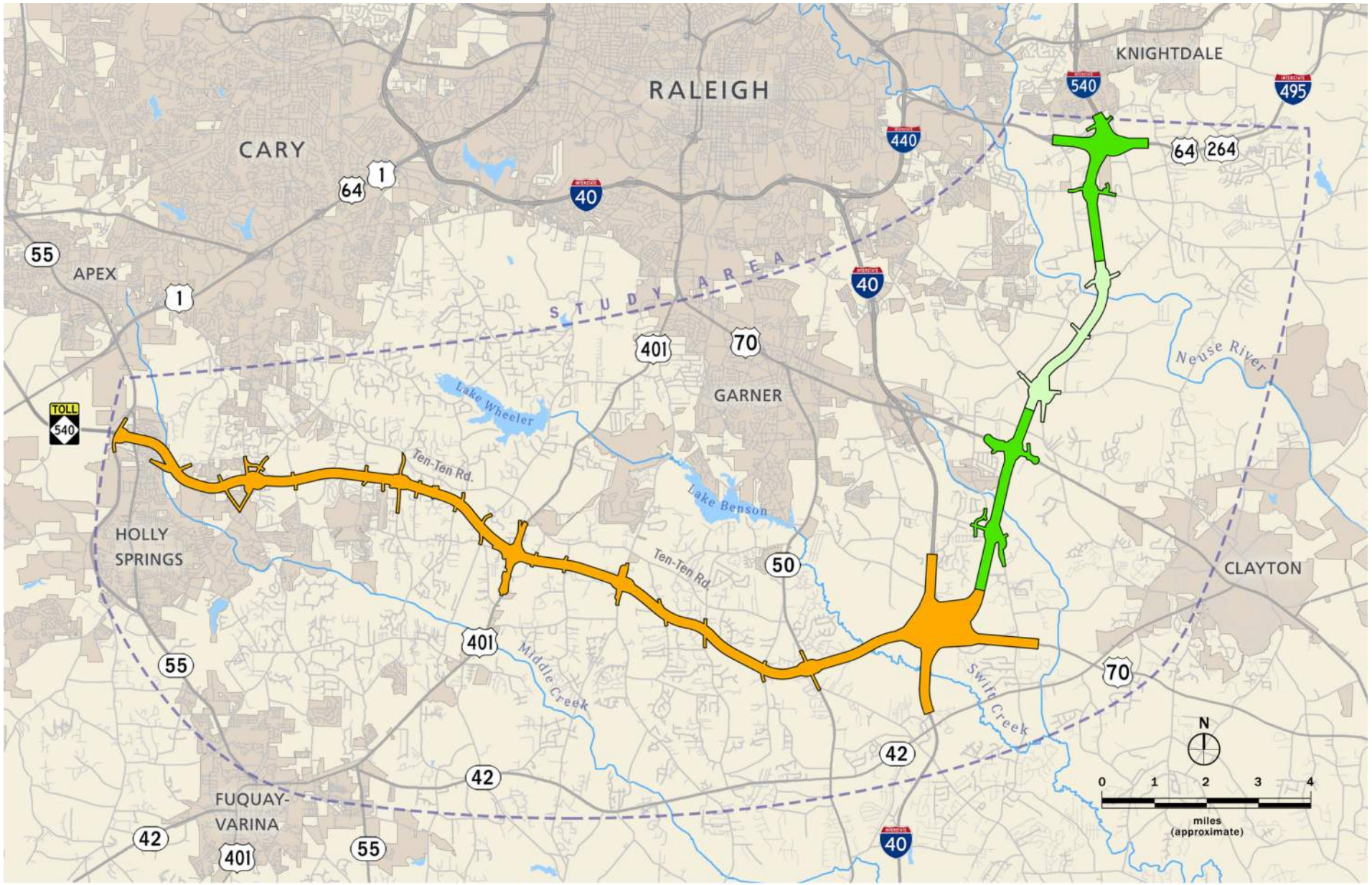
North Carolina Department of Transportation. October 2016. "*Traffic Noise Policy.*"

North Carolina Department of Transportation. October 2016. "*Traffic Noise Manual.*"

EXHIBITS

EXHIBIT 1

PROJECT LOCATION MAP



PREFERRED ALTERNATIVE

Detailed Study Alternative 2

Exhibit 1

Of the seventeen Detailed Study Alternatives, Alternative 2 was selected by the Federal Highway Administration and the North Carolina Department of Transportation as the preferred alternative. This alternative consists of the Orange Segment from NC 55 Bypass to east of I-40, and the Green Segment from east of I-40 to US 64/264 Bypass. The Green Segment shifts to the Mint Green segment for a portion of its length, as shown here.

EXHIBIT 2

NOISE ANALYSIS LOCATIONS

COMPLETE 540

TRIANGLE EXPRESSWAY SOUTHEAST EXTENSION
WAKE AND JOHNSTON COUNTIES
STIP R-2721, R-2828 AND R-2829

0 100' 200' 300'

N

LEGEND

- R21 = NOISE RECEPTOR
- = NOT IMPACTED / NOT BENEFITED
- = NOT IMPACTED / BENEFITED
- = IMPACTED / BENEFITED
- = IMPACTED / NOT BENEFITED
- = NOT NOISE SENSITIVE
- × = ACQUIRED
- = NOISE STUDY AREA
- = LIKELY NOISE WALL
- = UNLIKELY NOISE WALL

NOISE STUDY AREAS EXHIBIT 2.1

DECEMBER 2017

NC-55 BYPASS

NSA 1

R5003

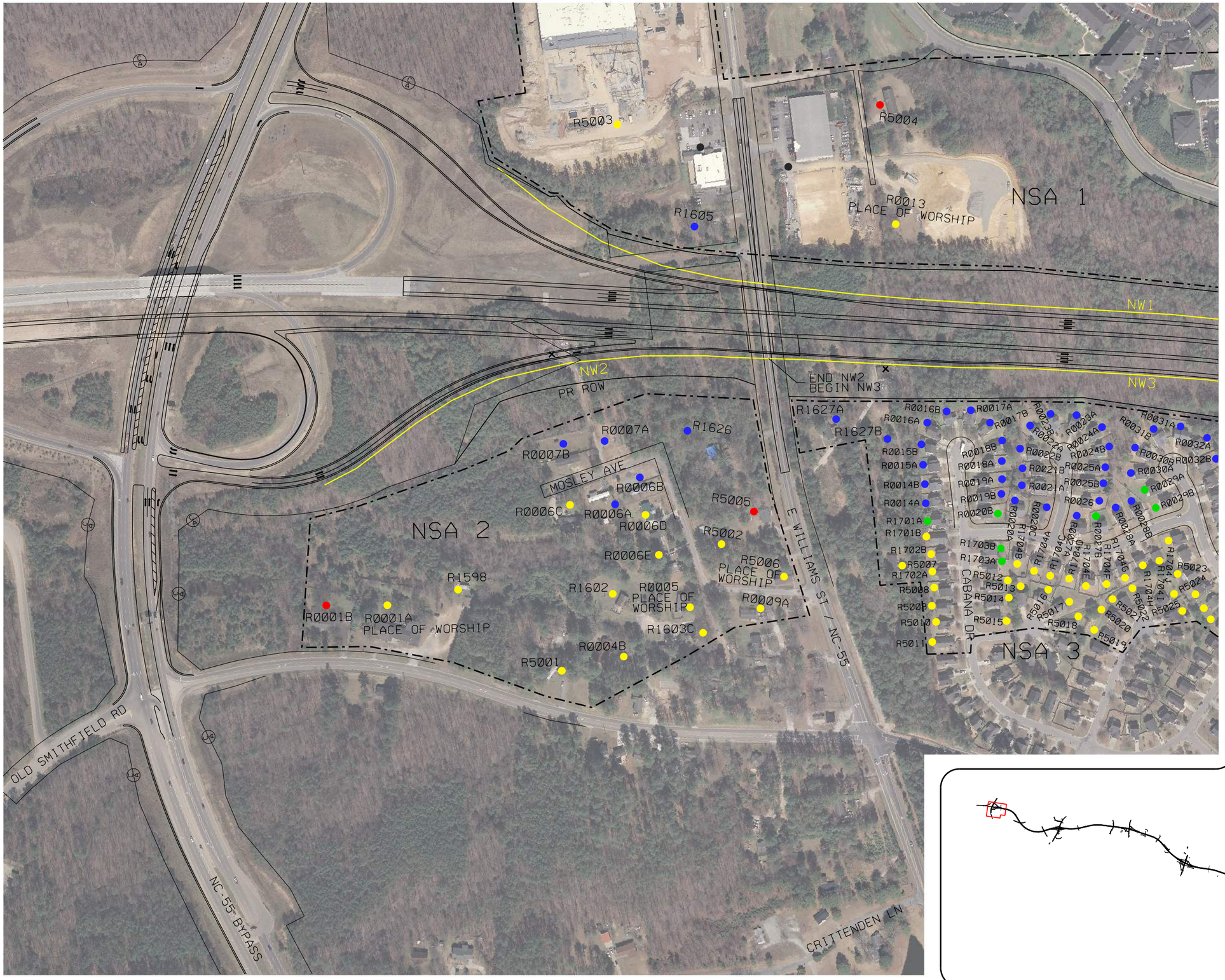
NW1

NC 540

NW2

NSA 2

KEY MAP



COMPLETE 540

TRIANGLE EXPRESSWAY SOUTHEAST EXTENSION
WAKE AND JOHNSTON COUNTIES
STIP R-2721, R-2828 AND R-2829

0 100' 200' 300'

LEGEND

R21 = NOISE RECEPTOR
= NOT IMPACTED / NOT BENEFITED
= NOT IMPACTED / BENEFITED
= IMPACTED / BENEFITED
= IMPACTED / NOT BENEFITED
= NOT NOISE SENSITIVE
× = ACQUIRED
= NOISE STUDY AREA
= LIKELY NOISE WALL
= UNLIKELY NOISE WALL

NOISE STUDY AREAS
EXHIBIT 2.2

DECEMBER 2017

KEY MAP



COMPLETE 540

TRIANGLE EXPRESSWAY SOUTHEAST EXTENSION
WAKE AND JOHNSTON COUNTIES
STIP R-2721, R-2828 AND R-2829

0 100' 200' 300'

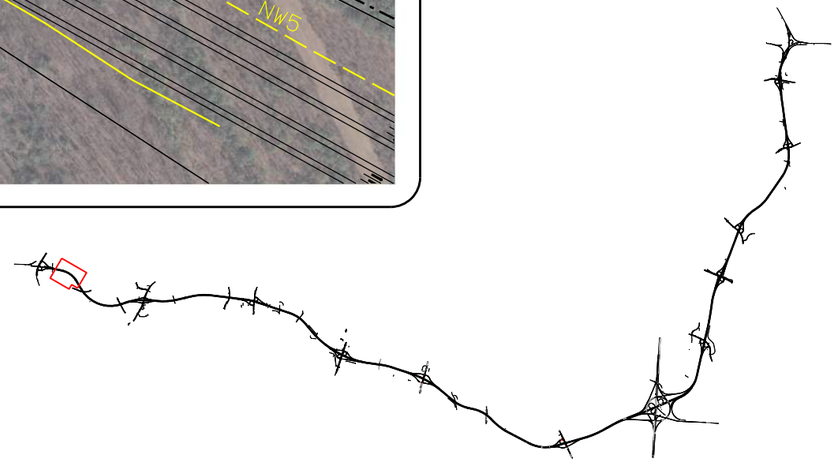
LEGEND

- R21 = NOISE RECEPTOR
- = NOT IMPACTED / NOT BENEFITED
- = NOT IMPACTED / BENEFITED
- = IMPACTED / BENEFITED
- = IMPACTED / NOT BENEFITED
- = NOT NOISE SENSITIVE
- × = ACQUIRED
- = NOISE STUDY AREA
- = LIKELY NOISE WALL
- = UNLIKELY NOISE WALL

NOISE STUDY AREAS EXHIBIT 2.3

DECEMBER 2017

KEY MAP



NSA 1
NSA 3
NSA 4
NSA 5
REUNION CREEK PKWY
FOR AREA DETAIL SEE EXHIBIT 2.65
STRAYWHITE AVE
PR ROW
NW1
NW3
NW5
THORNCREST
STONECREEK DR
SUNSET LAKE RD
DUTCH ELM

COMPLETE 540

TRIANGLE EXPRESSWAY SOUTHEAST EXTENSION
WAKE AND JOHNSTON COUNTIES
STIP R-2721, R-2828 AND R-2829

0 100' 200' 300'

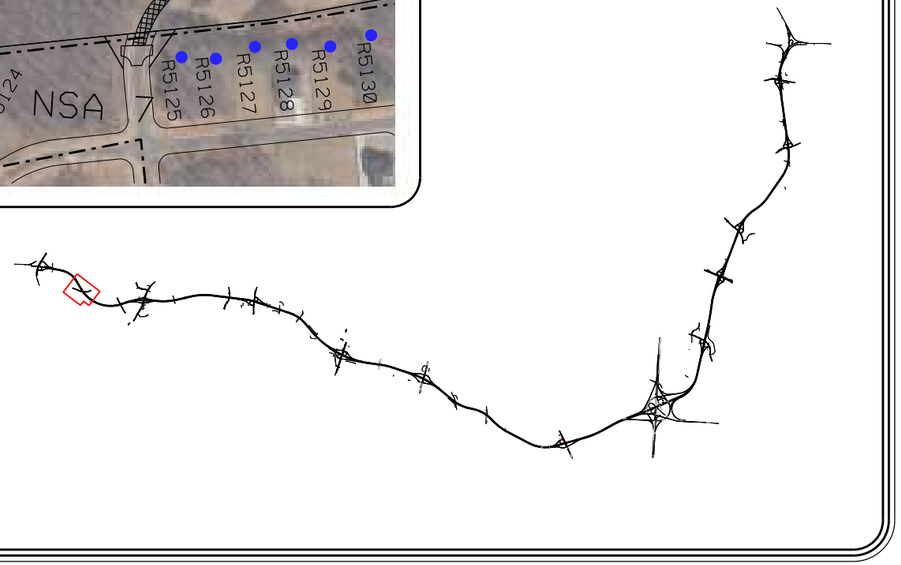
LEGEND

- R21 = NOISE RECEPTOR
- = NOT IMPACTED / NOT BENEFITED
- = NOT IMPACTED / BENEFITED
- = IMPACTED / BENEFITED
- = IMPACTED / NOT BENEFITED
- = NOT NOISE SENSITIVE
- = ACQUIRED
- = NOISE STUDY AREA
- = LIKELY NOISE WALL
- = UNLIKELY NOISE WALL

NOISE STUDY AREAS EXHIBIT 2.4

DECEMBER 2017

KEY MAP



COMPLETE 540

TRIANGLE EXPRESSWAY SOUTHEAST EXTENSION
WAKE AND JOHNSTON COUNTIES
STIP R-2721, R-2828 AND R-2829

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOT IMPACTED / NOT BENEFITED
=NOT IMPACTED / BENEFITED
=IMPACTED / BENEFITED
=IMPACTED / NOT BENEFITED
=NOT NOISE SENSITIVE
=ACQUIRED
=NOISE STUDY AREA
=LIKELY NOISE WALL
=UNLIKELY NOISE WALL

NOISE STUDY AREAS EXHIBIT 2.5

DECEMBER 2017

KEY MAP



COMPLETE 540

TRIANGLE EXPRESSWAY SOUTHEAST EXTENSION
WAKE AND JOHNSTON COUNTIES
STIP R-2721, R-2828 AND R-2829

0 100' 200' 300'

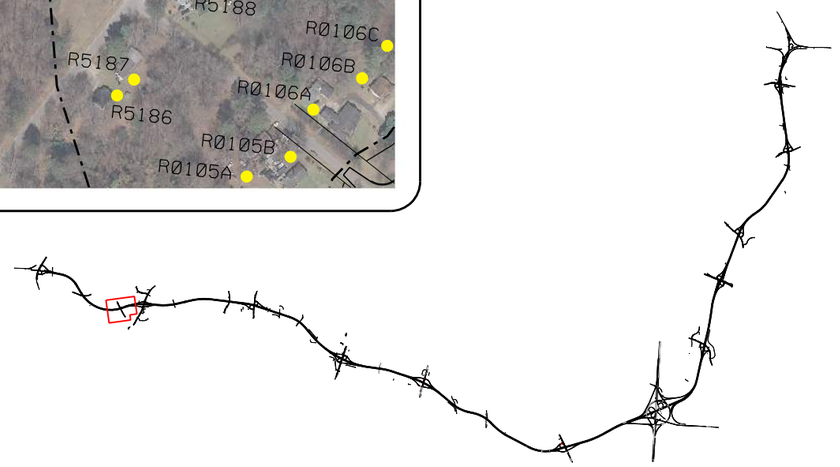
LEGEND

- R21 = NOISE RECEPTOR
- = NOT IMPACTED / NOT BENEFITED
- = NOT IMPACTED / BENEFITED
- = IMPACTED / BENEFITED
- = IMPACTED / NOT BENEFITED
- = NOT NOISE SENSITIVE
- = ACQUIRED
- = NOISE STUDY AREA
- = LIKELY NOISE WALL
- = UNLIKELY NOISE WALL

NOISE STUDY AREAS EXHIBIT 2.6

DECEMBER 2017

KEY MAP



COMPLETE 540

TRIANGLE EXPRESSWAY SOUTHEAST EXTENSION
WAKE AND JOHNSTON COUNTIES
STIP R-2721, R-2828 AND R-2829

0 100' 200' 300'

N

LEGEND

- R21 = NOISE RECEPTOR
- = NOT IMPACTED / NOT BENEFITED
- = NOT IMPACTED / BENEFITED
- = IMPACTED / BENEFITED
- = IMPACTED / NOT BENEFITED
- = NOT NOISE SENSITIVE
- = ACQUIRED
- = NOISE STUDY AREA
- = LIKELY NOISE WALL
- = UNLIKELY NOISE WALL

NOISE STUDY AREAS EXHIBIT 2.7

DECEMBER 2017

KEY MAP



NSA 12
NSA 13
NSA 14
NSA 15
NSA 16
NESS DR
ELLINWOOD DR
HOLLY SPRINGS RD
HOLLY RUN RD
KILDAIRE FARM RD
SANCROFT DR
PR ROW
PR EASEMENT
175' TAPER
R0121
R0123
R0124
R1597
R0125A
R0125B
R0126A
R0126B
R0126C
R0126D
R0130A
R0130B
R0130C
R0130D
R0130E
R0130F
R0131A
R0131B
R0131C
R0131D
R0131E
R0131F
R0132A
R0132B
R0133A
R0133B
R0134
R0135A
R0135B
R0136A
R0136B
R0140A
R0140B
R0141A
R0141B
R0142A
R0142B
R0143A
R0143B
R0144A
R0144B
R0144C
R0145
R0146A
R0146B
R0147A
R0147B
R0147C
R0147D
R0148
R0149A
R0149B
R0150A
R0150B
R0151A
R0151B
R0152A
R0152B
R0152C
R0153A
R0153B
R0154
R0155
R0156
R0157A
R0157B
R1716A
R1716B
R1717A
R1717B

COMPLETE 540

TRIANGLE EXPRESSWAY SOUTHEAST EXTENSION
WAKE AND JOHNSTON COUNTIES
STIP R-2721, R-2828 AND R-2829

0 100' 200' 300'

LEGEND

R21 = NOISE RECEPTOR
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= ACQUIRED
= NOISE STUDY AREA
= LIKELY NOISE WALL
= UNLIKELY NOISE WALL

NOISE STUDY AREAS EXHIBIT 2.8

DECEMBER 2017

NSA 16
NSA 11
NSA 10
PR ROW
NW16
NW11
S CARROLL ST
R0139B
R0139A
R0138B
R0138C
R0138A
R0117
R1628C
R0118
R0119A
R0119B
R1628B
R0116
R0115A
R0115B
R0115C
R0114A
R0114B
R0111
R0112B
R0112A
R0110
R0113C
R0113B
R0113A
R0109A
R0109B
R0109C
R0108
R0107B
R5190
R5189
R5188
R0106D
R0106C
R0106B
R0106A
R5187
R5186
R0105B
R0105A
R0103B
R0103A
R0102A
R0102B
R1718A
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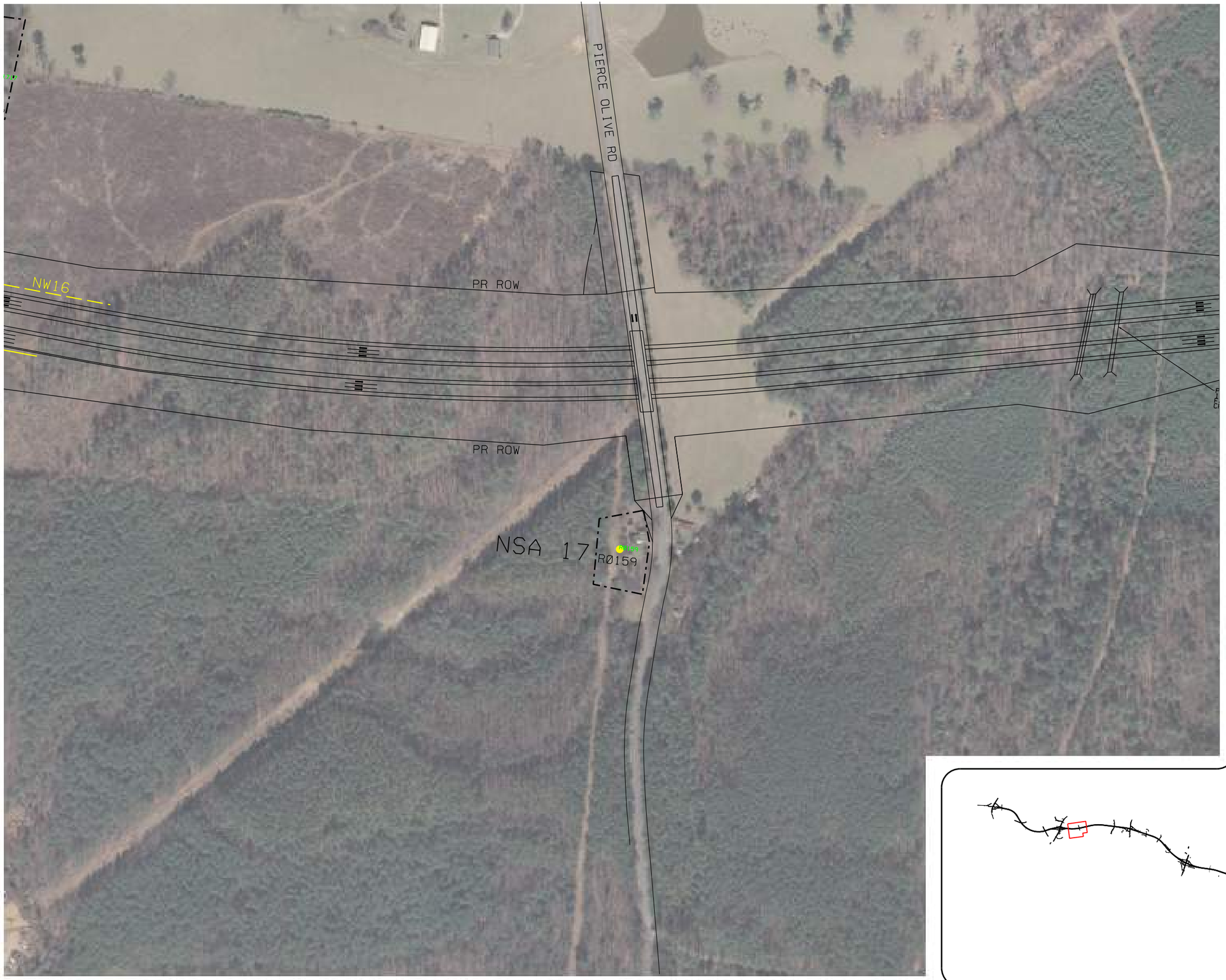
R1719A
R1719B
R5610
R5611
R5612
R5613
R5614
R5615

KEY MAP



COMPLETE 540

TRIANGLE EXPRESSWAY SOUTHEAST EXTENSION
WAKE AND JOHNSTON COUNTIES
STIP R-2721, R-2828 AND R-2829

0 100' 200' 300'

N

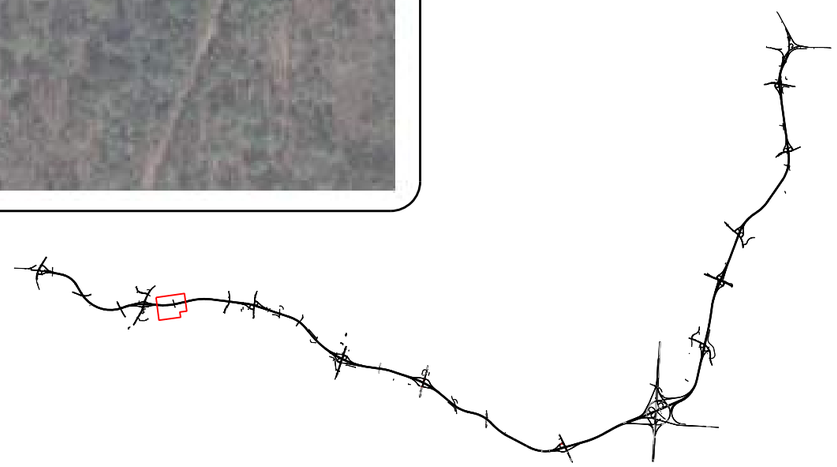
LEGEND

- R21 = NOISE RECEPTOR
- = NOT IMPACTED / NOT BENEFITED
- = NOT IMPACTED / BENEFITED
- = IMPACTED / BENEFITED
- = IMPACTED / NOT BENEFITED
- = NOT NOISE SENSITIVE
- × = ACQUIRED
- = NOISE STUDY AREA
- = LIKELY NOISE WALL
- = UNLIKELY NOISE WALL

NOISE STUDY AREAS
EXHIBIT 2.9

DECEMBER 2017

KEY MAP



COMPLETE 540

TRIANGLE EXPRESSWAY SOUTHEAST EXTENSION
WAKE AND JOHNSTON COUNTIES
STIP R-2721, R-2828 AND R-2829

0 100' 200' 300'

N

LEGEND

R21 =NOISE RECEPTOR
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=IMPACTED / BENEFITED
=IMPACTED / NOT BENEFITED
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=LIKELY NOISE WALL
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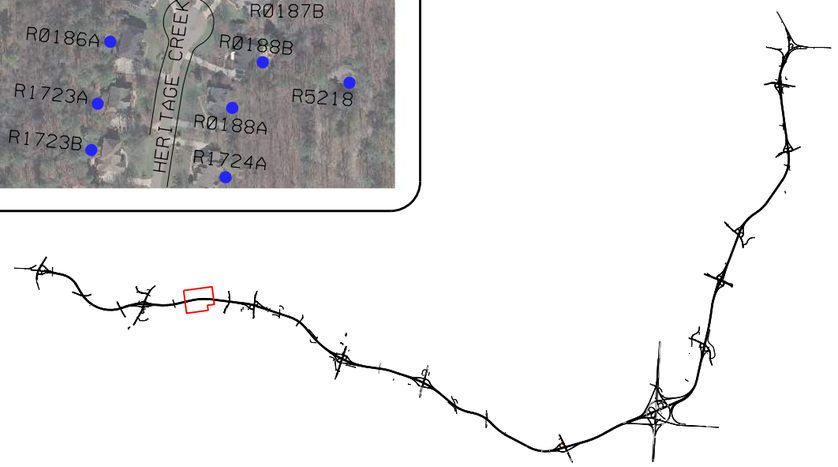
NOISE STUDY AREAS
EXHIBIT 2.10

DECEMBER 2017

NSA 18
NSA 19
PR ROW
NW18
NW19-1
LAWDRAKER RD
SKY MEADOW DR
GRANDBRIDGE DR
SUMMER BROOK DR
HERITAGE CREEK

R5618 R5619 R5620 R5621 R5622 R5623 R5616 R5617 R5191 R5192 R5193
R0161A R0161B R0163A R0163B R0164A R0164B R0165A R0165B R0166A R0166B R0167A R0167B R0168A R0168B R0168C R0169A R0169B R0170A R0170B R0171A R0171B R0172A R0172B R0173
R5194 R5195 R5196 R5197 R5198 R5199 R5201 R5202 R5203
R0174A R0174B R0176A R0176B R0178A R0178B R0179A R0179B R0180A R0180B R0182A R0182B R0182C R0184
R1720 R1721A R1721B R1722A R1722B
R0186A R0186B R0187A R0187B R0188A R0188B R1723A R1723B R1724A R5218

KEY MAP



COMPLETE 540

TRIANGLE EXPRESSWAY SOUTHEAST EXTENSION
WAKE AND JOHNSTON COUNTIES
STIP R-2721, R-2828 AND R-2829

0 100' 200' 300'

LEGEND

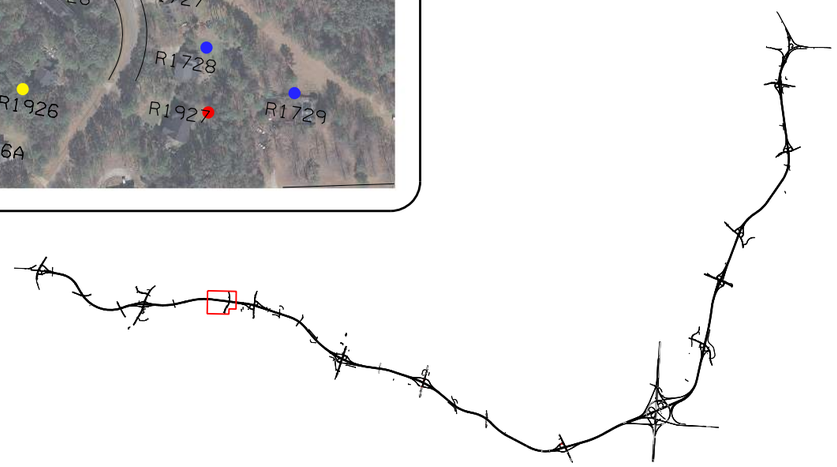
R21 =NOISE RECEPTOR
=NOT IMPACTED / NOT BENEFITED
=NOT IMPACTED / BENEFITED
=IMPACTED / BENEFITED
=IMPACTED / NOT BENEFITED
=NOT NOISE SENSITIVE
=ACQUIRED
=NOISE STUDY AREA
=LIKELY NOISE WALL
=UNLIKELY NOISE WALL

NOISE STUDY AREAS EXHIBIT 2.11

DECEMBER 2017

NSA 18
NSA 19
NSA 20
NSA 21
CASTELAINE CIR
FLORESTA
WEST LAKE ROAD
HERITAGE CREEK
WESLEY RIDGE DR
PR ROW
NW18
NW20
NW19-1
NW19-2
NW21-1
R0172A
R0172B
R0173
R0186A
R0186B
R0187A
R0187B
R0188A
R0188B
R0189A
R0189B
R0189C
R0190
R0191A
R0191B
R0192A
R0192B
R0193A
R0193B
R0194
R0195
R0196
R0197A
R0197B
R1723A
R1723B
R1724A
R1724B
R1725A
R1725B
R1726
R1727
R1728
R1729
R1923
R1924A
R1924B
R1925A
R1925B
R1925C
R1925D
R1926
R1926A
R1927
R5205
R5206
R5207
R5208
R5209
R5210
R5211
R5212
R5213
R5214
R5215
R5216
R5217
R5218
R5219
R5220
R5221
R5222
R5223
R5224
R5225
R5226
R5227
R5228
R5229
R5231
R5232
R5233
R5234
R5235
R5236
R5237
R5635
R5636
R5637
R5638
R5639
R5640
R5641
R5642
R5643
R5644
R5645
R5646

KEY MAP



COMPLETE 540

TRIANGLE EXPRESSWAY SOUTHEAST EXTENSION
WAKE AND JOHNSTON COUNTIES
STIP R-2721, R-2828 AND R-2829

0 100' 200' 300'

N

LEGEND

- R21 = NOISE RECEPTOR
- = NOT IMPACTED / NOT BENEFITED
- = NOT IMPACTED / BENEFITED
- = IMPACTED / BENEFITED
- = IMPACTED / NOT BENEFITED
- = NOT NOISE SENSITIVE
- = ACQUIRED
- = NOISE STUDY AREA
- = LIKELY NOISE WALL
- = UNLIKELY NOISE WALL

NOISE STUDY AREAS
EXHIBIT 2.12

DECEMBER 2017

BELLS LAKE RD
ORCHARD CREST CT
BELLS POINTE CT
TEN TEN RD
HIGHLAND CREEK DR
OXFORD GREEN DR
PR ROW
NSA 21
NSA 22
NSA 23
NW21-1
NW21-2
NW22
R0225B
R0222C
R0225C
R0230B
R0230A
R0222B
R0223B
R0229B
R0228
R0222A
R0223A
R0229A
R0227B
R0221B
R0226B
R0220B
R0221A
R0226A
R0227A
R0220A
R5259
R0219
R0217B
R0218B
R5260
R0217A
R0218A
R0215B
R0216B
R0215A
R0216A
R0214B
R0214A
R0214C
R0197B
R1727
R1728
R1927
R1729
R1730
R1731
R0198B
R0198A
R0198C
R2289B
R2289A
R2290B
R2290A
R5250
R5251
R0199B
R0199A
R0199C
R0204
R0203
R0205

KEY MAP



COMPLETE 540

TRIANGLE EXPRESSWAY SOUTHEAST EXTENSION
WAKE AND JOHNSTON COUNTIES
STIP R-2721, R-2828 AND R-2829

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NOISE STUDY AREAS EXHIBIT 2.13

DECEMBER 2017

NW21-1
PR ROW
END NW21-1
BEGIN NW21-2
NW21-2
NW22
NSA 21
NSA 23
NSA 24
OXFORD GREEN DR
PONY SOLDIER DR
ALPHAWOOD DR
BELLS LAKE
R0196
R0197A
R0197B
R1726
R1727
R1728
R1926
R1926A
R1927
R1729
R1730
R1731
R0198B
R0198A
R0198C
R5241
R5238
R5239
R5235
R5242
R5243
R2289A
R2289B
R2290B
R2290A
R5250
R5251
R0199B
R0199A
R0199C
R0203
R0204
R0205
R5240
R5252
R5255
R0206
R5256
R5257
R5254
R5258
R0210
R0211A
R0211B
R0212
R0207
R0208
R0209
R0213A
R0213B

KEY MAP



COMPLETE 540

TRIANGLE EXPRESSWAY SOUTHEAST EXTENSION
WAKE AND JOHNSTON COUNTIES
STIP R-2721, R-2828 AND R-2829

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NOISE STUDY AREAS EXHIBIT 2.14

DECEMBER 2017

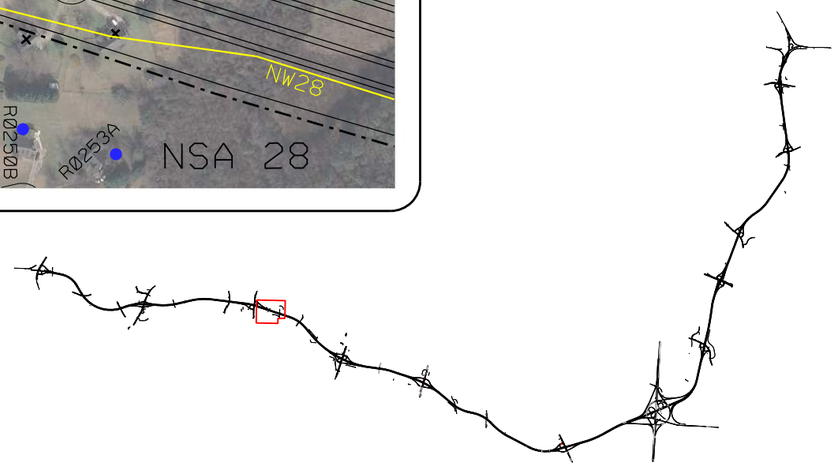
NSA 24
NSA 25
NSA 26
NSA 27
NSA 28

NW24
NW25
NW27
NW28

PR ROW
PR ROW

WHISPERING WIND DR
RHODES RD
DEERBORN DR
BUCKSKIN LN
DEER MEADOWS DR
PINESLOPE DR
BUCKWOOD DR
BAYBARK CIR

KEY MAP



COMPLETE 540

TRIANGLE EXPRESSWAY SOUTHEAST EXTENSION
WAKE AND JOHNSTON COUNTIES
STIP R-2721, R-2828 AND R-2829

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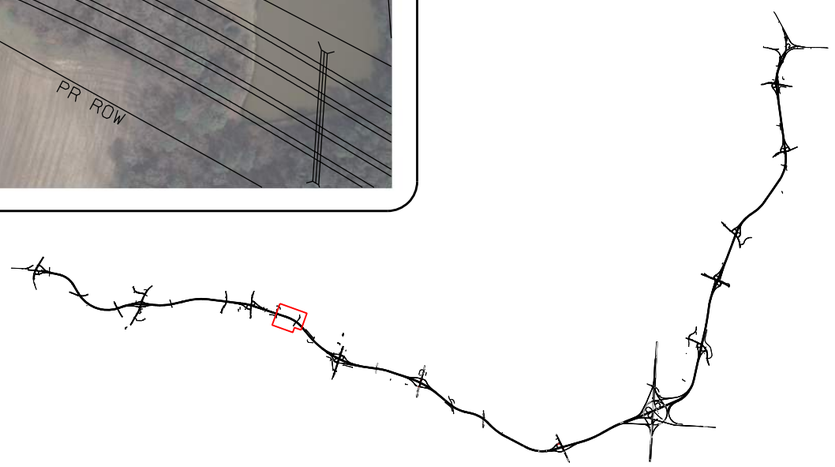
=UNLIKELY NOISE WALL

NOISE STUDY AREAS EXHIBIT 2.15

DECEMBER 2017

KEY MAP



NSA 26
NSA 27
NSA 28
NSA 29
TEN TEN RD
BAYBARK CIR
SUNLAKE FARMS RD
BUCKWOOD DR
LOWER CREEK
HEAVY WEIGHT DR
JOHNSON POND RD
PR ROW
NW27
NW28
R0263A
R0263B
R0264B
R0265A
R0265B
R0266A
R0266B
R0267A
R0267B
R0268A
R0268B
R0268C
R0269
R0270
R0271A
R0271B
R0272
R0273A
R0273B
R0274A
R0274B
R0274C
R0275
R0276
R0277
R0280
R0281
R0282A
R0282B
R0250A
R0250B
R0253A
R0253B
R1743A
R1743B
R1744A
R1744B
R1745A
R1745B
R1745C
R1745D
R1745E
R1745F
R1745G
R1745H
R1745I
R1746A
R1746B
R1747
R1748
R1916
R1917
R5300
R5301
R5302
R5303
R5304
R5305
R5306
R5307
R5308
R5317
R5318
R5319
R5320
R5321
R5322
R5323
R5324
R5325
R5326
R5327

COMPLETE 540

TRIANGLE EXPRESSWAY SOUTHEAST EXTENSION
WAKE AND JOHNSTON COUNTIES
STIP R-2721, R-2828 AND R-2829

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NOISE STUDY AREAS EXHIBIT 2.16

DECEMBER 2017

R1749
NSA 30
R0289
R0290
NSA 31
PR ROW
PR ROW
PR ROW
PR ROW
NW32
R0287B
R0286B
R0285A
R0284B
R0287A
R0286A
R0285B
R0284A
R0283B
R0283A
R0288
R5341
LAKE WHEELER RD
R1753A
R1753B
NSA 32
R5332
R5331
R5330
R5333
R5334
R5337
R5338
R5339
R5340
R5329
R5328
JOHNSON POND RD

KEY MAP

COMPLETE 540

TRIANGLE EXPRESSWAY SOUTHEAST EXTENSION
WAKE AND JOHNSTON COUNTIES
STIP R-2721, R-2828 AND R-2829

0 100' 200' 300'

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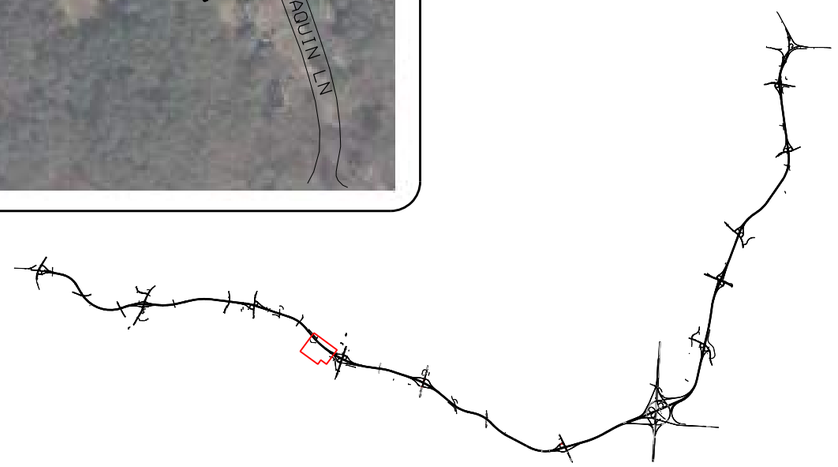
NOISE STUDY AREAS EXHIBIT 2.17

DECEMBER 2017

NSA 30
R0289
R0290
NSA 31
NSA 33
R5347
R5348
R5349
R5350
R5351
R5352
R5353
R5354
R5355
R1649B
R1649A
PR ROW
NW32
PR ROW
R0286B
R0287B
R0285A
R0284B
R0287A
R0286A
R0285B
R0284A
R0283B
R0283A
LAKE WHEELER RD
R0288
R5341
R1753A
R1754
R1753B
NSA 32
R5344
R5343
R5333
R5338
R5334
R5340
R5342
R5335
R5336
R5337
R5339
R5345
R5634
R5633
R5631
R5632
R5630
NSA 34
R0330E
R0331A
R0331B
R0330D
R0331C
R0330C
R1609A
R0330B
R1609B
R0330A
JUAQUIN LN

KEY MAP



COMPLETE 540

TRIANGLE EXPRESSWAY SOUTHEAST EXTENSION
WAKE AND JOHNSTON COUNTIES
STIP R-2721, R-2828 AND R-2829

0 100' 200' 300'

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NOISE STUDY AREAS EXHIBIT 2.18

DECEMBER 2017

NSA 34
R0332A
R0332B
R0334A
R0334B
R0334C
R0335A
R0335B
R0335C
R0337A
R0337B
R0337C
R5346
R0333A
R0333B
R0333C
R0333D
R0336A
R0336B
R0336C
RETGATE LN
DONNY BROOK ROAD
PR ROW
PR ROW
FAYETTEVILLE RD/US-401
PR ROW
DONNY BROOK RD
R0352
NSA 38
WAKE TECH AUTO BUILDING
R0353
R5362
ADVANTAGE WAY
TECH RD
R0351
WAKE TECH
NWBS-1
NWBS-2
NSA 35
FOR AREA DETAIL SEE EXHIBIT 2.66

KEY MAP

COMPLETE 540

TRIANGLE EXPRESSWAY SOUTHEAST EXTENSION
WAKE AND JOHNSTON COUNTIES
STIP R-2721, R-2828 AND R-2829

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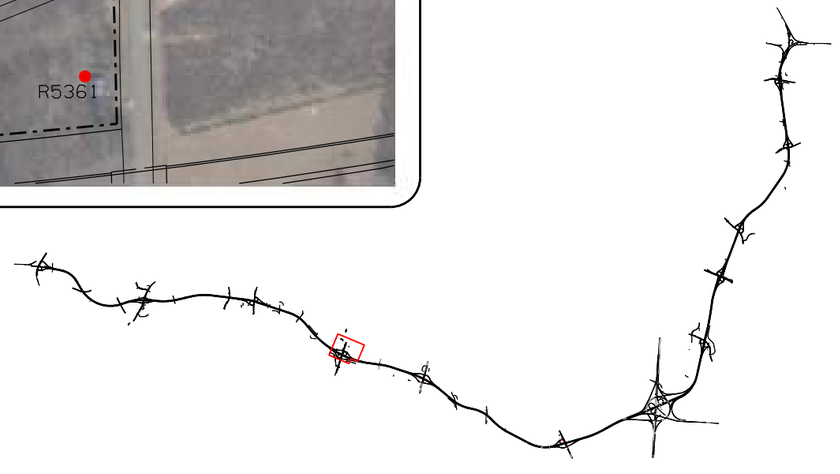
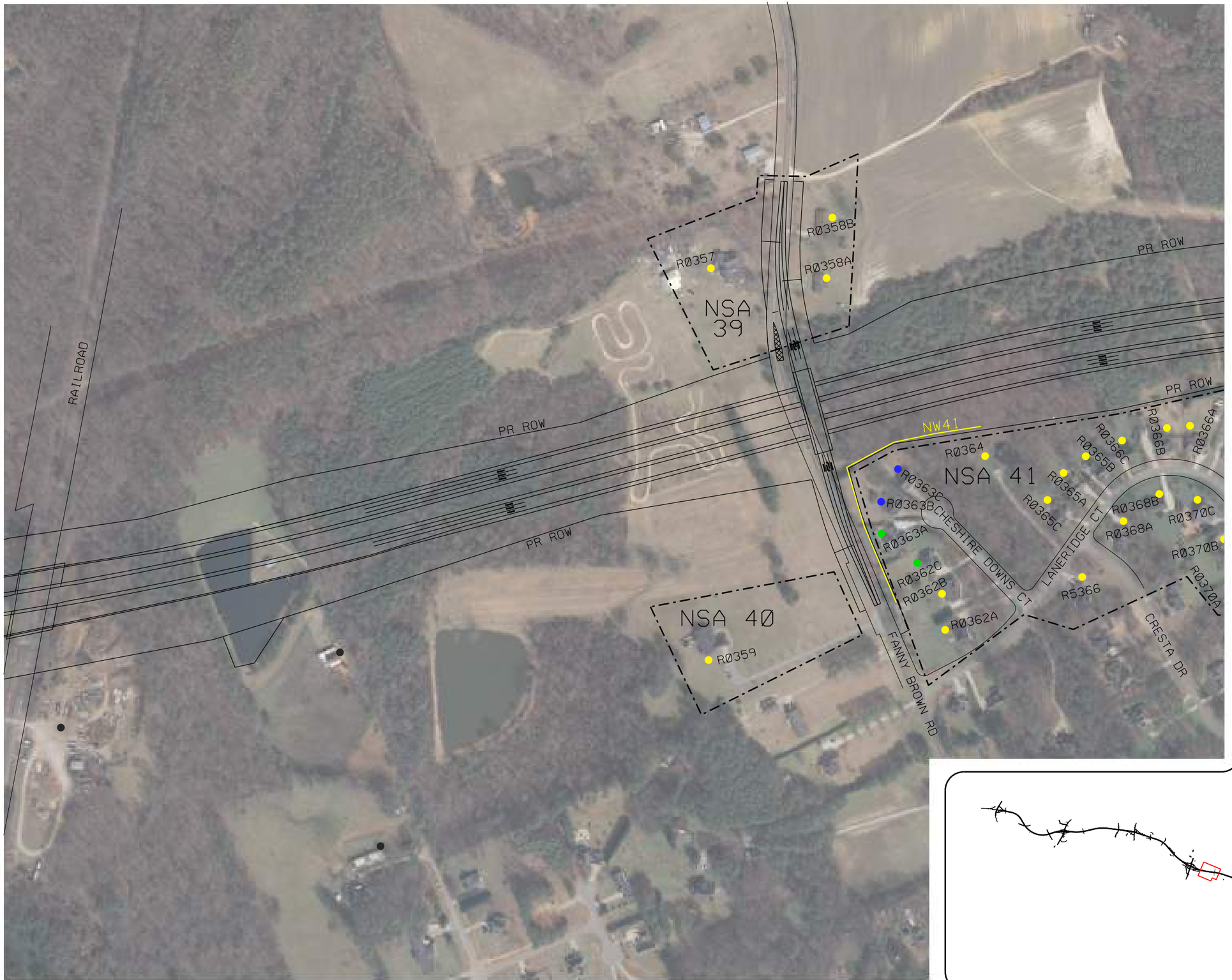
NOISE STUDY AREAS EXHIBIT 2.19

DECEMBER 2017

KEY MAP



OPPORTUNITY LN
W ALLEN ST
OAKVALE ST
FAYETTEVILLE RD/US-401
PR ROW
PR ROW
PR ROW
NSA 36
NSA 33
NSA 37
R0321B
R0322B
R0322A
R0321A
R0319B
R0320B
R0319A
R0320A
R0316
R0315B
R0313B
R0313A
R0315A
R0317A
R0318A
R0318B
R0317B
R0312B
R0314B
R0314A
R0312A
R0311B
R0311A
R0309A
R0309B
R0310
R0308
R0307B
R5358
R5357
R5356
R5354
R5351
R5359
R5360
R5355
R5352
R5353
R1649B
R1649A
R5365
R5364
R5363
R5361



COMPLETE 540

TRIANGLE EXPRESSWAY SOUTHEAST EXTENSION
WAKE AND JOHNSTON COUNTIES
STIP R-2721, R-2828 AND R-2829

0 100' 200' 300'

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= UNLIKELY NOISE WALL

NOISE STUDY AREAS EXHIBIT 2.20

DECEMBER 2017

KEY MAP



COMPLETE 540

TRIANGLE EXPRESSWAY SOUTHEAST EXTENSION
WAKE AND JOHNSTON COUNTIES
STIP R-2721, R-2828 AND R-2829

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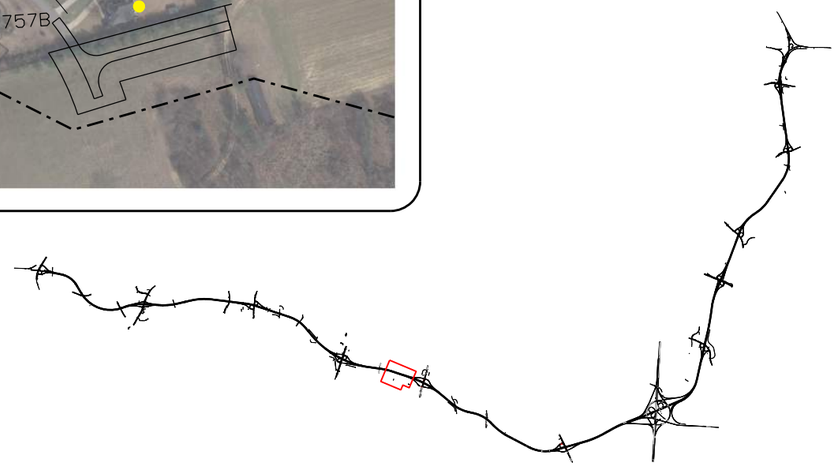
NOISE STUDY AREAS
EXHIBIT 2.21

DECEMBER 2017

KEY MAP



NSA 43
NSA 42
NSA 41
NW43
NW41
PR ROW
PR ROW
ROLLING FARM DR
TROTTER DR
R0405
R0404
R1762B
R1762A
R1759
R1760B
R1763
R1760A
R1761
R0389C
R0389B
R0389A
R0388A
R0388B
R0387B
R0387A
R0390A
R0390B
R0391A
R0391B
R0392A
R0392B
R0393B
R0393A
R0393C
R0366A
R0367B
R0367A
R0367C
R0370C
R0370B
R0370A
R0371
R0375B
R0376C
R0375A
R0376B
R0376A
R0377A
R0377B
R0377C
R0378B
R0378A
R0378C
R1758B
R1758A
R1758C
R1757B
R1757A
R1756B
R1756A
R1755A
R1755B
R0381A
R0381B
R0380A
R0380B
R0379A
R0379B
R0379C
R0383A
R0383B

COMPLETE 540

TRIANGLE EXPRESSWAY SOUTHEAST EXTENSION
WAKE AND JOHNSTON COUNTIES
STIP R-2721, R-2828 AND R-2829

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NOISE STUDY AREAS EXHIBIT 2.22

DECEMBER 2017

OLD STAGE RD

PR ROW

PR ROW

NSA 42

NSA 45

R0420A

R0420B

R0420C

R0419A

R0419B

R0426

R0427

R0428

R0429

R0430

KEY MAP

COMPLETE 540

TRIANGLE EXPRESSWAY SOUTHEAST EXTENSION
WAKE AND JOHNSTON COUNTIES
STIP R-2721, R-2828 AND R-2829

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NOISE STUDY AREAS
EXHIBIT 2.23

DECEMBER 2017

HOLLAND CHURCH RD

NSA 44

NSA 43

R0411A R0411B R0412A R0412B R0413 R0414 R0409A R0409B R0408 R0407A R0407B R0407C R0406A R0406B R0406C R0405 R0404 R5367 R5368 R5369 R5370 R5371 R5372

ROLLING FARM DR

PR ROW

PR ROW

OLD STAGE RD

KEY MAP

COMPLETE 540

TRIANGLE EXPRESSWAY SOUTHEAST EXTENSION
WAKE AND JOHNSTON COUNTIES
STIP R-2721, R-2828 AND R-2829

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NOISE STUDY AREAS
EXHIBIT 2.24

DECEMBER 2017

HOLLAND CHURCH ROAD
NSA 46
R5374
R5373
NSA 47
R0486
R5386
R5377
R2292
R5375
R5376
PR ROW
NW49-1
NSA 49

KEY MAP

COMPLETE 540

TRIANGLE EXPRESSWAY SOUTHEAST EXTENSION
WAKE AND JOHNSTON COUNTIES
STIP R-2721, R-2828 AND R-2829

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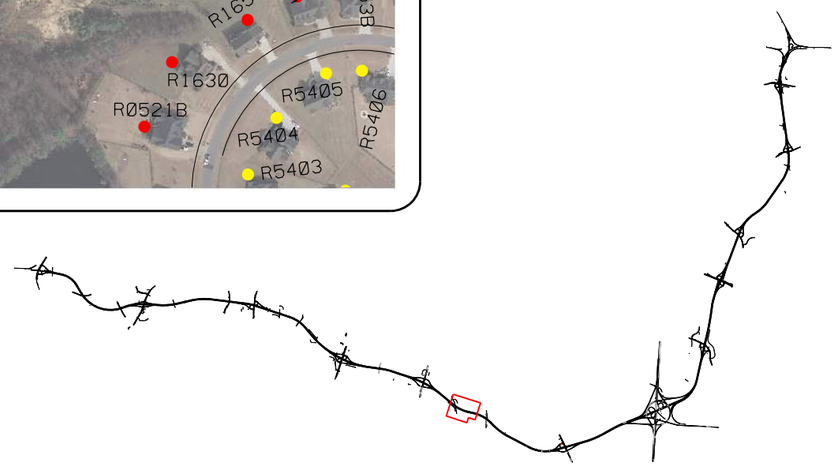
NOISE STUDY AREAS EXHIBIT 2.25

DECEMBER 2017

NSA 47
NSA 50
NSA 49
NSA 48
R5375
R5376
R5377
R5386
R5387
R5388
R5389
R5390
R5391
R5393
R5392
R2292
R2293
R2294B
R2294A
R1766
R1765
R1764B
R1764A
R1928
R1929
R1767B
R1767A
R1768
R0500A
R0500B
R0502A
R0502B
NEW RIVER CIR
CONTENDER DR
R0497B
R0497A
R0497C
R0498C
R0498A
R0498B
R0499B
R0499A
R0499C
R0501A
R0501B
R0503B
PR ROW
NW50
NW49-1
NW49-2
R1653A
R1653C
R1653B
R1630
R0521B
R5405
R5404
R5403
R5406
R0483B
R0483A
R5379
R5378
HOLLAND CHURCH RD
ASHTON HOLLOW DR
R5380
R5381
R5382
R5383
R5384
R5385
R5624
R5625
R5626
R5627
R5628
R5629

KEY MAP



COMPLETE 540

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WAKE AND JOHNSTON COUNTIES
STIP R-2721, R-2828 AND R-2829

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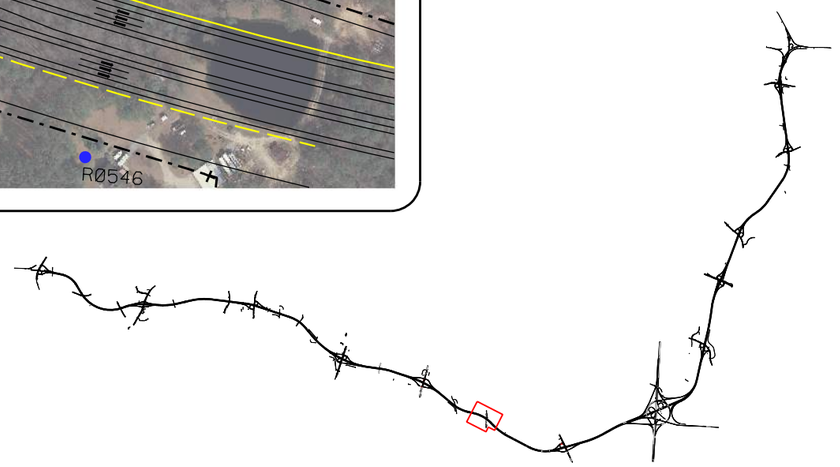
=IMPACTED / BENEFITED
=IMPACTED / NOT BENEFITED
=NOT NOISE SENSITIVE
=ACQUIRED
=NOISE STUDY AREA
=LIKELY NOISE WALL
=UNLIKELY NOISE WALL

NOISE STUDY AREAS EXHIBIT 2.26

DECEMBER 2017

KEY MAP



NSA 49
NSA 50
NSA 51
NSA 52
NSA 53
CAROLINA MARLIN CT
NEW RIVER CIR
CONTENDER DR
SAULS RD
AUTUMN FIELD DR
TAVERNIER KNOLL LN
DUVAL HILL ST
HUNTWYCK DR
SCHOOL R0543
PLACE OF WORSHIP R0541
COMMUNITY GARDEN RD
PR ROW
NW50
NW49.2
NW52
NW53

COMPLETE 540

TRIANGLE EXPRESSWAY SOUTHEAST EXTENSION
WAKE AND JOHNSTON COUNTIES
STIP R-2721, R-2828 AND R-2829

0 100' 200' 300'

LEGEND

- R21 = NOISE RECEPTOR
- = NOT IMPACTED / NOT BENEFITED
- = NOT IMPACTED / BENEFITED
- = IMPACTED / BENEFITED
- = IMPACTED / NOT BENEFITED
- = NOT NOISE SENSITIVE
- = ACQUIRED
- = NOISE STUDY AREA
- = LIKELY NOISE WALL
- = UNLIKELY NOISE WALL

NOISE STUDY AREAS EXHIBIT 2.27

DECEMBER 2017

NSA 53

NSA 52

NW52

NW53

PR ROW

PR ROW

HUNTWYCK DR

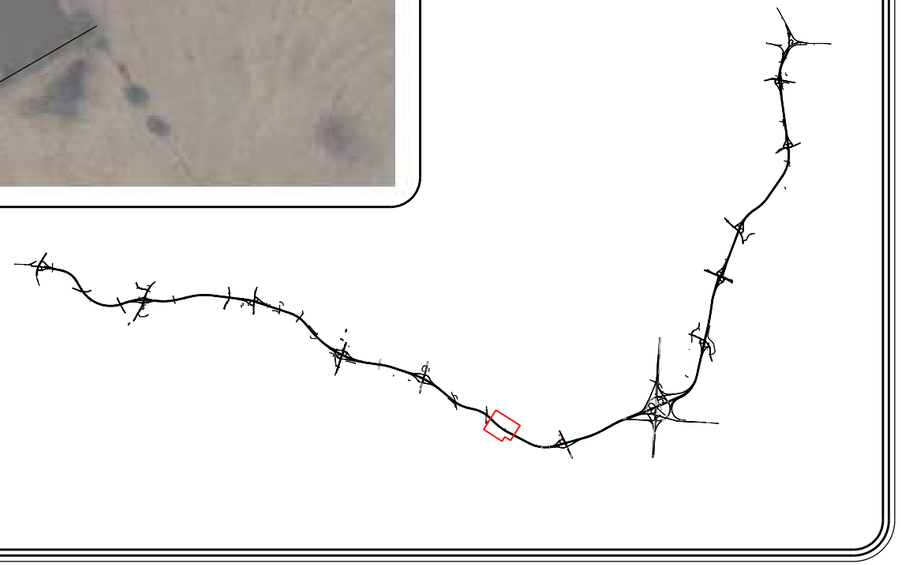
LASSITER FARM RD

JOE LEACH RD

SHANNONDALE DR

COMMUNUTY GARDEN RD

R0549B R0548B R0548A R0549A R0550 R0551B R0551A R0552 R0553 R0555C R0555B R0554A R0554B R0555A R0565B R0565A R5431 R5432 R5433 R0576A R0576B R0577C R0577B R0577A R0564C R0564B R0564A R0563A R0563B R1780C R1780B R1780A R0558B R0559B R0558A R0557A R0556C R0556B R0556A R0557B R0559A R0559C R1781C R1781B R1781A R1782B R1782A R0560B R0560A R0562 R0583B R0583A R0582B R0582A R1785C R1785B R1785A R1784A R1784B R1783B R1783C R1783A R0544B R0546 R5430



COMPLETE 540

TRIANGLE EXPRESSWAY SOUTHEAST EXTENSION
WAKE AND JOHNSTON COUNTIES
STIP R-2721, R-2828 AND R-2829

0 100' 200' 300'

LEGEND

R21 = NOISE RECEPTOR
= NOT IMPACTED / NOT BENEFITED
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= IMPACTED / NOT BENEFITED
= NOT NOISE SENSITIVE
= ACQUIRED
= NOISE STUDY AREA
= LIKELY NOISE WALL
= UNLIKELY NOISE WALL

NOISE STUDY AREAS
EXHIBIT 2.28

DECEMBER 2017

NSA 55
NSA 54
R5440
R5441
R5442
R5443
R0641C
R0642C
R0642A
R0641B
R0642B
CLEE CIR
R0643
R0641A
R5439
R0637
R5438
R0638
NW55-1
NW54
NW53
PR ROW
PR ROW
PR ROW
R1632
R0646
R0644
R0647
R0645A
R0645B
JORDAN RD
R0650A
R0649B
R0650B
R0649A
R0650C
R0648B
R5437
POND TO BE DRAINED

KEY MAP

COMPLETE 540

TRIANGLE EXPRESSWAY SOUTHEAST EXTENSION
WAKE AND JOHNSTON COUNTIES
STIP R-2721, R-2828 AND R-2829

0 100' 200' 300'

N

LEGEND

- R21 = NOISE RECEPTOR
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- = NOT NOISE SENSITIVE
- × = ACQUIRED
- = NOISE STUDY AREA
- = LIKELY NOISE WALL
- = UNLIKELY NOISE WALL

NOISE STUDY AREAS EXHIBIT 2.29

DECEMBER 2017

NSA 55

NSA 54

GRISSOM FARM RD

WOODBREK DR

TREKWOOD DR

UPCHURCH WOOD

JORDAN RD

PR ROW

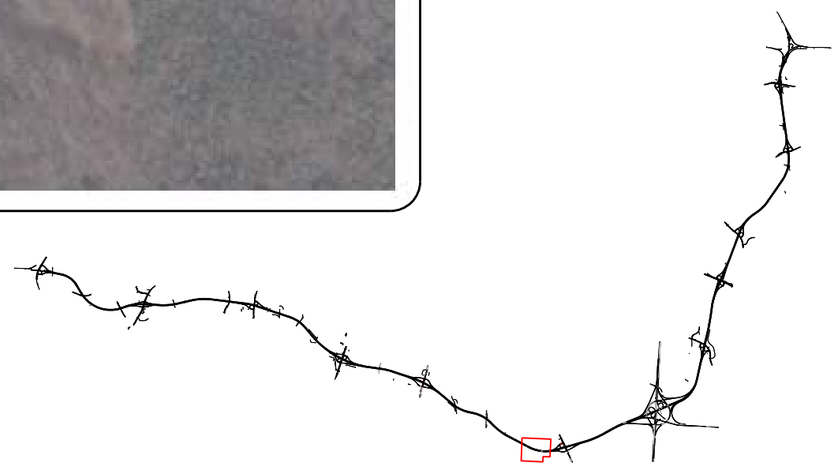
NW55-1

NW55-2

NW54

R1632 R0637 R0638 R0639 R0638 R0641A R0641B R0641C R0642A R0642B R0642C R0643 R0644 R0645A R0645B R0646 R0647 R0648A R0648B R0649A R0649B R0650A R0650B R0650C R0652A R0652B R2279 R2280 R2281 R2282A R2282B R2283 R2284A R2284B R2285A R2285B R5434 R5435 R5436 R5437 R5438 R5439 R5440 R5441 R5442 R5443 R5444 R5445 R5446 R5447 R5448 R5449 R5450 R5451 R5452 R5453 R5454 R5455 R0733A R0737A R0738 R0745B R0746A R0746B R0746C R0747A R0747B R0747C R0747D R0747E

KEY MAP



COMPLETE 540

TRIANGLE EXPRESSWAY SOUTHEAST EXTENSION
WAKE AND JOHNSTON COUNTIES
STIP R-2721, R-2828 AND R-2829

0 100' 200' 300'

LEGEND

- R21 = NOISE RECEPTOR
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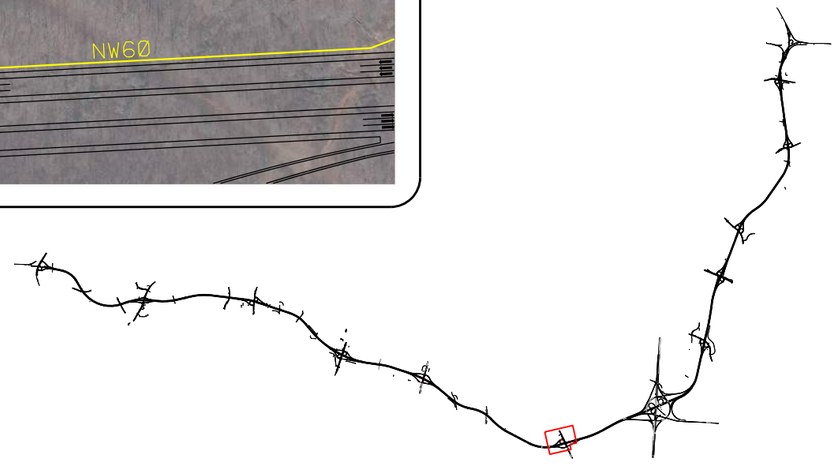
- = IMPACTED / NOT BENEFITED
- = NOT NOISE SENSITIVE
- = ACQUIRED
- = NOISE STUDY AREA
- = LIKELY NOISE WALL
- = UNLIKELY NOISE WALL

NOISE STUDY AREAS EXHIBIT 2.30

DECEMBER 2017

KEY MAP



COMPLETE 540

TRIANGLE EXPRESSWAY SOUTHEAST EXTENSION
WAKE AND JOHNSTON COUNTIES
STIP R-2721, R-2828 AND R-2829

0 100' 200' 300'

LEGEND

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= IMPACTED / NOT BENEFITED
= NOT NOISE SENSITIVE
= ACQUIRED
= NOISE STUDY AREA
= LIKELY NOISE WALL
= UNLIKELY NOISE WALL

NOISE STUDY AREAS EXHIBIT 2.31

DECEMBER 2017

KEY MAP



NSA 55
NSA 58
NSA 59
NW55-2
NW58
NW60
PR ROW
R0747C
R0745B
R0747A
R0747B
R5457
R5458
R1613
R5459
R0748A
R0748B
R0749A
R0749B
R1614
R5456
R0752A
R0752B
R0753A
R0753B
R0750A
R0750B
R0750C
R1798
R1799
R1800
R0751A
R0751B
R0755
R0756
R0754
R0758A
R0757A
R0758B
R0757B
R0760C
R0759A
R0760A
R0759B
R0760B
R0761A
R0762A
R0762B
R0761B
R0762C
R0765B
R0765A
R0763
R0764
STEVENS OAKS DR
OPEN FIELD DR
CLEVELAND SCHOOL RD
BENSON RD / NC-50

COMPLETE 540

TRIANGLE EXPRESSWAY SOUTHEAST EXTENSION
WAKE AND JOHNSTON COUNTIES
STIP R-2721, R-2828 AND R-2829

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOT IMPACTED / NOT BENEFITED
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=IMPACTED / NOT BENEFITED
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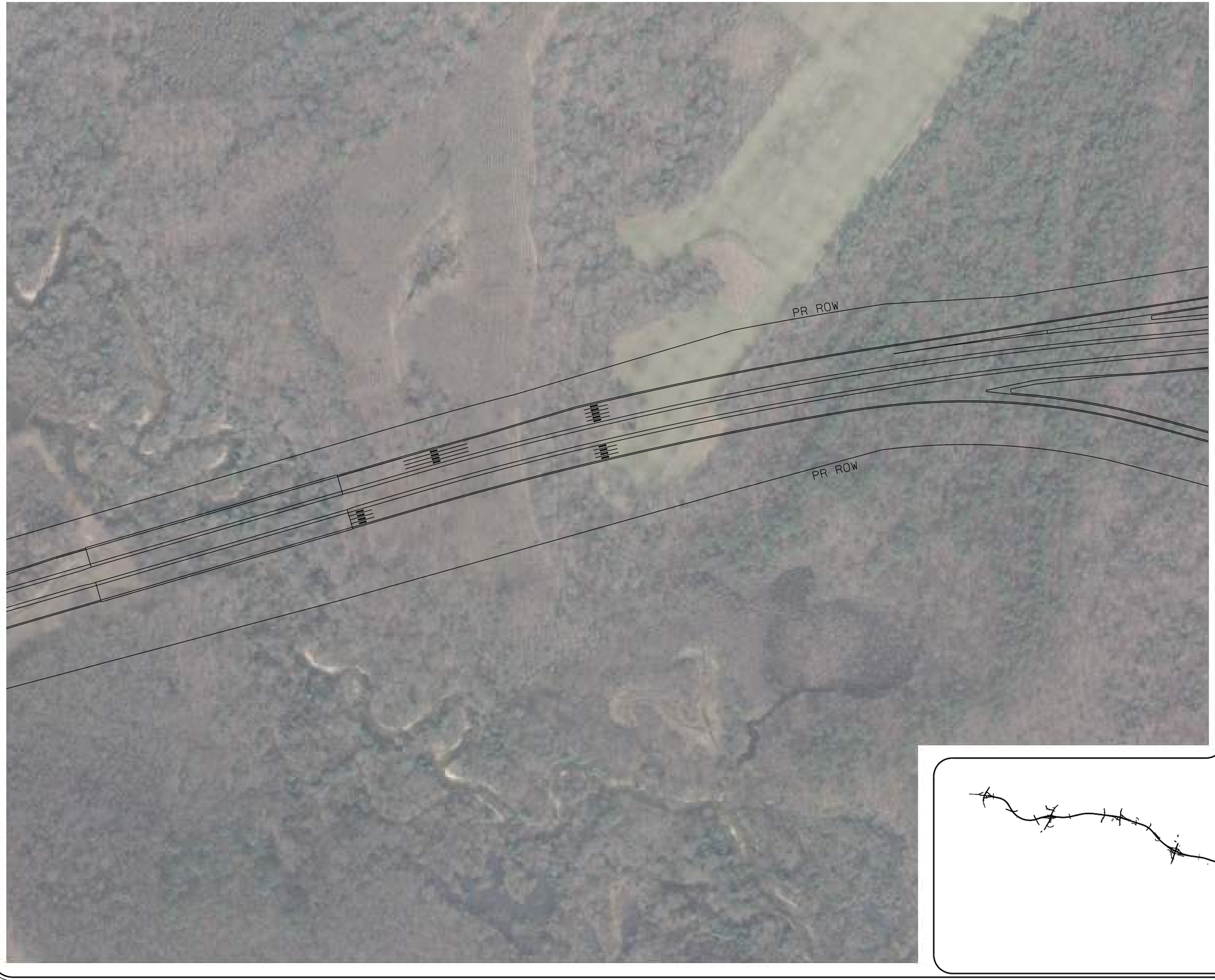
=ACQUIRED
=NOISE STUDY AREA
=LIKELY NOISE WALL
=UNLIKELY NOISE WALL

NOISE STUDY AREAS
EXHIBIT 2.32

DECEMBER 2017

ROLLING FIELD DR
FANTASY MOTH DR
PR ROW
PR ROW
PR ROW
NW60
NSA 60
NSA 61
RECA RD
R5465
R5467
R5468
R5469
R5647
R5648
R5649
R5650
R5651
R5652
R5653
R5654
R5480
R5481
R5493
R5494
R5495
R5491
R5496
R5482
R5483
R5476
R5470
R5492
R5484
R5471
R5475
R5477
R5490
R5489
R5488
R5487
R5486
R5485
R5608
R5479
R5478
R5474
R5473
R5472
R0722A
R0722B
R0723B
R0723A
R5497
R5498
R5499

KEY MAP



COMPLETE 540

TRIANGLE EXPRESSWAY SOUTHEAST EXTENSION
WAKE AND JOHNSTON COUNTIES
STIP R-2721, R-2828 AND R-2829

0 100' 200' 300'

LEGEND

R21 = NOISE RECEPTOR
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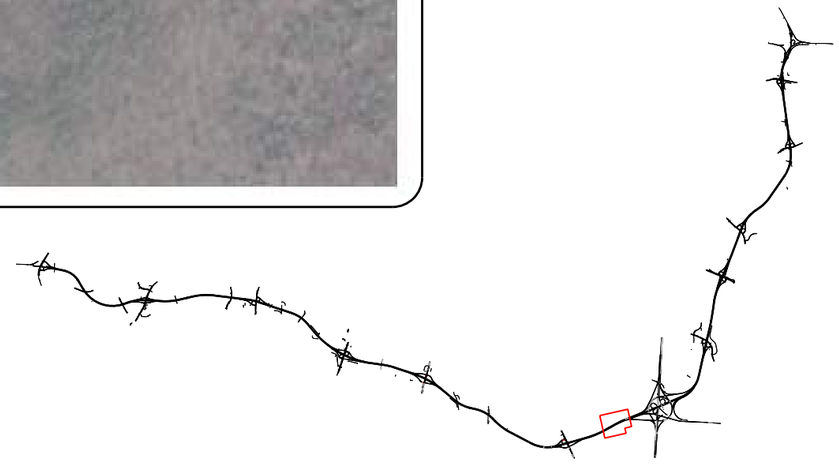
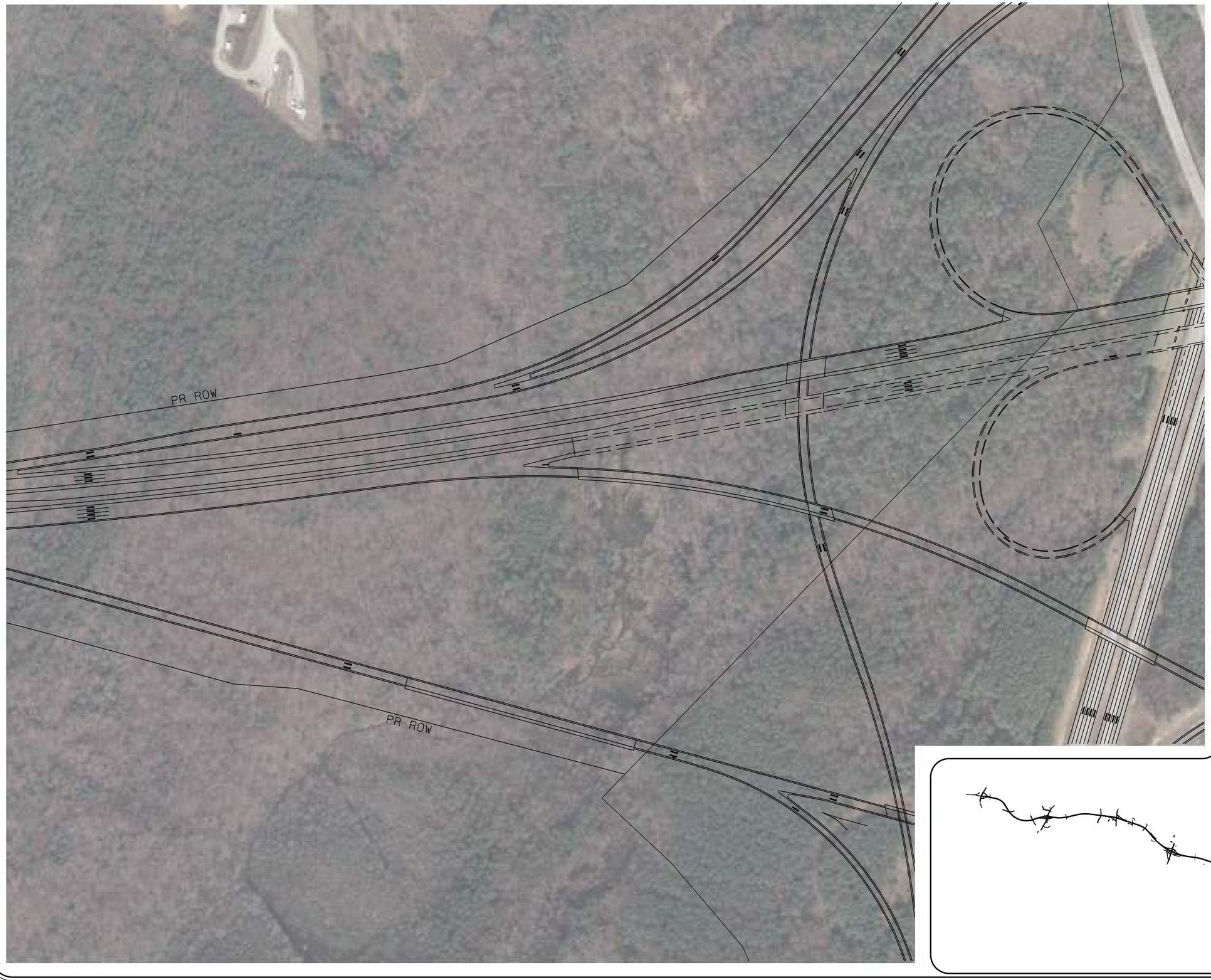
= IMPACTED / NOT BENEFITED
= NOT NOISE SENSITIVE
= ACQUIRED
= NOISE STUDY AREA
= LIKELY NOISE WALL
= UNLIKELY NOISE WALL

NOISE STUDY AREAS
EXHIBIT 2.33

DECEMBER 2017

KEY MAP





COMPLETE 540

TRIANGLE EXPRESSWAY SOUTHEAST EXTENSION
WAKE AND JOHNSTON COUNTIES
STIP R-2721, R-2828 AND R-2829

0 100' 200' 300'

LEGEND

R21 = NOISE RECEPTOR
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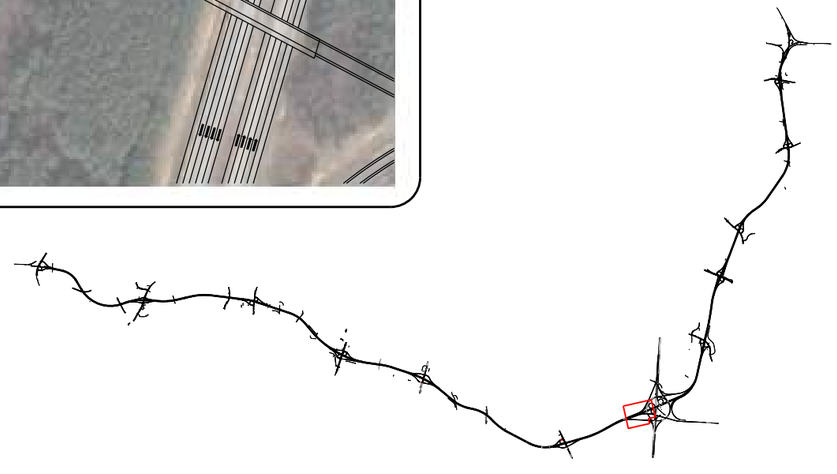
= IMPACTED / BENEFITED
= IMPACTED / NOT BENEFITED
= NOT NOISE SENSITIVE
= ACQUIRED
= NOISE STUDY AREA
= LIKELY NOISE WALL
= UNLIKELY NOISE WALL

NOISE STUDY AREAS
EXHIBIT 2.34

DECEMBER 2017

KEY MAP





COMPLETE 540

TRIANGLE EXPRESSWAY SOUTHEAST EXTENSION
WAKE AND JOHNSTON COUNTIES
STIP R-2721, R-2828 AND R-2829

0 100' 200' 300'

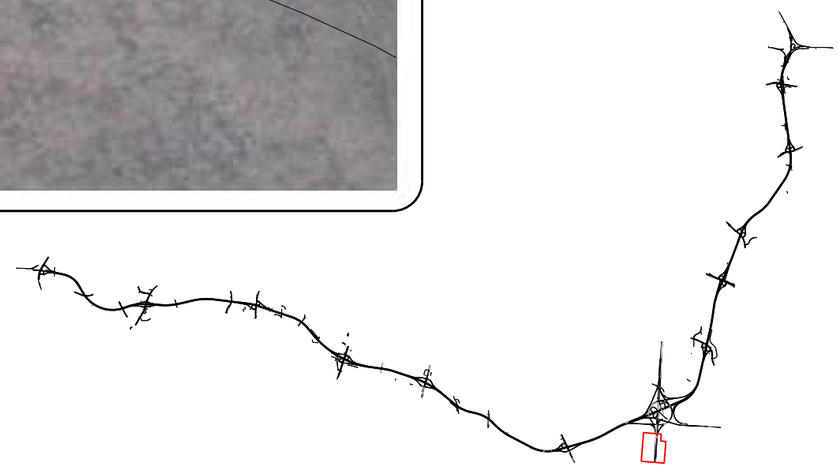
LEGEND

- R21 = NOISE RECEPTOR
- = NOT IMPACTED / NOT BENEFITED
- = NOT IMPACTED / BENEFITED
- = IMPACTED / BENEFITED
- = IMPACTED / NOT BENEFITED
- = NOT NOISE SENSITIVE
- = ACQUIRED
- = NOISE STUDY AREA
- = LIKELY NOISE WALL
- = UNLIKELY NOISE WALL

NOISE STUDY AREAS
EXHIBIT 2.35

DECEMBER 2017

KEY MAP



COMPLETE 540

TRIANGLE EXPRESSWAY SOUTHEAST EXTENSION
WAKE AND JOHNSTON COUNTIES
STIP R-2721, R-2828 AND R-2829

0 100' 200' 300'

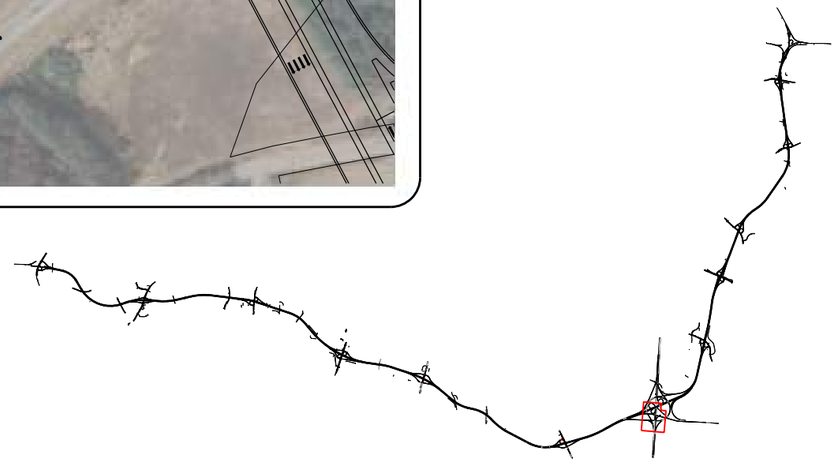
LEGEND

R21 = NOISE RECEPTOR
= NOT IMPACTED / NOT BENEFITED
= NOT IMPACTED / BENEFITED
= IMPACTED / BENEFITED
= IMPACTED / NOT BENEFITED
= NOT NOISE SENSITIVE
= ACQUIRED
= NOISE STUDY AREA
= LIKELY NOISE WALL
= UNLIKELY NOISE WALL

NOISE STUDY AREAS
EXHIBIT 2.36

DECEMBER 2017

KEY MAP



COMPLETE 540

TRIANGLE EXPRESSWAY SOUTHEAST EXTENSION
WAKE AND JOHNSTON COUNTIES
STIP R-2721, R-2828 AND R-2829

0 100' 200' 300'

LEGEND

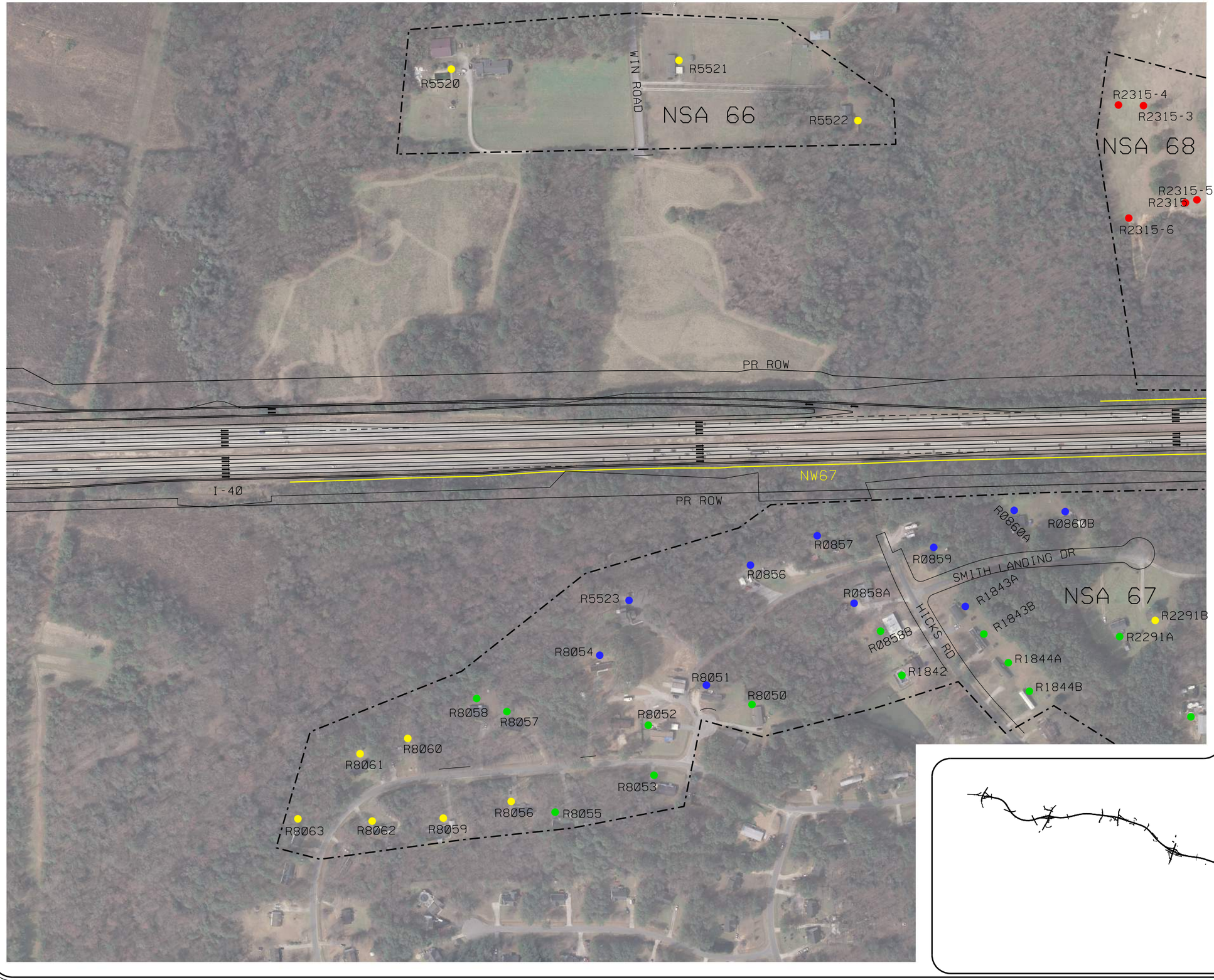
R21 = NOISE RECEPTOR
= NOT IMPACTED / NOT BENEFITED
= NOT IMPACTED / BENEFITED
= IMPACTED / BENEFITED
= IMPACTED / NOT BENEFITED
= NOT NOISE SENSITIVE
= ACQUIRED
= NOISE STUDY AREA
= LIKELY NOISE WALL
= UNLIKELY NOISE WALL

NOISE STUDY AREAS
EXHIBIT 2.37

DECEMBER 2017

R0804B
R0804A
R0804C
R0805
NSA 64
NEW BETHEL CHURCH ROAD
PR ROW
R0807
R0806
R0809A
R5508
R0809B
R0808A
R0811A
R0808B
NSA 65
R5509
R5510
R0811B
R5519
R5517
R5511
R5518
R5513
R5512
R5514
R5516
R5515
R0816A
PR ROW

KEY MAP



COMPLETE 540

TRIANGLE EXPRESSWAY SOUTHEAST EXTENSION
WAKE AND JOHNSTON COUNTIES
STIP R-2721, R-2828 AND R-2829

0 100' 200' 300'

LEGEND

R21 = NOISE RECEPTOR
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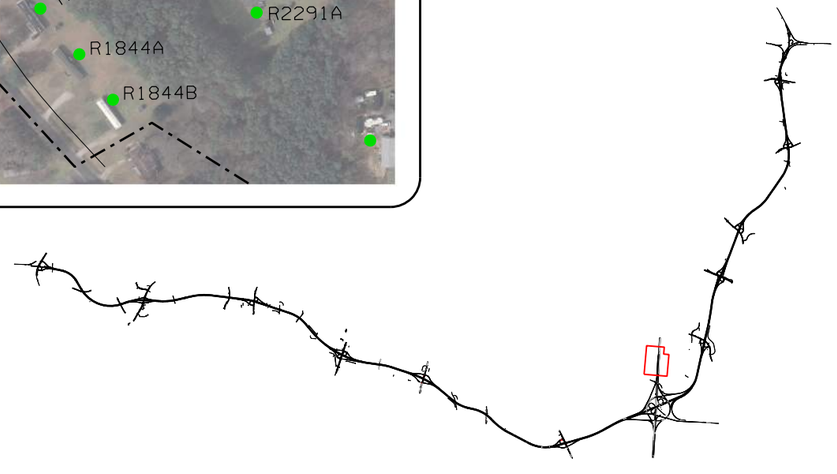
= NOT IMPACTED / BENEFITED
= IMPACTED / BENEFITED
= IMPACTED / NOT BENEFITED
= NOT NOISE SENSITIVE
× = ACQUIRED
= NOISE STUDY AREA
= LIKELY NOISE WALL
= UNLIKELY NOISE WALL

NOISE STUDY AREAS
EXHIBIT 2.38

DECEMBER 2017

KEY MAP



COMPLETE 540

TRIANGLE EXPRESSWAY SOUTHEAST EXTENSION
WAKE AND JOHNSTON COUNTIES
STIP R-2721, R-2828 AND R-2829

0 100' 200' 300'

LEGEND

R21 = NOISE RECEPTOR
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= NOT IMPACTED / BENEFITED
= IMPACTED / BENEFITED
= IMPACTED / NOT BENEFITED
= NOT NOISE SENSITIVE
= ACQUIRED
= NOISE STUDY AREA
= LIKELY NOISE WALL
= UNLIKELY NOISE WALL

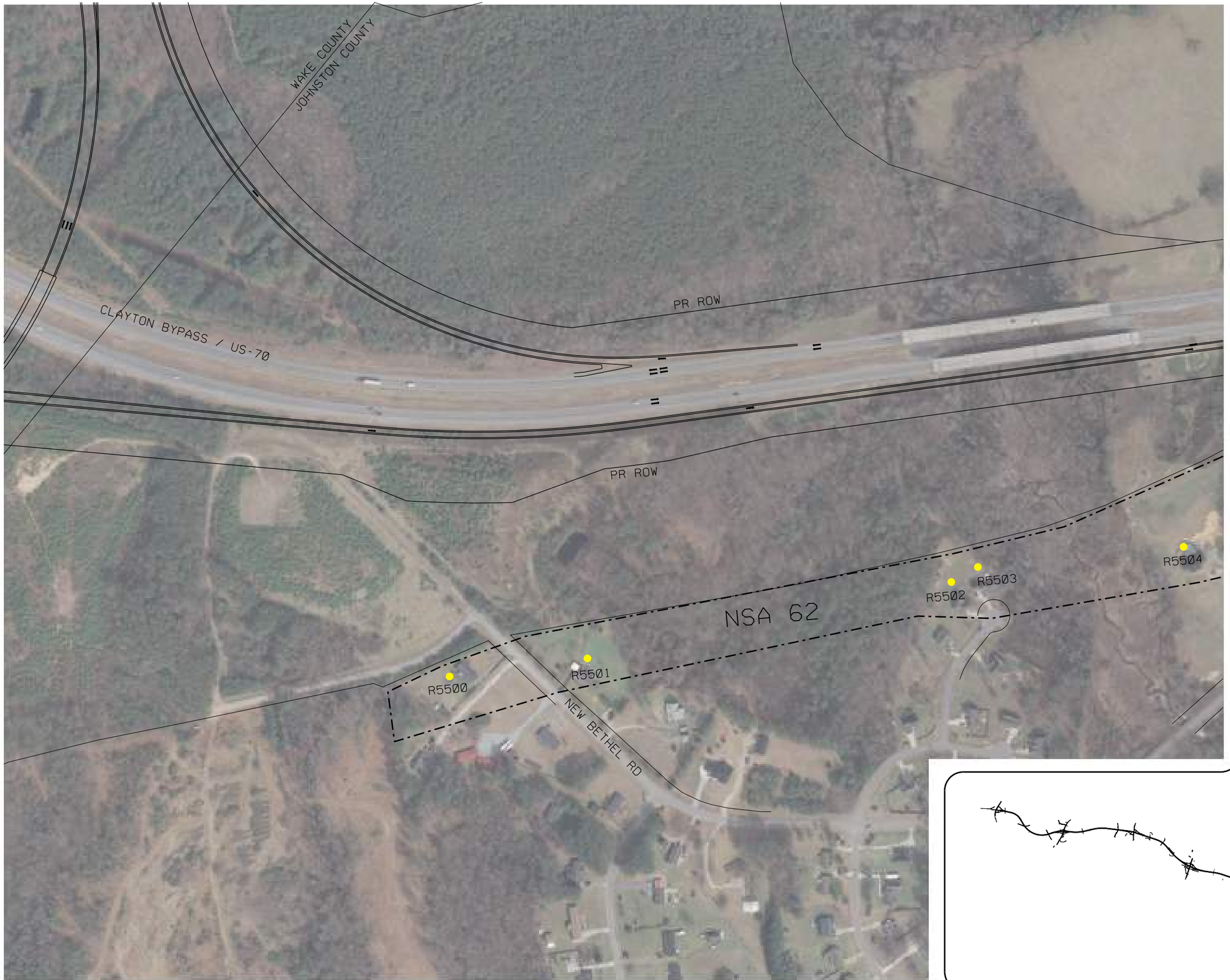
NOISE STUDY AREAS EXHIBIT 2.39

DECEMBER 2017

NSA 68
NSA 67
R2315-2
R2315-1
R2315-6
R2315
R0920
R0924A
R0924B
R0928
R0919B
R0921A
R0921B
R0921C
R0919A
R0917
R0923B
R0923A
R0931A
R0931B
R0916A
R0916B
R0916C
R0918B
R0918A
R0918C
R0922B
R0922A
BATTLEFIELD DR
NW68
I-40
NW67
PR ROW
R5524
R5525
R5528
R5527
R5529
R5526
R5657
R5659
R5655
R5658
R5660
R5656
BOVINE PL
HIGH PASTURE PL

KEY MAP





COMPLETE 540

TRIANGLE EXPRESSWAY SOUTHEAST EXTENSION
WAKE AND JOHNSTON COUNTIES
STIP R-2721, R-2828 AND R-2829

0 100' 200' 300'

N

LEGEND

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- = IMPACTED / BENEFITED
- = IMPACTED / NOT BENEFITED
- = NOT NOISE SENSITIVE
- × = ACQUIRED
- = NOISE STUDY AREA
- = LIKELY NOISE WALL
- = UNLIKELY NOISE WALL

NOISE STUDY AREAS
EXHIBIT 2.40

DECEMBER 2017

KEY MAP





COMPLETE 540

TRIANGLE EXPRESSWAY SOUTHEAST EXTENSION
WAKE AND JOHNSTON COUNTIES
STIP R-2721, R-2828 AND R-2829

0 100' 200' 300'

LEGEND

- R21 = NOISE RECEPTOR
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- = IMPACTED / NOT BENEFITED
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- = NOISE STUDY AREA
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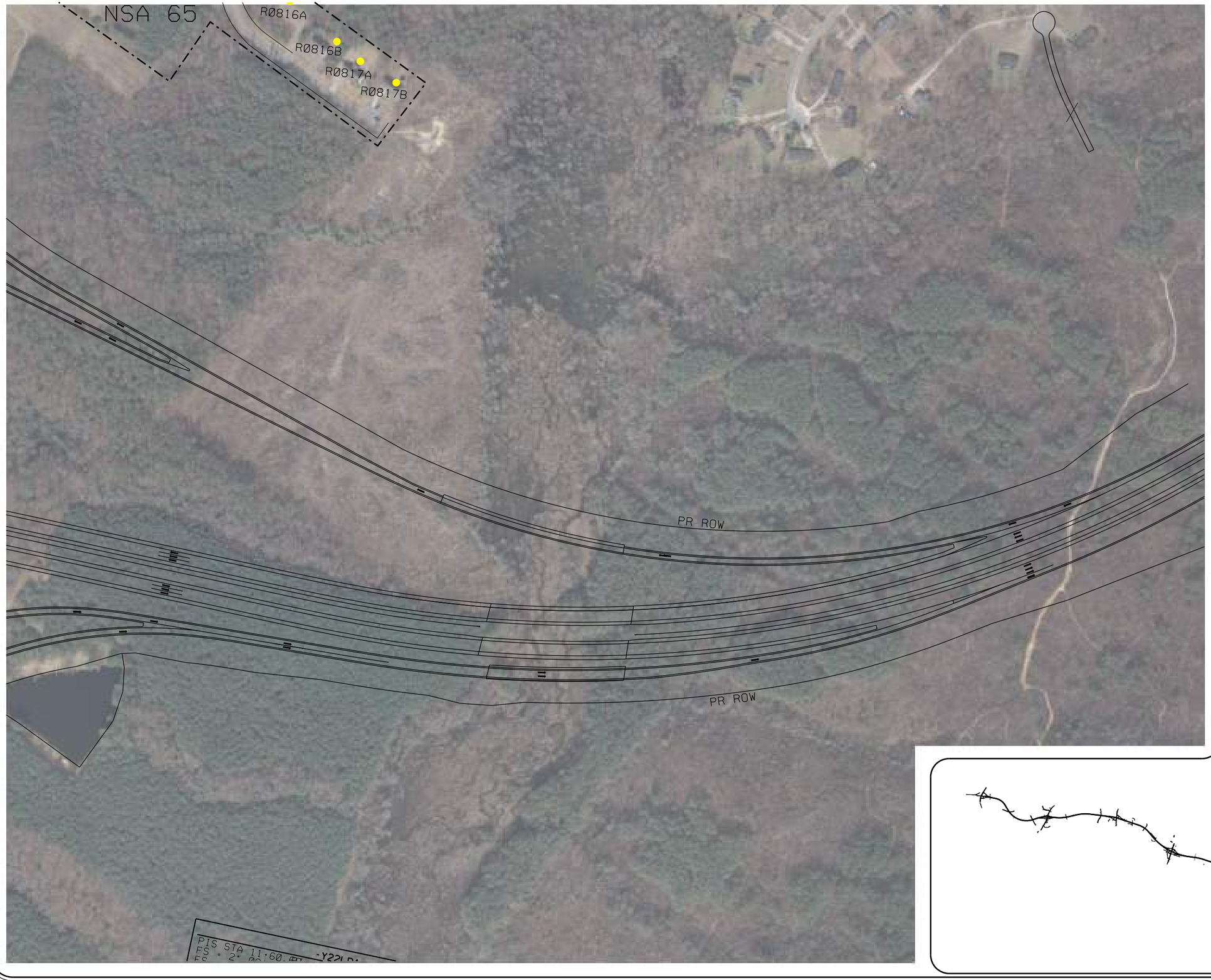
- = UNLIKELY NOISE WALL

NOISE STUDY AREAS EXHIBIT 2.41

DECEMBER 2017

KEY MAP





COMPLETE 540

TRIANGLE EXPRESSWAY SOUTHEAST EXTENSION
WAKE AND JOHNSTON COUNTIES
STIP R-2721, R-2828 AND R-2829

0 100' 200' 300'

LEGEND

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= IMPACTED / BENEFITED
= IMPACTED / NOT BENEFITED
= NOT NOISE SENSITIVE
= ACQUIRED
= NOISE STUDY AREA
= LIKELY NOISE WALL
= UNLIKELY NOISE WALL

NOISE STUDY AREAS EXHIBIT 2.42

DECEMBER 2017

KEY MAP



COMPLETE 540

TRIANGLE EXPRESSWAY SOUTHEAST EXTENSION
WAKE AND JOHNSTON COUNTIES
STIP R-2721, R-2828 AND R-2829

0 100' 200' 300'

LEGEND

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- = NOT IMPACTED / BENEFITED
- = IMPACTED / BENEFITED
- = IMPACTED / NOT BENEFITED
- = NOT NOISE SENSITIVE
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- = LIKELY NOISE WALL
- = UNLIKELY NOISE WALL

NOISE STUDY AREAS
EXHIBIT 2.43

DECEMBER 2017

PR ROW

PR ROW

NSA 69

R5530

R5531

R5532

R5533

R5534

REDPATH DR

HILLINGTON ROAD

KEY MAP

COMPLETE 540

TRIANGLE EXPRESSWAY SOUTHEAST EXTENSION
WAKE AND JOHNSTON COUNTIES
STIP R-2721, R-2828 AND R-2829

0 100' 200' 300'

LEGEND

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- = IMPACTED / BENEFITED
- = IMPACTED / NOT BENEFITED
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- × = ACQUIRED
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- = UNLIKELY NOISE WALL

NOISE STUDY AREAS
EXHIBIT 2.44

DECEMBER 2017

PR ROW
WHITE OAK RD
NSA 71
R0868
R0873
ESCONDIDO FARM ROAD
R5538
R0872
NSA 74
R0871
R1635
PR ROW
PR ROW
PR ROW
PR ROW
NSA 70
R0866A
R0866B
R0864A
R0864B
R0864B

KEY MAP

COMPLETE 540

TRIANGLE EXPRESSWAY SOUTHEAST EXTENSION
WAKE AND JOHNSTON COUNTIES
STIP R-2721, R-2828 AND R-2829

0 100' 200' 300'

LEGEND

R21 = NOISE RECEPTOR
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= ACQUIRED
= NOISE STUDY AREA
= LIKELY NOISE WALL
= UNLIKELY NOISE WALL

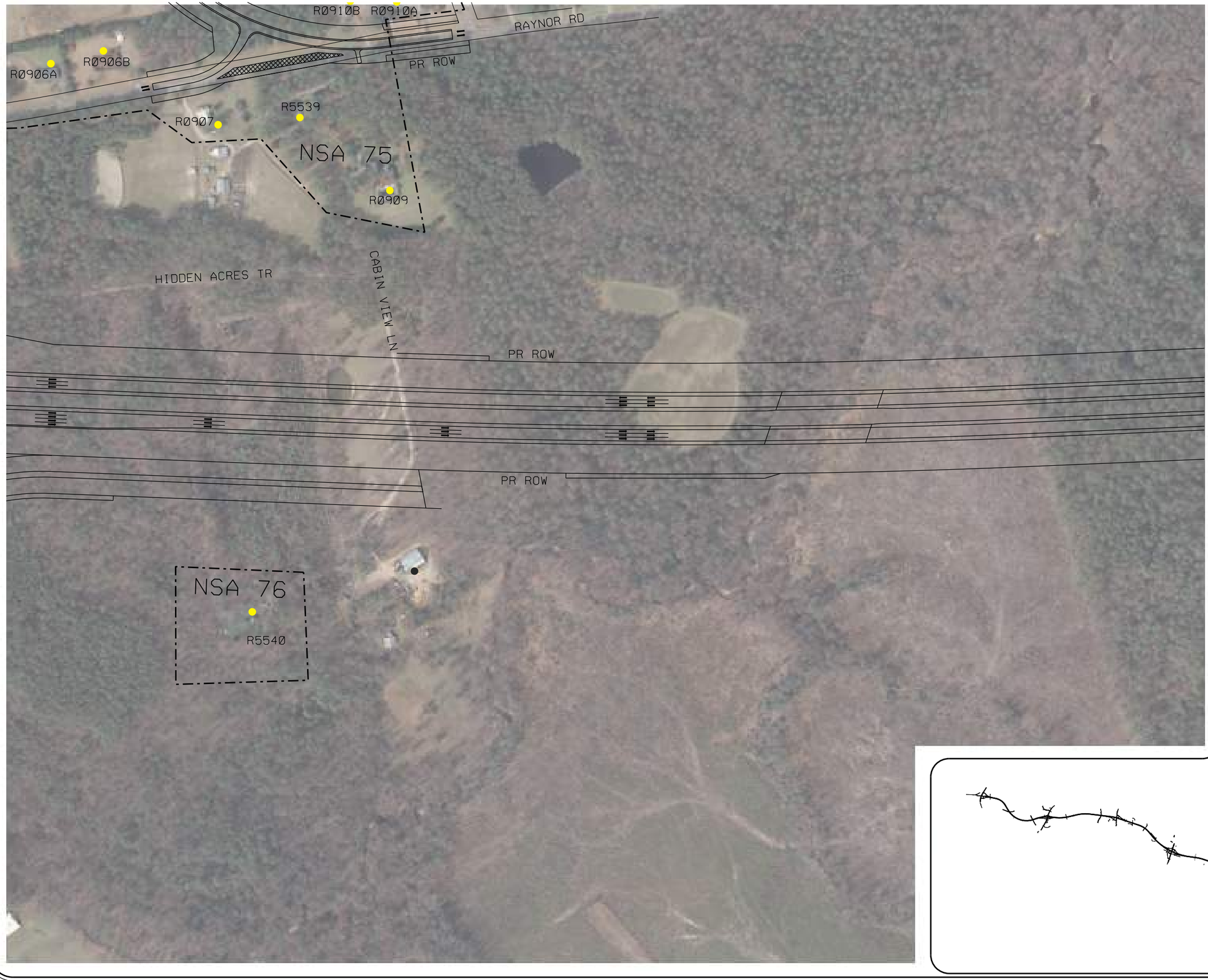
NOISE STUDY AREAS EXHIBIT 2.45

DECEMBER 2017

NSA 73
NSA 75
NSA 72
PLACE OF WORSHIP
OLD CASCADE DR
WHITE OAK RD
TWAIN DR
OLD MEADOWBROOK DR
MUSTARD SEED LN
SANDCASTLE DR
RAYNOR RD
PR ROW
R0893A
R0890A
R0893B
R0890B
R0890C
R0889A
R0894A
R0899A
R0894B
R0899B
R0889B
R0891A
R0895
R0891B
R0894C
R0892A
R0892B
R0888A
R0888B
R0896
R0898
R0897A
R0897B
R0912A
R0912B
R0911
R0910B
R0910A
R0906B
R0906A
R0905
R0907
R5539
R0909
R0881A
R0880A
R0879A
R0881B
R0879B
R0880B
R0877B
R0878
R5535
R5536
R5537
R1636

KEY MAP





COMPLETE 540

TRIANGLE EXPRESSWAY SOUTHEAST EXTENSION
WAKE AND JOHNSTON COUNTIES
STIP R-2721, R-2828 AND R-2829

0 100' 200' 300'

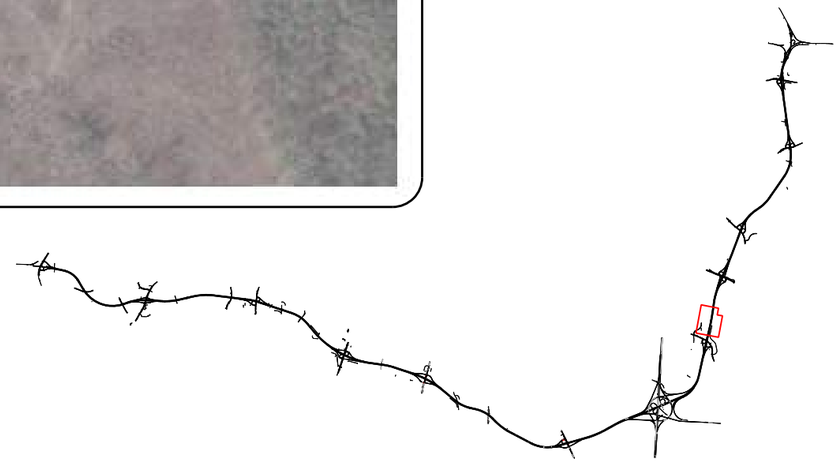
LEGEND

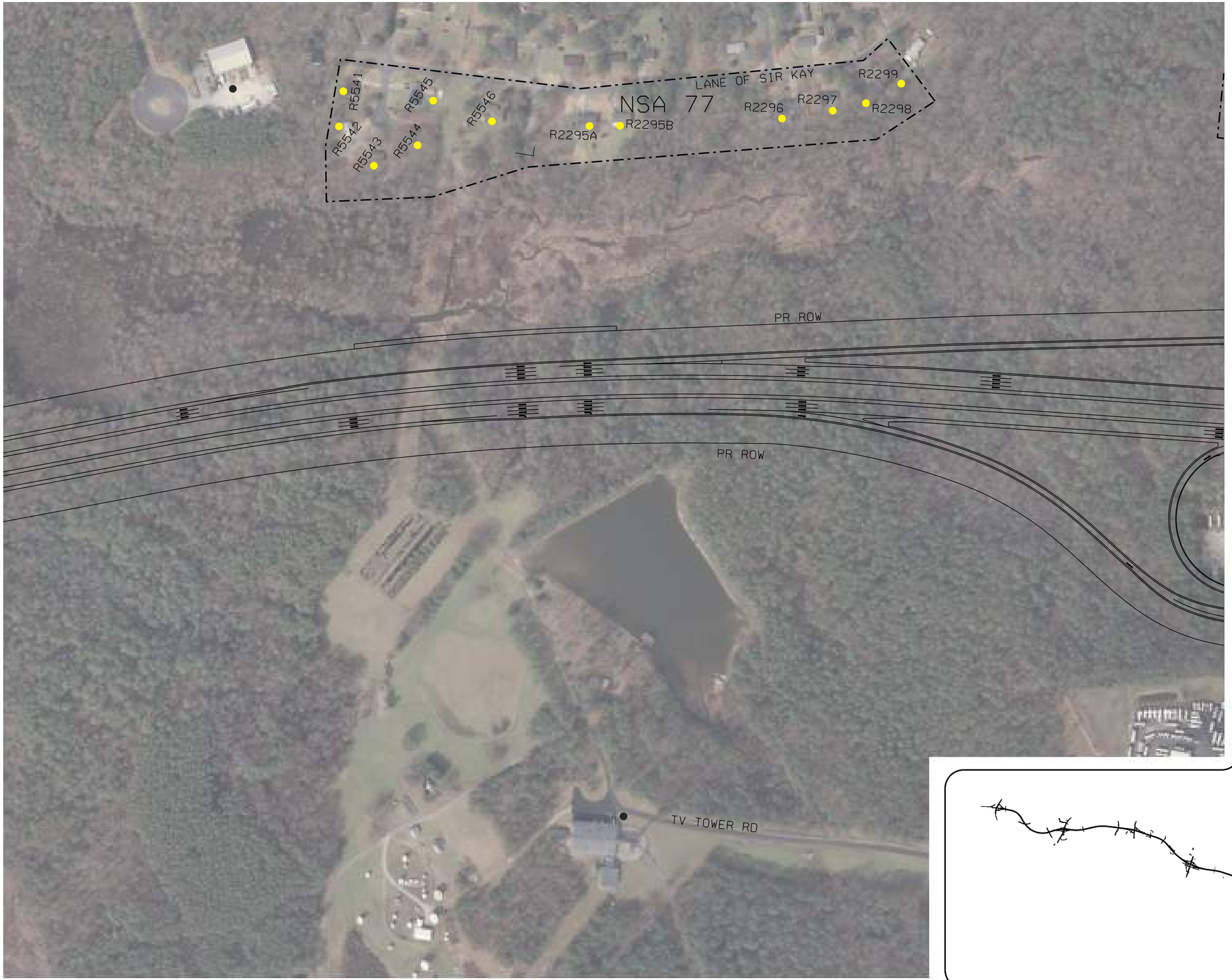
- R21 = NOISE RECEPTOR
- = NOT IMPACTED / NOT BENEFITED
- = NOT IMPACTED / BENEFITED
- = IMPACTED / BENEFITED
- = IMPACTED / NOT BENEFITED
- = NOT NOISE SENSITIVE
- = ACQUIRED
- = NOISE STUDY AREA
- = LIKELY NOISE WALL
- = UNLIKELY NOISE WALL

NOISE STUDY AREAS
EXHIBIT 2.46

DECEMBER 2017

KEY MAP





COMPLETE 540

TRIANGLE EXPRESSWAY SOUTHEAST EXTENSION
WAKE AND JOHNSTON COUNTIES
STIP R-2721, R-2828 AND R-2829

0 100' 200' 300'

LEGEND

R21 = NOISE RECEPTOR
= NOT IMPACTED / NOT BENEFITED
= NOT IMPACTED / BENEFITED
= IMPACTED / BENEFITED
= IMPACTED / NOT BENEFITED
= NOT NOISE SENSITIVE
= ACQUIRED
= NOISE STUDY AREA
= LIKELY NOISE WALL
= UNLIKELY NOISE WALL

NOISE STUDY AREAS EXHIBIT 2.47

DECEMBER 2017

KEY MAP



COMPLETE 540

TRIANGLE EXPRESSWAY SOUTHEAST EXTENSION
WAKE AND JOHNSTON COUNTIES
STIP R-2721, R-2828 AND R-2829

0 100' 200' 300'

LEGEND

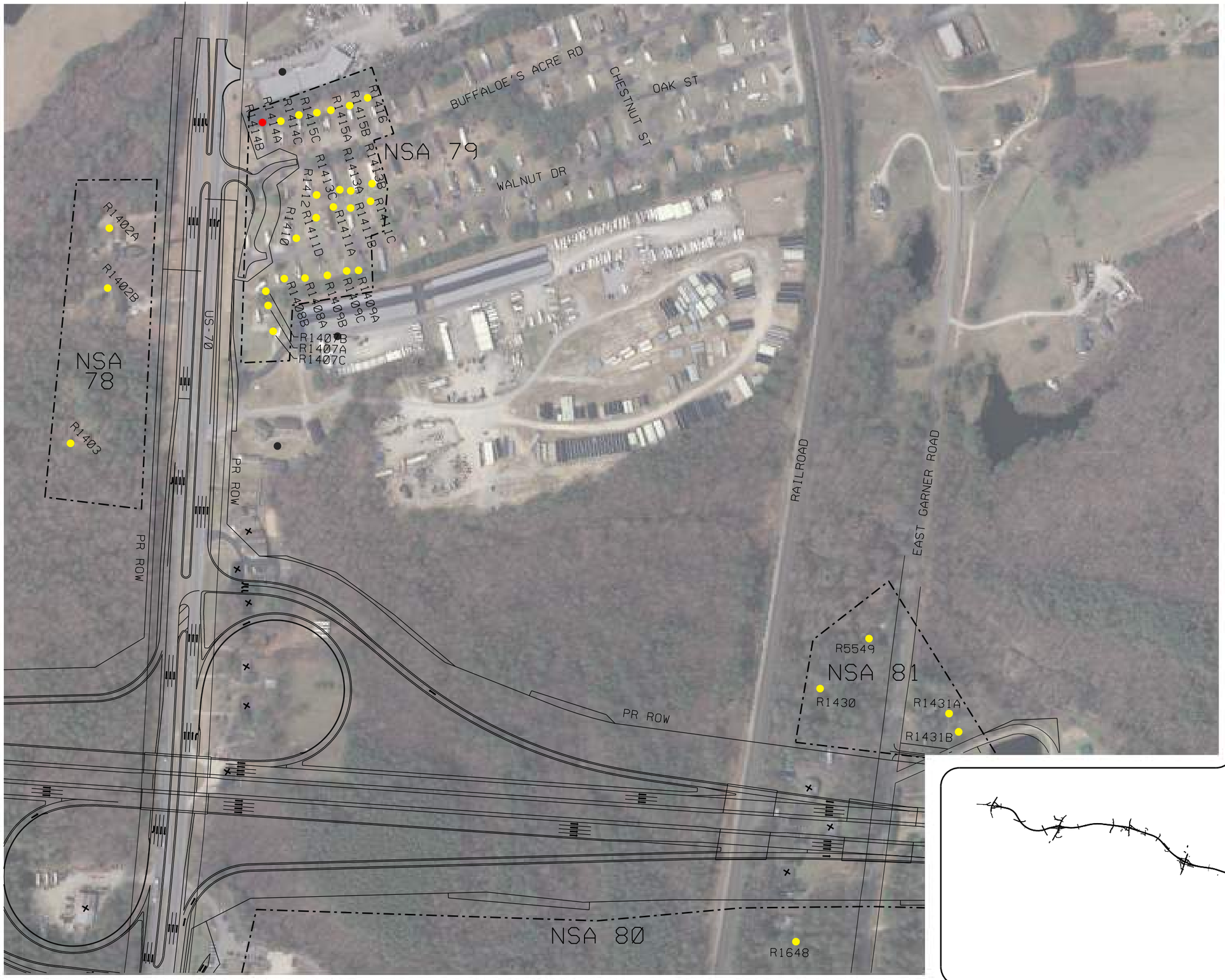
- R21 = NOISE RECEPTOR
- = NOT IMPACTED / NOT BENEFITED
- = NOT IMPACTED / BENEFITED
- = IMPACTED / BENEFITED
- = IMPACTED / NOT BENEFITED
- = NOT NOISE SENSITIVE
- × = ACQUIRED
- = NOISE STUDY AREA
- = LIKELY NOISE WALL
- = UNLIKELY NOISE WALL

NOISE STUDY AREAS
EXHIBIT 2.48

DECEMBER 2017

KEY MAP





COMPLETE 540

TRIANGLE EXPRESSWAY SOUTHEAST EXTENSION
WAKE AND JOHNSTON COUNTIES
STIP R-2721, R-2828 AND R-2829

0 100' 200' 300'

LEGEND

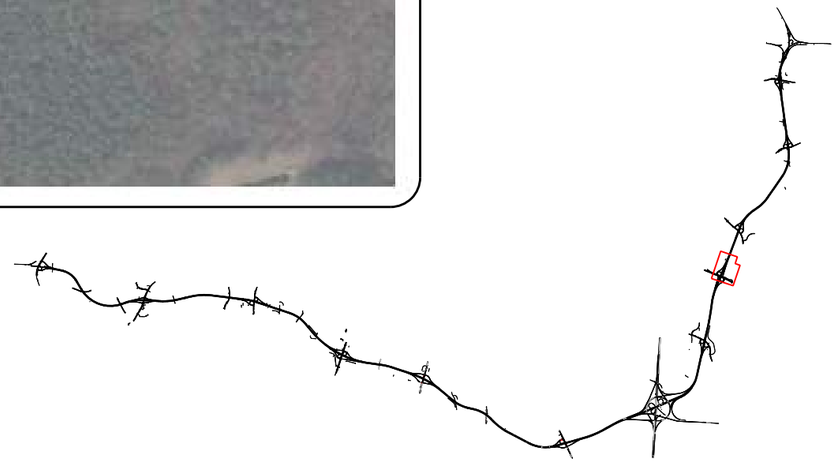
R21 = NOISE RECEPTOR
= NOT IMPACTED / NOT BENEFITED
= NOT IMPACTED / BENEFITED
= IMPACTED / BENEFITED
= IMPACTED / NOT BENEFITED
= NOT NOISE SENSITIVE
= ACQUIRED
= NOISE STUDY AREA
= LIKELY NOISE WALL
= UNLIKELY NOISE WALL

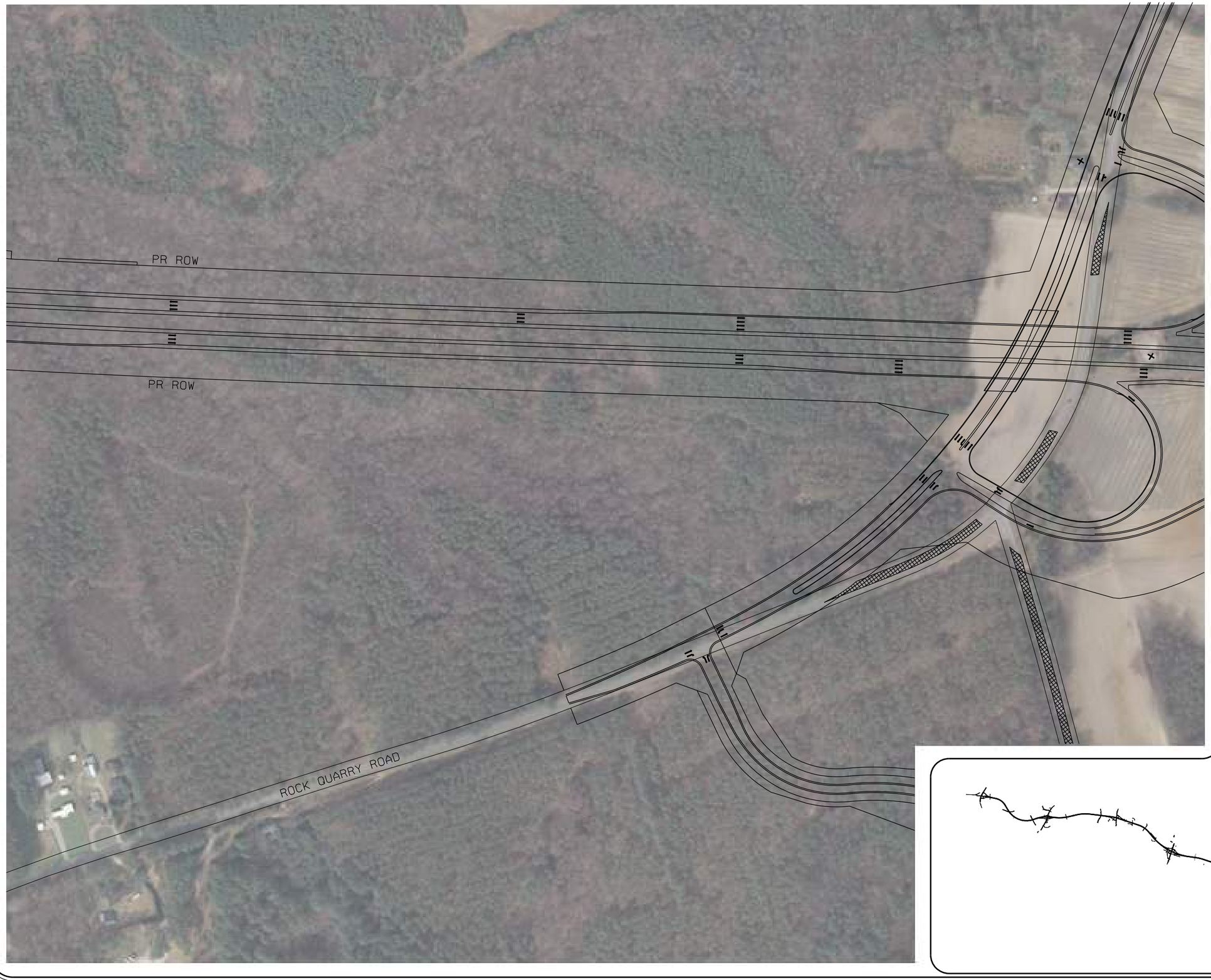
NOISE STUDY AREAS EXHIBIT 2.49

DECEMBER 2017

PR ROW
PR ROW
R5549
NSA 81
R1430
R1431A
R1431B
R1648
R1620
NSA 80
GARNER ROAD
EAST GARNER
R1434
RAILROAD
R5548
R5547
R1435B
R1435A
US 70

KEY MAP





COMPLETE 540

TRIANGLE EXPRESSWAY SOUTHEAST EXTENSION
WAKE AND JOHNSTON COUNTIES
STIP R-2721, R-2828 AND R-2829

0 100' 200' 300'

LEGEND

R21 = NOISE RECEPTOR
= NOT IMPACTED / NOT BENEFITED
= NOT IMPACTED / BENEFITED
= IMPACTED / BENEFITED
= IMPACTED / NOT BENEFITED
= NOT NOISE SENSITIVE
= ACQUIRED
= NOISE STUDY AREA
= LIKELY NOISE WALL
= UNLIKELY NOISE WALL

NOISE STUDY AREAS
EXHIBIT 2.50

DECEMBER 2017

KEY MAP





COMPLETE 540

TRIANGLE EXPRESSWAY SOUTHEAST EXTENSION
WAKE AND JOHNSTON COUNTIES
STIP R-2721, R-2828 AND R-2829

0 100' 200' 300'

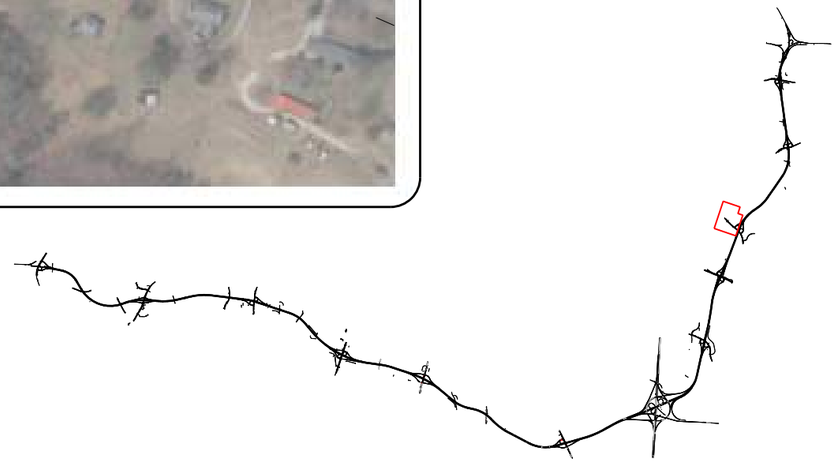
LEGEND

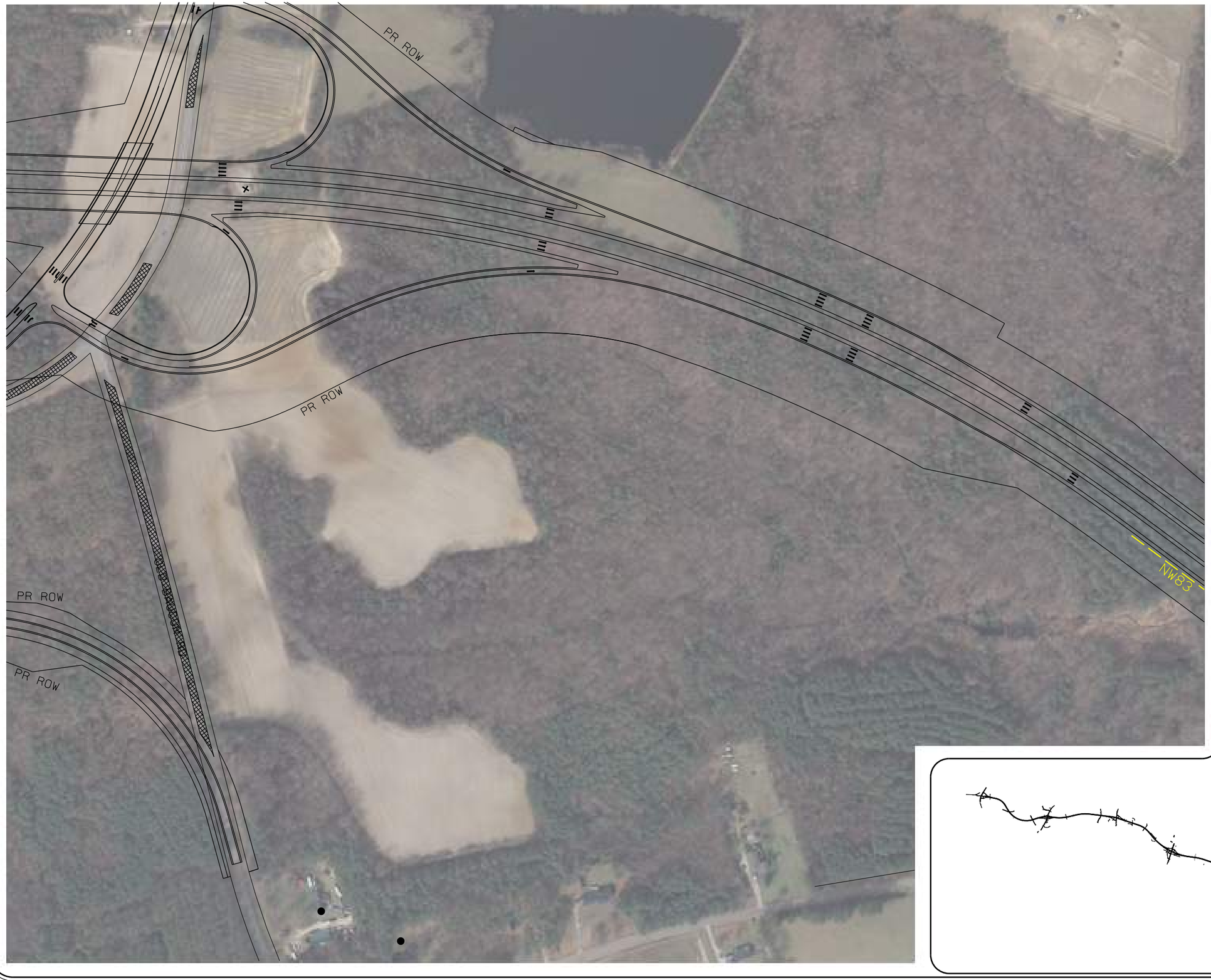
R21 = NOISE RECEPTOR
= NOT IMPACTED / NOT BENEFITED
= NOT IMPACTED / BENEFITED
= IMPACTED / BENEFITED
= IMPACTED / NOT BENEFITED
= NOT NOISE SENSITIVE
= ACQUIRED
= NOISE STUDY AREA
= LIKELY NOISE WALL
= UNLIKELY NOISE WALL

NOISE STUDY AREAS
EXHIBIT 2.51

DECEMBER 2017

KEY MAP





COMPLETE 540

TRIANGLE EXPRESSWAY SOUTHEAST EXTENSION
WAKE AND JOHNSTON COUNTIES
STIP R-2721, R-2828 AND R-2829

0 100' 200' 300'

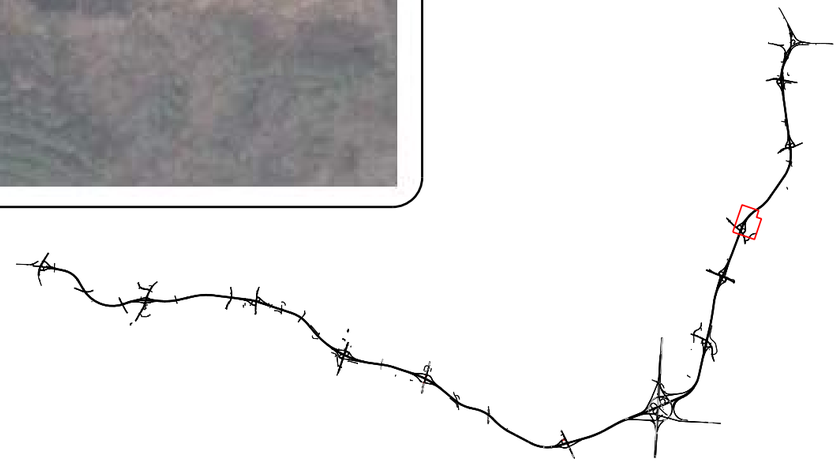
LEGEND

R21 = NOISE RECEPTOR
= NOT IMPACTED / NOT BENEFITED
= NOT IMPACTED / BENEFITED
= IMPACTED / BENEFITED
= IMPACTED / NOT BENEFITED
= NOT NOISE SENSITIVE
= ACQUIRED
= NOISE STUDY AREA
= LIKELY NOISE WALL
= UNLIKELY NOISE WALL

NOISE STUDY AREAS
EXHIBIT 2.52

DECEMBER 2017

KEY MAP



COMPLETE 540

TRIANGLE EXPRESSWAY SOUTHEAST EXTENSION
WAKE AND JOHNSTON COUNTIES
STIP R-2721, R-2828 AND R-2829

0 100'200'300'

LEGEND

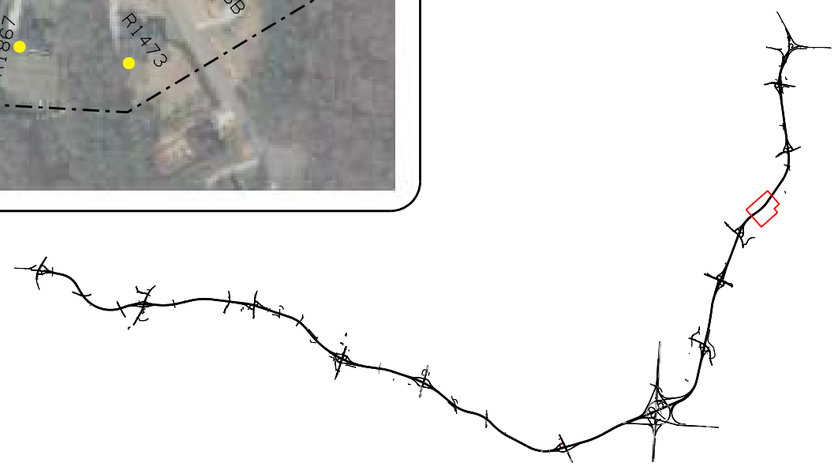
R21 =NOISE RECEPTOR
=NOT IMPACTED / NOT BENEFITED
=NOT IMPACTED / BENEFITED
=IMPACTED / BENEFITED
=IMPACTED / NOT BENEFITED
=NOT NOISE SENSITIVE
=ACQUIRED
=NOISE STUDY AREA
=LIKELY NOISE WALL
=UNLIKELY NOISE WALL

NOISE STUDY AREAS
EXHIBIT 2.53

DECEMBER 2017

PR ROW
PR ROW
NW83
R1469
NSA 83
R1470
R5552
FERNDALE RD
BRANCH RD
R5554
R5551
R5550
R5555
R5556
R5557
R5553
R1868A
R1868B
R5606
R1869A
R1869B
R1870A
R1870B
R1478C
R1477
R5604
R1476C
R1476A
R1476B
NSA 84
R1867
R1473

KEY MAP





COMPLETE 540

TRIANGLE EXPRESSWAY SOUTHEAST EXTENSION
WAKE AND JOHNSTON COUNTIES
STIP R-2721, R-2828 AND R-2829

0 100' 200' 300'

LEGEND

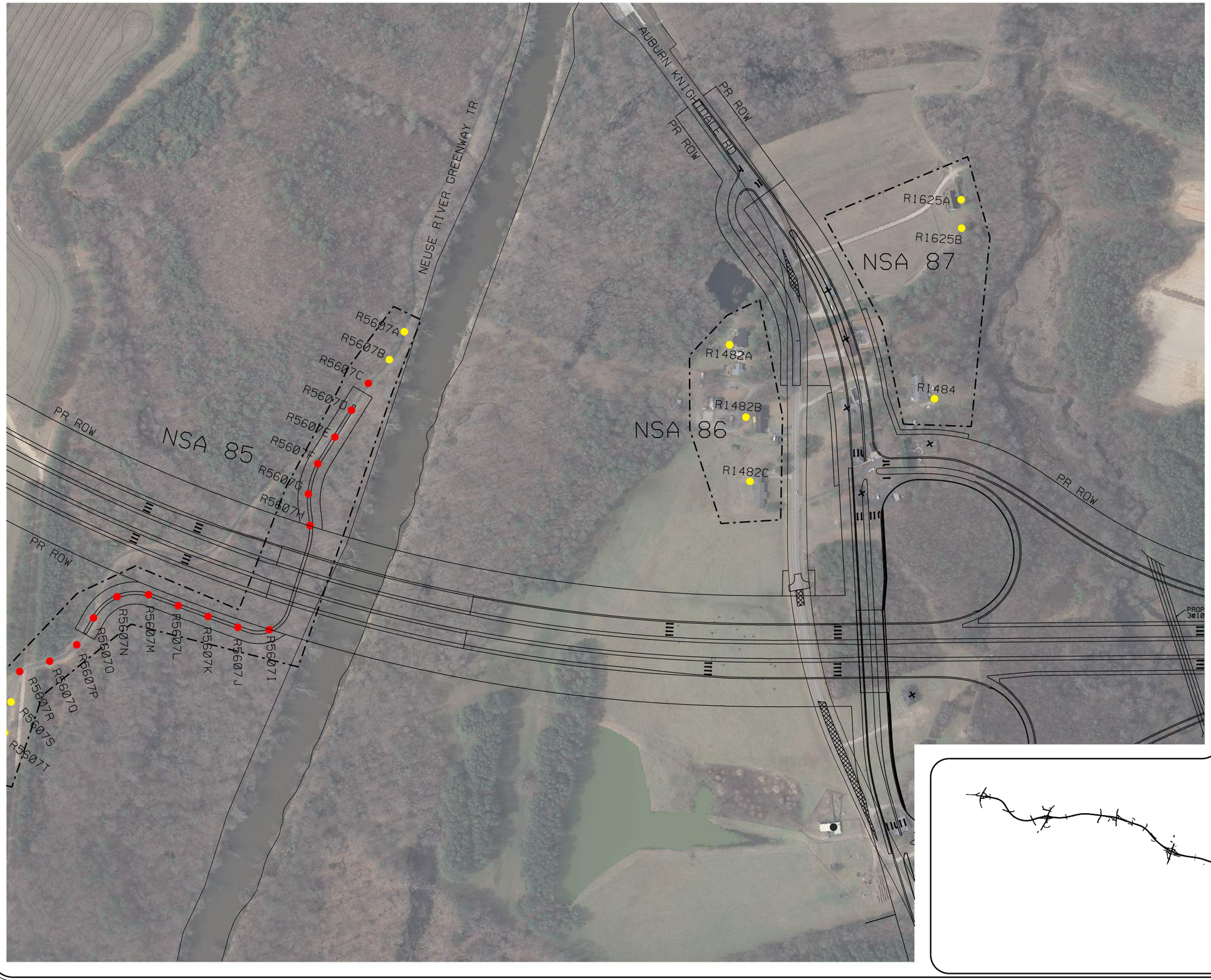
- R21 = NOISE RECEPTOR
- = NOT IMPACTED / NOT BENEFITED
- = NOT IMPACTED / BENEFITED
- = IMPACTED / BENEFITED
- = IMPACTED / NOT BENEFITED
- = NOT NOISE SENSITIVE
- × = ACQUIRED
- = NOISE STUDY AREA
- = LIKELY NOISE WALL
- = UNLIKELY NOISE WALL

NOISE STUDY AREAS
EXHIBIT 2.54

DECEMBER 2017

KEY MAP





COMPLETE 540

TRIANGLE EXPRESSWAY SOUTHEAST EXTENSION
WAKE AND JOHNSTON COUNTIES
STIP R-2721, R-2828 AND R-2829

0 100' 200' 300'

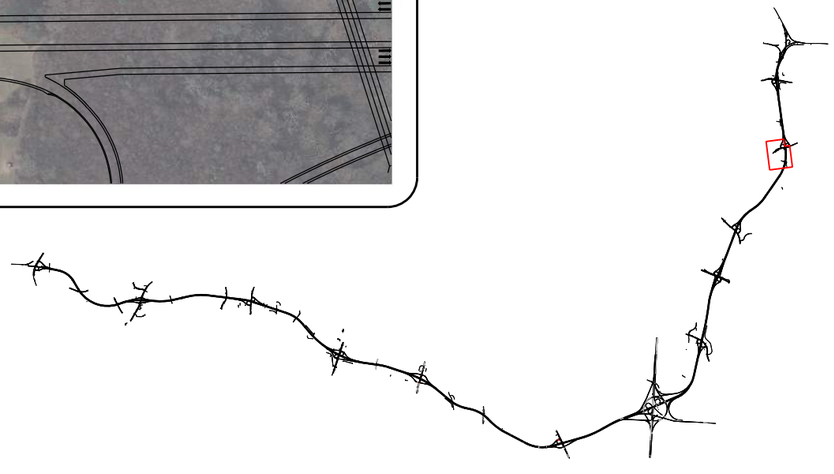
LEGEND

R21 = NOISE RECEPTOR
= NOT IMPACTED / NOT BENEFITED
= NOT IMPACTED / BENEFITED
= IMPACTED / BENEFITED
= IMPACTED / NOT BENEFITED
= NOT NOISE SENSITIVE
× = ACQUIRED
= NOISE STUDY AREA
= LIKELY NOISE WALL
= UNLIKELY NOISE WALL

NOISE STUDY AREAS
EXHIBIT 2.55

DECEMBER 2017

KEY MAP





COMPLETE 540

TRIANGLE EXPRESSWAY SOUTHEAST EXTENSION
WAKE AND JOHNSTON COUNTIES
STIP R-2721, R-2828 AND R-2829

0 100' 200' 300'

LEGEND

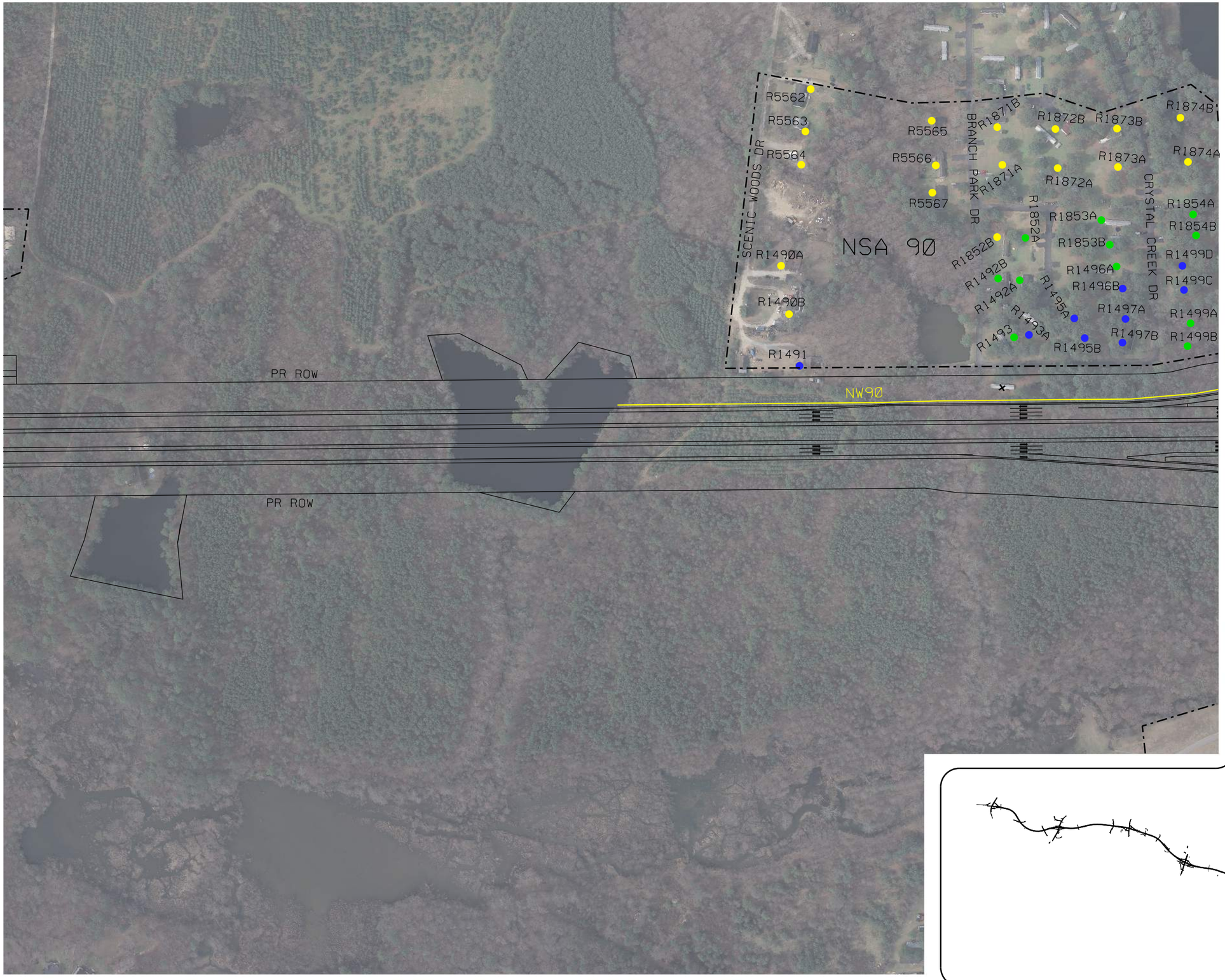
- R21 = NOISE RECEPTOR
- = NOT IMPACTED / NOT BENEFITED
- = NOT IMPACTED / BENEFITED
- = IMPACTED / BENEFITED
- = IMPACTED / NOT BENEFITED
- = NOT NOISE SENSITIVE
- × = ACQUIRED
- = NOISE STUDY AREA
- = LIKELY NOISE WALL
- = UNLIKELY NOISE WALL

NOISE STUDY AREAS
EXHIBIT 2.56

DECEMBER 2017

KEY MAP





COMPLETE 540

TRIANGLE EXPRESSWAY SOUTHEAST EXTENSION
WAKE AND JOHNSTON COUNTIES
STIP R-2721, R-2828 AND R-2829

0 100' 200' 300'

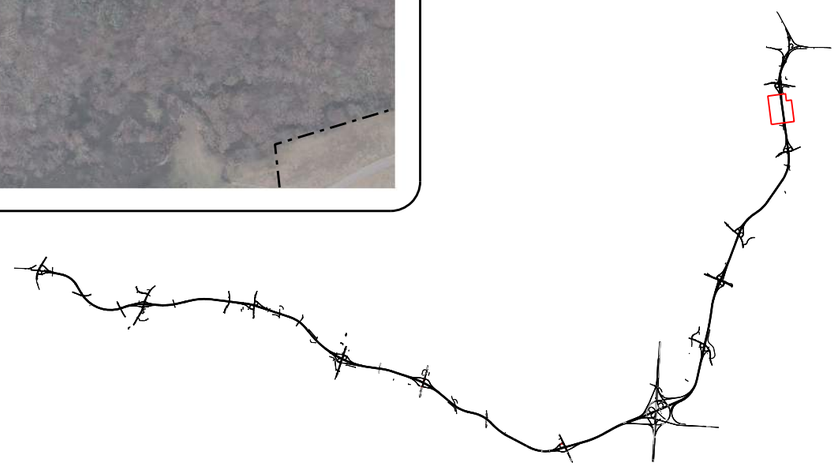
LEGEND

- R21 = NOISE RECEPTOR
- = NOT IMPACTED / NOT BENEFITED
- = NOT IMPACTED / BENEFITED
- = IMPACTED / BENEFITED
- = IMPACTED / NOT BENEFITED
- = NOT NOISE SENSITIVE
- × = ACQUIRED
- = NOISE STUDY AREA
- = LIKELY NOISE WALL
- = UNLIKELY NOISE WALL

NOISE STUDY AREAS
EXHIBIT 2.57

DECEMBER 2017

KEY MAP



COMPLETE 540

TRIANGLE EXPRESSWAY SOUTHEAST EXTENSION
WAKE AND JOHNSTON COUNTIES
STIP R-2721, R-2828 AND R-2829

0 100' 200' 300'

LEGEND

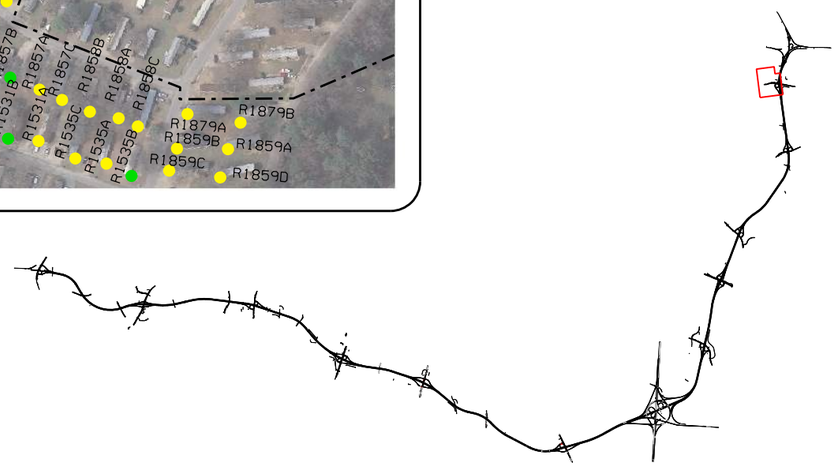
- R21 = NOISE RECEPTOR
- = NOT IMPACTED / NOT BENEFITED
- = NOT IMPACTED / BENEFITED
- = IMPACTED / BENEFITED
- = IMPACTED / NOT BENEFITED
- = NOT NOISE SENSITIVE
- = ACQUIRED
- = NOISE STUDY AREA
- = LIKELY NOISE WALL
- = UNLIKELY NOISE WALL

NOISE STUDY AREAS
EXHIBIT 2.58

DECEMBER 2017

HODGE RD
PR ROW
KEMP DR
KNIGHTDALE ESTATES DR
SOUTHERN LIVING DR
POOLE RD
NW90
NW92
NSA 92
R1519A
R1519B
R1518
R1522C
R1522A
R1522B
R1517
R1874B
R5574
R1523B
R1523A
R5575
R1524B
R1524A
R1516A
R1520A
R1521C
R1525D
R1521B
R1516B
R1520B
R1525A
R1883B
R1521A
R1520C
R1883A
R5578
R5576
R5577
R1525B
R1515A
R1526
R1883C
R1528C
R1527
R1528A
R1515B
R1528B
R1875A
R1875B
R1876A
R1876B
R1857B
R1857A
R1858B
R1858A
R1858C
R1879B
R1879A
R1859B
R1859A
R1859C
R1859D
R1535C
R1535A
R1535B

KEY MAP



COMPLETE 540

TRIANGLE EXPRESSWAY SOUTHEAST EXTENSION
WAKE AND JOHNSTON COUNTIES
STIP R-2721, R-2828 AND R-2829

0 100' 200' 300'

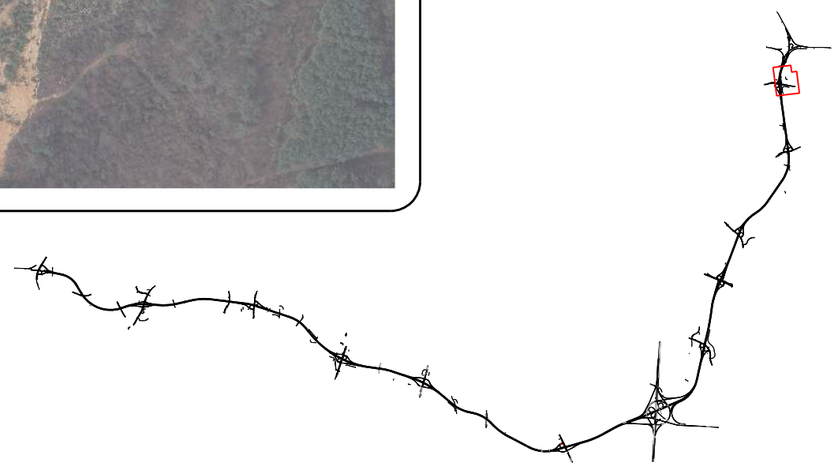
LEGEND

- R21 = NOISE RECEPTOR
- = NOT IMPACTED / NOT BENEFITED
- = NOT IMPACTED / BENEFITED
- = IMPACTED / BENEFITED
- = IMPACTED / NOT BENEFITED
- = NOT NOISE SENSITIVE
- × = ACQUIRED
- = NOISE STUDY AREA
- = LIKELY NOISE WALL
- = UNLIKELY NOISE WALL

NOISE STUDY AREAS EXHIBIT 2.59

DECEMBER 2017

KEY MAP



COMPLETE 540

TRIANGLE EXPRESSWAY SOUTHEAST EXTENSION
WAKE AND JOHNSTON COUNTIES
STIP R-2721, R-2828 AND R-2829

0 100'200'300'

LEGEND

- R21 = NOISE RECEPTOR
- = NOT IMPACTED / NOT BENEFITED
- = NOT IMPACTED / BENEFITED
- = IMPACTED / BENEFITED
- = IMPACTED / NOT BENEFITED
- = NOT NOISE SENSITIVE
- = ACQUIRED
- = NOISE STUDY AREA
- = LIKELY NOISE WALL
- = UNLIKELY NOISE WALL

NOISE STUDY AREAS
EXHIBIT 2.60

DECEMBER 2017

LODGE DR
KEMP DR
R1860B
R1860A
R1860C
R1860C
R1542A
R1861
NSA 92
R1542B
R1546
R1543B
R1547A
R1543A
R1547B
R1548B
R1548A
R1548C
R1549C
R1549A
R1549B
R1550B
R1550A
R1550C
NW92
PR ROW
US-64 / US-264
OLD FAISON RD
ROCKING ROBYN RD

KEY MAP

COMPLETE 540

TRIANGLE EXPRESSWAY SOUTHEAST EXTENSION
WAKE AND JOHNSTON COUNTIES
STIP R-2721, R-2828 AND R-2829

0 100' 200' 300'

N

LEGEND

R21 = NOISE RECEPTOR
= NOT IMPACTED / NOT BENEFITED
= NOT IMPACTED / BENEFITED
= IMPACTED / BENEFITED
= IMPACTED / NOT BENEFITED
= NOT NOISE SENSITIVE
= ACQUIRED
= NOISE STUDY AREA
= LIKELY NOISE WALL
= UNLIKELY NOISE WALL

NOISE STUDY AREAS
EXHIBIT 2.61

DECEMBER 2017

I-87

KEY MAP

COMPLETE 540

TRIANGLE EXPRESSWAY SOUTHEAST EXTENSION
WAKE AND JOHNSTON COUNTIES
STIP R-2721, R-2828 AND R-2829

0 100' 200' 300'

LEGEND

- R21 = NOISE RECEPTOR
- = NOT IMPACTED / NOT BENEFITED
- = NOT IMPACTED / BENEFITED
- = IMPACTED / BENEFITED
- = IMPACTED / NOT BENEFITED
- = NOT NOISE SENSITIVE
- × = ACQUIRED
- = NOISE STUDY AREA
- = LIKELY NOISE WALL
- = UNLIKELY NOISE WALL

NOISE STUDY AREAS
EXHIBIT 2.62

DECEMBER 2017

PR ROW
I-64 / I-264
NSA 96
R1557A
R1557B
R1557C
NSA 97
R2301B
R1558B
R1558A
R1558C
GOWER DR
R1559C
R1559B
R1559A
NSA 98
R1556A
OLD FAISON RD
R1554
R5603
NSA 95
CLIFTON RD
R1553A
R1553B
R1552A
R1552B
NSA 94
R5602
R1551

KEY MAP

COMPLETE 540

TRIANGLE EXPRESSWAY SOUTHEAST EXTENSION
WAKE AND JOHNSTON COUNTIES
STIP R-2721, R-2828 AND R-2829

0 100' 200' 300'

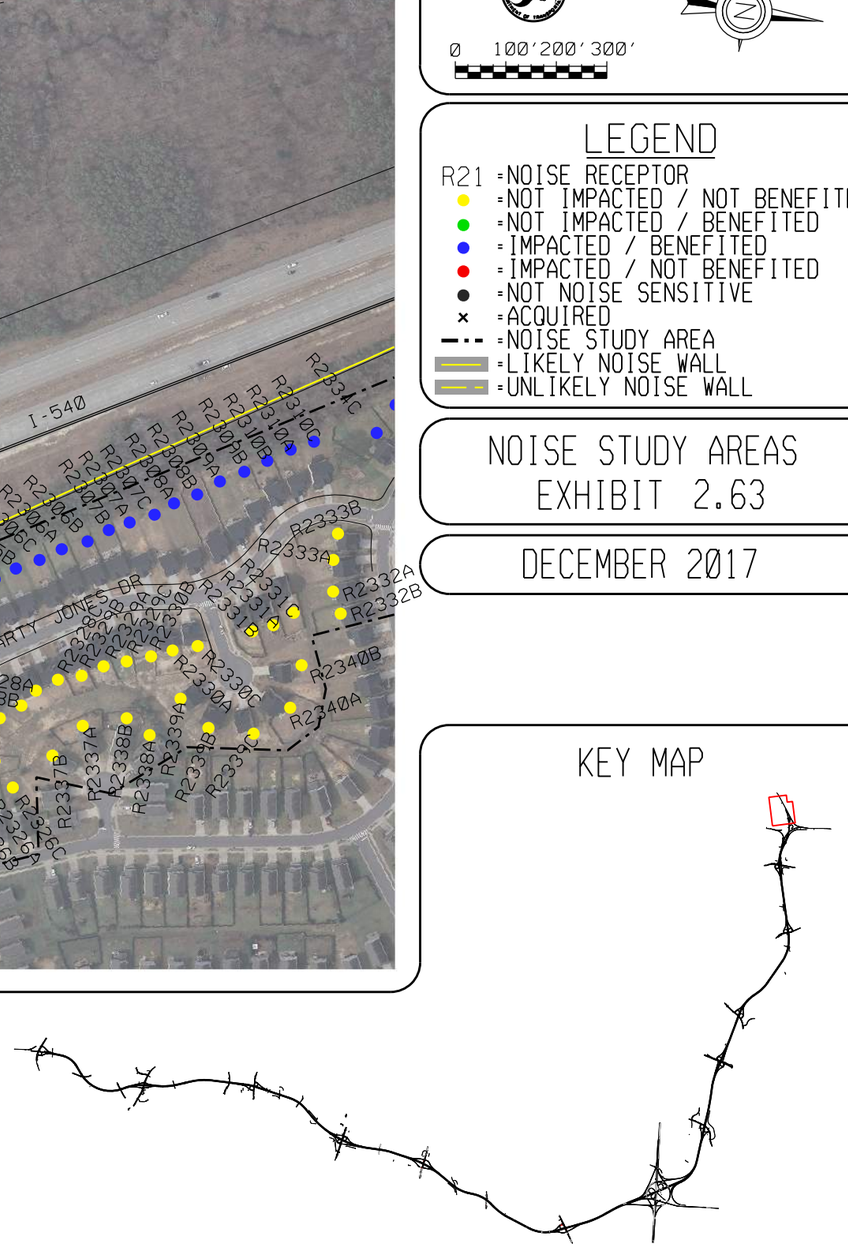
LEGEND

- R21 = NOISE RECEPTOR
- = NOT IMPACTED / NOT BENEFITED
- = NOT IMPACTED / BENEFITED
- = IMPACTED / BENEFITED
- = IMPACTED / NOT BENEFITED
- = NOT NOISE SENSITIVE
- = ACQUIRED
- = NOISE STUDY AREA
- = LIKELY NOISE WALL
- = UNLIKELY NOISE WALL

NOISE STUDY AREAS EXHIBIT 2.63

DECEMBER 2017

KEY MAP



COMPLETE 540

TRIANGLE EXPRESSWAY SOUTHEAST EXTENSION
WAKE AND JOHNSTON COUNTIES
STIP R-2721, R-2828 AND R-2829

0 100' 200' 300'

LEGEND

- R21 = NOISE RECEPTOR
- = NOT IMPACTED / NOT BENEFITED
- = NOT IMPACTED / BENEFITED
- = IMPACTED / BENEFITED
- = IMPACTED / NOT BENEFITED
- = NOT NOISE SENSITIVE
- × = ACQUIRED
- = NOISE STUDY AREA
- = LIKELY NOISE WALL
- = UNLIKELY NOISE WALL

NOISE STUDY AREAS
EXHIBIT 2.64

DECEMBER 2017

BELLEFONT CT
NW97
I-540
NW98
NSA 98
SMARTY JONES DR
KINGMAN DR

KEY MAP

COMPLETE 540

TRIANGLE EXPRESSWAY SOUTHEAST EXTENSION
WAKE AND JOHNSTON COUNTIES
STIP R-2721, R-2828 AND R-2829

0 50' 100' 150'

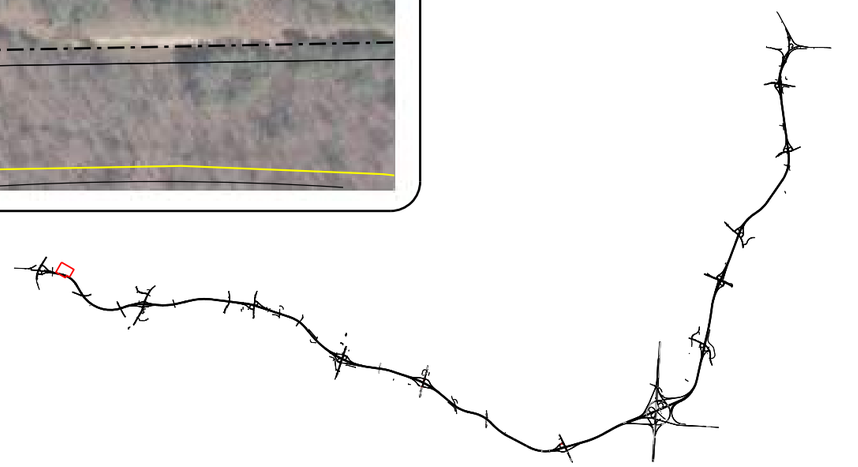
LEGEND

- R21 = NOISE RECEPTOR
- = NOT IMPACTED / NOT BENEFITED
- = NOT IMPACTED / BENEFITED
- = IMPACTED / BENEFITED
- = IMPACTED / NOT BENEFITED
- = NOT NOISE SENSITIVE
- = ACQUIRED
- = NOISE STUDY AREA
- = LIKELY NOISE WALL
- = UNLIKELY NOISE WALL

NOISE STUDY AREAS EXHIBIT 2.65

DECEMBER 2017

KEY MAP





COMPLETE 540

TRIANGLE EXPRESSWAY SOUTHEAST EXTENSION
WAKE AND JOHNSTON COUNTIES
STIP R-2721, R-2828 AND R-2829

0 50' 100' 150'

LEGEND

R21 = NOISE RECEPTOR
= NOT IMPACTED / NOT BENEFITED
= NOT IMPACTED / BENEFITED
= IMPACTED / BENEFITED
= IMPACTED / NOT BENEFITED
= NOT NOISE SENSITIVE
= ACQUIRED
= NOISE STUDY AREA
= LIKELY NOISE WALL
= UNLIKELY NOISE WALL

NOISE STUDY AREAS EXHIBIT 2.66

DECEMBER 2017

PR ROW
DONNY BROOK RD
PR ROW
FAYETTEVILLE RD/US-401
CHANDLER RIDGE CIR
I-540WN
NB3-2
R0342
NSA 35

R0338V 1ST FLR
R0338W 2ND FLR
R0338X 3RD FLR
R0338M 1ST FLR
R0338N 2ND FLR
R0338O 3RD FLR
R0338G 1ST FLR
R0338H 2ND FLR
R0338I 3RD FLR
R0338J 1ST FLR
R0338K 2ND FLR
R0338L 3RD FLR
R0338D 1ST FLR
R0338E 2ND FLR
R0338F 3RD FLR
R0338A 1ST FLR
R0338B 2ND FLR
R0338C 3RD FLR
R1610D 1ST FLR
R1610E 2ND FLR
R1610F 3RD FLR
R1610A 1ST FLR
R1610B 2ND FLR
R1610C 3RD FLR
R1610J 1ST FLR
R1610K 2ND FLR
R1610L 3RD FLR
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R0339C 3RD FLR
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R0339H 2ND FLR
R0339I 3RD FLR
R0339D 1ST FLR
R0339E 2ND FLR
R0339F 3RD FLR
R0338S 1ST FLR
R0338T 2ND FLR
R0338U 3RD FLR
R0338P 1ST FLR
R0338Q 2ND FLR
R0338R 3RD FLR
R0339J 1ST FLR
R0339K 2ND FLR
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R0346L 3RD FLR
R0346G 1ST FLR
R0346H 2ND FLR
R0346I 3RD FLR
R0348A 1ST FLR
R0348B 2ND FLR
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R0350J 1ST FLR
R0350K 2ND FLR
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R0350F 3RD FLR
R0350A 1ST FLR
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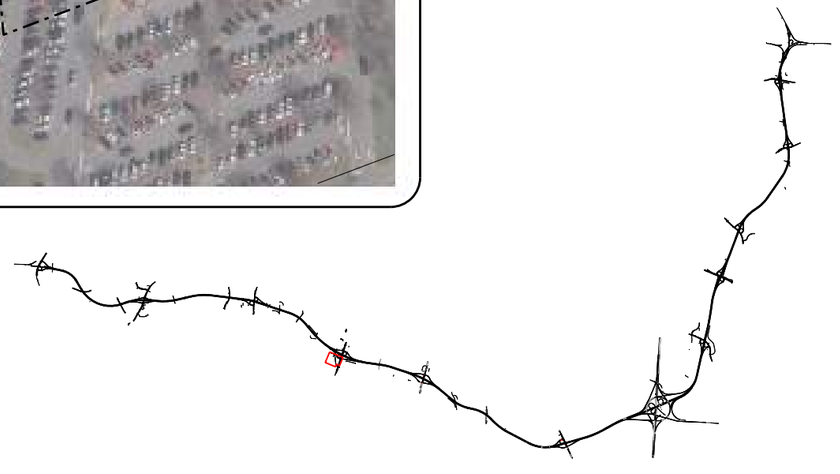
R0350C 3RD FLR
R0350G 1ST FLR
R0350H 2ND FLR
R0350I 3RD FLR

KEY MAP



TRAFFIC NOISE REPORT ADDENDUM
VOLUME II

For

ADMINISTRATIVE ACTION
ENVIRONMENTAL IMPACT STATEMENT

Wake and Johnston Counties

STIP Project Nos. R-2721, R-2828, and R-2829
State Project Nos. 6.401078, 6.401079, and 6.401080
Federal Aid Project Nos. STP-0540(19), STP-0540(20), and STP-0540(21)
WBS Nos. 37673.1.TA2, 35516.1.TA2, and 35517.1.TA1

Prepared for:

Prepared By:
H.W. Lochner, Inc.

December, 2017

APPENDICES

APPENDIX 1

NOISE MEASUREMENTS AND MODEL VALIDATION RESULTS

LOCHNER

Memorandum

To:	Kiersten Bass
From:	Dave Shannon
cc:	
Subject:	Triangle Expressway Southeast Extension Noise Study Revised Proposed Scope of Work and Field Measurement Locations
Date:	April 30, 2013

Noise measurements will be performed at several areas of frequent human use along the alternative project alignments in order to aid in the determination of the Existing loudest-hour equivalent noise levels and the creation of validated Traffic Noise Models for noise-sensitive areas in the vicinity of the project.

Measurement Sites Along Existing Traffic Noise Sources

As stated in the NCDOT Traffic Noise Analysis and Abatement Manual, Title 23 CFR 772.11(d)(2) requires validation of the Traffic Noise Model to verify its accuracy. Sufficient data will be gathered during noise measurements to construct a validated noise model, including traffic volumes, vehicle mixes and speeds, weather conditions, foliage types and density, identification of noise sources other than traffic and a record of any abnormal events which if included in the data would skew the results. Sketches showing monitor locations will be prepared and photographs of the measurement area will be taken.

Each measurement site will include at least two and preferably three monitors running at the same time located at various distances perpendicular from the source roadway. The monitor located farthest from the traffic noise source will preferably be beyond the influence of the roadway traffic. Noise measurements along existing traffic noise sources will be 20 minutes in duration at a minimum. Data will be collected in one minute increments in order to “de-spike” the data after the field data is collected. Measurements will be conducted during the school year, preferably on a Tuesday, Wednesday or Thursday.

Measurement Sites in Areas With no Existing Traffic Noise Sources

In order to identify typical diurnal changes in areas of frequent human use without appreciable traffic noise source(s), representative long-term noise monitoring data will be obtained. The purpose of these measurements is to identify the loudest-hour for that area and to serve as a basis for determining substantial noise increases. Preferably the long-term measurements will be conducted from 7:00 a.m. to 7:00 p.m., or as conditions such as access and weather allow.

Proposed Field Measurement Locations

The attached figures show the proposed locations for noise measurements. The locations shown are intended to indicate the general coverage of measurement sites and specific locations may be refined based on the proposed alignment, interchange geometrics and site conditions. For each of the build alternatives the general pavement improvements are shown on the exhibits.

Measurement sites will preferably be close to the proposed right of way but will not be included in any right of way acquisition. Proposed right of way information will be reviewed prior to the commencement of field work and the locations will be adjusted accordingly.

The project area between the west terminus and I-40 can be described as subdivisions separated by undeveloped land. Because the land-use can be characterized almost entirely as suburban, no long-term measurements were proposed to represent a diurnal curve for rural conditions. Both long-term measurements in this area are located within subdivisions.

The project area between I-40 and the north terminus can be described as rural with some subdivisions separated by undeveloped land. Because the land-use can be characterized as mainly rural, one long-term measurement is proposed to represent a diurnal curve for rural conditions.

The long term measurements will be used to set a diurnal curve. At each short-term site the far-field meter will be located far enough from the major traffic noise source to record an ambient noise level. The noise level from the diurnal curve for that same 20-minute time period will be compared to the loudest hour from the diurnal curve to identify an adjustment that will be applied to the short-term noise level to establish the loudest hour noise level for that location. For every receptor in the noise study an applicable ambient noise level will be identified to compare to the results from the TNM model of existing conditions in order to establish an existing loudest-hour noise level for use in the impact analysis.

A proposed scope of work for the field measurements was coordinated with NCDOT in January of 2012 but since then the Red, Red Modified, Lilac and Plum Corridors were added to corridors under consideration. In response to the increase in corridors being studied, Sites G, K, and L were moved, Sites S, T U, V and W were added and one of the long-term measurements was shifted from Site A to Site T.

Site A – Sunshine Crest Court (Long-term): One location will be measured since there is no existing traffic noise source and therefore no need to collect drop-off data to validate the TNM model. This measurement was to be used as one of the general references for the diurnal curve for suburban receptors but the long-term site has been changed to Site T along the Red Corridor.

Site B – Scot's Laurel subdivision (Short-term): At least two locations will be measured at varying distances from Kildaire Farm Road, preferably at locations where the terrain varies. Traffic data will be recorded for use in validating the TNM Model.

Site C – Wesley Court (Short-term): At least two locations will be measured at varying distances from Holly Springs Road, preferably at locations where the terrain varies. Traffic data will be recorded for use in validating the TNM Model.

Site D – Subdivision (Short-term): At least two locations will be measured at varying distances from West Lake Road, preferably at locations where the terrain varies. Traffic data will be recorded for use in validating the TNM Model.

Site E – Dear Meadow Drive (Long-term): This measurement will be used as the general reference for the diurnal curve for suburban receptors in this area.

Site F – Arnold Park Lane (Short-term): At least two locations will be measured at varying distances from Lake Wheeler Road, preferably at locations where the terrain varies. Traffic data will be recorded for use in validating the TNM Model.

Site G – Ten-Ten Road (Short-term): At least two locations will be measured at varying distances from Ten Ten Street, preferably at locations where the terrain varies. Traffic data will be recorded for use in validating the TNM Model. Site G was previously located near the Orange Corridor at Allen Street West and had some redundancy to Site H. It was therefore moved to be at a location closer to the Red Corridor.

Site H – Chandler Ridge Circle, Wake Technical Community College (Short-term): At least two locations will be measured at varying distances from the roadway, preferably at locations where the terrain varies. Traffic data will be recorded for use in validating the TNM Model.

Site I – Contender Drive (Short-term): One location will be measured since there is no existing traffic noise source and therefore no need to collect drop-off data to validate the TNM model.

Site J – Upchurch Woods Drive (Short-term): At least two locations will be measured at varying distances from Jordan Road, preferably at locations where the terrain varies. Traffic data will be recorded for use in validating the TNM Model.

Site K – Golden Grain Road (Short-term): At least two locations will be measured at varying distances from Benson Road, preferably at locations where the terrain varies. Traffic data will be recorded for use in validating the TNM Model. Site K was previously located south of the Orange Corridor at Open Field Drive but was moved to be at a location that would apply to both the Orange and Lilac Corridors.

Site L – Summerwind Plantation Drive (Short-term): One location will be measured since there is no existing traffic noise source and therefore no need to collect drop-off data to validate the TNM model. Site L was previously located near Site K on Serather Court but was moved to be less redundant and to be at a location that would apply to the Plum Corridor.

Site M – Hayward Court (Short-term): At least two locations will be measured at varying distances from White Oak Road, preferably at locations where the terrain varies. Traffic data will be recorded for use in validating the TNM Model.

Site N – Walnut Drive (Short-term): At least two locations will be measured at varying distances from US 70, preferably at locations where the terrain varies. Traffic data will be recorded for use in validating the TNM Model.

Site O – La Varra Drive, Pine Hollow Golf Club (Short-term): At least two locations will be measured at varying distances from East Garner Road, preferably at locations where the terrain varies. Traffic data will be recorded for use in validating the TNM Model.

Site P – Auburn Knightdale Road (Long-term): This measurement will be used as the general reference for the diurnal curve for rural receptors.

Site Q – Orchard Farm Lane (Short-term): At least two locations will be measured at varying distances from Poole Road, preferably at locations where the terrain varies. Traffic data will be recorded for use in validating the TNM Model.

Site R – Faison Ridge Lane and Ellen Drive (Short-term): At least two locations will be measured at varying distances from US 64/264, preferably at locations where the terrain varies. Traffic data will be recorded for use in validating the TNM Model.

Site S – Parkway Drive (Short-term): One location will be measured since there is no existing traffic noise source and therefore no need to collect drop-off data to validate the TNM model.

Site T – Gussett Drive (Long-term): This measurement will be used as the general reference for the diurnal curve for suburban receptors in this area.

Site U – Coachman Drive (Short-term): At least two locations will be measured at varying distances from Timber Drive, preferably at locations where the terrain varies. Traffic data will be recorded for use in validating the TNM Model.

Site V – Atchison Street (Short-term): At least two locations will be measured at varying distances from Benson Road, preferably at locations where the terrain varies. Traffic data will be recorded for use in validating the TNM Model.

Site W – Pine Walk Circle (Short-term): At least two locations will be measured at varying distances from I-40, preferably at locations where the terrain varies. Traffic data will be recorded for use in validating the TNM Model.

Estimated Schedule
Short Term .– A, B, C, D, F, G, H, I, J, K, L, M, N, O, Q, R, S, U, V, W = 20 Sites
Long term .– E, P, T = 3 Sites

Measurements should preferably be acquired Tuesday through Thursday. The three long-term measurements will each take one day and will be acquired on Tuesday, Wednesday and Thursday. It is likely that the 20 short-term measurements may require more than three days and therefore some measurements will be taken Monday afternoon. If all of the measurements are completed early enough on Thursday, the measurements that were collected Monday could be repeated. Also, depending on the time required between measurements, there may be time for additional short-term measurements. Those additional locations will be determined in the field as needed and should preferably be located near proposed interchanges.

This methodology has been discussed with the Greg Smith at the Traffic Noise and Air Quality Group at the NCDOT on March 5, 2013 who approved the proposed methodology as described in this memo with no further comments.

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TRIANGLE EXPRESSWAY
SOUTHEAST EXTENSION

T.I.P. NO. R-2721,
R-2828, R-2829

NOISE MEASUREMENT LOCATIONS



TRIANGLE EXPRESSWAY
SOUTHEAST EXTENSION

T.I.P. NO. R-2721,
R-2828, R-2829

N

0 500m

0 1000' 2000'

NOISE MEASUREMENT LOCATIONS



TRIANGLE EXPRESSWAY
SOUTHEAST EXTENSION

T.I.P. NO. R-2721,
R-2828, R-2829

N

0 500m

0 1000' 2000'

NOISE MEASUREMENT LOCATIONS



TRIANGLE EXPRESSWAY
SOUTHEAST EXTENSION

T.I.P. NO. R-2721,
R-2828, R-2829

NOISE MEASUREMENT LOCATIONS



TRIANGLE EXPRESSWAY
SOUTHEAST EXTENSION

T.I.P. NO. R-2721,
R-2828, R-2829

N

0 500m

0 1000' 2000'

NOISE MEASUREMENT LOCATIONS



TRIANGLE EXPRESSWAY
SOUTHEAST EXTENSION

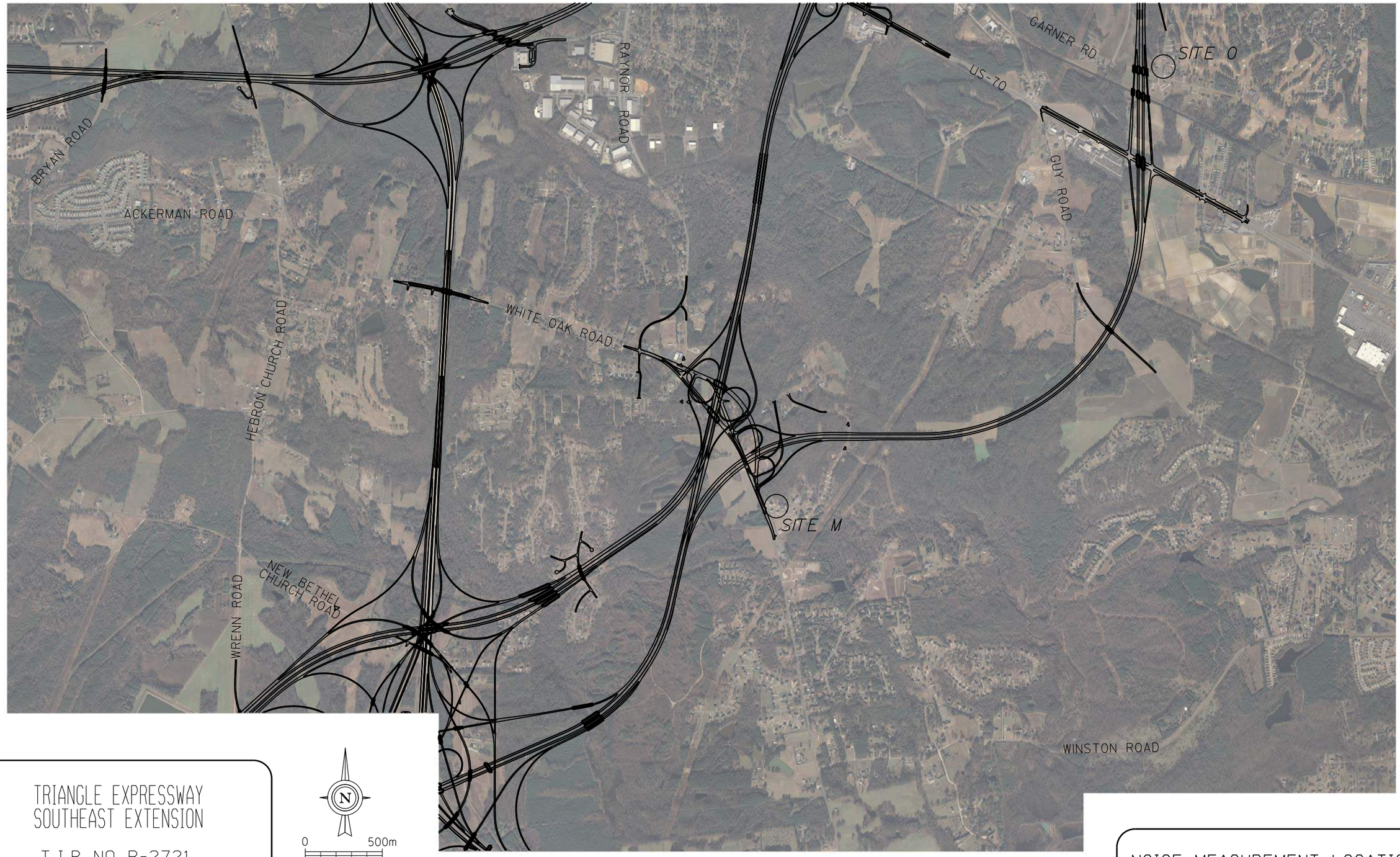
T.I.P. NO. R-2721,
R-2828, R-2829

N

0 500m

0 1000' 2000'

NOISE MEASUREMENT LOCATIONS



TRIANGLE EXPRESSWAY
SOUTHEAST EXTENSION

T.I.P. NO. R-2721,
R-2828, R-2829

N

0 500m

0 1000' 2000'

NOISE MEASUREMENT LOCATIONS



TRIANGLE EXPRESSWAY
SOUTHEAST EXTENSION

T.I.P. NO. R-2721,
R-2828, R-2829

N

0 500m

0 1000' 2000'

NOISE MEASUREMENT LOCATIONS



TRIANGLE EXPRESSWAY
SOUTHEAST EXTENSION

T.I.P. NO. R-2721,
R-2828, R-2829

NOISE MEASUREMENT LOCATIONS

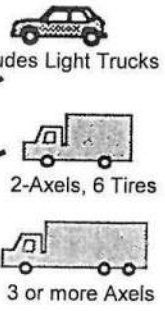
H.W. LOCHNER, INC.

NOISE MEASUREMENT DATA SHEET

SITE NUMBER: A
PROJECT: Tri-Ex
SITE DESCRIPTION:
DATE: 9/10/13
START TIME: 5:25
EVENT NUMBER:
END TIME: 5:45
TECHNICIAN: Shannon / Schutz / Ballman
DURATION: 20-
CALIBRATION: START 116.0 DB END DB
WEATHER DATA: SKY CONDITION Clear TEMP 90+
WIND: START Ø MPH END Ø MPH DIRECTION
EQUIPMENT: METER 12 CALIBRATOR
RESPONSE: FAST SLOW BATTERY CHECK
RESULTS: Leq 12: 47.1 Lmax

TRAFFIC DATA

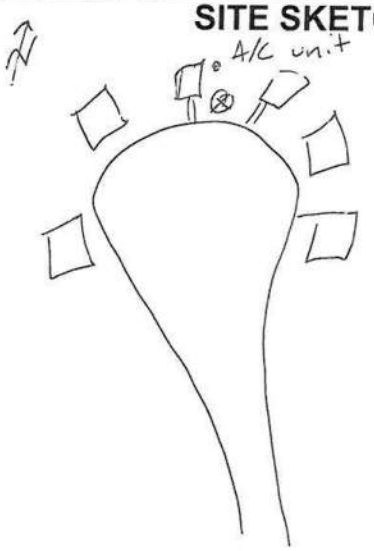
ROAD	N	S	E	W		
TRAFFIC SPEED						
AUTOMOBILES						
MEDIUM TRUCKS						
HEAVY TRUCKS						



SITE SKETCH

No Traffic

Note: Almost every home has AC running



A/C cycled off @ 5:39
SLM went from 47± to 43±

MAJOR SOURCES: Birds, Air Conditioner, Traffic on Sunset, Lake Rd & Williams St
BACKGROUND NOISE:
UNUSUAL EVENTS:
OTHER NOTES:

Triangle Expressway Southeast Extension

Site A
Short Term-Ambient
9/10/13

Meter 012	
Time (s)	**Leq (dB)**
5:23 PM	43.3
5:24 PM	44.3
5:25 PM	47.1
5:26 PM	46.9
5:27 PM	46.0
5:28 PM	46.0
5:29 PM	46.6
5:30 PM	45.4
5:31 PM	45.5
5:32 PM	45.9
5:33 PM	46.3
5:34 PM	46.2
5:35 PM	45.4
5:36 PM	45.9
5:37 PM	42.3
5:38 PM	42.4
5:39 PM	43.4
5:40 PM	42.6
5:41 PM	42.1
5:42 PM	42.0
5:43 PM	42.0

Avg Leq=	**45**
Adjustment =	**3**
Adjusted Loudest Hour =	**48**

Site T	
Time (s)	**Leq (dB)**
5:23 PM	38.8
5:24 PM	38.3
5:25 PM	38.1
5:26 PM	38.2
5:27 PM	38.0
5:28 PM	38.2
5:29 PM	38.2
5:30 PM	38.3
5:31 PM	38.6
5:32 PM	38.7
5:33 PM	38.6
5:34 PM	38.4
5:35 PM	38.2
5:36 PM	38.8
5:37 PM	39.5
5:38 PM	43.0
5:39 PM	39.5
5:40 PM	38.9
5:41 PM	38.5
5:42 PM	38.6
5:43 PM	38.5

Avg Leq=	**39**
Loudest Hour at Site T =	**42**
Adjustment =	**3**



Site A –Meter



Site A –Meter



Triangle Expressway
Southeast Extension
ORANGE CORRIDOR
Johnston/Wake Counties
T.I.P. NO. R-2721, R-2828, R-2829

N

0 100' 200'

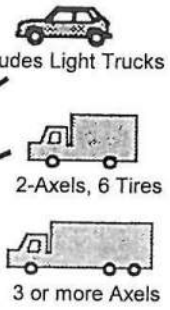
NOISE MEASUREMENT
LOCATION A

H.W. LOCHNER, INC. | NOISE MEASUREMENT DATA SHEET

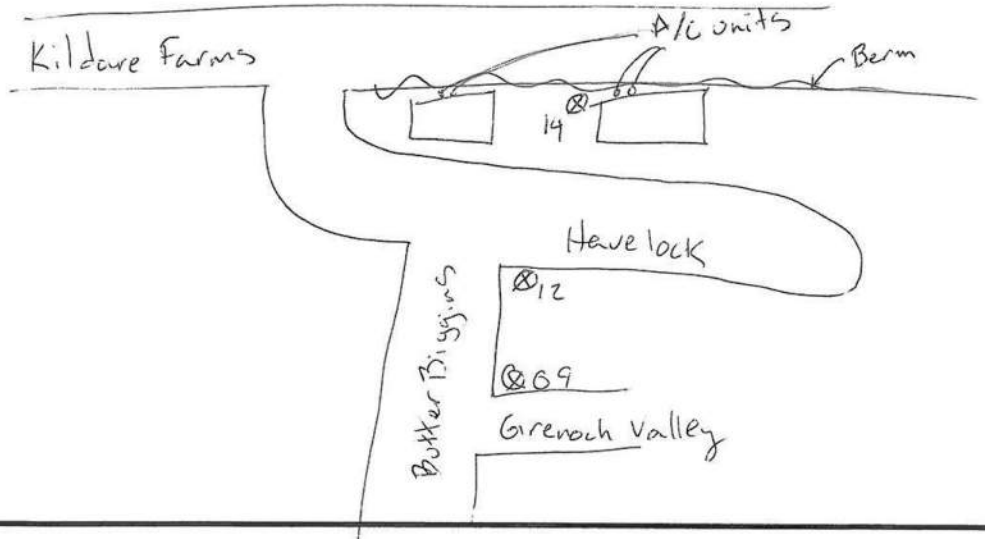
SITE NUMBER: B **PROJECT:** Tri-Ex
SITE DESCRIPTION: _____ **DATE:** 9/10/13
START TIME: 4:49
EVENT NUMBER: _____ **END TIME:** 5:09
TECHNICIAN: Shannon/Schutz/Bollman **DURATION:** 20±
CALIBRATION: START _____ DB END _____ DB
WEATHER DATA: SKY CONDITION Clear TEMP 90+
WIND: START Ø MPH END Ø MPH DIRECTION _____
EQUIPMENT: METER 9:101.2 12:116.6 14:118.1 CALIBRATOR _____
RESPONSE: FAST _____ SLOW _____ BATTERY CHECK _____
RESULTS: Leq 9:38.5 12:51.6 14:60.5 Lmax _____

TRAFFIC DATA

ROAD	N	S	E	W		
TRAFFIC SPEED	45	45				
AUTOMOBILES	99	215				
MEDIUM TRUCKS	1	2				
HEAVY TRUCKS	1	1				



SITE SKETCH



MAJOR SOURCES: Air Conditioners, Traffic on Kildare Farm
BACKGROUND NOISE: Insects
UNUSUAL EVENTS: Dog barking near #609
OTHER NOTES: _____

Triangle Expressway Southeast Extension

Site B
Short Term
9/10/13

Near (Meter 014)		Middle (Meter 012)		Far (Meter 009)		Site T	
Time (s)	Leq (dB)	Time (s)	Leq (dB)	Time (s)	Leq (dB)	Time (s)	Leq (dB)
4:46 PM	56.8			4:46 PM	46.7	4:46 PM	40.1
4:47 PM	55.2	4:47 PM	44.7	4:47 PM	46.5	4:47 PM	39.8
4:48 PM	52.2	4:48 PM	47.1	4:48 PM	51.1	4:48 PM	40.2
4:49 PM	55.2	4:49 PM	50.2	4:49 PM	45.0	4:49 PM	39.9
4:50 PM	55.3	4:50 PM	42.5	4:50 PM	47.4	4:50 PM	39.5
4:51 PM	53.0	4:51 PM	47.7	4:51 PM	45.4	4:51 PM	39.2
4:52 PM	57.2	4:52 PM	44.5	4:52 PM	46.1	4:52 PM	39.2
4:53 PM	55.2	4:53 PM	41.7	4:53 PM	46.0	4:53 PM	40.0
4:54 PM	62.1	4:54 PM	46.5	4:54 PM	50.1	4:54 PM	42.2
4:55 PM	56.1	4:55 PM	43.7	4:55 PM	52.5	4:55 PM	40.5
4:56 PM	56.7	4:56 PM	51.3	4:56 PM	58.6	4:56 PM	38.9
4:57 PM	55.6	4:57 PM	50.7	4:57 PM	50.9	4:57 PM	38.6
4:58 PM	56.4	4:58 PM	52.8	4:58 PM	51.7	4:58 PM	38.3
4:59 PM	56.2	4:59 PM	49.2	4:59 PM	47.0	4:59 PM	38.6
5:00 PM	56.8	5:00 PM	50.5	5:00 PM	58.2	5:00 PM	39.0
5:01 PM	54.6	5:01 PM	46.2	5:01 PM	51.6	5:01 PM	38.6
5:02 PM	54.3	5:02 PM	47.6	5:02 PM	45.2	5:02 PM	38.8
5:03 PM	57.3	5:03 PM	50.0	5:03 PM	50.1	5:03 PM	38.2
5:04 PM	54.1	5:04 PM	44.0	5:04 PM	51.7	5:04 PM	38.2
5:05 PM	57.8	5:05 PM	52.6	5:05 PM	48.1	5:05 PM	38.9
5:06 PM	55.4	5:06 PM	45.4	5:06 PM	46.4	5:06 PM	38.6
		5:07 PM	53.5	5:07 PM	44.5	5:07 PM	39.6
		5:08 PM	48.5	5:08 PM	45.0	5:08 PM	38.7

Avg Leq=	**56**	**Avg Leq=**	**49**	**Avg Leq=**	**49**	**Avg Leq=**	**39**
				Adjustment =	**3**	**Loudest Hour at Site T =**	**42**
				Adjusted Loudest Hour =	**52**	**Adjustment =**	**3**



Site B – Far Meter



Site B – Far Meter



Site B – Middle Meter



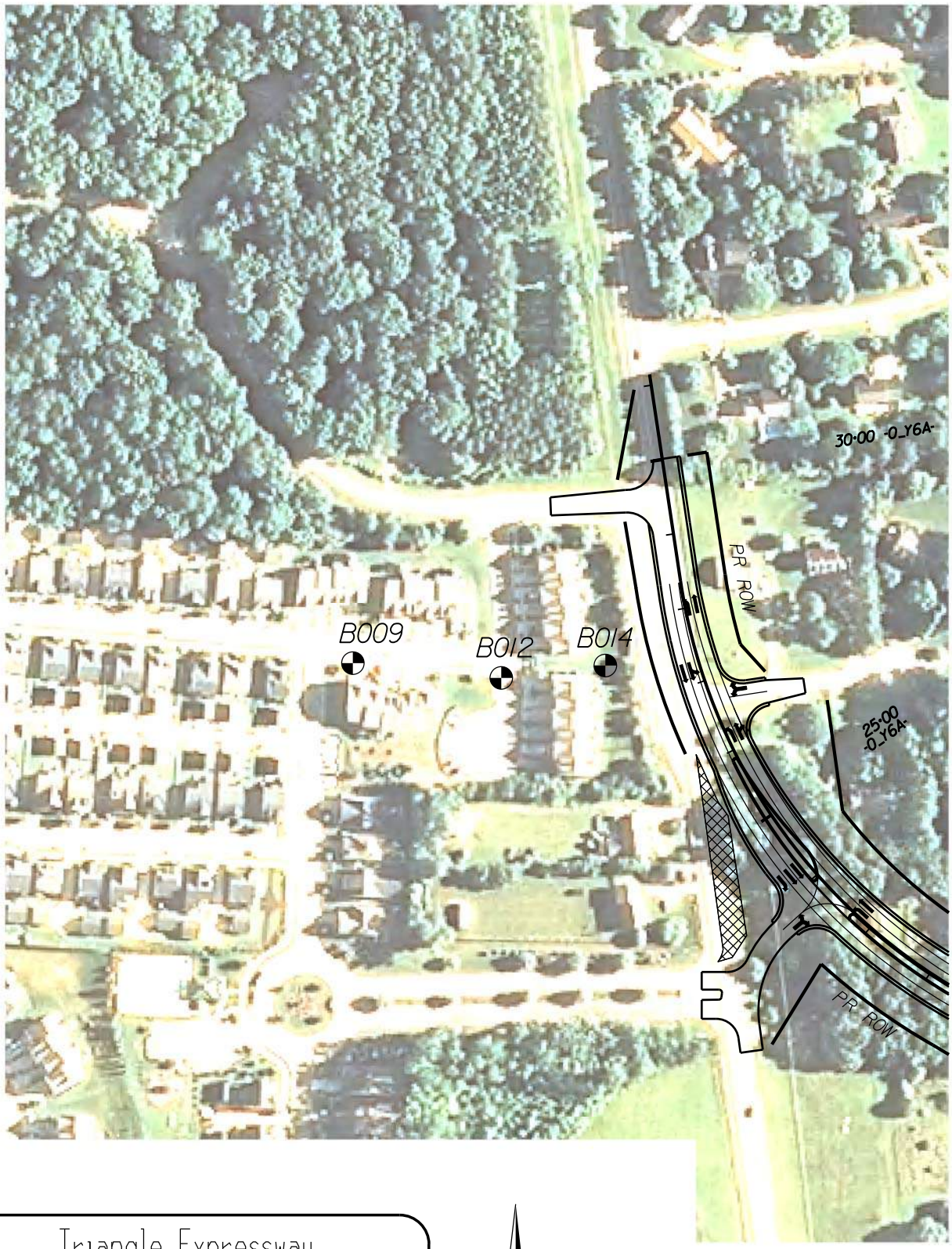
Site B – Middle Meter



Site B – Close Meter



Site B – Close Meter



Triangle Expressway
Southeast Extension
ORANGE CORRIDOR
Johnston/Wake Counties
T.I.P. NO. R-2721, R-2828, R-2829

N

0 100' 200'

NOISE MEASUREMENT
LOCATION B

H.W. LOCHNER, INC.	NOISE MEASUREMENT DATA SHEET

SITE NUMBER: C **PROJECT:** Tri-Ev

SITE DESCRIPTION: _____ **DATE:** 9/10/13

START TIME: 4:16

EVENT NUMBER: _____ **END TIME:** 4:36

TECHNICIAN: Shannon / Schlotz / Bollman **DURATION:** 20'

CALIBRATION: START 12: 116.6 14: 111.5 DB END _____ DB

WEATHER DATA: SKY CONDITION Clear TEMP 90+

WIND: START 0 MPH END 0 MPH DIRECTION _____

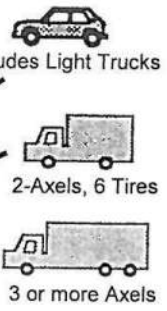
EQUIPMENT: METER 12 & 14 CALIBRATOR _____

RESPONSE: FAST _____ SLOW _____ BATTERY CHECK _____

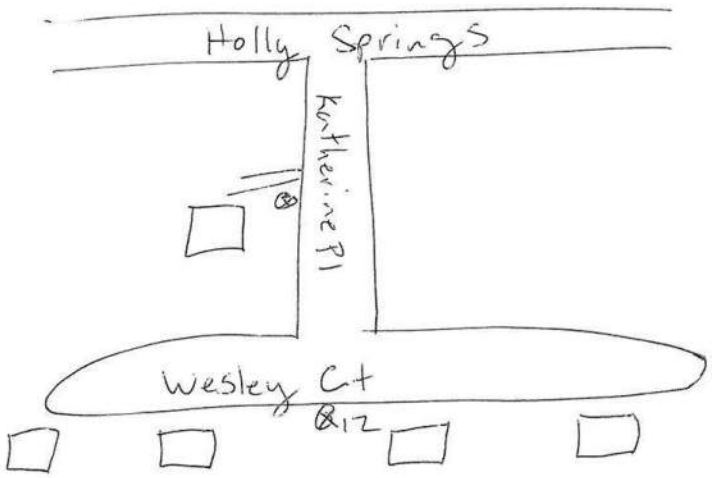
RESULTS: Leq 12: 55.1 14: 61.5 Lmax _____

TRAFFIC DATA

ROAD	N	S	E	W		
TRAFFIC SPEED						
AUTOMOBILES	183	337	2	2		
MEDIUM TRUCKS	6	8				
HEAVY TRUCKS	1	0				



SITE SKETCH



MAJOR SOURCES: Traffic

BACKGROUND NOISE: _____

UNUSUAL EVENTS: _____

OTHER NOTES: Dog Barking in distance near propose "C" location

Triangle Expressway Southeast Extension

Site C
Short Term
9/10/13

= Eliminated due to anomalous data point

Near (Meter 014)		Far (Meter 012)		Site T	
Time (s)	**Leq (dB)**	**Time (s)**	**Leq (dB)**	**Time (s)**	**Leq (dB)**
4:13 PM	60.4			4:13 PM	37.5
4:14 PM	59.6			4:14 PM	37.1
4:15 PM	72.3	4:15 PM	49.3	4:15 PM	37.1
4:16 PM	60.3	4:16 PM	48.4	4:16 PM	37.7
4:17 PM	61.5	4:17 PM	60.5	4:17 PM	38.5
4:18 PM	61.3	4:18 PM	50.1	4:18 PM	38.7
4:19 PM	58.9	4:19 PM	50.0	4:19 PM	38.7
4:20 PM	61.8	4:20 PM	50.7	4:20 PM	38.1
4:21 PM	59.7	4:21 PM	47.8	4:21 PM	38.2
4:22 PM	60.2	4:22 PM	49.6	4:22 PM	38.1
4:23 PM	62.5	4:23 PM	48.9	4:23 PM	38.5
4:24 PM	60.5	4:24 PM	48.9	4:24 PM	38.7
4:25 PM	69.4	4:25 PM	51.2	4:25 PM	40.3
4:26 PM	61.0	4:26 PM	49.7	4:26 PM	39.7
4:27 PM	59.9	4:27 PM	58.2	4:27 PM	39.0
4:28 PM	62.0	4:28 PM	49.5	4:28 PM	39.1
4:29 PM	62.6	4:29 PM	48.0	4:29 PM	38.4
4:30 PM	61.4	4:30 PM	52.6	4:30 PM	38.3
4:31 PM	65.4	4:31 PM	52.3	4:31 PM	38.4
4:32 PM	63.8	4:32 PM	53.2	4:32 PM	43.1
4:33 PM	59.7	4:33 PM	48.1	4:33 PM	49.0
		4:34 PM	47.7	4:34 PM	41.8
		4:35 PM	48.2	4:35 PM	43.9

Avg Leq=	**61**	**Avg Leq=**	**52**	**Avg Leq=**	**41**
		Adjustment =	**1**	**Loudest Hour at Site T =**	**42**
		Adjusted Loudest Hour =	**53**	**Adjustment =**	**1**



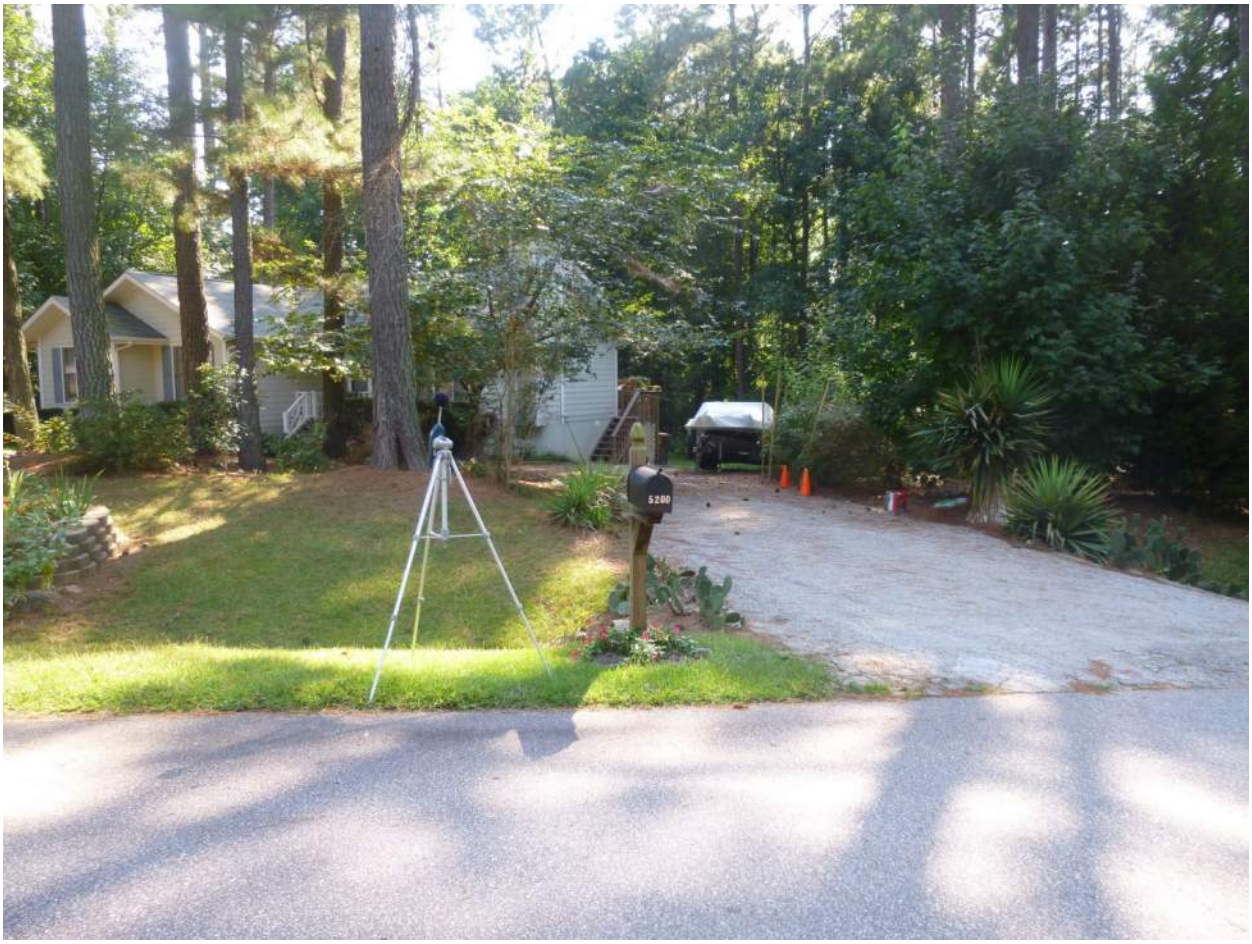
Site C – Far Meter



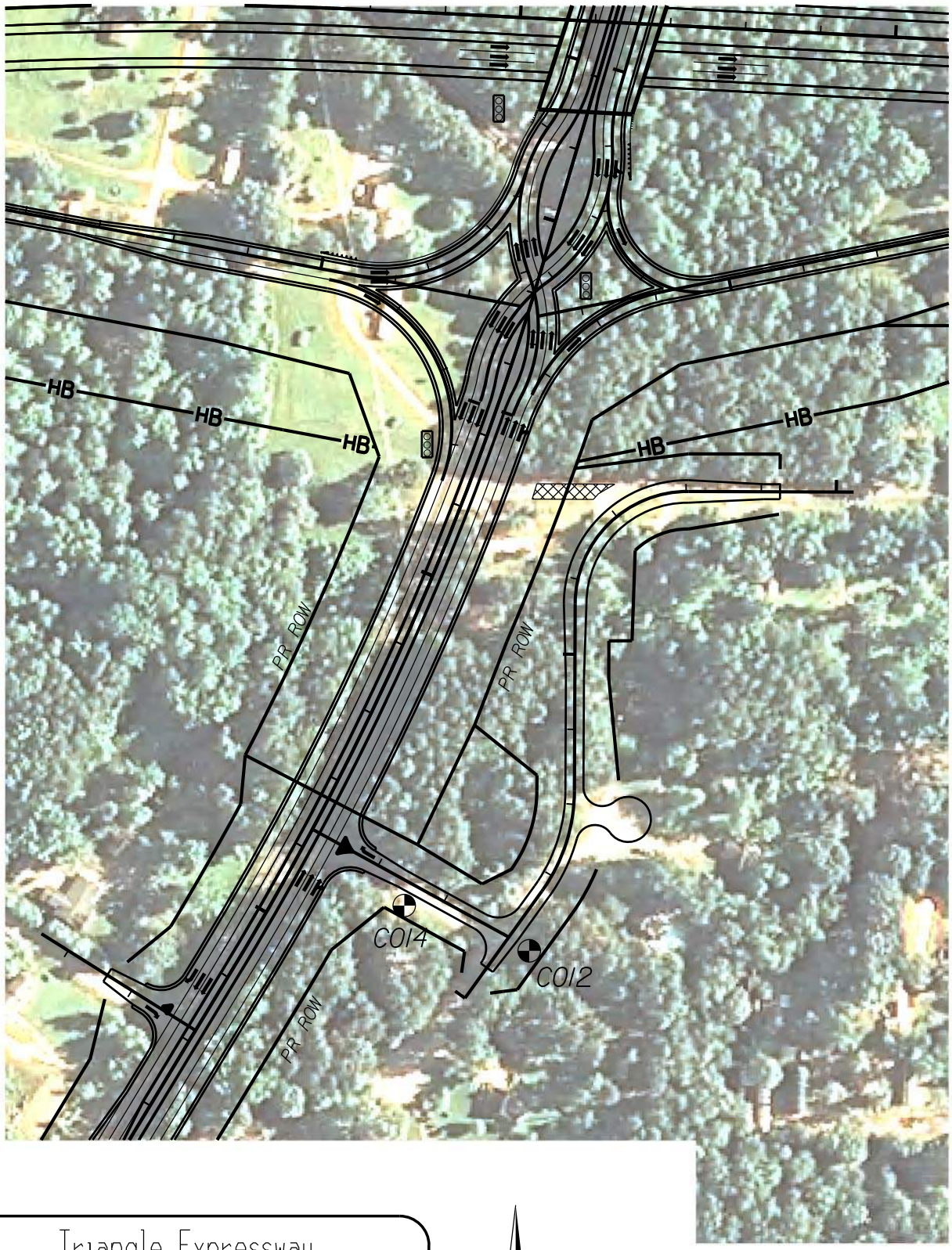
Site C – Far Meter



Site C – Close Meter



Site C – Close Meter



Triangle Expressway
Southeast Extension
ORANGE CORRIDOR
Johnston/Wake Counties
T.I.P. NO. R-2721, R-2828, R-2829

N

0 100' 200'

NOISE MEASUREMENT
LOCATION C

H.W. LOCHNER, INC.

NOISE MEASUREMENT DATA SHEET

SITE NUMBER: D **PROJECT:** TA-Ex

SITE DESCRIPTION: **DATE:** 9/10/13

START TIME: 3:36

EVENT NUMBER: **END TIME:** 3:56

TECHNICIAN: Shannon / Schultz / Ballman **DURATION:** 20

CALIBRATION: START DB END DB

WEATHER DATA: SKY CONDITION Clear TEMP 90

WIND: START Ø MPH END Ø MPH DIRECTION

EQUIPMENT: METER 12: 116.6 14: 113.0 9: 101.1 CALIBRATOR

RESPONSE: FAST SLOW BATTERY CHECK

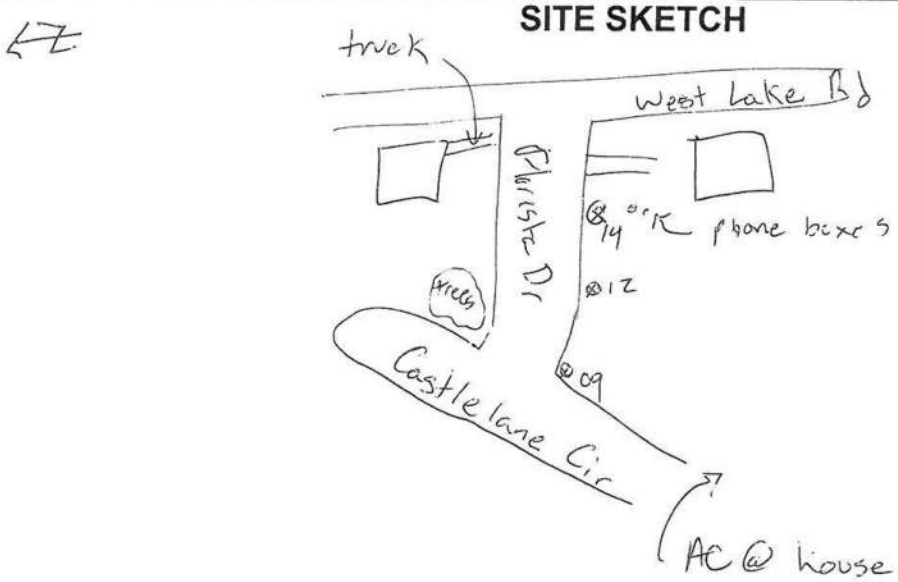
RESULTS: Leq 12: 48.5 9: 32.3 14: 56.5 Lmax

TRAFFIC DATA

ROAD	N	S	E	W		
TRAFFIC SPEED	45	45				
AUTOMOBILES	75	80				
MEDIUM TRUCKS	1	0				
HEAVY TRUCKS	0	2				



SITE SKETCH



MAJOR SOURCES: Traffic on West Lake, Birds, Insects

BACKGROUND NOISE: Truck pulled in/out house on Left

UNUSUAL EVENTS: Garage Door open/closing & talking near 009

OTHER NOTES: A/C near 009

Triangle Expressway Southeast Extension

Site D
Short Term
9/10/13

Near (Meter 014)		Middle (Meter 012)		Far (Meter 009)		Site P	
Time (s)	Leq (dB)	Time (s)	Leq (dB)	Time (s)	Leq (dB)	Time (s)	Leq (dB)
3:34 PM	57.3			3:34 PM	44.9	3:34 PM	44.2
3:35 PM	56.8			3:35 PM	43.0	3:35 PM	45.5
3:36 PM	55.2	3:36 PM	45.6	3:36 PM	42.7	3:36 PM	47.3
3:37 PM	58.2	3:37 PM	43.9	3:37 PM	46.0	3:37 PM	43.3
3:38 PM	56.1	3:38 PM	46.7	3:38 PM	44.0	3:38 PM	48.4
3:39 PM	56.4	3:39 PM	45.1	3:39 PM	43.1	3:39 PM	56.0
3:40 PM	58.3	3:40 PM	42.6	3:40 PM	45.1	3:40 PM	44.7
3:41 PM	56.7	3:41 PM	47.0	3:41 PM	44.1	3:41 PM	45.0
3:42 PM	62.8	3:42 PM	43.6	3:42 PM	47.3	3:42 PM	42.2
3:43 PM	60.2	3:43 PM	48.9	3:43 PM	43.7	3:43 PM	44.1
3:44 PM	54.8	3:44 PM	44.8	3:44 PM	45.2	3:44 PM	45.4
3:45 PM	57.2	3:45 PM	44.9	3:45 PM	44.9	3:45 PM	45.1
3:46 PM	56.4	3:46 PM	44.4	3:46 PM	45.2	3:46 PM	45.0
3:47 PM	54.9	3:47 PM	46.0	3:47 PM	43.7	3:47 PM	46.3
3:48 PM	58.8	3:48 PM	44.2	3:48 PM	50.3	3:48 PM	48.9
3:49 PM	56.6	3:49 PM	49.7	3:49 PM	46.6	3:49 PM	44.3
3:50 PM	57.3	3:50 PM	44.7	3:50 PM	45.9	3:50 PM	42.3
3:51 PM	55.4	3:51 PM	46.9	3:51 PM	44.4	3:51 PM	42.8
3:52 PM	53.8	3:52 PM	44.9	3:52 PM	43.3	3:52 PM	49.4
3:53 PM	60.2	3:53 PM	42.7	3:53 PM	46.1	3:53 PM	44.1
3:54 PM	56.4	3:54 PM	47.9	3:54 PM	44.5	3:54 PM	46.4
3:55 PM	53.8	3:55 PM	46.0	3:55 PM	43.0	3:55 PM	40.5
		3:56 PM	45.5	3:56 PM	41.2	3:56 PM	40.2
Avg Leq=	**57**	**Avg Leq=**	**46**	**Avg Leq=**	**45**	**Avg Leq=**	**45**
				Adjustment =	**1**	**Loudest Hour at Site P =**	**46**
				Adjusted Loudest Hour =	**46**	**Adjustment =**	**1**



Site D – Close Meter



Site D – Close Meter



Site D – Close Meter



Site D – Middle Meter



Site D – Middle Meter



Site D – Far Meter



Triangle Expressway
Southeast Extension
ORANGE CORRIDOR
Johnston/Wake Counties
T.I.P. NO. R-2721, R-2828, R-2829

N

0 100' 200'

NOISE MEASUREMENT
LOCATION D

H.W. LOCHNER, INC.

NOISE MEASUREMENT DATA SHEET

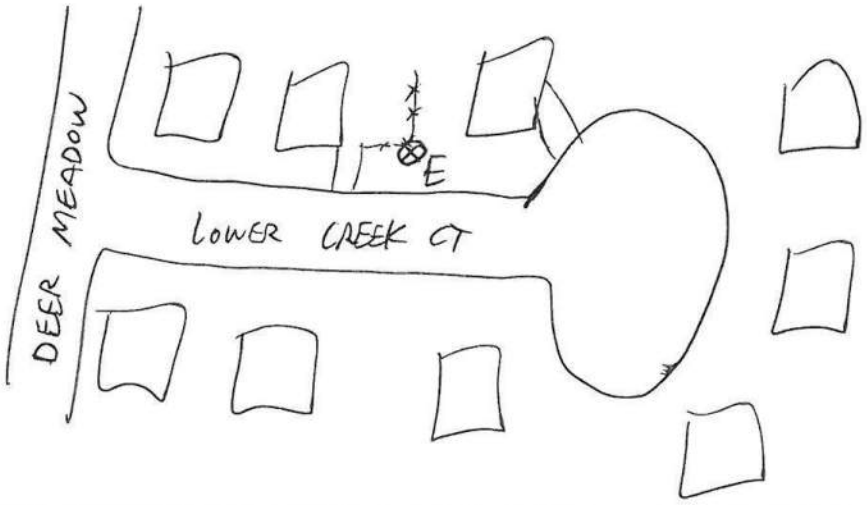
SITE NUMBER: E
PROJECT: TRI-EX
SITE DESCRIPTION:
DATE: 9/10/13
START TIME: 7:15 AM
EVENT NUMBER:
END TIME: 8:00 P.M
TECHNICIAN: SHANNON / SALUTZ
DURATION:
CALIBRATION: START ____ DB END ____ DB
WEATHER DATA: SKY CONDITION CLEAR TEMP 70° - 90°
WIND: START 0 MPH END 0 MPH DIRECTION ____
EQUIPMENT: METER LD 870 CALIBRATOR ____
RESPONSE: FAST ____ SLOW ____ BATTERY CHECK ____
RESULTS: Leq 30.9 Lmax ____

TRAFFIC DATA

ROAD	N	S	E	W		
TRAFFIC SPEED						
AUTOMOBILES						
MEDIUM TRUCKS						
HEAVY TRUCKS						



SITE SKETCH



MAJOR SOURCES: ____
BACKGROUND NOISE: ____
UNUSUAL EVENTS: ____
OTHER NOTES: ____

Triangle Expressway Southeast Extension

Site E **9/10/2013** = Eliminated due to anomalous data point
Long Term **Meter LD 870**

Time (sec)	Leq (dB)	Time (sec)	Leq (dB)	Time (sec)	Leq (dB)	Time (sec)	Leq (dB)	Time (sec)	Leq (dB)
7:16 AM	54.5	8:03 AM	36.2	8:50 AM	49.8	9:37 AM	36.2	10:24 AM	36.9
7:17 AM	34.8	8:04 AM	33.2	8:51 AM	57.0	9:38 AM	56.8	10:25 AM	37.7
7:18 AM	35.0	8:05 AM	33.2	8:52 AM	57.0	9:39 AM	40.0	10:26 AM	39.6
7:19 AM	35.8	8:06 AM	34.9	8:53 AM	53.5	9:40 AM	38.8	10:27 AM	38.7
7:20 AM	35.0	8:07 AM	36.5	8:54 AM	52.7	9:41 AM	37.6	10:28 AM	39.2
7:21 AM	34.8	8:08 AM	37.2	8:55 AM	52.6	9:42 AM	37.6	10:29 AM	38.1
7:22 AM	34.6	8:09 AM	36.6	8:56 AM	52.0	9:43 AM	37.3	10:30 AM	37.5
7:23 AM	36.8	8:10 AM	36.2	8:57 AM	49.0	9:44 AM	38.0	10:31 AM	38.7
7:24 AM	35.0	8:11 AM	35.3	8:58 AM	47.4	9:45 AM	37.9	10:32 AM	39.6
7:25 AM	34.3	8:12 AM	35.4	8:59 AM	47.6	9:46 AM	38.0	10:33 AM	39.3
7:26 AM	36.3	8:13 AM	35.2	9:00 AM	50.2	9:47 AM	39.9	10:34 AM	36.4
7:27 AM	38.2	8:14 AM	34.5	9:01 AM	53.4	9:48 AM	41.1	10:35 AM	37.2
7:28 AM	39.7	8:15 AM	33.8	9:02 AM	45.3	9:49 AM	38.2	10:36 AM	37.3
7:29 AM	33.5	8:16 AM	35.7	9:03 AM	49.8	9:50 AM	37.8	10:37 AM	39.5
7:30 AM	32.7	8:17 AM	37.7	9:04 AM	46.1	9:51 AM	37.7	10:38 AM	37.2
7:31 AM	32.8	8:18 AM	34.7	9:05 AM	43.4	9:52 AM	39.0	10:39 AM	36.7
7:32 AM	37.8	8:19 AM	33.8	9:06 AM	43.2	9:53 AM	38.3	10:40 AM	36.8
7:33 AM	36.9	8:20 AM	34.9	9:07 AM	42.6	9:54 AM	37.0	10:41 AM	35.8
7:34 AM	36.2	8:21 AM	35.8	9:08 AM	43.7	9:55 AM	38.9	10:42 AM	37.5
7:35 AM	35.4	8:22 AM	37.5	9:09 AM	43.5	9:56 AM	40.2	10:43 AM	37.4
7:36 AM	32.9	8:23 AM	36.9	9:10 AM	43.9	9:57 AM	39.3	10:44 AM	36.4
7:37 AM	37.1	8:24 AM	36.5	9:11 AM	45.2	9:58 AM	37.6	10:45 AM	37.4
7:38 AM	36.7	8:25 AM	42.7	9:12 AM	44.2	9:59 AM	39.7	10:46 AM	37.1
7:39 AM	34.6	8:26 AM	43.4	9:13 AM	43.7	10:00 AM	38.6	10:47 AM	35.4
7:40 AM	34.6	8:27 AM	42.4	9:14 AM	43.5	10:01 AM	39.3	10:48 AM	35.9
7:41 AM	32.7	8:28 AM	40.7	9:15 AM	45.6	10:02 AM	38.4	10:49 AM	36.2
7:42 AM	36.1	8:29 AM	37.5	9:16 AM	46.4	10:03 AM	39.9	10:50 AM	40.6
7:43 AM	34.7	8:30 AM	36.3	9:17 AM	37.0	10:04 AM	42.8	10:51 AM	36.0
7:44 AM	39.8	8:31 AM	36.2	9:18 AM	38.4	10:05 AM	39.8	10:52 AM	35.3
7:45 AM	34.2	8:32 AM	37.0	9:19 AM	39.2	10:06 AM	38.6	10:53 AM	33.0
7:46 AM	34.6	8:33 AM	36.7	9:20 AM	41.6	10:07 AM	39.4	10:54 AM	34.0
7:47 AM	35.7	8:34 AM	35.9	9:21 AM	38.4	10:08 AM	38.8	10:55 AM	35.2
7:48 AM	36.6	8:35 AM	35.3	9:22 AM	40.8	10:09 AM	37.2	10:56 AM	36.4
7:49 AM	36.1	8:36 AM	36.7	9:23 AM	41.8	10:10 AM	37.0	10:57 AM	35.1
7:50 AM	37.6	8:37 AM	37.1	9:24 AM	37.4	10:11 AM	37.7	10:58 AM	35.6
7:51 AM	39.6	8:38 AM	37.4	9:25 AM	37.9	10:12 AM	37.3	10:59 AM	35.2
7:52 AM	34.5	8:39 AM	36.7	9:26 AM	37.5	10:13 AM	38.5	11:00 AM	37.6
7:53 AM	34.7	8:40 AM	37.0	9:27 AM	37.9	10:14 AM	39.3	11:01 AM	34.3
7:54 AM	34.2	8:41 AM	36.7	9:28 AM	39.0	10:15 AM	38.5	11:02 AM	35.8
7:55 AM	33.7	8:42 AM	36.5	9:29 AM	37.2	10:16 AM	38.1	11:03 AM	33.8
7:56 AM	37.5	8:43 AM	38.8	9:30 AM	47.8	10:17 AM	38.5	11:04 AM	35.2
7:57 AM	33.8	8:44 AM	40.0	9:31 AM	40.4	10:18 AM	36.9	11:05 AM	35.4
7:58 AM	32.7	8:45 AM	50.3	9:32 AM	39.4	10:19 AM	41.0	11:06 AM	34.5
7:59 AM	32.7	8:46 AM	51.8	9:33 AM	39.6	10:20 AM	45.0	11:07 AM	34.1
8:00 AM	33.2	8:47 AM	50.8	9:34 AM	41.4	10:21 AM	40.0	11:08 AM	33.6
8:01 AM	34.9	8:48 AM	52.8	9:35 AM	42.9	10:22 AM	39.5	11:09 AM	32.8
8:02 AM	34.3	8:49 AM	46.8	9:36 AM	41.3	10:23 AM	36.8	11:10 AM	33.3

Triangle Expressway Southeast Extension

Site E **9/10/2013** = Eliminated due to anomalous data point
Long Term **Meter 1707**

Time (sec)	Leq (dB)	Time (sec)	Leq (dB)	Time (sec)	Leq (dB)	Time (sec)	Leq (dB)	Time (sec)	Leq (dB)
11:11 AM	37.2	11:58 AM	32.4	12:45 PM	31.1	1:32 PM	30.1	2:19 PM	31.8
11:12 AM	34.3	11:59 AM	32.7	12:46 PM	31.5	1:33 PM	34.5	2:20 PM	31.8
11:13 AM	36.4	12:00 PM	32.0	12:47 PM	32.3	1:34 PM	35.9	2:21 PM	32.1
11:14 AM	34.6	12:01 PM	32.3	12:48 PM	32.3	1:35 PM	35.0	2:22 PM	33.0
11:15 AM	33.5	12:02 PM	33.5	12:49 PM	32.1	1:36 PM	34.9	2:23 PM	40.5
11:16 AM	34.9	12:03 PM	32.1	12:50 PM	32.3	1:37 PM	35.8	2:24 PM	37.8
11:17 AM	34.7	12:04 PM	32.7	12:51 PM	32.5	1:38 PM	35.0	2:25 PM	36.8
11:18 AM	34.9	12:05 PM	34.6	12:52 PM	31.5	1:39 PM	34.5	2:26 PM	36.2
11:19 AM	35.0	12:06 PM	33.3	12:53 PM	31.5	1:40 PM	32.9	2:27 PM	35.3
11:20 AM	38.0	12:07 PM	31.5	12:54 PM	31.9	1:41 PM	28.6	2:28 PM	35.9
11:21 AM	39.2	12:08 PM	30.6	12:55 PM	31.2	1:42 PM	28.1	2:29 PM	35.6
11:22 AM	34.1	12:09 PM	32.7	12:56 PM	31.9	1:43 PM	30.3	2:30 PM	33.7
11:23 AM	34.6	12:10 PM	32.5	12:57 PM	31.1	1:44 PM	30.8	2:31 PM	29.9
11:24 AM	33.7	12:11 PM	32.4	12:58 PM	31.6	1:45 PM	30.4	2:32 PM	30.3
11:25 AM	33.1	12:12 PM	33.0	12:59 PM	31.7	1:46 PM	31.9	2:33 PM	30.2
11:26 AM	34.3	12:13 PM	32.8	1:00 PM	32.5	1:47 PM	30.1	2:34 PM	34.0
11:27 AM	34.6	12:14 PM	32.6	1:01 PM	32.6	1:48 PM	29.3	2:35 PM	33.7
11:28 AM	34.8	12:15 PM	33.3	1:02 PM	30.6	1:49 PM	29.4	2:36 PM	31.6
11:29 AM	35.8	12:16 PM	32.7	1:03 PM	30.0	1:50 PM	29.8	2:37 PM	31.7
11:30 AM	34.0	12:17 PM	32.7	1:04 PM	32.5	1:51 PM	29.4	2:38 PM	34.3
11:31 AM	33.7	12:18 PM	32.4	1:05 PM	32.3	1:52 PM	29.2	2:39 PM	47.9
11:32 AM	35.4	12:19 PM	33.2	1:06 PM	31.5	1:53 PM	30.1	2:40 PM	37.7
11:33 AM	33.5	12:20 PM	33.2	1:07 PM	29.4	1:54 PM	30.1	2:41 PM	30.6
11:34 AM	31.8	12:21 PM	32.2	1:08 PM	30.4	1:55 PM	30.0	2:42 PM	29.8
11:35 AM	31.5	12:22 PM	32.2	1:09 PM	32.8	1:56 PM	29.3	2:43 PM	30.9
11:36 AM	31.6	12:23 PM	31.2	1:10 PM	33.5	1:57 PM	30.2	2:44 PM	29.9
11:37 AM	31.5	12:24 PM	31.8	1:11 PM	34.8	1:58 PM	30.4	2:45 PM	33.6
11:38 AM	31.8	12:25 PM	32.3	1:12 PM	31.1	1:59 PM	33.6	2:46 PM	35.9
11:39 AM	31.9	12:26 PM	32.3	1:13 PM	31.8	2:00 PM	44.5	2:47 PM	35.4
11:40 AM	32.2	12:27 PM	30.9	1:14 PM	30.5	2:01 PM	35.7	2:48 PM	35.5
11:41 AM	37.2	12:28 PM	30.9	1:15 PM	29.1	2:02 PM	35.4	2:49 PM	35.2
11:42 AM	39.7	12:29 PM	32.7	1:16 PM	28.4	2:03 PM	35.5	2:50 PM	37.0
11:43 AM	35.0	12:30 PM	33.5	1:17 PM	30.7	2:04 PM	35.2	2:51 PM	35.8
11:44 AM	34.5	12:31 PM	40.0	1:18 PM	32.2	2:05 PM	35.0	2:52 PM	38.1
11:45 AM	35.7	12:32 PM	34.2	1:19 PM	32.7	2:06 PM	31.2	2:53 PM	32.8
11:46 AM	38.4	12:33 PM	34.9	1:20 PM	31.3	2:07 PM	30.6	2:54 PM	34.3
11:47 AM	40.8	12:34 PM	32.3	1:21 PM	30.1	2:08 PM	36.2	2:55 PM	39.1
11:48 AM	33.0	12:35 PM	34.3	1:22 PM	29.2	2:09 PM	30.1	2:56 PM	45.9
11:49 AM	33.4	12:36 PM	31.3	1:23 PM	32.8	2:10 PM	29.8	2:57 PM	35.6
11:50 AM	35.2	12:37 PM	32.1	1:24 PM	31.3	2:11 PM	29.5	2:58 PM	32.3
11:51 AM	33.5	12:38 PM	34.8	1:25 PM	31.0	2:12 PM	30.2	2:59 PM	31.9
11:52 AM	31.5	12:39 PM	32.1	1:26 PM	30.1	2:13 PM	31.0	3:00 PM	30.4
11:53 AM	31.8	12:40 PM	33.1	1:27 PM	30.3	2:14 PM	33.5	3:01 PM	31.2
11:54 AM	31.8	12:41 PM	32.3	1:28 PM	30.3	2:15 PM	37.6	3:02 PM	33.0
11:55 AM	32.8	12:42 PM	31.5	1:29 PM	29.5	2:16 PM	33.6	3:03 PM	40.0
11:56 AM	32.4	12:43 PM	31.9	1:30 PM	31.2	2:17 PM	30.1	3:04 PM	32.6
11:57 AM	34.1	12:44 PM	32.0	1:31 PM	30.4	2:18 PM	32.5	3:05 PM	33.2

Triangle Expressway Southeast Extension

Site E **9/10/2013** = Eliminated due to anomalous data point
Long Term **Meter 1707**

Time (sec)	Leq (dB)	Time (sec)	Leq (dB)	Time (sec)	Leq (dB)	Time (sec)	Leq (dB)	Time (sec)	Leq (dB)
3:06 PM	34.5	3:53 PM	33.8	4:40 PM	51.2	5:27 PM	40.4	6:14 PM	39.5
3:07 PM	35.7	3:54 PM	31.8	4:41 PM	49.6	5:28 PM	40.5	6:15 PM	39.3
3:08 PM	36.0	3:55 PM	32.6	4:42 PM	48.5	5:29 PM	40.2	6:16 PM	39.3
3:09 PM	36.0	3:56 PM	31.6	4:43 PM	44.1	5:30 PM	40.5	6:17 PM	38.9
3:10 PM	35.6	3:57 PM	35.1	4:44 PM	42.7	5:31 PM	40.8	6:18 PM	39.2
3:11 PM	35.2	3:58 PM	37.6	4:45 PM	40.0	5:32 PM	40.5	6:19 PM	40.0
3:12 PM	35.2	3:59 PM	32.1	4:46 PM	39.4	5:33 PM	40.2	6:20 PM	39.6
3:13 PM	35.4	4:00 PM	33.5	4:47 PM	38.6	5:34 PM	40.1	6:21 PM	39.3
3:14 PM	48.3	4:01 PM	32.7	4:48 PM	38.4	5:35 PM	40.2	6:22 PM	41.5
3:15 PM	33.5	4:02 PM	32.4	4:49 PM	38.3	5:36 PM	40.2	6:23 PM	39.2
3:16 PM	32.2	4:03 PM	32.8	4:50 PM	37.3	5:37 PM	39.7	6:24 PM	38.3
3:17 PM	32.4	4:04 PM	36.1	4:51 PM	38.0	5:38 PM	40.0	6:25 PM	38.5
3:18 PM	31.9	4:05 PM	36.1	4:52 PM	37.4	5:39 PM	39.9	6:26 PM	38.8
3:19 PM	31.8	4:06 PM	36.3	4:53 PM	37.2	5:40 PM	39.6	6:27 PM	39.0
3:20 PM	31.6	4:07 PM	35.9	4:54 PM	34.9	5:41 PM	38.8	6:28 PM	38.4
3:21 PM	32.7	4:08 PM	36.8	4:55 PM	35.4	5:42 PM	38.9	6:29 PM	37.4
3:22 PM	31.8	4:09 PM	38.1	4:56 PM	35.9	5:43 PM	39.2	6:30 PM	35.3
3:23 PM	31.8	4:10 PM	36.9	4:57 PM	34.2	5:44 PM	39.8	6:31 PM	35.7
3:24 PM	32.1	4:11 PM	37.0	4:58 PM	33.6	5:45 PM	39.9	6:32 PM	36.1
3:25 PM	42.3	4:12 PM	36.8	4:59 PM	36.9	5:46 PM	39.3	6:33 PM	42.4
3:26 PM	41.3	4:13 PM	33.6	5:00 PM	36.8	5:47 PM	39.1	6:34 PM	36.7
3:27 PM	36.0	4:14 PM	32.1	5:01 PM	37.0	5:48 PM	40.6	6:35 PM	35.7
3:28 PM	36.3	4:15 PM	32.7	5:02 PM	42.3	5:49 PM	37.2	6:36 PM	35.8
3:29 PM	36.7	4:16 PM	33.0	5:03 PM	42.0	5:50 PM	37.9	6:37 PM	35.6
3:30 PM	36.3	4:17 PM	32.2	5:04 PM	38.0	5:51 PM	37.7	6:38 PM	38.5
3:31 PM	36.0	4:18 PM	32.1	5:05 PM	38.7	5:52 PM	38.1	6:39 PM	38.8
3:32 PM	35.6	4:19 PM	33.0	5:06 PM	37.8	5:53 PM	38.5	6:40 PM	44.0
3:33 PM	36.2	4:20 PM	31.6	5:07 PM	37.3	5:54 PM	39.4	6:41 PM	38.2
3:34 PM	33.8	4:21 PM	36.7	5:08 PM	38.1	5:55 PM	39.7	6:42 PM	37.6
3:35 PM	32.1	4:22 PM	36.9	5:09 PM	39.1	5:56 PM	39.3	6:43 PM	37.8
3:36 PM	34.3	4:23 PM	38.6	5:10 PM	39.3	5:57 PM	41.5	6:44 PM	38.0
3:37 PM	32.9	4:24 PM	38.5	5:11 PM	39.9	5:58 PM	39.2	6:45 PM	39.8
3:38 PM	32.5	4:25 PM	37.6	5:12 PM	39.6	5:59 PM	40.5	6:46 PM	38.7
3:39 PM	33.3	4:26 PM	37.3	5:13 PM	40.0	6:00 PM	41.1	6:47 PM	36.3
3:40 PM	36.3	4:27 PM	37.8	5:14 PM	39.3	6:01 PM	40.3	6:48 PM	35.2
3:41 PM	34.7	4:28 PM	37.4	5:15 PM	39.7	6:02 PM	39.3	6:49 PM	41.0
3:42 PM	33.9	4:29 PM	42.6	5:16 PM	40.5	6:03 PM	39.9	6:50 PM	36.0
3:43 PM	34.2	4:30 PM	42.0	5:17 PM	40.5	6:04 PM	40.1	6:51 PM	35.0
3:44 PM	40.2	4:31 PM	44.5	5:18 PM	40.6	6:05 PM	40.2	6:52 PM	36.0
3:45 PM	37.5	4:32 PM	48.4	5:19 PM	41.1	6:06 PM	40.3	6:53 PM	36.8
3:46 PM	36.4	4:33 PM	47.6	5:20 PM	40.7	6:07 PM	40.4	6:54 PM	37.6
3:47 PM	36.3	4:34 PM	46.9	5:21 PM	40.9	6:08 PM	39.8	6:55 PM	46.9
3:48 PM	35.3	4:35 PM	43.2	5:22 PM	41.0	6:09 PM	37.3	6:56 PM	45.7
3:49 PM	35.3	4:36 PM	37.8	5:23 PM	40.8	6:10 PM	37.2	6:57 PM	38.4
3:50 PM	35.7	4:37 PM	39.1	5:24 PM	40.7	6:11 PM	36.9	6:58 PM	38.0
3:51 PM	36.9	4:38 PM	39.2	5:25 PM	40.5	6:12 PM	38.3	6:59 PM	38.7
3:52 PM	35.4	4:39 PM	48.3	5:26 PM	40.7	6:13 PM	38.9	7:00 PM	38.4

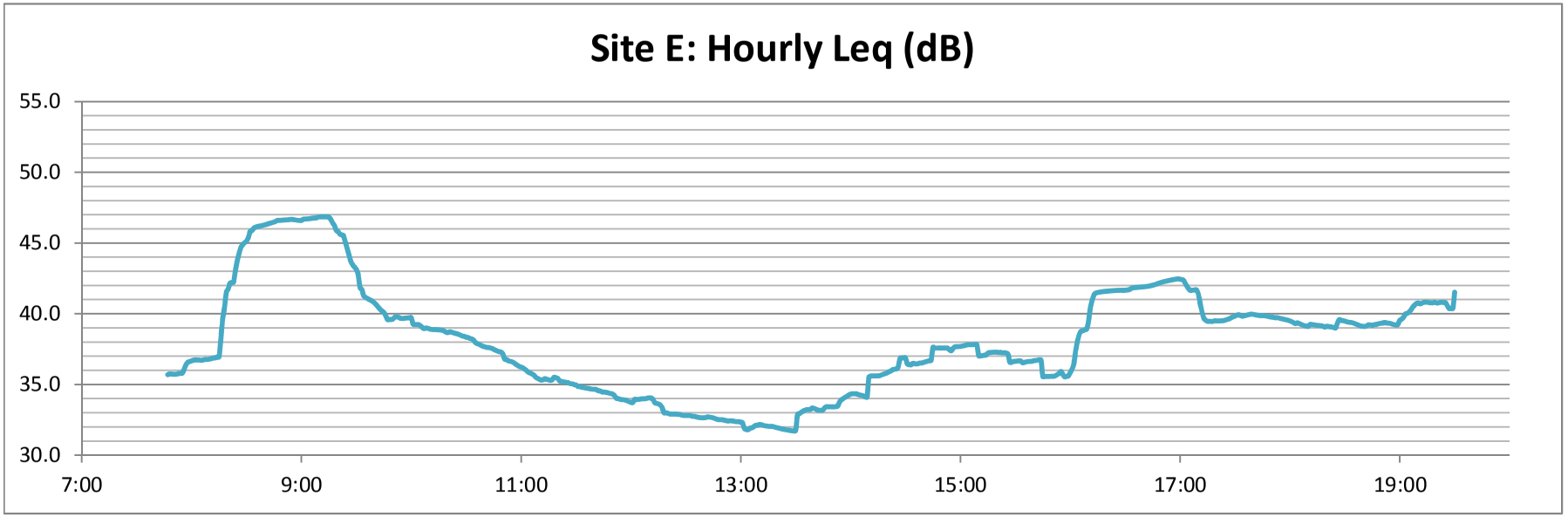
Triangle Expressway Southeast Extension

Site E **9/10/2013** = Eliminated due to anomalous data point
Long Term **Meter 1707**

Time (sec)	Leq (dB)
7:01 PM	38.7
7:02 PM	38.7
7:03 PM	37.6
7:04 PM	37.9
7:05 PM	35.9
7:06 PM	37.5
7:07 PM	36.4
7:08 PM	35.7
7:09 PM	36.5
7:10 PM	36.9
7:11 PM	39.6
7:12 PM	42.0
7:13 PM	37.2
7:14 PM	37.0
7:15 PM	41.8
7:16 PM	39.8
7:17 PM	41.0
7:18 PM	40.6
7:19 PM	41.4
7:20 PM	40.4
7:21 PM	40.5
7:22 PM	40.0
7:23 PM	38.4
7:24 PM	36.8
7:25 PM	34.3
7:26 PM	34.5
7:27 PM	36.3
7:28 PM	40.6
7:29 PM	46.1
7:30 PM	41.2
7:31 PM	43.0
7:32 PM	45.6
7:33 PM	43.6
7:34 PM	42.4
7:35 PM	43.6
7:36 PM	45.6
7:37 PM	43.9
7:38 PM	44.2
7:39 PM	42.1
7:40 PM	41.7
7:41 PM	40.8
7:42 PM	42.0
7:43 PM	39.2
7:44 PM	37.4
7:45 PM	38.3
7:46 PM	36.3
7:47 PM	36.8
7:48 PM	39.9
7:49 PM	36.9
7:50 PM	36.2
7:51 PM	39.0
7:52 PM	37.5
7:53 PM	35.0
7:54 PM	35.8
7:55 PM	41.0
7:56 PM	38.8
7:57 PM	38.7
7:58 PM	39.1
7:59 PM	53.1
8:00 PM	56.6

Triangle Expressway Southeast Extension

Site E
Long Term
9/17/2013
Meter LD 870





Site E – Long Term



Site E – Long Term



Triangle Expressway
Southeast Extension
ORANGE CORRIDOR
Johnston/Wake Counties
T.I.P. NO. R-2721, R-2828, R-2829

N

0 100' 200'

NOISE MEASUREMENT
LOCATION E

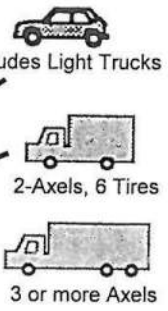
H.W. LOCHNER, INC.

NOISE MEASUREMENT DATA SHEET

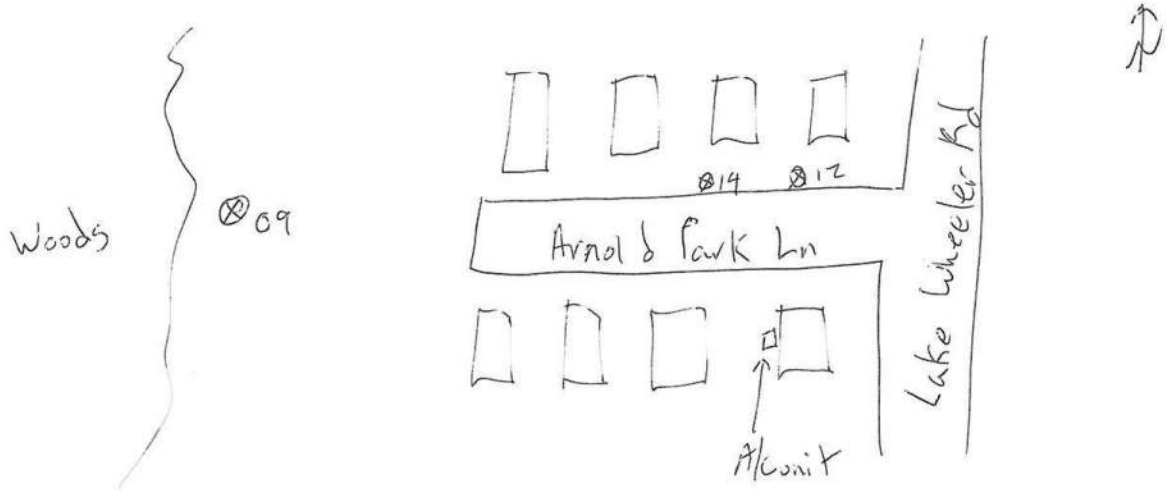
SITE NUMBER: F
PROJECT: Tri-Ex
SITE DESCRIPTION:
DATE: 9/10/13
START TIME: 1:24
EVENT NUMBER:
END TIME: 1:44
TECHNICIAN: Shannon / Salute / Bellman
DURATION: 20
CALIBRATION: START 12: 116.5 9: 104.2 14: 118.5 DB END 12: 116.7 9: 101.3 14: 114.5 DB
WEATHER DATA: SKY CONDITION clear TEMP 90
WIND: START ∅ MPH END ∅ MPH DIRECTION
EQUIPMENT: METER CALIBRATOR
RESPONSE: FAST SLOW BATTERY CHECK
RESULTS: Leq 12: 100.6 9: 14: 57.1 Lmax

TRAFFIC DATA

ROAD	N	S	E	W		
TRAFFIC SPEED	45	45				
AUTOMOBILES	49	61		2		
MEDIUM TRUCKS	1	7				
HEAVY TRUCKS	1	1				



SITE SKETCH



MAJOR SOURCES: Birds / insects / Traffic on Lake Wheeler Rd / AC unit
BACKGROUND NOISE:
UNUSUAL EVENTS: Car on Arnold Park @ 1:43
OTHER NOTES:

Triangle Expressway Southeast Extension

Site F
Short Term
9/10/13

= Eliminated due to anomalous data point

Near (Meter 012)		Middle (Meter 014)		Far (Meter 009)		Site P	
Time (s)	Leq (dB)	Time (s)	Leq (dB)	Time (s)	Leq (dB)	Time (s)	Leq (dB)
		1:21 PM	60	1:21 PM	45.3	1:21 PM	46.2
1:22 PM	58.1	1:22 PM	60.9	1:22 PM	43.0	1:22 PM	45.0
1:23 PM	58.8	1:23 PM	60.4	1:23 PM	44.3	1:23 PM	37.7
1:24 PM	59.4	1:24 PM	57.8	1:24 PM	43.1	1:24 PM	40.8
1:25 PM	57.0	1:25 PM	55.3	1:25 PM	42.4	1:25 PM	37.4
1:26 PM	54.3	1:26 PM	53.3	1:26 PM	41.5	1:26 PM	38.7
1:27 PM	51.6	1:27 PM	56.0	1:27 PM	42.7	1:27 PM	46.9
1:28 PM	54.2	1:28 PM	57.3	1:28 PM	43.4	1:28 PM	48.7
1:29 PM	56.1	1:29 PM	55.0	1:29 PM	41.8	1:29 PM	43.9
1:30 PM	53.3	1:30 PM	63.0	1:30 PM	45.1	1:30 PM	45.8
1:31 PM	61.7	1:31 PM	56.2	1:31 PM	42.8	1:31 PM	40.3
1:32 PM	54.0	1:32 PM	57.2	1:32 PM	42.6	1:32 PM	38.4
1:33 PM	56.1	1:33 PM	61.0	1:33 PM	42.3	1:33 PM	42.9
1:34 PM	59.0	1:34 PM	52.0	1:34 PM	41.8	1:34 PM	44.1
1:35 PM	49.1	1:35 PM	58.3	1:35 PM	42.8	1:35 PM	37.9
1:36 PM	56.7	1:36 PM	60.1	1:36 PM	43.4	1:36 PM	42.6
1:37 PM	58.8	1:37 PM	60.9	1:37 PM	44.8	1:37 PM	40.4
1:38 PM	59.4	1:38 PM	65.7	1:38 PM	47.5	1:38 PM	39.5
1:39 PM	64.1	1:39 PM	61.8	1:39 PM	44.9	1:39 PM	37.2
1:40 PM	60.6	1:40 PM	60.4	1:40 PM	43.4	1:40 PM	40.9
1:41 PM	58.6	1:41 PM	58.1	1:41 PM	42.2	1:41 PM	40.7
1:42 PM	56.7	1:42 PM	53.1	1:42 PM	41.9	1:42 PM	33.6
1:43 PM	53.4	1:43 PM	50.2	1:43 PM	42.7	1:43 PM	38.1
1:44 PM	50.8					1:44 PM	41.7
Avg Leq=	**57**	**Avg Leq=**	**58**	**Avg Leq=**	**43**	**Avg Leq=**	**43**
				Adjustment =	**3**	**Loudest Hour at Site P =**	**46**
				Adjusted Loudest Hour =	**46**	**Adjustment =**	**3**



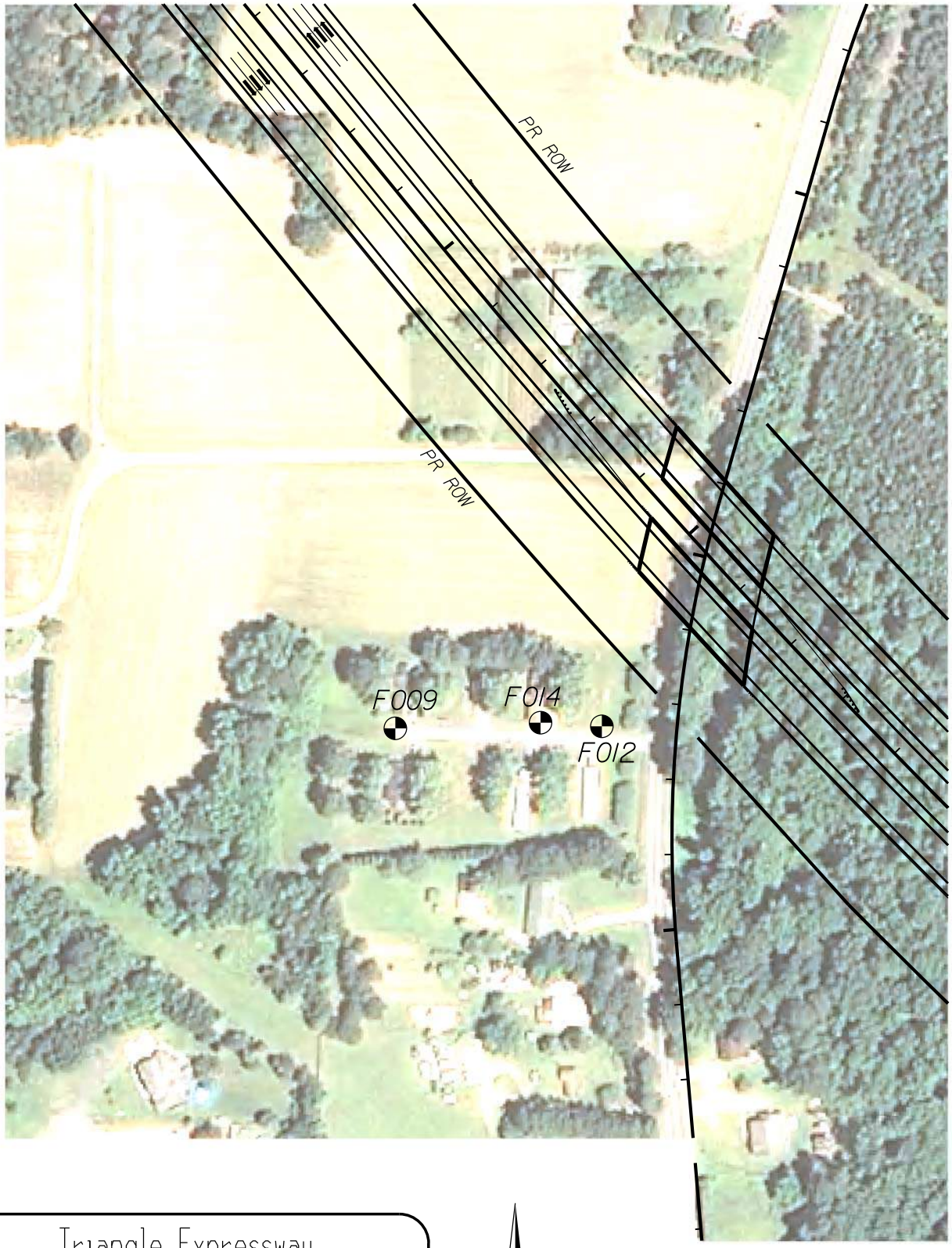
Site F – Far meter



Site F – Middle and Close meters



Site F – Middle and Close meters



Triangle Expressway
Southeast Extension
ORANGE CORRIDOR
Johnston/Wake Counties
T.I.P. NO. R-2721, R-2828, R-2829

N

0 100' 200'

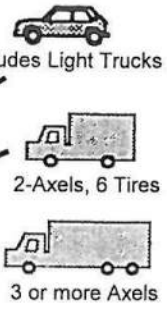
NOISE MEASUREMENT
LOCATION F

H.W. LOCHNER, INC.	NOISE MEASUREMENT DATA SHEET

SITE NUMBER: G **PROJECT:** Tri-Ex
SITE DESCRIPTION: _____ **DATE:** 9/10/13
START TIME: 2:09
EVENT NUMBER: _____ **END TIME:** 2:29
TECHNICIAN: Shannon/Salute/Bollman **DURATION:** 20
CALIBRATION: START 12: 116.8 14: 115.5 DB END _____ DB
WEATHER DATA: SKY CONDITION Clear TEMP _____
WIND: START Ø MPH END Ø MPH DIRECTION breeze from East
EQUIPMENT: METER _____ CALIBRATOR _____
RESPONSE: FAST _____ SLOW _____ BATTERY CHECK _____
RESULTS: Leq 12: 58.9 14: 55.4 Lmax _____

TRAFFIC DATA

ROAD	NW	SE	E	W		
TRAFFIC SPEED	45	45				
AUTOMOBILES	206	130				
MEDIUM TRUCKS	7	5				
HEAVY TRUCKS	0	3				
		1				



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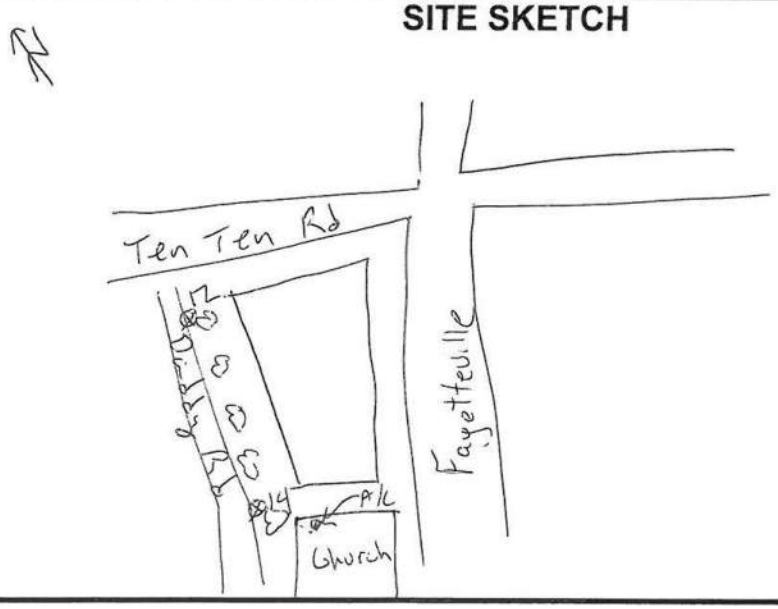


MAJOR SOURCES: Traffic on Ten-Ten, A/C unit on church
BACKGROUND NOISE: Traffic on Fayetteville Rd
UNUSUAL EVENTS: Car on Daddy @ 2:12
OTHER NOTES: Sirens @ 2:25

Triangle Expressway Southeast Extension

Site G
Short Term
9/10/13

= Eliminated due to anomalous data point

Near (Meter 012)		Far (Meter 014)		Site P	
Time (s)	**Leq (dB)**	**Time (s)**	**Leq (dB)**	**Time (s)**	**Leq (dB)**
		2:06 PM	54.6	2:06 PM	46.5
		2:07 PM	53.2	2:07 PM	55.0
2:08 PM	54.3	2:08 PM	54.9	2:08 PM	42.8
2:09 PM	60.2	2:09 PM	59.9	2:09 PM	46.2
2:10 PM	59.8	2:10 PM	50.6	2:10 PM	41.4
2:11 PM	54.3	2:11 PM	52.5	2:11 PM	47.0
2:12 PM	55.5	2:12 PM	52.1	2:12 PM	47.2
2:13 PM	53.5	2:13 PM	50.8	2:13 PM	47.5
2:14 PM	54.6	2:14 PM	51.2	2:14 PM	44.2
2:15 PM	54.2	2:15 PM	51.0	2:15 PM	53.1
2:16 PM	55.2	2:16 PM	52.7	2:16 PM	44.7
2:17 PM	56.0	2:17 PM	52.0	2:17 PM	40.5
2:18 PM	55.0	2:18 PM	51.5	2:18 PM	41.7
2:19 PM	52.4	2:19 PM	50.1	2:19 PM	40.9
2:20 PM	53.4	2:20 PM	53.5	2:20 PM	37.6
2:21 PM	56.5	2:21 PM	55.6	2:21 PM	40.2
2:22 PM	58.2	2:22 PM	59.0	2:22 PM	45.8
2:23 PM	58.7	2:23 PM	52.4	2:23 PM	44.6
2:24 PM	55.7	2:24 PM	52.5	2:24 PM	47.7
2:25 PM	54.7	2:25 PM	52.6	2:25 PM	44.7
2:26 PM	54.8	2:26 PM	51.0	2:26 PM	41.9
2:27 PM	55.1	2:27 PM	49.8	2:27 PM	39.7
2:28 PM	54.3			2:28 PM	39.2

Avg Leq=	**56**	**Avg Leq=**	**52**	**Avg Leq=**	**44**
		Adjustment =	**2**	**Loudest Hour at Site P =**	**46**
		Adjusted Loudest Hour =	**54**	**Adjustment =**	**2**



Site G – Close Meter



Site G – Close Meter



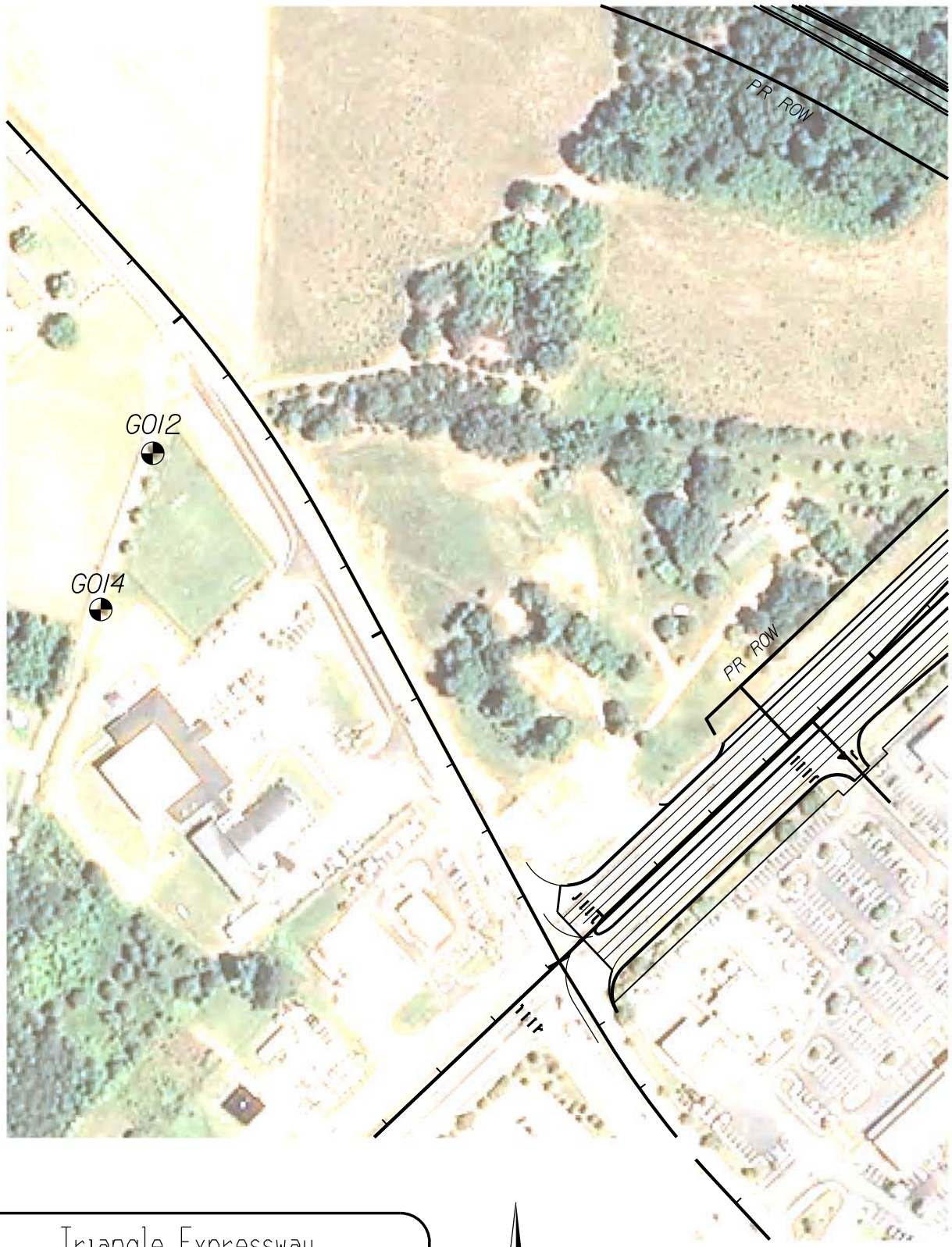
Site G – Close Meter



Site G – Far Meter



Site G – Far Meter



Triangle Expressway
Southeast Extension
RED CORRIDOR
Johnston/Wake Counties
T.I.P. NO. R-2721, R-2828, R-2829

N

0 100' 200'

NOISE MEASUREMENT
LOCATION G

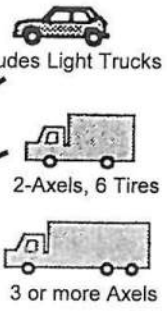
H.W. LOCHNER, INC.

NOISE MEASUREMENT DATA SHEET

SITE NUMBER: 4 **PROJECT:** Tri-Ex
SITE DESCRIPTION: _____ **DATE:** 9/10/13
START TIME: 2:43
EVENT NUMBER: _____ **END TIME:** 3:05
TECHNICIAN: Shannon/Salute/Ballman **DURATION:** 22 min
CALIBRATION: START 14:113.7 12:116.5 9:101.1 DB END _____ DB
WEATHER DATA: SKY CONDITION Clear TEMP 90
WIND: START Ø MPH END Ø MPH DIRECTION _____
EQUIPMENT: METER _____ CALIBRATOR _____
RESPONSE: FAST _____ SLOW _____ BATTERY CHECK _____
RESULTS: Leq 14:61.8 9:39.9 12:63.2 Lmax _____

TRAFFIC DATA

ROAD	N	S	E	W		
TRAFFIC SPEED	55	55				
AUTOMOBILES	226	255				
MEDIUM TRUCKS	8	9				
HEAVY TRUCKS	6	5				
		2				



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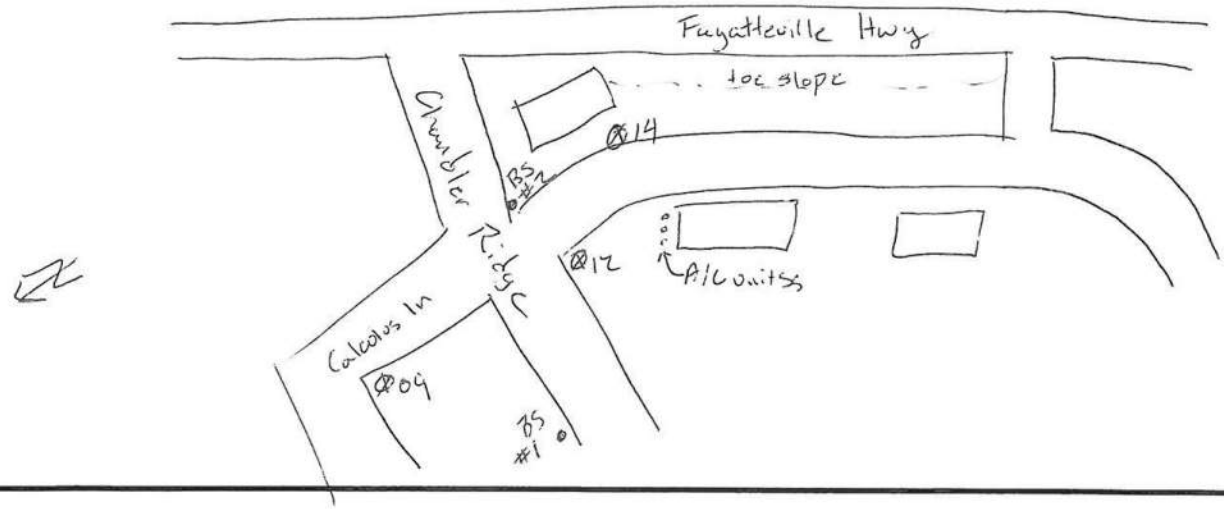


MAJOR SOURCES: Cars on Fayatteville Hwy
BACKGROUND NOISE: A/C units
UNUSUAL EVENTS: #1 School Bus @ 2:44 on Chandler Ridge / Car pass @ 7:45
OTHER NOTES: School Bus @ 2:46 & @ 2:57 @ #2 yelling @ 3:01

Triangle Expressway Southeast Extension

Site H
Short Term
9/10/13

= Eliminated due to anomalous data point

Near (Meter 014)		Middle (Meter 012)		Far (Meter 009)		Site T	
Time (s)	Leq (dB)	Time (s)	Leq (dB)	Time (s)	Leq (dB)	Time (s)	Leq (dB)
				2:40 PM	48.1	2:40 PM	38.0
2:41 PM	55.9			2:41 PM	51.3	2:41 PM	45.3
2:42 PM	55.2	2:42 PM	60.5	2:42 PM	49.7	2:42 PM	38.6
2:43 PM	62.9	2:43 PM	62.9	2:43 PM	53.4	2:43 PM	43.2
2:44 PM	58.4	2:44 PM	65.7	2:44 PM	50.3	2:44 PM	37.0
2:45 PM	56.1	2:45 PM	55.4	2:45 PM	49.7	2:45 PM	36.2
2:46 PM	53.0	2:46 PM	53.4	2:46 PM	49.1	2:46 PM	36.8
2:47 PM	53.9	2:47 PM	52.7	2:47 PM	50.0	2:47 PM	38.2
2:48 PM	57.2	2:48 PM	53.2	2:48 PM	52.5	2:48 PM	37.8
2:49 PM	51.4	2:49 PM	55.1	2:49 PM	48.4	2:49 PM	42.8
2:50 PM	56.6	2:50 PM	55.0	2:50 PM	45.6	2:50 PM	48.6
2:51 PM	51.6	2:51 PM	54.3	2:51 PM	55.6	2:51 PM	38.2
2:52 PM	58.3	2:52 PM	52.0	2:52 PM	56.9	2:52 PM	38.1
2:53 PM	56.3	2:53 PM	56.8	2:53 PM	53.8	2:53 PM	38.2
2:54 PM	60.1	2:54 PM	53.1	2:54 PM	58.2	2:54 PM	37.6
2:55 PM	55.9	2:55 PM	70.3	2:55 PM	57.2	2:55 PM	37.6
2:56 PM	57.1	2:56 PM	54.6	2:56 PM	56.5	2:56 PM	37.9
2:57 PM	54.3	2:57 PM	54.9	2:57 PM	52.2	2:57 PM	37.5
2:58 PM	59.2	2:58 PM	56.7	2:58 PM	53.0	2:58 PM	37.8
2:59 PM	56.1	2:59 PM	56.0	2:59 PM	48.8	2:59 PM	38.1
3:00 PM	51.0	3:00 PM	51.7	3:00 PM	49.8	3:00 PM	41.9
3:01 PM	56.4	3:01 PM	51.7	3:01 PM	51.6	3:01 PM	38.5
3:02 PM	57.6	3:02 PM	53.4	3:02 PM	50.6	3:02 PM	37.1
3:03 PM	62.2	3:03 PM	68.0	3:03 PM	49.5	3:03 PM	37.5
		3:04 PM	52.1	3:04 PM	51.3	3:04 PM	37.8
		3:05 PM	55.6	3:05 PM	50.7	3:05 PM	37.4
		3:06 PM	51.1	3:06 PM	51.7	3:06 PM	36.9
Avg Leq=	**56**	**Avg Leq=**	**54**	**Avg Leq=**	**52**	**Avg Leq=**	**40**
				Adjustment =	**2**	**Loudest Hour at Site T =**	**42**
				Adjusted Loudest Hour =	**54**	**Adjustment =**	**2**



Site H – Middle Meter



Site H – Middle Meter



Site H – Far Meter



Site H – Far Meter

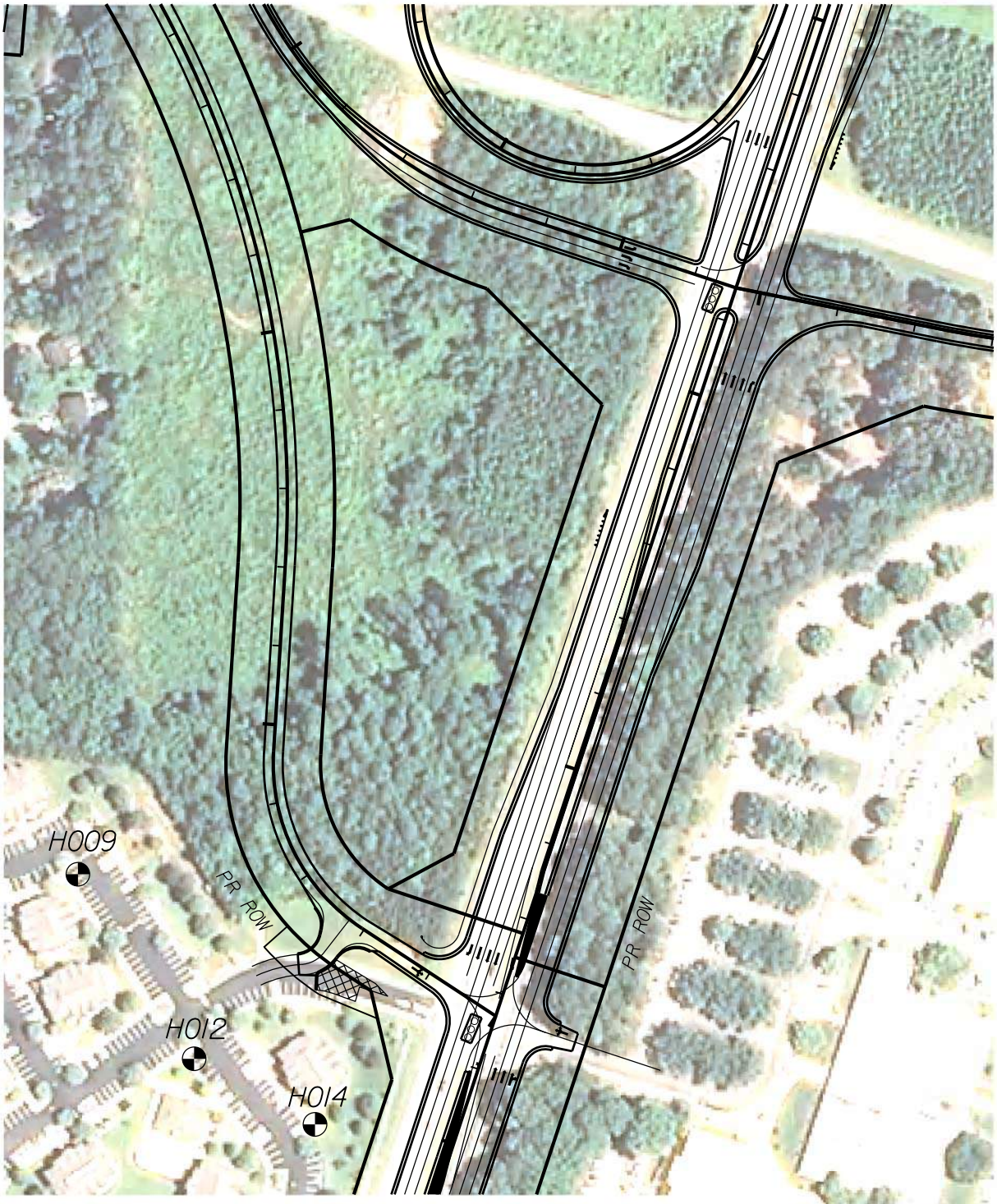


Site H – Far Meter


Site H – Close Meter



Site H – Close Meter



Triangle Expressway
Southeast Extension
ORANGE CORRIDOR
Johnston/Wake Counties
T.I.P. NO. R-2721, R-2828, R-2829

N

0 100' 200'

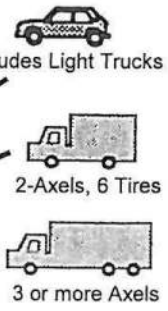
NOISE MEASUREMENT
LOCATION H

H.W. LOCHNER, INC. | NOISE MEASUREMENT DATA SHEET

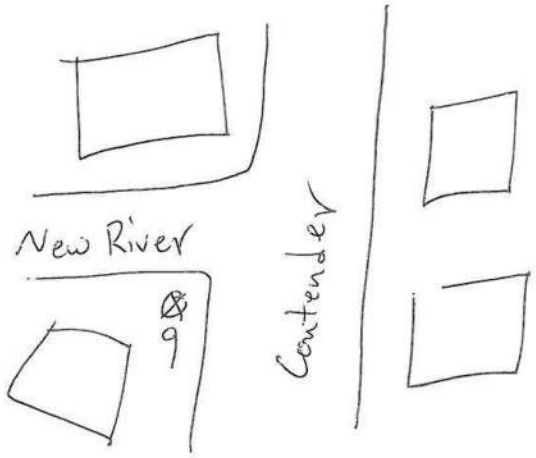
SITE NUMBER: I **PROJECT:** Tri-Ex
SITE DESCRIPTION: _____ **DATE:** 9/11/13
START TIME: 11:51
EVENT NUMBER: _____ **END TIME:** 12:11
TECHNICIAN: Shannon/Seletz/Bollman **DURATION:** 20
CALIBRATION: START 94.3.8 DB END _____ DB
WEATHER DATA: SKY CONDITION _____ TEMP _____
WIND: START Ø MPH END Ø MPH DIRECTION Breeze < 5 mph
EQUIPMENT: METER _____ CALIBRATOR _____
RESPONSE: FAST _____ SLOW _____ BATTERY CHECK _____
RESULTS: Leq 94.5 Lmax _____

TRAFFIC DATA

ROAD						
	N	S	E	W		
TRAFFIC SPEED						
AUTOMOBILES						
MEDIUM TRUCKS						
HEAVY TRUCKS						



SITE SKETCH



MAJOR SOURCES: Birds/insects/A/C units
BACKGROUND NOISE: _____
UNUSUAL EVENTS: Growling Dog @ 11:55 Car @ 12:08, 12:11 (Garage Door)
OTHER NOTES: _____

Triangle Expressway Southeast Extension

Site I
Short Term-Ambient
9/11/13

Meter 009	
Time (s)	Leq (dB)
11:49 AM	41.2
11:50 AM	39.9
11:51 AM	41.3
11:52 AM	43.3
11:53 AM	39.4
11:54 AM	42.1
11:55 AM	38.7
11:56 AM	37.2
11:57 AM	41
11:58 AM	34.7
11:59 AM	34.2
12:00 PM	33.4
12:01 PM	36
12:02 PM	35.7
12:03 PM	35.2
12:04 PM	33.8
12:05 PM	57.2
12:06 PM	33.6
12:07 PM	35.4
12:08 PM	49.5
12:09 PM	37.5

Avg Leq=	**41**
Adjustment =	**4**
Adjusted Loudest Hour =	**45**

Site T	
Time (s)	Leq (dB)
11:49 AM	34.4
11:50 AM	35.1
11:51 AM	35.2
11:52 AM	34.9
11:53 AM	34.5
11:54 AM	34.3
11:55 AM	36.2
11:56 AM	35.9
11:57 AM	35.7
11:58 AM	37.8
11:59 AM	37.9
12:00 PM	41.9
12:01 PM	41.5
12:02 PM	37.0
12:03 PM	37.8
12:04 PM	42.8
12:05 PM	40.9
12:06 PM	38.0
12:07 PM	37.3
12:08 PM	37.6
12:09 PM	37.9

Avg Leq=	**38**
Loudest Hour at Site T =	**42**
Adjustment =	**4**



Site I –Meter



Site I –Meter



Site I –Meter



Triangle Expressway
Southeast Extension
ORANGE CORRIDOR
Johnston/Wake Counties
T.I.P. NO. R-2721, R-2828, R-2829

N

0 100' 200'

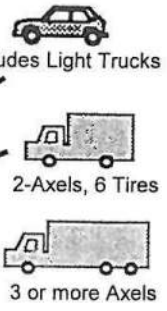
NOISE MEASUREMENT
LOCATION I

H.W. LOCHNER, INC. | NOISE MEASUREMENT DATA SHEET

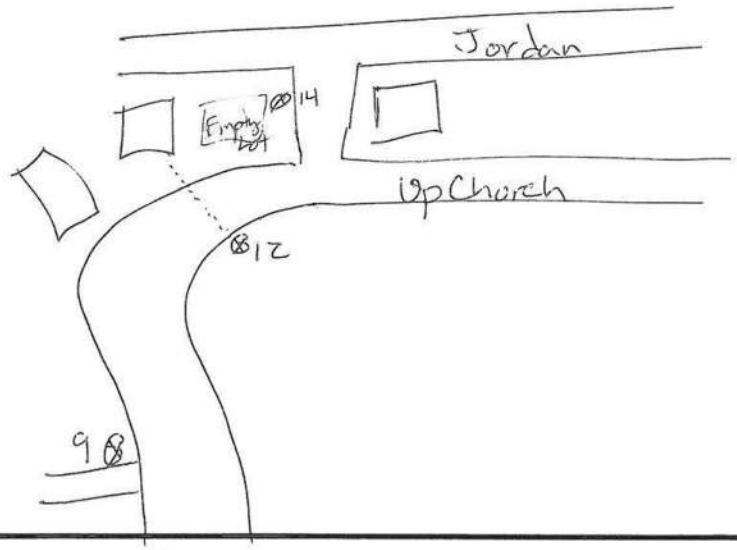
SITE NUMBER: J **PROJECT:** Tri-Ex
SITE DESCRIPTION: _____ **DATE:** 9/11/13
START TIME: 11:10
EVENT NUMBER: _____ **END TIME:** 11:30
TECHNICIAN: Shannon/Sedotz/Ballman **DURATION:** _____
CALIBRATION: START 9:114 12:114.2 14:113.6 DB END _____ DB
WEATHER DATA: SKY CONDITION Clear TEMP 85
WIND: START ϕ MPH END ϕ MPH DIRECTION breezy
EQUIPMENT: METER _____ CALIBRATOR _____
RESPONSE: FAST _____ SLOW _____ BATTERY CHECK _____
RESULTS: Leq 9:41.8 12:48.8 14:46.9 Lmax _____

TRAFFIC DATA

ROAD	N	S	E	W		
TRAFFIC SPEED						
AUTOMOBILES	7	7	1	1		
MEDIUM TRUCKS	0	0	0	0		
HEAVY TRUCKS	0	0	0	0		



SITE SKETCH



MAJOR SOURCES: Birds/Insects/A/C
BACKGROUND NOISE: _____
UNUSUAL EVENTS: Dog Barking / Home Construction
OTHER NOTES: _____

Triangle Expressway Southeast Extension

Site J
Short Term
9/11/13

= Eliminated due to anomalous data point

Near (Meter 014)		Middle (Meter 012)		Far (Meter 009)		Site T	
Time (s)	Leq (dB)	Time (s)	Leq (dB)	Time (s)	Leq (dB)	Time (s)	Leq (dB)
				11:07 AM	43.2	11:07 AM	36.7
				11:08 AM	43.7	11:08 AM	37.5
		11:09 AM	49	11:09 AM	42.1	11:09 AM	37.0
11:10 AM	44.9	11:10 AM	48	11:10 AM	42.8	11:10 AM	40.0
11:11 AM	43.8	11:11 AM	41.7	11:11 AM	40.8	11:11 AM	39.3
11:12 AM	45	11:12 AM	38	11:12 AM	41.7	11:12 AM	40.1
11:13 AM	39.8	11:13 AM	39.8	11:13 AM	40.5	11:13 AM	38.1
11:14 AM	44.6	11:14 AM	43.8	11:14 AM	41.5	11:14 AM	37.1
11:15 AM	47.3	11:15 AM	42.2	11:15 AM	42.5	11:15 AM	37.8
11:16 AM	45	11:16 AM	41.2	11:16 AM	41.6	11:16 AM	38.9
11:17 AM	37.2	11:17 AM	38.5	11:17 AM	42.3	11:17 AM	39.1
11:18 AM	36.5	11:18 AM	38.2	11:18 AM	41.4	11:18 AM	37.2
11:19 AM	39.5	11:19 AM	38.3	11:19 AM	42.0	11:19 AM	36.0
11:20 AM	43.6	11:20 AM	40.1	11:20 AM	39.9	11:20 AM	36.3
11:21 AM	42.7	11:21 AM	42.5	11:21 AM	40.3	11:21 AM	35.7
11:22 AM	42	11:22 AM	43	11:22 AM	41.4	11:22 AM	35.7
11:23 AM	46.9	11:23 AM	42.3	11:23 AM	41.0	11:23 AM	36.4
11:24 AM	49.2	11:24 AM	47.2	11:24 AM	42.9	11:24 AM	34.7
11:25 AM	47.1	11:25 AM	44.6	11:25 AM	41.1	11:25 AM	34.3
11:26 AM	50.5	11:26 AM	43.7	11:26 AM	40.6	11:26 AM	34.7
11:27 AM	47.6	11:27 AM	41.8	11:27 AM	41.8	11:27 AM	36.6
11:28 AM	56.3	11:28 AM	44			11:28 AM	38.6
11:29 AM	47	11:29 AM	60.7			11:29 AM	39.3
11:30 AM	39.4	11:30 AM	40.5			11:30 AM	38.8
		11:31 AM	40.6			11:31 AM	40.0
Avg Leq=	**45**	**Avg Leq=**	**43**	**Avg Leq=**	**42**	**Avg Leq=**	**38**
				Adjustment =	**4**	**Loudest Hour at Site T =**	**42**
				Adjusted Loudest Hour =	**46**	**Adjustment =**	**4**



Site J – Far Meter



Site J – Far Meter



Site J – Middle Meter



Site J – Middle Meter



Site J – Middle Meter



Site J – Close Meter



Site J – Close Meter



Site J – Close Meter



Triangle Expressway
Southeast Extension
ORANGE CORRIDOR
Johnston/Wake Counties
T.I.P. NO. R-2721, R-2828, R-2829

N

0 100' 200'

NOISE MEASUREMENT
LOCATION J

H.W. LOCHNER, INC.

NOISE MEASUREMENT DATA SHEET

SITE NUMBER: K **PROJECT:** Tri-Ex

SITE DESCRIPTION: _____ **DATE:** 9/11/13

START TIME: 10:23

EVENT NUMBER: _____ **END TIME:** 10:43

TECHNICIAN: Shamon/Salute/Bollman **DURATION:** _____

CALIBRATION: START 9:114.0 14:113.9 12:114.2 DB END _____ DB

WEATHER DATA: SKY CONDITION Clear TEMP 80

WIND: START Ø MPH END Ø MPH DIRECTION _____

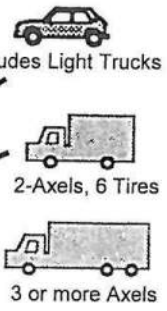
EQUIPMENT: METER _____ CALIBRATOR _____

RESPONSE: FAST _____ SLOW _____ BATTERY CHECK _____

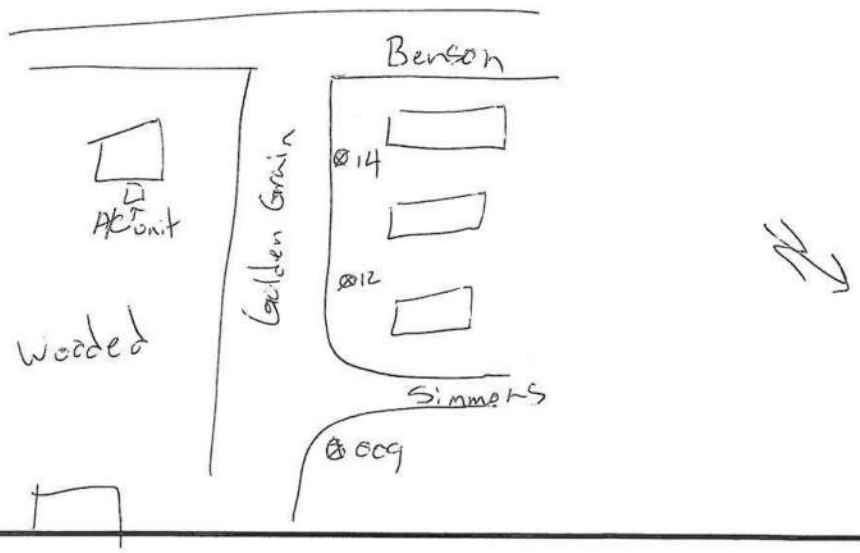
RESULTS: Leq 9:57.7 12:56.5 14:47.7 Lmax _____

TRAFFIC DATA

ROAD						
	N	S	E	W		
TRAFFIC SPEED						
AUTOMOBILES	110	80	7	7		
MEDIUM TRUCKS	4	2				
HEAVY TRUCKS	3	2				
	3					



SITE SKETCH



MAJOR SOURCES: Insects/Birds/Traffic on Benson / AC units

BACKGROUND NOISE: _____

UNUSUAL EVENTS: Car Stopped @ Meter 009 from 10:32-10:36

OTHER NOTES: _____

Triangle Expressway Southeast Extension

Site K
Short Term
9/11/13

= Eliminated due to anomalous data point

Near (Meter 014)		Middle (Meter 012)		Far (Meter 009)		Site T	
Time (s)	Leq (dB)	Time (s)	Leq (dB)	Time (s)	Leq (dB)	Time (s)	Leq (dB)
10:20 AM	47.3			10:20 AM	44.8	10:20 AM	35.2
10:21 AM	48.9	10:21 AM	45.0	10:21 AM	45.5	10:21 AM	36
10:22 AM	49.1	10:22 AM	45.8	10:22 AM	44.8	10:22 AM	32.7
10:23 AM	50.4	10:23 AM	45.5	10:23 AM	44.8	10:23 AM	33.5
10:24 AM	56.3	10:24 AM	45.8	10:24 AM	48.5	10:24 AM	34.9
10:25 AM	47.5	10:25 AM	57.4	10:25 AM	54.5	10:25 AM	42.1
10:26 AM	59.6	10:26 AM	45.7	10:26 AM	61.4	10:26 AM	33.9
10:27 AM	61	10:27 AM	60.6	10:27 AM	61.3	10:27 AM	36.1
10:28 AM	60.1	10:28 AM	62.3	10:28 AM	60.2	10:28 AM	35.7
10:29 AM	56.5	10:29 AM	58.9	10:29 AM	61.9	10:29 AM	36.5
10:30 AM	49.4	10:30 AM	51.4	10:30 AM	61.8	10:30 AM	37.5
10:31 AM	49.5	10:31 AM	48.3	10:31 AM	59.6	10:31 AM	37
10:32 AM	51.5	10:32 AM	46.7	10:32 AM	59.1	10:32 AM	38.1
10:33 AM	51.6	10:33 AM	48.2	10:33 AM	55.7	10:33 AM	37.7
10:34 AM	47.6	10:34 AM	48.6	10:34 AM	43.8	10:34 AM	39.2
10:35 AM	61.8	10:35 AM	45.0	10:35 AM	60	10:35 AM	38.8
10:36 AM	59.9	10:36 AM	63.1	10:36 AM	61.5	10:36 AM	40.1
10:37 AM	54.9	10:37 AM	62.5	10:37 AM	47	10:37 AM	39
10:38 AM	50.5	10:38 AM	49.6	10:38 AM	46.6	10:38 AM	36.6
10:39 AM	52.2	10:39 AM	46.6	10:39 AM	46.9	10:39 AM	37.3
10:40 AM	48.9	10:40 AM	48.1	10:40 AM	47.4	10:40 AM	39.4
10:41 AM	50.2	10:41 AM	47.0			10:41 AM	39
Avg Leq=	**56**	**Avg Leq=**	**51**	**Avg Leq=**	**46**	**Avg Leq=**	**38**
				Adjustment =	**4**	**Loudest Hour at Site T =**	**42**
				Adjusted Loudest Hour =	**50**	**Adjustment =**	**4**



Site K – Close Meter



Site K – Close Meter



Site K –Close Meter



Site K –Middle Meter



Site K – Middle Meter



Site K – Middle Meter



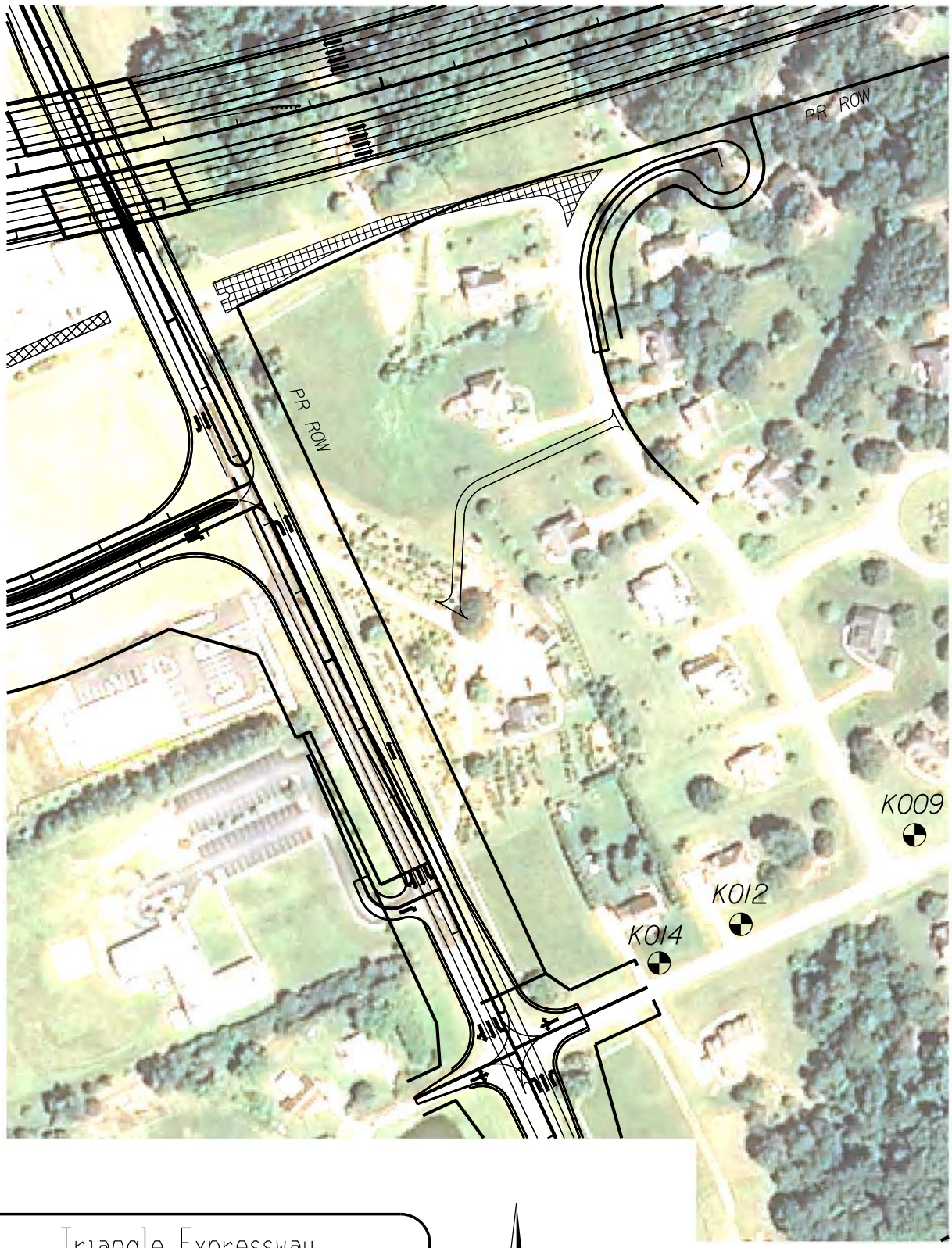
Site K – Far Meter



Site K – Far Meter



Site K – Far Meter



Triangle Expressway
Southeast Extension
LILAC CORRIDOR
Johnston/Wake Counties
T.I.P. NO. R-2721, R-2828, R-2829

N

0 100' 200'

NOISE MEASUREMENT
LOCATION K

H.W. LOCHNER, INC.	NOISE MEASUREMENT DATA SHEET

SITE NUMBER: L **PROJECT:** TRI-EX

SITE DESCRIPTION: _____ **DATE:** _____

START TIME: 9:47

EVENT NUMBER: _____ **END TIME:** 10:07

TECHNICIAN: SHANNON **DURATION:** 20

CALIBRATION: START 114.0 DB END 113.8 DB

WEATHER DATA: SKY CONDITION CLEAR TEMP 80

WIND: START Ø MPH END Ø MPH DIRECTION _____

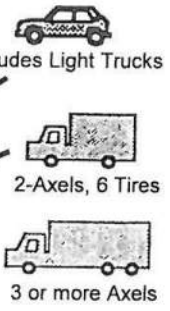
EQUIPMENT: METER 012 CALIBRATOR _____

RESPONSE: FAST _____ SLOW _____ BATTERY CHECK _____

RESULTS: Leq 12: 49.4 Lmax _____

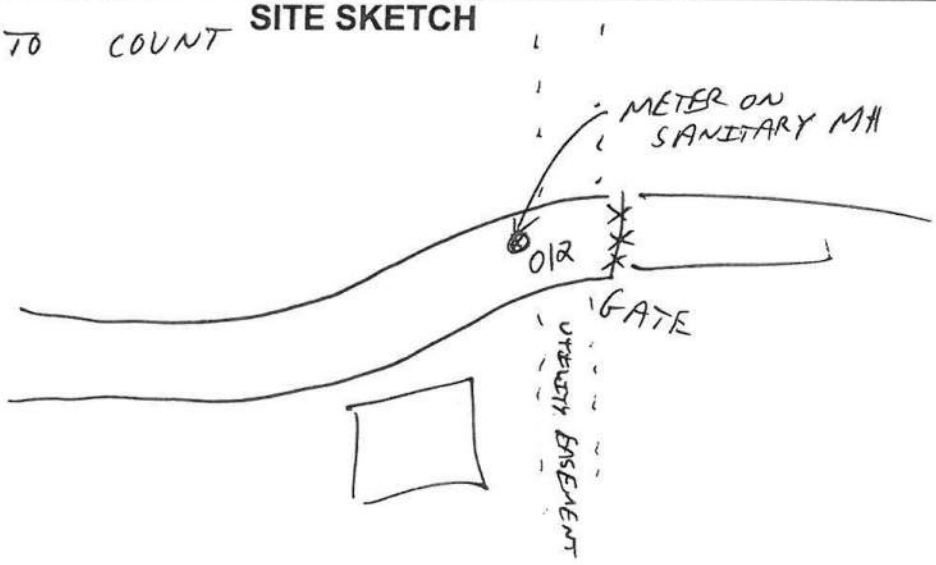
TRAFFIC DATA

ROAD	N	S	E	W		
TRAFFIC SPEED						
AUTOMOBILES						
MEDIUM TRUCKS						
HEAVY TRUCKS						



SITE SKETCH

NO TRAFFIC TO COUNT



MAJOR SOURCES: TRAFFIC ON I-40, INSECTS, ~~GEN~~ HOME CONSTRUCTION IN DISTANCE

BACKGROUND NOISE: _____

UNUSUAL EVENTS: CAR PULLED UP / TALKING @ 9:59

OTHER NOTES: _____

Triangle Expressway Southeast Extension

Site L
Short Term - Ambient
9/11/13

Meter 012	
Time (s)	Leq (dB)
9:46 AM	54.5
9:47 AM	55.2
9:48 AM	48.5
9:49 AM	47.9
9:50 AM	47.6
9:51 AM	47.4
9:52 AM	48.0
9:53 AM	47.1
9:54 AM	47.4
9:55 AM	47.9
9:56 AM	47.7
9:57 AM	50.6
9:58 AM	51.3
9:59 AM	47.6
10:00 AM	47.7
10:01 AM	48.3
10:02 AM	47.1
10:03 AM	47.8
10:04 AM	47.6
10:05 AM	48.5
10:06 AM	49.0

Avg Leq=	**48**
Adjustment =	**3**
Adjusted Loudest Hour =	**51**

Site T	
Time (s)	Leq (dB)
9:46 AM	36.1
9:47 AM	40.4
9:48 AM	45.8
9:49 AM	35.8
9:50 AM	35.8
9:51 AM	36.1
9:52 AM	37.5
9:53 AM	44.8
9:54 AM	39.2
9:55 AM	36.9
9:56 AM	37.7
9:57 AM	38.5
9:58 AM	38.0
9:59 AM	37.8
10:00 AM	38.5
10:01 AM	37.5
10:02 AM	37.4
10:03 AM	35.5
10:04 AM	38.0
10:05 AM	37.1
10:06 AM	38.0

Avg Leq=	**39**
Loudest Hour at Site T =	**42**
Adjustment =	**3**



Site L –Meter



Site L –Meter



Site L –Meter



Triangle Expressway
Southeast Extension
ORANGE CORRIDOR
Johnston/Wake Counties
T.I.P. NO. R-2721, R-2828, R-2829

N

0 200' 400'

NOISE MEASUREMENT
LOCATION L

H.W. LOCHNER, INC.	NOISE MEASUREMENT DATA SHEET

SITE NUMBER: M **PROJECT:** ~~Tri-Ex~~

SITE DESCRIPTION: _____ **DATE:** 9/12/13

START TIME: 3:03

EVENT NUMBER: _____ **END TIME:** 3:23

TECHNICIAN: Sherman/Salutz/Ballmer **DURATION:** 20

CALIBRATION: START 9:113.9 12:113.9 14:113.8 DB END _____ DB

WEATHER DATA: SKY CONDITION clear TEMP 96

WIND: START ~~0~~ MPH END ~~0~~ MPH DIRECTION Breeze from West

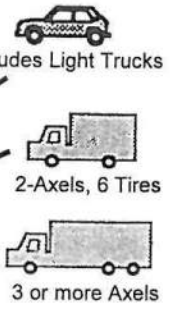
EQUIPMENT: METER _____ CALIBRATOR _____

RESPONSE: FAST _____ SLOW _____ BATTERY CHECK _____

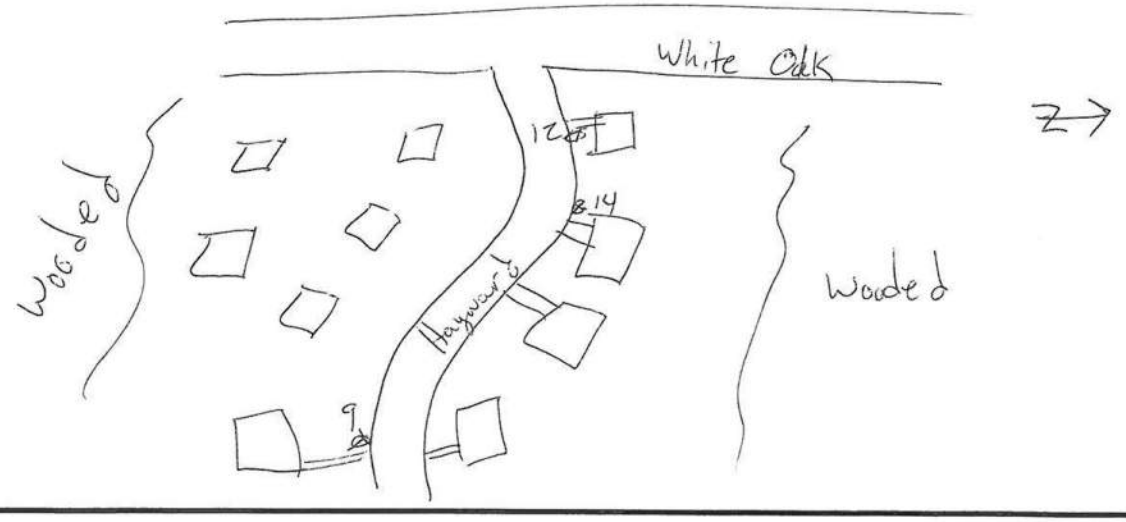
RESULTS: Leq 9:46.0 12:52.3 14:57.2 Lmax _____

TRAFFIC DATA

ROAD	N	S	E	W		
TRAFFIC SPEED						
AUTOMOBILES	45	86				
MEDIUM TRUCKS	2					
HEAVY TRUCKS						



SITE SKETCH



MAJOR SOURCES: A/C units / Traffic on White Oak

BACKGROUND NOISE: _____

UNUSUAL EVENTS: Small Plane @ 3:08

OTHER NOTES: _____

Triangle Expressway Southeast Extension

Site M
Short Term
9/11/13

= Eliminated due to anomalous data point

Near (Meter 012)		Middle (Meter 014)		Far (Meter 009)		Site T	
Time (s)	Leq (dB)	Time (s)	Leq (dB)	Time (s)	Leq (dB)	Time (s)	Leq (dB)
		2:59 PM	70.2			2:59 PM	38.1
		3:00 PM	46.2			3:00 PM	41.9
3:01 PM	56.6	3:01 PM	46.4	3:01 PM	42.5	3:01 PM	38.5
3:02 PM	51.7	3:02 PM	45.6	3:02 PM	44.5	3:02 PM	37.1
3:03 PM	53.8	3:03 PM	46.1	3:03 PM	44.5	3:03 PM	37.5
3:04 PM	52.1	3:04 PM	43.8	3:04 PM	44.1	3:04 PM	37.8
3:05 PM	49.8	3:05 PM	54.4	3:05 PM	44.4	3:05 PM	37.4
3:06 PM	47.7	3:06 PM	50.7	3:06 PM	54.6	3:06 PM	36.9
3:07 PM	56.7	3:07 PM	45.7	3:07 PM	44.9	3:07 PM	37.4
3:08 PM	51.4	3:08 PM	45.9	3:08 PM	44.7	3:08 PM	37.7
3:09 PM	48.5	3:09 PM	47.4	3:09 PM	44.9	3:09 PM	38
3:10 PM	53.9	3:10 PM	42.4	3:10 PM	44	3:10 PM	38.5
3:11 PM	51.2	3:11 PM	43.5	3:11 PM	44.5	3:11 PM	36.9
3:12 PM	48.8	3:12 PM	43.1	3:12 PM	43.3	3:12 PM	36.8
3:13 PM	50.1	3:13 PM	42.3	3:13 PM	43.8	3:13 PM	37.4
3:14 PM	48.6	3:14 PM	47.4	3:14 PM	44.4	3:14 PM	37.7
3:15 PM	49.7	3:15 PM	45.4	3:15 PM	45.9	3:15 PM	36.9
3:16 PM	53.6	3:16 PM	47.6	3:16 PM	46.1	3:16 PM	37.9
3:17 PM	52.1	3:17 PM	46.2	3:17 PM	45.6	3:17 PM	38.2
3:18 PM	53.2	3:18 PM	45.6	3:18 PM	45.0	3:18 PM	38.7
3:19 PM	53.1	3:19 PM	44.0	3:19 PM	44.1	3:19 PM	37.7
3:20 PM	51.2	3:20 PM	42.8	3:20 PM	43.6	3:20 PM	37.9
3:21 PM	52.1			3:21 PM	43.9	3:21 PM	38.2

Avg Leq= 52

Avg Leq= 46

Avg Leq= 45
Adjustment = 4
Adjusted Loudest Hour = 49

Avg Leq= 38
Loudest Hour at Site T = 42
Adjustment = 4



Site M – Far Meter



Site M – Far Meter



Site M – Middle Meter



Site M – Middle Meter



Site M – Middle Meter



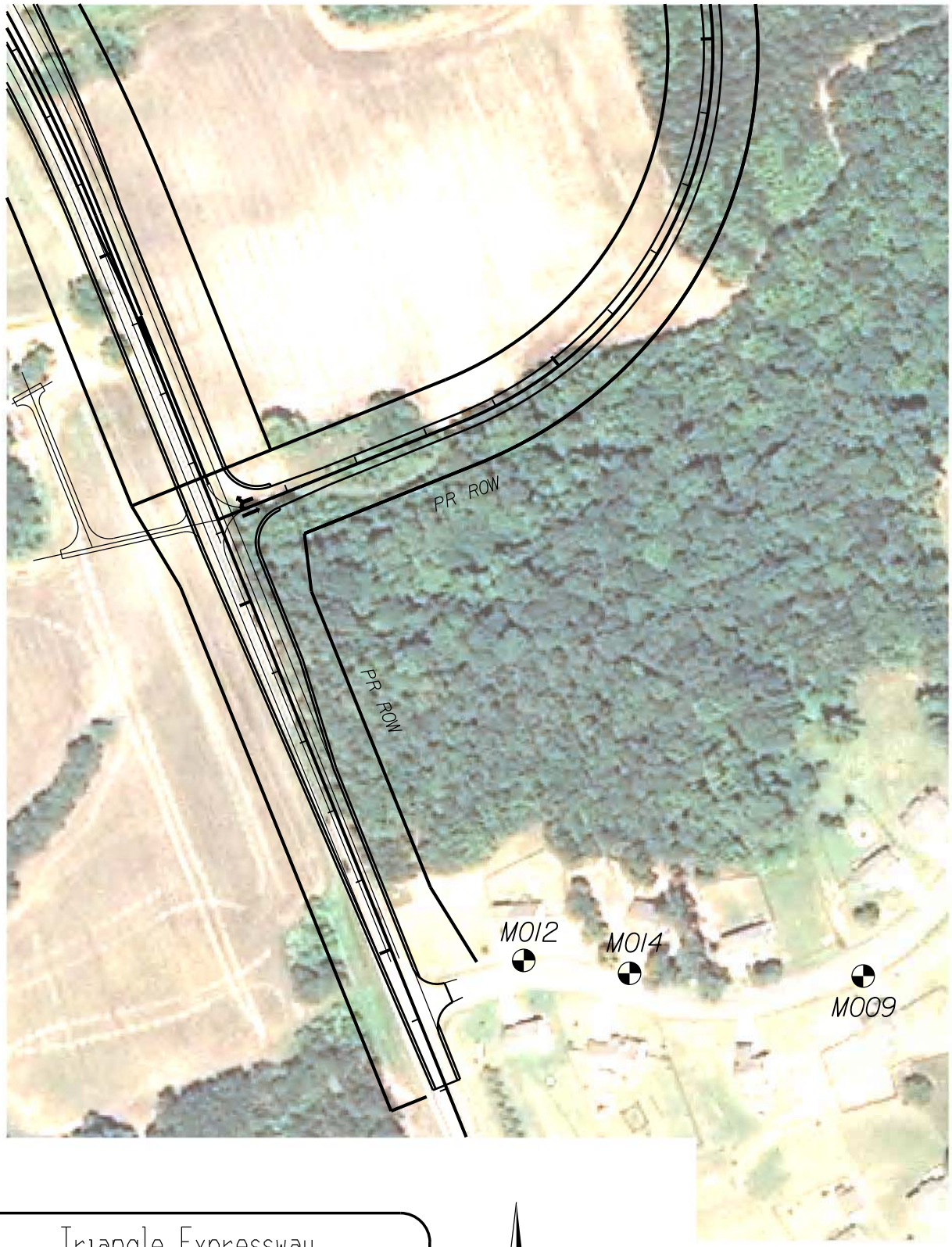
Site M – Close Meter



Site M – Close Meter



Site M – Close Meter



Triangle Expressway
Southeast Extension
LILAC CORRIDOR
Johnston/Wake Counties
T.I.P. NO. R-2721, R-2828, R-2829

N

0 100' 200'

NOISE MEASUREMENT
LOCATION M

H.W. LOCHNER, INC.	NOISE MEASUREMENT DATA SHEET

SITE NUMBER: N **PROJECT:** Tri-Ex

SITE DESCRIPTION: _____ **DATE:** 9/12/13

START TIME: 1:18

EVENT NUMBER: _____ **END TIME:** 1:38

TECHNICIAN: Shannon/Schutz/ **DURATION:** 20

CALIBRATION: START 9:113.9 12:113.9 14:113.9 DB END _____ DB

WEATHER DATA: SKY CONDITION Clear TEMP _____

WIND: START 0 MPH END 0 MPH DIRECTION _____

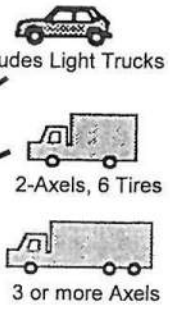
EQUIPMENT: METER _____ CALIBRATOR _____

RESPONSE: FAST _____ SLOW _____ BATTERY CHECK _____

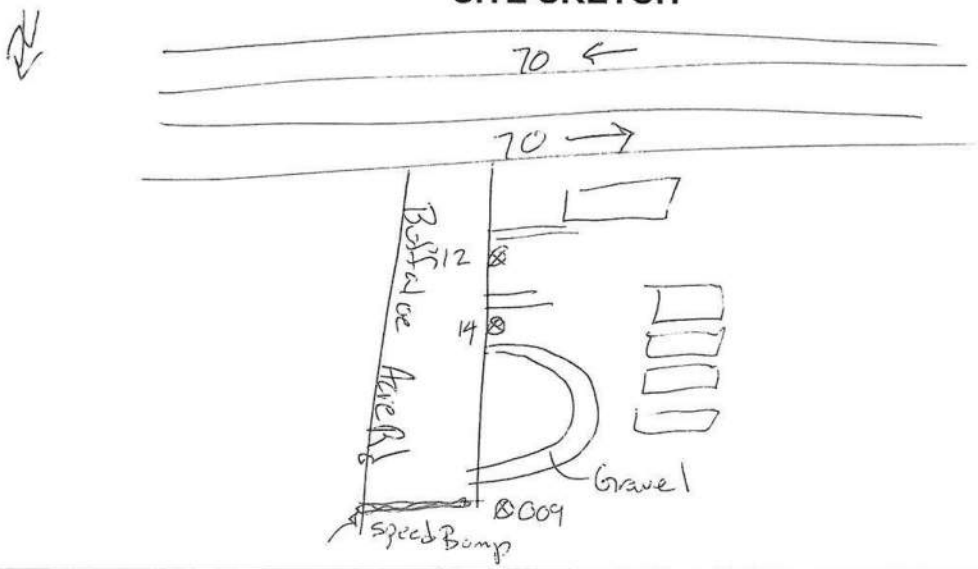
RESULTS: Leq 9:53.4 12:61.8 14:57.4 Lmax _____

TRAFFIC DATA

ROAD	N	S	E	W		
TRAFFIC SPEED						
AUTOMOBILES			297	283		
MEDIUM TRUCKS			4	7		
HEAVY TRUCKS			11	16		
				3		



SITE SKETCH



MAJOR SOURCES: Traffic on 70 / Insects / Birds

BACKGROUND NOISE: _____

UNUSUAL EVENTS: Barking Dog. Near 609

OTHER NOTES: Talking near 14

Triangle Expressway Southeast Extension

Site N
Short Term
9/12/13

= Eliminated due to anomalous data point

Near (Meter 012)		Middle (Meter 014)		Far (Meter 009)		Site T	
Time (s)	Leq (dB)	Time (s)	Leq (dB)	Time (s)	Leq (dB)	Time (s)	Leq (dB)
		1:15 PM	58.5	1:15 PM	53.6	1:15 PM	37.5
		1:16 PM	57.7	1:16 PM	53.2	1:16 PM	39.4
1:17 PM	62.9	1:17 PM	57.6	1:17 PM	54.6	1:17 PM	38.1
1:18 PM	62.1	1:18 PM	59.0	1:18 PM	54.9	1:18 PM	37
1:19 PM	62.3	1:19 PM	59.7	1:19 PM	55.5	1:19 PM	36.9
1:20 PM	63.4	1:20 PM	56.0	1:20 PM	53.4	1:20 PM	36.5
1:21 PM	64.4	1:21 PM	57.5	1:21 PM	54.4	1:21 PM	37
1:22 PM	60.2	1:22 PM	56.2	1:22 PM	50.8	1:22 PM	36.6
1:23 PM	61.8	1:23 PM	57.1	1:23 PM	54.6	1:23 PM	36.5
1:24 PM	60.5	1:24 PM	56.0	1:24 PM	51.7	1:24 PM	37.8
1:25 PM	61.2	1:25 PM	57.0	1:25 PM	53	1:25 PM	37.7
1:26 PM	59.6	1:26 PM	55.4	1:26 PM	50.4	1:26 PM	36.7
1:27 PM	60.8	1:27 PM	59.3	1:27 PM	53.7	1:27 PM	36.5
1:28 PM	59.8	1:28 PM	58.3	1:28 PM	54.4	1:28 PM	36.3
1:29 PM	62.6	1:29 PM	57.2	1:29 PM	52.7	1:29 PM	36.6
1:30 PM	62.5	1:30 PM	54.1	1:30 PM	51.5	1:30 PM	37.6
1:31 PM	61.3	1:31 PM	59.0	1:31 PM	53.2	1:31 PM	37.8
1:32 PM	58.5	1:32 PM	55.8	1:32 PM	53.8	1:32 PM	45.6
1:33 PM	64.4	1:33 PM	57.3	1:33 PM	51.8	1:33 PM	41.9
1:34 PM	59.8	1:34 PM	55.5	1:34 PM	51.9	1:34 PM	36.3
1:35 PM	61.3	1:35 PM	59.4	1:35 PM	57.8	1:35 PM	37
1:36 PM	60.6			1:36 PM	49.8	1:36 PM	36.9
1:37 PM	65.4			1:37 PM	51.7	1:37 PM	37.2
				1:38 PM	52.9	1:38 PM	37.8
Avg Leq=	**62**	**Avg Leq=**	**58**	**Avg Leq=**	**54**	**Avg Leq=**	**39**
				Adjustment =	**3**	**Loudest Hour at Site T =**	**42**
				Adjusted Loudest Hour =	**57**	**Adjustment =**	**3**



Site N – Far Meter



Site N – Far Meter



Site N – Far Meter



Site N – Middle Meter



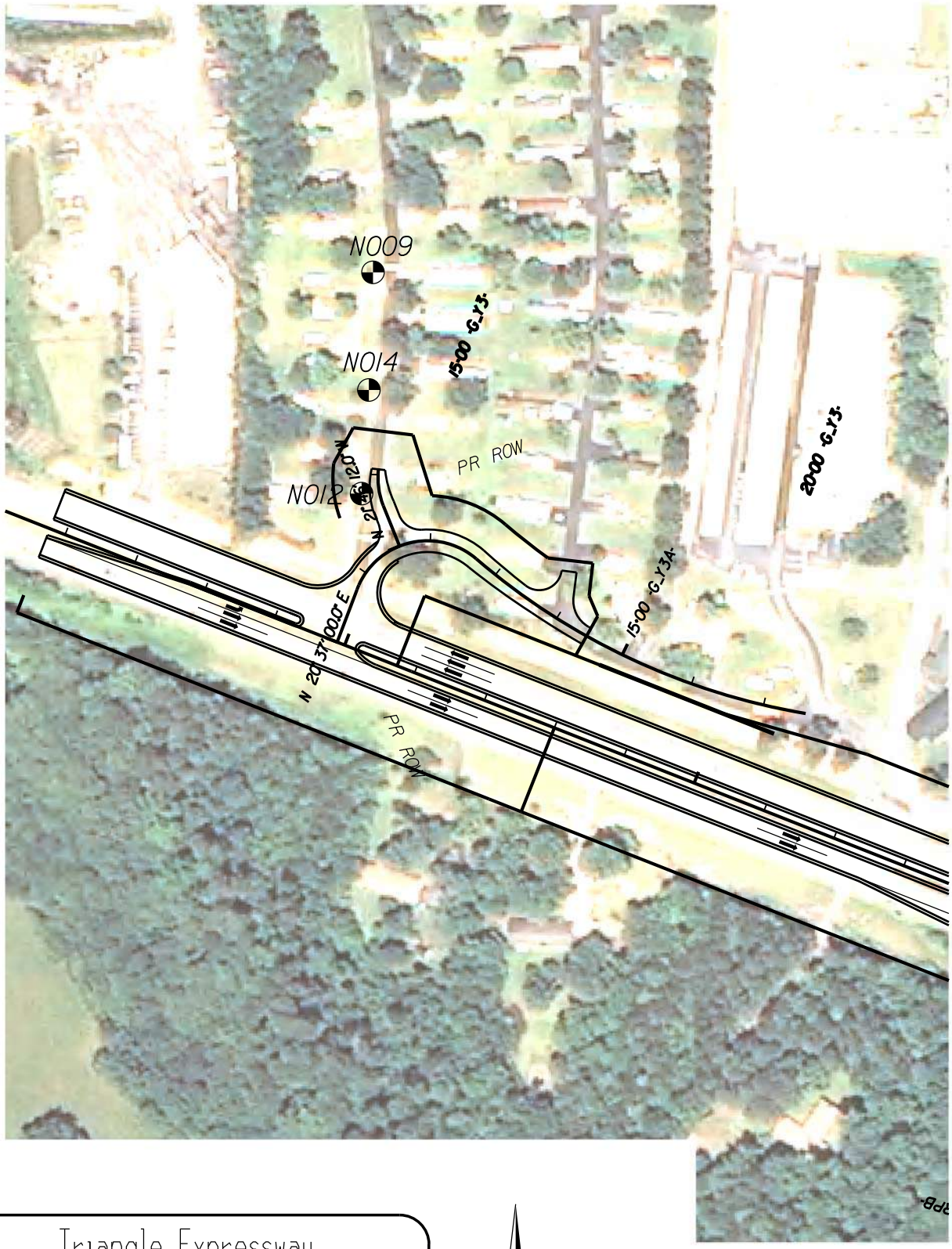
Site N – Middle Meter



Site N – Close Meter



Site N – Close Meter



Triangle Expressway
Southeast Extension
GREEN CORRIDOR
Johnston/Wake Counties
T.I.P. NO. R-2721, R-2828, R-2829

NOISE MEASUREMENT
LOCATION N

H.W. LOCHNER, INC.

NOISE MEASUREMENT DATA SHEET

SITE NUMBER: 0 **PROJECT:** Tri-Ex

SITE DESCRIPTION: _____ **DATE:** 9/12/13

START TIME: 10:56

EVENT NUMBER: _____ **END TIME:** 11:06

TECHNICIAN: Shannon/Salutz/Ballman **DURATION:** 20

CALIBRATION: START 9:114.0 12:114.1 14:114.0 DB END _____ DB

WEATHER DATA: SKY CONDITION Clear TEMP 85

WIND: START Ø MPH END Ø MPH DIRECTION _____

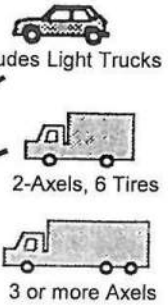
EQUIPMENT: METER _____ CALIBRATOR _____

RESPONSE: FAST _____ SLOW _____ BATTERY CHECK _____

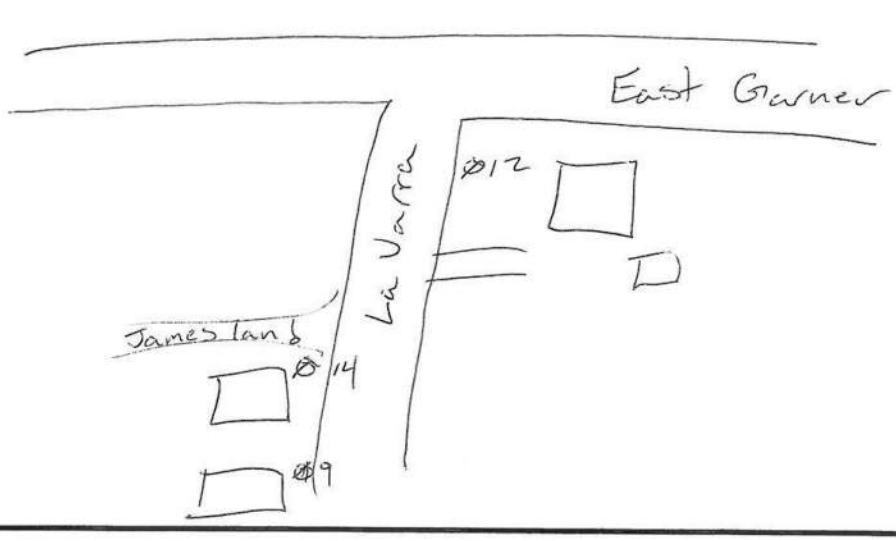
RESULTS: Leq 9:48.9 12:55.8 14:48.5 Lmax _____

TRAFFIC DATA

ROAD	N	S	E	W		
TRAFFIC SPEED						
AUTOMOBILES			16	33		
MEDIUM TRUCKS			1	2		
HEAVY TRUCKS			0	1		



SITE SKETCH



MAJOR SOURCES: Insects / Traffic on East Garner

BACKGROUND NOISE: Dogs Barking in distance

UNUSUAL EVENTS: Garbage Truck on Garner @ 11:01 / Car stopped @ 12 @ 11:14

OTHER NOTES: _____

Triangle Expressway Southeast Extension

Site O
Short Term
9/12/13

= Eliminated due to anomalous data point

Near (Meter 012)		Middle (Meter 014)		Far (Meter 009)		Site T	
Time (s)	Leq (dB)	Time (s)	Leq (dB)	Time (s)	Leq (dB)	Time (s)	Leq (dB)
		10:53 AM	46.0	10:53 AM	50.7	10:53 AM	37.9
10:54 AM	53.6	10:54 AM	46.7	10:54 AM	53	10:54 AM	37.9
10:55 AM	55.1	10:55 AM	47.1	10:55 AM	50.7	10:55 AM	38
10:56 AM	52.1	10:56 AM	48.3	10:56 AM	49.1	10:56 AM	40
10:57 AM	57.5	10:57 AM	48.2	10:57 AM	51.2	10:57 AM	40.4
10:58 AM	56.8	10:58 AM	49.8	10:58 AM	48.8	10:58 AM	39
10:59 AM	59	10:59 AM	48.3	10:59 AM	47.5	10:59 AM	43.6
11:00 AM	54.4	11:00 AM	46.9	11:00 AM	48.7	11:00 AM	43.8
11:01 AM	53.5	11:01 AM	46.9	11:01 AM	49.6	11:01 AM	42.9
11:02 AM	50.2	11:02 AM	50.4	11:02 AM	46.5	11:02 AM	40.1
11:03 AM	57.4	11:03 AM	47.9	11:03 AM	47.5	11:03 AM	36.1
11:04 AM	58.6	11:04 AM	47.8	11:04 AM	49.1	11:04 AM	34.6
11:05 AM	55.6	11:05 AM	45.9	11:05 AM	48.6	11:05 AM	36
11:06 AM	52.7	11:06 AM	45.9	11:06 AM	45.6	11:06 AM	38.6
11:07 AM	53.5	11:07 AM	46.7	11:07 AM	47.2	11:07 AM	36.7
11:08 AM	49.5	11:08 AM	47.7	11:08 AM	46.6	11:08 AM	37.5
11:09 AM	52.8	11:09 AM	45.6	11:09 AM	43.5	11:09 AM	37
11:10 AM	53.1	11:10 AM	46.9	11:10 AM	46.2	11:10 AM	40
11:11 AM	58.4	11:11 AM	55.6	11:11 AM	53.1	11:11 AM	39.3
11:12 AM	60.6	11:12 AM	47.1	11:12 AM	46.2	11:12 AM	40.1
11:13 AM	53.8	11:13 AM	45.7	11:13 AM	43.5	11:13 AM	38.1
11:14 AM	53.4	11:14 AM	47.5	11:14 AM	45.1	11:14 AM	37.1
11:15 AM	56.4			11:15 AM	44.9	11:15 AM	37.8
11:16 AM	51.8					11:16 AM	38.9
11:17 AM	55.6					11:17 AM	39.1
11:18 AM	54					11:18 AM	37.2

Avg Leq= 54

Avg Leq= 48

Avg Leq= 48
Adjustment = 3
Adjusted Loudest Hour = 51

Avg Leq= 39
Loudest Hour at Site T = 42
Adjustment = 3



Site O – Far Meter



Site O – Far Meter



Site O – Far Meter



Site O – Middle Meter



Site O – Middle Meter



Site O – Middle Meter



Site O – Close Meter



Site O – Close Meter



Site O – Close Meter



Triangle Expressway
Southeast Extension
BROWN CORRIDOR
Johnston/Wake Counties
T.I.P. NO. R-2721, R-2828, R-2829

N

0 100' 200'

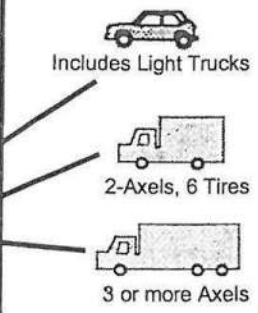
NOISE MEASUREMENT
LOCATION 0

H.W. LOCHNER, INC.	NOISE MEASUREMENT DATA SHEET

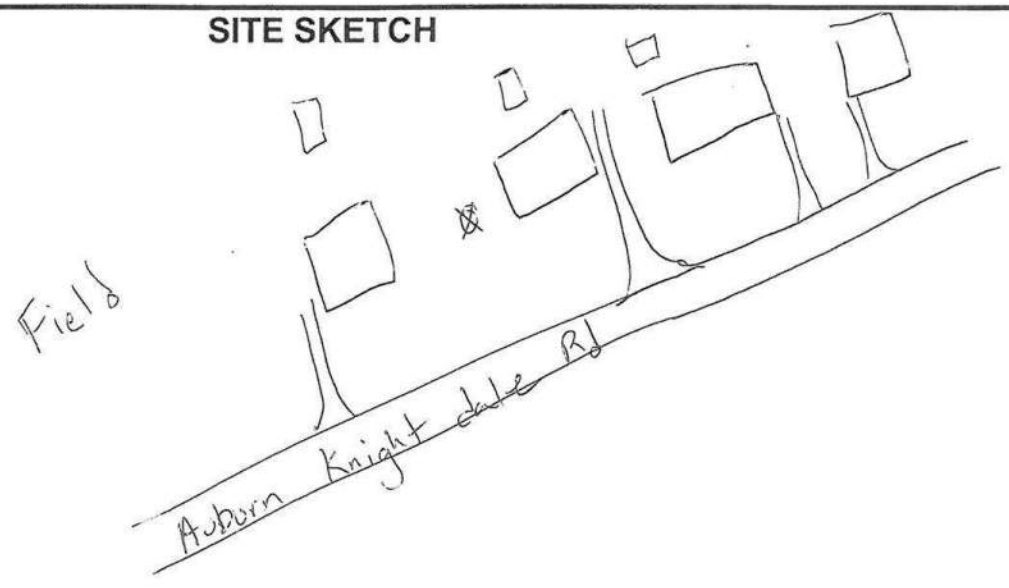
SITE NUMBER: P **PROJECT:** Tri-Ex
SITE DESCRIPTION: _____ **DATE:** 9/12/13
START TIME: 7:02am
EVENT NUMBER: _____ **END TIME:** 6:41pm
TECHNICIAN: Shannon / Salutz **DURATION:** _____
CALIBRATION: START _____ DB END _____ DB
WEATHER DATA: SKY CONDITION overcast TEMP 70°-90°
WIND: START Ø MPH END Ø MPH
EQUIPMENT: METER LD 876 CALIBRATOR _____
RESPONSE: FAST _____ SLOW _____ BATTERY CHECK _____
RESULTS: Leq _____ Lmax _____

TRAFFIC DATA

ROAD						
	N	S	E	W		
TRAFFIC SPEED						
AUTOMOBILES						
MEDIUM TRUCKS						
HEAVY TRUCKS						



SITE SKETCH



BACKGROUND NOISE: _____
MAJOR SOURCES: _____
UNUSUAL EVENTS: _____
OTHER NOTES: _____

Triangle Expressway Southeast Extension

Site P **9/11/2013** = Eliminated due to anomalous data point
Long Term **Meter LD870**

Time (sec)	Leq (dB)	Time (sec)	Leq (dB)	Time (sec)	Leq (dB)	Time (sec)	Leq (dB)	Time (sec)	Leq (dB)
7:02 AM	50.0	7:50 AM	47.9	8:38 AM	43.2	9:26 AM	44.8	10:14 AM	37.8
7:03 AM	51.6	7:51 AM	41.9	8:39 AM	44.9	9:27 AM	45.1	10:15 AM	37.9
7:04 AM	42.3	7:52 AM	37.7	8:40 AM	43.7	9:28 AM	46.0	10:16 AM	37.7
7:05 AM	44.0	7:53 AM	46.7	8:41 AM	44.6	9:29 AM	45.9	10:17 AM	38.3
7:06 AM	41.4	7:54 AM	44.1	8:42 AM	41.5	9:30 AM	45.0	10:18 AM	43.6
7:07 AM	46.8	7:55 AM	39.4	8:43 AM	40.6	9:31 AM	39.8	10:19 AM	41.7
7:08 AM	41.6	7:56 AM	45.1	8:44 AM	41.6	9:32 AM	45.4	10:20 AM	36.0
7:09 AM	46.7	7:57 AM	50.2	8:45 AM	41.2	9:33 AM	40.5	10:21 AM	45.6
7:10 AM	47.4	7:58 AM	43.8	8:46 AM	45.1	9:34 AM	40.8	10:22 AM	43.6
7:11 AM	43.6	7:59 AM	41.8	8:47 AM	43.2	9:35 AM	44.5	10:23 AM	38.2
7:12 AM	42.1	8:00 AM	44.4	8:48 AM	41.2	9:36 AM	42.2	10:24 AM	44.1
7:13 AM	45.0	8:01 AM	41.9	8:49 AM	43.5	9:37 AM	44.2	10:25 AM	48.4
7:14 AM	40.8	8:02 AM	42.2	8:50 AM	41.6	9:38 AM	44.6	10:26 AM	47.9
7:15 AM	45.2	8:03 AM	46.9	8:51 AM	44.8	9:39 AM	41.0	10:27 AM	39.8
7:16 AM	40.9	8:04 AM	45.3	8:52 AM	41.9	9:40 AM	44.7	10:28 AM	37.5
7:17 AM	44.6	8:05 AM	43.6	8:53 AM	41.6	9:41 AM	44.6	10:29 AM	39.5
7:18 AM	42.7	8:06 AM	47.3	8:54 AM	43.1	9:42 AM	45.9	10:30 AM	35.0
7:19 AM	47.0	8:07 AM	42.5	8:55 AM	43.3	9:43 AM	44.0	10:31 AM	39.6
7:20 AM	42.5	8:08 AM	40.3	8:56 AM	46.3	9:44 AM	38.7	10:32 AM	39.2
7:21 AM	46.0	8:09 AM	46.7	8:57 AM	46.0	9:45 AM	40.0	10:33 AM	38.0
7:22 AM	48.1	8:10 AM	45.1	8:58 AM	40.6	9:46 AM	44.4	10:34 AM	39.0
7:23 AM	40.3	8:11 AM	43.7	8:59 AM	38.0	9:47 AM	39.9	10:35 AM	40.9
7:24 AM	45.2	8:12 AM	44.7	9:00 AM	41.0	9:48 AM	46.0	10:36 AM	42.3
7:25 AM	44.4	8:13 AM	41.2	9:01 AM	40.6	9:49 AM	40.5	10:37 AM	41.1
7:26 AM	45.3	8:14 AM	44.5	9:02 AM	34.8	9:50 AM	37.7	10:38 AM	43.0
7:27 AM	41.8	8:15 AM	46.2	9:03 AM	43.4	9:51 AM	41.5	10:39 AM	40.3
7:28 AM	42.8	8:16 AM	39.9	9:04 AM	34.9	9:52 AM	46.0	10:40 AM	41.0
7:29 AM	41.5	8:17 AM	44.6	9:05 AM	36.7	9:53 AM	47.6	10:41 AM	45.1
7:30 AM	39.0	8:18 AM	43.0	9:06 AM	41.2	9:54 AM	44.2	10:42 AM	35.2
7:31 AM	46.9	8:19 AM	41.2	9:07 AM	36.8	9:55 AM	37.7	10:43 AM	38.9
7:32 AM	39.4	8:20 AM	51.2	9:08 AM	41.3	9:56 AM	43.1	10:44 AM	46.8
7:33 AM	42.6	8:21 AM	42.1	9:09 AM	41.8	9:57 AM	42.7	10:45 AM	41.7
7:34 AM	42.5	8:22 AM	42.5	9:10 AM	42.3	9:58 AM	45.2	10:46 AM	49.2
7:35 AM	43.8	8:23 AM	42.0	9:11 AM	43.0	9:59 AM	43.9	10:47 AM	46.8
7:36 AM	45.2	8:24 AM	40.7	9:12 AM	39.6	10:00 AM	47.1	10:48 AM	35.4
7:37 AM	43.9	8:25 AM	43.1	9:13 AM	37.7	10:01 AM	44.3	10:49 AM	39.8
7:38 AM	43.5	8:26 AM	39.2	9:14 AM	41.3	10:02 AM	42.8	10:50 AM	40.3
7:39 AM	47.6	8:27 AM	45.1	9:15 AM	43.3	10:03 AM	47.7	10:51 AM	47.9
7:40 AM	44.2	8:28 AM	49.6	9:16 AM	47.5	10:04 AM	40.7	10:52 AM	36.1
7:41 AM	40.9	8:29 AM	50.8	9:17 AM	44.0	10:05 AM	41.0	10:53 AM	39.5
7:42 AM	43.3	8:30 AM	42.6	9:18 AM	39.9	10:06 AM	33.8	10:54 AM	37.0
7:43 AM	48.8	8:31 AM	47.6	9:19 AM	34.8	10:07 AM	47.2	10:55 AM	38.7
7:44 AM	45.2	8:32 AM	44.7	9:20 AM	43.9	10:08 AM	36.6	10:56 AM	41.2
7:45 AM	44.6	8:33 AM	41.1	9:21 AM	37.6	10:09 AM	36.0	10:57 AM	42.0
7:46 AM	42.6	8:34 AM	44.5	9:22 AM	38.2	10:10 AM	39.2	10:58 AM	37.6
7:47 AM	45.6	8:35 AM	41.4	9:23 AM	40.9	10:11 AM	39.2	10:59 AM	39.3
7:48 AM	37.2	8:36 AM	37.5	9:24 AM	47.4	10:12 AM	36.1	11:00 AM	35.0
7:49 AM	40.9	8:37 AM	43.2	9:25 AM	45.6	10:13 AM	40.1	11:01 AM	36.3

Triangle Expressway Southeast Extension

Site P **9/11/2013** = Eliminated due to anomalous data point
Long Term **Meter LD870**

Time (sec)	Leq (dB)	Time (sec)	Leq (dB)	Time (sec)	Leq (dB)	Time (sec)	Leq (dB)	Time (sec)	Leq (dB)
11:02 AM	36.6	11:50 AM	43.3	12:38 PM	41.9	1:26 PM	38.7	2:14 PM	44.2
11:03 AM	42.2	11:51 AM	45.4	12:39 PM	47.0	1:27 PM	46.9	2:15 PM	53.1
11:04 AM	44.6	11:52 AM	42.8	12:40 PM	41.2	1:28 PM	48.7	2:16 PM	44.7
11:05 AM	38.6	11:53 AM	42.0	12:41 PM	44.8	1:29 PM	43.9	2:17 PM	40.5
11:06 AM	39.7	11:54 AM	41.7	12:42 PM	44.0	1:30 PM	45.8	2:18 PM	41.7
11:07 AM	48.6	11:55 AM	41.1	12:43 PM	46.4	1:31 PM	40.3	2:19 PM	40.9
11:08 AM	40.2	11:56 AM	42.1	12:44 PM	43.6	1:32 PM	38.4	2:20 PM	37.6
11:09 AM	36.6	11:57 AM	48.6	12:45 PM	43.0	1:33 PM	42.9	2:21 PM	40.2
11:10 AM	46.3	11:58 AM	42.7	12:46 PM	47.0	1:34 PM	44.1	2:22 PM	45.8
11:11 AM	41.6	11:59 AM	45.6	12:47 PM	56.5	1:35 PM	37.9	2:23 PM	44.6
11:12 AM	44.0	12:00 PM	42.5	12:48 PM	39.2	1:36 PM	42.6	2:24 PM	47.7
11:13 AM	49.2	12:01 PM	49.1	12:49 PM	36.9	1:37 PM	40.4	2:25 PM	44.7
11:14 AM	42.9	12:02 PM	42.8	12:50 PM	45.6	1:38 PM	39.5	2:26 PM	41.9
11:15 AM	43.8	12:03 PM	43.7	12:51 PM	45.0	1:39 PM	37.2	2:27 PM	39.7
11:16 AM	39.4	12:04 PM	44.7	12:52 PM	45.8	1:40 PM	40.9	2:28 PM	39.2
11:17 AM	37.3	12:05 PM	43.7	12:53 PM	43.4	1:41 PM	40.7	2:29 PM	42.7
11:18 AM	36.9	12:06 PM	42.1	12:54 PM	42.9	1:42 PM	33.6	2:30 PM	43.3
11:19 AM	38.7	12:07 PM	39.2	12:55 PM	43.0	1:43 PM	38.1	2:31 PM	33.9
11:20 AM	38.9	12:08 PM	41.9	12:56 PM	45.5	1:44 PM	41.7	2:32 PM	43.1
11:21 AM	40.1	12:09 PM	43.5	12:57 PM	42.1	1:45 PM	42.3	2:33 PM	43.0
11:22 AM	39.8	12:10 PM	43.5	12:58 PM	44.7	1:46 PM	46.3	2:34 PM	47.0
11:23 AM	49.4	12:11 PM	42.2	12:59 PM	40.0	1:47 PM	43.7	2:35 PM	45.5
11:24 AM	44.0	12:12 PM	42.5	1:00 PM	41.0	1:48 PM	45.4	2:36 PM	40.4
11:25 AM	45.0	12:13 PM	41.5	1:01 PM	41.0	1:49 PM	40.7	2:37 PM	41.4
11:26 AM	43.0	12:14 PM	44.7	1:02 PM	40.4	1:50 PM	45.3	2:38 PM	42.0
11:27 AM	43.3	12:15 PM	43.6	1:03 PM	47.4	1:51 PM	46.8	2:39 PM	40.7
11:28 AM	42.4	12:16 PM	41.2	1:04 PM	41.9	1:52 PM	44.7	2:40 PM	36.1
11:29 AM	39.2	12:17 PM	47.9	1:05 PM	46.6	1:53 PM	39.2	2:41 PM	39.6
11:30 AM	46.1	12:18 PM	45.4	1:06 PM	43.5	1:54 PM	45.6	2:42 PM	34.7
11:31 AM	43.0	12:19 PM	40.7	1:07 PM	43.4	1:55 PM	41.1	2:43 PM	45.6
11:32 AM	42.1	12:20 PM	41.9	1:08 PM	43.5	1:56 PM	42.7	2:44 PM	41.6
11:33 AM	41.8	12:21 PM	47.1	1:09 PM	38.5	1:57 PM	47.6	2:45 PM	43.0
11:34 AM	43.2	12:22 PM	43.4	1:10 PM	36.8	1:58 PM	46.5	2:46 PM	49.5
11:35 AM	43.5	12:23 PM	44.2	1:11 PM	46.7	1:59 PM	45.5	2:47 PM	42.1
11:36 AM	46.1	12:24 PM	48.7	1:12 PM	42.1	2:00 PM	45.8	2:48 PM	46.4
11:37 AM	51.1	12:25 PM	44.1	1:13 PM	40.2	2:01 PM	48.2	2:49 PM	45.5
11:38 AM	41.8	12:26 PM	45.3	1:14 PM	43.5	2:02 PM	45.4	2:50 PM	42.3
11:39 AM	39.8	12:27 PM	46.1	1:15 PM	44.6	2:03 PM	45.3	2:51 PM	45.4
11:40 AM	41.1	12:28 PM	46.9	1:16 PM	40.2	2:04 PM	42.5	2:52 PM	45.6
11:41 AM	39.8	12:29 PM	54.3	1:17 PM	37.8	2:05 PM	47.1	2:53 PM	42.8
11:42 AM	41.5	12:30 PM	48.6	1:18 PM	40.9	2:06 PM	46.5	2:54 PM	44.9
11:43 AM	41.8	12:31 PM	42.9	1:19 PM	43.6	2:07 PM	55.0	2:55 PM	47.9
11:44 AM	48.5	12:32 PM	41.5	1:20 PM	41.2	2:08 PM	42.8	2:56 PM	42.9
11:45 AM	42.0	12:33 PM	46.6	1:21 PM	46.2	2:09 PM	46.2	2:57 PM	43.0
11:46 AM	40.0	12:34 PM	47.4	1:22 PM	45.0	2:10 PM	41.4	2:58 PM	35.1
11:47 AM	41.3	12:35 PM	42.7	1:23 PM	37.7	2:11 PM	47.0	2:59 PM	37.3
11:48 AM	52.4	12:36 PM	44.4	1:24 PM	40.8	2:12 PM	47.2	3:00 PM	48.0
11:49 AM	44.5	12:37 PM	44.2	1:25 PM	37.4	2:13 PM	47.5	3:01 PM	44.2

Triangle Expressway Southeast Extension NC 109 Improvement Study
W. Lexington Ave to I-40

Site P **9/11/2013** = Eliminated due to anomalous data point
Long Term **Meter LD870**

Time (sec)	Leq (dB)
3:02 PM	41.6
3:03 PM	31.0
3:04 PM	38.8
3:05 PM	44.7
3:06 PM	46.2
3:07 PM	43.7
3:08 PM	40.9
3:09 PM	41.3
3:10 PM	44.3
3:11 PM	42.7
3:12 PM	46.3
3:13 PM	40.5
3:14 PM	42.4
3:15 PM	44.8
3:16 PM	46.4
3:17 PM	42.7
3:18 PM	43.9
3:19 PM	45.3
3:20 PM	44.4
3:21 PM	44.8
3:22 PM	41.3
3:23 PM	45.9
3:24 PM	44.7
3:25 PM	43.3
3:26 PM	42.8
3:27 PM	43.7
3:28 PM	46.4
3:29 PM	55.6
3:30 PM	48.9
3:31 PM	45.4
3:32 PM	41.1
3:33 PM	40.8
3:34 PM	44.2
3:35 PM	45.5
3:36 PM	47.3
3:37 PM	43.3
3:38 PM	48.4
3:39 PM	56.0
3:40 PM	44.7
3:41 PM	45.0
3:42 PM	42.2
3:43 PM	44.1
3:44 PM	45.4
3:45 PM	45.1
3:46 PM	45.0
3:47 PM	46.3
3:48 PM	48.9
3:49 PM	44.3

Time (sec)	Leq (dB)
3:50 PM	42.3
3:51 PM	42.8
3:52 PM	49.4
3:53 PM	44.1
3:54 PM	46.4
3:55 PM	40.5
3:56 PM	40.2
3:57 PM	44.7
3:58 PM	41.0
3:59 PM	36.4
4:00 PM	42.0
4:01 PM	42.1
4:02 PM	42.4
4:03 PM	45.4
4:04 PM	44.7
4:05 PM	40.8
4:06 PM	43.0
4:07 PM	44.0
4:08 PM	46.7
4:09 PM	44.0
4:10 PM	43.1
4:11 PM	42.1
4:12 PM	43.3
4:13 PM	40.2
4:14 PM	39.9
4:15 PM	44.7
4:16 PM	36.2
4:17 PM	43.8
4:18 PM	43.0
4:19 PM	40.7
4:20 PM	36.3
4:21 PM	47.3
4:22 PM	38.4
4:23 PM	40.8
4:24 PM	43.2
4:25 PM	41.5
4:26 PM	39.6
4:27 PM	46.7
4:28 PM	42.3
4:29 PM	45.5
4:30 PM	40.4
4:31 PM	39.9
4:32 PM	42.3
4:33 PM	44.7
4:34 PM	42.0
4:35 PM	44.7
4:36 PM	44.0
4:37 PM	47.2

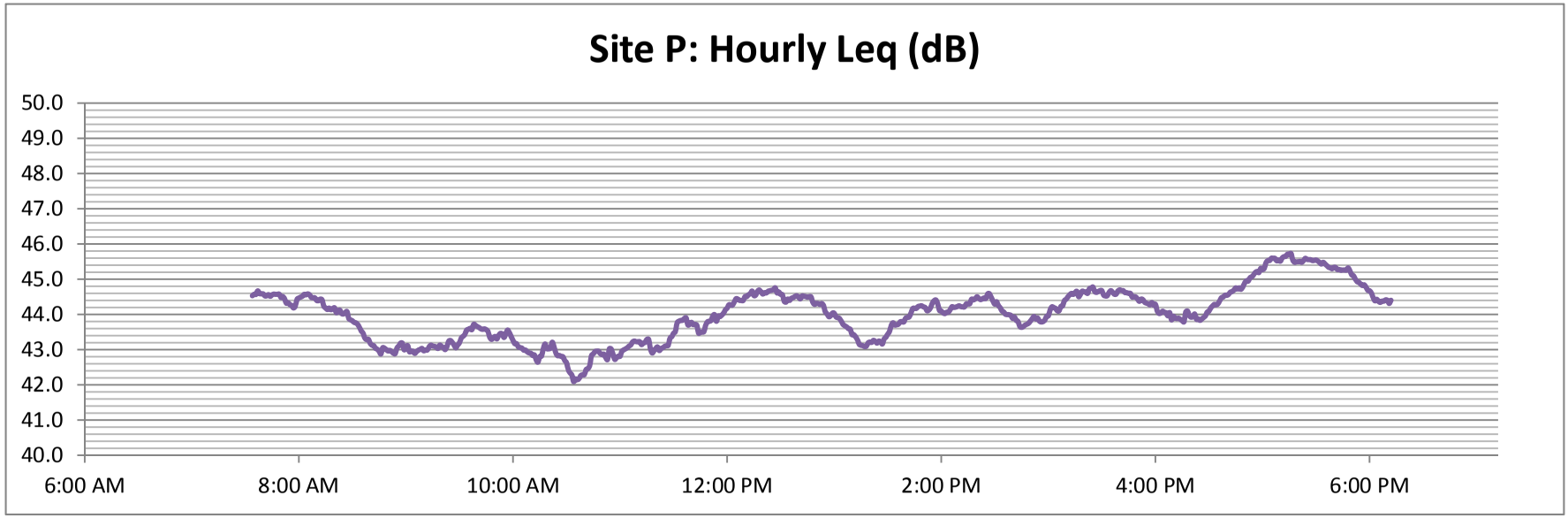
Time (sec)	Leq (dB)
4:38 PM	45.2
4:39 PM	47.7
4:40 PM	41.1
4:41 PM	44.1
4:42 PM	43.1
4:43 PM	41.4
4:44 PM	43.8
4:45 PM	43.2
4:46 PM	51.0
4:47 PM	47.2
4:48 PM	45.2
4:49 PM	40.4
4:50 PM	43.7
4:51 PM	46.4
4:52 PM	45.6
4:53 PM	44.6
4:54 PM	44.8
4:55 PM	43.8
4:56 PM	43.9
4:57 PM	46.5
4:58 PM	47.0
4:59 PM	41.4
5:00 PM	46.9
5:01 PM	45.6
5:02 PM	45.4
5:03 PM	44.6
5:04 PM	46.1
5:05 PM	46.5
5:06 PM	47.3
5:07 PM	45.2
5:08 PM	48.2
5:09 PM	43.9
5:10 PM	44.9
5:11 PM	46.2
5:12 PM	44.5
5:13 PM	44.4
5:14 PM	45.4
5:15 PM	42.2
5:16 PM	42.3
5:17 PM	39.2
5:18 PM	46.9
5:19 PM	47.5
5:20 PM	45.0
5:21 PM	47.0
5:22 PM	46.8
5:23 PM	43.9
5:24 PM	46.6
5:25 PM	46.6

Time (sec)	Leq (dB)
5:26 PM	43.1
5:27 PM	45.2
5:28 PM	48.6
5:29 PM	42.6
5:30 PM	44.7
5:31 PM	49.4
5:32 PM	46.5
5:33 PM	44.8
5:34 PM	46.8
5:35 PM	44.6
5:36 PM	43.7
5:37 PM	42.7
5:38 PM	40.6
5:39 PM	46.2
5:40 PM	47.6
5:41 PM	46.6
5:42 PM	43.9
5:43 PM	46.6
5:44 PM	43.3
5:45 PM	45.1
5:46 PM	45.1
5:47 PM	43.3
5:48 PM	46.0
5:49 PM	40.7
5:50 PM	44.6
5:51 PM	44.9
5:52 PM	47.8
5:53 PM	47.8
5:54 PM	41.7
5:55 PM	43.3
5:56 PM	43.7
5:57 PM	45.0
5:58 PM	47.3
5:59 PM	42.7
6:00 PM	45.4
6:01 PM	41.9
6:02 PM	41.5
6:03 PM	47.2
6:04 PM	42.8
6:05 PM	43.4
6:06 PM	45.0
6:07 PM	43.8
6:08 PM	47.4
6:09 PM	46.3
6:10 PM	44.6
6:11 PM	41.5
6:12 PM	44.8
6:13 PM	42.1

Time (sec)	Leq (dB)
6:14 PM	45.9
6:15 PM	41.8
6:16 PM	42.2
6:17 PM	45.8
6:18 PM	39.2
6:19 PM	37.7
6:20 PM	42.8
6:21 PM	39.9
6:22 PM	42.1
6:23 PM	41.9
6:24 PM	44.1
6:25 PM	44.4
6:26 PM	44.6
6:27 PM	36.9
6:28 PM	45.6
6:29 PM	41.2
6:30 PM	37.2
6:31 PM	45.4
6:32 PM	39.6
6:33 PM	46.7
6:34 PM	44.0
6:35 PM	42.6
6:36 PM	45.7
6:37 PM	42.5
6:38 PM	44.1
6:39 PM	45.6
6:40 PM	43.9
6:41 PM	49.0

Triangle Expressway Southeast Extension

Site P
Long Term
9/12/2013
Meter LD870





Site P – Long Term Meter



Site P – Long Term Meter



Triangle Expressway
Southeast Extension
BROWN CORRIDOR
Johnston/Wake Counties
T.I.P. NO. R-2721, R-2828, R-2829

N

0 100' 200'

NOISE MEASUREMENT
LOCATION P

H.W. LOCHNER, INC.

NOISE MEASUREMENT DATA SHEET

SITE NUMBER: Q **PROJECT:** Tri-Ex

SITE DESCRIPTION: _____ **DATE:** 9/12/13

START TIME: 9:12

EVENT NUMBER: _____ **END TIME:** 9:32

TECHNICIAN: Shannon/Salotz/Bollman **DURATION:** 20

CALIBRATION: START 9:113.8 14:113.5 12:114.1 DB END _____ DB

WEATHER DATA: SKY CONDITION Clear TEMP 75

WIND: START 0 MPH END 0 MPH DIRECTION breeze from South

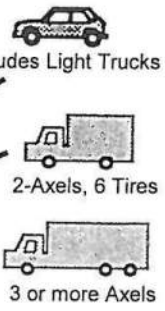
EQUIPMENT: METER _____ CALIBRATOR _____

RESPONSE: FAST _____ SLOW _____ BATTERY CHECK _____

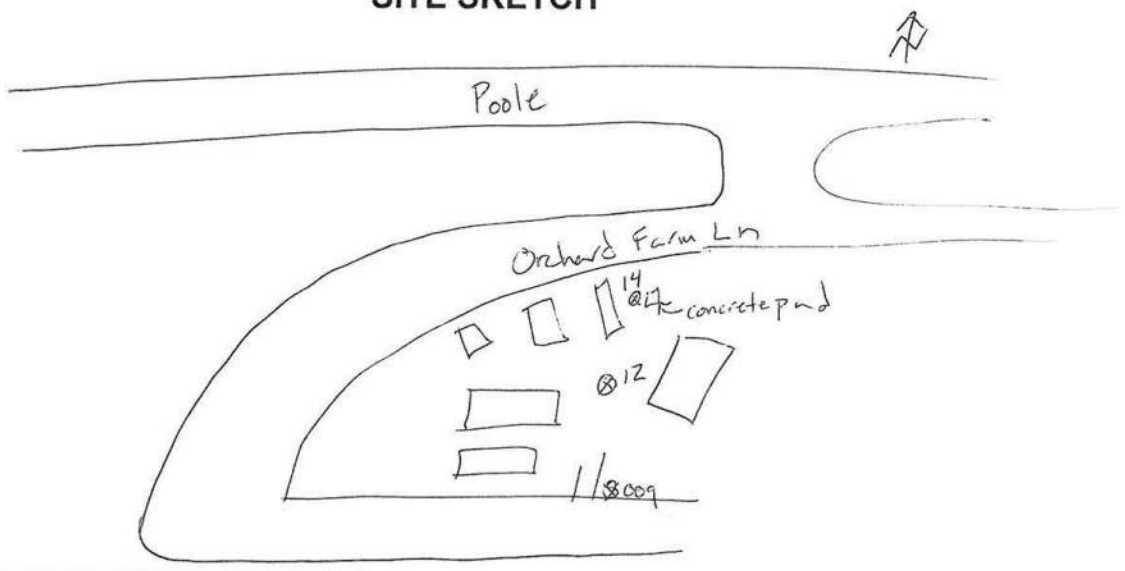
RESULTS: Leq 9:55.0 12:57.3 14:54.6 Lmax _____

TRAFFIC DATA

ROAD	N	S	E	W		
TRAFFIC SPEED						
AUTOMOBILES			48	87		
MEDIUM TRUCKS			4	1		
HEAVY TRUCKS			2	2		



SITE SKETCH



MAJOR SOURCES: Insects / Birds

BACKGROUND NOISE: _____

UNUSUAL EVENTS: chainsaw in distance / train horn

OTHER NOTES: traffic on Poole not audible / cal taking by 009 @ 9:29

Triangle Expressway Southeast Extension

Site Q
Short Term
9/12/13

Near (Meter 014)		Middle (Meter 012)		Far (Meter 009)		Site P	
Time (s)	Leq (dB)	Time (s)	Leq (dB)	Time (s)	Leq (dB)	Time (s)	Leq (dB)
				9:08 AM	54.4	9:08 AM	41.3
9:09 AM	54.1	9:09 AM	57.0	9:09 AM	53.1	9:09 AM	41.8
9:10 AM	55.6	9:10 AM	56.3	9:10 AM	51.2	9:10 AM	42.3
9:11 AM	55.4	9:11 AM	56.1	9:11 AM	51.3	9:11 AM	43
9:12 AM	55.5	9:12 AM	57.4	9:12 AM	56.4	9:12 AM	39.6
9:13 AM	54.7	9:13 AM	56.3	9:13 AM	54	9:13 AM	37.7
9:14 AM	54.4	9:14 AM	57.8	9:14 AM	52.2	9:14 AM	41.3
9:15 AM	53.7	9:15 AM	57.7	9:15 AM	52.9	9:15 AM	43.3
9:16 AM	54.2	9:16 AM	55.9	9:16 AM	54	9:16 AM	47.5
9:17 AM	55.1	9:17 AM	57.3	9:17 AM	54.6	9:17 AM	44
9:18 AM	59.6	9:18 AM	58.8	9:18 AM	51.7	9:18 AM	39.9
9:19 AM	55.4	9:19 AM	59.5	9:19 AM	53.3	9:19 AM	34.8
9:20 AM	56.7	9:20 AM	57.1	9:20 AM	57.6	9:20 AM	43.9
9:21 AM	55.7	9:21 AM	57.1	9:21 AM	58.9	9:21 AM	37.6
9:22 AM	56.1	9:22 AM	57.4	9:22 AM	58.6	9:22 AM	38.2
9:23 AM	52.8	9:23 AM	58.0	9:23 AM	58.3	9:23 AM	40.9
9:24 AM	53.8	9:24 AM	57.5	9:24 AM	56.3	9:24 AM	47.4
9:25 AM	53.5	9:25 AM	56.3	9:25 AM	54.0	9:25 AM	45.6
9:26 AM	53.2	9:26 AM	56.9	9:26 AM	54.7	9:26 AM	44.8
9:27 AM	52	9:27 AM	56.1	9:27 AM	54.2	9:27 AM	45.1
9:28 AM	52.7	9:28 AM	55.0	9:28 AM	55.6	9:28 AM	46
9:29 AM	52.2	9:29 AM	56.6			9:29 AM	45.9
		9:30 AM	57.1			9:30 AM	45
Avg Leq= 55		**Avg Leq= 57**		**Avg Leq=**	**54**	**Avg Leq=**	**44**
				Adjustment =	**2**	**Loudest Hour at Site P =**	**46**
				Adjusted Loudest Hour =	**56**	**Adjustment =**	**2**



Site Q – Far Meter



Site Q – Far Meter



Site Q – Middle Meter



Site Q – Middle Meter



Site Q – Close Meter



Site Q – Close Meter



Triangle Expressway
Southeast Extension
GREEN CORRIDOR
Johnston/Wake Counties
T.I.P. NO. R-2721, R-2828, R-2829

N

0 100' 200'

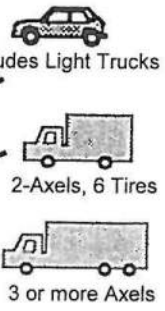
NOISE MEASUREMENT
LOCATION Q

H.W. LOCHNER, INC. | NOISE MEASUREMENT DATA SHEET

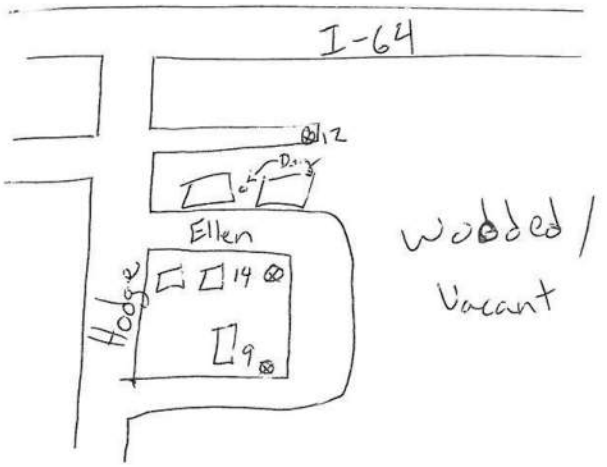
SITE NUMBER: R **PROJECT:** Tri-Ex
SITE DESCRIPTION: _____ **DATE:** 9/12/13
START TIME: 9:44 (9/14) 10:12 (12)
EVENT NUMBER: _____ **END TIME:** 10:04 (9/14) 10:32 (12
TECHNICIAN: Shannon/Salotz/Ballman **DURATION:** 20 20
CALIBRATION: START 9:113.4 12:113.9 14:113.8 DB END _____ DB
WEATHER DATA: SKY CONDITION Clear TEMP 85
WIND: START Ø MPH END Ø MPH DIRECTION _____
EQUIPMENT: METER _____ CALIBRATOR _____
RESPONSE: FAST _____ SLOW _____ BATTERY CHECK _____
RESULTS: Leq 9:55.3 14:53.9 12:61.9 Lmax _____

TRAFFIC DATA

ROAD	N	S	E	W		
TRAFFIC SPEED						
AUTOMOBILES			422	429		
MEDIUM TRUCKS			22	15		
HEAVY TRUCKS			~~56~~	48		



SITE SKETCH



MAJOR SOURCES: Traffic on 64/Insects/Birds
BACKGROUND NOISE: _____
UNUSUAL EVENTS: Dog Bark @ 9:57
OTHER NOTES: 9+14 from 9:44-10:04 + traffic count w/ 12 10:12-10:32

Triangle Expressway Southeast Extension

Site R
Short Term
9/12/13

Near (Meter 012)		Middle (Meter 014)		Far (Meter 009)		Site T	
Time (s)	Leq (dB)	Time (s)	Leq (dB)	Time (s)	Leq (dB)	Time (s)	Leq (dB)
10:10 AM	62.4	9:41 AM	54.1	9:41 AM	54	9:41 AM	38
10:11 AM	61.4	9:42 AM	54.4	9:42 AM	55.1	9:42 AM	39.5
10:12 AM	61.4	9:43 AM	54.2	9:43 AM	56.4	9:43 AM	40.4
10:13 AM	61.6	9:44 AM	54.1	9:44 AM	55.8	9:44 AM	39
10:14 AM	62.8	9:45 AM	53.1	9:45 AM	55.2	9:45 AM	37.3
10:15 AM	61.1	9:46 AM	53.2	9:46 AM	55.2	9:46 AM	36.1
10:16 AM	63.4	9:47 AM	53.7	9:47 AM	54.5	9:47 AM	40.4
10:17 AM	62.5	9:48 AM	53.9	9:48 AM	55.9	9:48 AM	45.8
10:18 AM	61.5	9:49 AM	53.6	9:49 AM	53.7	9:49 AM	35.8
10:19 AM	61.7	9:50 AM	55.4	9:50 AM	55	9:50 AM	35.8
10:20 AM	62.1	9:51 AM	54.3	9:51 AM	54	9:51 AM	36.1
10:21 AM	62.4	9:52 AM	54.0	9:52 AM	54.8	9:52 AM	37.5
10:22 AM	61.7	9:53 AM	53.0	9:53 AM	56.4	9:53 AM	44.8
10:23 AM	62.8	9:54 AM	53.0	9:54 AM	54.7	9:54 AM	39.2
10:24 AM	60.1	9:55 AM	54.0	9:55 AM	54.3	9:55 AM	36.9
10:25 AM	61.4	9:56 AM	54.1	9:56 AM	57.1	9:56 AM	37.7
10:26 AM	62.7	9:57 AM	54.0	9:57 AM	58.1	9:57 AM	38.5
10:27 AM	62.1	9:58 AM	54.5	9:58 AM	55.8	9:58 AM	38
10:28 AM	61.9	9:59 AM	55.8	9:59 AM	53.7	9:59 AM	37.8
10:29 AM	63.1	10:00 AM	55.1	10:00 AM	54.2	10:00 AM	38.5
10:30 AM	60.8			10:01 AM	52.7	10:01 AM	37.5
10:31 AM	60.3						

Avg Leq= 62

Avg Leq= 54

Avg Leq= 55
Adjustment = 2
Adjusted Loudest Hour = 57

Avg Leq= 40
Loudest Hour at Site T = 42
Adjustment = 2



Site R – Far Meter



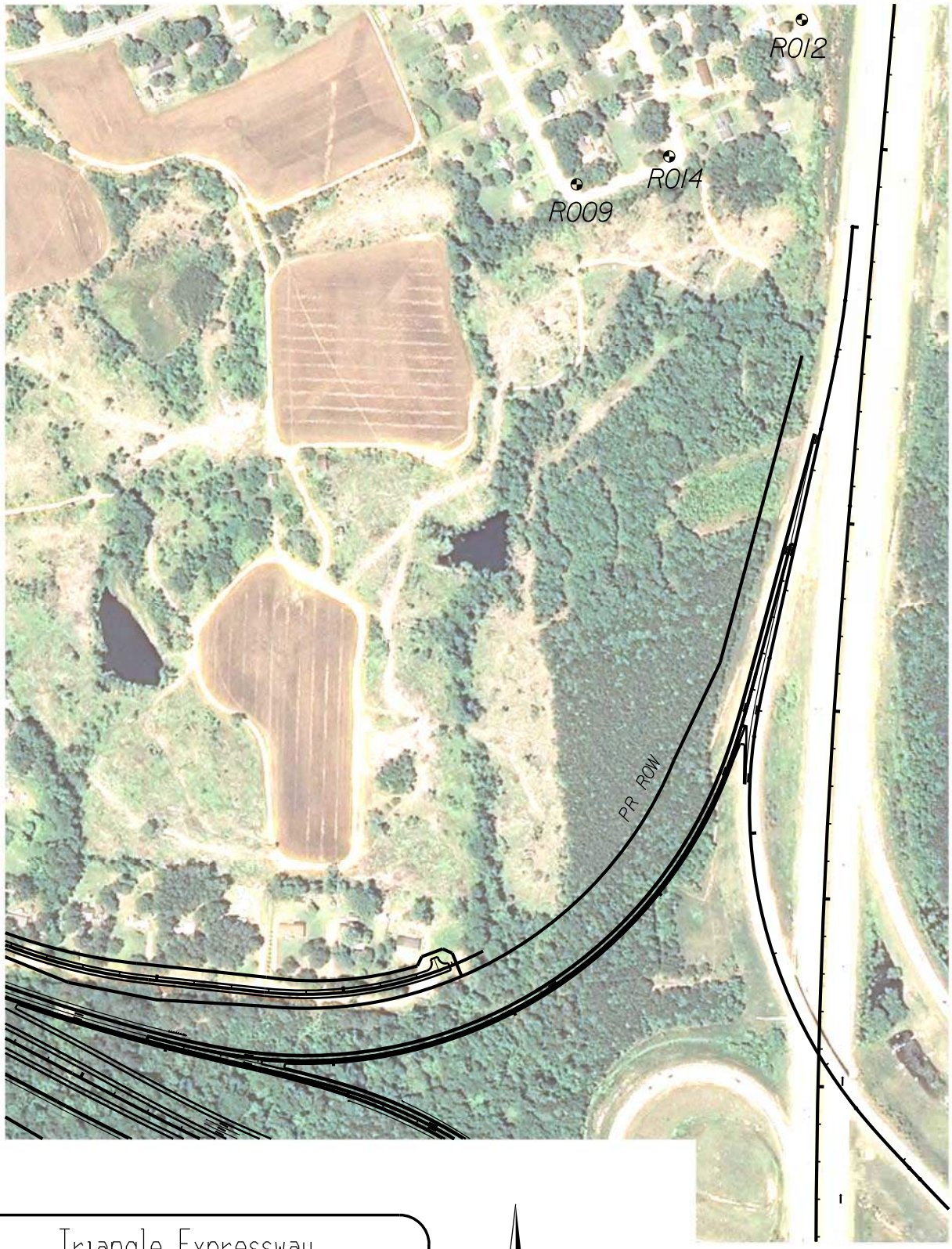
Site R – Far Meter



Site R – Close Meter



Site R – Close Meter



Triangle Expressway
Southeast Extension
GREEN CORRIDOR
Johnston/Wake Counties
T.I.P. NO. R-2721, R-2828, R-2829

N

0 200' 400'

NOISE MEASUREMENT
LOCATION R

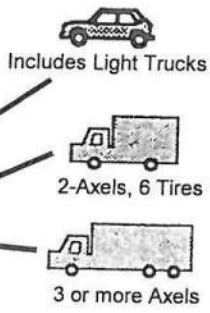
H.W. LOCHNER, INC.

NOISE MEASUREMENT DATA SHEET

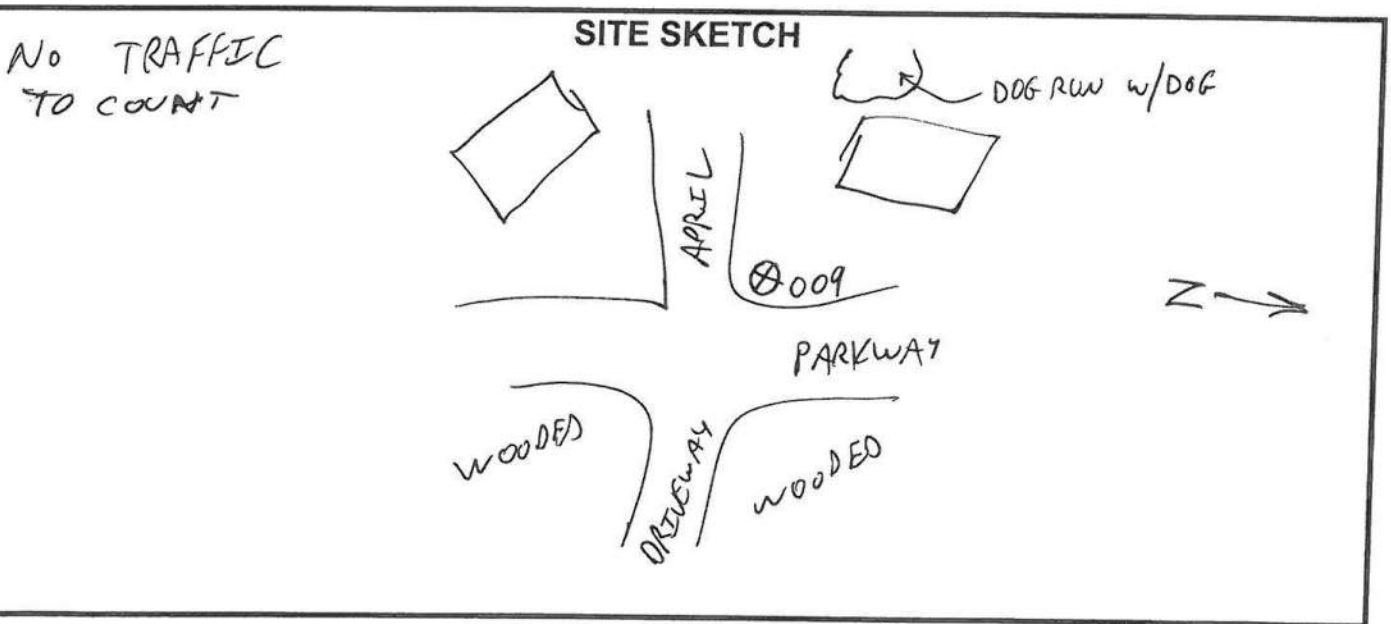
SITE NUMBER: 5 **PROJECT:** TRI-EX
SITE DESCRIPTION: _____ **DATE:** 9/11/13
START TIME: 12:35
EVENT NUMBER: _____ **END TIME:** 12:55
TECHNICIAN: SHANNON **DURATION:** 20
CALIBRATION: START _____ DB END 114.0 DB
WEATHER DATA: SKY CONDITION CLEAR TEMP 85
WIND: START Ø MPH END Ø MPH DIRECTION _____
EQUIPMENT: METER _____ CALIBRATOR _____
RESPONSE: FAST _____ SLOW _____ BATTERY CHECK _____
RESULTS: Leq 45.2 Lmax _____

TRAFFIC DATA

ROAD	N	S	E	W		
TRAFFIC SPEED						
AUTOMOBILES						
MEDIUM TRUCKS						
HEAVY TRUCKS						



SITE SKETCH



MAJOR SOURCES: TRAFFIC ON 401 / BIRDS / INSECTS
BACKGROUND NOISE: _____
UNUSUAL EVENTS: _____
OTHER NOTES: _____

Triangle Expressway Southeast Extension

Site S
Short Term - Ambient
9/11/13

= Eliminate

Meter 009	
Time (s)	**Leq (dB)**
12:33 PM	43.2
12:34 PM	45.9
12:35 PM	46.0
12:36 PM	43.1
12:37 PM	42.7
12:38 PM	43.9
12:39 PM	43.5
12:40 PM	43.4
12:41 PM	42.7
12:42 PM	40.7
12:43 PM	42.1
12:44 PM	42.5
12:45 PM	42.0
12:46 PM	43.2
12:47 PM	42.5
12:48 PM	41.1
12:49 PM	40.2
12:50 PM	41.7
12:51 PM	51.1
12:52 PM	52.3
12:53 PM	45.7

Avg Leq= 43
Adjustment = 1
Adjusted Loudest Hour = 44

Site P	
Time (s)	**Leq (dB)**
12:33 PM	46.6
12:34 PM	47.4
12:35 PM	42.7
12:36 PM	44.4
12:37 PM	44.2
12:38 PM	41.9
12:39 PM	47.0
12:40 PM	41.2
12:41 PM	44.8
12:42 PM	44.0
12:43 PM	46.4
12:44 PM	43.6
12:45 PM	43.0
12:46 PM	47.0
12:47 PM	56.5
12:48 PM	39.2
12:49 PM	36.9
12:50 PM	45.6
12:51 PM	45.0
12:52 PM	45.8
12:53 PM	43.4

Avg Leq= 45
Loudest Hour at Site P = 46
Adjustment = 1



Site S –Meter



Site S –Meter



Site S – Meter



Triangle Expressway
Southeast Extension
RED CORRIDOR
Johnston/Wake Counties
T.I.P. NO. R-2721, R-2828, R-2829

N

0 100' 200'

NOISE MEASUREMENT
LOCATION S

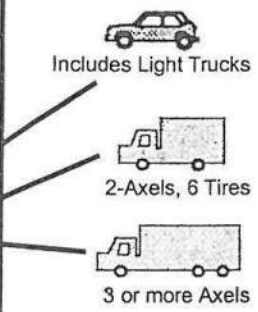
H.W. LOCHNER, INC.

NOISE MEASUREMENT DATA SHEET

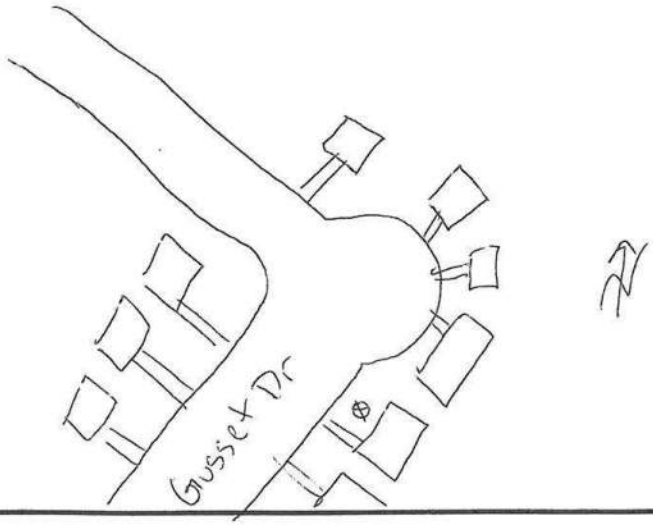
SITE NUMBER: T
PROJECT: Tri-Ex
SITE DESCRIPTION:
DATE: 9/11/13
START TIME: 6:32 am
EVENT NUMBER:
END TIME: 7:01 pm
TECHNICIAN: Shannon / Saltz
DURATION:
CALIBRATION: START ____ DB END ____ DB
WEATHER DATA: SKY CONDITION Clear TEMP 70°-90°
WIND: START 0 MPH END 0 MPH
EQUIPMENT: METER LD 870 CALIBRATOR
RESPONSE: FAST ____ SLOW ____ BATTERY CHECK ____
RESULTS: Leq ____ Lmax ____

TRAFFIC DATA

ROAD						
	N	S	E	W		
TRAFFIC SPEED						
AUTOMOBILES						
MEDIUM TRUCKS						
HEAVY TRUCKS						



SITE SKETCH



BACKGROUND NOISE:
MAJOR SOURCES:
UNUSUAL EVENTS:
OTHER NOTES:

Triangle Expressway Southeast Extension

Site T **9/11/2013** = Eliminated due to anomalous data point
Long Term **Meter LD870**

Time (sec)	Leq (dB)	Time (sec)	Leq (dB)	Time (sec)	Leq (dB)	Time (sec)	Leq (dB)	Time (sec)	Leq (dB)
6:32 AM	97.7	7:57 AM	38.7	8:45 AM	35.0	9:33 AM	41.4	10:21 AM	36.0
6:33 AM	95.7	7:58 AM	35.0	8:46 AM	35.7	9:34 AM	43.0	10:22 AM	32.7
7:11 AM	46.6	7:59 AM	35.6	8:47 AM	37.2	9:35 AM	55.0	10:23 AM	33.5
7:12 AM	42.0	8:00 AM	35.3	8:48 AM	36.4	9:36 AM	44.0	10:24 AM	34.9
7:13 AM	35.6	8:01 AM	35.2	8:49 AM	36.9	9:37 AM	43.6	10:25 AM	42.1
7:14 AM	35.6	8:02 AM	35.7	8:50 AM	39.8	9:38 AM	44.8	10:26 AM	33.9
7:15 AM	34.6	8:03 AM	34.6	8:51 AM	42.6	9:39 AM	37.1	10:27 AM	36.1
7:16 AM	34.8	8:04 AM	36.0	8:52 AM	44.1	9:40 AM	36.8	10:28 AM	35.7
7:17 AM	35.8	8:05 AM	36.9	8:53 AM	39.9	9:41 AM	38.0	10:29 AM	36.5
7:18 AM	35.4	8:06 AM	36.6	8:54 AM	38.5	9:42 AM	39.5	10:30 AM	37.5
7:19 AM	36.3	8:07 AM	38.9	8:55 AM	36.9	9:43 AM	40.4	10:31 AM	37.0
7:20 AM	49.2	8:08 AM	41.2	8:56 AM	36.7	9:44 AM	39.0	10:32 AM	38.1
7:21 AM	35.3	8:09 AM	42.3	8:57 AM	35.6	9:45 AM	37.3	10:33 AM	37.7
7:22 AM	36.6	8:10 AM	39.3	8:58 AM	35.5	9:46 AM	36.1	10:34 AM	39.2
7:23 AM	42.1	8:11 AM	37.0	8:59 AM	34.5	9:47 AM	40.4	10:35 AM	38.8
7:24 AM	42.7	8:12 AM	37.1	9:00 AM	40.1	9:48 AM	45.8	10:36 AM	40.1
7:25 AM	45.8	8:13 AM	37.1	9:01 AM	35.3	9:49 AM	35.8	10:37 AM	39.0
7:26 AM	45.8	8:14 AM	37.9	9:02 AM	40.3	9:50 AM	35.8	10:38 AM	36.6
7:27 AM	44.3	8:15 AM	50.2	9:03 AM	36.3	9:51 AM	36.1	10:39 AM	37.3
7:28 AM	37.7	8:16 AM	50.6	9:04 AM	35.0	9:52 AM	37.5	10:40 AM	39.4
7:29 AM	36.4	8:17 AM	48.5	9:05 AM	34.3	9:53 AM	44.8	10:41 AM	39.0
7:30 AM	36.4	8:18 AM	37.8	9:06 AM	32.9	9:54 AM	39.2	10:42 AM	37.5
7:31 AM	35.3	8:19 AM	43.0	9:07 AM	35.6	9:55 AM	36.9	10:43 AM	38.3
7:32 AM	39.8	8:20 AM	38.3	9:08 AM	35.7	9:56 AM	37.7	10:44 AM	39.0
7:33 AM	35.8	8:21 AM	40.7	9:09 AM	37.7	9:57 AM	38.5	10:45 AM	40.3
7:34 AM	35.5	8:22 AM	36.5	9:10 AM	37.3	9:58 AM	38.0	10:46 AM	39.3
7:35 AM	34.5	8:23 AM	43.7	9:11 AM	37.1	9:59 AM	37.8	10:47 AM	38.3
7:36 AM	34.5	8:24 AM	37.8	9:12 AM	36.9	10:00 AM	38.5	10:48 AM	40.6
7:37 AM	34.1	8:25 AM	38.7	9:13 AM	36.9	10:01 AM	37.5	10:49 AM	37.7
7:38 AM	34.1	8:26 AM	56.4	9:14 AM	39.1	10:02 AM	37.4	10:50 AM	37.5
7:39 AM	35.3	8:27 AM	36.5	9:15 AM	37.9	10:03 AM	35.5	10:51 AM	39.3
7:40 AM	34.4	8:28 AM	36.5	9:16 AM	39.2	10:04 AM	38.0	10:52 AM	37.9
7:41 AM	33.5	8:29 AM	36.6	9:17 AM	39.5	10:05 AM	37.1	10:53 AM	37.9
7:42 AM	34.1	8:30 AM	36.8	9:18 AM	36.1	10:06 AM	38.0	10:54 AM	37.9
7:43 AM	35.1	8:31 AM	36.6	9:19 AM	35.7	10:07 AM	39.6	10:55 AM	38.0
7:44 AM	35.6	8:32 AM	36.9	9:20 AM	35.5	10:08 AM	40.2	10:56 AM	40.0
7:45 AM	36.8	8:33 AM	36.4	9:21 AM	37.0	10:09 AM	39.5	10:57 AM	40.4
7:46 AM	40.0	8:34 AM	36.0	9:22 AM	37.2	10:10 AM	38.7	10:58 AM	39.0
7:47 AM	38.0	8:35 AM	35.3	9:23 AM	34.2	10:11 AM	38.8	10:59 AM	43.6
7:48 AM	39.9	8:36 AM	33.3	9:24 AM	35.0	10:12 AM	39.7	11:00 AM	43.8
7:49 AM	38.0	8:37 AM	34.1	9:25 AM	34.5	10:13 AM	37.3	11:01 AM	42.9
7:50 AM	37.6	8:38 AM	34.5	9:26 AM	36.3	10:14 AM	36.9	11:02 AM	40.1
7:51 AM	37.5	8:39 AM	34.8	9:27 AM	38.0	10:15 AM	37.0	11:03 AM	36.1
7:52 AM	36.2	8:40 AM	34.1	9:28 AM	38.1	10:16 AM	41.9	11:04 AM	34.6
7:53 AM	39.2	8:41 AM	33.1	9:29 AM	37.3	10:17 AM	37.4	11:05 AM	36.0
7:54 AM	34.7	8:42 AM	32.9	9:30 AM	37.8	10:18 AM	36.0	11:06 AM	38.6
7:55 AM	35.5	8:43 AM	34.1	9:31 AM	38.3	10:19 AM	35.5	11:07 AM	36.7
7:56 AM	36.3	8:44 AM	35.6	9:32 AM	38.1	10:20 AM	35.2	11:08 AM	37.5

Triangle Expressway Southeast Extension

Site T **9/11/2013** = Eliminated due to anomalous data point
Long Term **Meter LD870**

Time (sec)	Leq (dB)	Time (sec)	Leq (dB)	Time (sec)	Leq (dB)	Time (sec)	Leq (dB)	Time (sec)	Leq (dB)
11:09 AM	37.0	11:57 AM	35.7	12:45 PM	33.6	1:33 PM	41.9	2:21 PM	37.3
11:10 AM	40.0	11:58 AM	37.8	12:46 PM	33.8	1:34 PM	36.3	2:22 PM	36.5
11:11 AM	39.3	11:59 AM	37.9	12:47 PM	34.5	1:35 PM	37.0	2:23 PM	38.0
11:12 AM	40.1	12:00 PM	41.9	12:48 PM	35.1	1:36 PM	36.9	2:24 PM	38.1
11:13 AM	38.1	12:01 PM	41.5	12:49 PM	35.6	1:37 PM	37.2	2:25 PM	36.8
11:14 AM	37.1	12:02 PM	37.0	12:50 PM	36.3	1:38 PM	37.8	2:26 PM	37.1
11:15 AM	37.8	12:03 PM	37.8	12:51 PM	36.1	1:39 PM	37.0	2:27 PM	36.9
11:16 AM	38.9	12:04 PM	42.8	12:52 PM	36.3	1:40 PM	36.9	2:28 PM	36.7
11:17 AM	39.1	12:05 PM	40.9	12:53 PM	37.5	1:41 PM	46.2	2:29 PM	36.6
11:18 AM	37.2	12:06 PM	38.0	12:54 PM	37.3	1:42 PM	37.5	2:30 PM	36.8
11:19 AM	36.0	12:07 PM	37.3	12:55 PM	36.7	1:43 PM	37.3	2:31 PM	36.6
11:20 AM	36.3	12:08 PM	37.6	12:56 PM	36.3	1:44 PM	37.0	2:32 PM	37.0
11:21 AM	35.7	12:09 PM	37.9	12:57 PM	36.2	1:45 PM	37.4	2:33 PM	36.8
11:22 AM	35.7	12:10 PM	38.6	12:58 PM	39.1	1:46 PM	38.4	2:34 PM	36.7
11:23 AM	36.4	12:11 PM	39.2	12:59 PM	35.7	1:47 PM	39.2	2:35 PM	37.7
11:24 AM	34.7	12:12 PM	43.0	1:00 PM	35.2	1:48 PM	44.5	2:36 PM	50.1
11:25 AM	34.3	12:13 PM	43.6	1:01 PM	35.3	1:49 PM	37.8	2:37 PM	43.4
11:26 AM	34.7	12:14 PM	40.9	1:02 PM	36.0	1:50 PM	37.6	2:38 PM	36.9
11:27 AM	36.6	12:15 PM	38.3	1:03 PM	42.0	1:51 PM	36.7	2:39 PM	37.6
11:28 AM	38.6	12:16 PM	38.3	1:04 PM	36.3	1:52 PM	36.6	2:40 PM	38.0
11:29 AM	39.3	12:17 PM	38.3	1:05 PM	35.5	1:53 PM	37.2	2:41 PM	45.3
11:30 AM	38.8	12:18 PM	38.0	1:06 PM	35.3	1:54 PM	36.7	2:42 PM	38.6
11:31 AM	40.0	12:19 PM	37.3	1:07 PM	35.7	1:55 PM	43.1	2:43 PM	43.2
11:32 AM	39.3	12:20 PM	37.9	1:08 PM	35.4	1:56 PM	37.2	2:44 PM	37.0
11:33 AM	41.0	12:21 PM	38.7	1:09 PM	35.4	1:57 PM	37.2	2:45 PM	36.2
11:34 AM	39.5	12:22 PM	41.9	1:10 PM	37.3	1:58 PM	37.4	2:46 PM	36.8
11:35 AM	44.3	12:23 PM	39.0	1:11 PM	38.7	1:59 PM	36.7	2:47 PM	38.2
11:36 AM	39.7	12:24 PM	38.0	1:12 PM	37.0	2:00 PM	36.5	2:48 PM	37.8
11:37 AM	39.1	12:25 PM	36.5	1:13 PM	37.9	2:01 PM	36.8	2:49 PM	42.8
11:38 AM	38.2	12:26 PM	35.0	1:14 PM	38.2	2:02 PM	37.2	2:50 PM	48.6
11:39 AM	37.7	12:27 PM	34.9	1:15 PM	37.5	2:03 PM	37.1	2:51 PM	38.2
11:40 AM	36.9	12:28 PM	35.1	1:16 PM	39.4	2:04 PM	37.7	2:52 PM	38.1
11:41 AM	36.9	12:29 PM	35.8	1:17 PM	38.1	2:05 PM	37.2	2:53 PM	38.2
11:42 AM	37.4	12:30 PM	36.6	1:18 PM	37.0	2:06 PM	40.4	2:54 PM	37.6
11:43 AM	35.8	12:31 PM	36.5	1:19 PM	36.9	2:07 PM	37.3	2:55 PM	37.6
11:44 AM	35.8	12:32 PM	36.2	1:20 PM	36.5	2:08 PM	45.6	2:56 PM	37.9
11:45 AM	36.7	12:33 PM	42.2	1:21 PM	37.0	2:09 PM	37.0	2:57 PM	37.5
11:46 AM	42.3	12:34 PM	35.9	1:22 PM	36.6	2:10 PM	36.9	2:58 PM	37.8
11:47 AM	43.1	12:35 PM	36.1	1:23 PM	36.5	2:11 PM	36.8	2:59 PM	38.1
11:48 AM	38.6	12:36 PM	35.7	1:24 PM	37.8	2:12 PM	40.1	3:00 PM	41.9
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11:51 AM	35.2	12:39 PM	35.8	1:27 PM	36.5	2:15 PM	37.1	3:03 PM	37.5
11:52 AM	34.9	12:40 PM	36.5	1:28 PM	36.3	2:16 PM	37.5	3:04 PM	37.8
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11:55 AM	36.2	12:43 PM	34.1	1:31 PM	37.8	2:19 PM	36.8	3:07 PM	37.4
11:56 AM	35.9	12:44 PM	34.8	1:32 PM	45.6	2:20 PM	37.8	3:08 PM	37.7

Triangle Expressway Southeast Extension

Site T **9/11/2013** = Eliminated due to anomalous data point
Long Term **Meter LD870**

Time (sec)	Leq (dB)
3:09 PM	38.0
3:10 PM	38.5
3:11 PM	36.9
3:12 PM	36.8
3:13 PM	37.4
3:14 PM	37.7
3:15 PM	36.9
3:16 PM	37.9
3:17 PM	38.2
3:18 PM	38.7
3:19 PM	37.7
3:20 PM	37.9
3:21 PM	38.2
3:22 PM	38.4
3:23 PM	38.8
3:24 PM	39.0
3:25 PM	38.0
3:26 PM	37.5
3:27 PM	36.8
3:28 PM	36.6
3:29 PM	36.4
3:30 PM	36.4
3:31 PM	36.1
3:32 PM	35.9
3:33 PM	38.6
3:34 PM	48.3
3:35 PM	36.7
3:36 PM	37.0
3:37 PM	37.1
3:38 PM	36.9
3:39 PM	37.6
3:40 PM	39.1
3:41 PM	37.7
3:42 PM	37.7
3:43 PM	38.1
3:44 PM	37.7
3:45 PM	37.8
3:46 PM	37.5
3:47 PM	37.6
3:48 PM	37.6
3:49 PM	37.6
3:50 PM	43.5
3:51 PM	37.2
3:52 PM	37.1
3:53 PM	36.7
3:54 PM	37.3
3:55 PM	36.9
3:56 PM	37.1

Time (sec)	Leq (dB)
3:57 PM	37.0
3:58 PM	37.1
3:59 PM	37.0
4:00 PM	37.2
4:01 PM	40.5
4:02 PM	38.2
4:03 PM	37.6
4:04 PM	37.8
4:05 PM	38.0
4:06 PM	38.0
4:07 PM	37.6
4:08 PM	37.2
4:09 PM	37.5
4:10 PM	37.8
4:11 PM	38.8
4:12 PM	37.5
4:13 PM	37.5
4:14 PM	37.1
4:15 PM	37.1
4:16 PM	37.7
4:17 PM	38.5
4:18 PM	38.7
4:19 PM	38.7
4:20 PM	38.1
4:21 PM	38.2
4:22 PM	38.1
4:23 PM	38.5
4:24 PM	38.7
4:25 PM	40.3
4:26 PM	39.7
4:27 PM	39.0
4:28 PM	39.1
4:29 PM	38.4
4:30 PM	38.3
4:31 PM	38.4
4:32 PM	43.1
4:33 PM	49.0
4:34 PM	41.8
4:35 PM	43.9
4:36 PM	43.3
4:37 PM	40.6
4:38 PM	39.4
4:39 PM	39.0
4:40 PM	39.0
4:41 PM	38.8
4:42 PM	38.9
4:43 PM	39.7
4:44 PM	39.1

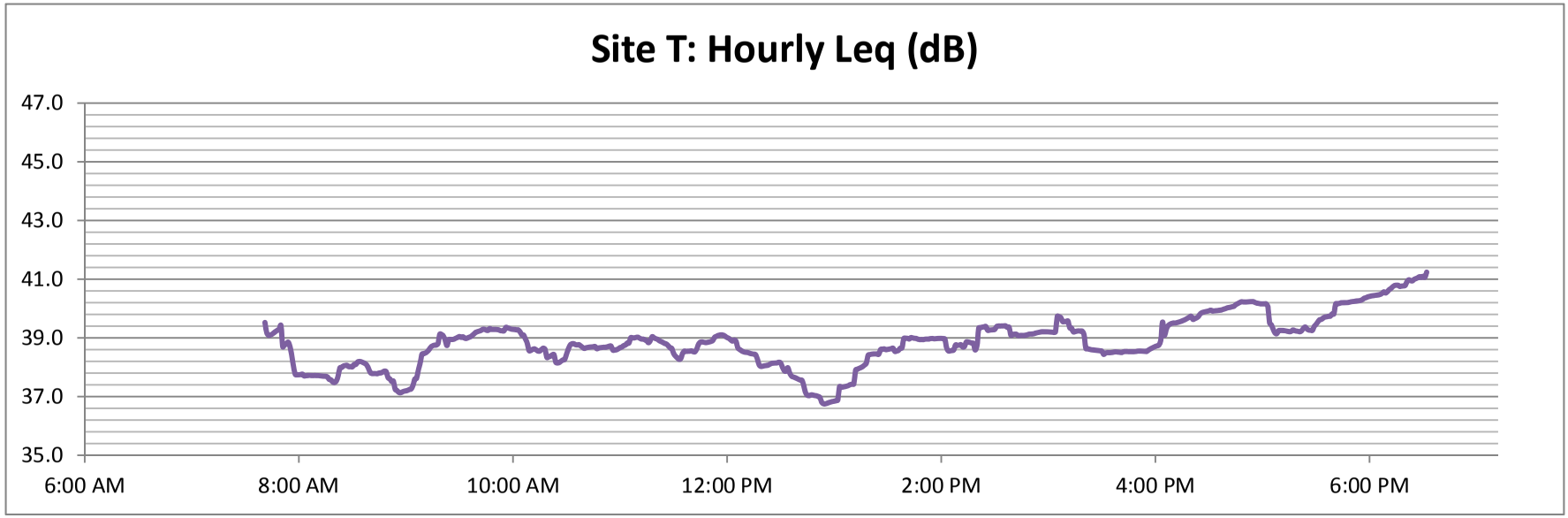
Time (sec)	Leq (dB)
4:45 PM	61.8
4:46 PM	40.1
4:47 PM	39.8
4:48 PM	40.2
4:49 PM	39.9
4:50 PM	39.5
4:51 PM	39.2
4:52 PM	39.2
4:53 PM	40.0
4:54 PM	42.2
4:55 PM	40.5
4:56 PM	38.9
4:57 PM	38.6
4:58 PM	38.3
4:59 PM	38.6
5:00 PM	39.0
5:01 PM	38.6
5:02 PM	38.8
5:03 PM	38.2
5:04 PM	38.2
5:05 PM	38.9
5:06 PM	38.6
5:07 PM	39.6
5:08 PM	38.7
5:09 PM	39.6
5:10 PM	39.2
5:11 PM	39.5
5:12 PM	39.0
5:13 PM	39.0
5:14 PM	41.0
5:15 PM	40.1
5:16 PM	40.1
5:17 PM	40.6
5:18 PM	38.6
5:19 PM	38.2
5:20 PM	38.6
5:21 PM	38.2
5:22 PM	38.6
5:23 PM	38.8
5:24 PM	38.3
5:25 PM	38.1
5:26 PM	38.2
5:27 PM	38.0
5:28 PM	38.2
5:29 PM	38.2
5:30 PM	38.3
5:31 PM	38.6
5:32 PM	38.7

Time (sec)	Leq (dB)
5:33 PM	38.6
5:34 PM	38.4
5:35 PM	38.2
5:36 PM	38.8
5:37 PM	39.5
5:38 PM	43.0
5:39 PM	39.5
5:40 PM	38.9
5:41 PM	38.5
5:42 PM	38.6
5:43 PM	38.5
5:44 PM	38.4
5:45 PM	39.7
5:46 PM	42.0
5:47 PM	38.8
5:48 PM	39.1
5:49 PM	39.4
5:50 PM	38.7
5:51 PM	41.1
5:52 PM	42.5
5:53 PM	41.7
5:54 PM	39.1
5:55 PM	38.7
5:56 PM	38.5
5:57 PM	38.5
5:58 PM	43.5
5:59 PM	41.9
6:00 PM	42.7
6:01 PM	42.1
6:02 PM	39.7
6:03 PM	40.9
6:04 PM	40.5
6:05 PM	39.5
6:06 PM	39.7
6:07 PM	39.8
6:08 PM	42.4
6:09 PM	39.8
6:10 PM	47.4
6:11 PM	40.0
6:12 PM	39.7
6:13 PM	40.5
6:14 PM	41.1
6:15 PM	40.3
6:16 PM	39.9
6:17 PM	41.1
6:18 PM	39.6
6:19 PM	39.2
6:20 PM	39.1

Time (sec)	Leq (dB)
6:21 PM	39.2
6:22 PM	39.3
6:23 PM	39.1
6:24 PM	39.5
6:25 PM	40.2
6:26 PM	41.3
6:27 PM	39.5
6:28 PM	40.4
6:29 PM	39.5
6:30 PM	39.8
6:31 PM	39.1
6:32 PM	39.8
6:33 PM	39.0
6:34 PM	39.2
6:35 PM	39.7
6:36 PM	41.0
6:37 PM	42.4
6:38 PM	41.4
6:39 PM	42.1
6:40 PM	42.8
6:41 PM	41.1
6:42 PM	42.4
6:43 PM	41.3
6:44 PM	39.5
6:45 PM	39.4
6:46 PM	39.7
6:47 PM	39.9
6:48 PM	39.6
6:49 PM	40.7
6:50 PM	44.6
6:51 PM	43.7
6:52 PM	41.1
6:53 PM	41.3
6:54 PM	42.3
6:55 PM	40.9
6:56 PM	40.6
6:57 PM	41.4
6:58 PM	42.5
6:59 PM	43.5
7:00 PM	41.0
7:01 PM	46.8

Triangle Expressway Southeast Extension

Site T
Long Term
9/11/2013
Meter LD870

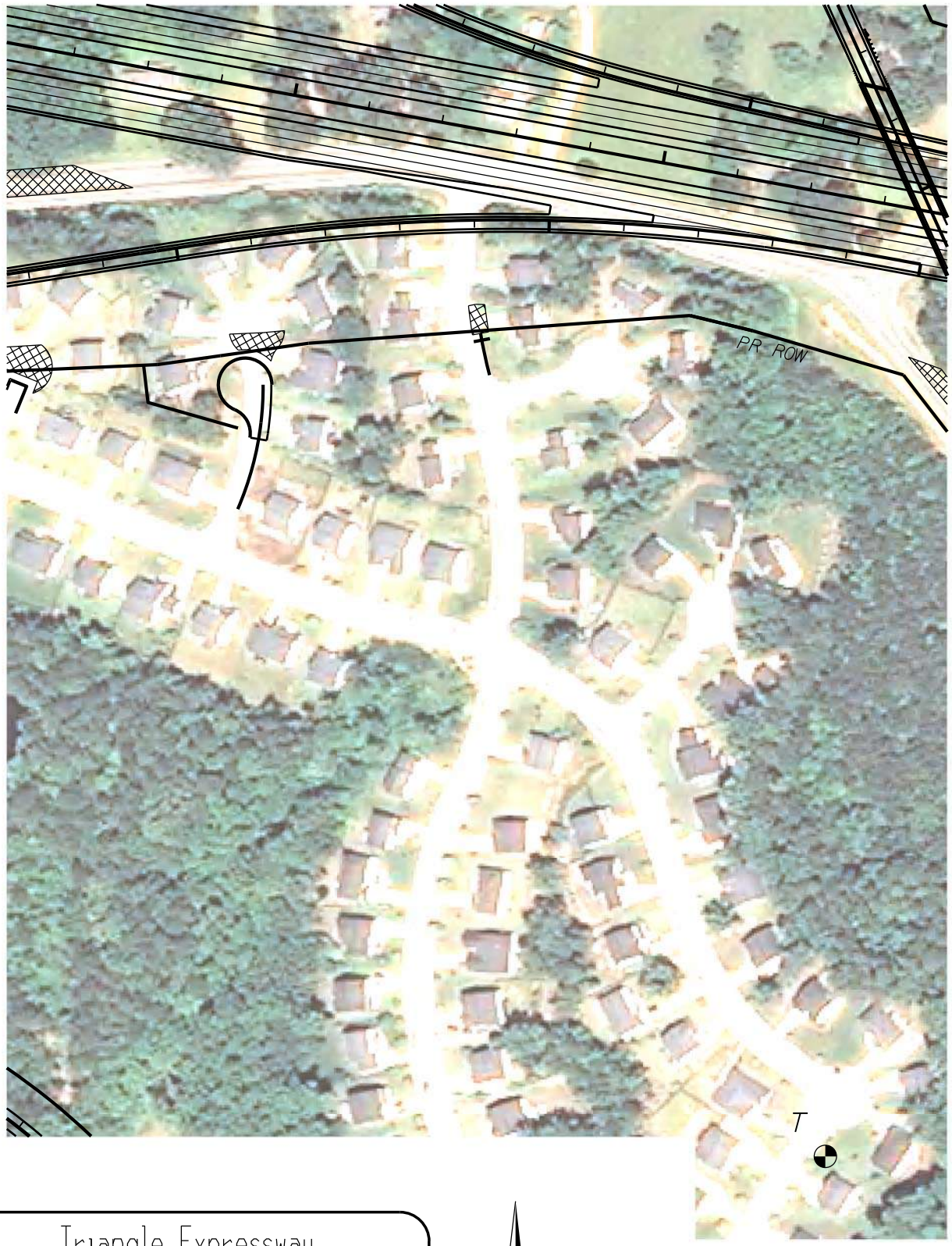




Site T – Long Term Meter



Site T – Long Term Meter



Triangle Expressway
Southeast Extension
RED CORRIDOR
Johnston/Wake Counties
T.I.P. NO. R-2721, R-2828, R-2829

N

0 100' 200'

NOISE MEASUREMENT
LOCATION T

H.W. LOCHNER, INC. | NOISE MEASUREMENT DATA SHEET

SITE NUMBER: U **PROJECT:** Tri-Ex

SITE DESCRIPTION: _____ **DATE:** 9/11/13

START TIME: 2:06

EVENT NUMBER: _____ **END TIME:** 2:26

TECHNICIAN: Shannon/Sadate/Ballman **DURATION:** 20

CALIBRATION: START 9:113.9 12:114.0 14:114.2 DB END _____ DB

WEATHER DATA: SKY CONDITION Clear TEMP 80

WIND: START Ø MPH END Ø MPH DIRECTION _____

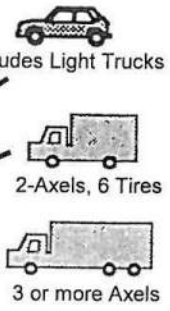
EQUIPMENT: METER _____ CALIBRATOR _____

RESPONSE: FAST _____ SLOW _____ BATTERY CHECK _____

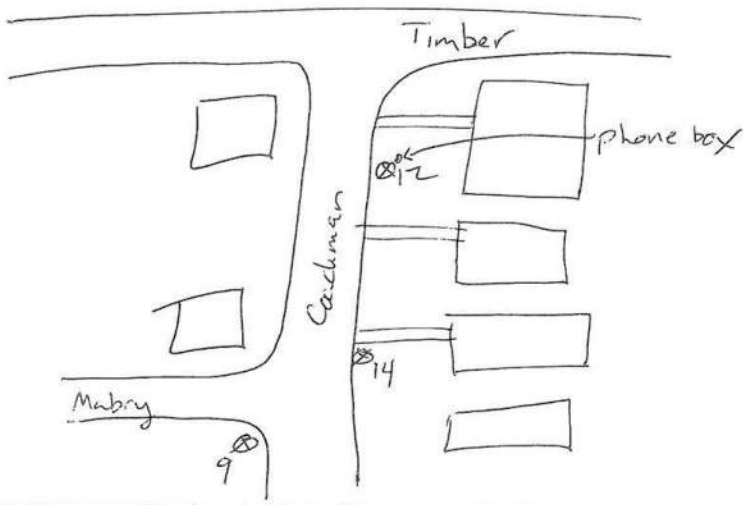
RESULTS: Leq 9:46.7 12:58.1 14:52.8 Lmax _____

TRAFFIC DATA

ROAD						
	N	S	E	W		
TRAFFIC SPEED						
AUTOMOBILES	2	3	181	150		
MEDIUM TRUCKS			2	2		
HEAVY TRUCKS			5	3		



SITE SKETCH



MAJOR SOURCES: Traffic on Timber / A/C / Insects

BACKGROUND NOISE: _____

UNUSUAL EVENTS: Car Pulled up / Talking / Doors @ 2:13

OTHER NOTES: _____

Triangle Expressway Southeast Extension

Site U
Short Term
9/11/13

Near (Meter 012)		Middle (Meter 014)		Far (Meter 009)		Site T	
Time (s)	Leq (dB)	Time (s)	Leq (dB)	Time (s)	Leq (dB)	Time (s)	Leq (dB)
		2:05 PM	50.6	2:05 PM	44.2	2:05 PM	37.2
2:06 PM	56.8	2:06 PM	55.5	2:06 PM	52.6	2:06 PM	40.4
2:07 PM	59.6	2:07 PM	48.7	2:07 PM	43.5	2:07 PM	37.3
2:08 PM	53.5	2:08 PM	53.2	2:08 PM	47.4	2:08 PM	45.6
2:09 PM	55.9	2:09 PM	52.9	2:09 PM	47.7	2:09 PM	37
2:10 PM	60.4	2:10 PM	55.0	2:10 PM	45	2:10 PM	36.9
2:11 PM	59.6	2:11 PM	47.4	2:11 PM	44.2	2:11 PM	36.8
2:12 PM	53.7	2:12 PM	53.6	2:12 PM	47.6	2:12 PM	40.1
2:13 PM	59.3	2:13 PM	51.5	2:13 PM	46.5	2:13 PM	37.1
2:14 PM	55.6	2:14 PM	53.6	2:14 PM	47.4	2:14 PM	37.1
2:15 PM	60.1	2:15 PM	48.3	2:15 PM	44.9	2:15 PM	37.1
2:16 PM	54.4	2:16 PM	49.2	2:16 PM	44.6	2:16 PM	37.5
2:17 PM	54.8	2:17 PM	54.2	2:17 PM	47.2	2:17 PM	37.1
2:18 PM	59.1	2:18 PM	52.0	2:18 PM	44.2	2:18 PM	37.2
2:19 PM	60	2:19 PM	49.1	2:19 PM	43.9	2:19 PM	36.8
2:20 PM	55.6	2:20 PM	50.9	2:20 PM	46.8	2:20 PM	37.8
2:21 PM	56.7	2:21 PM	53.6	2:21 PM	46.7	2:21 PM	37.3
2:22 PM	59.7	2:22 PM	54.1	2:22 PM	48.1	2:22 PM	36.5
2:23 PM	58.4	2:23 PM	49.8	2:23 PM	47.0	2:23 PM	38
2:24 PM	55.8	2:24 PM	55.5	2:24 PM	47.1	2:24 PM	38.1
2:25 PM	61.3	2:25 PM	53.5	2:25 PM	43.7	2:25 PM	36.8
2:26 PM	58.3					2:26 PM	37.1
Avg Leq=	**58**	**Avg Leq=**	**53**	**Avg Leq=**	**46**	**Avg Leq=**	**39**
				Adjustment =	**3**	**Loudest Hour at Site T =**	**42**
				Adjusted Loudest Hour =	**49**	**Adjustment =**	**3**



Site U – Far Meter



Site U – Far Meter



Site U – Middle Meter



Site U – Middle Meter



Site U – Close Meter



Site U – Close Meter



Triangle Expressway
Southeast Extension
RED CORRIDOR
Johnston/Wake Counties
T.I.P. NO. R-2721, R-2828, R-2829

N

0 100' 200'

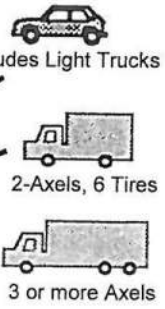
NOISE MEASUREMENT
LOCATION U

H.W. LOCHNER, INC. | NOISE MEASUREMENT DATA SHEET

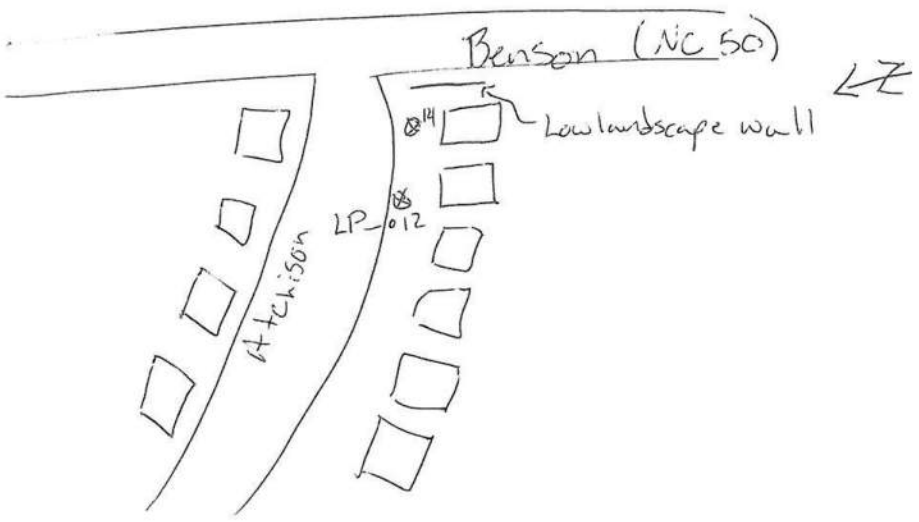
SITE NUMBER: 1 **PROJECT:** Tri-Ex
SITE DESCRIPTION: _____ **DATE:** 9/11/13
START TIME: 2:41
EVENT NUMBER: _____ **END TIME:** 3:01
TECHNICIAN: Sherman/Salotz/Billman **DURATION:** 20
CALIBRATION: START 9:113.9 14:113.9 12:114.1 DB END _____ DB
WEATHER DATA: SKY CONDITION overcast TEMP 85
WIND: START Ø MPH END Ø MPH DIRECTION _____
EQUIPMENT: METER _____ CALIBRATOR _____
RESPONSE: FAST _____ SLOW _____ BATTERY CHECK _____
RESULTS: Leq 9:55.2 12:58.4 14:62.0 Lmax _____

TRAFFIC DATA

ROAD	N	S	E	W		
TRAFFIC SPEED						
AUTOMOBILES	176	219	5	6		
MEDIUM TRUCKS	3	7		1		
HEAVY TRUCKS	2	2				



SITE SKETCH



MAJOR SOURCES: Traffic on NC 50 / Insects / Birds
BACKGROUND NOISE: _____
UNUSUAL EVENTS: School Bus @ 2:42 / Barking Dogs @ 2:44 / car left @ 2:45 & 3:01
OTHER NOTES: ~~massive~~ slow helicopter @ 2:51 / car returned @ 2:54

Triangle Expressway Southeast Extension

Site V
Short Term
9/11/13

= Eliminated due to anomalous data point

Near (Meter 014)		Middle (Meter 012)		Far (Meter 009)		Site T	
Time (s)	Leq (dB)	Time (s)	Leq (dB)	Time (s)	Leq (dB)	Time (s)	Leq (dB)
2:38 PM	65.5			2:38 PM	58.8	2:38 PM	36.9
2:39 PM	61.7			2:39 PM	49.9	2:39 PM	37.6
2:40 PM	61.8	2:40 PM	64.2	2:40 PM	48.2	2:40 PM	38
2:41 PM	61.2	2:41 PM	56.8	2:41 PM	46.3	2:41 PM	45.3
2:42 PM	61.8	2:42 PM	56.3	2:42 PM	53	2:42 PM	38.6
2:43 PM	61.8	2:43 PM	56.8	2:43 PM	56	2:43 PM	43.2
2:44 PM	62.8	2:44 PM	56.9	2:44 PM	48.8	2:44 PM	37
2:45 PM	61.5	2:45 PM	59.9	2:45 PM	52.8	2:45 PM	36.2
2:46 PM	61.8	2:46 PM	61.5	2:46 PM	58.6	2:46 PM	36.8
2:47 PM	66.7	2:47 PM	56.9	2:47 PM	64.7	2:47 PM	38.2
2:48 PM	61.8	2:48 PM	59.1	2:48 PM	55.4	2:48 PM	37.8
2:49 PM	60	2:49 PM	64.9	2:49 PM	50.8	2:49 PM	42.8
2:50 PM	59.2	2:50 PM	58.8	2:50 PM	50.7	2:50 PM	48.6
2:51 PM	61.2	2:51 PM	56.8	2:51 PM	47.6	2:51 PM	38.2
2:52 PM	60.8	2:52 PM	54.3	2:52 PM	47.7	2:52 PM	38.1
2:53 PM	61.2	2:53 PM	55.5	2:53 PM	56.7	2:53 PM	38.2
2:54 PM	60	2:54 PM	55.2	2:54 PM	45.3	2:54 PM	37.6
2:55 PM	59.8	2:55 PM	58.3	2:55 PM	54.0	2:55 PM	37.6
2:56 PM	61.8	2:56 PM	54.8	2:56 PM	46.6	2:56 PM	37.9
2:57 PM	60.1	2:57 PM	56.6	2:57 PM	45.8	2:57 PM	37.5
2:58 PM	63	2:58 PM	56.3	2:58 PM	52.4	2:58 PM	37.8
2:59 PM	61.6	2:59 PM	55.0	2:59 PM	55.0	2:59 PM	38.1
		3:00 PM	57.8			3:00 PM	41.9
		3:01 PM	58.2			3:01 PM	38.5
		3:02 PM	55.3			3:02 PM	37.1

Avg Leq= 61

Avg Leq= 57

Avg Leq= 51
Adjustment = 1
Adjusted Loudest Hour = 52

Avg Leq= 41
Loudest Hour at Site T = 42
Adjustment = 1



Site V – Far Meter



Site V – Far Meter



Site V – Far Meter



Site V – Middle Meter



Site V – Middle Meter



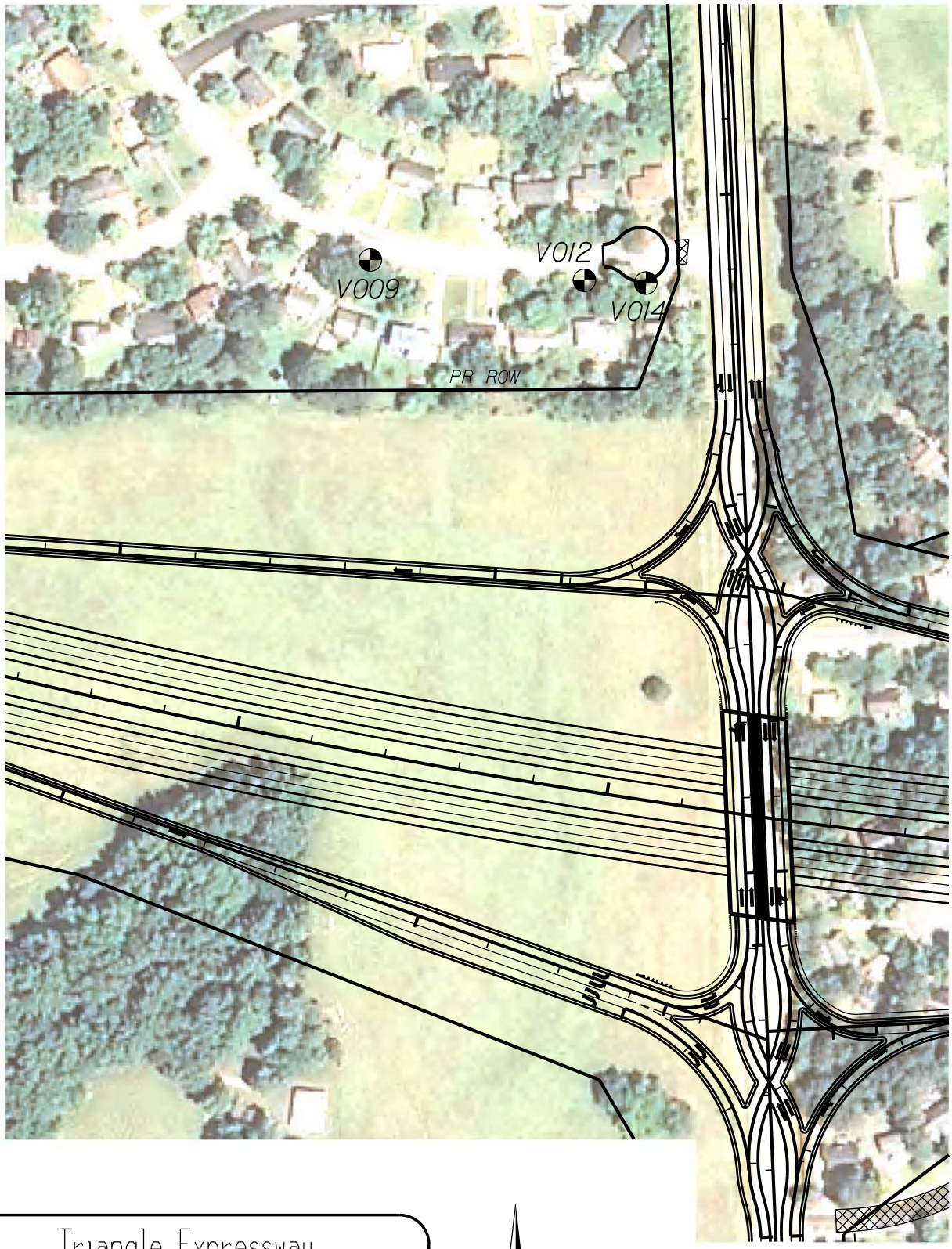
Site V – Close Meter



Site V – Close Meter



Site V – Close Meter



Triangle Expressway
Southeast Extension
RED CORRIDOR
Johnston/Wake Counties
T.I.P. NO. R-2721, R-2828, R-2829

N

0 100' 200'

NOISE MEASUREMENT
LOCATION V

H.W. LOCHNER, INC.	NOISE MEASUREMENT DATA SHEET

SITE NUMBER: W **PROJECT:** Tri-Ex

SITE DESCRIPTION: _____ **DATE:** _____

START TIME: 2:03

EVENT NUMBER: _____ **END TIME:** 2:23

TECHNICIAN: _____ **DURATION:** 20

CALIBRATION: START clear DB END 9:113.8 12:113.9 14:113.9 DB

WEATHER DATA: SKY CONDITION _____ TEMP 85

WIND: START slight breeze MPH END _____ MPH DIRECTION various

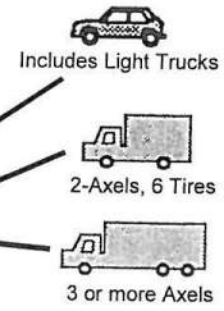
EQUIPMENT: METER _____ CALIBRATOR _____

RESPONSE: FAST _____ SLOW _____ BATTERY CHECK _____

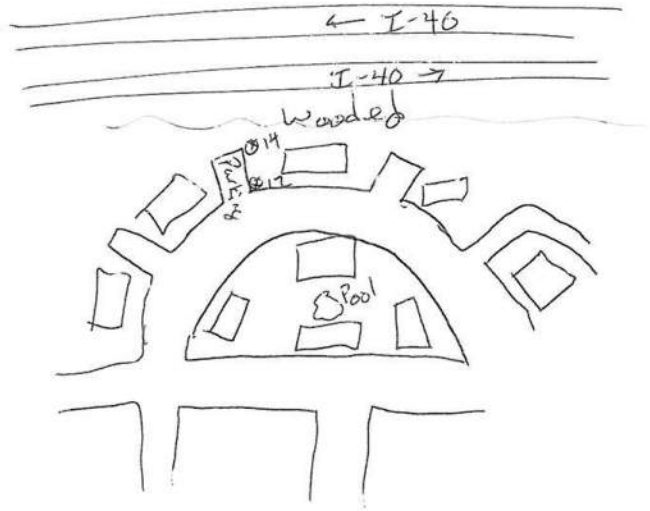
RESULTS: Leq 9:56.0 14:60.0 12:56.3 Lmax _____

TRAFFIC DATA 2:43 - 2:53 (10 min)

ROAD	N	S	E	W		
TRAFFIC SPEED						
AUTOMOBILES	335	430				
MEDIUM TRUCKS	16	12				
HEAVY TRUCKS	21	30				



SITE SKETCH



MAJOR SOURCES: Traffic on I-40 / A/C units / Radio by Pool

BACKGROUND NOISE: _____

UNUSUAL EVENTS: Leaf Blower @ 2:14 to 2:22

OTHER NOTES: I-40 not visible traffic counted immediately after @ diff location

Triangle Expressway Southeast Extension

Site W
Short Term
9/11/13

= Eliminated due to anomalous data point

Near (Meter 014)		Middle (Meter 012)		Far (Meter 009)		Site T	
Time (s)	Leq (dB)	Time (s)	Leq (dB)	Time (s)	Leq (dB)	Time (s)	Leq (dB)
2:00 PM	59.9			2:00 PM	52.3	2:00 PM	36.5
2:01 PM	59.8	2:01 PM	56.3	2:01 PM	53.5	2:01 PM	36.8
2:02 PM	60.8	2:02 PM	56.0	2:02 PM	54.3	2:02 PM	37.2
2:03 PM	60.8	2:03 PM	57.5	2:03 PM	53.8	2:03 PM	37.1
2:04 PM	58.8	2:04 PM	57.7	2:04 PM	53.7	2:04 PM	37.7
2:05 PM	60	2:05 PM	55.0	2:05 PM	53.9	2:05 PM	37.2
2:06 PM	59.5	2:06 PM	56.5	2:06 PM	54.6	2:06 PM	40.4
2:07 PM	59.3	2:07 PM	57.9	2:07 PM	54.7	2:07 PM	37.3
2:08 PM	58.9	2:08 PM	56.4	2:08 PM	55.5	2:08 PM	45.6
2:09 PM	59.9	2:09 PM	55.2	2:09 PM	55.3	2:09 PM	37
2:10 PM	61.3	2:10 PM	55.3	2:10 PM	55	2:10 PM	36.9
2:11 PM	60.6	2:11 PM	58.1	2:11 PM	53.1	2:11 PM	36.8
2:12 PM	59.9	2:12 PM	56.7	2:12 PM	53.4	2:12 PM	40.1
2:13 PM	60.8	2:13 PM	55.7	2:13 PM	54	2:13 PM	37.1
2:14 PM	60.2	2:14 PM	57.2	2:14 PM	53.8	2:14 PM	37.1
2:15 PM	60.1	2:15 PM	57.0	2:15 PM	55.9	2:15 PM	37.1
2:16 PM	59	2:16 PM	55.9	2:16 PM	57.8	2:16 PM	37.5
2:17 PM	60.2	2:17 PM	55.4	2:17 PM	60.1	2:17 PM	37.1
2:18 PM	60.4	2:18 PM	57.2	2:18 PM	61.1	2:18 PM	37.2
2:19 PM	60.4	2:19 PM	57.5	2:19 PM	60.6	2:19 PM	36.8
2:20 PM	59.7	2:20 PM	56.9	2:20 PM	57.6	2:20 PM	37.8
		2:21 PM	56.5			2:21 PM	37.3
		2:22 PM	55.8			2:22 PM	36.5

Avg Leq= 60

Avg Leq= 57

Avg Leq= 54
Adjustment = 3
Adjusted Loudest Hour = 57

Avg Leq= 39
Loudest Hour at Site T = 42
Adjustment = 3



Site W – Far Meter



Site W – Far Meter



Site W – Middle Meter



Site W – Middle Meter



Site W – Close Meter



Site W – Close Meter



Triangle Expressway
Southeast Extension
RED CORRIDOR
Johnston/Wake Counties
T.I.P. NO. R-2721, R-2828, R-2829

N

0 100' 200'

NOISE MEASUREMENT
LOCATION W

Complete 540
Traffic Noise Analysis

TNM Predicted VS Field Measured
September, 2013 Measurements

Monitoring Location	Source	Start/Stop	Field Measured Leq dB(A)	TNM Predicted Leq dB(A)	Validation Delta (Pred. - Meas.)	Reason for lack of validation
A012	No Traffic	5:25-5:45	45.0	21.0		
B014	Kildare Farms	4:49-5:09	56.0	56.6	0.6	
B012			49.0	48.2	-0.8	
B009			49.0	45.0	-4.0	Insects, AC Units
C014	Holly Springs	4:16-4:36	61.0	61.4	0.4	
C012			52.0	53.7	1.7	
D014	West Lake Rd	3:36-3:56	57.0	56.7	-0.3	
D012			46.0	47.5	1.5	
D009			45.0	44.3	-0.7	
E870	No Traffic	7:15 am to 8:00 pm	Long-Term			
F012	Lake Wheeler Rd	1:24-1:44	57.0	57.2	0.2	
F014			58.0	50.0	-8.0	AC Unit
F009			43.0	44.3	1.3	
G012	Ten-Ten Rd	2:09-2:29	56.0	57.6	1.6	
G014			52.0	49.6	-2.4	AC Unit
H014	Fayette Hwy	2:43-3:05	56.0	56.5	0.5	
H012			54.0	51.7	-2.3	AC Unit, School Bus
H009			52.0	48.7	-3.3	AC Unit, School Bus, Kids
I009	No Traffic	11:51-12:11	41.0	26.1		
J014	Jordan	11:10-11:30	45.0	44.0	-1.0	
J012			43.0	38.8	-4.2	Birds, Insects, AC Units
J009			42.0	31.5	-10.5	Birds, Insects, AC Units
K014	Benson	10:23-10:43	56.0	56.7	0.7	
K012			51.0	52.0	1.0	
K009			46.0	47.6	1.6	
L012	No Traffic	9:47-10:07	48.0	28.8		
M012	White Oak	3:03-3:23	52.0	53.0	1.0	
M014			46.0	47.9	1.9	
M009			45.0	42.1	-2.9	AC Units
N012	I-70	1:18-1:38	62.0	63.4	1.4	
N014			58.0	58.1	0.1	
N009			54.0	55.3	1.3	
O012	E. Garner	10:56-11:06	54.0	54.6	0.6	
O014			48.0	44.8	-3.2	Insects
O009			48.0	42.6	-5.4	Insects
P870	Auburn-Knightdale	7:02 am - 6:02 pm	Long-Term			
Q014	Poole	9:12-9:32	55.0	50.8	-4.2	Insects, Birds
Q012			57.0	48.6	-8.4	Insects, Birds
Q009			54.0	45.7	-8.3	Insects, Birds
R012	I-64	10:12-10:32	62.0	60.5	-1.5	
R014		9:44-10:04	54.0	55.2	1.2	
R009		9:44-10:04	55.0	51.4	-3.6	Insects, Birds
S009	No Traffic	12:35-12:55	43.0	20.0		
T870	No Traffic	6:32 am - 7:01 pm	Long-Term			
U012	Timber	2:06-2:26	58.0	58.8	0.8	
U014			53.0	51.2	-1.8	AC Units, Insects
U009			46.0	47.6	1.6	
V014	NC 50	2:41-3:01	61.0	61.9	0.9	
V012			57.0	56.9	-0.1	
V009			51.0	48.4	-2.6	Insects, Birds
W014	I-40	2:03-2:23	60.0	61.1	1.1	
W012			57.0	56.8	-0.2	
W009			54.0	49.4	-4.6	AC Units, Radio

HWL 8 July 2014
ECS TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: Tri-Ex
RUN: Existing_A
BARRIER DESIGN: INPUT HEIGHTS
ATMOSPHERICS: 68 deg F, 50% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	Crit'n	Increase over existing Calculated	Increase over existing Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Noise Reduction Goal	Noise Reduction Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
A012	1	1	0.0	21.0	66	21.0	10	----	21.0	0.0	8	-8.0
B014	3	1	0.0	56.6	66	56.6	10	----	56.6	0.0	8	-8.0
B012	4	1	0.0	48.2	66	48.2	10	----	48.2	0.0	8	-8.0
B009	5	1	0.0	45.0	66	45.0	10	----	45.0	0.0	8	-8.0
C014	6	1	0.0	61.4	66	61.4	10	----	61.4	0.0	8	-8.0
C012	7	1	0.0	53.7	66	53.7	10	----	53.7	0.0	8	-8.0
D014	8	1	0.0	56.7	66	56.7	10	----	56.7	0.0	8	-8.0
D012	9	1	0.0	47.5	66	47.5	10	----	47.5	0.0	8	-8.0
D009	10	1	0.0	44.3	66	44.3	10	----	44.3	0.0	8	-8.0
E870	11	1	0.0	43.3	66	43.3	10	----	43.3	0.0	8	-8.0
F012	12	1	0.0	57.2	66	57.2	10	----	57.2	0.0	8	-8.0
F014	13	1	0.0	50.0	66	50.0	10	----	50.0	0.0	8	-8.0
F009	14	1	0.0	44.3	66	44.3	10	----	44.3	0.0	8	-8.0
G014	15	1	0.0	49.6	66	49.6	10	----	49.6	0.0	8	-8.0
G012	16	1	0.0	57.6	66	57.6	10	----	57.6	0.0	8	-8.0
H014	17	1	0.0	56.5	66	56.5	10	----	56.5	0.0	8	-8.0
H012	18	1	0.0	51.7	66	51.7	10	----	51.7	0.0	8	-8.0
H009	19	1	0.0	48.7	66	48.7	10	----	48.7	0.0	8	-8.0
S009	20	1	0.0	20.0	66	20.0	10	----	20.0	0.0	8	-8.0

Dwelling Units	# DUs	Noise Reduction Min	Noise Reduction Avg	Noise Reduction Max
		dB	dB	dB
All Selected	19	0.0	0.0	0.0

All Impacted		0	0.0	0.0	0.0							
All that meet NR Goal		0	0.0	0.0	0.0							

HWL 1 May 2014
ECS TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: Tri-Ex
RUN: EX_B-Validation
BARRIER DESIGN: INPUT HEIGHTS
ATMOSPHERICS: 68 deg F, 50% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	Crit'n	Increase over existing Calculated	Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Noise Reduction Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
I009	1	1	0.0	26.1	66	26.1	10	----	26.1	0.0	8	-8.0
J014	2	1	0.0	44.0	66	44.0	10	----	44.0	0.0	8	-8.0
J012	3	1	0.0	38.8	66	38.8	10	----	38.8	0.0	8	-8.0
J009	4	1	0.0	31.5	66	31.5	10	----	31.5	0.0	8	-8.0
K014	5	1	0.0	56.7	66	56.7	10	----	56.7	0.0	8	-8.0
K012	6	1	0.0	52.0	66	52.0	10	----	52.0	0.0	8	-8.0
K009	7	1	0.0	47.6	66	47.6	10	----	47.6	0.0	8	-8.0

Dwelling Units	# DUs	Noise Reduction Min	Avg	Max
		dB	dB	dB
All Selected	7	0.0	0.0	0.0
All Impacted	0	0.0	0.0	0.0
All that meet NR Goal	0	0.0	0.0	0.0

HWL 1 May 2014
ECS TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: Tri-Ex
RUN: Existing_C
BARRIER DESIGN: INPUT HEIGHTS
ATMOSPHERICS: 68 deg F, 50% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	Crit'n	Increase over existing Calculated	Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Noise Reduction Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
T870	1	1	0.0	28.8	66	28.8	10	----	28.8	0.0	8	-8.0
U012	2	1	0.0	58.8	66	58.8	10	----	58.8	0.0	8	-8.0
U014	3	1	0.0	51.2	66	51.2	10	----	51.2	0.0	8	-8.0
U009	4	1	0.0	47.6	66	47.6	10	----	47.6	0.0	8	-8.0
V012	5	1	0.0	56.9	66	56.9	10	----	56.9	0.0	8	-8.0
V014	6	1	0.0	61.9	66	61.9	10	----	61.9	0.0	8	-8.0
V009	331	1	0.0	48.4	66	48.4	10	----	48.4	0.0	8	-8.0

Dwelling Units	# DUs	Noise Reduction Min	Avg	Max
		dB	dB	dB
All Selected	7	0.0	0.0	0.0
All Impacted	0	0.0	0.0	0.0
All that meet NR Goal	0	0.0	0.0	0.0

HWL 8 July 2014
ECS TNM 2.5
Calculated with TNM 2.5
RESULTS: SOUND LEVELS
PROJECT/CONTRACT: Tri-Ex
RUN: Existing_D
BARRIER DESIGN: INPUT HEIGHTS
ATMOSPHERICS: 68 deg F, 50% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	Crit'n	Increase over existing Calculated	Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Noise Reduction Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
L012	1	1	0.0	28.8	66	28.8	10	----	28.8	0.0	8	-8.0
M012	2	1	0.0	53.0	66	53.0	10	----	53.0	0.0	8	-8.0
M014	3	1	0.0	47.9	66	47.9	10	----	47.9	0.0	8	-8.0
M009	4	1	0.0	42.1	66	42.1	10	----	42.1	0.0	8	-8.0
N012	5	1	0.0	63.4	66	63.4	10	----	63.4	0.0	8	-8.0
N014	6	1	0.0	58.1	66	58.1	10	----	58.1	0.0	8	-8.0
N009	7	1	0.0	55.3	66	55.3	10	----	55.3	0.0	8	-8.0
O012	8	1	0.0	54.6	66	54.6	10	----	54.6	0.0	8	-8.0
O014	9	1	0.0	44.8	66	44.8	10	----	44.8	0.0	8	-8.0
O009	10	1	0.0	42.6	66	42.6	10	----	42.6	0.0	8	-8.0
P870	11	1	0.0	31.9	66	31.9	10	----	31.9	0.0	8	-8.0
Q014	12	1	0.0	50.8	66	50.8	10	----	50.8	0.0	8	-8.0
Q012	13	1	0.0	48.6	66	48.6	10	----	48.6	0.0	8	-8.0
Q009	14	1	0.0	45.7	66	45.7	10	----	45.7	0.0	8	-8.0
R012	15	1	0.0	60.5	66	60.5	10	----	60.5	0.0	8	-8.0
R014	16	1	0.0	55.2	66	55.2	10	----	55.2	0.0	8	-8.0
R009	17	1	0.0	51.4	66	51.4	10	----	51.4	0.0	8	-8.0
W012	18	1	0.0	56.8	66	56.8	10	----	56.8	0.0	8	-8.0
W014	19	1	0.0	61.1	66	61.1	10	----	61.1	0.0	8	-8.0
W009	20	1	0.0	49.4	66	49.4	10	----	49.4	0.0	8	-8.0

Dwelling Units	# DUs	Noise Reduction Min	Avg	Max
		dB	dB	dB

All Selected		20	0.0	0.0	0.0							
All Impacted		0	0.0	0.0	0.0							
All that meet NR Goal		0	0.0	0.0	0.0							

Triangle Expressway Southeast Extension

Adjustment of Ambient Measurements
September 2013

Monitoring Location	Area Type	Site P or Site T	Long-Term Long Term Leq dB(A)	Long-Term Loudest Hour Leq	Long-Term Delta dB(A)	Field Measured Leq dB(A)	Adjusted Ambient
A	Suburban	Site T	39	42	3	45	48
B (Far)	Suburban	Site T	39	42	3	49	52
C (Far)	Suburban	Site T	41	42	1	52	53
D (Far)	Rural	Site P	45	46	1	45	46
F (Far)	Rural	Site P	43	46	3	43	46
G (Far)	Rural	Site P	44	46	2	52	54
H (Far)	Suburban	Site T	40	42	2	52	54
I	Suburban	Site T	38	42	4	41	45
J (Far)	Suburban	Site T	38	42	4	42	46
K (Far)	Suburban	Site T	38	42	4	46	50
L	Suburban	Site T	39	42	3	48	51
M (Far)	Suburban	Site T	38	42	4	45	49
N (Far)	Suburban	Site T	39	42	3	54	57
O (Far)	Suburban	Site T	39	42	3	48	51
Q (Far)	Rural	Site P	44	46	2	54	56
R (Far)	Suburban	Site T	40	42	2	55	57
S	Rural	Site P	45	46	1	43	44
U (Far)	Suburban	Site T	39	42	3	46	49
V (Far)	Suburban	Site T	41	42	1	51	52
W (Far)	Suburban	Site T	39	42	3	54	57

PCB PIEZOTRONICS
A PCB GROUP COMPANY

Certificate of Calibration and Conformance

Certificate Number 2012-154589

Instrument Model 870, Serial Number 0189, was calibrated on 03FEB2012. The instrument meets factory specifications per Procedure D0001.8051, ANSI S1.4 1983, IEC 651-Type 1 1979, and IEC 804-Type 1 1985.

Instrument found to be in calibration as received: YES
Date Calibrated: 03FEB2012
Calibration due: 03FEB2014

Calibration Standards Used

MANUFACTURER	MODEL	SERIAL NUMBER	INTERVAL	CAL. DUE	TRACEABILITY NO.
Larson Davis	LDSigGn/2239	0653 / 0101	12 Months	06APR2012	2011-141913
Larson Davis	900B	3191	12 Months	05MAY2012	2011-143256

Reference Standards are traceable to the National Institute of Standards and Technology (NIST)

Calibration Environmental Conditions

Temperature: 23 ° Centigrade

Relative Humidity: 30 %

Affirmations

This Certificate attests that this instrument has been calibrated under the stated conditions with Measurement and Test Equipment (M&TE) Standards traceable to the U.S. National Institute of Standards and Technology (NIST). All of the Measurement Standards have been calibrated to their manufacturers' specified accuracy / uncertainty. Evidence of traceability and accuracy is on file at Provo Engineering & Manufacturing Center. An acceptable accuracy ratio between the Standard(s) and the item calibrated has been maintained. This instrument meets or exceeds the manufacturer's published specification unless noted.

This calibration complies with the requirements of ISO 17025 and ANSI Z540. The collective uncertainty of the Measurement Standard used does not exceed 25% of the applicable tolerance for each characteristic calibrated unless otherwise noted.

The results documented in this certificate relate only to the item(s) calibrated or tested. A one year calibration is recommended, however calibration interval assignment and adjustment are the responsibility of the end user. This certificate may not be reproduced, except in full, without the written approval of the issuer.

"AS RECEIVED" data same as shipped data.

Signed: 

Technician: Eric Olson

Provo Engineering and Manufacturing Center, 1681 West 820 North, Provo, Utah 84601
Toll Free: 888.258.3222 Telephone: 716.926.8243 Fax: 716.926.8215
ISO 9001-2008 Certified

PCB PIEZOTRONICS
A PCB GROUP COMPANY

Certificate of Calibration and Conformance

Certificate Number 2013-173245

Instrument Model 824, Serial Number A0121, was calibrated on 25APR2013. The instrument meets factory specifications per Procedure D0001.8046, IEC 61672-1:2002 Class 1; IEC 60651-2001, 60804-2000 and ANSI S1.4-1983 Type 1 1/3, 1/1 Oct. Filters; S1.11-1986 Type 1C; IEC61260-am1-2001 Class 1 .

Instrument found to be in calibration as received: YES
Date Calibrated: 25APR2013
Calibration due: 25APR2015

Calibration Standards Used

MANUFACTURER	MODEL	SERIAL NUMBER	INTERVAL	CAL. DUE	TRACEABILITY NO.
Larson Davis	LDSigGn/2209	0617 / 0104	12 Months	16JAN2014	2013-168816

Reference Standards are traceable to the National Institute of Standards and Technology (NIST)

Calibration Environmental Conditions

Temperature: 22 ° Centigrade

Relative Humidity: 26 %

Affirmations

This Certificate attests that this instrument has been calibrated under the stated conditions with Measurement and Test Equipment (M&TE) Standards traceable to the U.S. National Institute of Standards and Technology (NIST). All of the Measurement Standards have been calibrated to their manufacturers' specified accuracy / uncertainty. Evidence of traceability and accuracy is on file at Provo Engineering & Manufacturing Center. An acceptable accuracy ratio between the Standard(s) and the item calibrated has been maintained. This instrument meets or exceeds the manufacturer's published specification unless noted.

The collective uncertainty of the Measurement Standard used does not exceed 25% of the applicable tolerance for each characteristic calibrated unless otherwise noted.

The results documented in this certificate relate only to the item(s) calibrated or tested. A one year calibration is recommended, however calibration interval assignment and adjustment are the responsibility of the end user. This certificate may not be reproduced, except in full, without the written approval of the issuer.

"As received" data is the same as shipped data.
Tested with PRM902 S/N 2322

Signed: 

Technician: Sean Childs

Provo Engineering and Manufacturing Center, 1681 West 820 North, Provo, Utah 84601
Toll Free: 888.258.3222 Telephone: 716.926.8243 Fax: 716.926.8215
ISO 9001-2008 Certified

PCB PIEZOTRONICS
A PCB GROUP COMPANY

Certificate of Calibration and Conformance

Certificate Number 2012-154670

Instrument Model 824, Serial Number A1303, was calibrated on 03FEB2012. The instrument meets factory specifications per Procedure D0001.8046, IEC 61672-1:2002 Class 1; IEC 60651-2001, 60804-2000 and ANSI S1.4-1983 Type 1 1/3, 1/1 Oct. Filters; S1.11-1986 Type 1C; IEC61260-am1-2001 Class 1 .

Instrument found to be in calibration as received: YES
Date Calibrated: 03FEB2012
Calibration due: 03FEB2014

Calibration Standards Used

MANUFACTURER	MODEL	SERIAL NUMBER	INTERVAL	CAL. DUE	TRACEABILITY NO.
Larson Davis	LDSigGn/2209	0617 / 0104	12 Months	16JAN2013	2012-153792

Reference Standards are traceable to the National Institute of Standards and Technology (NIST)

Calibration Environmental Conditions

Temperature: 23 ° Centigrade

Relative Humidity: 30 %

Affirmations

This Certificate attests that this instrument has been calibrated under the stated conditions with Measurement and Test Equipment (M&TE) Standards traceable to the U.S. National Institute of Standards and Technology (NIST). All of the Measurement Standards have been calibrated to their manufacturers' specified accuracy / uncertainty. Evidence of traceability and accuracy is on file at Provo Engineering & Manufacturing Center. An acceptable accuracy ratio between the Standard(s) and the item calibrated has been maintained. This instrument meets or exceeds the manufacturer's published specification unless noted.

This calibration complies with the requirements of ISO 17025 and ANSI Z540. The collective uncertainty of the Measurement Standard used does not exceed 25% of the applicable tolerance for each characteristic calibrated unless otherwise noted.

The results documented in this certificate relate only to the item(s) calibrated or tested. A one year calibration is recommended, however calibration interval assignment and adjustment are the responsibility of the end user. This certificate may not be reproduced, except in full, without the written approval of the issuer.

"As received" data is the same as shipped data.
Tested with PRM902 S/N 1846

Signed: 

Technician: Sean Childs

Provo Engineering and Manufacturing Center, 1681 West 820 North, Provo, Utah 84601
Toll Free: 888.258.3222 Telephone: 716.926.8243 Fax: 716.926.8215
ISO 9001-2008 Certified

PCB PIEZOTRONICS
A PCB GROUP COMPANY

Certificate of Calibration and Conformance

Certificate Number 2012-154657

Instrument Model 824, Serial Number A3953, was calibrated on 03FEB2012. The instrument meets factory specifications per Procedure D0001.8046, IEC 61672-1:2002 Class 1; IEC 60651-2001, 60804-2000 and ANSI S1.4-1983 Type 1 1/3, 1/1 Oct. Filters; S1.11-1986 Type 1C; IEC61260-am1-2001 Class 1 .

Instrument found to be in calibration as received: YES
Date Calibrated: 03FEB2012
Calibration due: 03FEB2014

Calibration Standards Used

MANUFACTURER	MODEL	SERIAL NUMBER	INTERVAL	CAL. DUE	TRACEABILITY NO.
Larson Davis	LDSigGn/2209	0617 / 0104	12 Months	16JAN2013	2012-153792

Reference Standards are traceable to the National Institute of Standards and Technology (NIST)

Calibration Environmental Conditions

Temperature: 23 ° Centigrade

Relative Humidity: 30 %

Affirmations

This Certificate attests that this instrument has been calibrated under the stated conditions with Measurement and Test Equipment (M&TE) Standards traceable to the U.S. National Institute of Standards and Technology (NIST). All of the Measurement Standards have been calibrated to their manufacturers' specified accuracy / uncertainty. Evidence of traceability and accuracy is on file at Provo Engineering & Manufacturing Center. An acceptable accuracy ratio between the Standard(s) and the item calibrated has been maintained. This instrument meets or exceeds the manufacturer's published specification unless noted.

This calibration complies with the requirements of ISO 17025 and ANSI Z540. The collective uncertainty of the Measurement Standard used does not exceed 25% of the applicable tolerance for each characteristic calibrated unless otherwise noted.

The results documented in this certificate relate only to the item(s) calibrated or tested. A one year calibration is recommended, however calibration interval assignment and adjustment are the responsibility of the end user. This certificate may not be reproduced, except in full, without the written approval of the issuer.

"As received" data is the same as shipped data.
Tested with PRM902 S/N 4450

Signed: 
Technician: Sean Childs

Provo Engineering and Manufacturing Center, 1681 West 820 North, Provo, Utah 84601
Toll Free: 888.258.3222 Telephone: 716.926.8243 Fax: 716.926.8215
ISO 9001-2008 Certified

APPENDIX 2

IMPACT ANALYSIS TABLE

Complete 540

Traffic Noise Analysis

IMPACT ANALYSIS TABLE

Receptor	Property Address	Properties Represented	NAC Land Use Category	2016 Existing[3]		2040 DSA-2 Build[1,3]		2040 DSA-2 Increase[2]
R0001A	5836 OLD SMITHFIELD RD	PLACE OF WORSHIP	D	40		44		4
R0001B	5900 OLD SMITHFIELD RD	1	B	60		66		6
R0004B	3512 BAKERS ALY	1	B	57		62		5
R0005	3501 BAKERS ALY	PLACE OF WORSHIP	D	40		40		0
R0006A	5705 MOSLEY AVE	1	B	51		61		10
R0006B	3625 FORAKER ST	1	B	51		65		14
R0006C	5713 MOSLEY AVE	1	B	52		61		9
R0006D	3617 FORAKER ST	1	B	50		57		7
R0006E	3609 FORAKER ST	1	B	53		60		7
R0007A	5712 MOSLEY AVE	1	B	50		63		13
R0007B	5724 MOSLEY AVE	1	B	50		63		13
R0009A	5603 FELDER AVE	1	B	59		64		5
R0013	5528 EDDIE CREEK DR	PLACE OF WORSHIP	D	40		43		3
R0014A	303 CABANA DR	1	B	53		63		10
R0014B	305 CABANA DR	1	B	52		63		11
R0015A	307 CABANA DR	1	B	53		64		11
R0015B	309 CABANA DR	1	B	53		65		12
R0016A	311 CABANA DR	1	B	53		67		14
R0016B	313 CABANA DR	1	B	50		67		17
R0017A	314 CABANA DR	1	B	48		68		20
R0017B	312 CABANA DR	1	B	48	[3]	67		19
R0018A	308 CABANA DR	1	B	48	[3]	62		14
R0018B	310 CABANA DR	1	B	48	[3]	66		18
R0019A	304 CABANA DR	1	B	48	[3]	60		12
R0019B	302 CABANA DR	1	B	48	[3]	59		11
R0020A	103 DOVES HAVEN DR	1	B	48	[3]	61		13
R0020B	300 CABANA DR	1	B	48	[3]	57		9
R0020C	105 DOVES HAVEN DR	1	B	48	[3]	58		10
R0021A	103 SPRING DOVE LN	1	B	48	[3]	61		13
R0021B	105 SPRING DOVE LN	1	B	48	[3]	62		14
R0022A	109 SPRING DOVE LN	1	B	48	[3]	67		19
R0022B	107 SPRING DOVE LN	1	B	48	[3]	64		16
R0023A	112 SPRING DOVE LN	1	B	48	[3]	67		19
R0023B	111 SPRING DOVE LN	1	B	48	[3]	67		19
R0024A	110 SPRING DOVE LN	1	B	48	[3]	67		19
R0024B	108 SPRING DOVE LN	1	B	48	[3]	65		17
R0025A	106 SPRING DOVE LN	1	B	48	[3]	62		14
R0025B	104 SPRING DOVE LN	1	B	48	[3]	60		12
R0026	102 SPRING DOVE LN	1	B	48	[3]	59		11
R0027A	201 DOVES HAVEN DR	1	B	48	[3]	59		11
R0027B	205 DOVES HAVEN DR	1	B	48	[3]	57		9
R0028A	209 DOVES HAVEN DR	1	B	48	[3]	60		12
R0028B	211 DOVES HAVEN DR	1	B	48	[3]	60		12

1 Noise levels highlighted in red are levels above the Noise Abatement Criteria.
2 Noise level increases highlighted in red are above the substantial increase criteria.
3 Measured noise levels reported if traffic not the dominant noise source

Complete 540

Traffic Noise Analysis

IMPACT ANALYSIS TABLE

Receptor	Property Address	Properties Represented	NAC Land Use Category	2016 Existing[3]	2040 DSA-2 Build[1,3]	2040 DSA-2 Increase[2]
R0029A	203 SUNSHINE CREST CT	1	B	48[3]	56	8
R0029B	201 SUNSHINE CREST CT	1	B	48[3]	56	8
R0030A	205 SUNSHINE CREST CT	1	B	48[3]	64	16
R0030B	207 SUNSHINE CREST CT	1	B	48[3]	69	21
R0031A	208 SUNSHINE CREST CT	1	B	48[3]	72	24
R0031B	209 SUNSHINE CREST CT	1	B	48[3]	71	23
R0032A	206 SUNSHINE CREST CT	1	B	48[3]	71	23
R0032B	204 SUNSHINE CREST CT	1	B	48[3]	67	19
R0033A	202 SUNSHINE CREST CT	1	B	48[3]	64	16
R0033B	200 SUNSHINE CREST CT	1	B	48[3]	62	14
R0034A	112 SUNSHINE CREST CT	1	B	48[3]	59	11
R0034B	110 SUNSHINE CREST CT	1	B	48[3]	55	7
R0035A	108 SUNSHINE CREST CT	1	B	48[3]	52	4
R0035B	104 SUNSHINE CREST CT	1	B	48[3]	51	3
R0036A	100 SUNSHINE CREST CT	1	B	48[3]	50	2
R0036B	102 SUNSHINE CREST CT	1	B	48[3]	49	1
R0037A	501 STONECREEK DR	1	B	48[3]	50	2
R0037B	503 STONECREEK DR	1	B	48[3]	50	2
R0038A	505 STONECREEK DR	1	B	48[3]	53	5
R0038B	507 STONECREEK DR	1	B	48[3]	55	7
R0039A	509 STONECREEK DR	1	B	48[3]	64	16
R0039B	511 STONECREEK DR	1	B	48[3]	71	23
R0040A	512 STONECREEK DR	1	B	48[3]	74	26
R0040B	510 STONECREEK DR	1	B	48[3]	72	24
R0041A	504 STONECREEK DR	1	B	48[3]	66	18
R0041B	508 STONECREEK DR	1	B	48[3]	69	21
R0041C	500 STONECREEK DR	1	B	48[3]	59	11
R0042A	405 THORNCREST DR	1	B	48[3]	70	22
R0042B	403 THORNCREST DR	1	B	48[3]	67	19
R0043A	407 THORNCREST DR	1	B	48[3]	69	21
R0043B	409 THORNCREST DR	1	B	48[3]	68	20
R0044A	411 THORNCREST DR	1	B	48[3]	65	17
R0044B	413 THORNCREST DR	1	B	48[3]	63	15
R0045A	501 THORNCREST DR	1	B	48[3]	64	16
R0045B	415 THORNCREST DR	1	B	48[3]	63	15
R0046A	503 THORNCREST DR	1	B	48[3]	66	18
R0046B	505 THORNCREST DR	1	B	48[3]	71	23
R0047A	509 THORNCREST DR	1	B	48[3]	70	22
R0047B	507 THORNCREST DR	1	B	48[3]	72	24
R0048A	508 THORNCREST DR	1	B	48[3]	68	20
R0048B	506 THORNCREST DR	1	B	48[3]	63	15
R0049A	101 WEEPING OAK CT	1	B	48[3]	58	10
R0049B	504 THORNCREST DR	1	B	48[3]	61	13

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3 Measured noise levels reported if traffic not the dominant noise source

Complete 540

Traffic Noise Analysis

IMPACT ANALYSIS TABLE

Receptor	Property Address	Properties Represented	NAC Land Use Category	2016 Existing[3]	2040 DSA-2 Build[1,3]	2040 DSA-2 Increase[2]
R0050A	103 WEEPING OAK CT	1	B	48[3]	58	10
R0050B	104 WEEPING OAK CT	1	B	48[3]	54	6
R0051A	414 THORNCREST DR	1	B	48[3]	49	1
R0051B	102 WEEPING OAK CT	1	B	48[3]	48[3]	0
R0052A	412 THORNCREST DR	1	B	48[3]	51	3
R0052B	406 THORNCREST DR	1	B	48[3]	51	3
R0053A	412 STONECREEK DR	1	B	48[3]	56	8
R0053B	410 STONECREEK DR	1	B	48[3]	54	6
R0054A	200 REUNION PARK DR APT 2818	1	B	48[3]	63	15
R0054B	200 REUNION PARK DR APT 2828	1	B	48[3]	65	17
R0054C	200 REUNION PARK DR APT 2817	1	B	48[3]	63	15
R0054D	200 REUNION PARK DR APT 2827	1	B	48[3]	65	17
R0054E	200 REUNION PARK DR APT 2814	1	B	48[3]	63	15
R0054F	200 REUNION PARK DR APT 2824	1	B	48[3]	65	17
R0054G	200 REUNION PARK DR APT 2813	1	B	48[3]	63	15
R0054H	200 REUNION PARK DR APT 2823	1	B	48[3]	65	17
R0054I	200 REUNION PARK DR APT 2816	1	B	48[3]	53	5
R0054J	200 REUNION PARK DR APT 2826	1	B	48[3]	58	10
R0054K	200 REUNION PARK DR APT 2815	1	B	48[3]	53	5
R0054L	200 REUNION PARK DR APT 2825	1	B	48[3]	58	10
R0054M	200 REUNION PARK DR APT 2812	1	B	48[3]	52	4
R0054N	200 REUNION PARK DR APT 2822	1	B	48[3]	57	9
R0054O	200 REUNION PARK DR APT 2811	1	B	48[3]	52	4
R0054P	200 REUNION PARK DR APT 2821	1	B	48[3]	57	9
R0055A	200 REUNION PARK DR APT 3018	1	B	48[3]	62	14
R0055B	200 REUNION PARK DR APT 3028	1	B	48[3]	63	15
R0055C	200 REUNION PARK DR APT 3038	1	B	48[3]	67	19
R0055D	200 REUNION PARK DR APT 3017	1	B	48[3]	61	13
R0055E	200 REUNION PARK DR APT 3027	1	B	48[3]	63	15
R0055F	200 REUNION PARK DR APT 3037	1	B	48[3]	67	19
R0055G	200 REUNION PARK DR APT 3014	1	B	48[3]	61	13
R0055H	200 REUNION PARK DR APT 3024	1	B	48[3]	63	15
R0055I	200 REUNION PARK DR APT 3034	1	B	48[3]	66	18
R0055J	200 REUNION PARK DR APT 3013	1	B	48[3]	60	12
R0055K	200 REUNION PARK DR APT 3023	1	B	48[3]	63	15
R0055L	200 REUNION PARK DR APT 3033	1	B	48[3]	67	19
R0055M	200 REUNION PARK DR APT 3011	1	B	48[3]	57	9
R0055N	200 REUNION PARK DR APT 3021	1	B	48[3]	60	12
R0055O	200 REUNION PARK DR APT 3031	1	B	48[3]	67	19
R0055P	200 REUNION PARK DR APT 3012	1	B	48[3]	57	9
R0055Q	200 REUNION PARK DR APT 3022	1	B	48[3]	60	12
R0055R	200 REUNION PARK DR APT 3032	1	B	48[3]	67	19
R0055S	200 REUNION PARK DR APT 3015	1	B	48[3]	58	10

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3 Measured noise levels reported if traffic not the dominant noise source

Complete 540

Traffic Noise Analysis

IMPACT ANALYSIS TABLE

Receptor	Property Address	Properties Represented	NAC Land Use Category	2016 Existing[3]	2040 DSA-2 Build[1,3]	2040 DSA-2 Increase[2]
R0055T	200 REUNION PARK DR APT 3025	1	B	48[3]	60	12
R0055U	200 REUNION PARK DR APT 3035	1	B	48[3]	68	20
R0055V	200 REUNION PARK DR APT 3016	1	B	48[3]	60	12
R0055W	200 REUNION PARK DR APT 3026	1	B	48[3]	62	14
R0055X	200 REUNION PARK DR APT 3036	1	B	48[3]	67	19
R0056A	215 HOLLYHOCK LN	1	B	48[3]	67	19
R0056B	213 HOLLYHOCK LN	1	B	48[3]	66	18
R0056C	217 HOLLYHOCK LN	1	B	48[3]	68	20
R0057A	219 HOLLYHOCK LN	1	B	48[3]	70	22
R0057B	221 HOLLYHOCK LN	1	B	48[3]	71	23
R0058A	220 HOLLYHOCK LN	1	B	48[3]	66	18
R0058B	222 HOLLYHOCK LN	1	B	48[3]	69	21
R0058C	218 HOLLYHOCK LN	1	B	48[3]	64	16
R0059A	136 FAIRFORD DR	1	B	48	57	9
R0059B	140 FAIRFORD DR	1	B	49	58	9
R0059C	132 FAIRFORD DR	1	B	48[3]	57	9
R0060	4240 SUNSET LAKE RD	COMMERCIAL	E	57	60	3
R0061A	5204 DUTCH ELM DR	1	B	48[3]	63	15
R0061B	5208 DUTCH ELM DR	1	B	48[3]	65	17
R0061C	5200 DUTCH ELM DR	1	B	48[3]	58	10
R0062A	5212 DUTCH ELM DR	1	B	48[3]	64	16
R0062B	5216 DUTCH ELM DR	1	B	48[3]	63	15
R0063A	5209 DUTCH ELM DR	1	B	48[3]	48	0
R0063B	5213 DUTCH ELM DR	1	B	48[3]	48[3]	0
R0064A	5217 DUTCH ELM DR	1	B	48[3]	48[3]	0
R0064B	5221 DUTCH ELM DR	1	B	48[3]	48[3]	0
R0065A	5220 DUTCH ELM DR	1	B	48[3]	61	13
R0065B	5224 DUTCH ELM DR	1	B	48[3]	60	12
R0066A	5300 DUTCH ELM DR	1	B	48[3]	60	12
R0066B	5228 DUTCH ELM DR	1	B	48[3]	60	12
R0067A	5225 DUTCH ELM DR	1	B	48[3]	51	3
R0067B	5405 MONARCH BIRCH DR	1	B	48[3]	48[3]	0
R0068A	5305 DUTCH ELM DR	1	B	48[3]	48[3]	0
R0068B	5309 DUTCH ELM DR	1	B	48[3]	48[3]	0
R0068C	5317 DUTCH ELM DR	1	B	48[3]	48[3]	0
R0069A	5308 DUTCH ELM DR	1	B	48[3]	60	12
R0069B	5304 DUTCH ELM DR	1	B	48[3]	60	12
R0070A	5312 DUTCH ELM DR	1	B	49	60	11
R0070B	5316 DUTCH ELM DR	1	B	51	60	9
R0071A	5320 DUTCH ELM DR	1	B	52	59	7
R0071B	5324 DUTCH ELM DR	1	B	53	59	6
R0072A	5332 DUTCH ELM DR	1	B	55	60	5
R0072B	5328 DUTCH ELM DR	1	B	54	59	5

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Complete 540

Traffic Noise Analysis

IMPACT ANALYSIS TABLE

Receptor	Property Address	Properties Represented	NAC Land Use Category	2016 Existing[3]	2040 DSA-2 Build[1,3]	2040 DSA-2 Increase[2]
R0073A	5333 DUTCH ELM DR	1	B	48[3]	48	0
R0073B	5301 DUTCH ELM DR	1	B	48[3]	48[3]	0
R0073C	5325 DUTCH ELM DR	1	B	48[3]	48[3]	0
R0074A	5336 DUTCH ELM DR	1	B	58	60	2
R0074B	5340 DUTCH ELM DR	1	B	57	60	3
R0075	5200 LOCKLEY RD	RECREATIONAL	C	53[3]	66	13
R0076A	9032 TURNER DR	1	B	53[3]	63	10
R0076B	9017 TURNER DR	1	B	53[3]	61	8
R0077A	4710 EDWARDS DR	1	B	52[3]	54	2
R0077B	4712 EDWARDS DR	1	B	52[3]	54	2
R0078A	4716 EDWARDS DR	1	B	52[3]	57	5
R0078B	4720 EDWARDS DR	1	B	55	59	4
R0079	4900 SUNSET LAKE RD	1	B	53	64	11
R0080A	208 BELLAGIO DR	1	B	52[3]	52[3]	0
R0080B	212 BELLAGIO DR	1	B	52[3]	52[3]	0
R0081	101 CAPRI DR	1	B	52[3]	52[3]	0
R0082	120 PALERMO CT	1	B	52[3]	54	2
R0083	109 PALERMO CT	1	B	52[3]	62	10
R0084	104 PALERMO CT	1	B	52[3]	61	9
R0085A	4002 CLYDE DR	1	B	53[3]	65	12
R0085B	4004 CLYDE DR	1	B	53[3]	69	16
R0086	4001 CLYDE DR	1	B	53[3]	59	6
R0087A	5004 SUNSET LAKE RD	1	B	53[3]	60	7
R0087B	4009 CLYDE DR	1	B	53[3]	56	3
R0088A	5012 SUNSET LAKE RD	1	B	59	63	4
R0088B	5008 SUNSET LAKE RD	1	B	53[3]	53[3]	0
R0088C	5000 SUNSET LAKE RD	1	B	53[3]	56	3
R0089A	5017 SUNSET LAKE RD	1	B	54	63	9
R0089B	5005 SUNSET LAKE RD	1	B	58	64	6
R0090A	5025 SUNSET LAKE RD	1	B	53	59	6
R0090B	5021 SUNSET LAKE RD	1	B	53[3]	57	4
R0090C	5029 SUNSET LAKE RD	1	B	58	62	4
R0090D	5033 SUNSET LAKE RD	1	B	59	62	3
R0091A	4632 LOCKLEY RD	1	B	53[3]	57	4
R0091B	4624 LOCKLEY RD	1	B	53[3]	56	3
R0091C	4624 LOCKLEY RD	1	B	53[3]	58	5
R0102A	4505 LOCKLEY RD	1	B	53	57	4
R0102B	9724 HOLLY SPRINGS RD	1	B	57	60	3
R0103A	4512 LOCKLEY RD	1	B	53[3]	56	3
R0103B	9716 HOLLY SPINGS ROAD	1	B	56	61	5
R0104	4608 LOCKLEY RD	PLACE OF WORSHIP	C	53[3]	53[3]	0
R0105A	9704 HOLLY SPRINGS RD	1	B	54	59	5
R0105B	9700 HOLLY SPRINGS RD	1	B	54	60	6

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Complete 540

Traffic Noise Analysis

IMPACT ANALYSIS TABLE

Receptor	Property Address	Properties Represented	NAC Land Use Category	2016 Existing[3]		2040 DSA-2 Build[1,3]		2040 DSA-2 Increase[2]
R0106A	9636 HOLLY SPRINGS RD	1	B	53		60		7
R0106B	9632 HOLLY SPRINGS RD	1	B	53	[3]	56		3
R0106C	9628 HOLLY SPRINGS RD	1	B	55		61		6
R0106D	9640 HOLLY SPRINGS RD	1	B	53		58		5
R0107B	9717 HOLLY SPRINGS RD	1	B	53	[3]	57		4
R0108	9721 HOLLY SPRINGS RD	1	B	53	[3]	57		4
R0109A	9029 WESLEY CT	1	B	54		60		6
R0109B	9028 WESLEY CT	1	B	58		63		5
R0109C	9025 WESLEY CT	1	B	53	[3]	57		4
R0110	5200 CATHERINE PL	1	B	56		62		6
R0111	9008 WESLEY CT	1	B	59		64		5
R0112A	9009 WESLEY CT	1	B	53	[3]	58		5
R0112B	9005 WESLEY CT	1	B	53	[3]	56		3
R0113A	9017 WESLEY CT	1	B	53	[3]	54		1
R0113B	9021 WESLEY CT	1	B	53	[3]	53		0
R0113C	9013 WESLEY CT	1	B	53	[3]	57		4
R0114A	9000 WESLEY CT	1	B	53	[3]	60		7
R0114B	9001 WESLEY CT	1	B	53	[3]	58		5
R0115A	104 FAIRVIEW ST	1	B	54		61		7
R0115B	106 FAIRVIEW ST	1	B	53	[3]	59		6
R0115C	106 FAIRVIEW ST	1	B	53	[3]	58		5
R0116	108 FAIRVIEW ST	1	B	53	[3]	57		4
R0117	109 FAIRVIEW ST	1	B	53	[3]	60		7
R0118	103 SPRING ST	1	B	53	[3]	65		12
R0119A	104 SPRING ST	1	B	53	[3]	66		13
R0119B	102 SPRING ST	1	B	53	[3]	66		13
R0121	9516 HOLLY SPRINGS RD	1	B	57		62		5
R0123	9516 HOLLY SPRINGS RD	1	B	52		60		8
R0124	9516 HOLLY SPRINGS RD	1	B	56		56		0
R0125A	4312 KILDAIRE FARM RD	1	B	54		56		2
R0125B	4316 KILDAIRE FARM RD	1	B	52		52		0
R0126A	113 GRENOCH VALLEY LN	1	B	52	[3]	52	[3]	0
R0126B	109 GRENOCH VALLEY LN	1	B	52	[3]	52	[3]	0
R0126C	105 GRENOCH VALLEY LN	1	B	52	[3]	52	[3]	0
R0126D	101 GRENOCH VALLEY LN	1	B	52	[3]	52		0
R0127A	105 BUTTERBIGGINS LN	1	B	52	[3]	52	[3]	0
R0127B	107 BUTTERBIGGINS LN	1	B	52	[3]	52	[3]	0
R0127C	109 BUTTERBIGGINS LN	1	B	52	[3]	52	[3]	0
R0127D	103 BUTTERBIGGINS LN	1	B	52	[3]	52	[3]	0
R0127E	101 BUTTERBIGGINS LN	1	B	52	[3]	52	[3]	0
R0128A	116 BUTTERBIGGINS LN	1	B	52	[3]	52	[3]	0
R0128B	114 BUTTERBIGGINS LN	1	B	52	[3]	52	[3]	0
R0128C	112 BUTTERBIGGINS LN	1	B	52	[3]	52	[3]	0

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Complete 540

Traffic Noise Analysis

IMPACT ANALYSIS TABLE

Receptor	Property Address	Properties Represented	NAC Land Use Category	2016 Existing[3]	2040 DSA-2 Build[1,3]	2040 DSA-2 Increase[2]
R0128D	110 BUTTERBIGGINS LN	1	B	52[3]	52[3]	0
R0129A	108 BUTTERBIGGINS LN	1	B	52[3]	52[3]	0
R0129B	106 BUTTERBIGGINS LN	1	B	52[3]	52[3]	0
R0129C	104 BUTTERBIGGINS LN	1	B	52[3]	52	0
R0129D	102 BUTTERBIGGINS LN	1	B	52[3]	53	1
R0129E	100 BUTTERBIGGINS LN	1	B	52[3]	53	1
R0130A	101 HAVELOCK CT	1	B	61	66	5
R0130B	103 HAVELOCK CT	1	B	61	66	5
R0130C	105 HAVELOCK CT	1	B	62	67	5
R0130D	107 HAVELOCK CT	1	B	61	65	4
R0130E	109 HAVELOCK CT	1	B	60	65	5
R0130F	111 HAVELOCK CT	1	B	60	64	4
R0131A	113 HAVELOCK CT	1	B	62	67	5
R0131B	115 HAVELOCK CT	1	B	62	67	5
R0131C	117 HAVELOCK CT	1	B	62	67	5
R0131D	119 HAVELOCK CT	1	B	62	67	5
R0131E	121 HAVELOCK CT	1	B	62	67	5
R0131F	123 HAVELOCK CT	1	B	62	67	5
R0132A	4609 AVIARY CIR	1	B	54	65	11
R0132B	4605 AVIARY CIR	1	B	52[3]	58	6
R0133A	4321 HOLLY RUN RD	1	B	52[3]	56	4
R0133B	4324 HOLLY RUN RD	1	B	52[3]	57	5
R0134	4601 AVIARY CIR	1	B	52[3]	57	5
R0135A	4608 AVIARY CIR	1	B	52	58	6
R0135B	4600 AVIARY CIR	1	B	52[3]	57	5
R0136A	4616 AVIARY CIR	1	B	62	65	3
R0136B	4612 AVIARY CIR	1	B	55	60	5
R0138A	3508 LEXHAM CT	1	B	52[3]	67	15
R0138B	3504 LEXHAM CT	1	B	52[3]	64	12
R0138C	3505 LEXHAM CT	1	B	52[3]	70	18
R0139A	4101 SANCROFT DR	1	B	52[3]	64	12
R0139B	3500 LEXHAM CT	1	B	52[3]	58	6
R0140A	3425 ASHMILL CT	1	B	52[3]	61	9
R0140B	3424 ASHMILL CT	1	B	52[3]	61	9
R0141A	3420 ASHMILL CT	1	B	52	60	8
R0141B	3416 ASHMILL CT	1	B	52	60	8
R0142A	3408 ASHMILL CT	1	B	53	62	9
R0142B	3412 ASHMILL CT	1	B	52	60	8
R0143A	3404 ASHMILL CT	1	B	55	64	9
R0143B	4221 SANCROFT DR	1	B	54	64	10
R0144A	3421 ASHMILL CT	1	B	52[3]	61	9
R0144B	3417 ASHMILL CT	1	B	52[3]	61	9
R0144C	3413 ASHMILL CT	1	B	52[3]	58	6

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Complete 540

Traffic Noise Analysis

IMPACT ANALYSIS TABLE

Receptor	Property Address	Properties Represented	NAC Land Use Category	2016 Existing[3]	2040 DSA-2 Build[1,3]	2040 DSA-2 Increase[2]
R0145	3401 ASHMILL CT	1	B	52[3]	58	6
R0146A	4208 SANCROFT DR	1	B	52[3]	55	3
R0146B	4204 SANCROFT DR	1	B	52[3]	52[3]	0
R0147A	4216 SANCROFT DR	1	B	52[3]	52	0
R0147B	4220 SANCROFT DR	1	B	52[3]	52[3]	0
R0147C	4224 SANCROFT DR	1	B	52[3]	54	2
R0147D	4228 SANCROFT DR	1	B	56	58	2
R0148	9412 HOLLY SPRINGS RD	1	B	53	62	9
R0149A	4313 HOLLY RUN RD	1	B	52[3]	61	9
R0149B	4309 HOLLY RUN RD	1	B	52[3]	60	8
R0150A	4301 HOLLY RUN RD	1	B	58	62	4
R0150B	4305 HOLLY RUN RD	1	B	52[3]	59	7
R0151A	4312 HOLLY RUN RD	1	B	52[3]	56	4
R0151B	4308 HOLLY RUN RD	1	B	52[3]	55	3
R0152A	4408 ELLINWOOD DR	1	B	52[3]	52[3]	0
R0152B	4404 ELLINWOOD DR	1	B	52[3]	52[3]	0
R0152C	4412 ELLINWOOD DR	1	B	52[3]	52[3]	0
R0153A	4304 HOLLY RUN RD	1	B	52[3]	54	2
R0153B	4300 HOLLY RUN RD	1	B	60	63	3
R0154	9409 HOLLY SPRINGS RD	1	B	52[3]	55	3
R0155	9401 HOLLY SPRINGS RD	1	B	54	57	3
R0156	9329 HOLLY SPRINGS RD	1	B	52[3]	55	3
R0157A	4209 WYCKFORD PL	1	B	52[3]	52	0
R0157B	4205 WYCKFORD PL	1	B	52[3]	53	1
R0159	8600 PIERCE OLIVE RD	1	B	56	64	8
R0161A	3829 SKY MEADOW DR	1	B	46[3]	57	11
R0161B	3830 SKY MEADOW DR	1	B	46[3]	47	1
R0163A	3828 SKY MEADOW DR	1	B	46[3]	48	2
R0163B	3818 SKY MEADOW DR	1	B	46[3]	48	2
R0164A	3817 SKY MEADOW DR	1	B	46[3]	61	15
R0164B	8612 LAWDRAKER RD	1	B	46[3]	57	11
R0165A	3812 SKY MEADOW DR	1	B	46[3]	47	1
R0165B	3808 SKY MEADOW DR	1	B	46[3]	46[3]	0
R0166A	8604 LAWDRAKER RD	1	B	46[3]	51	5
R0166B	8600 LAWDRAKER RD	1	B	46[3]	50	4
R0167A	8613 LAWDRAKER RD	1	B	46[3]	63	17
R0167B	3729 SKY MEADOW DR	1	B	46[3]	69	23
R0168A	8605 LAWDRAKER RD	1	B	46[3]	60	14
R0168B	3732 SKY MEADOW DR	1	B	46[3]	59	13
R0168C	8601 LAWDRAKER RD	1	B	46[3]	57	11
R0169A	3725 SKY MEADOW DR	1	B	46[3]	68	22
R0169B	3717 SKY MEADOW DR	1	B	46[3]	68	22
R0170A	3724 SKY MEADOW DR	1	B	46[3]	58	12

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Complete 540

Traffic Noise Analysis

IMPACT ANALYSIS TABLE

Receptor	Property Address	Properties Represented	NAC Land Use Category	2016 Existing[3]	2040 DSA-2 Build[1,3]	2040 DSA-2 Increase[2]
R0170B	3716 SKY MEADOW DR	1	B	46[3]	62	16
R0171A	3712 SKY MEADOW DR	1	B	46[3]	63	17
R0171B	3708 SKY MEADOW DR	1	B	46[3]	59	13
R0172A	3704 SKY MEADOW DR	1	B	46[3]	63	17
R0172B	3700 SKY MEADOW DR	1	B	46[3]	63	17
R0173	3709 SKY MEADOW DR	1	B	46[3]	66	20
R0174A	3901 SUMMER BROOK DR	1	B	46[3]	57	11
R0174B	3905 SUMMER BROOK DR	1	B	46[3]	57	11
R0176A	3913 SUMMER BROOK DR	1	B	46[3]	56	10
R0176B	3909 SUMMER BROOK DR	1	B	46[3]	57	11
R0178A	3917 SUMMER BROOK DR	1	B	46[3]	56	10
R0178B	3728 GRANDBRIDGE DR	1	B	46[3]	58	12
R0179A	3724 GRANDBRIDGE DR	1	B	46[3]	57	11
R0179B	3720 GRANDBRIDGE DR	1	B	46[3]	59	13
R0180A	3716 GRANDBRIDGE DR	1	B	46[3]	64	18
R0180B	3712 GRANDBRIDGE DR	1	B	46[3]	63	17
R0182A	3708 GRANDBRIDGE DR	1	B	46[3]	63	17
R0182B	3704 GRANDBRIDGE DR	1	B	46[3]	68	22
R0182C	3700 GRANDBRIDGE DR	1	B	46[3]	66	20
R0184	3701 GRANDBRIDGE DR	1	B	46[3]	62	16
R0186A	3608 HERITAGE CREEK DR	1	B	46[3]	63	17
R0186B	3604 HERITAGE CREEK DR	1	B	46[3]	65	19
R0187A	3600 HERITAGE CREEK DR	1	B	46[3]	70	24
R0187B	3601 HERITAGE CREEK DR	1	B	46[3]	67	21
R0188A	3609 HERITAGE CREEK DR	1	B	46[3]	58	12
R0188B	3605 HERITAGE CREEK DR	1	B	46[3]	59	13
R0189A	3521 CASTELAINE CIR	1	B	46[3]	65	19
R0189B	3513 CASTELAINE CIR	1	B	46[3]	65	19
R0189C	3509 CASTELAINE CIR	1	B	46[3]	62	16
R0190	3404 CASTELAINE CIR	1	B	56	59	3
R0191A	3105 FLORESTA DR	1	B	54	64	10
R0191B	3108 FLORESTA DR	1	B	51	58	7
R0192A	4008 WEST LAKE RD	1	B	48	60	12
R0192B	4004 WEST LAKE RD	1	B	48	60	12
R0193A	3420 LANGSTON CIR	1	B	49	56	7
R0193B	3412 LANGSTON CIR	1	B	46[3]	54	8
R0194	4001 WEST LAKE RD	1	B	49	58	9
R0195	4000 HARRIAT DR	1	B	48	58	10
R0196	4005 HARRIAT DR	1	B	46[3]	69	23
R0197A	4009 HARRIAT DR	1	B	46[3]	69	23
R0197B	4013 HARRIAT DR	1	B	46[3]	72	26
R0198A	5924 OXFORD GREEN DR	1	B	46[3]	63	17
R0198B	5928 OXFORD GREEN DR	1	B	46[3]	60	14

1 Noise levels highlighted in red are levels above the Noise Abatement Criteria.
2 Noise level increases highlighted in red are above the substantial increase criteria.
3 Measured noise levels reported if traffic not the dominant noise source

Complete 540

Traffic Noise Analysis

IMPACT ANALYSIS TABLE

Receptor	Property Address	Properties Represented	NAC Land Use Category	2016 Existing[3]	2040 DSA-2 Build[1,3]	2040 DSA-2 Increase[2]
R0198C	5920 OXFORD GREEN DR	1	B	46[3]	64	18
R0199A	5921 OXFORD GREEN DR	1	B	46[3]	57	11
R0199B	5925 OXFORD GREEN DR	1	B	46[3]	54	8
R0199C	5917 OXFORD GREEN DR	1	B	46[3]	58	12
R0203	5905 OXFORD GREEN DR	1	B	46[3]	60	14
R0204	5909 OXFORD GREEN DR	1	B	46[3]	56	10
R0205	8016 BELLS LAKE RD	1	B	51	61	10
R0206	8020 BELLS LAKE RD	1	B	55	62	7
R0207	8101 BELLS LAKE RD	1	B	55	63	8
R0208	5729 CARRIAGEHOUSE CT	1	B	46	57	11
R0209	8121 BELLS LAKE RD	1	B	53	60	7
R0210	8100 BELLS LAKE RD	1	B	51	58	7
R0211A	8108 WHEELER WOODS DR	1	B	47	55	8
R0211B	4008 TRUELOVE DR	1	B	50	57	7
R0212	8200 BELLS LAKE RD	1	B	54	58	4
R0213A	8207 BELLS LAKE RD	1	B	50	56	6
R0213B	8201 BELLS LAKE RD	1	B	52	58	6
R0214A	2926 BELLS POINTE CT	1	B	46[3]	63	17
R0214B	2929 BELLS POINTE CT	1	B	48	63	15
R0214C	2925 BELLS POINTE CT	1	B	57	64	7
R0215A	2922 BELLS POINTE CT	1	B	46[3]	58	12
R0215B	2918 BELLS POINTE CT	1	B	46[3]	56	10
R0216A	2921 BELLS POINTE CT	1	B	57	62	5
R0216B	2917 BELLS POINTE CT	1	B	56	61	5
R0217A	2914 BELLS POINTE CT	1	B	46[3]	54	8
R0217B	2912 BELLS POINTE CT	1	B	46[3]	53	7
R0218A	2913 BELLS POINTE CT	1	B	57	61	4
R0218B	2909 BELLS POINTE CT	1	B	57	60	3
R0219	2901 BELLS POINTE CT	1	B	58	61	3
R0220A	2908 BELLS POINTE CT	1	B	46[3]	53	7
R0220B	7524 ORCHARD CREST CT	1	B	46[3]	52	6
R0221A	7525 ORCHARD CREST CT	1	B	52	57	5
R0221B	2900 BELLS POINTE CT	1	B	56	59	3
R0222A	7520 ORCHARD CREST CT	1	B	46[3]	50	4
R0222B	7516 ORCHARD CREST CT	1	B	46[3]	49	3
R0222C	7512 ORCHARD CREST CT	1	B	46[3]	49	3
R0223A	7517 ORCHARD CREST CT	1	B	54	59	5
R0223B	7513 ORCHARD CREST CT	1	B	55	59	4
R0225B	7505 ORCHARD CREST CT	1	B	59	63	4
R0225C	7509 ORCHARD CREST CT	1	B	57	61	4
R0226A	7801 BELLS LAKE RD	1	B	53	57	4
R0226B	7801 BELLS LAKE RD	1	B	50	56	6
R0227A	3008 GEIGER CIR	1	B	48	55	7

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3 Measured noise levels reported if traffic not the dominant noise source

Complete 540

Traffic Noise Analysis

IMPACT ANALYSIS TABLE

Receptor	Property Address	Properties Represented	NAC Land Use Category	2016 Existing[3]		2040 DSA-2 Build[1,3]		2040 DSA-2 Increase[2]
R0227B	3004 GEIGER CIR	1	B	48		54		6
R0228	7737 BELLS LAKE RD	1	B	54		59		5
R0229A	3620 HIGHLAND CREEK DR	1	B	47		53		6
R0229B	3616 HIGHLAND CREEK DR	1	B	48		54		6
R0230A	3608 HIGHLAND CREEK DR	1	B	51		56		5
R0230B	3600 HIGHLAND CREEK DR	1	B	54		58		4
R0233	3900 BLUE HORIZON RD	1	B	46	[3]	72		26
R0234A	2904 DAY LILY LANE	1	B	46	[3]	69		23
R0234B	2900 DAY LILY LANE	1	B	46	[3]	68		22
R0234C	2908 DAY LILY LANE	1	B	51		66		15
R0235A	2901 DAY LILY LANE	1	B	46	[3]	56		10
R0235B	2905 DAY LILY LANE	1	B	48		58		10
R0235C	2909 DAY LILY LANE	1	B	55		60		5
R0236A	2900 BUTTONQUAIL DR	1	B	46	[3]	60		14
R0236B	2904 BUTTONQUAIL DR	1	B	47		57		10
R0236C	2908 BUTTONQUAIL DR	1	B	51		59		8
R0236D	2909 BUTTONQUAIL DR	1	B	54		56		2
R0236E	3801 BLUE HORIZON RD	1	B	47		56		9
R0236F	3805 BLUE HORIZON RD	1	B	46	[3]	58		12
R0236G	3809 BLUE HORIZON RD	1	B	46	[3]	58		12
R0237A	3810 SPRINGTIME DR.	1	B	51		64		13
R0237B	3808 SPRINGTIME DR.	1	B	51		61		10
R0237C	3820 SPRINGTIME DR.	1	B	51		69		18
R0238A	3821 SPRINGTIME DR.	1	B	46	[3]	66		20
R0238B	3825 SPRINGTIME DR.	1	B	46	[3]	73		27
R0238C	3829 SPRINGTIME DR.	1	B	46	[3]	62		16
R0239A	3833 SPRINGTIME DR.	1	B	46	[3]	59		13
R0239B	3835 SPRINGTIME DR.	1	B	46	[3]	56		10
R0239C	3837 SPRINGTIME DR.	1	B	46	[3]	54		8
R0240A	3716 WHISPERING WIND DR	1	B	46	[3]	57		11
R0240B	3720 WHISPERING WIND DR	1	B	46	[3]	60		14
R0241A	3728 WHISPERING WIND DR	1	B	46	[3]	73		27
R0241B	3724 WHISPERING WIND DR	1	B	46	[3]	65		19
R0242A	3725 WHISPERING WIND DR	1	B	46	[3]	63		17
R0242B	3721 WHISPERING WIND DR	1	B	46	[3]	59		13
R0243	8101 RHODES RD	1	B	46	[3]	67		21
R0244A	8105 RHODES RD	1	B	46	[3]	60		14
R0244B	8109 RHODES RD	1	B	46	[3]	58		12
R0245A	5609 DEERBORN DR	1	B	46	[3]	68		22
R0245B	5605 DEERBORN DR	1	B	46	[3]	65		19
R0246A	5613 DEERBORN DR	1	B	46	[3]	70		24
R0246B	5617 DEERBORN DR	1	B	46	[3]	70		24
R0247A	8112 DEER MEADOW DR	1	B	46	[3]	60		14

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3 Measured noise levels reported if traffic not the dominant noise source

Complete 540

Traffic Noise Analysis

IMPACT ANALYSIS TABLE

Receptor	Property Address	Properties Represented	NAC Land Use Category	2016 Existing[3]	2040 DSA-2 Build[1,3]	2040 DSA-2 Increase[2]
R0247B	8108 DEER MEADOW DR	1	B	46[3]	61	15
R0247C	8116 DEER MEADOW DR	1	B	46[3]	59	13
R0248	8100 DEER MEADOW DR	1	B	46[3]	69	23
R0249	8105 DEER MEADOW DR	1	B	46[3]	71	25
R0250A	5412 LOWER CREEK CT	1	B	46[3]	61	15
R0250B	5408 LOWER CREEK CT	1	B	46[3]	61	15
R0250C	5416 LOWER CREEK CT	1	B	46[3]	61	15
R0253A	5400 LOWER CREEK CT	1	B	46[3]	63	17
R0253B	5401 LOWER CREEK CT	1	B	46[3]	60	14
R0254	8004 DEER MEADOW DR	1	B	49	54	5
R0255	8020 DEER MEADOW DR	1	B	46[3]	59	13
R0256A	8028 DEER MEADOW DR	1	B	46[3]	68	22
R0256B	8032 DEER MEADOW DR	1	B	46[3]	75	29
R0257A	8009 DEER MEADOW DR	1	B	47	52	5
R0257B	8013 DEER MEADOW DR	1	B	46[3]	51	5
R0258	7908 PINESLOPE DR	1	B	47	53	6
R0259	7900 PINESLOPE DR	1	B	50	53	3
R0260A	8029 DEER MEADOW DR	1	B	46[3]	55	9
R0260B	7916 PINESLOPE DR	1	B	46[3]	56	10
R0261A	5416 BUCKWOOD DR	1	B	46[3]	65	19
R0261B	5420 BUCKWOOD DR	1	B	46[3]	67	21
R0261C	7924 PINESLOPE DR	1	B	46[3]	63	17
R0262A	8008 BAYBARK CIR	1	B	50	53	3
R0262B	8004 BAYBARK CIR	1	B	53	55	2
R0263A	8017 BAYBARK CIR	1	B	55	57	2
R0263B	8001 BAYBARK CIR	1	B	59	60	1
R0264A	8004 EVERARD CT	1	B	46	52	6
R0264B	8000 EVERARD CT	1	B	49	53	4
R0265A	8001 EVERARD CT	1	B	47	55	8
R0265B	8020 BAYBARK CIR	1	B	48	54	6
R0266A	8008 EVERARD CT	1	B	46[3]	55	9
R0266B	8005 EVERARD CT	1	B	46[3]	55	9
R0267A	7917 PINESLOPE DR	1	B	46[3]	56	10
R0267B	7925 PINESLOPE DR	1	B	46[3]	61	15
R0268A	5400 BUCKWOOD DR	1	B	46	57	11
R0268B	5401 BUCKWOOD DR	1	B	46[3]	59	13
R0268C	5404 BUCKWOOD DR	1	B	46[3]	58	12
R0269	5409 BUCKWOOD DR	1	B	46[3]	65	19
R0270	5405 BUCKWOOD DR	1	B	46[3]	75	29
R0271A	3733 SUNLAKE FARMS RD	1	B	46[3]	65	19
R0271B	3736 SUNLAKE FARMS RD	1	B	46[3]	63	17
R0272	3729 SUNLAKE FARMS RD	1	B	46[3]	69	23
R0273A	3721 SUNLAKE FARMS RD	1	B	46[3]	62	16

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Complete 540

Traffic Noise Analysis

IMPACT ANALYSIS TABLE

Receptor	Property Address	Properties Represented	NAC Land Use Category	2016 Existing[3]	2040 DSA-2 Build[1,3]	2040 DSA-2 Increase[2]
R0273B	3725 SUNLAKE FARMS RD	1	B	46[3]	65	19
R0274A	3800 DOESKIN DR	1	B	46[3]	64	18
R0274B	3804 DOESKIN DR	1	B	46[3]	65	19
R0274C	3808 DOESKIN DR	1	B	46[3]	62	16
R0275	3904 JOHNSON POND RD	1	B	46[3]	53	7
R0276	3900 JOHNSON POND RD	1	B	49	58	9
R0277	3824 JOHNSON POND RD	1	B	51	63	12
R0280	3728 JOHNSON POND RD	1	B	49	59	10
R0281	3733 JOHNSON POND RD	1	B	48	55	7
R0282A	3717 JOHNSON POND RD	1	B	48	56	8
R0282B	3725 JOHNSON POND RD	1	B	50	56	6
R0283A	8712 LAKE WHEELER RD	1	B	60	68	8
R0283B	8700 LAKE WHEELER RD	1	B	59	68	9
R0284A	3909 ARNOLD PARK LN	1	B	46[3]	64	18
R0284B	3908 ARNOLD PARK LN	1	B	47	66	19
R0285A	3907 ARNOLD PARK LN	1	B	49	67	18
R0285B	3906 ARNOLD PARK LN	1	B	48	66	18
R0286A	3905 ARNOLD PARK LN	1	B	49	65	16
R0286B	3904 ARNOLD PARK LN	1	B	52	69	17
R0287A	3901 ARNOLD PARK LN	1	B	64	71	7
R0287B	3900 ARNOLD PARK LN	1	B	62	72	10
R0288	8709 LAKE WHEELER RD	1	B	57	67	10
R0289	8600 LAKE WHEELER RD	1	B	51	66	15
R0290	8537 LAKE WHEELER RD	1	B	46[3]	67	21
R0307B	8701 MARIGOLD ST	1	B	54[3]	58	4
R0309A	3708 OAKVALE ST	1	B	54[3]	59	5
R0309B	8612 LOBELIA ST	1	B	54[3]	60	6
R0310	8612 FAYETTEVILLE RD	1	B	59	64	5
R0311A	8613 LOBELIA ST	1	B	56	60	4
R0311B	8609 LOBELIA ST	1	B	55	61	6
R0312A	8605 LOBELIA ST	1	B	54	60	6
R0312B	3705 W ALLEN ST	1	B	54	59	5
R0313A	3708 W ALLEN ST	1	B	54[3]	56	2
R0313B	3712 W ALLEN ST	1	B	54[3]	57	3
R0314A	8524 FAYETTEVILLE RD	1	B	61	67	6
R0314B	8520 FAYETTEVILLE RD	1	B	62	67	5
R0315A	8516 FAYETTEVILLE RD	1	B	61	65	4
R0315B	8412 FAYETTEVILLE RD	1	B	59	64	5
R0316	8408 FAYETTEVILLE RD	1	B	60	63	3
R0317A	8509 FAYETTEVILLE RD	1	B	63	68	5
R0317B	8513 FAYETTEVILLE RD	1	B	64	69	5
R0318A	3605 E ALLEN ST	1	B	54[3]	57	3
R0318B	3601 E ALLEN ST	1	B	54[3]	55	1

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Complete 540

Traffic Noise Analysis

IMPACT ANALYSIS TABLE

Receptor	Property Address	Properties Represented	NAC Land Use Category	2016 Existing[3]	2040 DSA-2 Build[1,3]	2040 DSA-2 Increase[2]
R0319A	8501 FAYETTEVILLE RD	1	B	62	66	4
R0319B	8505 FAYETTEVILLE RD	1	B	61	64	3
R0320A	8416 CAMELLIA ST	1	B	54	57	3
R0320B	8420 CAMELLIA ST	1	B	54[3]	56	2
R0321A	8409 FAYETTEVILLE RD	1	B	62	66	4
R0321B	8413 FAYETTEVILLE RD	1	B	63	66	3
R0322A	8412 CAMELLIA ST	1	B	54[3]	57	3
R0322B	8408 CAMELLIA ST	1	B	54[3]	57	3
R0330A	8816 JUAQUIN LN	1	B	54[3]	56	2
R0330B	8812 JUAQUIN LN	1	B	54[3]	56	2
R0330C	8808 JUAQUIN LN	1	B	54[3]	56	2
R0330D	8804 JUAQUIN LN	1	B	54[3]	58	4
R0330E	8800 JUAQUIN LN	1	B	54[3]	56	2
R0331A	8801 JUAQUIN LN	1	B	55	61	6
R0331B	8805 JUAQUIN LN	1	B	54[3]	60	6
R0331C	8809 JUAQUIN LN	1	B	54[3]	60	6
R0332A	8804 REIGATE LN	1	B	54[3]	60	6
R0332B	8808 REIGATE LN	1	B	54[3]	59	5
R0333A	8809 REIGATE LN	1	B	54[3]	59	5
R0333B	8813 REIGATE LN	1	B	54[3]	58	4
R0333C	8817 REIGATE LN	1	B	54[3]	58	4
R0333D	8821 REIGATE LN	1	B	54[3]	57	3
R0334A	8820 REIGATE LN	1	B	54[3]	57	3
R0334B	8816 REIGATE LN	1	B	54[3]	57	3
R0334C	8812 REIGATE LN	1	B	54[3]	58	4
R0335A	8824 REIGATE LN	1	B	54[3]	56	2
R0335B	8828 REIGATE LN	1	B	54[3]	55	1
R0335C	8832 REIGATE LN	1	B	54[3]	54	0
R0336A	8825 REIGATE LN	1	B	54[3]	56	2
R0336B	8829 REIGATE LN	1	B	54[3]	55	1
R0336C	8833 REIGATE LN	1	B	54[3]	56	2
R0337A	8840 REIGATE LN	1	B	54[3]	54[3]	0
R0337B	8836 REIGATE LN	1	B	54[3]	54	0
R0337C	8837 REIGATE LN	1	B	54[3]	54	0
R0338A	2811 Calculus Lane	1	B	54[3]	54[3]	0
R0338B	2821 Calculus Lane	1	B	54[3]	54[3]	0
R0338C	2831 Calculus Lane	1	B	54[3]	55	1
R0338D	2812 Calculus Lane	1	B	54[3]	54[3]	0
R0338E	2822 Calculus Lane	1	B	54[3]	54[3]	0
R0338F	2832 Calculus Lane	1	B	54[3]	55	1
R0338G	2814 Calculus Lane	1	B	54[3]	54[3]	0
R0338H	2824 Calculus Lane	1	B	54[3]	56	2
R0338I	2834 Calculus Lane	1	B	54[3]	57	3

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Complete 540

Traffic Noise Analysis

IMPACT ANALYSIS TABLE

Receptor	Property Address	Properties Represented	NAC Land Use Category	2016 Existing[3]	2040 DSA-2 Build[1,3]	2040 DSA-2 Increase[2]
R0338J	2813 Calculus Lane	1	B	54[3]	54	0
R0338K	2823 Calculus Lane	1	B	54[3]	55	1
R0338L	2833 Calculus Lane	1	B	54[3]	57	3
R0338M	2613 Calculus Lane	1	B	54[3]	54	0
R0338N	2623 Calculus Lane	1	B	54[3]	57	3
R0338O	2633 Calculus Lane	1	B	54[3]	58	4
R0338P	2614 Calculus Lane	1	B	54[3]	56	2
R0338Q	2624 Calculus Lane	1	B	54[3]	59	5
R0338R	2634 Calculus Lane	1	B	55	61	6
R0338S	2612 Calculus Lane	1	B	54[3]	55	1
R0338T	2622 Calculus Lane	1	B	54[3]	58	4
R0338U	2632 Calculus Lane	1	B	55	61	6
R0338V	2611 Calculus Lane	1	B	54[3]	54[3]	0
R0338W	2621 Calculus Lane	1	B	54[3]	57	3
R0338X	2631 Calculus Lane	1	B	55	59	4
R0339A	1514 Dormitory Road	1	B	54[3]	56	2
R0339B	1524 Dormitory Road	1	B	54[3]	59	5
R0339C	1534 Dormitory Road	1	B	56	62	6
R0339D	1513 Dormitory Road	1	B	54[3]	54[3]	0
R0339E	1523 Dormitory Road	1	B	54[3]	54[3]	0
R0339F	1533 Dormitory Road	1	B	54[3]	54[3]	0
R0339G	1511 Dormitory Road	1	B	54[3]	54[3]	0
R0339H	1521 Dormitory Road	1	B	54[3]	54[3]	0
R0339I	1531 Dormitory Road	1	B	54[3]	54[3]	0
R0339J	1512 Dormitory Road	1	B	54[3]	56	2
R0339K	1522 Dormitory Road	1	B	54[3]	59	5
R0339L	1532 Dormitory Road	1	B	57	62	5
R0339M	3614 Chandler Ridge Circle	1	B	54[3]	54[3]	0
R0339N	3624 Chandler Ridge Circle	1	B	54[3]	56	2
R0339O	3634 Chandler Ridge Circle	1	B	54[3]	59	5
R0339P	3613 Chandler Ridge Circle	1	B	54[3]	54[3]	0
R0339Q	3623 Chandler Ridge Circle	1	B	54[3]	57	3
R0339R	3633 Chandler Ridge Circle	1	B	55	60	5
R0339S	3611 Chandler Ridge Circle	1	B	54[3]	55	1
R0339T	3621 Chandler Ridge Circle	1	B	54[3]	59	5
R0339U	3631 Chandler Ridge Circle	1	B	57	62	5
R0339V	3612 Chandler Ridge Circle	1	B	54[3]	56	2
R0339W	3622Chandler Ridge Circle	1	B	54[3]	59	5
R0339X	3632 Chandler Ridge Circle	1	B	57	62	5
R0340A	3813 Chandler Ridge Circle	1	B	54[3]	54[3]	0
R0340B	3823 Chandler Ridge Circle	1	B	54[3]	55	1
R0340C	3833 Chandler Ridge Circle	1	B	54[3]	57	3
R0340D	3811 Chandler Ridge Circle	1	B	54[3]	54[3]	0

1 Noise levels highlighted in red are levels above the Noise Abatement Criteria.
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3 Measured noise levels reported if traffic not the dominant noise source

Complete 540

Traffic Noise Analysis

IMPACT ANALYSIS TABLE

Receptor	Property Address	Properties Represented	NAC Land Use Category	2016 Existing[3]	2040 DSA-2 Build[1,3]	2040 DSA-2 Increase[2]
R0340E	3821 Chandler Ridge Circle	1	B	54[3]	55	1
R0340F	3831 Chandler Ridge Circle	1	B	54[3]	57	3
R0340G	3812 Chandler Ridge Circle	1	B	54[3]	54[3]	0
R0340H	3822 Chandler Ridge Circle	1	B	54[3]	55	1
R0340I	3832 Chandler Ridge Circle	1	B	54[3]	57	3
R0340J	3814 Chandler Ridge Circle	1	B	54[3]	54[3]	0
R0340K	3824 Chandler Ridge Circle	1	B	54[3]	54	0
R0340L	3834 Chandler Ridge Circle	1	B	54[3]	57	3
R0341A	4811 Chandler Ridge Circle	1	B	54[3]	58	4
R0341B	4821 Chandler Ridge Circle	1	B	58	63	5
R0341C	4831 Chandler Ridge Circle	1	B	61	65	4
R0341D	4812 Chandler Ridge Circle	1	B	54	59	5
R0341E	4822 Chandler Ridge Circle	1	B	61	64	3
R0341F	4832 Chandler Ridge Circle	1	B	63	66	3
R0341G	4813 Chandler Ridge Circle	1	B	55	61	6
R0341H	4823 Chandler Ridge Circle	1	B	63	67	4
R0341I	4833 Chandler Ridge Circle	1	B	66	70	4
R0341J	4814 Chandler Ridge Circle	1	B	56	61	5
R0341K	4824 Chandler Ridge Circle	1	B	65	68	3
R0341L	4834 Chandler Ridge Circle	1	B	68	72	4
R0342	4900 CHANDLER RIDGE CIR	RECREATIONAL	C	54[3]	55	1
R0343A	3914 Chandler Ridge Circle	1	B	54[3]	54[3]	0
R0343B	3924 Chandler Ridge Circle	1	B	54[3]	55	1
R0343C	3934 Chandler Ridge Circle	1	B	55	59	4
R0343D	3913 Chandler Ridge Circle	1	B	54[3]	54[3]	0
R0343E	3923 Chandler Ridge Circle	1	B	54[3]	56	2
R0343F	3933 Chandler Ridge Circle	1	B	55	59	4
R0343G	3911 Chandler Ridge Circle	1	B	54[3]	54	0
R0343H	3921 Chandler Ridge Circle	1	B	54[3]	57	3
R0343I	3931 Chandler Ridge Circle	1	B	55	60	5
R0343J	3912 Chandler Ridge Circle	1	B	54[3]	54[3]	0
R0343K	3922 Chandler Ridge Circle	1	B	54[3]	55	1
R0343L	3932 Chandler Ridge Circle	1	B	54[3]	58	4
R0344A	4111 Chandler Ridge Circle	1	B	54[3]	54[3]	0
R0344B	4121 Chandler Ridge Circle	1	B	54[3]	54[3]	0
R0344C	4131 Chandler Ridge Circle	1	B	54[3]	54	0
R0344D	4112 Chandler Ridge Circle	1	B	54[3]	54[3]	0
R0344E	4122 Chandler Ridge Circle	1	B	54[3]	54[3]	0
R0344F	4132 Chandler Ridge Circle	1	B	54[3]	54	0
R0344G	4114 Chandler Ridge Circle	1	B	54[3]	54[3]	0
R0344H	4124 Chandler Ridge Circle	1	B	54[3]	55	1
R0344I	4134 Chandler Ridge Circle	1	B	54	58	4
R0344J	4113 Chandler Ridge Circle	1	B	54[3]	54[3]	0

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Complete 540

Traffic Noise Analysis

IMPACT ANALYSIS TABLE

Receptor	Property Address	Properties Represented	NAC Land Use Category	2016 Existing[3]	2040 DSA-2 Build[1,3]	2040 DSA-2 Increase[2]
R0344K	4123 Chandler Ridge Circle	1	B	54[3]	55	1
R0344L	4133 Chandler Ridge Circle	1	B	54	58	4
R0345A	4312 Chandler Ridge Circle	1	B	54[3]	54[3]	0
R0345B	4322 Chandler Ridge Circle	1	B	54[3]	55	1
R0345C	4332 Chandler Ridge Circle	1	B	54	58	4
R0345D	4311 Chandler Ridge Circle	1	B	54[3]	54[3]	0
R0345E	4321 Chandler Ridge Circle	1	B	54[3]	54[3]	0
R0345F	4331 Chandler Ridge Circle	1	B	54[3]	56	2
R0345G	4314 Chandler Ridge Circle	1	B	54[3]	54	0
R0345H	4324 Chandler Ridge Circle	1	B	56	60	4
R0345I	4334 Chandler Ridge Circle	1	B	58	62	4
R0345J	4313 Chandler Ridge Circle	1	B	54[3]	54[3]	0
R0345K	4323 Chandler Ridge Circle	1	B	54[3]	57	3
R0345L	4333Chandler Ridge Circle	1	B	56	60	4
R0346A	4512 Chandler Ridge Circle	1	B	60	63	3
R0346B	4522 Chandler Ridge Circle	1	B	66	69	3
R0346C	4532 Chandler Ridge Circle	1	B	67	70	3
R0346D	4514 Chandler Ridge Circle	1	B	54[3]	55	1
R0346E	4524 Chandler Ridge Circle	1	B	57	60	3
R0346F	4534 Chandler Ridge Circle	1	B	58	62	4
R0346G	4513 Chandler Ridge Circle	1	B	54[3]	54[3]	0
R0346H	4523 Chandler Ridge Circle	1	B	54[3]	54[3]	0
R0346I	4533 Chandler Ridge Circle	1	B	54[3]	57	3
R0346J	4511 Chandler Ridge Circle	1	B	60	62	2
R0346K	4521 Chandler Ridge Circle	1	B	66	69	3
R0346L	4531 Chandler Ridge Circle	1	B	67	69	2
R0347A	4712 Chandler Ridge Circle	1	B	60	63	3
R0347B	4722 Chandler Ridge Circle	1	B	65	68	3
R0347C	4732 Chandler Ridge Circle	1	B	66	69	3
R0347D	4714 Chandler Ridge Circle	1	B	54	57	3
R0347E	4724 Chandler Ridge Circle	1	B	58	61	3
R0347F	4734 Chandler Ridge Circle	1	B	59	63	4
R0347G	4713 Chandler Ridge Circle	1	B	54[3]	54[3]	0
R0347H	4723 Chandler Ridge Circle	1	B	54[3]	54[3]	0
R0347I	4733 Chandler Ridge Circle	1	B	54[3]	59	5
R0347J	4711 Chandler Ridge Circle	1	B	60	63	3
R0347K	4721 Chandler Ridge Circle	1	B	65	68	3
R0347L	4731 Chandler Ridge Circle	1	B	66	69	3
R0348A	5812 Chemistry Road	1	B	54[3]	54[3]	0
R0348B	5822 Chemistry Road	1	B	54[3]	55	1
R0348C	5832 Chemistry Road	1	B	55	59	4
R0348D	5814 Chemistry Road	1	B	54[3]	54[3]	0
R0348E	5824 Chemistry Road	1	B	54[3]	55	1

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Complete 540

Traffic Noise Analysis

IMPACT ANALYSIS TABLE

Receptor	Property Address	Properties Represented	NAC Land Use Category	2016 Existing[3]	2040 DSA-2 Build[1,3]	2040 DSA-2 Increase[2]
R0348F	5834 Chemistry Road	1	B	54[3]	58	4
R0348G	5813 Chemistry Road	1	B	54[3]	54[3]	0
R0348H	5823 Chemistry Road	1	B	54[3]	56	2
R0348I	5833 Chemistry Road	1	B	55	60	5
R0348J	5811 Chemistry Road	1	B	54[3]	54	0
R0348K	5821 Chemistry Road	1	B	55	58	3
R0348L	5831 Chemistry Road	1	B	57	62	5
R0349A	4414 Chandler Ridge Circle	1	B	55	57	2
R0349B	4424 Chandler Ridge Circle	1	B	59	63	4
R0349C	4434 Chandler Ridge Circle	1	B	61	65	4
R0349D	4413 Chandler Ridge Circle	1	B	56	58	2
R0349E	4423 Chandler Ridge Circle	1	B	61	65	4
R0349F	4433 Chandler Ridge Circle	1	B	63	66	3
R0349G	4411 Chandler Ridge Circle	1	B	54	56	2
R0349H	4421 Chandler Ridge Circle	1	B	59	62	3
R0349I	4431 Chandler Ridge Circle	1	B	61	64	3
R0349J	4412 Chandler Ridge Circle	1	B	54[3]	54	0
R0349K	4422 Chandler Ridge Circle	1	B	56	60	4
R0349L	4432 Chandler Ridge Circle	1	B	58	61	3
R0350A	4613 Chandler Ridge Circle	1	B	64	67	3
R0350B	4623 Chandler Ridge Circle	1	B	68	71	3
R0350C	4633 Chandler Ridge Circle	1	B	68	71	3
R0350D	4614 Chandler Ridge Circle	1	B	61	65	4
R0350E	4624 Chandler Ridge Circle	1	B	66	69	3
R0350F	4634 Chandler Ridge Circle	1	B	66	69	3
R0350G	4611 Chandler Ridge Circle	1	B	60	63	3
R0350H	4621 Chandler Ridge Circle	1	B	65	68	3
R0350I	4631 Chandler Ridge Circle	1	B	64	69	5
R0350J	4612 Chandler Ridge Circle	1	B	55	58	3
R0350K	4622 Chandler Ridge Circle	1	B	60	64	4
R0350L	4632 Chandler Ridge Circle	1	B	62	65	3
R0351	9101 FAYETTEVILLE RD	SCHOOL	C	54	61	7
R0352	9101 FAYETTEVILLE RD	SCHOOL	D	40[3]	46	6
R0353	9101 FAYETTEVILLE RD	SCHOOL	C	54[3]	57	3
R0357	9304 FANNY BROWN RD	1	B	54[3]	59	5
R0358A	9317 FANNY BROWN RD	1	B	54[3]	61	7
R0358B	9309 FANNY BROWN RD	1	B	54[3]	58	4
R0359	9500 FANNY BROWN RD	1	B	54[3]	57	3
R0362A	4516 CHESHIRE DOWNS CT	1	B	54[3]	57	3
R0362B	4512 CHESHIRE DOWNS CT	1	B	54[3]	56	2
R0362C	4508 CHESHIRE DOWNS CT	1	B	54[3]	60	6
R0363A	4504 CHESHIRE DOWNS CT	1	B	58	64	6
R0363B	4500 CHESHIRE DOWNS CT	1	B	55	67	12

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Complete 540

Traffic Noise Analysis

IMPACT ANALYSIS TABLE

Receptor	Property Address	Properties Represented	NAC Land Use Category	2016 Existing[3]	2040 DSA-2 Build[1,3]	2040 DSA-2 Increase[2]
R0363C	4501 CHESHIRE DOWNS CT	1	B	54[3]	71	17
R0364	1400 LANERIDGE CT	1	B	54[3]	60	6
R0365A	1348 LANERIDGE CT	1	B	54[3]	58	4
R0365B	1344 LANERIDGE CT	1	B	54[3]	59	5
R0365C	1352 LANERIDGE CT	1	B	54[3]	56	2
R0366A	1328 LANERIDGE CT	1	B	54[3]	61	7
R0366B	1332 LANERIDGE CT	1	B	54[3]	60	6
R0366C	1336 LANERIDGE CT	1	B	54[3]	60	6
R0367A	1320 LANERIDGE CT	1	B	54[3]	60	6
R0367B	1324 LANERIDGE CT	1	B	54[3]	63	9
R0367C	1316 LANERIDGE CT	1	B	54[3]	59	5
R0368A	1349 LANERIDGE CT	1	B	54[3]	54[3]	0
R0368B	1341 LANERIDGE CT	1	B	54[3]	54[3]	0
R0370A	1313 LANERIDGE CT	1	B	54[3]	54[3]	0
R0370B	1317 LANERIDGE CT	1	B	54[3]	54[3]	0
R0370C	1329 LANERIDGE CT	1	B	54[3]	54[3]	0
R0371	1312 LANERIDGE CT	1	B	54[3]	55	1
R0375A	4817 TROTTER DR	1	B	54[3]	57	3
R0375B	4821 TROTTER DR	1	B	54[3]	58	4
R0376A	4905 TROTTER DR	1	B	54[3]	60	6
R0376B	4909 TROTTER DR	1	B	54[3]	61	7
R0376C	4901 TROTTER DR	1	B	54[3]	59	5
R0377A	4917 TROTTER DR	1	B	54[3]	61	7
R0377B	4921 TROTTER DR	1	B	54[3]	61	7
R0377C	4925 TROTTER DR	1	B	54[3]	58	4
R0378A	4941 TROTTER DR	1	B	54[3]	58	4
R0378B	4937 TROTTER DR	1	B	54[3]	59	5
R0378C	4945 TROTTER DR	1	B	54[3]	58	4
R0379A	4808 TROTTER DR	1	B	54[3]	54[3]	0
R0379B	4812 TROTTER DR	1	B	54[3]	54[3]	0
R0379C	1300 WYNNCREST CT	1	B	54[3]	54[3]	0
R0380A	4900 TROTTER DR	1	B	54[3]	54[3]	0
R0380B	4908 TROTTER DR	1	B	54[3]	55	1
R0381A	4912 TROTTER DR	1	B	54[3]	54[3]	0
R0381B	4916 TROTTER DR	1	B	54[3]	56	2
R0383A	1309 WYNNCREST CT	1	B	54[3]	54[3]	0
R0383B	1313 WYNNCREST CT	1	B	54[3]	54[3]	0
R0387A	1221 ROLLING FARM DR	1	B	54[3]	64	10
R0387B	1225 ROLLING FARM DR	1	B	54[3]	69	15
R0388A	1220 ROLLING FARM DR	1	B	54[3]	57	3
R0388B	1224 ROLLING FARM DR	1	B	54[3]	65	11
R0389A	1216 ROLLING FARM DR	1	B	54[3]	54[3]	0
R0389B	1212 ROLLING FARM DR	1	B	54[3]	54[3]	0

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Complete 540

Traffic Noise Analysis

IMPACT ANALYSIS TABLE

Receptor	Property Address	Properties Represented	NAC Land Use Category	2016 Existing[3]	2040 DSA-2 Build[1,3]	2040 DSA-2 Increase[2]
R0389C	1208 ROLLING FARM DR	1	B	54[3]	54[3]	0
R0390A	1217 ROLLING FARM DR	1	B	54[3]	55	1
R0390B	1213 ROLLING FARM DR	1	B	54[3]	56	2
R0391A	1209 ROLLING FARM DR	1	B	54[3]	59	5
R0391B	1205 ROLLING FARM DR	1	B	54[3]	57	3
R0392A	1201 ROLLING FARM DR	1	B	54[3]	56	2
R0392B	1129 ROLLING FARM DR	1	B	54[3]	58	4
R0393A	1121 ROLLING FARM DR	1	B	54[3]	57	3
R0393B	1125 ROLLING FARM DR	1	B	54[3]	56	2
R0393C	1117 ROLLING FARM DR	1	B	54[3]	57	3
R0404	1105 ROLLING FARM DR	1	B	54[3]	57	3
R0405	1104 ROLLING FARM DR	1	B	54[3]	54[3]	0
R0406A	1029 ROLLING FARM DR	1	B	54[3]	54[3]	0
R0406B	1025 ROLLING FARM DR	1	B	54[3]	54[3]	0
R0406C	1033 ROLLING FARM DR	1	B	54[3]	54[3]	0
R0407A	1017 ROLLING FARM DR	1	B	54[3]	57	3
R0407B	1021 ROLLING FARM DR	1	B	54[3]	54	0
R0407C	1013 ROLLING FARM DR	1	B	54[3]	57	3
R0408	9200 OLD STAGE RD	1	B	54[3]	59	5
R0409A	9104 OLD STAGE RD	1	B	54[3]	59	5
R0409B	9108 OLD STAGE RD	1	B	54[3]	54[3]	0
R0411A	9029 OLD STAGE RD	1	B	54[3]	56	2
R0411B	9101 OLD STAGE RD	1	B	54[3]	55	1
R0412A	9105 OLD STAGE RD	1	B	54[3]	54[3]	0
R0412B	9109 OLD STAGE RD	1	B	54[3]	54[3]	0
R0413	9201 OLD STAGE RD	1	B	54[3]	54	0
R0414	9216 OLD STAGE RD	1	B	57	65	8
R0419A	9516 OLD STAGE RD	1	B	54[3]	60	6
R0419B	2504 ROLLING MEADOWS DR	1	B	54[3]	58	4
R0420A	2510 ROLLING MEADOWS DR	1	B	54[3]	54[3]	0
R0420B	2508 ROLLING MEADOWS DR	1	B	54[3]	54	0
R0420C	2506 ROLLING MEADOWS DR	1	B	54[3]	56	2
R0426	9605 OLD STAGE RD	1	B	54	60	6
R0427	9701 OLD STAGE RD	1	B	54[3]	59	5
R0428	9713 OLD STAGE RD	PLACE OF WORSHIP	C	57	63	6
R0429	9801 OLD STAGE RD	1	B	57	62	5
R0430	9708 OLD STAGE RD	1	B	54	58	4
R0483A	5321 HOLLAND CHURCH RD	1	B	45[3]	61	16
R0483B	5323 HOLLAND CHURCH RD	1	B	45[3]	62	17
R0486	5101 HOLLAND CHURCH RD	1	B	50	58	8
R0497A	4912 CONTENDER DR	1	B	45[3]	67	22
R0497B	4908 CONTENDER DR	1	B	45[3]	66	21
R0497C	4916 CONTENDER DR	1	B	45[3]	67	22

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Complete 540

Traffic Noise Analysis

IMPACT ANALYSIS TABLE

Receptor	Property Address	Properties Represented	NAC Land Use Category	2016 Existing[3]	2040 DSA-2 Build[1,3]	2040 DSA-2 Increase[2]
R0498A	4924 CONTENDER DR	1	B	45[3]	66	21
R0498B	4928 CONTENDER DR	1	B	45[3]	66	21
R0498C	4920 CONTENDER DR	1	B	45[3]	66	21
R0499A	4936 CONTENDER DR	1	B	45[3]	66	21
R0499B	4932 CONTENDER DR	1	B	45[3]	66	21
R0499C	4940 CONTENDER DR	1	B	45[3]	66	21
R0500A	4933 CONTENDER DR	1	B	45[3]	56	11
R0500B	8716 NEW RIVER CIR	1	B	45[3]	56	11
R0501A	5000 CONTENDER DR	1	B	45[3]	68	23
R0501B	5004 CONTENDER DR	1	B	45[3]	67	22
R0502A	8713 NEW RIVER CIR	1	B	45[3]	57	12
R0502B	5005 CONTENDER DR	1	B	45[3]	56	11
R0503A	5012 CONTENDER DR	1	B	45[3]	65	20
R0503B	5008 CONTENDER DR	1	B	45[3]	67	22
R0504A	5013 CONTENDER DR	1	B	45[3]	55	10
R0504B	5021 CONTENDER DR	1	B	45[3]	53	8
R0505A	5016 CONTENDER DR	1	B	45[3]	61	16
R0505B	5020 CONTENDER DR	1	B	45[3]	58	13
R0506A	5024 CONTENDER DR	1	B	45[3]	56	11
R0506B	5028 CONTENDER DR	1	B	45[3]	55	10
R0507A	8929 CAROLINA MARLIN CT	1	B	45[3]	52	7
R0507B	4804 KURE CT	1	B	45[3]	50	5
R0508A	4812 KURE CT	1	B	49	54	5
R0509A	5032 CONTENDER DR	1	B	45	54	9
R0509B	5036 CONTENDER DR	1	B	52	58	6
R0510A	5104 AUTUMN FIELD DR	1	B	53	58	5
R0510B	5200 AUTUMN FIELD DR	1	B	50	55	5
R0511A	8909 SAULS RD	1	B	46[3]	53	7
R0511B	8913 SAULS RD	1	B	50	57	7
R0512A	5201 AUTUMN FIELD DR	1	B	46[3]	46[3]	0
R0512B	5205 AUTUMN FIELD DR	1	B	46[3]	46	0
R0513B	8920 SAULS RD	1	B	47	56	9
R0517	9012 SAULS RD	1	B	47	60	13
R0518A	1405 TAVERNIER KNOLL LN	1	B	45[3]	61	16
R0518B	1409 TAVERNIER KNOLL LN	1	B	45[3]	58	13
R0518C	1401 TAVERNIER KNOLL LN	1	B	45[3]	59	14
R0519A	1325 TAVERNIER KNOLL LN	1	B	45[3]	62	17
R0519B	1329 TAVERNIER KNOLL LN	1	B	45[3]	60	15
R0520A	1317 TAVERNIER KNOLL LN	1	B	45[3]	66	21
R0520B	1321 TAVERNIER KNOLL LN	1	B	45[3]	61	16
R0521A	1229 TAVERNIER KNOLL LN	1	B	45[3]	55	10
R0521B	1233 TAVERNIER KNOLL LN	1	B	45[3]	58	13
R0522A	1221 TAVERNIER KNOLL LN	1	B	45[3]	52	7

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Complete 540

Traffic Noise Analysis

IMPACT ANALYSIS TABLE

Receptor	Property Address	Properties Represented	NAC Land Use Category	2016 Existing[3]	2040 DSA-2 Build[1,3]	2040 DSA-2 Increase[2]
R0522B	1217 TAVERNIER KNOLL LN	1	B	45[3]	51	6
R0523A	9108 COCONUT LN	1	B	45[3]	52	7
R0526A	9105 KON TIKI CT	1	B	45[3]	45[3]	0
R0526B	9101 KON TIKI CT	1	B	45[3]	46	1
R0526C	1208 TAVERNIER KNOLL LN	1	B	45[3]	46	1
R0526D	9104 KON TIKI CT	1	B	45[3]	54	9
R0527A	9012 DUVAL HILL ST	1	B	45[3]	48	3
R0527B	9016 DUVAL HILL ST	1	B	45[3]	46	1
R0528A	9024 DUVAL HILL ST	1	B	45[3]	47	2
R0528B	9020 DUVAL HILL ST	1	B	45[3]	46	1
R0532A	1120 TAVERNIER KNOLL LN	1	B	45[3]	47	2
R0532B	1112 TAVERNIER KNOLL LN	1	B	45[3]	47	2
R0533A	9021 DUVAL HILL ST	1	B	45[3]	46	1
R0533B	9017 DUVAL HILL ST	1	B	45[3]	48	3
R0534A	9013 DUVAL HILL ST	1	B	45[3]	47	2
R0534B	9009 DUVAL HILL ST	1	B	45[3]	48	3
R0534C	9005 DUVAL HILL ST	1	B	45[3]	49	4
R0540	9114 SAULS RD	1	B	51	57	6
R0541	9104 SAULS RD	PLACE OF WORSHIP	D	40	45	5
R0542	9016 SAULS RD	1	B	46	54	8
R0543	9109 SAULS RD	SCHOOL	D	40[3]	43	3
R0544A	717 COMMUNITY GARDEN RD	1	B	46[3]	62	16
R0544B	729 COMMUNITY GARDEN RD	1	B	46[3]	65	19
R0545	9137 SAULS RD	1	B	46[3]	57	11
R0546	9125 SAULS RD	1	B	46[3]	72	26
R0547	2028 PONDSEDGE TRL	1	B	46[3]	57	11
R0548A	9928 HUNTWYCK DR	1	B	46[3]	55	9
R0548B	9924 HUNTWYCK DR	1	B	46[3]	54	8
R0549A	9937 HUNTWYCK DR	1	B	46[3]	48	2
R0549B	9925 HUNTWYCK DR	1	B	46[3]	47	1
R0550	9941 HUNTWYCK DR	1	B	46[3]	50	4
R0551A	9940 HUNTWYCK DR	1	B	46[3]	59	13
R0551B	9936 HUNTWYCK DR	1	B	46[3]	56	10
R0552	9944 HUNTWYCK DR	1	B	46[3]	60	14
R0553	9948 HUNTWYCK DR	1	B	46[3]	64	18
R0554A	9952 HUNTWYCK DR	1	B	46[3]	67	21
R0554B	9957 HUNTWYCK DR	1	B	46[3]	68	22
R0555A	9953 HUNTWYCK DR	1	B	46[3]	64	18
R0555B	9949 HUNTWYCK DR	1	B	46[3]	53	7
R0555C	9945 HUNTWYCK DR	1	B	46[3]	55	9
R0556A	905 SHANNONDALE DR	1	B	46[3]	67	21
R0556B	909 SHANNONDALE DR	1	B	46[3]	62	16
R0556C	913 SHANNONDALE DR	1	B	46[3]	59	13

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3 Measured noise levels reported if traffic not the dominant noise source

Complete 540

Traffic Noise Analysis

IMPACT ANALYSIS TABLE

Receptor	Property Address	Properties Represented	NAC Land Use Category	2016 Existing[3]	2040 DSA-2 Build[1,3]	2040 DSA-2 Increase[2]
R0557A	912 SHANNONDALE DR	1	B	46[3]	63	17
R0557B	904 SHANNONDALE DR	1	B	46[3]	68	22
R0558A	920 SHANNONDALE DR	1	B	46[3]	58	12
R0558B	928 SHANNONDALE DR	1	B	46[3]	57	11
R0559A	10136 JOE LEACH RD	1	B	46[3]	61	15
R0559B	10132 JOE LEACH RD	1	B	46[3]	60	14
R0559C	10140 JOE LEACH RD	1	B	46[3]	65	19
R0560A	10173 JOE LEACH RD	1	B	46[3]	61	15
R0560B	10165 JOE LEACH RD	1	B	46[3]	57	11
R0562	10175 JOE LEACH RD	1	B	46[3]	58	12
R0563A	200 LASSITER FARM RD	1	B	46[3]	58	12
R0563B	204 LASSITER FARM RD	1	B	46[3]	56	10
R0564A	208 LASSITER FARM RD	1	B	46[3]	54	8
R0564B	212 LASSITER FARM RD	1	B	46[3]	53	7
R0564C	10112 JOE LEACH RD	1	B	46[3]	53	7
R0565A	201 LASSITER FARM RD	1	B	46[3]	53	7
R0565B	205 LASSITER FARM RD	1	B	46[3]	50	4
R0576A	10037 JOE LEACH RD	1	B	46[3]	49	3
R0576B	10101 JOE LEACH RD	1	B	46[3]	46	0
R0577A	10113 JOE LEACH RD	1	B	46[3]	48	2
R0577B	10109 JOE LEACH RD	1	B	46[3]	49	3
R0577C	10105 JOE LEACH RD	1	B	46[3]	47	1
R0582A	1017 SHANNONDALE DR	1	B	46[3]	47	1
R0582B	1021 SHANNONDALE DR	1	B	46[3]	46	0
R0583A	1025 SHANNONDALE DR	1	B	46[3]	46[3]	0
R0583B	1029 SHANNONDALE DR	1	B	46[3]	46[3]	0
R0637	10308 JORDAN RD	1	B	46[3]	62	16
R0638	10320 JORDAN RD	1	B	49	64	15
R0641A	605 CLEE CIR	1	B	46[3]	63	17
R0641B	608 CLEE CIR	1	B	46[3]	59	13
R0641C	10237 JORDAN RD	1	B	46[3]	60	14
R0642A	613 CLEE CIR	1	B	46[3]	57	11
R0642B	609 CLEE CIR	1	B	46[3]	59	13
R0642C	612 CLEE CIR	1	B	46[3]	54	8
R0643	10337 JORDAN RD	1	B	46[3]	64	18
R0644	10400 JORDAN RD	1	B	46[3]	61	15
R0645A	10416 JORDAN RD	1	B	46[3]	57	11
R0645B	10408 JORDAN RD	1	B	47	61	14
R0646	10401 JORDAN RD	1	B	47	65	18
R0647	10417 JORDAN RD	1	B	49	60	11
R0648A	1525 UPCHURCH WOODS DR	1	B	46[3]	52	6
R0648B	1521 UPCHURCH WOODS DR	1	B	46[3]	53	7
R0649A	1519 UPCHURCH WOODS DR	1	B	46[3]	54	8

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Complete 540

Traffic Noise Analysis

IMPACT ANALYSIS TABLE

Receptor	Property Address	Properties Represented	NAC Land Use Category	2016 Existing[3]	2040 DSA-2 Build[1,3]	2040 DSA-2 Increase[2]
R0649B	1515 UPCHURCH WOODS DR	1	B	46[3]	54	8
R0650A	1509 UPCHURCH WOODS DR	1	B	52	58	6
R0650B	1513 UPCHURCH WOODS DR	1	B	46	55	9
R0650C	1505 UPCHURCH WOODS DR	1	B	53	58	5
R0652A	5933 STANCIL FARM RD	1	B	46[3]	62	16
R0652B	6005 STANCIL FARM RD	1	B	46[3]	62	16
R0681A	5505 SIMMONS DR	1	B	51	52	1
R0681B	1105 GOLDEN GRAIN RD	1	B	56	57	1
R0681C	1109 GOLDEN GRAIN RD	1	B	53	55	2
R0682	1108 GOLDEN GRAIN RD	1	B	56	59	3
R0722A	5308 SERATHER CT	1	B	50[3]	57	7
R0722B	5304 SERATHER CT	1	B	50[3]	59	9
R0723A	5301 SERATHER CT	1	B	50[3]	68	18
R0723B	5300 SERATHER CT	1	B	50[3]	63	13
R0724A	5305 SERATHER CT	1	B	50[3]	63	13
R0724B	5309 SERATHER CT	1	B	50[3]	61	11
R0726A	921 TURNER POND DR	1	B	55	56	1
R0726B	917 TURNER POND DR	1	B	58	60	2
R0727B	3753 WAKEFIELD LN	1	B	50[3]	50[3]	0
R0728A	3757 WAKEFIELD LN	1	B	50[3]	50[3]	0
R0728B	3761 WAKEFIELD LN	1	B	50[3]	50[3]	0
R0729A	3756 WAKEFIELD LN	1	B	50[3]	50[3]	0
R0729B	3760 WAKEFIELD LN	1	B	50[3]	51	1
R0729C	3752 WAKEFIELD LN	1	B	50[3]	50	0
R0730A	909 TURNER POND DR	1	B	50	52	2
R0730B	913 TURNER POND DR	1	B	51	51	0
R0731	905 TURNER POND DR	1	B	50[3]	50	0
R0732	901 TURNER POND DR	1	B	50[3]	52	2
R0733A	5208 DOUBLE D ACRES DR	1	B	50[3]	50[3]	0
R0733B	5204 DOUBLE D ACRES DR	1	B	50[3]	51	1
R0734	1236 GRISSOM FARM RD	1	B	58	60	2
R0735	1216 GRISSOM FARM RD	1	B	50[3]	54	4
R0736A	1200 GRISSOM FARM RD	1	B	50[3]	55	5
R0736B	1208 GRISSOM FARM RD	1	B	50[3]	55	5
R0737A	1113 GRISSOM FARM RD	1	B	50[3]	50[3]	0
R0737B	1201 GRISSOM FARM RD	1	B	50[3]	50[3]	0
R0738	1109 GRISSOM FARM RD	1	B	50[3]	51	1
R0741A	5505 TREKWOOD DR	1	B	50[3]	56	6
R0741B	5501 TREKWOOD DR	1	B	50[3]	55	5
R0741C	5509 TREKWOOD DR	1	B	50[3]	58	8
R0745A	5517 TREKWOOD DR	1	B	50[3]	60	10
R0745B	5521 TREKWOOD DR	1	B	50[3]	62	12
R0745C	5513 TREKWOOD DR	1	B	50[3]	59	9

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Traffic Noise Analysis

IMPACT ANALYSIS TABLE

Receptor	Property Address	Properties Represented	NAC Land Use Category	2016 Existing[3]	2040 DSA-2 Build[1,3]	2040 DSA-2 Increase[2]
R0746A	5324 WOODBREK DR	1	B	50[3]	60	10
R0746B	5328 WOODBREK DR	1	B	50[3]	62	12
R0746C	5332 WOODBREK DR	1	B	50[3]	65	15
R0747A	5333 WOODBREK DR	1	B	50[3]	65	15
R0747B	5336 WOODBREK DR	1	B	50[3]	66	16
R0747C	5525 TREKWOOD DR	1	B	50[3]	62	12
R0747D	5528 TREKWOOD DR	1	B	50[3]	55	5
R0747E	5520 TREKWOOD DR	1	B	50[3]	55	5
R0748A	933 OPEN FIELD DR	1	B	50[3]	57	7
R0748B	929 OPEN FIELD DR	1	B	50[3]	57	7
R0749A	1001 OPEN FIELD DR	1	B	50[3]	56	6
R0749B	1005 OPEN FIELD DR	1	B	50[3]	57	7
R0750A	932 OPEN FIELD DR	1	B	50[3]	53	3
R0750B	928 OPEN FIELD DR	1	B	50[3]	55	5
R0750C	1004 OPEN FIELD DR	1	B	50[3]	53	3
R0751A	1012 OPEN FIELD DR	1	B	50[3]	50[3]	0
R0751B	1020 OPEN FIELD DR	1	B	50[3]	50[3]	0
R0752A	1009 OPEN FIELD DR	1	B	50[3]	57	7
R0752B	1013 OPEN FIELD DR	1	B	50[3]	57	7
R0753A	1017 OPEN FIELD DR	1	B	53	58	5
R0753B	1021 OPEN FIELD DR	1	B	50[3]	52	2
R0754	1029 OPEN FIELD DR	1	B	50[3]	51	1
R0755	4012 BENSON RD	1	B	56	58	2
R0756	3933 BENSON RD	1	B	56	60	4
R0757A	1033 OPEN FIELD DR	1	B	50[3]	53	3
R0757B	1037 OPEN FIELD DR	1	B	50	54	4
R0758A	4020 BENSON RD	1	B	53	56	3
R0758B	4024 BENSON RD	1	B	56	58	2
R0759A	1112 OPEN FIELD DR	1	B	50[3]	50[3]	0
R0759B	1100 OPEN FIELD DR	1	B	50[3]	50	0
R0760A	1105 OPEN FIELD DR	1	B	63	65	2
R0760B	1109 OPEN FIELD DR	1	B	59	61	2
R0760C	1101 OPEN FIELD DR	1	B	58	61	3
R0761A	1116 OPEN FIELD DR	1	B	50[3]	50[3]	0
R0761B	1120 OPEN FIELD DR	1	B	50[3]	50[3]	0
R0762A	6929 STEVENS OAKS DR	1	B	59	60	1
R0762B	1117 OPEN FIELD DR	1	B	56	58	2
R0762C	1113 OPEN FIELD DR	1	B	59	61	2
R0763	6924 STEVENS OAKS DR	1	B	50[3]	50[3]	0
R0764	1209 OPEN FIELD DR	1	B	52	55	3
R0765A	7001 CLEVELAND SCHOOL RD	1	B	56	57	1
R0765B	3530 PARRISH FARM RD	1	B	50	53	3
R0803	251 NEW BETHEL	1	B	58	62	4

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3 Measured noise levels reported if traffic not the dominant noise source

Complete 540

Traffic Noise Analysis

IMPACT ANALYSIS TABLE

Receptor	Property Address	Properties Represented	NAC Land Use Category	2016 Existing[3]	2040 DSA-2 Build[1,3]	2040 DSA-2 Increase[2]
R0804A	2420 NEW BETHEL CHURCH RD	1	B	58	62	4
R0804B	2432 NEW BETHEL CHURCH RD	1	B	54	58	4
R0804C	2428 NEW BETHEL CHURCH RD	1	B	61	65	4
R0805	2425 NEW BETHEL CHURCH RD	1	B	60	62	2
R0806	2520 NEW BETHEL CHURCH RD	1	B	64	68	4
R0807	2509 NEW BETHEL CHURCH RD	1	B	63	65	2
R0808A	4504 BARRINGTON HILLS LN	1	B	56	56	0
R0808B	4512 BARRINGTON HILLS LN	1	B	51	52	1
R0809A	4505 BARRINGTON HILLS LN	1	B	59	61	2
R0809B	4509 BARRINGTON HILLS LN	1	B	53	54	1
R0811A	7101 LITTLE SHANNON DR	1	B	53	55	2
R0811B	7105 LITTLE SHANNON DR	1	B	54	56	2
R0816A	7117 BREEZY BRANCH LN	1	B	49[3]	49	0
R0816B	7113 BREEZY BRANCH LN	1	B	49[3]	49[3]	0
R0817A	7125 BREEZY BRANCH LN	1	B	49[3]	49[3]	0
R0817B	7121 BREEZY BRANCH LN	1	B	49[3]	49[3]	0
R0856	4608 SELLIE DR	1	B	65	70	5
R0857	4517 HICKS RD	1	B	67	73	6
R0858A	4501 HICKS RD	1	B	62	66	4
R0858B	4425 HICKS RD	1	B	60	64	4
R0859	4302 HICKS RD	1	B	66	72	6
R0860A	4312 SMITH LANDING DR	1	B	74	76	2
R0860B	4308 SMITH LANDING DR	1	B	71	75	4
R0864A	2904 HAYWARD CT	1	B	58	61	3
R0864B	2908 HAYWARD CT	1	B	55	57	2
R0865A	2912 HAYWARD CT	1	B	49[3]	51	2
R0866A	2905 HAYWARD CT	1	B	55	58	3
R0866B	2909 HAYWARD CT	1	B	50	54	4
R0868	9220 WHITE OAK RD	1	B	53	57	4
R0871	2913 ESCONDIDO FARM RD	1	B	49[3]	49[3]	0
R0872	2908 ESCONDIDO FARM RD	1	B	49[3]	49[3]	0
R0873	2824 ESCONDIDO FARM RD	1	B	49[3]	52	3
R0878	4221 SAND CASTLE DR	1	B	52	59	7
R0879A	4233 SAND CASTLE DR	1	B	50	55	5
R0879B	4232 SAND CASTLE DR	1	B	49	53	4
R0880A	4237 SAND CASTLE DR	1	B	49[3]	50	1
R0880B	4229 SAND CASTLE DR	1	B	49[3]	55	6
R0881A	8924 OLD CASCADE DR	1	B	49[3]	51	2
R0881B	8932 OLD CASCADE DR	1	B	49[3]	49	0
R0888A	8952 OLD CASCADE DR	1	B	49[3]	49	0
R0888B	8964 OLD CASCADE DR	1	B	49[3]	51	2
R0889A	9024 OLD CASCADE DR	1	B	49[3]	49[3]	0
R0889B	9012 OLD CASCADE DR	1	B	49[3]	49	0

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Complete 540

Traffic Noise Analysis

IMPACT ANALYSIS TABLE

Receptor	Property Address	Properties Represented	NAC Land Use Category	2016 Existing[3]		2040 DSA-2 Build[1,3]		2040 DSA-2 Increase[2]
R0890A	9020 MUSTARD SEED LN	1	B	49	[3]	49	[3]	0
R0890B	9024 MUSTARD SEED LN	1	B	49	[3]	49	[3]	0
R0890C	9016 MUSTARD SEED LN	1	B	49	[3]	49	[3]	0
R0891A	9008 MUSTARD SEED LN	1	B	49	[3]	50		1
R0891B	9012 MUSTARD SEED LN	1	B	49	[3]	49		0
R0892A	9004 MUSTARD SEED LN	1	B	49	[3]	51		2
R0892B	9000 MUSTARD SEED LN	1	B	49	[3]	52		3
R0893A	9017 MUSTARD SEED LN	1	B	49		53		4
R0893B	9025 MUSTARD SEED LN	1	B	49	[3]	49		0
R0894A	9009 MUSTARD SEED LN	1	B	49	[3]	54		5
R0894B	9013 MUSTARD SEED LN	1	B	49	[3]	52		3
R0894C	9001 MUSTARD SEED LN	1	B	49		56		7
R0895	8805 TIFFANY CREEK DR	1	B	57		63		6
R0896	8908 WHITE OAK RD	1	B	56		61		5
R0897A	8833 WHITE OAK RD	1	B	53		60		7
R0897B	8905 WHITE OAK RD	1	B	55		60		5
R0898	8817 WHITE OAK RD	1	B	49		50		1
R0899A	8812 WHITE OAK RD	1	B	54		57		3
R0899B	8816 WHITE OAK RD	1	B	52		58		6
R0905	8925 WHITE OAK RD	PLACE OF WORSHIP	C	64		57		-7
R0906A	5908 RAYNOR RD	1	B	49	[3]	51		2
R0906B	8925 WHITE OAK RD	1	B	49		51		2
R0907	5901 RAYNOR RD	1	B	54		55		1
R0909	5901 RAYNOR RD	1	B	49	[3]	55		6
R0910A	5804 RAYNOR RD	1	B	49		51		2
R0910B	5812 RAYNOR RD	1	B	51		55		4
R0911	5800 RAYNOR RD	1	B	49		51		2
R0912A	105 TWAIN DR	1	B	49	[3]	50		1
R0912B	105 TWAIN DR	1	B	49	[3]	49		0
R0916A	4219 BATTLE FIELD DR	1	B	70		73		3
R0916B	4215 BATTLE FIELD DR	1	B	71		74		3
R0916C	4211 BATTLE FIELD DR	1	B	71		74		3
R0917	4214 BATTLE FIELD DR	1	B	60		62		2
R0918A	4201 BATTLE FIELD DR	1	B	70		74		4
R0918B	4205 BATTLE FIELD DR	1	B	70		74		4
R0918C	4151 BATTLE FIELD DR	1	B	71		75		4
R0919A	2605 RIFLE RIDGE CT	1	B	58		61		3
R0919B	2609 RIFLE RIDGE CT	1	B	56		58		2
R0920	2608 RIFLE RIDGE CT	1	B	51		53		2
R0921A	2604 RIFLE RIDGE CT	1	B	54		55		1
R0921B	2600 RIFLE RIDGE CT	1	B	57		58		1
R0921C	4144 BATTLE FIELD DR	1	B	52		53		1
R0922A	4143 BATTLE FIELD DR	1	B	69		73		4

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Complete 540

Traffic Noise Analysis

IMPACT ANALYSIS TABLE

Receptor	Property Address	Properties Represented	NAC Land Use Category	2016 Existing[3]	2040 DSA-2 Build[1,3]	2040 DSA-2 Increase[2]
R0922B	4147 BATTLE FIELD DR	1	B	70	74	4
R0923A	4139 BATTLE FIELD DR	1	B	66	71	5
R0923B	4135 BATTLE FIELD DR	1	B	63	66	3
R0924A	4132 BATTLE FIELD DR	1	B	51	52	1
R0924B	4136 BATTLE FIELD DR	1	B	50	51	1
R0928	4127 BATTLE FIELD DR	1	B	54	58	4
R0931A	3921 LAUROB LN	1	B	68	72	4
R0931B	3917 LAUROB LN	1	B	73	76	3
R1402A	2028 US 70 HWY E	1	B	57[3]	57[3]	0
R1402B	2032 US 70 HWY E	1	B	57[3]	58	1
R1403	2100 US 70 HWY E	1	B	57[3]	61	4
R1407A	139 Walnut Drive	1	B	60	62	2
R1407B	137 Walnut Drive	1	B	60	63	3
R1407C	141 Walnut Drive	1	B	61	64	3
R1408A	133 Walnut Drive	1	B	57[3]	60	3
R1408B	135 Walnut Drive	1	B	58	62	4
R1409A	127 Walnut Drive	1	B	57[3]	58	1
R1409B	131 Walnut Drive	1	B	57[3]	59	2
R1409C	129 Walnut Drive	1	B	57[3]	58	1
R1410	134 Walnut Drive	1	B	57[3]	60	3
R1411A	130 Walnut Drive	1	B	57[3]	57[3]	0
R1411B	128 Walnut Drive	1	B	57[3]	57[3]	0
R1411C	126 Walnut Drive	1	B	57[3]	58	1
R1411D	132 Walnut Drive	1	B	57[3]	57	0
R1412	135 Buffaloe Acres Lane	1	B	57	59	2
R1413A	131 BUFFALOE ACRE LN	1	B	57[3]	57	0
R1413B	129 BUFFALOE ACRE LN	1	B	57[3]	57	0
R1413C	133 BUFFALOE ACRE LN	1	B	57[3]	57[3]	0
R1414A	138 BUFFALOE ACRE LN	1	B	61	64	3
R1414B	140 BUFFALOE ACRE LN	1	B	65	67	2
R1414C	136 BUFFALOE ACRE LN	1	B	59	62	3
R1415A	134A BUFFALOE ACRE LN	1	B	57[3]	59	2
R1415B	132 BUFFALOE ACRE LN	1	B	57[3]	57	0
R1415C	134 BUFFALOE ACRE LN	1	B	58	61	3
R1416	130 BUFFALOE ACRE LN	1	B	57[3]	57	0
R1430	2700 E GARNER RD	1	B	57[3]	61	4
R1431A	2637 E GARNER RD	1	B	57	63	6
R1431B	2701 E GARNER RD	1	B	57[3]	63	6
R1434	2809 E GARNER RD	1	B	57[3]	59	2
R1435A	2832 E GARNER RD	1	B	57	57[3]	0
R1435B	2828 E GARNER RD	1	B	57[3]	57[3]	0
R1448A	6905 ROCK QUARRY RD	1	B	57[3]	57[3]	0
R1448B	6833 ROCK QUARRY RD	1	B	57[3]	57[3]	0

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Complete 540

Traffic Noise Analysis

IMPACT ANALYSIS TABLE

Receptor	Property Address	Properties Represented	NAC Land Use Category	2016 Existing[3]	2040 DSA-2 Build[1,3]	2040 DSA-2 Increase[2]
R1449	7117 ROCK QUARRY RD	1	B	57[3]	58	1
R1469	2440 BRANCH RD	1	B	51[3]	68	17
R1470	2441 BRANCH RD	1	B	51[3]	65	14
R1473	3601 GRIFFICE MILL RD	1	B	51[3]	51[3]	0
R1476A	3509 GRIFFICE MILL RD	1	B	51[3]	51[3]	0
R1476B	4701 PRESERVE RD	1	B	51[3]	51[3]	0
R1476C	3505 GRIFFICE MILL RD	1	B	51[3]	51[3]	0
R1477	3433 GRIFFICE MILL RD	1	B	51[3]	51[3]	0
R1478A	3432 GRIFFICE MILL RD	1	B	51[3]	59	8
R1478B	3428 GRIFFICE MILL RD	1	B	51[3]	58	7
R1478C	3436 GRIFFICE MILL RD	1	B	51[3]	58	7
R1479A	3421 GRIFFICE MILL RD	1	B	51[3]	51[3]	0
R1479B	3417 GRIFFICE MILL RD	1	B	51[3]	52	1
R1479C	3425 GRIFFICE MILL RD	1	B	51[3]	51[3]	0
R1480A	3420 GRIFFICE MILL RD	1	B	52	61	9
R1480B	3424 GRIFFICE MILL RD	1	B	51[3]	61	10
R1481	3409 GRIFFICE MILL RD	1	B	51[3]	54	3
R1482A	2813 AUBURN KNIGHTDALE RD	1	B	56[3]	58	2
R1482B	2821 AUBURN KNIGHTDALE RD	1	B	56[3]	56	0
R1482C	2805 AUBURN KNIGHTDALE RD	1	B	56[3]	62	6
R1484	2828 AUBURN KNIGHTDALE RD	1	B	56[3]	58	2
R1490A	7341 SCENIC WOODS DR	1	B	56[3]	60	4
R1490B	7353 SCENIC WOODS DR	1	B	56[3]	64	8
R1491	7357 SCENIC WOODS DR	1	B	56[3]	73	17
R1492A	1608 STONE STREAM DR	1	B	56[3]	61	5
R1492B	3916 BRANCH PARK DR	1	B	56[3]	61	5
R1493A	1704 SHALLOW WATER DR.	1	B	56[3]	68	12
R1493B	1700 SHALLOW WATER DR.	1	B	56[3]	65	9
R1495A	1513 STONE STREAM DR	1	B	56[3]	68	12
R1495B	1705 SHALLOW WATER DR.	1	B	56[3]	71	15
R1496A	1709 SHALLOW WATER DR.	1	B	56[3]	65	9
R1496B	1713 SHALLOW WATER DR.	1	B	56[3]	67	11
R1497A	1717 SHALLOW WATER DR.	1	B	56[3]	67	11
R1497B	1721 SHALLOW WATER DR.	1	B	56[3]	70	14
R1499A	1708 SHALLOW WATER DR	1	B	56[3]	65	9
R1499B	1712 SHALLOW WATER DR.	1	B	56[3]	65	9
R1499C	1716 SHALLOW WATER DR.	1	B	56[3]	66	10
R1499D	1718 SHALLOW WATER DR.	1	B	56[3]	66	10
R1500A	1408 Orchard Farm Lane	1	B	56[3]	62	6
R1500B	1412 Orchard Farm Lane	1	B	56[3]	62	6
R1500C	1416 Orchard Farm Lane	1	B	56[3]	62	6
R1502A	1409 Orchard Farm Lane	1	B	56[3]	58	2
R1502B	1413 Orchard Farm Lane	1	B	56[3]	60	4

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Traffic Noise Analysis

IMPACT ANALYSIS TABLE

Receptor	Property Address	Properties Represented	NAC Land Use Category	2016 Existing[3]	2040 DSA-2 Build[1,3]	2040 DSA-2 Increase[2]
R1502C	1405 Orchard Farm Lane	1	B	56[3]	57	1
R1503A	1329 Orchard Farm Lane	1	B	56[3]	60	4
R1503B	1325 Orchard Farm Lane	1	B	56[3]	58	2
R1503C	1333 Orchard Farm Lane	1	B	56[3]	62	6
R1504A	1321 Orchard Farm Lane	1	B	56[3]	59	3
R1504B	1317 Orchard Farm Lane	1	B	56[3]	57	1
R1505A	1308 Covered Wagon Lane	1	B	56[3]	60	4
R1505B	1304 Covered Wagon Lane	1	B	56[3]	60	4
R1506A	1309 Orchard Farm Lane	1	B	56[3]	56	0
R1506B	1305 Orchard Farm Lane	1	B	56[3]	56	0
R1507A	2708 Old Hickory Lane	1	B	56[3]	59	3
R1507B	2704 Old Hickory Lane	1	B	56[3]	56	0
R1508A	1217 Orchard Farm Lane	1	B	56[3]	57	1
R1508B	2709 Old Hickory Lane	1	B	56[3]	58	2
R1508C	2705 Old Hickory Lane	1	B	56[3]	58	2
R1509A	1012 Foxvale Court	1	B	56[3]	57	1
R1509B	1008 Foxvale Court	1	B	56[3]	58	2
R1510A	1221 Orchard Farm Lane	1	B	56[3]	56	0
R1510B	1004 Foxvale Court	1	B	56[3]	56	0
R1515A	4201 Flower Garden Drive	1	B	56[3]	67	11
R1515B	7407 POOLE RD	1	B	56[3]	72	16
R1516A	4205 Flower Garden Drive	1	B	61	67	6
R1516B	7333 Poole Road	1	B	59	67	8
R1517	7317 Poole Road & 7325 Poole Road	1	B	61	64	3
R1518	2529 Hodge Road	1	B	60	64	4
R1519A	2521 Hodge Road	1	B	56[3]	56[3]	0
R1519B	1204 Paradise Valley Court	1	B	56[3]	58	2
R1520A	1213 Oaradise Valley Court	1	B	56[3]	63	7
R1520B	4105 Revine Drive	1	B	56[3]	63	7
R1520C	4008 Old Stones Mill Street	1	B	56[3]	63	7
R1521A	4004 Old Stones Mill Street	1	B	56[3]	62	6
R1521B	4000 Old Stones Mill Street	1	B	56[3]	61	5
R1521C	1120 Southern Living Drive	1	B	56[3]	61	5
R1522A	1116 Southern Living Drive	1	B	56[3]	56[3]	0
R1522B	1124 Southern Living Drive	1	B	56[3]	57	1
R1522C	1124 Southern Living Drive	1	B	56[3]	56[3]	0
R1523A	3901 Old Woodard Street	1	B	56[3]	56[3]	0
R1523B	1113 Southern Living Drive	1	B	56[3]	56	0
R1524A	1116 Riverdale Street	1	B	56[3]	58	2
R1524B	3905 Old Woodward Street	1	B	56[3]	58	2
R1525A	4005 Old Stones Mill Street	1	B	56[3]	57	1
R1525B	4009 Old Stones Mill Street	1	B	56[3]	60	4
R1525C	4001 Old Stones Mill Street	1	B	56[3]	56	0

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Traffic Noise Analysis

IMPACT ANALYSIS TABLE

Receptor	Property Address	Properties Represented	NAC Land Use Category	2016 Existing[3]	2040 DSA-2 Build[1,3]	2040 DSA-2 Increase[2]
R1526	4013 Old Stones Mill Street	1	B	56[3]	66	10
R1527	1005 Hinnants Creek Street	1	B	56[3]	66	10
R1528A	1004 Southern Living Drive	1	B	56[3]	65	9
R1528B	1000 Southern Living Drive	1	B	56[3]	70	14
R1528C	1008 Southern Living Drive	1	B	56[3]	61	5
R1529A	2425 THICKET CT	1	B	56[3]	69	13
R1529B	2421 THICKET CT	1	B	56[3]	74	18
R1529C	2417 THICKET CT	1	B	56[3]	77	21
R1530A	2416 RADIANCE CT	1	B	56[3]	66	10
R1530B	2415 RADIANCE CT	1	B	56[3]	65	9
R1531A	2412 RADIANCE CT	1	B	56[3]	62	6
R1531B	2416 RADIANCE CT	1	B	56[3]	64	8
R1533A	5600 KNIGHTDALE ESTATES DR.	1	B	56[3]	74	18
R1533B	2404 THICKET CT	1	B	56[3]	75	19
R1533C	2408 THICKET CT	1	B	56[3]	75	19
R1534A	2405 RADIANCE CT	1	B	56[3]	65	9
R1534B	2401 RADIANCE CT	1	B	56[3]	65	9
R1534C	2409 RADIANCE CT	1	B	56[3]	67	11
R1535A	2404 Raidiace Ct	1	B	56[3]	62	6
R1535B	2400 RADIANCE CT.	1	B	56[3]	62	6
R1535C	2408 RADIANCE CT	1	B	56[3]	62	6
R1539A	3809 KNIGHTDALE ESTATES DR.	1	B	56[3]	76	20
R1539B	3666 LODGE DR.	1	B	56[3]	76	20
R1539C	3656 LODGE DR	1	B	56[3]	69	13
R1540A	3801 KNIGHTDALE ESTATES DR.	1	B	56[3]	65	9
R1540B	3805 KNIGHTDALE ESTATES DR.	1	B	56[3]	70	14
R1540C	3652 LODGE DR.	1	B	56[3]	64	8
R1541A	3729 KNIGHTDALE ESTATES DR.	1	B	56[3]	64	8
R1541B	3648 LODGE DR.	1	B	56[3]	63	7
R1541C	3644 LODGE DR.	1	B	56[3]	59	3
R1541D	3725 KNIGHTDALE ESTATES DR.	1	B	56[3]	61	5
R1542A	3612 KEMP DR	1	B	56[3]	63	7
R1542B	3616 KEMP DR	1	B	56[3]	65	9
R1543A	3624 KEMP DR	1	B	56[3]	69	13
R1543B	3620 KEMP DR	1	B	56[3]	68	12
R1546	3613 KEMP DR	1	B	56[3]	65	9
R1547A	3621 KEMP DR	1	B	56[3]	67	11
R1547B	3625 KEMP DR	1	B	56[3]	67	11
R1548A	3707 KEMP DR	1	B	56[3]	63	7
R1548B	3701 KEMP DR	1	B	56[3]	67	11
R1548C	3709 KEMP DR	1	B	56[3]	65	9
R1549A	3717 KEMP DR	1	B	56[3]	64	8
R1549B	3721 KEMP DR	1	B	56[3]	64	8

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Traffic Noise Analysis

IMPACT ANALYSIS TABLE

Receptor	Property Address	Properties Represented	NAC Land Use Category	2016 Existing[3]	2040 DSA-2 Build[1,3]	2040 DSA-2 Increase[2]
R1549C	3713 KEMP DR	1	B	56[3]	65	9
R1550A	3729 KEMP DR	1	B	56[3]	63	7
R1550B	3725 KEMP DR	1	B	56[3]	63	7
R1550C	3733 KEMP DR	1	B	56	62	6
R1551	4300 CLIFTON RD	1	B	64	66	2
R1552A	4135 CLIFTON RD	1	B	59	63	4
R1552B	4133 CLIFTON RD	1	B	62	65	3
R1553A	4109 CLIFTON RD	1	B	57[3]	59	2
R1553B	4113 CLIFTON RD	1	B	57	60	3
R1554	4100 CLIFTON RD	1	B	59	62	3
R1556A	4716 OLD FAISON RD	1	B	59	64	5
R1556B	4716 OLD FAISON RD	1	B	59	64	5
R1556C	4708 OLD FAISON RD	1	B	57	61	4
R1557A	4005 DREAM VALLEY DR	1	B	60	64	4
R1557B	4809 OLD FAISON RD	1	B	62	65	3
R1557C	4801 OLD FAISON RD	1	B	64	66	2
R1558A	105 GOWER DR	1	B	57[3]	59	2
R1558B	103 GOWER DR	1	B	57[3]	59	2
R1558C	101 GOWER DR	1	B	57[3]	60	3
R1559A	102 GOWER DR	1	B	64	66	2
R1559B	104 GOWER DR	1	B	64	67	3
R1559C	100 GOWER DR	1	B	65	65	0
R1560A	205 GOWER CIR	1	B	57[3]	66	9
R1560B	201 GOWER CIR	1	B	57	65	8
R1561A	202 GOWER CIR	1	B	67	74	7
R1561B	200 GOWER CIR	1	B	64	67	3
R1562A	206 GOWER CIR	1	B	64	69	5
R1562B	204 GOWER CIR	1	B	66	71	5
R1562C	208 GOWER CIR	1	B	63	66	3
R1597	9516 HOLLY SPRINGS RD	1	B	52[3]	58	6
R1598	5828 OLD SMITHFIELD RD	1	B	56	60	4
R1602	3500 BAKERS ALY	1	B	53	60	7
R1603C	3517 FORAKER ST	1	B	56	61	5
R1605	2124 E WILLIAMS ST	1	B	52	63	11
R1609A	8813 JUAQUIN LN	1	B	54[3]	59	5
R1609B	8817 JUAQUIN LN	1	B	54[3]	57	3
R1610A	3014 Dormitory Road	1	B	54[3]	54[3]	0
R1610B	3024 Dormitory Road	1	B	54[3]	54[3]	0
R1610C	3034 Dormitory Road	1	B	54[3]	55	1
R1610D	3012 Dormitory Road	1	B	54[3]	54[3]	0
R1610E	3022 Dormitory Road	1	B	54[3]	54[3]	0
R1610F	3032 Dormitory Road	1	B	54[3]	54	0
R1610G	3013 Dormitory Road	1	B	54[3]	54[3]	0

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Traffic Noise Analysis

IMPACT ANALYSIS TABLE

Receptor	Property Address	Properties Represented	NAC Land Use Category	2016 Existing[3]	2040 DSA-2 Build[1,3]	2040 DSA-2 Increase[2]
R1610H	3023 Dormitory Road	1	B	54[3]	54[3]	0
R1610I	3033 Dormitory Road	1	B	54[3]	54	0
R1610J	3011 Dormitory Road	1	B	54[3]	54[3]	0
R1610K	3021 Dormitory Road	1	B	54[3]	54[3]	0
R1610L	3031 Dormitory Road	1	B	54[3]	54	0
R1613	6808 CALI CT	1	B	50[3]	59	9
R1614	913 OPEN FIELD DR	1	B	50[3]	55	5
R1620	2749 E GARNER RD	1	B	57[3]	66	9
R1624	8021 DEER MEADOW DR	1	B	46[3]	46[3]	0
R1625A	2846 AUBURN KNIGHTDALE RD	1	B	56[3]	56[3]	0
R1625B	2848 AUBURN KNIGHTDALE RD	1	B	56[3]	56[3]	0
R1626	2208 E WILLIAMS ST	1	B	55	67	12
R1627A	2213 E WILLIAMS ST	1	B	54	66	12
R1627B	2215 E WILLIAMS ST	1	B	53	66	13
R1628B	98 S CARROLL ST	1	B	53[3]	61	8
R1628C	102 N CARROLL ST	1	B	53[3]	66	13
R1630	1301 TAVERNIER KNOLL LN	1	B	45[3]	61	16
R1632	10400 JORDAN RD	1	B	47	67	20
R1635	2916 ESCONDIDO FARM RD	1	B	49[3]	49[3]	0
R1636	8909 OLD CASCADE DR	1	B	49[3]	61	12
R1648	2728 E GARNER RD	1	B	57[3]	61	4
R1649A	8609 MARIGOLD ST	1	B	54[3]	62	8
R1649B	8612 MARIGOLD ST	1	B	54[3]	62	8
R1653A	1309 TAVERNIER KNOLL LN	1	B	45[3]	63	18
R1653B	1313 TAVERNIER KNOLL LN	1	B	45[3]	64	19
R1653C	1305 TAVERNIER KNOLL LN	1	B	45[3]	62	17
R1701A	301 CABANA DR	1	B	53	62	9
R1701B	211 CABANA DR	1	B	54	62	8
R1702A	207 CABANA DR	1	B	55	62	7
R1702B	209 CABANA DR	1	B	54	62	8
R1703A	208 CABANA DR	1	B	48[3]	55	7
R1703B	210 CABANA DR	1	B	48[3]	56	8
R1704A	106 DOVES HAVEN DR	1	B	48[3]	52	4
R1704B	104 DOVES HAVEN DR	1	B	48[3]	51	3
R1704C	200 DOVES HAVEN DR	1	B	48[3]	54	6
R1704D	202 DOVES HAVEN DR	1	B	48[3]	51	3
R1704E	204 DOVES HAVEN DR	1	B	48[3]	51	3
R1704F	206 DOVES HAVEN DR	1	B	48[3]	51	3
R1704G	208 DOVES HAVEN DR	1	B	48[3]	50	2
R1704H	210 DOVES HAVEN DR	1	B	48[3]	48	0
R1704I	212 DOVES HAVEN DR	1	B	48[3]	50	2
R1704J	111 SUNSHINE CREST CT	1	B	48[3]	53	5
R1705	200 REUNION PARK DR	RECREATIONAL	C	48[3]	61	13

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Traffic Noise Analysis

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Receptor	Property Address	Properties Represented	NAC Land Use Category	2016 Existing[3]	2040 DSA-2 Build[1,3]	2040 DSA-2 Increase[2]
R1705A	200 REUNION PARK DR APT 2318	1	B	48[3]	54	6
R1705B	200 REUNION PARK DR APT 2328	1	B	48[3]	57	9
R1705C	200 REUNION PARK DR APT 2338	1	B	48[3]	59	11
R1705D	200 REUNION PARK DR APT 2316	1	B	48[3]	61	13
R1705E	200 REUNION PARK DR APT 2326	1	B	48[3]	63	15
R1705F	200 REUNION PARK DR APT 2336	1	B	48[3]	64	16
R1705G	200 REUNION PARK DR APT 2317	1	B	48[3]	53	5
R1705H	200 REUNION PARK DR APT 2327	1	B	48[3]	56	8
R1705I	200 REUNION PARK DR APT 2337	1	B	48[3]	58	10
R1705J	200 REUNION PARK DR APT 2315	1	B	48[3]	59	11
R1705K	200 REUNION PARK DR APT 2325	1	B	48[3]	62	14
R1705L	200 REUNION PARK DR APT 2335	1	B	48[3]	63	15
R1705M	200 REUNION PARK DR APT 2314	1	B	48[3]	52	4
R1705N	200 REUNION PARK DR APT 2324	1	B	48[3]	54	6
R1705O	200 REUNION PARK DR APT 2334	1	B	48[3]	56	8
R1705P	200 REUNION PARK DR APT 2312	1	B	48[3]	59	11
R1705Q	200 REUNION PARK DR APT 2322	1	B	48[3]	61	13
R1705R	200 REUNION PARK DR APT 2332	1	B	48[3]	63	15
R1705S	200 REUNION PARK DR APT 2313	1	B	48[3]	52	4
R1705T	200 REUNION PARK DR APT 2323	1	B	48[3]	54	6
R1705U	200 REUNION PARK DR APT 2333	1	B	48[3]	56	8
R1705V	200 REUNION PARK DR APT 2311	1	B	48[3]	58	10
R1705W	200 REUNION PARK DR APT 2321	1	B	48[3]	61	13
R1705X	200 REUNION PARK DR APT 2331	1	B	48[3]	62	14
R1706A	200 REUNION PARK DR APT 2217	1	B	48[3]	58	10
R1706B	200 REUNION PARK DR APT 2227	1	B	48[3]	60	12
R1706C	200 REUNION PARK DR APT 2237	1	B	48[3]	62	14
R1706D	200 REUNION PARK DR APT 2218	1	B	48[3]	59	11
R1706E	200 REUNION PARK DR APT 2228	1	B	48[3]	61	13
R1706F	200 REUNION PARK DR APT 2238	1	B	48[3]	63	15
R1706G	200 REUNION PARK DR APT 2214	1	B	48[3]	56	8
R1706H	200 REUNION PARK DR APT 2224	1	B	48[3]	58	10
R1706I	200 REUNION PARK DR APT 2234	1	B	48[3]	62	14
R1706J	200 REUNION PARK DR APT 2213	1	B	48[3]	55	7
R1706K	200 REUNION PARK DR APT 2223	1	B	48[3]	59	11
R1706L	200 REUNION PARK DR APT 2233	1	B	48[3]	63	15
R1706M	200 REUNION PARK DR APT 2211	1	B	48[3]	48	0
R1706N	200 REUNION PARK DR APT 2221	1	B	48[3]	51	3
R1706O	200 REUNION PARK DR APT 2231	1	B	48[3]	57	9
R1706P	200 REUNION PARK DR APT 2212	1	B	48[3]	48	0
R1706Q	200 REUNION PARK DR APT 2222	1	B	48[3]	50	2
R1706R	200 REUNION PARK DR APT 2232	1	B	48[3]	57	9
R1706S	200 REUNION PARK DR APT 2215	1	B	48[3]	48	0

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Complete 540

Traffic Noise Analysis

IMPACT ANALYSIS TABLE

Receptor	Property Address	Properties Represented	NAC Land Use Category	2016 Existing[3]	2040 DSA-2 Build[1,3]	2040 DSA-2 Increase[2]
R1706T	200 REUNION PARK DR APT 2225	1	B	48[3]	50	2
R1706U	200 REUNION PARK DR APT 2235	1	B	48[3]	57	9
R1706V	200 REUNION PARK DR APT 2216	1	B	48[3]	48[3]	0
R1706W	200 REUNION PARK DR APT 2226	1	B	48[3]	50	2
R1706X	200 REUNION PARK DR APT 2236	1	B	48[3]	58	10
R1707A	200 REUNION PARK DR APT 2711	1	B	48[3]	62	14
R1707B	200 REUNION PARK DR APT 2721	1	B	48[3]	64	16
R1707C	200 REUNION PARK DR APT 2731	1	B	48[3]	67	19
R1707D	200 REUNION PARK DR APT 2712	1	B	48[3]	61	13
R1707E	200 REUNION PARK DR APT 2722	1	B	48[3]	64	16
R1707F	200 REUNION PARK DR APT 2732	1	B	48[3]	67	19
R1707G	200 REUNION PARK DR APT 2715	1	B	48[3]	61	13
R1707H	200 REUNION PARK DR APT 2725	1	B	48[3]	64	16
R1707I	200 REUNION PARK DR APT 2735	1	B	48[3]	67	19
R1707J	200 REUNION PARK DR APT 2716	1	B	48[3]	61	13
R1707K	200 REUNION PARK DR APT 2726	1	B	48[3]	65	17
R1707L	200 REUNION PARK DR APT 2736	1	B	48[3]	67	19
R1707M	200 REUNION PARK DR APT 2718	1	B	48[3]	50	2
R1707N	200 REUNION PARK DR APT 2728	1	B	48[3]	52	4
R1707O	200 REUNION PARK DR APT 2738	1	B	48[3]	59	11
R1707P	200 REUNION PARK DR APT 2717	1	B	48[3]	50	2
R1707Q	200 REUNION PARK DR APT 2727	1	B	48[3]	52	4
R1707R	200 REUNION PARK DR APT 2737	1	B	48[3]	59	11
R1707S	200 REUNION PARK DR APT 2714	1	B	48[3]	51	3
R1707T	200 REUNION PARK DR APT 2724	1	B	48[3]	52	4
R1707U	200 REUNION PARK DR APT 2734	1	B	48[3]	58	10
R1707V	200 REUNION PARK DR APT 2713	1	B	48[3]	57	9
R1707W	200 REUNION PARK DR APT 2723	1	B	48[3]	59	11
R1707X	200 REUNION PARK DR APT 2733	1	B	48[3]	61	13
R1708A	200 REUNION PARK DR APT 3111	1	B	48[3]	57	9
R1708B	200 REUNION PARK DR APT 3121	1	B	48[3]	62	14
R1708C	200 REUNION PARK DR APT 3131	1	B	48[3]	63	15
R1708D	200 REUNION PARK DR APT 3112	1	B	48[3]	57	9
R1708E	200 REUNION PARK DR APT 3122	1	B	48[3]	61	13
R1708F	200 REUNION PARK DR APT 3132	1	B	48[3]	62	14
R1708G	200 REUNION PARK DR APT 3113	1	B	48[3]	59	11
R1708H	200 REUNION PARK DR APT 3123	1	B	48[3]	63	15
R1708I	200 REUNION PARK DR APT 3133	1	B	48[3]	64	16
R1708J	200 REUNION PARK DR APT 3114	1	B	48[3]	56	8
R1708K	200 REUNION PARK DR APT 3124	1	B	48[3]	60	12
R1708L	200 REUNION PARK DR APT 3134	1	B	48[3]	61	13
R1708M	200 REUNION PARK DR APT 3117	1	B	48[3]	55	7
R1708N	200 REUNION PARK DR APT 3127	1	B	48[3]	59	11

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Complete 540

Traffic Noise Analysis

IMPACT ANALYSIS TABLE

Receptor	Property Address	Properties Represented	NAC Land Use Category	2016 Existing[3]	2040 DSA-2 Build[1,3]	2040 DSA-2 Increase[2]
R1708O	200 REUNION PARK DR APT 3137	1	B	48[3]	62	14
R1708P	200 REUNION PARK DR APT 3115	1	B	48[3]	56	8
R1708Q	200 REUNION PARK DR APT 3125	1	B	48[3]	60	12
R1708R	200 REUNION PARK DR APT 3135	1	B	48[3]	61	13
R1708S	200 REUNION PARK DR APT 3116	1	B	48[3]	56	8
R1708T	200 REUNION PARK DR APT 3126	1	B	48[3]	59	11
R1708U	200 REUNION PARK DR APT 3136	1	B	48[3]	61	13
R1708V	200 REUNION PARK DR APT 3118	1	B	48[3]	54	6
R1708W	200 REUNION PARK DR APT 3128	1	B	48[3]	57	9
R1708X	200 REUNION PARK DR APT 3138	1	B	48[3]	60	12
R1709A	215 GALLENT HEDGE TRL	1	B	48[3]	60	12
R1709B	213 GALLENT HEDGE TRL	1	B	48[3]	59	11
R1709C	211 GALLENT HEDGE TRL	1	B	48[3]	59	11
R1709D	209 GALLENT HEDGE TRL	1	B	48[3]	58	10
R1709E	207 GALLENT HEDGE TRL	1	B	48[3]	58	10
R1709F	205 GALLENT HEDGE TRL	1	B	48[3]	58	10
R1709G	203 GALLENT HEDGE TRL	1	B	48[3]	57	9
R1709H	201 GALLENT HEDGE TRL	1	B	48[3]	57	9
R1710A	915 STRAYWHITE AVE	1	B	48[3]	64	16
R1710B	913 STRAYWHITE AVE	1	B	48[3]	65	17
R1710C	911 STRAYWHITE AVE	1	B	48[3]	65	17
R1710D	909 STRAYWHITE AVE	1	B	48[3]	64	16
R1710E	907 STRAYWHITE AVE	1	B	48[3]	65	17
R1710F	905 STRAYWHITE AVE	1	B	48[3]	65	17
R1710G	901 STRAYWHITE AVE	1	B	48[3]	64	16
R1710H	903 STRAYWHITE AVE	1	B	48[3]	64	16
R1711A	209 HOLLYHOCK LN	1	B	48[3]	61	13
R1711B	211 HOLLYHOCK LN	1	B	48[3]	63	15
R1712A	212 HOLLYHOCK LN	1	B	48[3]	55	7
R1712B	210 HOLLYHOCK LN	1	B	48[3]	55	7
R1713A	216 HOLLYHOCK LN	1	B	48[3]	59	11
R1713B	214 HOLLYHOCK LN	1	B	48[3]	57	9
R1714A	203 LINDELL DR	1	B	48[3]	61	13
R1714B	205 LINDELL DR	1	B	48[3]	62	14
R1715A	207 LINDELL DR	1	B	48[3]	63	15
R1715B	208 LINDELL DR	1	B	48[3]	61	13
R1716A	4112 SANCROFT DR	1	B	52[3]	57	5
R1716B	4108 SANCROFT DR	1	B	52[3]	52[3]	0
R1717A	4104 SANCROFT DR	1	B	52[3]	52[3]	0
R1717B	4100 SANCROFT DR	1	B	52[3]	52[3]	0
R1718A	100 SPRING ST	1	B	53[3]	63	10
R1718B	203 OAKLAND DR	1	B	53[3]	63	10
R1719A	207 OAKLAND DR	1	B	53[3]	64	11

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Complete 540

Traffic Noise Analysis

IMPACT ANALYSIS TABLE

Receptor	Property Address	Properties Represented	NAC Land Use Category	2016 Existing[3]	2040 DSA-2 Build[1,3]	2040 DSA-2 Increase[2]
R1719B	205 OAKLAND DR	1	B	53[3]	64	11
R1720	3721 GRANDBRIDGE DR	1	B	46[3]	47	1
R1721A	3713 GRANDBRIDGE DR	1	B	46[3]	53	7
R1721B	3717 GRANDBRIDGE DR	1	B	46[3]	49	3
R1722A	3709 GRANDBRIDGE DR	1	B	46[3]	52	6
R1722B	3705 GRANDBRIDGE DR	1	B	46[3]	56	10
R1723A	3612 HERITAGE CREEK DR	1	B	46[3]	60	14
R1723B	3616 HERITAGE CREEK DR	1	B	46[3]	60	14
R1724A	3613 HERITAGE CREEK DR	1	B	46[3]	56	10
R1724B	3617 HERITAGE CREEK DR	1	B	46[3]	55	9
R1725A	4012 WEST LAKE RD	1	B	53	60	7
R1725B	4016 WEST LAKE RD	1	B	56	62	6
R1726	4012 HARRIAT DR	1	B	46[3]	64	18
R1727	4017 HARRIAT DR	1	B	46[3]	65	19
R1728	4021 HARRIAT DR	1	B	46[3]	61	15
R1729	6016 OXFORD GREEN DR	1	B	46[3]	61	15
R1730	6008 OXFORD GREEN DR	1	B	46[3]	58	12
R1731	6000 OXFORD GREEN DR	1	B	46[3]	59	13
R1732	8105 BUCKSKIN LN	1	B	46[3]	55	9
R1733	5608 DEERBORN DR	1	B	46[3]	58	12
R1734	5604 DEERBORN DR	1	B	46[3]	54	8
R1735	8104 BUCKSKIN LN	1	B	46[3]	49	3
R1736A	8113 RHODES RD	1	B	46[3]	53	7
R1736B	8117 RHODES RD	1	B	46[3]	55	9
R1737A	8100 RHODES RD	1	B	46[3]	58	12
R1737B	8104 RHODES RD	1	B	46[3]	57	11
R1738A	8036 RHODES RD	1	B	52	52	0
R1738B	8038 RHODES RD	1	B	46[3]	52	6
R1739A	8040 RHODES RD	1	B	48	54	6
R1739B	8042 RHODES RD	1	B	46[3]	54	8
R1740	3718 WHISPERING WIND DR	1	B	46[3]	55	9
R1741A	3708 WHISPERING WIND DR.	1	B	46[3]	52	6
R1741B	3706 WHISPERING WIND DR.	1	B	46[3]	52	6
R1741C	3700 WHISPERING WIND DR.	1	B	53	53	0
R1742A	3717 WHISPERING WIND DR.	1	B	46[3]	58	12
R1742B	3715 WHISPERING WIND DR.	1	B	46[3]	54	8
R1743A	5417 LOWER CREEK CT	1	B	46[3]	53	7
R1743B	5413 LOWER CREEK CT	1	B	46[3]	49	3
R1744A	5405 LOWER CREEK CT	1	B	46[3]	56	10
R1744B	5409 LOWER CREEK CT	1	B	46[3]	51	5
R1745A	3801 DOESKIN DR	1	B	46[3]	56	10
R1745B	3809 DOESKIN DR	1	B	46[3]	48	2
R1745C	3820 DOESKIN DR	1	B	46[3]	58	12

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Complete 540

Traffic Noise Analysis

IMPACT ANALYSIS TABLE

Receptor	Property Address	Properties Represented	NAC Land Use Category	2016 Existing[3]	2040 DSA-2 Build[1,3]	2040 DSA-2 Increase[2]
R1745D	3821 DOESKIN DR	1	B	46[3]	49	3
R1745E	8309 WHITETAIL DR	1	B	46[3]	53	7
R1745F	3833 DOESKIN DR	1	B	46[3]	56	10
R1745G	3832 DOESKIN DR	1	B	46[3]	51	5
R1745H	3828 DOESKIN DR	1	B	46[3]	53	7
R1745I	3824 DOESKIN DR	1	B	46[3]	56	10
R1746A	3732 SUNLAKE FARMS RD	1	B	47	58	11
R1746B	3728 SUNLAKE FARMS RD	1	B	48	58	10
R1747	3724 SUNLAKE FARMS RD	1	B	48	58	10
R1748	3717 SUNLAKE FARMS RD	1	B	46[3]	60	14
R1749	8536 LAKE WHEELER RD	1	B	55	63	8
R1753A	8720 LAKE WHEELER RD	1	B	59	67	8
R1753B	8732 LAKE WHEELER RD	1	B	58	66	8
R1754	8729 LAKE WHEELER RD	1	B	52	65	13
R1755A	4920 TROTTER DR	1	B	54[3]	57	3
R1755B	4928 TROTTER DR	1	B	54[3]	54[3]	0
R1756A	4936 TROTTER DR	1	B	54[3]	54[3]	0
R1756B	4940 TROTTER DR	1	B	54[3]	54[3]	0
R1757A	4944 TROTTER DR	1	B	54[3]	54[3]	0
R1757B	4952 TROTTER DR	1	B	54[3]	54[3]	0
R1758A	4953 TROTTER DR	1	B	54[3]	55	1
R1758B	4949 TROTTER DR	1	B	54[3]	56	2
R1758C	4957 TROTTER DR	1	B	54[3]	54	0
R1759	4800 WHITE POST DR	1	B	54[3]	54[3]	0
R1760A	4808 WHITE POST DR	1	B	54[3]	54[3]	0
R1760B	4804 WHITE POST DR	1	B	54[3]	54[3]	0
R1761	4809 WHITE POST DR	1	B	54[3]	54[3]	0
R1762A	4805 WHITE POST DR	1	B	54[3]	54[3]	0
R1762B	4801 WHITE POST DR	1	B	54[3]	54[3]	0
R1763	1128 ROLLING FARM DR	1	B	54[3]	54[3]	0
R1764A	4801 CONTENDER DR	1	B	45[3]	61	16
R1764B	4805 CONTENDER DR	1	B	45[3]	56	11
R1765	4809 CONTENDER DR	1	B	45[3]	56	11
R1766	8925 OREGON INLET CT	1	B	45[3]	54	9
R1767A	8712 NEW RIVER CIR	1	B	45[3]	52	7
R1767B	8708 NEW RIVER CIR	1	B	45[3]	51	6
R1768	8709 NEW RIVER CIR	1	B	45[3]	49	4
R1769	8928 CAROLINA MARLIN CT	1	B	45[3]	50	5
R1770A	1013 DEER OAKS CT	1	B	46[3]	46[3]	0
R1770B	1017 DEER OAKS CT	1	B	46[3]	46[3]	0
R1771A	1012 DEER OAKS CT	1	B	46[3]	51	5
R1771B	1008 DEER OAKS CT	1	B	46[3]	52	6
R1771C	5209 AUTUMN FIELD DR	1	B	46[3]	52	6

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Complete 540

Traffic Noise Analysis

IMPACT ANALYSIS TABLE

Receptor	Property Address	Properties Represented	NAC Land Use Category	2016 Existing[3]	2040 DSA-2 Build[1,3]	2040 DSA-2 Increase[2]
R1772A	1005 DEER OAKS CT	1	B	46[3]	46[3]	0
R1772B	1009 DEER OAKS CT	1	B	46[3]	46[3]	0
R1773A	1004 QUAIL OAKS CIR	1	B	46[3]	49	3
R1773B	1012 QUAIL OAKS CIR	1	B	46[3]	48	2
R1780A	921 SHANNONDALE DR	1	B	46[3]	54	8
R1780B	925 SHANNONDALE DR	1	B	46[3]	51	5
R1780C	929 SHANNONDALE DR	1	B	46[3]	51	5
R1781A	1005 SHANNONDALE DR	1	B	46[3]	49	3
R1781B	1013 SHANNONDALE DR	1	B	46[3]	47	1
R1781C	10121 JOE LEACH RD	1	B	46[3]	49	3
R1782A	10133 JOE LEACH RD	1	B	46[3]	55	9
R1782B	1000 SHANNONDALE DR	1	B	46[3]	53	7
R1783A	1010 SHANNONDALE DR	1	B	46[3]	51	5
R1783B	1012 SHANNONDALE DR	1	B	46[3]	50	4
R1783C	1004 SHANNONDALE DR	1	B	46[3]	52	6
R1784A	1020 SHANNONDALE DR	1	B	46[3]	49	3
R1784B	1016 SHANNONDALE DR	1	B	46[3]	50	4
R1785A	1032 SHANNONDALE DR	1	B	46[3]	49	3
R1785B	1028 SHANNONDALE DR	1	B	46[3]	49	3
R1785C	1040 SHANNONDALE DR	1	B	46[3]	49	3
R1798	6801 PAYTON VIEW DR	1	B	50[3]	52	2
R1799	6821 PAYTON VIEW DR	1	B	50[3]	50[3]	0
R1800	5312 SERATHER CT	1	B	50[3]	51	1
R1801	5313 SERATHER CT	1	B	50[3]	57	7
R1802A	5317 SERATHER CT	1	B	50[3]	60	10
R1802B	5317 SERATHER CT	1	B	50[3]	57	7
R1842	4425 HICKS RD	1	B	58	61	3
R1843A	4302 HICKS RD	1	B	63	67	4
R1843B	4302 HICKS RD	1	B	61	65	4
R1844A	4302 HICKS RD	1	B	60	64	4
R1844B	4302 HICKS RD	1	B	60	63	3
R1852A	1602 STONE STREAM DR	1	B	56[3]	63	7
R1852B	2805 HODGE RD	1	B	56[3]	60	4
R1853A	2805 HODGE RD	1	B	56[3]	64	8
R1853B	2805 HODGE RD	1	B	56[3]	65	9
R1854A	2805 HODGE RD	1	B	56[3]	64	8
R1854B	2805 HODGE RD	1	B	56[3]	65	9
R1855A	1204 Broken Arrow Court	1	B	56[3]	60	4
R1855B	1200 Broken Arrow Court	1	B	56[3]	60	4
R1855C	1424 Orchard Farm Lane	1	B	56[3]	59	3
R1856A	1112 Garden Grive Lane	1	B	56[3]	57	1
R1856B	1421 Orchard Farm Lane	1	B	56[3]	56	0
R1856C	1429 Orchard Farm Lane	1	B	56[3]	57	1

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Complete 540

Traffic Noise Analysis

IMPACT ANALYSIS TABLE

Receptor	Property Address	Properties Represented	NAC Land Use Category	2016 Existing[3]	2040 DSA-2 Build[1,3]	2040 DSA-2 Increase[2]
R1857A	2417 Prairie Court	1	B	56[3]	60	4
R1857B	2421 Prairie Court	1	B	56[3]	61	5
R1857C	2413 Prairie Court	1	B	56[3]	58	2
R1858A	2405 Prairie Court	1	B	56[3]	59	3
R1858B	2409 Prairie Court	1	B	56[3]	58	2
R1858C	2401 Prairie Court	1	B	56[3]	60	4
R1859A	3636 Lodge Drive	1	B	56[3]	56[3]	0
R1859B	3717 Knightdale Estates Drive	1	B	56[3]	58	2
R1859C	3721 Knightdale Estates Drive	1	B	56[3]	59	3
R1859D	3640 Lodge Drive	1	B	56[3]	56	0
R1860A	3604 KEMP DR	1	B	56[3]	61	5
R1860B	3600 KEMP DR	1	B	56[3]	58	2
R1860C	3608 KEMP DR	1	B	56[3]	62	6
R1861	3609 KEMP DR	1	B	56[3]	62	6
R1862	210 GOWER CIR	1	B	59	63	4
R1867	3609 GRIFFICE MILL RD	1	B	51[3]	51[3]	0
R1868A	3608 GRIFFICE MILL RD	1	B	51[3]	51	0
R1868B	3604 GRIFFICE MILL RD	1	B	51[3]	53	2
R1869A	3512 GRIFFICE MILL RD	1	B	51[3]	55	4
R1869B	3508 GRIFFICE MILL RD	1	B	51[3]	57	6
R1870A	3504 GRIFFICE MILL RD	1	B	51[3]	57	6
R1870B	3500 GRIFFICE MILL RD	1	B	51[3]	58	7
R1871A	1513 STONE STREAM DR	1	B	56[3]	56	0
R1871B	3913 BRANCH PARK DR	1	B	56[3]	60	4
R1872A	1600 STONE STREAM DR	1	B	56[3]	61	5
R1872B	1508 WOOD BRANCH CT	1	B	56[3]	57	1
R1873A	3720 CRYSTAL CREEK DR.	1	B	56[3]	63	7
R1873B	3721 CRYSTAL CREEK DR.	1	B	56[3]	56	0
R1874A	3716 CRYSTAL CREEK DR	1	B	56[3]	60	4
R1874B	3717 CRYSTAL CREEK DR.	1	B	56[3]	57	1
R1875A	2436 Prairie Court	1	B	56[3]	56	0
R1875B	2432 Prairie Court	1	B	56[3]	56	0
R1876A	2428 Prairie Court	1	B	56[3]	57	1
R1876B	2424 Prairie Court	1	B	56[3]	57	1
R1879A	3713 Knightdale Estates Drive	1	B	56[3]	57	1
R1879B	3632 Lodge Drive	1	B	56[3]	56[3]	0
R1881A	207 GOWER CIR	1	B	56[3]	61	5
R1881B	209 GOWER CIR	1	B	56[3]	60	4
R1882A	212 GOWER CIR	1	B	56	59	3
R1882B	211 GOWER CIR	1	B	56[3]	57	1
R1883A	1017 Southern Living Drive	1	B	56[3]	56	0
R1883B	1021 Southern Living Drive	1	B	56[3]	56[3]	0
R1883C	1013 Southern Living Drive	1	B	56[3]	57	1

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Complete 540

Traffic Noise Analysis

IMPACT ANALYSIS TABLE

Receptor	Property Address	Properties Represented	NAC Land Use Category	2016 Existing[3]	2040 DSA-2 Build[1,3]	2040 DSA-2 Increase[2]
R1884A	1020 QUAIL OAKS CIR	1	B	46[3]	48	2
R1884B	1100 QUAIL OAKS CIR	1	B	46[3]	46	0
R1885A	1104 QUAIL OAKS CIR	1	B	46[3]	46	0
R1886A	9916 HUNTWYCK DR	1	B	46[3]	53	7
R1886B	9920 HUNTWYCK DR	1	B	46[3]	53	7
R1916	6600 TEN TEN RD	1	B	50	56	6
R1917	6608 TEN TEN RD	1	B	51	55	4
R1918A	205 HOLLYHOCK LN	1	B	48[3]	56	8
R1918B	207 HOLLYHOCK LN	1	B	48[3]	58	10
R1918C	203 HOLLYHOCK LN	1	B	48[3]	55	7
R1919A	206 HOLLYHOCK LN	1	B	48[3]	48	0
R1919B	208 HOLLYHOCK LN	1	B	48[3]	50	2
R1919C	204 HOLLYHOCK LN	1	B	48[3]	49	1
R1920A	109 LINDELL DR	1	B	48[3]	59	11
R1920B	201 LINDELL DR	1	B	48[3]	56	8
R1920C	107 LINDELL DR	1	B	48[3]	58	10
R1921A	200 LINDELL DR	1	B	48[3]	53	5
R1921B	202 LINDELL DR	1	B	48[3]	52	4
R1922A	206 LINDELL DR	1	B	48[3]	59	11
R1922B	204 LINDELL DR	1	B	48[3]	53	5
R1923	3620 HERITAGE CREEK DR	1	B	46[3]	57	11
R1924A	3812 WESLEY RIDGE DR	1	B	46[3]	56	10
R1924B	3814 WESLEY RIDGE DR	1	B	46[3]	55	9
R1925A	3625 HERITAGE CREEK DR	1	B	46[3]	55	9
R1925B	3804 WESLEY RIDGE DR	1	B	46[3]	56	10
R1925C	3800 WESLEY RIDGE DR	1	B	46[3]	57	11
R1925D	3801 WESLEY RIDGE DR	1	B	46[3]	48	2
R1926	4029 HARRIAT DR	1	B	46[3]	54	8
R1926A	4033 HARRIAT DR	1	B	46[3]	54	8
R1927	4025 HARRIAT DR	1	B	46[3]	56	10
R1928	8704 NEW RIVER CIR	1	B	45[3]	51	6
R1929	8705 NEW RIVER CIR	1	B	45[3]	50	5
R2279	6024 STANCIL FARM RD	1	B	46[3]	48	2
R2280	6000 STANCIL FARM RD	1	B	46[3]	53	7
R2281	6005 STANCIL FARM RD	1	B	46[3]	58	12
R2282A	5216 WOODTRENT DR	1	B	46[3]	57	11
R2282B	5220 WOODTRENT DR	1	B	46[3]	56	10
R2283	5213 WOODTRENT DR	1	B	46[3]	53	7
R2284A	5204 WOODTRENT DR	1	B	46[3]	51	5
R2284B	5208 WOODTRENT DR	1	B	46[3]	52	6
R2285A	1016 GRISSOM FARM RD	1	B	46[3]	52	6
R2285B	1020 GRISSOM FARM RD	1	B	46[3]	51	5
R2287A	132 BUXTONWOOD PL	1	B	53[3]	70	17

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3 Measured noise levels reported if traffic not the dominant noise source

Complete 540

Traffic Noise Analysis

IMPACT ANALYSIS TABLE

Receptor	Property Address	Properties Represented	NAC Land Use Category	2016 Existing[3]	2040 DSA-2 Build[1,3]	2040 DSA-2 Increase[2]
R2287B	132 BUXTONWOOD PL	1	B	53[3]	67	14
R2289A	6017 OXFORD GREEN DR	1	B	46[3]	54	8
R2289B	6021 OXFORD GREEN DR	1	B	46[3]	54	8
R2290A	6009 OXFORD GREEN DR	1	B	46[3]	54	8
R2290B	6013 OXFORD GREEN DR	1	B	46[3]	54	8
R2291A	4305 SMITH LANDING DR	1	B	54	60	6
R2291B	225 LANE OF SIR KAY	1	B	49[3]	56	7
R2292	4816 SWORDFISH DR	1	B	45[3]	54	9
R2293	4824 SWORDFISH DR	1	B	45[3]	52	7
R2294A	8916 OREGON INLET CT	1	B	45[3]	52	7
R2294B	8908 OREGON INLET CT	1	B	45[3]	51	6
R2295A	227 LANE OF SIR KAY	1	B	57[3]	60	3
R2295B	217 LANE OF SIR KAY	1	B	57[3]	60	3
R2296	215 LANE OF SIR KAY	1	B	57[3]	59	2
R2297	213 LANE OF SIR KAY	1	B	57[3]	59	2
R2298	211 LANE OF SIR KAY	1	B	57[3]	59	2
R2299	211 LANE OF SIR KAY	1	B	57[3]	58	1
R2300A	4833 OLD FAISON RD	1	B	57[3]	60	3
R2300B	4813 OLD FAISON RD	1	B	57	60	3
R2301A	4808 OLD FAISON RD	1	B	57[3]	57[3]	0
R2301B	4806 OLD FAISON RD	1	B	57[3]	57[3]	0
R2302	4630 OLD FAISON RD	1	B	57[3]	58	1
R2303A	4713 SMARTY JONES DR	1	B	61	65	4
R2303B	4711 SMARTY JONES DR	1	B	60	64	4
R2303C	4715 SMARTY JONES DR	1	B	62	66	4
R2304A	4719 SMARTY JONES DR	1	B	65	69	4
R2304B	4717 SMARTY JONES DR	1	B	64	68	4
R2304C	4721 SMARTY JONES DR	1	B	66	70	4
R2305A	4725 SMARTY JONES DR	1	B	66	70	4
R2305B	4727 SMARTY JONES DR	1	B	67	70	3
R2305C	4723 SMARTY JONES DR	1	B	66	70	4
R2306A	4731 SMARTY JONES DR	1	B	67	71	4
R2306B	4733 SMARTY JONES DR	1	B	67	70	3
R2306C	4729 SMARTY JONES DR	1	B	67	70	3
R2307A	4737 SMARTY JONES DR	1	B	67	70	3
R2307B	4735 SMARTY JONES DR	1	B	67	70	3
R2307C	4739 SMARTY JONES DR	1	B	67	70	3
R2308A	4741 SMARTY JONES DR	1	B	67	70	3
R2308B	4801 SMARTY JONES DR	1	B	67	70	3
R2309A	4803 SMARTY JONES DR	1	B	67	71	4
R2309B	4805 SMARTY JONES DR	1	B	67	71	4
R2310A	4809 SMARTY JONES DR	1	B	68	72	4
R2310B	4807 SMARTY JONES DR	1	B	68	72	4

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3 Measured noise levels reported if traffic not the dominant noise source

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Traffic Noise Analysis

IMPACT ANALYSIS TABLE

Receptor	Property Address	Properties Represented	NAC Land Use Category	2016 Existing[3]	2040 DSA-2 Build[1,3]	2040 DSA-2 Increase[2]
R2310C	4811 SMARTY JONES DR	1	B	68	72	4
R2315	8025 COUNTRY CLUB DR	RECREATIONAL	C	50	65	15
R2323A	3930 BLUE HORIZON DR	1	B	46[3]	67	21
R2323B	3932 BLUE HORIZON DR	1	B	46[3]	62	16
R2323C	3934 BLUE HORIZON DR	1	B	46[3]	63	17
R2323D	3940 BLUE HORIZON DR	1	B	50	62	12
R2324A	4709 SMARTY JONES DR	1	B	59	62	3
R2324B	4707 SMARTY JONES DR	1	B	57	61	4
R2325A	4703 SMARTY JONES DR	1	B	57[3]	59	2
R2325B	4705 SMARTY JONES DR	1	B	57[3]	60	3
R2325C	4701 SMARTY JONES DR	1	B	57[3]	58	1
R2326A	1608 KINGMAN DR	1	B	57[3]	57[3]	0
R2326B	1610 KINGMAN DR	1	B	57[3]	57[3]	0
R2326C	1606 KINGMAN DR	1	B	57[3]	57[3]	0
R2327A	4712 SMARTY JONES DR	1	B	57[3]	57[3]	0
R2327B	4716 SMARTY JONES DR	1	B	57[3]	57[3]	0
R2327C	4708 SMARTY JONES DR	1	B	57[3]	57[3]	0
R2328A	4724 SMARTY JONES DR	1	B	57[3]	57[3]	0
R2328B	4720 SMARTY JONES DR	1	B	57[3]	57[3]	0
R2328C	4726 SMARTY JONES DR	1	B	57[3]	57[3]	0
R2329A	4730 SMARTY JONES DR	1	B	57[3]	57[3]	0
R2329B	4728 SMARTY JONES DR	1	B	57[3]	57[3]	0
R2329C	4732 SMARTY JONES DR	1	B	57[3]	57[3]	0
R2330A	4738 SMARTY JONES DR	1	B	57[3]	57[3]	0
R2330B	4736 SMARTY JONES DR	1	B	57[3]	57[3]	0
R2330C	4740 SMARTY JONES DR	1	B	57[3]	57[3]	0
R2331A	4804 SMARTY JONES DR	1	B	57[3]	57[3]	0
R2331B	4802 SMARTY JONES DR	1	B	57[3]	57[3]	0
R2331C	4806 SMARTY JONES DR	1	B	57[3]	57[3]	0
R2332A	1206 KINGMAN DR	1	B	57[3]	57[3]	0
R2332B	1208 KINGMAN DR	1	B	57[3]	57[3]	0
R2333A	1204 KINGMAN DR	1	B	57[3]	60	3
R2333B	1202 KINGMAN DR	1	B	58	62	4
R2334A	1134 KINGMAN DR	1	B	68	71	3
R2334B	1132 KINGMAN DR	1	B	68	70	2
R2334C	1136 KINGMAN DR	1	B	67	71	4
R2335A	1135 KINGMAN DR	1	B	57[3]	58	1
R2335B	1137 KINGMAN DR	1	B	57[3]	57[3]	0
R2336A	1203 KINGMAN DR	1	B	57[3]	57	0
R2336B	1207 KINGMAN DR	1	B	57[3]	58	1
R2337A	4507 ARCARO DR	1	B	57[3]	57[3]	0
R2337B	4505 ARCARO DR	1	B	57[3]	57[3]	0
R2338A	4506 ARCARO DR	1	B	57[3]	57[3]	0

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Traffic Noise Analysis

IMPACT ANALYSIS TABLE

Receptor	Property Address	Properties Represented	NAC Land Use Category	2016 Existing[3]	2040 DSA-2 Build[1,3]	2040 DSA-2 Increase[2]
R2338B	4508 ARCARO DR	1	B	57[3]	57[3]	0
R2339A	4605 FONSO DR	1	B	57[3]	57[3]	0
R2339B	4603 FONSO DR	1	B	57[3]	57[3]	0
R2339C	4601 FONSO DR	1	B	57[3]	57[3]	0
R2340A	4602 FONSO DR	1	B	57[3]	57[3]	0
R2340B	4604 FONSO DR	1	B	57[3]	57[3]	0
R2341A	4510 JOE COTTON DR	1	B	57[3]	57	0
R2341B	4508 JOE COTTON DR	1	B	57[3]	57	0
R2342A	120 BUXTONWOOD PL	1	B	53[3]	60	7
R2342B	124 BUXTONWOOD PL	1	B	53[3]	65	12
R2343A	108 BUXTONWOOD PL	1	B	53[3]	53[3]	0
R2343B	112 BUXTONWOOD PL	1	B	53[3]	56	3
R2343C	100 BUXTONWOOD PL	1	B	53[3]	53[3]	0
R2346A	105 MAYFIELD DR	1	B	53[3]	60	7
R2346B	103 MAYFIELD DR	1	B	53[3]	59	6
R2346C	101 MAYFIELD DR	1	B	53[3]	59	6
R2346D	111 MAYFIELD DR	1	B	53[3]	62	9
R2346E	109 MAYFIELD DR	1	B	53[3]	61	8
R2346F	107 MAYFIELD DR	1	B	53[3]	60	7
R2347A	117 MAYFIELD DR	1	B	53[3]	66	13
R2347B	115 MAYFIELD DR	1	B	53[3]	66	13
R2347C	115 MAYFIELD DR	1	B	53[3]	66	13
R2347D	119 MAYFIELD DR	1	B	53[3]	67	14
R2348A	121 MAYFIELD DR	1	B	53[3]	67	14
R2348B	125 MAYFIELD DR	1	B	53[3]	67	14
R2348C	125 MAYFIELD DR	1	B	53[3]	67	14
R2348D	127 MAYFIELD DR	1	B	53[3]	66	13
R2348E	129 MAYFIELD DR	1	B	53[3]	66	13
R2348F	131 MAYFIELD DR	1	B	53[3]	67	14
R2349A	209 MAYFIELD DR	1	B	53[3]	66	13
R2349B	207 MAYFIELD DR	1	B	53[3]	66	13
R2349C	205 MAYFIELD DR	1	B	53[3]	66	13
R2349D	203 MAYFIELD DR	1	B	53[3]	66	13
R2349E	201 MAYFIELD DR	1	B	53[3]	66	13
R2350A	221 MAYFIELD DR	1	B	53[3]	68	15
R2350B	219 MAYFIELD DR	1	B	53[3]	67	14
R2350C	217 MAYFIELD DR	1	B	53[3]	67	14
R2350D	215 MAYFIELD DR	1	B	53[3]	67	14
R2350E	213 MAYFIELD DR	1	B	53[3]	67	14
R2350F	211 MAYFIELD DR	1	B	53[3]	67	14
R2351A	223 MAYFIELD DR	1	B	53[3]	68	15
R2351B	225 MAYFIELD DR	1	B	53[3]	68	15
R2351C	227 MAYFIELD DR	1	B	53[3]	68	15

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Traffic Noise Analysis

IMPACT ANALYSIS TABLE

Receptor	Property Address	Properties Represented	NAC Land Use Category	2016 Existing[3]	2040 DSA-2 Build[1,3]	2040 DSA-2 Increase[2]
R2351D	229 MAYFIELD DR	1	B	53[3]	68	15
R2352A	224 MAYFIELD DR	1	B	53[3]	53[3]	0
R2352B	222 MAYFIELD DR	1	B	53[3]	53[3]	0
R2352C	220 MAYFIELD DR	1	B	53[3]	53[3]	0
R2352D	218 MAYFIELD DR	1	B	53[3]	53[3]	0
R2353A	216 MAYFIELD DR	1	B	53[3]	53[3]	0
R2353B	214 MAYFIELD DR	1	B	53[3]	53[3]	0
R2353C	212 MAYFIELD DR	1	B	53[3]	53[3]	0
R2353D	210 MAYFIELD DR	1	B	53[3]	53[3]	0
R2353E	208 MAYFIELD DR	1	B	53[3]	53[3]	0
R2354A	200 MAYFIELD DR	1	B	53[3]	53[3]	0
R2354B	202 MAYFIELD DR	1	B	53[3]	53[3]	0
R2354C	204 MAYFIELD DR	1	B	53[3]	53[3]	0
R2354D	206 MAYFIELD DR	1	B	53[3]	53[3]	0
R2355A	143 WILLOW VIEW LN	1	B	53[3]	53[3]	0
R2355B	141 WILLOW VIEW LN	1	B	53[3]	53[3]	0
R2355C	139 WILLOW VIEW LN	1	B	53[3]	53[3]	0
R2355D	137 WILLOW VIEW LN	1	B	53[3]	53[3]	0
R2356A	141 WILLOW VIEW LN	1	B	53[3]	53[3]	0
R2356B	106 MAYFIELD DR	1	B	53[3]	53[3]	0
R2356C	104 MAYFIELD DR	1	B	53[3]	53[3]	0
R2356D	102 MAYFIELD DR	1	B	53[3]	53[3]	0
R2356E	100 MAYFIELD DR	1	B	53[3]	53[3]	0
R5001	5814 OLD SMITHFIELD RD	1	B	61	65	4
R5002	3608 FORAKER ST	1	B	55	60	5
R5003	2080 E WILLIAMS ST	RECREATIONAL	C	53	62	9
R5004	5513 EDDIE CREEK DR	1	B	49	59	10
R5005	2224 E WILLIAMS ST	1	B	60	66	6
R5006	2244 E WILLIAMS ST	PLACE OF WORSHIP	D	46	50	4
R5007	2233 E WILLIAMS ST	1	B	55	61	6
R5008	205 CABANA DR	1	B	55	61	6
R5009	203 CABANA DR	1	B	56	62	6
R5010	201 CABANA DR	1	B	57	62	5
R5011	121 CABANA DR	1	B	58	63	5
R5012	206 CABANA DR	1	B	48[3]	54	6
R5013	103 SILVER BRANCH CT	1	B	48[3]	53	5
R5014	204 CABANA DR	1	B	48[3]	54	6
R5015	202 CABANA DR	1	B	53	57	4
R5016	105 SILVER BRANCH CT	1	B	49	55	6
R5017	107 SILVER BRANCH CT	1	B	48[3]	53	5
R5018	108 SILVER BRANCH CT	1	B	50	55	5
R5019	208 WINDCAP DR	1	B	50	54	4
R5020	210 WINDCAP DR	1	B	49	53	4

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Complete 540

Traffic Noise Analysis

IMPACT ANALYSIS TABLE

Receptor	Property Address	Properties Represented	NAC Land Use Category	2016 Existing[3]	2040 DSA-2 Build[1,3]	2040 DSA-2 Increase[2]
R5021	212 WINDCAP DR	1	B	48[3]	51	3
R5022	216 WINDCAP DR	1	B	48[3]	50	2
R5023	107 SUNSHINE CREST CT	1	B	48[3]	51	3
R5024	219 WINDCAP DR	1	B	48[3]	49	1
R5025	215 WINDCAP DR	1	B	48[3]	51	3
R5026	105 SUNSHINE CREST CT	1	B	48[3]	51	3
R5027	103 SUNSHINE CREST CT	1	B	48[3]	51	3
R5028	211 THORNCREST DR	1	B	48[3]	51	3
R5029	213 THORNCREST DR	1	B	48[3]	50	2
R5030	210 THORNCREST DR	1	B	48	52	4
R5031	212 THORNCREST DR	1	B	48[3]	51	3
R5032	300 THORNCREST DR	1	B	48[3]	50	2
R5033	302 THORNCREST DR	1	B	48[3]	50	2
R5034	411 STONECREEK DR	1	B	48[3]	50	2
R5035	409 STONECREEK DR	1	B	48[3]	48	0
R5036	407 STONECREEK DR	1	B	48[3]	49	1
R5037	405 STONECREEK DR	1	B	48[3]	50	2
R5038	403 STONECREEK DR	1	B	48[3]	49	1
R5039	401 STONECREEK DR	1	B	48[3]	49	1
R5040	309 STONECREEK DR	1	B	48[3]	51	3
R5041	307 STONECREEK DR	1	B	48[3]	51	3
R5042	305 STONECREEK DR	1	B	48	51	3
R5043	303 STONECREEK DR	1	B	48	52	4
R5044	301 STONECREEK DR	1	B	49	53	4
R5045	408 STONECREEK DR	1	B	48[3]	51	3
R5046	406 STONECREEK DR	1	B	48[3]	49	1
R5047	404 STONECREEK DR	1	B	48[3]	51	3
R5048	402 STONECREEK DR	1	B	48[3]	53	5
R5049	400 STONECREEK DR	1	B	48[3]	54	6
R5050	306 STONECREEK DR	1	B	48[3]	52	4
R5051	302 STONECREEK DR	1	B	48[3]	52	4
R5052	101 LINDELL DR	1	B	48[3]	54	6
R5053	103 LINDELL DR	1	B	48[3]	56	8
R5054	105 LINDELL DR	1	B	48[3]	55	7
R5055	102 LINDELL DR	1	B	49	53	4
R5056	104 LINDELL DR	1	B	48[3]	52	4
R5057	106 LINDELL DR	1	B	48[3]	52	4
R5058	103 GREYCREST CT	1	B	50	54	4
R5059	4026 REUNION CREEK PKWY	1	B	48[3]	66	18
R5060	4030 REUNION CREEK PKWY	1	B	48[3]	66	18
R5061	4034 REUNION CREEK PKWY	1	B	48[3]	65	17
R5062	4038 REUNION CREEK PKWY	1	B	48[3]	64	16
R5063A	200 PRESENTEER TRL	1	B	48[3]	54	6

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Traffic Noise Analysis

IMPACT ANALYSIS TABLE

Receptor	Property Address	Properties Represented	NAC Land Use Category	2016 Existing[3]	2040 DSA-2 Build[1,3]	2040 DSA-2 Increase[2]
R5063B	202 PRESENTEER TRL	1	B	48[3]	57	9
R5063C	204 PRESENTEER TRL	1	B	48[3]	56	8
R5063D	206 PRESENTEER TRL	1	B	48[3]	56	8
R5063E	208 PRESENTEER TRL	1	B	48[3]	56	8
R5064A	216 PRESENTEER TRL	1	B	48[3]	56	8
R5064B	218 PRESENTEER TRL	1	B	48[3]	56	8
R5064C	220 PRESENTEER TRL	1	B	48[3]	56	8
R5064D	226 PRESENTEER TRL	1	B	48[3]	58	10
R5064E	228 PRESENTEER TRL	1	B	48[3]	59	11
R5064F	222 PRESENTEER TRL	1	B	48[3]	57	9
R5065A	300 PRESENTEER TRL	1	B	48[3]	59	11
R5065B	302 PRESENTEER TRL	1	B	48[3]	58	10
R5065C	306 PRESENTEER TRL	1	B	48[3]	58	10
R5065D	308 PRESENTEER TRL	1	B	48[3]	58	10
R5065E	310 PRESENTEER TRL	1	B	48[3]	57	9
R5065F	306 PRESENTEER TRL	1	B	48[3]	55	7
R5066	105 GREYCREST CT	1	B	51	54	3
R5067	106 GREYCREST CT	1	B	51	54	3
R5068	104 GREYCREST CT	1	B	49	56	7
R5069	119 RIDGE LAKE DR	1	B	52	57	5
R5070	121 RIDGE LAKE DR	1	B	48[3]	56	8
R5071	102 GREYCREST CT	1	B	48[3]	55	7
R5072	123 RIDGE LAKE DR	1	B	48[3]	58	10
R5073	125 RIDGE LAKE DR	1	B	48[3]	59	11
R5074	127 RIDGE LAKE DR	1	B	48	60	12
R5075	124 RIDGE LAKE DR	1	B	52	60	8
R5076	122 RIDGE LAKE DR	1	B	54	60	6
R5077A	111 BELLA PL	1	B	63	65	2
R5077B	113 BELLA PL	1	B	62	65	3
R5077C	101 FIREFLY RD	1	B	62	65	3
R5077D	101 FIREFLY RD	1	B	62	65	3
R5077E	101 FIREFLY RD	1	B	62	66	4
R5078A	108 BELLA PL	1	B	48[3]	53	5
R5078B	110 BELLA PL	1	B	48[3]	51	3
R5078C	112 BELLA PL	1	B	48[3]	51	3
R5078D	114 BELLA PL	1	B	48[3]	52	4
R5078E	116 BELLA PL	1	B	48	56	8
R5079	5201 DUTCH ELM DR	1	B	48[3]	53	5
R5080	152 RESTONWOOD DR	1	B	61	64	3
R5081	148 RESTONWOOD DR	1	B	60	63	3
R5082	144 RESTONWOOD DR	1	B	57	64	7
R5083	140 RESTONWOOD DR	1	B	53[3]	65	12
R5084	136 RESTONWOOD DR	1	B	53[3]	63	10

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Complete 540

Traffic Noise Analysis

IMPACT ANALYSIS TABLE

Receptor	Property Address	Properties Represented	NAC Land Use Category	2016 Existing[3]	2040 DSA-2 Build[1,3]	2040 DSA-2 Increase[2]
R5085	128 RESTONWOOD DR	1	B	53[3]	69	16
R5086	124 RESTONWOOD DR	1	B	53[3]	70	17
R5087	125 RESTONWOOD DR	1	B	53[3]	53	0
R5088	129 RESTONWOOD DR	1	B	53[3]	53[3]	0
R5089	133 RESTONWOOD DR	1	B	53[3]	53[3]	0
R5090	137 RESTONWOOD DR	1	B	53[3]	53[3]	0
R5091	204 RIVER FALLS DR	1	B	53[3]	53[3]	0
R5092	121 RESTONWOOD DR	1	B	53[3]	53[3]	0
R5093	117 RESTONWOOD DR	1	B	53[3]	53[3]	0
R5094	113 RESTONWOOD DR	1	B	53[3]	53[3]	0
R5095	208 RIVER FALLS DR	1	B	53[3]	53[3]	0
R5096	212 RIVER FALLS DR	1	B	53[3]	53[3]	0
R5097	109 RESTONWOOD DR	1	B	53[3]	53[3]	0
R5098	105 RESTONWOOD DR	1	B	53[3]	53[3]	0
R5099	101 RESTONWOOD DR	1	B	53[3]	53	0
R5100	120 RESTONWOOD DR	1	B	53[3]	70	17
R5101	116 RESTONWOOD DR	1	B	53[3]	70	17
R5102	112 RESTONWOOD DR	1	B	53[3]	70	17
R5103	108 RESTONWOOD DR	1	B	53[3]	70	17
R5104	104 RESTONWOOD DR	1	B	53[3]	71	18
R5105	100 RESTONWOOD DR	1	B	53[3]	70	17
R5106	409 RIVER FALLS DR	1	B	53[3]	64	11
R5107	405 RIVER FALLS DR	1	B	53[3]	60	7
R5108	104 BATSONWOOD PL	1	B	53[3]	58	5
R5109	108 BATSONWOOD PL	1	B	53[3]	59	6
R5110	112 BATSONWOOD PL	1	B	53[3]	60	7
R5111	209 RIVER FALLS DR	1	B	53[3]	53[3]	0
R5112	213 RIVER FALLS DR	1	B	53[3]	53[3]	0
R5113	217 RIVER FALLS DR	1	B	53[3]	53[3]	0
R5114	105 BATSONWOOD PL	1	B	53[3]	53	0
R5115	109 BATSONWOOD PL	1	B	53[3]	53[3]	0
R5116	113 BATSONWOOD PL	1	B	53[3]	54	1
R5117	116 BATSONWOOD PL	1	B	53[3]	60	7
R5118	3724 HERITAGE MEADOWS LN	1	B	53[3]	55	2
R5119	3728 HERITAGE MEADOWS LN	1	B	53[3]	56	3
R5120	3732 HERITAGE MEADOWS LN	1	B	53[3]	59	6
R5121	3736 HERITAGE MEADOWS LN	1	B	53[3]	62	9
R5122	3735 HERITAGE MEADOWS LN	1	B	53[3]	55	2
R5123	3733 HERITAGE MEADOWS LN	1	B	53[3]	53	0
R5124	312 MYSTIC PINE PL	1	B	53[3]	63	10
R5125	224 MYSTIC PINE PL	1	B	53[3]	68	15
R5126	220 MYSTIC PINE PL	1	B	53[3]	68	15
R5127	216 MYSTIC PINE PL	1	B	53[3]	69	16

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Traffic Noise Analysis

IMPACT ANALYSIS TABLE

Receptor	Property Address	Properties Represented	NAC Land Use Category	2016 Existing[3]	2040 DSA-2 Build[1,3]	2040 DSA-2 Increase[2]
R5128	212 MYSTIC PINE PL	1	B	53[3]	69	16
R5129	208 MYSTIC PINE PL	1	B	53[3]	70	17
R5130	204 MYSTIC PINE PL	1	B	53[3]	70	17
R5131	132 MYSTIC PINE PL	1	B	53[3]	66	13
R5132	223 MYSTIC PINE PL	1	B	53[3]	53	0
R5133	201 VICTORY FALLS DR	1	B	53[3]	53	0
R5134	219 MYSTIC PINE PL	1	B	53[3]	53[3]	0
R5135	215 MYSTIC PINE PL	1	B	53[3]	53[3]	0
R5136	104 BANYAN CREEK PL	1	B	53[3]	53[3]	0
R5137	209 MYSTIC PINE PL	1	B	53[3]	53[3]	0
R5138	113 BANYAN CREEK PL	1	B	53[3]	53	0
R5139	201 MYSTIC PINE PL	1	B	53[3]	58	5
R5140	100 HARMONY CREEK PL	1	B	53[3]	58	5
R5141	125 MYSTIC PINE PL	1	B	53[3]	59	6
R5142	121 MYSTIC PINE PL	1	B	53[3]	59	6
R5143	9008 TURNER DR	1	B	53[3]	57	4
R5144	9001 TURNER DR	1	B	53[3]	55	2
R5145A	314 CASTIEN COVE PL	1	B	53[3]	59	6
R5145B	312 CASTIEN COVE PL	1	B	53[3]	57	4
R5145C	310 CASTIEN COVE PL	1	B	53[3]	58	5
R5145D	308 CASTIEN COVE PL	1	B	53[3]	57	4
R5146A	210 CASTIEN COVE PL	1	B	53[3]	56	3
R5146B	210 CASTIEN COVE PL	1	B	53[3]	55	2
R5146C	302 CASTIEN COVE PL	1	B	53[3]	55	2
R5146D	206 CASTIEN COVE PL	1	B	53[3]	53[3]	0
R5147A	313 CASTIEN COVE PL	1	B	53[3]	58	5
R5147B	311 CASTIEN COVE PL	1	B	53[3]	53	0
R5147C	309 CASTIEN COVE PL	1	B	53[3]	54	1
R5147D	307 CASTIEN COVE PL	1	B	53[3]	53[3]	0
R5148A	305 CASTIEN COVE PL	1	B	53[3]	53[3]	0
R5148B	303 CASTIEN COVE PL	1	B	53[3]	53[3]	0
R5148C	303 CASTIEN COVE PL	1	B	53[3]	53[3]	0
R5148D	301 CASTIEN COVE PL	1	B	53[3]	53[3]	0
R5149A	100 Bowerbank LN Apt 1	1	B	53[3]	53[3]	0
R5149B	100 Bowerbank LN Apt 2	1	B	53[3]	53[3]	0
R5149C	102 Bowerbank LN Apt 1	1	B	53[3]	53[3]	0
R5149D	102 Bowerbank LN Apt 2	1	B	53[3]	53[3]	0
R5149E	102 BOWERBANK LN	1	B	53[3]	53[3]	0
R5149F	104 BOWERBANK LN	1	B	53[3]	53[3]	0
R5150A	319 CASTIEN COVE PL	1	B	53[3]	56	3
R5150B	112 BOWERBANK LN	1	B	53[3]	56	3
R5150C	319 CASTIEN COVE PL	1	B	53[3]	57	4
R5150D	114 BOWERBANK LN	1	B	53[3]	56	3

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Traffic Noise Analysis

IMPACT ANALYSIS TABLE

Receptor	Property Address	Properties Represented	NAC Land Use Category	2016 Existing[3]	2040 DSA-2 Build[1,3]	2040 DSA-2 Increase[2]
R5150E	116 BOWERBANK LN	1	B	53[3]	57	4
R5150F	118 BOWERBANK LN	1	B	53[3]	56	3
R5151A	124 BOWERBANK LN	1	B	53[3]	54	1
R5151B	124 BOWERBANK LN	1	B	53[3]	54	1
R5151C	124 BOWERBANK LN	1	B	53[3]	54	1
R5151D	126 BOWERBANK LN	1	B	53[3]	54	1
R5151E	128 BOWERBANK LN	1	B	53[3]	54	1
R5151F	130 BOWERBANK LN	1	B	53[3]	53	0
R5152A	134 BOWERBANK LN	1	B	53[3]	53[3]	0
R5152B	200 BOWERBANK LN	1	B	53[3]	53[3]	0
R5152C	202 BOWERBANK LN	1	B	53[3]	53[3]	0
R5152D	204 BOWERBANK LN	1	B	53[3]	53[3]	0
R5153	4005 CLYDE DR	1	B	53[3]	53[3]	0
R5154A	100 RANSOMWOOD DR	1	B	53[3]	53[3]	0
R5154B	102 RANSOMWOOD DR	1	B	53[3]	53[3]	0
R5154C	104 RANSOMWOOD DR	1	B	53[3]	53[3]	0
R5154D	106 RANSOMWOOD DR	1	B	53[3]	53[3]	0
R5154E	108 RANSOMWOOD DR	1	B	53[3]	53[3]	0
R5154F	110 RANSOMWOOD DR	1	B	53[3]	53[3]	0
R5155A	112 RANSOMWOOD DR	1	B	53[3]	53	0
R5155B	114 RANSOMWOOD DR	1	B	53[3]	54	1
R5155C	116 RANSOMWOOD DR	1	B	53[3]	55	2
R5155D	118 RANSOMWOOD DR	1	B	53	56	3
R5155E	120 RANSOMWOOD DR	1	B	54	57	3
R5155F	122 RANSOMWOOD DR	1	B	55	58	3
R5157	300 BELLAGIO DR	1	B	52[3]	54	2
R5158	301 BELLAGIO DR	1	B	62	65	3
R5159	104 CAPRI DR	1	B	61	63	2
R5160	108 CAPRI DR	1	B	60	64	4
R5161	112 CAPRI DR	1	B	53	61	8
R5162	116 CAPRI DR	1	B	52[3]	61	9
R5163	105 CAPRI DR	1	B	52[3]	52[3]	0
R5164	109 CAPRI DR	1	B	52[3]	52[3]	0
R5165	201 BELLAGIO DR	1	B	52[3]	52[3]	0
R5166	120 PALERMO CT	1	B	52[3]	52[3]	0
R5167	116 PALERMO CT	1	B	52[3]	52[3]	0
R5168	113 PALERMO CT	1	B	52[3]	63	11
R5169	201 PALERMO CT	1	B	52[3]	63	11
R5170	101 PALERMO CT	1	B	52[3]	66	14
R5171	105 PALERMO CT	1	B	52[3]	60	8
R5172	108 PALERMO CT	1	B	52[3]	56	4
R5173	100 PALERMO CT	1	B	52[3]	64	12
R5174	105 BELLAGIO DR	1	B	52[3]	59	7

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Traffic Noise Analysis

IMPACT ANALYSIS TABLE

Receptor	Property Address	Properties Represented	NAC Land Use Category	2016 Existing[3]	2040 DSA-2 Build[1,3]	2040 DSA-2 Increase[2]
R5175	204 BELLAGIO DR	1	B	52[3]	52[3]	0
R5176	200 BELLAGIO DR	1	B	52[3]	52[3]	0
R5177	112 BELLAGIO DR	1	B	52[3]	52[3]	0
R5178	108 BELLAGIO DR	1	B	52[3]	52[3]	0
R5179	104 BELLAGIO DR	1	B	52[3]	52[3]	0
R5180	100 BELLAGIO DR	1	B	52[3]	56	4
R5181	101 BELLAGIO DR	1	B	52[3]	58	6
R5183	4624 LOCKLEY RD	1	B	53[3]	54	1
R5184	4620 LOCKLEY RD	1	B	53[3]	53	0
R5185	4612 LOCKLEY RD	1	B	53[3]	57	4
R5186	3957 CIRCLE DR	1	B	53[3]	54	1
R5187	3953 CIRCLE DR	1	B	53[3]	53	0
R5188	3949 CIRCLE DR	1	B	53[3]	56	3
R5189	3948 CIRCLE DR	1	B	53[3]	56	3
R5190	3932 PATRICK PLACE DR	1	B	53[3]	58	5
R5191	3905 RUSTIC MILL DR	1	B	46[3]	56	10
R5192	3901 RUSTIC MILL DR	1	B	46[3]	57	11
R5193	8537 LAWDRAKER RD	1	B	46[3]	58	12
R5194	3904 SUMMER BROOK DR	1	B	46[3]	51	5
R5195	3908 SUMMER BROOK DR	1	B	46[3]	51	5
R5196	3912 SUMMER BROOK DR	1	B	46[3]	51	5
R5197	3916 SUMMER BROOK DR	1	B	46[3]	52	6
R5198	3800 GRANDBRIDGE DR	1	B	46[3]	52	6
R5199	3801 GRANDBRIDGE DR	1	B	46[3]	55	9
R5201	3725 GRANDBRIDGE DR	1	B	46[3]	54	8
R5202	4005 SUMMER BROOK DR	1	B	46[3]	53	7
R5203	4009 SUMMER BROOK DR	1	B	46[3]	52	6
R5204	3820 WESLEY RIDGE DR	1	B	46[3]	51	5
R5205	3816 WESLEY RIDGE DR	1	B	46[3]	52	6
R5206	3821 WESLEY RIDGE DR	1	B	46[3]	48	2
R5207	3817 WESLEY RIDGE DR	1	B	46[3]	46	0
R5208	3813 WESLEY RIDGE DR	1	B	46[3]	48	2
R5209	3809 WESLEY RIDGE DR	1	B	46[3]	49	3
R5210	3737 WESLEY RIDGE DR	1	B	46[3]	57	11
R5211	3733 WESLEY RIDGE DR	1	B	46[3]	49	3
R5212	3729 WESLEY RIDGE DR	1	B	46[3]	47	1
R5213	3728 WESLEY RIDGE DR	1	B	46[3]	57	11
R5214	3732 WESLEY RIDGE DR	1	B	46[3]	58	12
R5215	3736 WESLEY RIDGE DR	1	B	46[3]	58	12
R5216	3412 GARDEN OAKS LN	1	B	46[3]	59	13
R5217	3400 GARDEN OAKS LN	1	B	49	59	10
R5218	3424 GARDEN OAKS LN	1	B	46[3]	65	19
R5219	3420 GARDEN OAKS LN	1	B	46[3]	65	19

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Traffic Noise Analysis

IMPACT ANALYSIS TABLE

Receptor	Property Address	Properties Represented	NAC Land Use Category	2016 Existing[3]	2040 DSA-2 Build[1,3]	2040 DSA-2 Increase[2]
R5220	3516 CASTELAINE CIR	1	B	46[3]	53	7
R5221	3512 CASTELAINE CIR	1	B	46[3]	50	4
R5222	3508 CASTELAINE CIR	1	B	46[3]	51	5
R5223	3504 CASTELAINE CIR	1	B	46[3]	50	4
R5224	3500 CASTELAINE CIR	1	B	46[3]	51	5
R5225	3408 CASTELAINE CIR	1	B	46	51	5
R5226	3113 FLORESTA DR	1	B	46[3]	60	14
R5227	3813 WEST LAKE RD	1	B	52	57	5
R5228	3429 LANGSTON CIR	1	B	63	67	4
R5229	3425 LANGSTON CIR	1	B	53	57	4
R5231	3421 LANGSTON CIR	1	B	50	54	4
R5232	3417 LANGSTON CIR	1	B	46[3]	50	4
R5233	3413 LANGSTON CIR	1	B	46[3]	47	1
R5234	3409 LANGSTON CIR	1	B	46[3]	46	0
R5235	3405 LANGSTON CIR	1	B	46[3]	47	1
R5236	3404 LANGSTON CIR	1	B	46[3]	54	8
R5237	4001 WEST LAKE RD	1	B	55	63	8
R5238	3401 LANGSTON CIR	1	B	46[3]	47	1
R5239	3341 LANGSTON CIR	1	B	46[3]	46	0
R5240	3333 LANGSTON CIR	1	B	46[3]	46[3]	0
R5241	3340 LANGSTON CIR	1	B	46[3]	55	9
R5242	3336 LANGSTON CIR	1	B	46[3]	54	8
R5243	3332 LANGSTON CIR	1	B	46[3]	53	7
R5244	3228 ALPHAWOOD DR	1	B	46[3]	51	5
R5245	3224 ALPHAWOOD DR	1	B	46[3]	52	6
R5246	3220 ALPHAWOOD DR	1	B	46[3]	52	6
R5247	3216 ALPHAWOOD DR	1	B	46[3]	53	7
R5248	3212 ALPHAWOOD DR	1	B	46[3]	53	7
R5249	3208 ALPHAWOOD DR	1	B	46[3]	53	7
R5250	6005 OXFORD GREEN DR	1	B	46[3]	55	9
R5251	6001 OXFORD GREEN DR	1	B	46[3]	57	11
R5252	3403 PONY SOLDIER DR	1	B	46[3]	54	8
R5253	3501 PONY SOLDIER DR	1	B	46[3]	52	6
R5254	8145 WHEELER WOODS DR	1	B	46[3]	54	8
R5255	8144 WHEELER WOODS DR	1	B	46	57	11
R5256	8140 WHEELER WOODS DR	1	B	46	55	9
R5257	8136 WHEELER WOODS DR	1	B	47	55	8
R5258	8132 WHEELER WOODS DR	1	B	46	52	6
R5259	7805 BELLS LAKE RD	1	B	54	57	3
R5260	3712 HIGHLAND CREEK DR	1	B	46[3]	55	9
R5261	5730 CARRIAGEHOUSE CT	1	B	46[3]	59	13
R5262	5732 CARRIAGEHOUSE CT	1	B	46[3]	57	11
R5263	5720 CARRIAGEHOUSE CT	1	B	46[3]	54	8

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Traffic Noise Analysis

IMPACT ANALYSIS TABLE

Receptor	Property Address	Properties Represented	NAC Land Use Category	2016 Existing[3]	2040 DSA-2 Build[1,3]	2040 DSA-2 Increase[2]
R5264	5728 CARRIAGEHOUSE CT	1	B	46[3]	55	9
R5265	5708 CARRIAGEHOUSE CT	1	B	46[3]	52	6
R5266	8108 RHODES RD	1	B	47	56	9
R5267	8112 RHODES RD	1	B	46[3]	54	8
R5268	8116 RHODES RD	1	B	46[3]	53	7
R5269	5704 CARRIAGEHOUSE CT	1	B	46[3]	52	6
R5270	8120 RHODES RD	1	B	47	53	6
R5271	8121 RHODES RD	1	B	46[3]	52	6
R5272	8125 RHODES RD	1	B	46[3]	48	2
R5273	8112 BUCKSKIN LN	1	B	46[3]	47	1
R5274	8108 BUCKSKIN LN	1	B	46[3]	49	3
R5275	8116 BUCKSKIN LN	1	B	46[3]	52	6
R5276	8117 BUCKSKIN LN	1	B	46[3]	54	8
R5277	8113 BUCKSKIN LN	1	B	46[3]	55	9
R5278	8109 BUCKSKIN LN	1	B	46[3]	55	9
R5279	5421 DOE LN	1	B	46[3]	46[3]	0
R5280	5417 DOE LN	1	B	46[3]	48	2
R5281	3812 BLUE HORIZON DR	1	B	46[3]	57	11
R5282	3810 BLUE HORIZON DR	1	B	46[3]	56	10
R5283	8020 RHODES RD	1	B	46[3]	54	8
R5284	3804 BLUE HORIZON DR	1	B	46	56	10
R5285	3800 BLUE HORIZON DR	1	B	58	55	-3
R5286	3700 WHISPERING WIND DR.	1	B	53	52	-1
R5287	3701 WHISPERING WIND DR.	1	B	47	52	5
R5288	3125 WHISPERING WIND DR.	1	B	46[3]	67	21
R5289	3127 WHISPERING WIND DR.	1	B	46[3]	74	28
R5290	6232 TEN TEN RD	1	B	56	57	1
R5291	6236 TEN TEN RD	1	B	52	55	3
R5292	8000 DEER MEADOW DR	1	B	53	57	4
R5293	8001 DEER MEADOW DR	1	B	52	58	6
R5294	6304 TEN TEN RD	1	B	51	55	4
R5295	6308 TEN TEN RD	1	B	50	54	4
R5296	6312 TEN TEN RD	1	B	52	54	2
R5297	8000 BAYBARK CIR	1	B	59	60	1
R5298	8021 DEER MEADOW DR	1	B	46[3]	53	7
R5299	8025 DEER MEADOW DR	1	B	46[3]	54	8
R5300	8021 BAYBARK CIR	1	B	59	60	1
R5301	8024 BAYBARK CIR	1	B	51	55	4
R5302	8025 BAYBARK CIR	1	B	61	62	1
R5303	8029 BAYBARK CIR	1	B	59	60	1
R5304	8028 BAYBARK CIR	1	B	54	57	3
R5305	6512 TEN TEN RD	1	B	60	61	1
R5306	6612 TEN TEN RD	1	B	53	57	4

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Traffic Noise Analysis

IMPACT ANALYSIS TABLE

Receptor	Property Address	Properties Represented	NAC Land Use Category	2016 Existing[3]		2040 DSA-2 Build[1,3]		2040 DSA-2 Increase[2]
R5307	6624 TEN TEN RD	1	B	56		58		2
R5308	3737 JOHNSON POND RD	1	B	46	[3]	58		12
R5309	5412 DOE LN	1	B	46	[3]	55		9
R5310	5408 DOE LN	1	B	46	[3]	57		11
R5311	5413 DOE LN	1	B	46	[3]	50		4
R5312	5409 DOE LN	1	B	46	[3]	51		5
R5313	5405 DOE LN	1	B	46	[3]	48		2
R5314	5403 DOE LN	1	B	46	[3]	53		7
R5315	5401 DOE LN	1	B	46	[3]	55		9
R5316	8120 DEER MEADOW DR	1	B	46	[3]	58		12
R5317	8129 DEER MEADOW DR	1	B	46	[3]	53		7
R5318	8133 DEER MEADOW DR	1	B	46	[3]	51		5
R5319	8137 DEER MEADOW DR	1	B	46	[3]	51		5
R5320	3836 DOESKIN DR	1	B	46	[3]	51		5
R5321	3840 DOESKIN DR	1	B	46	[3]	48		2
R5322	8300 WHITETAIL DR	1	B	46	[3]	46	[3]	0
R5323	8304 WHITETAIL DR	1	B	46	[3]	46	[3]	0
R5324	8308 WHITETAIL DR	1	B	46	[3]	46	[3]	0
R5325	8312 WHITETAIL DR	1	B	46	[3]	50		4
R5326	3908 JOHNSON POND RD	1	B	46	[3]	47		1
R5327	3908 JOHNSON POND RD	1	B	46	[3]	48		2
R5328	2504 OPTIMIST FARM RD	1	B	46	[3]	52		6
R5329	2504 OPTIMIST FARM RD	1	B	46	[3]	53		7
R5330	4033 SUGG FARM LN	1	B	46	[3]	56		10
R5331	4025 SUGG FARM LN	1	B	46	[3]	59		13
R5332	4017 SUGG FARM LN	1	B	46	[3]	60		14
R5333	4232 GLEN SUMMITT CT	1	B	46	[3]	60		14
R5334	4223 GLEN SUMMITT CT	1	B	46	[3]	58		12
R5335	4221 GLEN SUMMITT CT	1	B	46	[3]	53		7
R5336	2428 OPTIMIST FARM RD	1	B	46	[3]	57		11
R5337	2420 OPTIMIST FARM RD	1	B	46	[3]	59		13
R5338	4208 PLEASANT VIEW DR	1	B	46	[3]	55		9
R5339	2412 OPTIMIST FARM RD	1	B	46	[3]	58		12
R5340	2412 OPTIMIST FARM RD	1	B	48		60		12
R5341	8721 LAKE WHEELER RD	1	B	56		66		10
R5342	2300 DONNY BROOK RD	1	B	46		59		13
R5343	2216 DONNY BROOK RD	1	B	46	[3]	62		16
R5344	2212 DONNY BROOK RD	1	B	46	[3]	63		17
R5345	2129 DONNY BROOK RD	1	B	54	[3]	61		7
R5346	8805 REIGATE LN	1	B	54		60		6
R5347	3920 W ALLEN ST	1	B	54	[3]	60		6
R5348	3917 W ALLEN ST	1	B	54	[3]	60		6
R5349	3909 W ALLEN ST	1	B	54	[3]	60		6

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3 Measured noise levels reported if traffic not the dominant noise source

Complete 540

Traffic Noise Analysis

IMPACT ANALYSIS TABLE

Receptor	Property Address	Properties Represented	NAC Land Use Category	2016 Existing[3]	2040 DSA-2 Build[1,3]	2040 DSA-2 Increase[2]
R5350	3905 W ALLEN ST	1	B	54[3]	60	6
R5351	8600 MARIGOLD ST	1	B	54[3]	60	6
R5352	8604 MARIGOLD ST	1	B	54[3]	62	8
R5353	8608 MARIGOLD ST	1	B	54[3]	64	10
R5354	3813 W ALLEN ST	1	B	54[3]	59	5
R5355	8605 MARIGOLD ST	1	B	54[3]	54[3]	0
R5356	3809 W ALLEN ST	1	B	54[3]	58	4
R5357	3805 W ALLEN ST	1	B	54[3]	57	3
R5358	3801 W ALLEN ST	1	B	54[3]	58	4
R5359	8604 LOBELIA ST	1	B	54[3]	58	4
R5360	8608 LOBELIA ST	1	B	54[3]	59	5
R5361	8232 OLD MCCULLERS RD	1	B	54[3]	64	10
R5362	8241 OLD MCCULLERS RD	1	B	54[3]	67	13
R5363	1617 GULLEY LN	1	B	54[3]	62	8
R5364	1609 GULLEY LN	1	B	54[3]	56	2
R5365	8148 OLD MCCULLERS RD	1	B	54[3]	59	5
R5366	1401 LANERIDGE CT	1	B	54[3]	54[3]	0
R5367	720 GENTLE SLOPE WAY	1	B	54[3]	54[3]	0
R5368	724 GENTLE SLOPE WAY	1	B	54[3]	54[3]	0
R5369	721 GENTLE SLOPE WAY	1	B	54[3]	54[3]	0
R5370	717 GENTLE SLOPE WAY	1	B	54[3]	54[3]	0
R5371	713 GENTLE SLOPE WAY	1	B	54[3]	54[3]	0
R5372	709 GENTLE SLOPE WAY	1	B	54[3]	54[3]	0
R5373	4928 HOLLAND CHURCH RD	1	B	45[3]	53	8
R5374	4928 HOLLAND CHURCH RD	1	B	45[3]	55	10
R5375	5217 HOLLAND CHURCH RD	1	B	50	56	6
R5376	5221 HOLLAND CHURCH RD	1	B	53	60	7
R5377	4812 SWORDFISH DR	1	B	45[3]	53	8
R5378	1012 ASHTON HOLLOW DR	1	B	47	53	6
R5379	5329 HOLLAND CHURCH RD	1	B	51	59	8
R5380	5401 HOLLAND FARMS WAY	1	B	45[3]	58	13
R5381	5405 HOLLAND FARMS WAY	1	B	45[3]	59	14
R5382	5409 HOLLAND FARMS WAY	1	B	45[3]	59	14
R5383	5413 HOLLAND FARMS WAY	1	B	45[3]	60	15
R5384	5417 HOLLAND FARMS WAY	1	B	45[3]	58	13
R5385	5421 HOLLAND FARMS WAY	1	B	45[3]	57	12
R5386	4809 SWORDFISH DR	1	B	45[3]	52	7
R5387	4821 SWORDFISH DR	1	B	45[3]	47	2
R5388	4909 SWORDFISH DR	1	B	45[3]	46	1
R5389	4913 SWORDFISH DR	1	B	45[3]	50	5
R5390	4917 SWORDFISH DR	1	B	45[3]	46	1
R5391	4921 SWORDFISH DR	1	B	45[3]	45[3]	0
R5392	8905 OREGON INLET CT	1	B	45[3]	51	6

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Complete 540

Traffic Noise Analysis

IMPACT ANALYSIS TABLE

Receptor	Property Address	Properties Represented	NAC Land Use Category	2016 Existing[3]	2040 DSA-2 Build[1,3]	2040 DSA-2 Increase[2]
R5393	5000 SWORDFISH DR	1	B	45[3]	49	4
R5403	9100 KON TIKI CT	1	B	45[3]	51	6
R5404	1300 TAVERNIER KNOLL LN	1	B	45[3]	57	12
R5405	1308 TAVERNIER KNOLL LN	1	B	45[3]	56	11
R5406	1316 TAVERNIER KNOLL LN	1	B	45[3]	56	11
R5407	1320 TAVERNIER KNOLL LN	1	B	45[3]	54	9
R5408	9000 DUVAL HILL ST	1	B	45[3]	52	7
R5409	9004 DUVAL HILL ST	1	B	45[3]	51	6
R5410	9008 DUVAL HILL ST	1	B	45[3]	49	4
R5411	1400 TAVERNIER KNOLL LN	1	B	45[3]	49	4
R5412	1408 TAVERNIER KNOLL LN	1	B	45[3]	54	9
R5413	9108 SAULS RD	1	B	45[3]	49	4
R5414	9017 SAULS RD	1	B	47	69	22
R5415	9115 SAULS RD	1	B	51	61	10
R5430	732 COMMUNITY GARDEN RD	1	B	46[3]	59	13
R5431	209 LASSITER FARM RD	1	B	46[3]	49	3
R5432	213 LASSITER FARM RD	1	B	46[3]	49	3
R5433	10036 JOE LEACH RD	1	B	46[3]	50	4
R5434	1524 UPCHURCH WOODS DR	1	B	46[3]	46	0
R5435	1512 UPCHURCH WOODS DR	1	B	46[3]	46	0
R5436	1500 UPCHURCH WOODS DR	1	B	46[3]	50	4
R5437	1501 UPCHURCH WOODS DR	1	B	53	58	5
R5438	10313 JORDAN RD	1	B	46	65	19
R5439	601 CLEE CIR	1	B	46[3]	62	16
R5440	10232 JORDAN RD	1	B	51	59	8
R5441	5933 BLOOMING ACRES RD	1	B	46[3]	48	2
R5442	5937 BLOOMING ACRES RD	1	B	46[3]	54	8
R5443	5932 BLOOMING ACRES RD	1	B	46[3]	56	10
R5444	5936 BLOOMING ACRES RD	1	B	46[3]	57	11
R5445	5308 TYWOOD DR	1	B	46[3]	52	6
R5446	5221 WOODTRENT DR	1	B	46[3]	53	7
R5447	5316 WOODBREK DR	1	B	50[3]	55	5
R5448	5312 WOODBREK DR	1	B	50[3]	53	3
R5449	5308 WOODBREK DR	1	B	50[3]	53	3
R5450	5304 WOODBREK DR	1	B	50[3]	50	0
R5451	1104 GRISSOM FARM RD	1	B	50[3]	54	4
R5452	5305 WOODBREK DR	1	B	50[3]	51	1
R5453	5313 WOODBREK DR	1	B	50[3]	56	6
R5454	5512 TREKWOOD DR	1	B	50[3]	55	5
R5455	1112 GRISSOM FARM RD	1	B	50[3]	53	3
R5456	921 OPEN FIELD DR	1	B	50[3]	56	6
R5457	6816 CALI CT	1	B	50[3]	64	14
R5458	6812 CALI CT	1	B	50[3]	62	12

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Complete 540

Traffic Noise Analysis

IMPACT ANALYSIS TABLE

Receptor	Property Address	Properties Represented	NAC Land Use Category	2016 Existing[3]	2040 DSA-2 Build[1,3]	2040 DSA-2 Increase[2]
R5459	6804 CALI CT	1	B	50[3]	60	10
R5460	1217 GRISSOM FARM RD	1	B	51	55	4
R5461	5321 SERATHER CT	1	B	50[3]	55	5
R5462	5325 SERATHER CT	1	B	50[3]	52	2
R5463	5425 ROLLING FIELD DR	1	B	50[3]	52	2
R5464	5416 ROLLING FIELD DR	1	B	50[3]	54	4
R5465	5416 ROLLING FIELD DR	1	B	50[3]	54	4
R5466	5417 ROLLING FIELD DR	1	B	50[3]	55	5
R5467	5413 ROLLING FIELD DR	1	B	50[3]	57	7
R5468	5304 FANTASY MOTH DR	1	B	50[3]	56	6
R5469	5000 MAPLE SHADY CT	1	B	50[3]	52	2
R5470	5008 MAPLE SHADY CT	1	B	50[3]	56	6
R5471	5012 MAPLE SHADY CT	1	B	50[3]	58	8
R5472	5321 FANTASY MOTH DR	1	B	50[3]	65	15
R5473	5401 FANTASY MOTH DR	1	B	50[3]	65	15
R5474	5405 FANTASY MOTH DR	1	B	50[3]	67	17
R5475	5009 MAPLE SHADY CT	1	B	50[3]	58	8
R5476	5005 MAPLE SHADY CT	1	B	50[3]	56	6
R5477	5412 FANTASY MOTH DR	1	B	50[3]	59	9
R5478	5409 FANTASY MOTH DR	1	B	50[3]	67	17
R5479	5413 FANTASY MOTH DR	1	B	50[3]	67	17
R5480	5229 HARTFELT DR	1	B	50[3]	58	8
R5481	5233 HARTFELT DR	1	B	50[3]	58	8
R5482	5237 HARTFELT DR	1	B	50[3]	61	11
R5483	5241 HARTFELT DR	1	B	50[3]	62	12
R5484	5245 HARTFELT DR	1	B	50[3]	63	13
R5485	5421 FANTASY MOTH DR	1	B	50[3]	67	17
R5486	5429 FANTASY MOTH DR	1	B	50[3]	68	18
R5487	5433 FANTASY MOTH DR	1	B	50[3]	67	17
R5488	5433 FANTASY MOTH DR	1	B	50[3]	67	17
R5489	5437 FANTASY MOTH DR	1	B	50[3]	65	15
R5490	5441 FANTASY MOTH DR	1	B	50[3]	64	14
R5491	5244 HARTFELT DR	1	B	50[3]	60	10
R5492	5501 FANTASY MOTH DR	1	B	50[3]	61	11
R5493	5236 HARTFELT DR	1	B	50[3]	58	8
R5494	5508 FANTASY MOTH DR	1	B	50[3]	57	7
R5495	5509 FANTASY MOTH DR	1	B	50[3]	57	7
R5496	5505 FANTASY MOTH DR	1	B	50[3]	59	9
R5497	1025 RECA RD	1	B	50[3]	70	20
R5498	1020 RECA RD	1	B	50[3]	54	4
R5499	1024 RECA RD	1	B	50[3]	65	15
R5500	1263 NEW BETHEL	1	B	53	56	3
R5501	1218 NEW BETHEL	1	B	53	56	3

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Complete 540

Traffic Noise Analysis

IMPACT ANALYSIS TABLE

Receptor	Property Address	Properties Represented	NAC Land Use Category	2016 Existing[3]	2040 DSA-2 Build[1,3]	2040 DSA-2 Increase[2]
R5502	49 GRISSINGER	1	B	55	57	2
R5503	55 GRISSINGER	1	B	55	58	3
R5504	808 NEW BETHEL	1	B	55	57	2
R5505	722 NEW BETHEL	1	B	59	61	2
R5506	676 NEW BETHEL	1	B	65	68	3
R5507	186 WILLIS	1	B	51	55	4
R5508	2509 NEW BETHEL CHURCH RD	1	B	55	59	4
R5509	2421 PENNY FARM LN	1	B	55	59	4
R5510	4517 BARRINGTON HILLS LN	1	B	51	53	2
R5511	2437 PENNY FARM LN	1	B	52	54	2
R5512	2441 PENNY FARM LN	1	B	51	54	3
R5513	4525 BARRINGTON HILLS LN	1	B	51	54	3
R5514	4529 BARRINGTON HILLS LN	1	B	49	52	3
R5515	4609 BARRINGTON HILLS LN	1	B	50	51	1
R5516	7100 BREEZY BRANCH LN	1	B	49[3]	49[3]	0
R5517	4520 BARRINGTON HILLS LN	1	B	49[3]	50	1
R5518	7117 LITTLE SHANNON DR	1	B	50	52	2
R5519	7109 LITTLE SHANNON DR	1	B	53	55	2
R5520	2524 WIN RD	1	B	55	58	3
R5521	2527 WIN RD	1	B	54	57	3
R5522	2529 WIN RD	1	B	60	63	3
R5523	4621 SELLIE DR	1	B	66	70	4
R5524	4300 SMITH LANDING DR	1	B	65	71	6
R5525	4301 SMITH LANDING DR	1	B	65	69	4
R5526	2301 HIGH PASTURE PL	1	B	62	66	4
R5527	8501 BOVINE PL	1	B	63	67	4
R5528	8501 BOVINE PL	1	B	63	68	5
R5529	8501 BOVINE PL	1	B	61	66	5
R5530	221 HILLINGTON	1	B	49[3]	49[3]	0
R5531	217 HILLINGTON	1	B	49[3]	49[3]	0
R5532	214 HILLINGTON	1	B	49[3]	51	2
R5533	433 REDPATH DR	1	B	49[3]	54	5
R5534	432 REDPATH DR	1	B	49[3]	55	6
R5535	9548 CASCADE CT	1	B	49[3]	55	6
R5536	8909 OLD CASCADE DR	1	B	49[3]	55	6
R5537	8909 OLD CASCADE DR	1	B	49[3]	54	5
R5538	2905 ESCONDIDO FARM RD	1	B	49[3]	49[3]	0
R5539	5901 RAYNOR RD	1	B	52	54	2
R5540	2701 HIDDEN ACRES TRL	1	B	49[3]	58	9
R5541	600 TRAIL OF MERLIN	1	B	57[3]	60	3
R5542	602 TRAIL OF MERLIN	1	B	57[3]	60	3
R5543	604 TRAIL OF MERLIN	1	B	57[3]	60	3
R5544	603 TRAIL OF MERLIN	1	B	57[3]	60	3

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Complete 540

Traffic Noise Analysis

IMPACT ANALYSIS TABLE

Receptor	Property Address	Properties Represented	NAC Land Use Category	2016 Existing[3]	2040 DSA-2 Build[1,3]	2040 DSA-2 Increase[2]
R5545	601 TRAIL OF MERLIN	1	B	57[3]	61	4
R5546	602 QUEEN GUENEVERE TRL	1	B	57[3]	60	3
R5547	4812 GREEN GARDEN RD	1	B	57	63	6
R5548	4839 GREEN GARDEN RD	1	B	57[3]	59	2
R5549	2632 E GARNER RD	1	B	59	60	1
R5550	7004 FARMDALE RD	1	B	51[3]	54	3
R5551	7009 FARMDALE RD	1	B	51[3]	57	6
R5552	2402 BRANCH RD	1	B	51[3]	63	12
R5553	3621 GRIFFICE MILL RD	1	B	51[3]	51[3]	0
R5554	7000 FARMDALE RD	1	B	51[3]	51[3]	0
R5555	3620 GRIFFICE MILL RD	1	B	51[3]	53	2
R5556	3616 GRIFFICE MILL RD	1	B	51[3]	51	0
R5557	3612 GRIFFICE MILL RD	1	B	51[3]	52	1
R5558	3409 GRIFFICE MILL RD	1	B	51[3]	56	5
R5559	8500 BATTLE BRIDGE RD	1	B	51	59	8
R5560	2700 AUBURN KNIGHTDALE RD	1	B	56[3]	60	4
R5561	7409 SIDECREEK DR	1	B	56[3]	59	3
R5562	7333 SCENIC WOODS DR	1	B	56[3]	56	0
R5563	7333 SCENIC WOODS DR	1	B	56[3]	57	1
R5564	7333 SCENIC WOODS DR	1	B	56[3]	56	0
R5565	2805 HODGE RD	1	B	56[3]	56	0
R5566	2805 HODGE RD	1	B	56[3]	56[3]	0
R5567	2805 HODGE RD	1	B	56[3]	57	1
R5568	1204 Garden Grove Lane	RECREATIONAL	C	56[3]	58	2
R5569	1220 Garden Grove Lane	1	B	56[3]	58	2
R5570	1216 Garden Grove Lane	1	B	56[3]	59	3
R5571	1208 Garden Grove Lane	1	B	56[3]	58	2
R5572	1209 Broken Arrow Court	1	B	56[3]	58	2
R5573	1208 Broken Arrow Court	1	B	56[3]	56[3]	0
R5574	1133 Southern Living Drive	1	B	56[3]	59	3
R5575	1120 Riverdale Street	1	B	58	64	6
R5576	4109 Revine Drive	1	B	56[3]	64	8
R5577	4012 Old Stones Mill Street	1	B	56[3]	66	10
R5578	1012 Southern Living Drive	1	B	56[3]	57	1
R5579	7617 POOLE RD	RECREATIONAL	C	56[3]	61	5
R5580	6006 STONY FALLS WAY	1	B	56[3]	56[3]	0
R5581	6004 STONY FALLS WAY	1	B	56[3]	56[3]	0
R5582	6002 STONY FALLS WAY	1	B	56[3]	56[3]	0
R5583	5013 STONY FALLS WAY	1	B	56[3]	60	4
R5584	5011 STONY FALLS WAY	1	B	56[3]	60	4
R5585	5009 STONY FALLS WAY	1	B	56[3]	60	4
R5586	5007 STONY FALLS WAY	1	B	56[3]	60	4
R5587	5005 STONY FALLS WAY	1	B	56[3]	60	4

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Traffic Noise Analysis

IMPACT ANALYSIS TABLE

Receptor	Property Address	Properties Represented	NAC Land Use Category	2016 Existing[3]	2040 DSA-2 Build[1,3]	2040 DSA-2 Increase[2]
R5588	5003 STONY FALLS WAY	1	B	56[3]	60	4
R5589	5001 STONY FALLS WAY	1	B	56[3]	60	4
R5590	4907 STONY FALLS WAY	1	B	56[3]	60	4
R5591	4905 STONY FALLS WAY	1	B	56[3]	61	5
R5592	4903 STONY FALLS WAY	1	B	56[3]	61	5
R5593	4901 STONY FALLS WAY	1	B	56[3]	61	5
R5594	4807 STONY FALLS WAY	1	B	56[3]	61	5
R5595	4805 STONY FALLS WAY	1	B	56[3]	61	5
R5596	4803 STONY FALLS WAY	1	B	56[3]	60	4
R5597	4801 STONY FALLS WAY	1	B	56[3]	60	4
R5598	4707 STONY FALLS WAY	1	B	56[3]	60	4
R5599	4705 STONY FALLS WAY	1	B	56[3]	60	4
R5600	4703 STONY FALLS WAY	1	B	56[3]	60	4
R5601	4701 STONY FALLS WAY	1	B	56[3]	60	4
R5602	4304 CLIFTON RD	1	B	62	65	3
R5603	4040 CLIFTON RD	1	B	57[3]	60	3
R5604	3501 GRIFFICE MILL RD	1	B	51[3]	51[3]	0
R5605	3429 GRIFFICE MILL RD	1	B	51[3]	51[3]	0
R5606	3600 GRIFFICE MILL RD	1	B	51[3]	54	3
R5607A	NEUSE RIVER TRAIL	RECREATIONAL	C	51[3]	59	8
R5607B	NEUSE RIVER TRAIL	RECREATIONAL	C	51[3]	60	9
R5607C	NEUSE RIVER TRAIL	RECREATIONAL	C	51[3]	62	11
R5607D	NEUSE RIVER TRAIL	RECREATIONAL	C	51[3]	63	12
R5607E	NEUSE RIVER TRAIL	RECREATIONAL	C	51[3]	65	14
R5607F	NEUSE RIVER TRAIL	RECREATIONAL	C	51[3]	66	15
R5607G	NEUSE RIVER TRAIL	RECREATIONAL	C	51[3]	67	16
R5607H	NEUSE RIVER TRAIL	RECREATIONAL	C	51[3]	68	17
R5607I	NEUSE RIVER TRAIL	RECREATIONAL	C	51[3]	67	16
R5607J	NEUSE RIVER TRAIL	RECREATIONAL	C	51[3]	66	15
R5607K	NEUSE RIVER TRAIL	RECREATIONAL	C	51[3]	66	15
R5607L	NEUSE RIVER TRAIL	RECREATIONAL	C	51[3]	65	14
R5607M	NEUSE RIVER TRAIL	RECREATIONAL	C	51[3]	65	14
R5607N	NEUSE RIVER TRAIL	RECREATIONAL	C	51[3]	67	16
R5607O	NEUSE RIVER TRAIL	RECREATIONAL	C	51[3]	67	16
R5607P	NEUSE RIVER TRAIL	RECREATIONAL	C	51[3]	67	16
R5607Q	NEUSE RIVER TRAIL	RECREATIONAL	C	51[3]	65	14
R5607R	NEUSE RIVER TRAIL	RECREATIONAL	C	51[3]	63	12
R5607S	NEUSE RIVER TRAIL	RECREATIONAL	C	51[3]	60	9
R5607T	NEUSE RIVER TRAIL	RECREATIONAL	C	51[3]	59	8
R5607U	NEUSE RIVER TRAIL	RECREATIONAL	C	51[3]	57	6
R5608	5417 FANTASY MOTH DR	1	B	50[3]	67	17
R5610	105 OAKLAND DR	1	B	50[3]	62	12
R5611	108 OAKLAND DR	1	B	50[3]	60	10

1 Noise levels highlighted in red are levels above the Noise Abatement Criteria.
2 Noise level increases highlighted in red are above the substantial increase criteria.
3 Measured noise levels reported if traffic not the dominant noise source

Complete 540

Traffic Noise Analysis

IMPACT ANALYSIS TABLE

Receptor	Property Address	Properties Represented	NAC Land Use Category	2016 Existing[3]	2040 DSA-2 Build[1,3]	2040 DSA-2 Increase[2]
R5612	202 OAKLAND DR	1	B	50[3]	60	10
R5613	204 OAKLAND DR	1	B	50[3]	59	9
R5614	206 OAKLAND DR	1	B	50[3]	60	10
R5615	208 OAKLAND DR	1	B	50[3]	59	9
R5616	3913 RUSTIC MILL DR	1	B	50[3]	50	0
R5617	3909 RUSTIC MILL DR	1	B	50[3]	52	2
R5618	3916 RUSTIC MILL DR	1	B	50[3]	50[3]	0
R5619	3912 RUSTIC MILL DR	1	B	50[3]	50[3]	0
R5620	3908 RUSTIC MILL DR	1	B	50[3]	51	1
R5621	3904 RUSTIC MILL DR	1	B	50[3]	50[3]	0
R5622	3900 RUSTIC MILL DR	1	B	50[3]	50[3]	0
R5623	8521 LAWDRAKER RD	1	B	50[3]	55	5
R5624	5404 HOLLAND FARMS WAY	1	B	45[3]	54	9
R5625	5408 HOLLAND FARMS WAY	1	B	45[3]	54	9
R5626	5416 HOLLAND FARMS WAY	1	B	45[3]	54	9
R5627	5424 HOLLAND FARMS WAY	1	B	45[3]	54	9
R5628	5425 HOLLAND FARMS WAY	1	B	45[3]	55	10
R5629	5429 HOLLAND FARMS WAY	1	B	45[3]	51	6
R5630	2505 OPTIMIST FARM RD	1	B	46[3]	49	3
R5631	4204 GLEN SUMMITT CT	1	B	46[3]	46	0
R5632	2507 OPTIMIST FARM RD	1	B	46[3]	54	8
R5633	8809 RANSDELL RD	1	B	54[3]	57	3
R5634	2209 DONNY BROOK RD	1	B	54[3]	60	6
R5635	3725 WESLEY RIDGE DR	1	B	46[3]	49	3
R5636	3721 WESLEY RIDGE DR	1	B	46[3]	46	0
R5637	3713 WESLEY RIDGE DR	1	B	46[3]	46	0
R5638	3705 WESLEY RIDGE DR	1	B	46[3]	48	2
R5639	3724 WESLEY RIDGE DR	1	B	46[3]	57	11
R5640	3720 WESLEY RIDGE DR	1	B	46[3]	56	10
R5641	3716 WESLEY RIDGE DR	1	B	46[3]	56	10
R5642	3712 WESLEY RIDGE DR	1	B	46[3]	56	10
R5643	3708 WESLEY RIDGE DR	1	B	47	55	8
R5644	4100 WEST LAKE RD	1	B	53	59	6
R5645	3704 WESLEY RIDGE DR	1	B	54	60	6
R5646	3700 WESLEY RIDGE DR	1	B	55	60	5
R5647	5221 HARTFELT DR	1	B	50[3]	54	4
R5648	5225 HARTFELT DR	1	B	50[3]	56	6
R5649	5228 HARTFELT DR	1	B	50[3]	52	2
R5650	5232 HARTFELT DR	1	B	50[3]	54	4
R5651	5524 FANTASY MOTH DR	1	B	50[3]	53	3
R5652	5520 FANTASY MOTH DR	1	B	50[3]	51	1
R5653	5521 FANTASY MOTH DR	1	B	50[3]	53	3
R5654	5517 FANTASY MOTH DR	1	B	50[3]	54	4

1 Noise levels highlighted in red are levels above the Noise Abatement Criteria.
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3 Measured noise levels reported if traffic not the dominant noise source

Complete 540

Traffic Noise Analysis

IMPACT ANALYSIS TABLE

Receptor	Property Address	Properties Represented	NAC Land Use Category	2016 Existing[3]		2040 DSA-2 Build[1,3]		2040 DSA-2 Increase[2]
R5655	2302 HIGH PASTURE PL	1	B	59		63		4
R5656	2304 HIGH PASTURE PL	1	B	56		60		4
R5657	2303 HIGH PASTURE PL	1	B	59		63		4
R5658	2305 HIGH PASTURE PL	1	B	54		57		3
R5659	8502 BOVINE PL	1	B	57		61		4
R5660	8504 BOVINE PL	1	B	57		60		3

1 Noise levels highlighted in red are levels above the Noise Abatement Criteria.
2 Noise level increases highlighted in red are above the substantial increase criteria.
3 Measured noise levels reported if traffic not the dominant noise source

APPENDIX 3

NOISE BARRIER RESULTS

Noise Wall NW1

Location: Adjacent to westbound lanes of DSA2 mainline, east of NC-55 Bypass interchange

-NW1- does preliminarily meet NCDOT feasibility and reasonability criteria

-NW1- is likely to be incorporated into the project.

TNM Run: NW1 SBA: NW1-14ft OPT

Table A4.1: Noise Barrier Performance Table

-NW1- Acoustical Performance Summary			
Impacts:	117	Benefitted Receptors @≥7dB(A) NI	114
Impacted Receptors Benefitted:	110	Total Benefits:	144
Non-Impacted Receptors Benefitted:	33		

-NW1- Parameters			
	Terminus: 41+25 L		
	Terminus: 79+90 L		
Length:	4004 ft	Area / Benefit:	389 ft²
Average Height:	14 ft	Allowable Area / Benef	2,500 ft²
Area:	56,057 ft²		

Receptors					Noise Wall Performance			
Rec #	**Use**	**NAC**	**E.R.s**	**Address**	**Existing**	**Build**	**W/ Wall**	**NLR**
R0013	PLACE OF WORSHIP	D	1	5528 EDDIE CREEK DR	40	43	40	3
R0054A	Res	B	1	200 REUNION PARK DR APT 2818	48	63	55	8
R0054B	Res	B	1	200 REUNION PARK DR APT 2828	48	65	56	9
R0054C	Res	B	1	200 REUNION PARK DR APT 2817	48	63	56	7
R0054D	Res	B	1	200 REUNION PARK DR APT 2827	48	65	56	9
R0054E	Res	B	1	200 REUNION PARK DR APT 2814	48	63	56	7
R0054F	Res	B	1	200 REUNION PARK DR APT 2824	48	65	56	9
R0054G	Res	B	1	200 REUNION PARK DR APT 2813	48	63	56	7
R0054H	Res	B	1	200 REUNION PARK DR APT 2823	48	65	57	8
R0054I	Res	B	1	200 REUNION PARK DR APT 2816	48	53	48	5
R0054J	Res	B	1	200 REUNION PARK DR APT 2826	48	58	49	9
R0054K	Res	B	1	200 REUNION PARK DR APT 2815	48	53	48	5
R0054L	Res	B	1	200 REUNION PARK DR APT 2825	48	58	48	10
R0054M	Res	B	1	200 REUNION PARK DR APT 2812	48	52	48	4
R0054N	Res	B	1	200 REUNION PARK DR APT 2822	48	57	48	9
R0054O	Res	B	1	200 REUNION PARK DR APT 2811	48	52	48	4
R0054P	Res	B	1	200 REUNION PARK DR APT 2821	48	57	48	9
R0055A	Res	B	1	200 REUNION PARK DR APT 3018	48	62	54	8
R0055B	Res	B	1	200 REUNION PARK DR APT 3028	48	63	55	8
R0055C	Res	B	1	200 REUNION PARK DR APT 3038	48	67	55	12
R0055D	Res	B	1	200 REUNION PARK DR APT 3017	48	61	53	8
R0055E	Res	B	1	200 REUNION PARK DR APT 3027	48	63	54	9
R0055F	Res	B	1	200 REUNION PARK DR APT 3037	48	67	55	12
R0055G	Res	B	1	200 REUNION PARK DR APT 3014	48	61	53	8
R0055H	Res	B	1	200 REUNION PARK DR APT 3024	48	63	54	9
R0055I	Res	B	1	200 REUNION PARK DR APT 3034	48	66	56	10
R0055J	Res	B	1	200 REUNION PARK DR APT 3013	48	60	53	7
R0055K	Res	B	1	200 REUNION PARK DR APT 3023	48	63	54	9
R0055L	Res	B	1	200 REUNION PARK DR APT 3033	48	67	57	10
R0055M	Res	B	1	200 REUNION PARK DR APT 3011	48	57	49	8
R0055N	Res	B	1	200 REUNION PARK DR APT 3021	48	60	50	10
R0055O	Res	B	1	200 REUNION PARK DR APT 3031	48	67	57	10
R0055P	Res	B	1	200 REUNION PARK DR APT 3012	48	57	49	8

Noise Wall NW1

Location: Adjacent to westbound lanes of DSA2 mainline, east of NC-55 Bypass interchange

R0055Q	Res	B	1	200 REUNION PARK DR APT 3022	48	60	50	10
R0055R	Res	B	1	200 REUNION PARK DR APT 3032	48	67	57	10
R0055S	Res	B	1	200 REUNION PARK DR APT 3015	48	58	50	8
R0055T	Res	B	1	200 REUNION PARK DR APT 3025	48	60	51	9
R0055U	Res	B	1	200 REUNION PARK DR APT 3035	48	68	57	11
R0055V	Res	B	1	200 REUNION PARK DR APT 3016	48	60	51	9
R0055W	Res	B	1	200 REUNION PARK DR APT 3026	48	62	52	10
R0055X	Res	B	1	200 REUNION PARK DR APT 3036	48	67	57	10
R1605	Res	B	1	2124 E WILLIAMS ST	52	63	58	5
R1705	RECREATIONAL	C	1	200 REUNION PARK DR	48	61	53	8
R1706A	Res	B	1	200 REUNION PARK DR APT 2217	48	58	50	8
R1706B	Res	B	1	200 REUNION PARK DR APT 2227	48	60	51	9
R1706C	Res	B	1	200 REUNION PARK DR APT 2237	48	62	54	8
R1706D	Res	B	1	200 REUNION PARK DR APT 2218	48	59	52	7
R1706E	Res	B	1	200 REUNION PARK DR APT 2228	48	61	52	9
R1706F	Res	B	1	200 REUNION PARK DR APT 2238	48	63	54	9
R1706G	Res	B	1	200 REUNION PARK DR APT 2214	48	56	49	7
R1706H	Res	B	1	200 REUNION PARK DR APT 2224	48	58	50	8
R1706I	Res	B	1	200 REUNION PARK DR APT 2234	48	62	55	7
R1706J	Res	B	1	200 REUNION PARK DR APT 2213	48	55	50	5
R1706K	Res	B	1	200 REUNION PARK DR APT 2223	48	59	50	9
R1706L	Res	B	1	200 REUNION PARK DR APT 2233	48	63	55	8
R1706M	Res	B	1	200 REUNION PARK DR APT 2211	48	48	48	0
R1706N	Res	B	1	200 REUNION PARK DR APT 2221	48	51	48	3
R1706O	Res	B	1	200 REUNION PARK DR APT 2231	48	57	52	5
R1706P	Res	B	1	200 REUNION PARK DR APT 2212	48	48	48	0
R1706Q	Res	B	1	200 REUNION PARK DR APT 2222	48	50	48	2
R1706R	Res	B	1	200 REUNION PARK DR APT 2232	48	57	51	6
R1706S	Res	B	1	200 REUNION PARK DR APT 2215	48	48	48	0
R1706T	Res	B	1	200 REUNION PARK DR APT 2225	48	50	48	2
R1706U	Res	B	1	200 REUNION PARK DR APT 2235	48	57	51	6
R1706V	Res	B	1	200 REUNION PARK DR APT 2216	48	48	48	0
R1706W	Res	B	1	200 REUNION PARK DR APT 2226	48	50	48	2
R1706X	Res	B	1	200 REUNION PARK DR APT 2236	48	58	51	7
R1707A	Res	B	1	200 REUNION PARK DR APT 2711	48	62	54	8
R1707B	Res	B	1	200 REUNION PARK DR APT 2721	48	64	55	9
R1707C	Res	B	1	200 REUNION PARK DR APT 2731	48	67	56	11
R1707D	Res	B	1	200 REUNION PARK DR APT 2712	48	61	53	8
R1707E	Res	B	1	200 REUNION PARK DR APT 2722	48	64	56	8
R1707F	Res	B	1	200 REUNION PARK DR APT 2732	48	67	56	11
R1707G	Res	B	1	200 REUNION PARK DR APT 2715	48	61	53	8
R1707H	Res	B	1	200 REUNION PARK DR APT 2725	48	64	56	8
R1707I	Res	B	1	200 REUNION PARK DR APT 2735	48	67	57	10
R1707J	Res	B	1	200 REUNION PARK DR APT 2716	48	61	53	8
R1707K	Res	B	1	200 REUNION PARK DR APT 2726	48	65	56	9
R1707L	Res	B	1	200 REUNION PARK DR APT 2736	48	67	57	10
R1707M	Res	B	1	200 REUNION PARK DR APT 2718	48	50	48	2
R1707N	Res	B	1	200 REUNION PARK DR APT 2728	48	52	48	4
R1707O	Res	B	1	200 REUNION PARK DR APT 2738	48	59	53	6
R1707P	Res	B	1	200 REUNION PARK DR APT 2717	48	50	48	2
R1707Q	Res	B	1	200 REUNION PARK DR APT 2727	48	52	48	4
R1707R	Res	B	1	200 REUNION PARK DR APT 2737	48	59	52	7
R1707S	Res	B	1	200 REUNION PARK DR APT 2714	48	51	48	3
R1707T	Res	B	1	200 REUNION PARK DR APT 2724	48	52	48	4
R1707U	Res	B	1	200 REUNION PARK DR APT 2734	48	58	52	6

Noise Wall NW1

Location: Adjacent to westbound lanes of DSA2 mainline, east of NC-55 Bypass interchange

R1707V	Res	B	1	200 REUNION PARK DR APT 2713	48	57	50	7
R1707W	Res	B	1	200 REUNION PARK DR APT 2723	48	59	51	8
R1707X	Res	B	1	200 REUNION PARK DR APT 2733	48	61	53	8
R1708A	Res	B	1	200 REUNION PARK DR APT 3111	48	57	51	6
R1708B	Res	B	1	200 REUNION PARK DR APT 3121	48	62	53	9
R1708C	Res	B	1	200 REUNION PARK DR APT 3131	48	63	54	9
R1708D	Res	B	1	200 REUNION PARK DR APT 3112	48	57	51	6
R1708E	Res	B	1	200 REUNION PARK DR APT 3122	48	61	53	8
R1708F	Res	B	1	200 REUNION PARK DR APT 3132	48	62	54	8
R1708G	Res	B	1	200 REUNION PARK DR APT 3113	48	59	51	8
R1708H	Res	B	1	200 REUNION PARK DR APT 3123	48	63	52	11
R1708I	Res	B	1	200 REUNION PARK DR APT 3133	48	64	53	11
R1708J	Res	B	1	200 REUNION PARK DR APT 3114	48	56	49	7
R1708K	Res	B	1	200 REUNION PARK DR APT 3124	48	60	50	10
R1708L	Res	B	1	200 REUNION PARK DR APT 3134	48	61	52	9
R1708M	Res	B	1	200 REUNION PARK DR APT 3117	48	55	49	6
R1708N	Res	B	1	200 REUNION PARK DR APT 3127	48	59	50	9
R1708O	Res	B	1	200 REUNION PARK DR APT 3137	48	62	54	8
R1708P	Res	B	1	200 REUNION PARK DR APT 3115	48	56	51	5
R1708Q	Res	B	1	200 REUNION PARK DR APT 3125	48	60	53	7
R1708R	Res	B	1	200 REUNION PARK DR APT 3135	48	61	54	7
R1708S	Res	B	1	200 REUNION PARK DR APT 3116	48	56	51	5
R1708T	Res	B	1	200 REUNION PARK DR APT 3126	48	59	52	7
R1708U	Res	B	1	200 REUNION PARK DR APT 3136	48	61	54	7
R1708V	Res	B	1	200 REUNION PARK DR APT 3118	48	54	48	6
R1708W	Res	B	1	200 REUNION PARK DR APT 3128	48	57	48	9
R1708X	Res	B	1	200 REUNION PARK DR APT 3138	48	60	52	8
R1709A	Res	B	1	215 GALLENT HEDGE TRL	48	60	53	7
R1709B	Res	B	1	213 GALLENT HEDGE TRL	48	59	52	7
R1709C	Res	B	1	211 GALLENT HEDGE TRL	48	59	52	7
R1709D	Res	B	1	209 GALLENT HEDGE TRL	48	58	52	6
R1709E	Res	B	1	207 GALLENT HEDGE TRL	48	58	51	7
R1709F	Res	B	1	205 GALLENT HEDGE TRL	48	58	51	7
R1709G	Res	B	1	203 GALLENT HEDGE TRL	48	57	51	6
R1709H	Res	B	1	201 GALLENT HEDGE TRL	48	57	50	7
R1710A	Res	B	1	915 STRAYWHITE AVE	48	64	56	8
R1710B	Res	B	1	913 STRAYWHITE AVE	48	65	57	8
R1710C	Res	B	1	911 STRAYWHITE AVE	48	65	57	8
R1710D	Res	B	1	909 STRAYWHITE AVE	48	64	57	7
R1710E	Res	B	1	907 STRAYWHITE AVE	48	65	57	8
R1710F	Res	B	1	905 STRAYWHITE AVE	48	65	57	8
R1710G	Res	B	1	901 STRAYWHITE AVE	48	64	58	6
R1710H	Res	B	1	903 STRAYWHITE AVE	48	64	58	6
R1705A	Res	B	1	200 REUNION PARK DR APT 2318	48	54	48	6
R1705B	Res	B	1	200 REUNION PARK DR APT 2328	48	57	50	7
R1705C	Res	B	1	200 REUNION PARK DR APT 2338	48	59	52	7
R1705D	Res	B	1	200 REUNION PARK DR APT 2316	48	61	53	8
R1705E	Res	B	1	200 REUNION PARK DR APT 2326	48	63	54	9
R1705F	Res	B	1	200 REUNION PARK DR APT 2336	48	64	54	10
R1705G	Res	B	1	200 REUNION PARK DR APT 2317	48	53	48	5
R1705H	Res	B	1	200 REUNION PARK DR APT 2327	48	56	48	8
R1705I	Res	B	1	200 REUNION PARK DR APT 2337	48	58	49	9
R1705J	Res	B	1	200 REUNION PARK DR APT 2315	48	59	52	7
R1705K	Res	B	1	200 REUNION PARK DR APT 2325	48	62	53	9
R1705L	Res	B	1	200 REUNION PARK DR APT 2335	48	63	54	9

Noise Wall NW1

Location: Adjacent to westbound lanes of DSA2 mainline, east of NC-55 Bypass interchange

R1705M	Res	B	1	200 REUNION PARK DR APT 2314	48	52	48	4
R1705N	Res	B	1	200 REUNION PARK DR APT 2324	48	54	48	6
R1705O	Res	B	1	200 REUNION PARK DR APT 2334	48	56	49	7
R1705P	Res	B	1	200 REUNION PARK DR APT 2312	48	59	52	7
R1705Q	Res	B	1	200 REUNION PARK DR APT 2312	48	61	53	8
R1705R	Res	B	1	200 REUNION PARK DR APT 2312	48	63	54	9
R1705S	Res	B	1	200 REUNION PARK DR APT 2312	48	52	48	4
R1705T	Res	B	1	200 REUNION PARK DR APT 2312	48	54	48	6
R1705U	Res	B	1	200 REUNION PARK DR APT 2312	48	56	50	6
R1705V	Res	B	1	200 REUNION PARK DR APT 2311	48	58	52	6
R1705W	Res	B	1	200 REUNION PARK DR APT 2321	48	61	53	8
R1705X	Res	B	1	200 REUNION PARK DR APT 2331	48	62	54	8
R5003	RECREATIONAL	C	1	2080 E WILLIAMS ST	53	62	60	2
R5004	Res	B	1	5513 EDDIE CREEK DR	49	59	55	4
R5063A	Res	B	1	200 PRESENTEER TRL	48	54	50	4
R5063B	Res	B	1	202 PRESENTEER TRL	48	57	52	5
R5063C	Res	B	1	204 PRESENTEER TRL	48	56	52	4
R5063D	Res	B	1	206 PRESENTEER TRL	48	56	51	5
R5063E	Res	B	1	208 PRESENTEER TRL	48	56	51	5
R5064A	Res	B	1	216 PRESENTEER TRL	48	56	52	4
R5064B	Res	B	1	218 PRESENTEER TRL	48	56	52	4
R5064C	Res	B	1	220 PRESENTEER TRL	48	56	53	3
R5064D	Res	B	1	226 PRESENTEER TRL	48	58	54	4
R5064E	Res	B	1	228 PRESENTEER TRL	48	59	55	4
R5064F	Res	B	1	222 PRESENTEER TRL	48	57	54	3
R5065A	Res	B	1	300 PRESENTEER TRL	48	59	55	4
R5065B	Res	B	1	302 PRESENTEER TRL	48	58	54	4
R5065C	Res	B	1	306 PRESENTEER TRL	48	58	54	4
R5065D	Res	B	1	308 PRESENTEER TRL	48	58	53	5
R5065E	Res	B	1	310 PRESENTEER TRL	48	57	53	4
R5065F	Res	B	1	306 PRESENTEER TRL	48	55	52	3
R5059	Res	B	1	4026 REUNION CREEK PKWY	48	66	57	9
R5060	Res	B	1	4030 REUNION CREEK PKWY	48	66	58	8
R5061	Res	B	1	4034 REUNION CREEK PKWY	48	65	58	7
R5062	Res	B	1	4038 REUNION CREEK PKWY	48	64	58	6
							-NW1- predicted build condition with wall Benefits[1]	**144**

Impact = 5 to 6 dB(A) NLR = ≥ 7 dB(A) NLR =

[1] A receptor is considered benefitted if the predicted Noise Level Reduction (NLR) is at least 5 dB(A).

TABLE NSA1-NW1
CALCULATION OF EQUIVALENT RECEPTOR VALUE FOR AN APARTMENT COMPLEX WITH A POOL
ACTIVITY CATEGORY B

Apartment Exterior Use Areas (Activity Category B)		
CASE:	A multi-unit apartment complex has an outdoor pool area. According to the apartment manager, the pool has an average hourly use of 20 persons. The pool is located at ground level and is surrounded by the apartment buildings and is available for use by all apartment occupants and their guests. NCDOT assumes that the pool is open 12 hours a day, 7 days a week for 5 months. 75 of the apartment units are predicted to have future noise levels exceeding the Activity Category B NAC. The entire pool area and 97 apartment units are predicted to receive benefits from NW1 being considered for the project.	
Line	**For an Average Single Family Residential Unit in North Carolina**	
A	People per Residence	3
B	Hours Available for Use per Year	8,760
C	**Person-hours per Year Available for Use = A x B**	**26,280**
	For the Apartment Pool Area	
D	Average Hourly Occupancy for Pool Area	20
E	Hours Per Day Pool is Available for Use	12
F	Days per Month Pool is Available for Use	30
G	Months per Year Pool is Available for Use	5
H	**Person-hours per Year Available for Use = D x E x F x G**	**36,000**
I	**Equivalent Receptor Unit Value for Pool Area = H/C**	**1**
J	For most pool areas in apartment complexes, using one receptor point in TNM placed closest to the proposed highway project is sufficient. If more than one exterior receptor point was used to model large pool areas, enter the number of receptor points.	1
K	**Equivalent Receptor Value Assigned to Each Receiver = I/J**	**1**
L	Number of Votes Assigned to Pool Area in Barrier Voting Process = I	1
	For the Apartment Complex Residential Units, Each Apartment Unit Gets Analyzed as One Receptor	
M	Number of Apartment Units	111
N	Number of Impacted Units	75
O	Number of Benefited Units	97
P	**Number of Votes Assigned to Apartment Complex in Barrier Voting Process = L + O, not to Exceed M**	**98**
KEY:	Input Values	
	Calculated Values in Bold Text	

To be used with Traffic Noise Reports only

NCDOT NOISE WALL

FEASIBILITY & REASONABLENESS WORKSHEET

PROJECT - Complete 540 **TIP# -** R-2721

NOISE WALL # - NW1 **COUNTY(IES) -** Wake and Johnston

 # IMPACTS - 117 **# BENEFITS -** 144 **NAC:** ☐ **A** ☑ **B** ☑ **C** ☑ **D** ☐ **E**

A. FEASBILITY:

1.	Can a 5-dB(A) reduction in traffic noise levels be achieved for at least two impacted receptors?	YES
2.	Does topography negatively affect the proposed noise wall?	NO
3.	Does the proposed noise wall negatively affect property access, drainage, utilities or maintenance requirements?	NO
4.	Is there control of access in the vicinity of the proposed noise wall?	YES

B. REASONABLENESS

1.	Can a 7- dB(A) reduction in traffic noise levels be achieved for at least one benefited receptor?	YES
2.	Is the quantity per benefited receptor of 389 square feet less than the maximum allowable quantity per benefited receptor of 2,500 square feet?	YES

C. NOISE WALL PRELIMINARY DECISION

1.	Is the noise wall preliminarily feasible?	YES
2.	Is the noise wall preliminarily reasonable?	YES
3.	Is the noise wall likely?	YES

PREPARED BY: D. Shannon **DATE PREPARED:** 12/17/2017

Noise Wall: NW2 and NW3

Location: Adjacent to eastbound lanes of DSA2 mainline, NC 55 Bypass to east of East Williams Street

-NW3- does preliminarily meet NCDOT feasibility and reasonability criteria

-NW3- is likely to be incorporated into the project.

TNM Run: NW2_3-16_18 SBA: NW2 NW3 16ft OPT

Table A4.3: Noise Barrier Performance Table

-NW2 and NW3- Acoustical Performance Summary			
Impacts:	92	Benefitted Receptors @≥7dB(A) NLR:	66
Impacted Receptors Benefitted:	86	Total Benefits:	96
Non-Impacted Receptors Benefitted:	10		

-NW3- Parameters			
	Terminus: 36+10 L		
	Terminus: 94+15 L		
Length:	5828 ft	Area / Benefit:	972 ft²
Average Height:	16 ft	Allowable Area / Benefit:	2,500 ft²
Area:	93,264 ft²		

Receptors					Noise Wall Performance			
Rec #	Use	NAC	E.R.s	Address	Existing	Build	W/ Wall	NLR
R0014A	Res	B	1	303 CABANA DR	53	63	57	6
R0014B	Res	B	1	305 CABANA DR	52	63	56	7
R0015A	Res	B	1	307 CABANA DR	53	64	56	8
R0015B	Res	B	1	309 CABANA DR	53	65	58	7
R0016A	Res	B	1	311 CABANA DR	53	67	58	9
R0016B	Res	B	1	313 CABANA DR	50	67	59	8
R0017A	Res	B	1	314 CABANA DR	48	68	58	10
R0017B	Res	B	1	312 CABANA DR	48	67	57	10
R0018A	Res	B	1	308 CABANA DR	48	62	53	9
R0018B	Res	B	1	310 CABANA DR	48	66	55	11
R0019A	Res	B	1	304 CABANA DR	48	60	51	9
R0019B	Res	B	1	302 CABANA DR	48	59	51	8
R0020A	Res	B	1	103 DOVES HAVEN DR	48	61	52	9
R0020B	Res	B	1	300 CABANA DR	48	57	49	8
R0020C	Res	B	1	105 DOVES HAVEN DR	48	58	51	7
R0021A	Res	B	1	103 SPRING DOVE LN	48	61	51	10
R0021B	Res	B	1	105 SPRING DOVE LN	48	62	52	10
R0022A	Res	B	1	109 SPRING DOVE LN	48	67	57	10
R0022B	Res	B	1	107 SPRING DOVE LN	48	64	54	10
R0023A	Res	B	1	112 SPRING DOVE LN	48	67	58	9
R0023B	Res	B	1	111 SPRING DOVE LN	48	67	58	9
R0024A	Res	B	1	110 SPRING DOVE LN	48	67	57	10
R0024B	Res	B	1	108 SPRING DOVE LN	48	65	55	10
R0025A	Res	B	1	106 SPRING DOVE LN	48	62	53	9
R0025B	Res	B	1	104 SPRING DOVE LN	48	60	52	8
R0026	Res	B	1	102 SPRING DOVE LN	48	59	54	5
R0027A	Res	B	1	201 DOVES HAVEN DR	48	59	51	8
R0027B	Res	B	1	205 DOVES HAVEN DR	48	57	50	7
R0028A	Res	B	1	209 DOVES HAVEN DR	48	60	52	8
R0028B	Res	B	1	211 DOVES HAVEN DR	48	60	52	8
R0029A	Res	B	1	203 SUNSHINE CREST CT	48	56	50	6
R0029B	Res	B	1	201 SUNSHINE CREST CT	48	56	50	6
R0030A	Res	B	1	205 SUNSHINE CREST CT	48	64	54	10
R0030B	Res	B	1	207 SUNSHINE CREST CT	48	69	57	12

Noise Wall: NW2 and NW3

Location: Adjacent to eastbound lanes of DSA2 mainline, NC 55 Bypass to east of East Williams Street

R0031A	Res	B	1	208 SUNSHINE CREST CT	48	72	61	11
R0031B	Res	B	1	209 SUNSHINE CREST CT	48	71	60	11
R0032A	Res	B	1	206 SUNSHINE CREST CT	48	71	61	10
R0032B	Res	B	1	204 SUNSHINE CREST CT	48	67	59	8
R0033A	Res	B	1	202 SUNSHINE CREST CT	48	64	57	7
R0033B	Res	B	1	200 SUNSHINE CREST CT	48	62	56	6
R0034A	Res	B	1	112 SUNSHINE CREST CT	48	59	54	5
R0034B	Res	B	1	110 SUNSHINE CREST CT	48	55	51	4
R0035A	Res	B	1	108 SUNSHINE CREST CT	48	52	49	3
R0035B	Res	B	1	104 SUNSHINE CREST CT	48	51	48	3
R0036A	Res	B	1	100 SUNSHINE CREST CT	48	50	48	2
R0036B	Res	B	1	102 SUNSHINE CREST CT	48	49	48	1
R0037A	Res	B	1	501 STONECREEK DR	48	50	49	1
R0037B	Res	B	1	503 STONECREEK DR	48	50	48	2
R0038A	Res	B	1	505 STONECREEK DR	48	53	51	2
R0038B	Res	B	1	507 STONECREEK DR	48	55	50	5
R0039A	Res	B	1	509 STONECREEK DR	48	64	57	7
R0039B	Res	B	1	511 STONECREEK DR	48	71	62	9
R0040A	Res	B	1	512 STONECREEK DR	48	74	63	11
R0040B	Res	B	1	510 STONECREEK DR	48	72	62	10
R0041A	Res	B	1	504 STONECREEK DR	48	66	59	7
R0041B	Res	B	1	508 STONECREEK DR	48	69	61	8
R0041C	Res	B	1	500 STONECREEK DR	48	59	55	4
R0042A	Res	B	1	405 THORNCREST DR	48	70	59	11
R0042B	Res	B	1	403 THORNCREST DR	48	67	58	9
R0043A	Res	B	1	407 THORNCREST DR	48	69	60	9
R0043B	Res	B	1	409 THORNCREST DR	48	68	62	6
R0044A	Res	B	1	411 THORNCREST DR	48	65	60	5
R0044B	Res	B	1	413 THORNCREST DR	48	63	57	6
R0045A	Res	B	1	501 THORNCREST DR	48	64	56	8
R0045B	Res	B	1	415 THORNCREST DR	48	63	56	7
R0046A	Res	B	1	503 THORNCREST DR	48	66	56	10
R0046B	Res	B	1	505 THORNCREST DR	48	71	59	12
R0047A	Res	B	1	509 THORNCREST DR	48	70	59	11
R0047B	Res	B	1	507 THORNCREST DR	48	72	60	12
R0048A	Res	B	1	508 THORNCREST DR	48	68	57	11
R0048B	Res	B	1	506 THORNCREST DR	48	63	54	9
R0049A	Res	B	1	101 WEEPING OAK CT	48	58	50	8
R0049B	Res	B	1	504 THORNCREST DR	48	61	53	8
R0050A	Res	B	1	103 WEEPING OAK CT	48	58	52	6
R0050B	Res	B	1	104 WEEPING OAK CT	48	54	50	4
R0051A	Res	B	1	414 THORNCREST DR	48	49	48	1
R0051B	Res	B	1	102 WEEPING OAK CT	48	48	48	0
R0052A	Res	B	1	412 THORNCREST DR	48	51	48	3
R0052B	Res	B	1	406 THORNCREST DR	48	51	48	3
R0053A	Res	B	1	412 STONECREEK DR	48	56	52	4
R0053B	Res	B	1	410 STONECREEK DR	48	54	50	4
R0056A	Res	B	1	215 HOLLYHOCK LN	48	67	58	9
R0056B	Res	B	1	213 HOLLYHOCK LN	48	66	57	9
R0056C	Res	B	1	217 HOLLYHOCK LN	48	68	58	10
R0057A	Res	B	1	219 HOLLYHOCK LN	48	70	59	11
R0057B	Res	B	1	221 HOLLYHOCK LN	48	71	60	11
R0058A	Res	B	1	220 HOLLYHOCK LN	48	66	57	9
R0058B	Res	B	1	222 HOLLYHOCK LN	48	69	59	10
R0058C	Res	B	1	218 HOLLYHOCK LN	48	64	56	8
R1627A	Res	B	1	2213 E WILLIAMS ST	54	66	58	8

Noise Wall: NW2 and NW3

Location: Adjacent to eastbound lanes of DSA2 mainline, NC 55 Bypass to east of East Williams Street

R1627B	Res	B	1	2215 E WILLIAMS ST	53	66	58	8
R1701A	Res	B	1	301 CABANA DR	53	62	57	5
R1701B	Res	B	1	211 CABANA DR	54	62	58	4
R1702A	Res	B	1	207 CABANA DR	55	62	59	3
R1702B	Res	B	1	209 CABANA DR	54	62	58	4
R1703A	Res	B	1	208 CABANA DR	48	55	49	6
R1703B	Res	B	1	210 CABANA DR	48	56	49	7
R1704A	Res	B	1	106 DOVES HAVEN DR	48	52	49	3
R1704B	Res	B	1	104 DOVES HAVEN DR	48	51	49	2
R1711A	Res	B	1	209 HOLLYHOCK LN	48	61	55	6
R1711B	Res	B	1	211 HOLLYHOCK LN	48	63	55	8
R1712A	Res	B	1	212 HOLLYHOCK LN	48	55	51	4
R1712B	Res	B	1	210 HOLLYHOCK LN	48	55	51	4
R1713A	Res	B	1	216 HOLLYHOCK LN	48	59	54	5
R1713B	Res	B	1	214 HOLLYHOCK LN	48	57	53	4
R1714A	Res	B	1	203 LINDELL DR	48	61	55	6
R1714B	Res	B	1	205 LINDELL DR	48	62	56	6
R1715A	Res	B	1	207 LINDELL DR	48	63	57	6
R1715B	Res	B	1	208 LINDELL DR	48	61	56	5
R1918A	Res	B	1	205 HOLLYHOCK LN	48	56	51	5
R1918B	Res	B	1	207 HOLLYHOCK LN	48	58	53	5
R1918C	Res	B	1	203 HOLLYHOCK LN	48	55	50	5
R1919A	Res	B	1	206 HOLLYHOCK LN	48	48	48	0
R1919B	Res	B	1	208 HOLLYHOCK LN	48	50	48	2
R1919C	Res	B	1	204 HOLLYHOCK LN	48	49	48	1
R1920A	Res	B	1	109 LINDELL DR	48	59	54	5
R1920B	Res	B	1	201 LINDELL DR	48	56	52	4
R1920C	Res	B	1	107 LINDELL DR	48	58	53	5
R1921A	Res	B	1	200 LINDELL DR	48	53	52	1
R1921B	Res	B	1	202 LINDELL DR	48	52	51	1
R1922A	Res	B	1	206 LINDELL DR	48	59	54	5
R1922B	Res	B	1	204 LINDELL DR	48	53	52	1
R1704C	Res	B	1	200 DOVES HAVEN DR	48	54	51	3
R1704D	Res	B	1	202 DOVES HAVEN DR	48	51	50	1
R1704E	Res	B	1	204 DOVES HAVEN DR	48	51	50	1
R1704F	Res	B	1	206 DOVES HAVEN DR	48	51	50	1
R1704G	Res	B	1	208 DOVES HAVEN DR	48	50	50	0
R1704H	Res	B	1	210 DOVES HAVEN DR	48	48	48	0
R1704I	Res	B	1	212 DOVES HAVEN DR	48	50	49	1
R1704J	Res	B	1	111 SUNSHINE CREST CT	48	53	49	4
R5007	Res	B	1	2233 E WILLIAMS ST	55	61	58	3
R5008	Res	B	1	205 CABANA DR	55	61	59	2
R5009	Res	B	1	203 CABANA DR	56	62	60	2
R5010	Res	B	1	201 CABANA DR	57	62	60	2
R5011	Res	B	1	121 CABANA DR	58	63	62	1
R5012	Res	B	1	206 CABANA DR	48	54	50	4
R5013	Res	B	1	103 SILVER BRANCH CT	48	53	49	4
R5014	Res	B	1	204 CABANA DR	48	54	50	4
R5015	Res	B	1	202 CABANA DR	53	57	56	1
R5016	Res	B	1	105 SILVER BRANCH CT	49	55	52	3
R5017	Res	B	1	107 SILVER BRANCH CT	48	53	50	3
R5018	Res	B	1	108 SILVER BRANCH CT	50	55	54	1
R5019	Res	B	1	208 WINDCAP DR	50	54	53	1
R5020	Res	B	1	210 WINDCAP DR	49	53	52	1
R5021	Res	B	1	212 WINDCAP DR	48	51	50	1
R5022	Res	B	1	216 WINDCAP DR	48	50	50	0

Noise Wall: NW2 and NW3

Location: Adjacent to eastbound lanes of DSA2 mainline, NC 55 Bypass to east of East Williams Street

R5023	Res	B	1	107 SUNSHINE CREST CT	48	51	49	2
R5024	Res	B	1	219 WINDCAP DR	48	49	48	1
R5025	Res	B	1	215 WINDCAP DR	48	51	51	0
R5026	Res	B	1	105 SUNSHINE CREST CT	48	51	50	1
R5027	Res	B	1	103 SUNSHINE CREST CT	48	51	50	1
R5028	Res	B	1	211 THORNCREST DR	48	51	50	1
R5029	Res	B	1	213 THORNCREST DR	48	50	50	0
R5030	Res	B	1	210 THORNCREST DR	48	52	51	1
R5031	Res	B	1	212 THORNCREST DR	48	51	50	1
R5032	Res	B	1	300 THORNCREST DR	48	50	50	0
R5033	Res	B	1	302 THORNCREST DR	48	50	49	1
R5034	Res	B	1	411 STONECREEK DR	48	50	48	2
R5035	Res	B	1	409 STONECREEK DR	48	48	48	0
R5036	Res	B	1	407 STONECREEK DR	48	49	49	0
R5037	Res	B	1	405 STONECREEK DR	48	50	49	1
R5038	Res	B	1	403 STONECREEK DR	48	49	49	0
R5039	Res	B	1	401 STONECREEK DR	48	49	49	0
R5040	Res	B	1	309 STONECREEK DR	48	51	50	1
R5041	Res	B	1	307 STONECREEK DR	48	51	50	1
R5042	Res	B	1	305 STONECREEK DR	48	51	50	1
R5043	Res	B	1	303 STONECREEK DR	48	52	51	1
R5044	Res	B	1	301 STONECREEK DR	49	53	52	1
R5045	Res	B	1	408 STONECREEK DR	48	51	48	3
R5046	Res	B	1	406 STONECREEK DR	48	49	48	1
R5047	Res	B	1	404 STONECREEK DR	48	51	48	3
R5048	Res	B	1	402 STONECREEK DR	48	53	49	4
R5049	Res	B	1	400 STONECREEK DR	48	54	50	4
R5050	Res	B	1	306 STONECREEK DR	48	52	49	3
R5051	Res	B	1	302 STONECREEK DR	48	52	49	3
R5052	Res	B	1	101 LINDELL DR	48	54	51	3
R5053	Res	B	1	103 LINDELL DR	48	56	52	4
R5054	Res	B	1	105 LINDELL DR	48	55	51	4
R5055	Res	B	1	102 LINDELL DR	49	53	52	1
R5056	Res	B	1	104 LINDELL DR	48	52	52	0
R5057	Res	B	1	106 LINDELL DR	48	52	52	0
R5058	Res	B	1	103 GREYCREST CT	50	54	53	1
R5066	Res	B	1	105 GREYCREST CT	51	54	54	0
R5067	Res	B	1	106 GREYCREST CT	51	54	54	0
R5068	Res	B	1	104 GREYCREST CT	49	56	54	2
R5069	Res	B	1	119 RIDGE LAKE DR	52	57	56	1
R5070	Res	B	1	121 RIDGE LAKE DR	48	56	53	3
R5071	Res	B	1	102 GREYCREST CT	48	55	52	3
R5072	Res	B	1	123 RIDGE LAKE DR	48	58	54	4
R5073	Res	B	1	125 RIDGE LAKE DR	48	59	55	4
R5074	Res	B	1	127 RIDGE LAKE DR	48	60	56	4
R5075	Res	B	1	124 RIDGE LAKE DR	52	60	57	3
R5076	Res	B	1	122 RIDGE LAKE DR	54	60	59	1
R0001A	PLACE OF WORSHIP	D	1	5836 OLD SMITHFIELD RD	40	44	43	1
R0001B	Res	B	1	5900 OLD SMITHFIELD RD	60	66	65	1
R0004B	Res	B	1	3512 BAKERS ALY	57	62	61	1
R0005	PLACE OF WORSHIP	D	1	3501 BAKERS ALY	40	40	40	0
R0006A	Res	B	1	5705 MOSLEY AVE	51	61	56	5
R0006B	Res	B	1	3625 FORAKER ST	51	65	58	7
R0006C	Res	B	1	5713 MOSLEY AVE	52	61	58	3
R0006D	Res	B	1	3617 FORAKER ST	50	57	55	2

Noise Wall: NW2 and NW3

Location: Adjacent to eastbound lanes of DSA2 mainline, NC 55 Bypass to east of East Williams Street

R0006E	Res	B	1	3609 FORAKER ST	53	60	57	3
R0007A	Res	B	1	5712 MOSLEY AVE	50	63	57	6
R0007B	Res	B	1	5724 MOSLEY AVE	50	63	58	5
R0009A	Res	B	1	5603 FELDER AVE	59	64	62	2
R1598	Res	B	1	5828 OLD SMITHFIELD RD	56	60	60	0
R1602	Res	B	1	3500 BAKERS ALY	53	60	58	2
R1603C	Res	B	1	3517 FORAKER ST	56	61	59	2
R1626	Res	B	1	2208 E WILLIAMS ST	55	67	60	7
R5001	Res	B	1	5814 OLD SMITHFIELD RD	61	65	64	1
R5002	Res	B	1	3608 FORAKER ST	55	60	58	2
R5005	Res	B	1	2224 E WILLIAMS ST	60	66	64	2
R5006	PLACE OF WORSHIP	D	1	2244 E WILLIAMS ST	46	50	49	1
							-NW3- predicted build condition with wall Benefits[1]	**96**

Impact = 5 to 6 dB(A) NLR = ≥ 7 dB(A) NLR =

[1] A receptor is considered benefitted if the predicted Noise Level Reduction (NLR) is at least 5 dB(A).

To be used with Traffic Noise Reports only

NCDOT NOISE WALL

FEASIBILITY & REASONABLENESS WORKSHEET

PROJECT - Complete 540 **TIP# -** R-2721

NOISE WALL # - NW2 & NW3 **COUNTY(IES) -** Wake and Johnston

 # IMPACTS - 92 **# BENEFITS -** 96 **NAC:** ☐ **A** ☑ **B** ☐ **C** ☑ **D** ☐ **E**

A. FEASBILITY:

1.	Can a 5-dB(A) reduction in traffic noise levels be achieved for at least two impacted receptors?	YES
2.	Does topography negatively affect the proposed noise wall?	NO
3.	Does the proposed noise wall negatively affect property access, drainage, utilities or maintenance requirements?	NO
4.	Is there control of access in the vicinity of the proposed noise wall?	YES

B. REASONABLENESS

1.	Can a 7- dB(A) reduction in traffic noise levels be achieved for at least one benefited receptor?	YES
2.	Is the quantity per benefited receptor of 972 square feet less than the maximum allowable quantity per benefited receptor of 2,500 square feet?	YES

C. NOISE WALL PRELIMINARY DECISION

1.	Is the noise wall preliminarily feasible?	YES
2.	Is the noise wall preliminarily reasonable?	YES
3.	Is the noise wall likely?	YES

PREPARED BY: D. Shannon **DATE PREPARED:** 12/17/2017

Noise Wall: NW5
Location: Adjacent to westbound lanes of DSA2 mainline, north of Sunset Lake overpass

-NW5- does NOT preliminarily meet NCDOT feasibility and reasonability criteria
-NW5- is NOT likely to be incorporated into the project.

TNM Run: NW5 SBA: NW5-22ft-OPT

Table A4.4: Noise Barrier Performance Table

-NW5- Acoustical Performance Summary			
Impacts:	12	Benefitted Receptors @≥7dB(A) NLR:	2
Impacted Receptors Benefitted:	2	Total Benefits:	7
Non-Impacted Receptors Benefitted:	5		

-NW5- Parameters			
	Terminus: 85+50 L		
	Terminus: 35+45 Y3		
Length:	2604 ft	Area / Benefit:	8,182 ft²
Average Height:	22 ft	Allowable Area / Benefit:	2,500 ft²
Area:	57,271 ft²		

Receptors					Noise Wall Performance			
Rec #	Use	NAC	E.R.s	Address	Existing	Build	W/ Wall	NLR
R0061A	Res	B	1	5204 DUTCH ELM DR	48	63	60	3
R0061B	Res	B	1	5208 DUTCH ELM DR	48	65	61	4
R0061C	Res	B	1	5200 DUTCH ELM DR	48	58	58	0
R0062A	Res	B	1	5212 DUTCH ELM DR	48	64	60	4
R0062B	Res	B	1	5216 DUTCH ELM DR	48	63	60	3
R0063A	Res	B	1	5209 DUTCH ELM DR	48	48	48	0
R0063B	Res	B	1	5213 DUTCH ELM DR	48	48	48	0
R0064A	Res	B	1	5217 DUTCH ELM DR	48	48	48	0
R0064B	Res	B	1	5221 DUTCH ELM DR	48	48	48	0
R0065A	Res	B	1	5220 DUTCH ELM DR	48	61	59	2
R0065B	Res	B	1	5224 DUTCH ELM DR	48	60	58	2
R0066A	Res	B	1	5300 DUTCH ELM DR	48	60	56	4
R0066B	Res	B	1	5228 DUTCH ELM DR	48	60	57	3
R0067A	Res	B	1	5225 DUTCH ELM DR	48	51	50	1
R0067B	Res	B	1	5405 MONARCH BIRCH DR	48	48	48	0
R0068A	Res	B	1	5305 DUTCH ELM DR	48	48	48	0
R0068B	Res	B	1	5309 DUTCH ELM DR	48	48	48	0
R0068C	Res	B	1	5317 DUTCH ELM DR	48	48	48	0
R0069A	Res	B	1	5308 DUTCH ELM DR	48	60	55	5
R0069B	Res	B	1	5304 DUTCH ELM DR	48	60	56	4
R0070A	Res	B	1	5312 DUTCH ELM DR	49	60	54	6
R0070B	Res	B	1	5316 DUTCH ELM DR	51	60	54	6
R0071A	Res	B	1	5320 DUTCH ELM DR	52	59	53	6
R0071B	Res	B	1	5324 DUTCH ELM DR	53	59	52	7
R0072A	Res	B	1	5332 DUTCH ELM DR	55	60	54	6
R0072B	Res	B	1	5328 DUTCH ELM DR	54	59	52	7
R0073A	Res	B	1	5333 DUTCH ELM DR	48	48	48	0
R0073B	Res	B	1	5301 DUTCH ELM DR	48	48	48	0
R0073C	Res	B	1	5325 DUTCH ELM DR	48	48	48	0

Noise Wall: NW5

Location: Adjacent to westbound lanes of DSA2 mainline, north of Sunset Lake overpass

R0074A	Res	B	1	5336 DUTCH ELM DR	58	60	58	2
R0074B	Res	B	1	5340 DUTCH ELM DR	57	60	59	1
R5079	Res	B	1	5201 DUTCH ELM DR	48	53	51	2
							-NW5- predicted build condition with wall Benefits[1]	**7**

Impact = 5 to 6 dB(A) NLR = ≥ 7 dB(A) NLR =

[1] A receptor is considered benefitted if the predicted Noise Level Reduction (NLR) is at least 5 dB(A).

To be used with Traffic Noise Reports only

NCDOT NOISE WALL

FEASIBILITY & REASONABLENESS WORKSHEET

PROJECT - Complete 540 **TIP# -** R-2721

NOISE WALL # - NW5 **COUNTY(IES) -** Wake and Johnston

 # IMPACTS - 12 **# BENEFITS -** 7 **NAC:** ☐ A ☑ B ☐ C ☐ D ☐ E

A. FEASBILITY:

1.	Can a 5-dB(A) reduction in traffic noise levels be achieved for at least two impacted receptors?	YES
2.	Does topography negatively affect the proposed noise wall?	NO
3.	Does the proposed noise wall negatively affect property access, drainage, utilities or maintenance requirements?	NO
4.	Is there control of access in the vicinity of the proposed noise wall?	YES

B. REASONABLENESS

1.	Can a 7- dB(A) reduction in traffic noise levels be achieved for at least one benefited receptor?	YES
2.	Is the quantity per benefited receptor of 8,182 square feet less than the maximum allowable quantity per benefited receptor of 2,500 square feet?	NO

C. NOISE WALL PRELIMINARY DECISION

1.	Is the noise wall preliminarily feasible?	YES
2.	Is the noise wall preliminarily reasonable?	NO
3.	Is the noise wall likely?	NO

PREPARED BY: D. Shannon **DATE PREPARED:** 12/20/2017

Noise Wall: NW6
Location: Adjacent to westbound lanes of DSA2 mainline, east of westernmost Sunset Lake overpass

-NW6- does preliminarily meet NCDOT feasibility and reasonability criteria
-NW6- is likely to be incorporated into the project.

TNM Run: NW6 SBA: NW6-12ft-OPT

Table A4.5: Noise Barrier Performance Table

-NW6- Acoustical Performance Summary			
Impacts:	11	Benefitted Receptors @≥7dB(A) NLR:	8
Impacted Receptors Benefitted:	9	Total Benefits:	9
Non-Impacted Receptors Benefitted:	0		

-NW6- Parameters			
	Terminus: 106+45 L		
	Terminus: 124+60 L		
Length:	1760 ft	Area / Benefit:	2,347 ft²
Average Height:	12 ft	Allowable Area / Benefit:	3,000 ft²
Area:	21,124 ft²		

Receptors					Noise Wall Performance			
Rec #	Use	NAC	E.R.s	Address	Existing	Build	W/ Wall	NLR
R5080	Res	B	1	152 RESTONWOOD DR	61	64	63	1
R5081	Res	B	1	148 RESTONWOOD DR	60	63	63	0
R5082	Res	B	1	144 RESTONWOOD DR	57	64	62	2
R5083	Res	B	1	140 RESTONWOOD DR	53	65	59	6
R5084	Res	B	1	136 RESTONWOOD DR	53	63	59	4
R5085	Res	B	1	128 RESTONWOOD DR	53	69	61	8
R5086	Res	B	1	124 RESTONWOOD DR	53	70	61	9
R5087	Res	B	1	125 RESTONWOOD DR	53	53	53	0
R5088	Res	B	1	129 RESTONWOOD DR	53	53	53	0
R5089	Res	B	1	133 RESTONWOOD DR	53	53	53	0
R5090	Res	B	1	137 RESTONWOOD DR	53	53	53	0
R5091	Res	B	1	204 RIVER FALLS DR	53	53	53	0
R5092	Res	B	1	121 RESTONWOOD DR	53	53	53	0
R5093	Res	B	1	117 RESTONWOOD DR	53	53	53	0
R5094	Res	B	1	113 RESTONWOOD DR	53	53	53	0
R5095	Res	B	1	208 RIVER FALLS DR	53	53	53	0
R5096	Res	B	1	212 RIVER FALLS DR	53	53	53	0
R5097	Res	B	1	109 RESTONWOOD DR	53	53	53	0
R5098	Res	B	1	105 RESTONWOOD DR	53	53	53	0
R5099	Res	B	1	101 RESTONWOOD DR	53	53	53	0
R5100	Res	B	1	120 RESTONWOOD DR	53	70	61	9
R5101	Res	B	1	116 RESTONWOOD DR	53	70	61	9
R5102	Res	B	1	112 RESTONWOOD DR	53	70	61	9
R5103	Res	B	1	108 RESTONWOOD DR	53	70	61	9
R5104	Res	B	1	104 RESTONWOOD DR	53	71	61	10
R5105	Res	B	1	100 RESTONWOOD DR	53	70	62	8
R5106	Res	B	1	409 RIVER FALLS DR	53	64	61	3
R5107	Res	B	1	405 RIVER FALLS DR	53	60	58	2
R5108	Res	B	1	104 BATSONWOOD PL	53	58	58	0

Noise Wall: NW6

Location: Adjacent to westbound lanes of DSA2 mainline, east of westernmost Sunset Lake overpass

R5109	Res	B	1	108 BATSONWOOD PL	53	59	58	1
R5110	Res	B	1	112 BATSONWOOD PL	53	60	60	0
R5111	Res	B	1	209 RIVER FALLS DR	53	53	53	0
R5112	Res	B	1	213 RIVER FALLS DR	53	53	53	0
R5113	Res	B	1	217 RIVER FALLS DR	53	53	53	0
R5114	Res	B	1	105 BATSONWOOD PL	53	53	53	0
R5115	Res	B	1	109 BATSONWOOD PL	53	53	53	0
R5116	Res	B	1	113 BATSONWOOD PL	53	54	54	0
R5117	Res	B	1	116 BATSONWOOD PL	53	60	61	-1
R5118	Res	B	1	3724 HERITAGE MEADOWS LN	53	55	56	-1
							-NW6- predicted build condition with wall Benefits[1]	**9**

Impact = 5 to 6 dB(A) NLR = ≥ 7 dB(A) NLR =

[1] A receptor is considered benefitted if the predicted Noise Level Reduction (NLR) is at least 5 dB(A).

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NCDOT NOISE WALL

FEASIBILITY & REASONABLENESS WORKSHEET

PROJECT - Complete 540 **TIP# -** R-2721

NOISE WALL # - NW6 **COUNTY(IES) -** Wake and Johnston

 # IMPACTS - 11 **# BENEFITS -** 9 **NAC:** ☐ A ☑ B ☐ C ☐ D ☐ E

A. FEASBILITY:

1.	Can a 5-dB(A) reduction in traffic noise levels be achieved for at least two impacted receptors?	YES
2.	Does topography negatively affect the proposed noise wall?	NO
3.	Does the proposed noise wall negatively affect property access, drainage, utilities or maintenance requirements?	NO
4.	Is there control of access in the vicinity of the proposed noise wall?	YES

B. REASONABLENESS

1.	Can a 7- dB(A) reduction in traffic noise levels be achieved for at least one benefited receptor?	YES
2.	Is the quantity per benefited receptor of 2,347 square feet less than the maximum allowable quantity per benefited receptor of 3,000 square feet?	YES

C. NOISE WALL PRELIMINARY DECISION

1.	Is the noise wall preliminarily feasible?	YES
2.	Is the noise wall preliminarily reasonable?	YES
3.	Is the noise wall likely?	YES

PREPARED BY: R. Thompson **DATE PREPARED:** 12/5/2017

Noise Wall: NW7

Location: Adjacent to eastbound lanes of DSA2 mainline, west of easternmost Sunset Lake overpass

-NW7- does preliminarily meet NCDOT feasibility and reasonability criteria

-NW7- is likely to be incorporated into the project.

TNM Run: NW7 SBA: NW7-14ft-OPT

Table A4.6: Noise Barrier Performance Table

-NW7- Acoustical Performance Summary			
Impacts:	38	Benefitted Receptors @≥7dB(A) NLR:	30
Impacted Receptors Benefitted:	34	Total Benefits:	94
Non-Impacted Receptors Benefitted:	60		

-NW7- Parameters			
	Terminus: 115+30 L		
	Terminus: 158+65 L		
Length:	4,434 ft	Area / Benefit:	660 ft²
Average Height:	14 ft	Allowable Area / Benefit:	2,500 ft²
Area:	62,079 ft²		

Receptors					Noise Wall Performance			
Rec #	**Use**	**NAC**	**E.R.s**	**Address**	**Existing**	**Build**	**W/ Wall**	**NLR**
R0075	REC	C		5200 LOCKLEY RD	53	66		
R0075-1	5	C	5	5200 LOCKLEY RD	53	70	60	10
R0075-2	5	C	5	5200 LOCKLEY RD	53	70	60	10
R0075-3	5	C	5	5200 LOCKLEY RD	53	69	60	9
R0075-4	5	C	5	5200 LOCKLEY RD	53	69	60	9
R0075-5	5	C	5	5200 LOCKLEY RD	53	67	60	7
R0075-6	5	C	5	5200 LOCKLEY RD	53	66	59	7
R0075-7	5	C	5	5200 LOCKLEY RD	53	64	58	6
R0075-8	5	C	5	5200 LOCKLEY RD	53	64	58	6
R0075-9	5	C	5	5200 LOCKLEY RD	53	63	56	7
R0075-10	5	C	5	5200 LOCKLEY RD	53	63	56	7
R2287A	Res	B	1	132 BUXTONWOOD PL	53	70	59	11
R2287B	Res	B	1	132 BUXTONWOOD PL	53	67	59	8
R2342A	Res	B	1	120 BUXTONWOOD PL	53	60	53	7
R2342B	Res	B	1	124 BUXTONWOOD PL	53	65	56	9
R2343A	Res	B	1	108 BUXTONWOOD PL	53	53	53	0
R2343B	Res	B	1	112 BUXTONWOOD PL	53	56	53	3
R2343C	Res	B	1	100 BUXTONWOOD PL	53	53	53	0
R2346A	Res	B	1	105 MAYFIELD DR	53	60	56	4
R2346B	Res	B	1	103 MAYFIELD DR	53	59	55	4
R2346C	Res	B	1	101 MAYFIELD DR	53	59	54	5
R2346D	Res	B	1	111 MAYFIELD DR	53	62	57	5
R2346E	Res	B	1	109 MAYFIELD DR	53	61	57	4
R2346F	Res	B	1	107 MAYFIELD DR	53	60	56	4
R2347A	Res	B	1	117 MAYFIELD DR	53	66	61	5
R2347B	Res	B	1	115 MAYFIELD DR	53	66	61	5
R2347C	Res	B	1	115 MAYFIELD DR	53	66	61	5
R2347D	Res	B	1	119 MAYFIELD DR	53	67	62	5
R2348A	Res	B	1	121 MAYFIELD DR	53	67	63	4
R2348B	Res	B	1	125 MAYFIELD DR	53	67	62	5

Noise Wall: NW7

Location: Adjacent to eastbound lanes of DSA2 mainline, west of easternmost Sunset Lake overpass

R2348C	Res	B	1	125 MAYFIELD DR	53	67	62	5
R2348D	Res	B	1	127 MAYFIELD DR	53	66	62	4
R2348E	Res	B	1	129 MAYFIELD DR	53	66	62	4
R2348F	Res	B	1	131 MAYFIELD DR	53	67	62	5
R2349A	Res	B	1	209 MAYFIELD DR	53	66	61	5
R2349B	Res	B	1	207 MAYFIELD DR	53	66	61	5
R2349C	Res	B	1	205 MAYFIELD DR	53	66	61	5
R2349D	Res	B	1	203 MAYFIELD DR	53	66	61	5
R2349E	Res	B	1	201 MAYFIELD DR	53	66	61	5
R2350A	Res	B	1	221 MAYFIELD DR	53	68	60	8
R2350B	Res	B	1	219 MAYFIELD DR	53	67	60	7
R2350C	Res	B	1	217 MAYFIELD DR	53	67	60	7
R2350D	Res	B	1	215 MAYFIELD DR	53	67	60	7
R2350E	Res	B	1	213 MAYFIELD DR	53	67	60	7
R2350F	Res	B	1	211 MAYFIELD DR	53	67	61	6
R2351A	Res	B	1	223 MAYFIELD DR	53	68	60	8
R2351B	Res	B	1	225 MAYFIELD DR	53	68	60	8
R2351C	Res	B	1	227 MAYFIELD DR	53	68	59	9
R2351D	Res	B	1	229 MAYFIELD DR	53	68	59	9
R2352A	Res	B	1	224 MAYFIELD DR	53	53	53	0
R2352B	Res	B	1	222 MAYFIELD DR	53	53	53	0
R2352C	Res	B	1	220 MAYFIELD DR	53	53	53	0
R2352D	Res	B	1	218 MAYFIELD DR	53	53	53	0
R2353A	Res	B	1	216 MAYFIELD DR	53	53	53	0
R2353B	Res	B	1	214 MAYFIELD DR	53	53	53	0
R2353C	Res	B	1	212 MAYFIELD DR	53	53	53	0
R2353D	Res	B	1	210 MAYFIELD DR	53	53	53	0
R2353E	Res	B	1	208 MAYFIELD DR	53	53	53	0
R2354A	Res	B	1	200 MAYFIELD DR	53	53	53	0
R2354B	Res	B	1	202 MAYFIELD DR	53	53	53	0
R2354C	Res	B	1	204 MAYFIELD DR	53	53	53	0
R2354D	Res	B	1	206 MAYFIELD DR	53	53	53	0
R2355A	Res	B	1	143 WILLOW VIEW LN	53	53	53	0
R2355B	Res	B	1	141 WILLOW VIEW LN	53	53	53	0
R2355C	Res	B	1	139 WILLOW VIEW LN	53	53	53	0
R2355D	Res	B	1	137 WILLOW VIEW LN	53	53	53	0
R2356A	Res	B	1	141 WILLOW VIEW LN	53	53	53	0
R2356B	Res	B	1	106 MAYFIELD DR	53	53	53	0
R2356C	Res	B	1	104 MAYFIELD DR	53	53	53	0
R2356D	Res	B	1	102 MAYFIELD DR	53	53	53	0
R2356E	Res	B	1	100 MAYFIELD DR	53	53	53	0
R5124	Res	B	1	312 MYSTIC PINE PL	53	63	59	4
R5125	Res	B	1	224 MYSTIC PINE PL	53	68	61	7
R5126	Res	B	1	220 MYSTIC PINE PL	53	68	61	7
R5127	Res	B	1	216 MYSTIC PINE PL	53	69	62	7
R5128	Res	B	1	212 MYSTIC PINE PL	53	69	62	7
R5129	Res	B	1	208 MYSTIC PINE PL	53	70	62	8
R5130	Res	B	1	204 MYSTIC PINE PL	53	70	61	9
R5131	Res	B	1	132 MYSTIC PINE PL	53	66	58	8
R5132	Res	B	1	223 MYSTIC PINE PL	53	53	53	0
R5133	Res	B	1	201 VICTORY FALLS DR	53	53	53	0

Noise Wall: NW7

Location: Adjacent to eastbound lanes of DSA2 mainline, west of easternmost Sunset Lake overpass

R5134	Res	B	1	219 MYSTIC PINE PL	53	53	53	0
R5135	Res	B	1	215 MYSTIC PINE PL	53	53	53	0
R5136	Res	B	1	104 BANYAN CREEK PL	53	53	53	0
R5137	Res	B	1	209 MYSTIC PINE PL	53	53	53	0
R5138	Res	B	1	113 BANYAN CREEK PL	53	53	53	0
R5139	Res	B	1	201 MYSTIC PINE PL	53	58	53	5
R5140	Res	B	1	100 HARMONY CREEK PL	53	58	53	5
R5141	Res	B	1	125 MYSTIC PINE PL	53	59	53	6
R5142	Res	B	1	121 MYSTIC PINE PL	53	59	53	6
R0085A	Res	B	1	4002 CLYDE DR	53	65	58	7
R0085B	Res	B	1	4004 CLYDE DR	53	69	60	9
R0086	Res	B	1	4001 CLYDE DR	53	59	55	4
R0087A	Res	B	1	5004 SUNSET LAKE RD	53	60	58	2
R0087B	Res	B	1	4009 CLYDE DR	53	56	56	0
R0088A	Res	B	1	5012 SUNSET LAKE RD	59	63	63	0
R0088B	Res	B	1	5008 SUNSET LAKE RD	53	53	53	0
R0088C	Res	B	1	5000 SUNSET LAKE RD	53	56	55	1
R5145A	Res	B	1	314 CASTIEN COVE PL	53	59	53	6
R5145B	Res	B	1	312 CASTIEN COVE PL	53	57	53	4
R5145C	Res	B	1	310 CASTIEN COVE PL	53	58	53	5
R5145D	Res	B	1	308 CASTIEN COVE PL	53	57	53	4
R5146A	Res	B	1	210 CASTIEN COVE PL	53	56	53	3
R5146B	Res	B	1	210 CASTIEN COVE PL	53	55	53	2
R5146C	Res	B	1	302 CASTIEN COVE PL	53	55	53	2
R5146D	Res	B	1	206 CASTIEN COVE PL	53	53	53	0
R5147A	Res	B	1	313 CASTIEN COVE PL	53	58	53	5
R5147B	Res	B	1	311 CASTIEN COVE PL	53	53	53	0
R5147C	Res	B	1	309 CASTIEN COVE PL	53	54	53	1
R5147D	Res	B	1	307 CASTIEN COVE PL	53	53	53	0
R5148A	Res	B	1	305 CASTIEN COVE PL	53	53	53	0
R5148B	Res	B	1	303 CASTIEN COVE PL	53	53	53	0
R5148C	Res	B	1	303 CASTIEN COVE PL	53	53	53	0
R5148D	Res	B	1	301 CASTIEN COVE PL	53	53	53	0
R5149A	Res	B	1	100 Bowerbank LN Apt 1	53	53	53	0
R5149B	Res	B	1	100 Bowerbank LN Apt 2	53	53	53	0
R5149C	Res	B	1	102 Bowerbank LN Apt 1	53	53	53	0
R5149D	Res	B	1	102 Bowerbank LN Apt 2	53	53	53	0
R5149E	Res	B	1	102 BOWERBANK LN	53	53	53	0
R5149F	Res	B	1	104 BOWERBANK LN	53	53	53	0
R5150A	Res	B	1	319 CASTIEN COVE PL	53	56	53	3
R5150B	Res	B	1	112 BOWERBANK LN	53	56	53	3
R5150C	Res	B	1	319 CASTIEN COVE PL	53	57	53	4
R5150D	Res	B	1	114 BOWERBANK LN	53	56	53	3
R5150E	Res	B	1	116 BOWERBANK LN	53	57	53	4
R5150F	Res	B	1	118 BOWERBANK LN	53	56	53	3
R5151A	Res	B	1	124 BOWERBANK LN	53	54	53	1
R5151B	Res	B	1	124 BOWERBANK LN	53	54	53	1
R5151C	Res	B	1	124 BOWERBANK LN	53	54	53	1
R5151D	Res	B	1	126 BOWERBANK LN	53	54	53	1
R5151E	Res	B	1	128 BOWERBANK LN	53	54	53	1
R5151F	Res	B	1	130 BOWERBANK LN	53	53	53	0

Noise Wall: NW7

Location: Adjacent to eastbound lanes of DSA2 mainline, west of easternmost Sunset Lake overpass

R5152A	Res	B	1	134 BOWERBANK LN	53	53	53	0
R5152B	Res	B	1	200 BOWERBANK LN	53	53	53	0
R5152C	Res	B	1	202 BOWERBANK LN	53	53	53	0
R5152D	Res	B	1	204 BOWERBANK LN	53	53	53	0
R5153	Res	B	1	4005 CLYDE DR	53	53	53	0
R5154A	Res	B	1	100 RANSOMWOOD DR	53	53	53	0
R5154B	Res	B	1	102 RANSOMWOOD DR	53	53	53	0
R5154C	Res	B	1	104 RANSOMWOOD DR	53	53	53	0
R5154D	Res	B	1	106 RANSOMWOOD DR	53	53	53	0
R5154E	Res	B	1	108 RANSOMWOOD DR	53	53	53	0
R5154F	Res	B	1	110 RANSOMWOOD DR	53	53	53	0
R5155A	Res	B	1	112 RANSOMWOOD DR	53	53	53	0
R5155B	Res	B	1	114 RANSOMWOOD DR	53	54	54	0
R5155C	Res	B	1	116 RANSOMWOOD DR	53	55	55	0
R5155D	Res	B	1	118 RANSOMWOOD DR	53	56	56	0
R5155E	Res	B	1	120 RANSOMWOOD DR	54	57	57	0
R5155F	Res	B	1	122 RANSOMWOOD DR	55	58	58	0
							-NW7- predicted build condition with wall Benefits[1]	**54**

Impact = 5 to 6 dB(A) NLR = ≥ 7 dB(A) NLR =

[1] A receptor is considered benefitted if the predicted Noise Level Reduction (NLR) is at least 5 dB(A).

TABLE NSA7-NW7
CALCULATION OF EQUIVALENT RECEPTOR VALUE FOR AN APARTMENT COMPLEX WITH A POOL
ACTIVITY CATEGORY B

Apartment Exterior Use Areas (Activity Category B)		
CASE:	A multi-unit subdivision has an outdoor pool area. The pool has an area of 4,500 square feet which translates to maximum bather load of 300 users. Assuming half the pool-area users are in the pool at any one time, the total number of people in the pool area can be estimated to be 600. 125 people are estimated to use other areas of the recreational complex. The pool is located at ground level, is surrounded on three sides by residences and faces the DSA2 on the north side. NCDOT assumes that the pool is open 12 hours a day, 7 days a week for 5 months. The entire pool area is predicted to receive benefits from NW7 being considered for the project.	
Line	**For an Average Single Family Residential Unit in North Carolina**	
A	People per Residence	3
B	Hours Available for Use per Year	8,760
C	**Person-hours per Year Available for Use = A x B**	**26,280**
	For the Apartment Pool Area	
D	Average Hourly Occupancy for Pool Area	725
E	Hours Per Day Pool is Available for Use	12
F	Days per Month Pool is Available for Use	30
G	Months per Year Pool is Available for Use	5
H	**Person-hours per Year Available for Use = D x E x F x G**	**1,305,000**
I	**Equivalent Receptor Unit Value for Pool Area = H/C**	**50**
J	For most pool areas in apartment complexes, using one receptor point in TNM placed closest to the proposed highway project is sufficient. If more than one exterior receptor point was used to model large pool areas, enter the number of receptor points.	10
K	**Equivalent Receptor Value Assigned to Each Receiver = I/J**	**5.0**
L	Number of Votes Assigned to Pool Area in Barrier Voting Process = I	50
	For the Apartment Complex Residential Units, Each Apartment Unit Gets Analyzed as One Receptor	
M	Number of Apartment Units	N/A
N	Number of Impacted Units	N/A
O	Number of Benefited Units	N/A
P	**Number of Votes Assigned to Apartment Complex in Barrier Voting Process = L + O, not to Exceed M**	**#VALUE!**
KEY:	Input Values	
	Calculated Values in Bold Text	

To be used with Traffic Noise Reports only

NCDOT NOISE WALL

FEASIBILITY & REASONABLENESS WORKSHEET

PROJECT - Complete 540 **TIP# -** R-2721

NOISE WALL # - NW7 **COUNTY(IES) -** Wake and Johnston

 # IMPACTS - 38 **# BENEFITS -** 94 **NAC:** ☐ **A** ☑ **B** ☑ **C** ☐ **D** ☐ **E**

A. FEASBILITY:

1.	Can a 5-dB(A) reduction in traffic noise levels be achieved for at least two impacted receptors?	YES
2.	Does topography negatively affect the proposed noise wall?	NO
3.	Does the proposed noise wall negatively affect property access, drainage, utilities or maintenance requirements?	NO
4.	Is there control of access in the vicinity of the proposed noise wall?	YES

B. REASONABLENESS

1.	Can a 7- dB(A) reduction in traffic noise levels be achieved for at least one benefited receptor?	YES
2.	Is the quantity per benefited receptor of 660 square feet less than the maximum allowable quantity per benefited receptor of 2,500 square feet?	YES

C. NOISE WALL PRELIMINARY DECISION

1.	Is the noise wall preliminarily feasible?	YES
2.	Is the noise wall preliminarily reasonable?	YES
3.	Is the noise wall likely?	YES

PREPARED BY: D. Shannon **DATE PREPARED:** 12/20/2017

Noise Wall: NW8
Location: Adjacent to westbound lanes of DSA2 mainline, east of easternmost Sunset Lake overpass

-NW8- does NOT preliminarily meet NCDOT feasibility and reasonability criteria
-NW8- is NOT likely to be incorporated into the project.

TNM Run: NW8 SBA: NW8-20ft-OPT

Table A4.7: Noise Barrier Performance Table

-NW8- Acoustical Performance Summary			
Impacts:	5	Benefitted Receptors @≥7dB(A) NLR:	1
Impacted Receptors Benefitted:	3	Total Benefits:	5
Non-Impacted Receptors Benefitted:	2		

-NW8- Parameters			
	Terminus: 159+65 L		
	Terminus: 169+55 L		
Length:	1000 ft	Area / Benefit:	3,997 ft²
Average Height:	20 ft	Allowable Area / Benefit:	2,500 ft²
Area:	19,987 ft²		

Receptors					Noise Wall Performance			
Rec #	Use	NAC	E.R.s	Address	Existing	Build	W/ Wall	NLR
R5157	Res	B	1	300 BELLAGIO DR	52	54	54	0
R5158	Res	B	1	301 BELLAGIO DR	62	65	65	0
R5159	Res	B	1	104 CAPRI DR	61	63	63	0
R5160	Res	B	1	108 CAPRI DR	60	64	64	0
R5161	Res	B	1	112 CAPRI DR	53	61	58	3
R5162	Res	B	1	116 CAPRI DR	52	61	57	4
R5163	Res	B	1	105 CAPRI DR	52	52	52	0
R5164	Res	B	1	109 CAPRI DR	52	52	52	0
R5165	Res	B	1	201 BELLAGIO DR	52	52	52	0
R5166	Res	B	1	120 PALERMO CT	52	52	52	0
R5167	Res	B	1	116 PALERMO CT	52	52	52	0
R5168	Res	B	1	113 PALERMO CT	52	63	59	4
R5169	Res	B	1	201 PALERMO CT	52	63	60	3
R5170	Res	B	1	101 PALERMO CT	52	66	60	6
R5171	Res	B	1	105 PALERMO CT	52	60	55	5
R5172	Res	B	1	108 PALERMO CT	52	56	55	1
R5173	Res	B	1	100 PALERMO CT	52	64	58	6
R5174	Res	B	1	105 BELLAGIO DR	52	59	56	3
R5175	Res	B	1	204 BELLAGIO DR	52	52	52	0
R5176	Res	B	1	200 BELLAGIO DR	52	52	52	0
R5177	Res	B	1	112 BELLAGIO DR	52	52	52	0
R5178	Res	B	1	108 BELLAGIO DR	52	52	52	0
R5179	Res	B	1	104 BELLAGIO DR	52	52	52	0
R5180	Res	B	1	100 BELLAGIO DR	52	56	54	2
R5181	Res	B	1	101 BELLAGIO DR	52	58	55	3
R0080A	Res	B	1	208 BELLAGIO DR	52	52	52	0
R0080B	Res	B	1	212 BELLAGIO DR	52	52	52	0
R0081	Res	B	1	101 CAPRI DR	52	52	52	0
R0082	Res	B	1	120 PALERMO CT	52	54	52	2

Noise Wall: NW8

Location: Adjacent to westbound lanes of DSA2 mainline, east of easternmost Sunset Lake overpass

R0083	Res	B	1	109 PALERMO CT	52	62	55	7
R0084	Res	B	1	104 PALERMO CT	52	61	56	5
-NW8- predicted build condition with wall Benefits[1]								**5**

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NCDOT NOISE WALL

FEASIBILITY & REASONABLENESS WORKSHEET

PROJECT - Complete 540 **TIP# -** R-2721

NOISE WALL # - NW8 **COUNTY(IES) -** Wake and Johnston

 # IMPACTS - 5 **# BENEFITS -** 5 **NAC:** ☐ **A** ☑ **B** ☐ **C** ☐ **D** ☐ **E**

A. FEASBILITY:

1.	Can a 5-dB(A) reduction in traffic noise levels be achieved for at least two impacted receptors?	YES
2.	Does topography negatively affect the proposed noise wall?	NO
3.	Does the proposed noise wall negatively affect property access, drainage, utilities or maintenance requirements?	NO
4.	Is there control of access in the vicinity of the proposed noise wall?	YES

B. REASONABLENESS

1.	Can a 7- dB(A) reduction in traffic noise levels be achieved for at least one benefited receptor?	YES
2.	Is the quantity per benefited receptor of 3,997 square feet less than the maximum allowable quantity per benefited receptor of 2,500 square feet?	NO

C. NOISE WALL PRELIMINARY DECISION

1.	Is the noise wall preliminarily feasible?	YES
2.	Is the noise wall preliminarily reasonable?	NO
3.	Is the noise wall likely?	NO

PREPARED BY: D. Shannon **DATE PREPARED:** 12/17/2017

Noise Wall: NW11

Location: Adjacent to eastbound lanes of DSA2 mainline, southeast quadrant of Holly Springs Interchange

-NW11- does preliminarily meet NCDOT feasibility and reasonability criteria

-NW11- is likely to be incorporated into the project.

TNM Run: NW11 SBA: NW11-16ft-OPT

Table A4.8: Noise Barrier Performance Table

-NW11- Acoustical Performance Summary			
Impacts:	12	Benefitted Receptors @≥7dB(A) NLR:	5
Impacted Receptors Benefitted:	12	Total Benefits:	15
Non-Impacted Receptors Benefitted:	3		

-NW11- Parameters			
	Terminus: 192+75 L		
	Terminus: 212+35 L		
Length:	1993 ft	Area / Benefit:	2,128 ft²
Average Height:	14 ft	Allowable Area / Benefit:	2,500 ft²
Area:	31,926 ft²		

Receptors					Noise Wall Performance			
Rec #	**Use**	**NAC**	**E.R.s**	**Address**	**Existing**	**Build**	**W/ Wall**	**NLR**
R0111	Res	B	1	9008 WESLEY CT	59	64	64	0
R0112A	Res	B	1	9009 WESLEY CT	53	58	56	2
R0112B	Res	B	1	9005 WESLEY CT	53	56	54	2
R0113C	Res	B	1	9013 WESLEY CT	53	57	57	0
R0114A	Res	B	1	9000 WESLEY CT	53	60	58	2
R0114B	Res	B	1	9001 WESLEY CT	53	58	56	2
R0115A	Res	B	1	104 FAIRVIEW ST	54	61	59	2
R0115B	Res	B	1	106 FAIRVIEW ST	53	59	57	2
R0115C	Res	B	1	106 FAIRVIEW ST	53	58	55	3
R0116	Res	B	1	108 FAIRVIEW ST	53	57	53	4
R0117	Res	B	1	109 FAIRVIEW ST	53	60	56	4
R0118	Res	B	1	103 SPRING ST	53	65	57	8
R0119A	Res	B	1	104 SPRING ST	53	66	58	8
R0119B	Res	B	1	102 SPRING ST	53	66	58	8
R1628B	Res	B	1	98 S CARROLL ST	53	61	55	6
R1628C	Res	B	1	102 N CARROLL ST	53	66	58	8
R1718A	Res	B	1	100 SPRING ST	53	63	57	6
R1718B	Res	B	1	203 OAKLAND DR	53	63	57	6
R1719A	Res	B	1	207 OAKLAND DR	53	64	57	7
R1719B	Res	B	1	205 OAKLAND DR	53	64	58	6
R5610	Res	B	1	105 OAKLAND DR	50	62	57	5
R5611	Res	B	1	108 OAKLAND DR	50	60	55	5
R5612	Res	B	1	202 OAKLAND DR	50	60	55	5
R5613	Res	B	1	204 OAKLAND DR	50	59	54	5
R5614	Res	B	1	206 OAKLAND DR	50	60	54	6
R5615	Res	B	1	208 OAKLAND DR	50	59	54	5
				-NW11- predicted build condition with wall Benefits[1]				**15**

Impact = 5 to 6 dB(A) NLR = ≥ 7 dB(A) NLR =

[1] A receptor is considered benefitted if the predicted Noise Level Reduction (NLR) is at least 5 dB(A).

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NCDOT NOISE WALL

FEASIBILITY & REASONABLENESS WORKSHEET

PROJECT - Complete 540 **TIP# -** R-2721

NOISE WALL # - NW11 **COUNTY(IES) -** Wake and Johnston

 # IMPACTS - 12 **# BENEFITS -** 15 **NAC:** ☐ A ☑ B ☐ C ☐ D ☐ E

A. FEASBILITY:

1.	Can a 5-dB(A) reduction in traffic noise levels be achieved for at least two impacted receptors?	YES
2.	Does topography negatively affect the proposed noise wall?	NO
3.	Does the proposed noise wall negatively affect property access, drainage, utilities or maintenance requirements?	NO
4.	Is there control of access in the vicinity of the proposed noise wall?	YES

B. REASONABLENESS

1.	Can a 7- dB(A) reduction in traffic noise levels be achieved for at least one benefited receptor?	YES
2.	Is the quantity per benefited receptor of 2,128 square feet less than the maximum allowable quantity per benefited receptor of 2,500 square feet?	YES

C. NOISE WALL PRELIMINARY DECISION

1.	Is the noise wall preliminarily feasible?	YES
2.	Is the noise wall preliminarily reasonable?	YES
3.	Is the noise wall likely?	YES

PREPARED BY: D. Shannon **DATE PREPARED:** 12/20/2017

Noise Wall: NW13
Location: Adjacent to southbound Kildaire Farm Road

-NW13- does preliminarily meet NCDOT feasibility and reasonability criteria
-NW13- is likely to be incorporated into the project.

TNM Run: NW13 SBA: NW13-12ft-OPT

Table A4.9: Noise Barrier Performance Table

-NW13- Acoustical Performance Summary			
Impacts:	9	Benefitted Receptors @≥7dB(A) NLR:	10
Impacted Receptors Benefitted:	9	Total Benefits:	12
Non-Impacted Receptors Benefitted:	3		

-NW13- Parameters			
	Terminus: 24+00 Y5A		
	Terminus: 29+15 Y5A		
Length:	549 ft	Area / Benefit:	549 ft²
Average Height:	12 ft	Allowable Area / Benefit:	2,000 ft²
Area:	6,588 ft²		

Receptors					Noise Wall Performance			
Rec #	Use	NAC	E.R.s	Address	Existing	Build	W/ Wall	NLR
R0125A	Res	B	1	4312 KILDAIRE FARM RD	54	56	52	4
R0125B	Res	B	1	4316 KILDAIRE FARM RD	52	52	52	0
R0126A	Res	B	1	113 GRENOCH VALLEY LN	52	52	52	0
R0126B	Res	B	1	109 GRENOCH VALLEY LN	52	52	52	0
R0126C	Res	B	1	105 GRENOCH VALLEY LN	52	52	52	0
R0126D	Res	B	1	101 GRENOCH VALLEY LN	52	52	52	0
R0127A	Res	B	1	105 BUTTERBIGGINS LN	52	52	52	0
R0127B	Res	B	1	107 BUTTERBIGGINS LN	52	52	52	0
R0127C	Res	B	1	109 BUTTERBIGGINS LN	52	52	52	0
R0127D	Res	B	1	103 BUTTERBIGGINS LN	52	52	52	0
R0127E	Res	B	1	101 BUTTERBIGGINS LN	52	52	52	0
R0128A	Res	B	1	116 BUTTERBIGGINS LN	52	52	52	0
R0128B	Res	B	1	114 BUTTERBIGGINS LN	52	52	52	0
R0128C	Res	B	1	112 BUTTERBIGGINS LN	52	52	52	0
R0128D	Res	B	1	110 BUTTERBIGGINS LN	52	52	52	0
R0129A	Res	B	1	108 BUTTERBIGGINS LN	52	52	52	0
R0129B	Res	B	1	106 BUTTERBIGGINS LN	52	52	52	0
R0129C	Res	B	1	104 BUTTERBIGGINS LN	52	52	52	0
R0129D	Res	B	1	102 BUTTERBIGGINS LN	52	53	53	0
R0129E	Res	B	1	100 BUTTERBIGGINS LN	52	53	53	0
R0130A	Res	B	1	101 HAVELOCK CT	61	66	56	10
R0130B	Res	B	1	103 HAVELOCK CT	61	66	57	9
R0130C	Res	B	1	105 HAVELOCK CT	62	67	57	10
R0130D	Res	B	1	107 HAVELOCK CT	61	65	56	9
R0130E	Res	B	1	109 HAVELOCK CT	60	65	56	9
R0130F	Res	B	1	111 HAVELOCK CT	60	64	55	9
R0131A	Res	B	1	113 HAVELOCK CT	62	67	62	5
R0131B	Res	B	1	115 HAVELOCK CT	62	67	61	6
R0131C	Res	B	1	117 HAVELOCK CT	62	67	59	8

Noise Wall: NW13

Location: Adjacent to southbound Kildaire Farm Road

R0131D	Res	B	1	119 HAVELOCK CT	62	67	59	8
R0131E	Res	B	1	121 HAVELOCK CT	62	67	58	9
R0131F	Res	B	1	123 HAVELOCK CT	62	67	58	9
							-NW13- predicted build condition with wall Benefits[1]	**12**

Impact = 5 to 6 dB(A) NLR = ≥ 7 dB(A) NLR =

[1] A receptor is considered benefitted if the predicted Noise Level Reduction (NLR) is at least 5 dB(A).

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NCDOT NOISE WALL

FEASIBILITY & REASONABLENESS WORKSHEET

PROJECT - Complete 540 **TIP# -** R-2721

NOISE WALL # - NW13 **COUNTY(IES) -** Wake and Johnston

 # IMPACTS - 9 **# BENEFITS -** 12 **NAC:** ☐ A ☑ B ☐ C ☐ D ☐ E

A. FEASBILITY:

1.	Can a 5-dB(A) reduction in traffic noise levels be achieved for at least two impacted receptors?	YES
2.	Does topography negatively affect the proposed noise wall?	NO
3.	Does the proposed noise wall negatively affect property access, drainage, utilities or maintenance requirements?	NO
4.	Is there control of access in the vicinity of the proposed noise wall?	NO

B. REASONABLENESS

1.	Can a 7- dB(A) reduction in traffic noise levels be achieved for at least one benefited receptor?	YES
2.	Is the quantity per benefited receptor of 549 square feet less than the maximum allowable quantity per benefited receptor of 2,000 square feet?	YES

C. NOISE WALL PRELIMINARY DECISION

1.	Is the noise wall preliminarily feasible?	YES
2.	Is the noise wall preliminarily reasonable?	YES
3.	Is the noise wall likely?	YES

PREPARED BY: D. Shannon **DATE PREPARED:** 12/20/2017

Noise Wall: NW16
Location: Adjacent to westbound lanes of DSA2 mainline, east of Holly Springs Interchange

-NW16- does NOT preliminarily meet NCDOT feasibility and reasonability criteria
-NW16- is NOT likely to be incorporated into the project.

TNM Run: NW16 SBA: NW16-16ft-OPT

Table A4.10: Noise Barrier Performance Table

-NW16- Acoustical Performance Summary			
Impacts:	5	Benefitted Receptors @≥7dB(A) NLR:	2
Impacted Receptors Benefitted:	3	Total Benefits:	4
Non-Impacted Receptors Benefitted:	1		

-NW16- Parameters			
	Terminus: 204+30 L		
	Terminus: 214+30 L		
Length:	1000 ft	Area / Benefit:	4,000 ft²
Average Height:	16 ft	Allowable Area / Benefit:	2,500 ft²
Area:	15,998 ft²		

Receptors					Noise Wall Performance			
Rec #	**Use**	**NAC**	**E.R.s**	**Address**	**Existing**	**Build**	**W/ Wall**	**NLR**
R0138A	Res	B	1	3508 LEXHAM CT	52	67	60	7
R0138B	Res	B	1	3504 LEXHAM CT	52	64	59	5
R0138C	Res	B	1	3505 LEXHAM CT	52	70	61	9
R0139A	Res	B	1	4101 SANCROFT DR	52	64	60	4
R0139B	Res	B	1	3500 LEXHAM CT	52	58	53	5
R0140A	Res	B	1	3425 ASHMILL CT	52	61	60	1
R0140B	Res	B	1	3424 ASHMILL CT	52	61	60	1
R0141A	Res	B	1	3420 ASHMILL CT	52	60	60	0
R0141B	Res	B	1	3416 ASHMILL CT	52	60	59	1
R0142A	Res	B	1	3408 ASHMILL CT	53	62	62	0
R0142B	Res	B	1	3412 ASHMILL CT	52	60	60	0
R0143A	Res	B	1	3404 ASHMILL CT	55	64	64	0
R0143B	Res	B	1	4221 SANCROFT DR	54	64	64	0
R0144A	Res	B	1	3421 ASHMILL CT	52	61	60	1
R0144B	Res	B	1	3417 ASHMILL CT	52	61	59	2
R0144C	Res	B	1	3413 ASHMILL CT	52	58	56	2
R0145	Res	B	1	3401 ASHMILL CT	52	58	56	2
R0146A	Res	B	1	4208 SANCROFT DR	52	55	54	1
R0146B	Res	B	1	4204 SANCROFT DR	52	52	52	0
R1716A	Res	B	1	4112 SANCROFT DR	52	57	56	1
R1716B	Res	B	1	4108 SANCROFT DR	52	52	52	0
R1717A	Res	B	1	4104 SANCROFT DR	52	52	52	0
R1717B	Res	B	1	4100 SANCROFT DR	52	52	52	0
				-NW16- predicted build condition with wall Benefits[1]				**4**

Impact = 5 to 6 dB(A) NLR = ≥ 7 dB(A) NLR =

[1] A receptor is considered benefitted if the predicted Noise Level Reduction (NLR) is at least 5 dB(A).

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NCDOT NOISE WALL

FEASIBILITY & REASONABLENESS WORKSHEET

PROJECT - Complete 540 **TIP# -** R-2721

NOISE WALL # - NW16 **COUNTY(IES) -** Wake and Johnston

 # IMPACTS - 5 **# BENEFITS -** 4 **NAC:** ☐ A ☑ B ☐ C ☐ D ☐ E

A. FEASBILITY:

1.	Can a 5-dB(A) reduction in traffic noise levels be achieved for at least two impacted receptors?	YES
2.	Does topography negatively affect the proposed noise wall?	NO
3.	Does the proposed noise wall negatively affect property access, drainage, utilities or maintenance requirements?	NO
4.	Is there control of access in the vicinity of the proposed noise wall?	YES

B. REASONABLENESS

1.	Can a 7- dB(A) reduction in traffic noise levels be achieved for at least one benefited receptor?	YES
2.	Is the quantity per benefited receptor of 4,000 square feet less than the maximum allowable quantity per benefited receptor of 2,500 square feet?	NO

C. NOISE WALL PRELIMINARY DECISION

1.	Is the noise wall preliminarily feasible?	YES
2.	Is the noise wall preliminarily reasonable?	NO
3.	Is the noise wall likely?	NO

PREPARED BY: D. Shannon **DATE PREPARED:** 12/17/2017

Noise Wall: NW18
Location: Adjacent to westbound lanes of DSA2 mainline, between Pierce Olive and West Lake

-NW18- does NOT preliminarily meet NCDOT feasibility and reasonability criteria
-NW18- is NOT likely to be incorporated into the project.

TNM Run: NW18 SBA: NW18-20ft-OPT

Table A4.11: Noise Barrier Performance Table

-NW18- Acoustical Performance Summary			
Impacts:	20	Benefitted Receptors @≥7dB(A) NLR:	7
Impacted Receptors Benefitted:	15	Total Benefits:	15
Non-Impacted Receptors Benefitted:	0		

-NW18- Parameters					
		Terminus: 263+45 L			
		Terminus: 283+00 L			
Length:	2039	ft	Area / Benefit:	2,720	ft²
Average Height:	20	ft	Allowable Area / Benefit:	2,500	ft²
Area:	40,800	ft²			

Receptors					Noise Wall Performance			
Rec #	Use	NAC	E.R.s	Address	Existing	Build	W/ Wall	NLR
R0161A	Res	B	1	3829 SKY MEADOW DR	46	57	52	5
R0161B	Res	B	1	3830 SKY MEADOW DR	46	47	46	1
R0163A	Res	B	1	3818 SKY MEADOW DR	46	48	48	0
R0163B	Res	B	1	3818 SKY MEADOW DR	46	48	47	1
R0164A	Res	B	1	3817 SKY MEADOW DR	46	61	56	5
R0164B	Res	B	1	8612 LAWDRAKER RD	46	57	51	6
R0165A	Res	B	1	3812 SKY MEADOW DR	46	47	46	1
R0165B	Res	B	1	3808 SKY MEADOW DR	46	46	46	0
R0166A	Res	B	1	8604 LAWDRAKER RD	46	51	49	2
R0166B	Res	B	1	8600 LAWDRAKER RD	46	50	48	2
R0167A	Res	B	1	8613 LAWDRAKER RD	46	63	56	7
R0167B	Res	B	1	3729 SKY MEADOW DR	46	69	60	9
R0168A	Res	B	1	8605 LAWDRAKER RD	46	60	56	4
R0168B	Res	B	1	3732 SKY MEADOW DR	46	59	56	3
R0168C	Res	B	1	8601 LAWDRAKER RD	46	57	52	5
R0169A	Res	B	1	3725 SKY MEADOW DR	46	68	60	8
R0169B	Res	B	1	3717 SKY MEADOW DR	46	68	59	9
R0170A	Res	B	1	3724 SKY MEADOW DR	46	58	53	5
R0170B	Res	B	1	3716 SKY MEADOW DR	46	62	55	7
R0171A	Res	B	1	3712 SKY MEADOW DR	46	63	57	6
R0171B	Res	B	1	3708 SKY MEADOW DR	46	59	51	8
R0172A	Res	B	1	3704 SKY MEADOW DR	46	63	58	5
R0172B	Res	B	1	3700 SKY MEADOW DR	46	63	58	5
R0173	Res	B	1	3709 SKY MEADOW DR	46	66	59	7
R5191	Res	B	1	3905 RUSTIC MILL DR	46	56	55	1
R5192	Res	B	1	3901 RUSTIC MILL DR	46	57	55	2
R5193	Res	B	1	8537 LAWDRAKER RD	46	58	55	3
R5616	Res	B	1	3913 RUSTIC MILL DR	50	50	50	0
R5617	Res	B	1	3909 RUSTIC MILL DR	50	52	52	0

Noise Wall: NW18

Location: Adjacent to westbound lanes of DSA2 mainline, between Pierce Olive and West Lake

R5618	Res	B	1	3916 RUSTIC MILL DR	50	50	50	0
R5619	Res	B	1	3912 RUSTIC MILL DR	50	50	50	0
R5620	Res	B	1	3908 RUSTIC MILL DR	50	51	50	1
R5621	Res	B	1	3904 RUSTIC MILL DR	50	50	50	0
R5622	Res	B	1	3900 RUSTIC MILL DR	50	50	50	0
R5623	Res	B	1	8521 LAWDRAKER RD	50	55	53	2
							-NW18- predicted build condition with wall Benefits[1]	**15**

Impact = 5 to 6 dB(A) NLR = ≥ 7 dB(A) NLR =

[1] A receptor is considered benefitted if the predicted Noise Level Reduction (NLR) is at least 5 dB(A).

To be used with Traffic Noise Reports only

NCDOT NOISE WALL

FEASIBILITY & REASONABLENESS WORKSHEET

PROJECT - Complete 540 **TIP# -** R-2721

NOISE WALL # - NW18 **COUNTY(IES) -** Wake and Johnston

 # IMPACTS - 20 **# BENEFITS -** 15 **NAC:** ☐ **A** ☑ **B** ☐ **C** ☐ **D** ☐ **E**

A. FEASBILITY:

1.	Can a 5-dB(A) reduction in traffic noise levels be achieved for at least two impacted receptors?	YES
2.	Does topography negatively affect the proposed noise wall?	NO
3.	Does the proposed noise wall negatively affect property access, drainage, utilities or maintenance requirements?	NO
4.	Is there control of access in the vicinity of the proposed noise wall?	YES

B. REASONABLENESS

1.	Can a 7- dB(A) reduction in traffic noise levels be achieved for at least one benefited receptor?	YES
2.	Is the quantity per benefited receptor of 2,720 square feet less than the maximum allowable quantity per benefited receptor of 2,500 square feet?	NO

C. NOISE WALL PRELIMINARY DECISION

1.	Is the noise wall preliminarily feasible?	YES
2.	Is the noise wall preliminarily reasonable?	NO
3.	Is the noise wall likely?	NO

PREPARED BY: D. Shannon **DATE PREPARED:** 12/17/2017

Noise Wall: NW19-1
Location: Adjacent to eastbound lanes of DSA2 mainline, west of West Lake overpass

-NW19-1- does preliminarily meet NCDOT feasibility and reasonability criteria
-NW19-1- is likely to be incorporated into the project.

TNM Run: NW19-1 SBA: NW19-1-16ft-OPT

Table A4.12: Noise Barrier Performance Table

-NW19-1- Acoustical Performance Summary			
Impacts:	35	Benefitted Receptors @≥7dB(A) NLR:	15
Impacted Receptors Benefitted:	26	Total Benefits:	32
Non-Impacted Receptors Benefitted:	6		

-NW19-1- Parameters			
	Terminus: 265+05 L		
	Terminus: 294+00 L		
Length:	3896 ft	Area / Benefit:	1,946 ft²
Average Height:	16 ft	Allowable Area / Benefit:	2,500 ft²
Area:	62,273 ft²		

Receptors					Noise Wall Performance			
Rec #	Use	NAC	E.R.s	Address	Existing	Build	W/ Wall	NLR
R0174A	Res	B	1	3901 SUMMER BROOK DR	46	57	56	1
R0174B	Res	B	1	3905 SUMMER BROOK DR	46	57	54	3
R0176A	Res	B	1	3913 SUMMER BROOK DR	46	56	53	3
R0176B	Res	B	1	3909 SUMMER BROOK DR	46	57	54	3
R0178A	Res	B	1	3917 SUMMER BROOK DR	46	56	52	4
R0178B	Res	B	1	3728 GRANDBRIDGE DR	46	58	53	5
R0179A	Res	B	1	3724 GRANDBRIDGE DR	46	57	53	4
R0179B	Res	B	1	3720 GRANDBRIDGE DR	46	59	54	5
R0180A	Res	B	1	3716 GRANDBRIDGE DR	46	64	57	7
R0180B	Res	B	1	3712 GRANDBRIDGE DR	46	63	56	7
R0182A	Res	B	1	3708 GRANDBRIDGE DR	46	63	57	6
R0182B	Res	B	1	3704 GRANDBRIDGE DR	46	68	59	9
R0182C	Res	B	1	3700 GRANDBRIDGE DR	46	66	57	9
R0184	Res	B	1	3701 GRANDBRIDGE DR	46	62	53	9
R0186A	Res	B	1	3608 HERITAGE CREEK DR	46	63	53	10
R0186B	Res	B	1	3604 HERITAGE CREEK DR	46	65	55	10
R0187A	Res	B	1	3600 HERITAGE CREEK DR	46	70	59	11
R0187B	Res	B	1	3601 HERITAGE CREEK DR	46	67	58	9
R0188A	Res	B	1	3609 HERITAGE CREEK DR	46	58	52	6
R0188B	Res	B	1	3605 HERITAGE CREEK DR	46	59	53	6
R1720	Res	B	1	3721 GRANDBRIDGE DR	46	47	46	1
R1721A	Res	B	1	3713 GRANDBRIDGE DR	46	53	49	4
R1721B	Res	B	1	3717 GRANDBRIDGE DR	46	49	46	3
R1722A	Res	B	1	3709 GRANDBRIDGE DR	46	52	48	4
R1722B	Res	B	1	3705 GRANDBRIDGE DR	46	56	49	7
R1723A	Res	B	1	3612 HERITAGE CREEK DR	46	60	51	9
R1723B	Res	B	1	3616 HERITAGE CREEK DR	46	60	51	9
R1724A	Res	B	1	3613 HERITAGE CREEK DR	46	56	51	5
R1724B	Res	B	1	3617 HERITAGE CREEK DR	46	55	50	5

Noise Wall: NW19-1

Location: Adjacent to eastbound lanes of DSA2 mainline, west of West Lake overpass

R1923	Res	B	1	3620 HERITAGE CREEK DR	46	57	48	9
R1924A	Res	B	1	3812 WESLEY RIDGE DR	46	56	50	6
R1924B	Res	B	1	3814 WESLEY RIDGE DR	46	55	49	6
R1925A	Res	B	1	3625 HERITAGE CREEK DR	46	55	50	5
R1925B	Res	B	1	3804 WESLEY RIDGE DR	46	56	51	5
R1925C	Res	B	1	3800 WESLEY RIDGE DR	46	57	52	5
R1925D	Res	B	1	3801 WESLEY RIDGE DR	46	48	46	2
R5194	Res	B	1	3904 SUMMER BROOK DR	46	51	51	0
R5195	Res	B	1	3908 SUMMER BROOK DR	46	51	50	1
R5196	Res	B	1	3912 SUMMER BROOK DR	46	51	50	1
R5197	Res	B	1	3916 SUMMER BROOK DR	46	52	50	2
R5198	Res	B	1	3800 GRANDBRIDGE DR	46	52	50	2
R5199	Res	B	1	3801 GRANDBRIDGE DR	46	55	51	4
R5201	Res	B	1	3725 GRANDBRIDGE DR	46	54	49	5
R5203	Res	B	1	4009 SUMMER BROOK DR	46	52	48	4
R5204	Res	B	1	3820 WESLEY RIDGE DR	46	51	46	5
R5205	Res	B	1	3816 WESLEY RIDGE DR	46	52	47	5
R5206	Res	B	1	3821 WESLEY RIDGE DR	46	48	46	2
R5207	Res	B	1	3817 WESLEY RIDGE DR	46	46	46	0
R5208	Res	B	1	3813 WESLEY RIDGE DR	46	48	46	2
R5209	Res	B	1	3809 WESLEY RIDGE DR	46	49	46	3
R5210	Res	B	1	3737 WESLEY RIDGE DR	46	57	49	8
R5211	Res	B	1	3733 WESLEY RIDGE DR	46	49	46	3
R5212	Res	B	1	3729 WESLEY RIDGE DR	46	47	46	1
R5213	Res	B	1	3728 WESLEY RIDGE DR	46	57	54	3
R5214	Res	B	1	3732 WESLEY RIDGE DR	46	58	54	4
R5215	Res	B	1	3736 WESLEY RIDGE DR	46	58	53	5
R5216	Res	B	1	3412 GARDEN OAKS LN	46	59	57	2
R5218	Res	B	1	3424 GARDEN OAKS LN	46	65	57	8
R5219	Res	B	1	3420 GARDEN OAKS LN	46	65	59	6
							-NW19-1- predicted build condition with wall Benefits[1]	**32**

Impact = 5 to 6 dB(A) NLR = ≥ 7 dB(A) NLR =

[1] A receptor is considered benefitted if the predicted Noise Level Reduction (NLR) is at least 5 dB(A).

To be used with Traffic Noise Reports only

NCDOT NOISE WALL

FEASIBILITY & REASONABLENESS WORKSHEET

PROJECT - Complete 540 **TIP# -** R-2721

NOISE WALL # - NW19-1 **COUNTY(IES) -** Wake and Johnston

 # IMPACTS - 35 **# BENEFITS -** 32 **NAC:** ☐ A ☑ B ☐ C ☐ D ☐ E

A. FEASBILITY:

1.	Can a 5-dB(A) reduction in traffic noise levels be achieved for at least two impacted receptors?	YES
2.	Does topography negatively affect the proposed noise wall?	NO
3.	Does the proposed noise wall negatively affect property access, drainage, utilities or maintenance requirements?	NO
4.	Is there control of access in the vicinity of the proposed noise wall?	YES

B. REASONABLENESS

1.	Can a 7- dB(A) reduction in traffic noise levels be achieved for at least one benefited receptor?	YES
2.	Is the quantity per benefited receptor of 1,946 square feet less than the maximum allowable quantity per benefited receptor of 2,500 square feet?	YES

C. NOISE WALL PRELIMINARY DECISION

1.	Is the noise wall preliminarily feasible?	YES
2.	Is the noise wall preliminarily reasonable?	YES
3.	Is the noise wall likely?	YES

PREPARED BY: D. Shannon **DATE PREPARED:** 12/17/2017

Noise Wall: NW19-2
Location: Adjacent to eastbound lanes of DSA2 mainline, west of West Lake overpass

-NW19-2- does NOT preliminarily meet NCDOT feasibility and reasonability criteria
-NW19-2- is NOT likely to be incorporated into the project.

TNM Run: NW19-2 SBA: NW19-2-22ft-OPT

Table A4.13: Noise Barrier Performance Table

-NW19-2- Acoustical Performance Summary			
Impacts:	7	Benefitted Receptors @≥7dB(A) NLR:	0
Impacted Receptors Benefitted:	0	Total Benefits:	0
Non-Impacted Receptors Benefitted:	0		

-NW19-2- Parameters			
	Terminus: 294+00 L		
	Terminus: 21+25 Y7		
Length:	1363 ft	Area / Benefit:	N/A ft²
Average Height:	22 ft	Allowable Area / Benefit:	2,500 ft²
Area:	29,989 ft²		

Receptors					Noise Wall Performance			
Rec #	**Use**	**NAC**	**E.R.s**	**Address**	**Existing**	**Build**	**W/ Wall**	**NLR**
R0192A	Res	B	1	4008 WEST LAKE RD	48	60	57	3
R0192B	Res	B	1	4004 WEST LAKE RD	48	60	57	3
R1725A	Res	B	1	4012 WEST LAKE RD	53	60	59	1
R1725B	Res	B	1	4016 WEST LAKE RD	56	62	62	0
R5217	Res	B	1	3400 GARDEN OAKS LN	49	59	58	1
R5635	Res	B	1	3725 WESLEY RIDGE DR	46	49	49	0
R5636	Res	B	1	3721 WESLEY RIDGE DR	46	46	46	0
R5637	Res	B	1	3713 WESLEY RIDGE DR	46	46	46	0
R5638	Res	B	1	3705 WESLEY RIDGE DR	46	48	48	0
R5639	Res	B	1	3724 WESLEY RIDGE DR	46	57	56	1
R5640	Res	B	1	3720 WESLEY RIDGE DR	46	56	55	1
R5641	Res	B	1	3716 WESLEY RIDGE DR	46	56	55	1
R5642	Res	B	1	3712 WESLEY RIDGE DR	46	56	55	1
R5643	Res	B	1	3708 WESLEY RIDGE DR	47	55	55	0
R5644	Res	B	1	4100 WEST LAKE RD	53	59	59	0
R5645	Res	B	1	3704 WESLEY RIDGE DR	54	60	59	1
R5646	Res	B	1	3700 WESLEY RIDGE DR	55	60	60	0
				-NW19-2- predicted build condition with wall Benefits[1]				**0**

Impact = 5 to 6 dB(A) NLR = ≥ 7 dB(A) NLR =

[1] A receptor is considered benefitted if the predicted Noise Level Reduction (NLR) is at least 5 dB(A).

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NCDOT NOISE WALL

FEASIBILITY & REASONABLENESS WORKSHEET

PROJECT - Complete 540 **TIP# -** R-2721

NOISE WALL # - NW19-2 **COUNTY(IES) -** Wake and Johnston

 # IMPACTS - 7 **# BENEFITS -** 0 **NAC:** ☐ **A** ☑ **B** ☐ **C** ☐ **D** ☐ **E**

A. FEASBILITY:

1.	Can a 5-dB(A) reduction in traffic noise levels be achieved for at least two impacted receptors?	NO
2.	Does topography negatively affect the proposed noise wall?	NO
3.	Does the proposed noise wall negatively affect property access, drainage, utilities or maintenance requirements?	NO
4.	Is there control of access in the vicinity of the proposed noise wall?	YES

B. REASONABLENESS

1.	Can a 7- dB(A) reduction in traffic noise levels be achieved for at least one benefited receptor?	NO
2.	Is the quantity per benefited receptor of N/A square feet less than the maximum allowable quantity per benefited receptor of 2,500 square feet?	NO

C. NOISE WALL PRELIMINARY DECISION

1.	Is the noise wall preliminarily feasible?	NO
2.	Is the noise wall preliminarily reasonable?	NO
3.	Is the noise wall likely?	NO

PREPARED BY: D. Shannon **DATE PREPARED:** 12/20/2017

Noise Wall: NW20
Location: Adjacent to westbound lanes of DSA2 mainline, west of West Lake overpass

-NW20- does NOT preliminarily meet NCDOT feasibility and reasonability criteria
-NW20- is NOT likely to be incorporated into the project.

TNM Run: NW20 SBA: NW20-ft-OPT

Table A4.14: Noise Barrier Performance Table

-NW20- Acoustical Performance Summary			
Impacts:	5	Benefitted Receptors @≥7dB(A) NLR:	0
Impacted Receptors Benefitted:	3	Total Benefits:	3
Non-Impacted Receptors Benefitted:	0		

-NW20- Parameters					
		Terminus: 286+70 L			
		Terminus: 32+05 Y7			
Length:	2126	ft	Area / Benefit:	14,175	ft²
Average Height:	20	ft	Allowable Area / Benefit:	2,500	ft²
Area:	42,525	ft²			

Receptors					Noise Wall Performance			
Rec #	**Use**	**NAC**	**E.R.s**	**Address**	**Existing**	**Build**	**W/ Wall**	**NLR**
R0189A	Res	B	1	3521 CASTELAINE CIR	46	65	61	4
R0189B	Res	B	1	3513 CASTELAINE CIR	46	65	59	6
R0189C	Res	B	1	3509 CASTELAINE CIR	46	62	56	6
R0190	Res	B	1	3404 CASTELAINE CIR	56	59	59	0
R0191A	Res	B	1	3105 FLORESTA DR	54	64	58	6
R0191B	Res	B	1	3108 FLORESTA DR	51	58	55	3
R5220	Res	B	1	3516 CASTELAINE CIR	46	53	53	0
R5221	Res	B	1	3512 CASTELAINE CIR	46	50	47	3
R5222	Res	B	1	3508 CASTELAINE CIR	46	51	49	2
R5223	Res	B	1	3504 CASTELAINE CIR	46	50	49	1
R5224	Res	B	1	3500 CASTELAINE CIR	46	51	49	2
R5225	Res	B	1	3408 CASTELAINE CIR	46	51	51	0
R5226	Res	B	1	3113 FLORESTA DR	46	60	56	4
-NW20- predicted build condition with wall Benefits[1]								**3**

Impact = 5 to 6 dB(A) NLR = ≥ 7 dB(A) NLR =

[1] A receptor is considered benefitted if the predicted Noise Level Reduction (NLR) is at least 5 dB(A).

To be used with Traffic Noise Reports only

NCDOT NOISE WALL

FEASIBILITY & REASONABLENESS WORKSHEET

PROJECT - Complete 540 **TIP# -** R-2721

NOISE WALL # - NW20 **COUNTY(IES) -** Wake and Johnston

 # IMPACTS - 5 **# BENEFITS -** 3 **NAC:** ☐ **A** ☑ **B** ☐ **C** ☐ **D** ☐ **E**

A. FEASBILITY:

1.	Can a 5-dB(A) reduction in traffic noise levels be achieved for at least two impacted receptors?	YES
2.	Does topography negatively affect the proposed noise wall?	NO
3.	Does the proposed noise wall negatively affect property access, drainage, utilities or maintenance requirements?	NO
4.	Is there control of access in the vicinity of the proposed noise wall?	YES

B. REASONABLENESS

1.	Can a 7- dB(A) reduction in traffic noise levels be achieved for at least one benefited receptor?	NO
2.	Is the quantity per benefited receptor of 14,175 square feet less than the maximum allowable quantity per benefited receptor of 2,500 square feet?	NO

C. NOISE WALL PRELIMINARY DECISION

1.	Is the noise wall preliminarily feasible?	YES
2.	Is the noise wall preliminarily reasonable?	NO
3.	Is the noise wall likely?	NO

PREPARED BY: D. Shannon **DATE PREPARED:** 12/20/2017

Noise Wall: NW21-1
Location: Adjacent to eastbound lanes of DSA2 mainline, east of West Lake overpass

-NW21-1- does NOT preliminarily meet NCDOT feasibility and reasonability criteria
-NW21-1- is NOT likely to be incorporated into the project.

TNM Run: NW21-1 SBA: NW21-1-20ft-OPT

Table A4.15: Noise Barrier Performance Table

-NW21-1- Acoustical Performance Summary			
Impacts:	12	Benefitted Receptors @≥7dB(A) NLR:	5
Impacted Receptors Benefitted:	7	Total Benefits:	7
Non-Impacted Receptors Benefitted:	0		

-NW21-1- Parameters			
	Terminus: 305+55 L		
	Terminus: 323+95 L		
Length:	1846 ft	Area / Benefit:	5,278 ft²
Average Height:	20 ft	Allowable Area / Benefit:	2,500 ft²
Area:	36,946 ft²		

Receptors					Noise Wall Performance			
Rec #	Use	NAC	E.R.s	Address	Existing	Build	W/ Wall	NLR
R0193A	Res	B	1	3420 LANGSTON CIR	49	56	56	0
R0193B	Res	B	1	3412 LANGSTON CIR	46	54	52	2
R0194	Res	B	1	4001 WEST LAKE RD	49	58	57	1
R0195	Res	B	1	4000 HARRIAT DR	48	58	55	3
R0196	Res	B	1	4005 HARRIAT DR	46	69	59	10
R0197A	Res	B	1	4009 HARRIAT DR	46	69	59	10
R0197B	Res	B	1	4013 HARRIAT DR	46	72	59	13
R1726	Res	B	1	4012 HARRIAT DR	46	64	57	7
R1727	Res	B	1	4017 HARRIAT DR	46	65	57	8
R1728	Res	B	1	4021 HARRIAT DR	46	61	55	6
R1729	Res	B	1	6016 OXFORD GREEN DR	46	61	55	6
R1730	Res	B	1	6008 OXFORD GREEN DR	46	58	54	4
R1731	Res	B	1	6000 OXFORD GREEN DR	46	59	57	2
R1926	Res	B	1	4029 HARRIAT DR	46	54	51	3
R1927	Res	B	1	4025 HARRIAT DR	46	56	52	4
R2289A	Res	B	1	6017 OXFORD GREEN DR	46	54	53	1
R2289B	Res	B	1	6021 OXFORD GREEN DR	46	54	52	2
R2290A	Res	B	1	6009 OXFORD GREEN DR	46	54	52	2
R2290B	Res	B	1	6013 OXFORD GREEN DR	46	54	52	2
R1926A	Res	B	1	4033 HARRIAT DR	46	54	51	3
R5228	Res	B	1	3429 LANGSTON CIR	63	67	67	0
R5229	Res	B	1	3425 LANGSTON CIR	53	57	57	0
R5231	Res	B	1	3421 LANGSTON CIR	50	54	54	0
R5232	Res	B	1	3417 LANGSTON CIR	46	50	50	0
R5233	Res	B	1	3413 LANGSTON CIR	46	47	47	0
R5234	Res	B	1	3409 LANGSTON CIR	46	46	46	0
R5235	Res	B	1	3405 LANGSTON CIR	46	47	46	1
R5236	Res	B	1	3404 LANGSTON CIR	46	54	51	3
R5237	Res	B	1	4001 WEST LAKE RD	55	63	61	2

Noise Wall: NW21-1

Location: Adjacent to eastbound lanes of DSA2 mainline, east of West Lake overpass

R5238	Res	B	1	3401 LANGSTON CIR	46	47	47	0
R5239	Res	B	1	3341 LANGSTON CIR	46	46	46	0
R5240	Res	B	1	3333 LANGSTON CIR	46	46	46	0
R5241	Res	B	1	3340 LANGSTON CIR	46	55	52	3
R5242	Res	B	1	3336 LANGSTON CIR	46	54	51	3
R5243	Res	B	1	3332 LANGSTON CIR	46	53	50	3
							-NW21-1- predicted build condition with wall Benefits[1]	**7**

Impact = 5 to 6 dB(A) NLR = ≥ 7 dB(A) NLR =

[1] A receptor is considered benefitted if the predicted Noise Level Reduction (NLR) is at least 5 dB(A).

To be used with Traffic Noise Reports only

NCDOT NOISE WALL

FEASIBILITY & REASONABLENESS WORKSHEET

PROJECT - Complete 540 **TIP# -** R-2721

NOISE WALL # - NW21-1 **COUNTY(IES) -** Wake and Johnston

 # IMPACTS - 12 **# BENEFITS -** 7 **NAC:** ☐ **A** ☑ **B** ☐ **C** ☐ **D** ☐ **E**

A. FEASBILITY:

1.	Can a 5-dB(A) reduction in traffic noise levels be achieved for at least two impacted receptors?	YES
2.	Does topography negatively affect the proposed noise wall?	NO
3.	Does the proposed noise wall negatively affect property access, drainage, utilities or maintenance requirements?	NO
4.	Is there control of access in the vicinity of the proposed noise wall?	YES

B. REASONABLENESS

1.	Can a 7- dB(A) reduction in traffic noise levels be achieved for at least one benefited receptor?	YES
2.	Is the quantity per benefited receptor of 5,278 square feet less than the maximum allowable quantity per benefited receptor of 2,500 square feet?	NO

C. NOISE WALL PRELIMINARY DECISION

1.	Is the noise wall preliminarily feasible?	YES
2.	Is the noise wall preliminarily reasonable?	NO
3.	Is the noise wall likely?	NO

PREPARED BY: D. Shannon **DATE PREPARED:** 12/17/2017

Noise Wall: NW21-2
Location: Adjacent to eastbound lanes of DSA2 mainline, southwest quadrant of Bells Lake interchange

-NW21-2- does NOT preliminarily meet NCDOT feasibility and reasonability criteria
-NW21-2- is NOT likely to be incorporated into the project.

TNM Run: NW21-2 SBA: NW21-2-22ft-OPT

Table A4.16: Noise Barrier Performance Table

-NW21-2- Acoustical Performance Summary			
Impacts:	11	Benefitted Receptors @≥7dB(A) NLR:	0
Impacted Receptors Benefitted:	4	Total Benefits:	4
Non-Impacted Receptors Benefitted:	0		

-NW21-2- Parameters			
	Terminus: 323+95 L		
	Terminus: 23+25 Y8		
Length:	1578 ft	Area / Benefit:	8,681 ft²
Average Height:	22 ft	Allowable Area / Benefit:	2,500 ft²
Area:	34,725 ft²		

Receptors					Noise Wall Performance			
Rec #	**Use**	**NAC**	**E.R.s**	**Address**	**Existing**	**Build**	**W/ Wall**	**NLR**
R5251	Res	B	1	6001 OXFORD GREEN DR	46	57	56	1
R5252	Res	B	1	3403 PONY SOLDIER DR	46	54	53	1
R5253	Res	B	1	3501 PONY SOLDIER DR	46	52	50	2
R5254	Res	B	1	8145 WHEELER WOODS DR	46	54	52	2
R5255	Res	B	1	8144 WHEELER WOODS DR	46	57	54	3
R5256	Res	B	1	8140 WHEELER WOODS DR	46	55	53	2
R5257	Res	B	1	8136 WHEELER WOODS DR	47	55	53	2
R5258	Res	B	1	8132 WHEELER WOODS DR	46	52	52	0
R0198A	Res	B	1	5924 OXFORD GREEN DR	46	63	58	5
R0198B	Res	B	1	5928 OXFORD GREEN DR	46	60	57	3
R0198C	Res	B	1	5920 OXFORD GREEN DR	46	64	58	6
R0199A	Res	B	1	5921 OXFORD GREEN DR	46	57	54	3
R0199B	Res	B	1	5925 OXFORD GREEN DR	46	54	52	2
R0199C	Res	B	1	5917 OXFORD GREEN DR	46	58	54	4
R0203	Res	B	1	5905 OXFORD GREEN DR	46	60	54	6
R0204	Res	B	1	5909 OXFORD GREEN DR	46	56	52	4
R0205	Res	B	1	8016 BELLS LAKE RD	51	61	56	5
R0206	Res	B	1	8020 BELLS LAKE RD	55	62	62	0
R0210	Res	B	1	8100 BELLS LAKE RD	51	58	57	1
R0211A	Res	B	1	8108 WHEELER WOODS DR	47	55	54	1
R0211B	Res	B	1	4008 TRUELOVE DR	50	57	56	1
R0212	Res	B	1	8200 BELLS LAKE RD	54	58	58	0
R1731	Res	B	1	6000 OXFORD GREEN DR	46	59	57	2
				-NW21-2- predicted build condition with wall Benefits[1]				**4**

Impact = 5 to 6 dB(A) NLR = ≥ 7 dB(A) NLR =

[1] A receptor is considered benefitted if the predicted Noise Level Reduction (NLR) is at least 5 dB(A).

To be used with Traffic Noise Reports only

NCDOT NOISE WALL

FEASIBILITY & REASONABLENESS WORKSHEET

PROJECT - Complete 540 **TIP# -** R-2721

NOISE WALL # - NW21-2 **COUNTY(IES) -** Wake and Johnston

 # IMPACTS - 11 **# BENEFITS -** 4 **NAC:** ☐ **A** ☑ **B** ☐ **C** ☐ **D** ☐ **E**

A. FEASBILITY:

1.	Can a 5-dB(A) reduction in traffic noise levels be achieved for at least two impacted receptors?	YES
2.	Does topography negatively affect the proposed noise wall?	NO
3.	Does the proposed noise wall negatively affect property access, drainage, utilities or maintenance requirements?	NO
4.	Is there control of access in the vicinity of the proposed noise wall?	YES

B. REASONABLENESS

1.	Can a 7- dB(A) reduction in traffic noise levels be achieved for at least one benefited receptor?	NO
2.	Is the quantity per benefited receptor of 8,681 square feet less than the maximum allowable quantity per benefited receptor of 2,500 square feet?	NO

C. NOISE WALL PRELIMINARY DECISION

1.	Is the noise wall preliminarily feasible?	YES
2.	Is the noise wall preliminarily reasonable?	NO
3.	Is the noise wall likely?	NO

PREPARED BY: D. Shannon **DATE PREPARED:** 12/12/2017

Noise Wall: NW22

Location: Adjacent to westbound lanes of DSA2 mainline, northwest quadrant of Bells Lake interchange

-NW22- does NOT preliminarily meet NCDOT feasibility and reasonability criteria

-NW22- is NOT likely to be incorporated into the project.

TNM Run: NW22 SBA: NW22-24ft-OPT

Table A4.17: Noise Barrier Performance Table

-NW22- Acoustical Performance Summary			
Impacts:	4	Benefitted Receptors @≥7dB(A) NLR:	5
Impacted Receptors Benefitted:	0	Total Benefits:	6
Non-Impacted Receptors Benefitted:	6		

-NW22- Parameters			
	Terminus: 330+00 L		
	Terminus: 43+40 Y8		
Length:	1725 ft	Area / Benefit:	6,909 ft²
Average Height:	24 ft	Allowable Area / Benefit:	2,500 ft²
Area:	41,456 ft²		

Receptors					Noise Wall Performance			
Rec #	**Use**	**NAC**	**E.R.s**	**Address**	**Existing**	**Build**	**W/ Wall**	**NLR**
R0214A	Res	B	1	2926 BELLS POINTE CT	46	63	60	3
R0214B	Res	B	1	2929 BELLS POINTE CT	48	63	59	4
R0214C	Res	B	1	2925 BELLS POINTE CT	57	64	58	6
R0215A	Res	B	1	2922 BELLS POINTE CT	46	58	56	2
R0215B	Res	B	1	2918 BELLS POINTE CT	46	56	55	1
R0216A	Res	B	1	2921 BELLS POINTE CT	57	62	54	8
R0216B	Res	B	1	2917 BELLS POINTE CT	56	61	52	9
R0217A	Res	B	1	2914 BELLS POINTE CT	46	54	53	1
R0217B	Res	B	1	2912 BELLS POINTE CT	46	53	53	0
R0218A	Res	B	1	2913 BELLS POINTE CT	57	61	50	11
R0218B	Res	B	1	2909 BELLS POINTE CT	57	60	50	10
R0219	Res	B	1	2901 BELLS POINTE CT	58	61	53	8
R0220A	Res	B	1	2908 BELLS POINTE CT	46	53	52	1
R0220B	Res	B	1	7524 ORCHARD CREST CT	46	52	51	1
R0221A	Res	B	1	7525 ORCHARD CREST CT	52	57	56	1
R0221B	Res	B	1	2900 BELLS POINTE CT	56	59	59	0
R0222A	Res	B	1	7520 ORCHARD CREST CT	46	50	50	0
R0222B	Res	B	1	7516 ORCHARD CREST CT	46	49	49	0
R0222C	Res	B	1	7512 ORCHARD CREST CT	46	49	48	1
R0223A	Res	B	1	7517 ORCHARD CREST CT	54	59	59	0
R0223B	Res	B	1	7513 ORCHARD CREST CT	55	59	59	0
R0225B	Res	B	1	7505 ORCHARD CREST CT	59	63	63	0
R0225C	Res	B	1	7509 ORCHARD CREST CT	57	61	61	0
				-NW22- predicted build condition with wall Benefits[1]				**6**

Impact = 5 to 6 dB(A) NLR = ≥ 7 dB(A) NLR =

[1] A receptor is considered benefitted if the predicted Noise Level Reduction (NLR) is at least 5 dB(A).

To be used with Traffic Noise Reports only

NCDOT NOISE WALL

FEASIBILITY & REASONABLENESS WORKSHEET

PROJECT - Complete 540 **TIP# -** R-2721

NOISE WALL # - NW22 **COUNTY(IES) -** Wake and Johnston

 # IMPACTS - 4 **# BENEFITS -** 6 **NAC:** ☐ A ☑ B ☐ C ☐ D ☐ E

A. FEASBILITY:

1.	Can a 5-dB(A) reduction in traffic noise levels be achieved for at least two impacted receptors?	NO
2.	Does topography negatively affect the proposed noise wall?	NO
3.	Does the proposed noise wall negatively affect property access, drainage, utilities or maintenance requirements?	NO
4.	Is there control of access in the vicinity of the proposed noise wall?	YES

B. REASONABLENESS

1.	Can a 7- dB(A) reduction in traffic noise levels be achieved for at least one benefited receptor?	YES
2.	Is the quantity per benefited receptor of 6,909 square feet less than the maximum allowable quantity per benefited receptor of 2,500 square feet?	NO

C. NOISE WALL PRELIMINARY DECISION

1.	Is the noise wall preliminarily feasible?	NO
2.	Is the noise wall preliminarily reasonable?	NO
3.	Is the noise wall likely?	NO

PREPARED BY: D. Shannon **DATE PREPARED:** 12/20/2017

Noise Wall: NW24
Location: Adjacent to eastbound lanes of DSA2 mainline, west of Deer Meadow

-NW24- does preliminarily meet NCDOT feasibility and reasonability criteria
-NW24- is likely to be incorporated into the project.

TNM Run: NW24 SBA: NW24-20ft-OPT

Table A4.18: Noise Barrier Performance Table

-NW24- Acoustical Performance Summary			
Impacts:	21	Benefitted Receptors @≥7dB(A) NLR:	8
Impacted Receptors Benefitted:	16	Total Benefits:	21
Non-Impacted Receptors Benefitted:	5		

-NW24- Parameters			
Terminus: 351+40 L			
Terminus: 13+85 Y10			
Length:	2308 ft	Area / Benefit:	2,199 ft²
Average Height:	20 ft	Allowable Area / Benefit:	2,500 ft²
Area:	46,178 ft²		

Receptors					Noise Wall Performance			
Rec #	Use	NAC	E.R.s	Address	Existing	Build	W/ Wall	NLR
R0243	Res	B	1	8101 RHODES RD	46	67	59	8
R0244A	Res	B	1	8105 RHODES RD	46	60	55	5
R0244B	Res	B	1	8109 RHODES RD	46	58	53	5
R0245A	Res	B	1	5609 DEERBORN DR	46	68	58	10
R0245B	Res	B	1	5605 DEERBORN DR	46	65	57	8
R0246A	Res	B	1	5613 DEERBORN DR	46	70	59	11
R0246B	Res	B	1	5617 DEERBORN DR	46	70	58	12
R0247A	Res	B	1	8112 DEER MEADOW DR	46	60	54	6
R0247B	Res	B	1	8108 DEER MEADOW DR	46	61	56	5
R0247C	Res	B	1	8116 DEER MEADOW DR	46	59	55	4
R0248	Res	B	1	8100 DEER MEADOW DR	46	69	59	10
R1732	Res	B	1	8105 BUCKSKIN LN	46	55	50	5
R1733	Res	B	1	5608 DEERBORN DR	46	58	52	6
R1734	Res	B	1	5604 DEERBORN DR	46	54	51	3
R1735	Res	B	1	8104 BUCKSKIN LN	46	49	47	2
R1736A	Res	B	1	8113 RHODES RD	46	53	50	3
R1736B	Res	B	1	8117 RHODES RD	46	55	52	3
R1737A	Res	B	1	8100 RHODES RD	46	58	57	1
R1737B	Res	B	1	8104 RHODES RD	46	57	56	1
R2323A	Res	B	1	3930 BLUE HORIZON DR	46	67	62	5
R2323B	Res	B	1	3932 BLUE HORIZON DR	46	62	55	7
R2323C	Res	B	1	3934 BLUE HORIZON DR	46	63	56	7
R2323D	Res	B	1	3940 BLUE HORIZON DR	50	62	56	6
R5262	Res	B	1	5732 CARRIAGEHOUSE CT	46	57	56	1
R5263	Res	B	1	5720 CARRIAGEHOUSE CT	46	54	53	1
R5264	Res	B	1	5728 CARRIAGEHOUSE CT	46	55	54	1
R5265	Res	B	1	5708 CARRIAGEHOUSE CT	46	52	50	2
R5266	Res	B	1	8108 RHODES RD	47	56	55	1
R5267	Res	B	1	8112 RHODES RD	46	54	53	1
R5268	Res	B	1	8116 RHODES RD	46	53	52	1

Noise Wall: NW24

Location: Adjacent to eastbound lanes of DSA2 mainline, west of Deer Meadow

R5269	Res	B	1	5704 CARRIAGEHOUSE CT	46	52	51	1
R5270	Res	B	1	8120 RHODES RD	47	53	52	1
R5271	Res	B	1	8121 RHODES RD	46	52	49	3
R5272	Res	B	1	8125 RHODES RD	46	48	46	2
R5273	Res	B	1	8112 BUCKSKIN LN	46	47	46	1
R5274	Res	B	1	8108 BUCKSKIN LN	46	49	47	2
R5275	Res	B	1	8116 BUCKSKIN LN	46	52	49	3
R5276	Res	B	1	8117 BUCKSKIN LN	46	54	49	5
R5277	Res	B	1	8113 BUCKSKIN LN	46	55	50	5
R5278	Res	B	1	8109 BUCKSKIN LN	46	55	49	6
R5279	Res	B	1	5421 DOE LN	46	46	46	0
R5280	Res	B	1	5417 DOE LN	46	48	46	2
R5309	Res	B	1	5412 DOE LN	46	55	50	5
R5310	Res	B	1	5408 DOE LN	46	57	51	6
R5311	Res	B	1	5413 DOE LN	46	50	47	3
R5312	Res	B	1	5409 DOE LN	46	51	48	3
R5313	Res	B	1	5405 DOE LN	46	48	47	1
R5314	Res	B	1	5403 DOE LN	46	53	50	3
R5315	Res	B	1	5401 DOE LN	46	55	55	0
R5316	Res	B	1	8120 DEER MEADOW DR	46	58	57	1
							-NW24- predicted build condition with wall Benefits[1]	**21**

Impact = 5 to 6 dB(A) NLR = ≥ 7 dB(A) NLR =

[1] A receptor is considered benefitted if the predicted Noise Level Reduction (NLR) is at least 5 dB(A).

To be used with Traffic Noise Reports only

NCDOT NOISE WALL

FEASIBILITY & REASONABLENESS WORKSHEET

PROJECT - Complete 540 **TIP# -** R-2721

NOISE WALL # - NW24 **COUNTY(IES) -** Wake and Johnston

 # IMPACTS - 21 **# BENEFITS -** 21 **NAC:** ☐ **A** ☑ **B** ☐ **C** ☐ **D** ☐ **E**

A. FEASBILITY:

1.	Can a 5-dB(A) reduction in traffic noise levels be achieved for at least two impacted receptors?	YES
2.	Does topography negatively affect the proposed noise wall?	NO
3.	Does the proposed noise wall negatively affect property access, drainage, utilities or maintenance requirements?	NO
4.	Is there control of access in the vicinity of the proposed noise wall?	YES

B. REASONABLENESS

1.	Can a 7- dB(A) reduction in traffic noise levels be achieved for at least one benefited receptor?	YES
2.	Is the quantity per benefited receptor of 2,199 square feet less than the maximum allowable quantity per benefited receptor of 2,500 square feet?	YES

C. NOISE WALL PRELIMINARY DECISION

1.	Is the noise wall preliminarily feasible?	YES
2.	Is the noise wall preliminarily reasonable?	YES
3.	Is the noise wall likely?	YES

PREPARED BY: D. Shannon **DATE PREPARED:** 12/17/2017

Noise Wall: NW25
Location: Adjacent to westbound lanes of DSA2 mainline, Bells Lake interchange to Deer Meadow overpass

-NW25- does preliminarily meet NCDOT feasibility and reasonability criteria
-NW25- is likely to be incorporated into the project.

TNM Run: NW25 SBA: NW25-22ft-OPT

Table A4.19: Noise Barrier Performance Table

-NW25- Acoustical Performance Summary			
Impacts:	33	Benefitted Receptors @≥7dB(A) NLR:	10
Impacted Receptors Benefitted:	14	Total Benefits:	14
Non-Impacted Receptors Benefitted:	0		

-NW25- Parameters			
	Terminus: 352+55 L		
	Terminus: 365+70 L		
Length:	1344 ft	Area / Benefit:	2,113 ft²
Average Height:	22 ft	Allowable Area / Benefit:	2,500 ft²
Area:	29,579 ft²		

Receptors					Noise Wall Performance			
Rec #	Use	NAC	E.R.s	Address	Existing	Build	W/ Wall	NLR
R0233	Res	B	1	3900 BLUE HORIZON RD	46	72	59	13
R0234A	Res	B	1	2904 DAY LILY LANE	46	69	59	10
R0234B	Res	B	1	2900 DAY LILY LANE	46	68	58	10
R0234C	Res	B	1	2908 DAY LILY LANE	51	66	57	9
R0235A	Res	B	1	2901 DAY LILY LANE	46	56	53	3
R0235B	Res	B	1	2905 DAY LILY LANE	48	58	53	5
R0235C	Res	B	1	2909 DAY LILY LANE	55	60	59	1
R0236A	Res	B	1	2900 BUTTONQUAIL DR	46	60	59	1
R0236B	Res	B	1	2904 BUTTONQUAIL DR	47	57	56	1
R0236C	Res	B	1	2908 BUTTONQUAIL DR	51	59	58	1
R0236D	Res	B	1	2909 BUTTONQUAIL DR	54	56	55	1
R0236E	Res	B	1	3801 BLUE HORIZON RD	47	56	55	1
R0236F	Res	B	1	3805 BLUE HORIZON RD	46	58	57	1
R0236G	Res	B	1	3809 BLUE HORIZON RD	46	58	58	0
R0237A	Res	B	1	3810 SPRINGTIME DR.	51	64	57	7
R0237B	Res	B	1	3808 SPRINGTIME DR.	51	61	59	2
R0237C	Res	B	1	3820 SPRINGTIME DR.	51	69	58	11
R0238A	Res	B	1	3821 SPRINGTIME DR.	46	66	58	8
R0238B	Res	B	1	3825 SPRINGTIME DR.	46	73	60	13
R0238C	Res	B	1	3829 SPRINGTIME DR.	46	62	56	6
R0239A	Res	B	1	3833 SPRINGTIME DR.	46	59	57	2
R0239B	Res	B	1	3835 SPRINGTIME DR.	46	56	53	3
R0239C	Res	B	1	3837 SPRINGTIME DR.	46	54	53	1
R0240A	Res	B	1	3716 WHISPERING WIND DR	46	57	55	2
R0240B	Res	B	1	3720 WHISPERING WIND DR	46	60	58	2
R0241A	Res	B	1	3728 WHISPERING WIND DR	46	73	60	13
R0241B	Res	B	1	3724 WHISPERING WIND DR	46	65	60	5
R0242A	Res	B	1	3725 WHISPERING WIND DR	46	63	61	2
R0242B	Res	B	1	3721 WHISPERING WIND DR	46	59	58	1

Noise Wall: NW25

Location: Adjacent to westbound lanes of DSA2 mainline, Bells Lake interchange to Deer Meadow overpass

R0255	Res	B	1	8020 DEER MEADOW DR	46	59	59	0
R0256A	Res	B	1	8028 DEER MEADOW DR	46	68	68	0
R0256B	Res	B	1	8032 DEER MEADOW DR	46	75	75	0
R1738A	Res	B	1	8036 RHODES RD	52	52	51	1
R1738B	Res	B	1	8038 RHODES RD	46	52	52	0
R1739A	Res	B	1	8040 RHODES RD	48	54	52	2
R1739B	Res	B	1	8042 RHODES RD	46	54	53	1
R1740	Res	B	1	3718 WHISPERING WIND DR	46	55	55	0
R1741A	Res	B	1	3708 WHISPERING WIND DR.	46	52	52	0
R1741B	Res	B	1	3706 WHISPERING WIND DR.	46	52	52	0
R1741C	Res	B	1	3700 WHISPERING WIND DR.	53	53	52	1
R1742A	Res	B	1	3717 WHISPERING WIND DR.	46	58	57	1
R1742B	Res	B	1	3715 WHISPERING WIND DR.	46	54	53	1
R5281	Res	B	1	3812 BLUE HORIZON DR	46	57	57	0
R5282	Res	B	1	3810 BLUE HORIZON DR	46	56	55	1
R5283	Res	B	1	8020 RHODES RD	46	54	53	1
R5284	Res	B	1	3804 BLUE HORIZON DR	46	56	56	0
R5285	Res	B	1	3800 BLUE HORIZON DR	58	55	55	0
R5286	Res	B	1	3700 WHISPERING WIND DR.	53	52	51	1
R5287	Res	B	1	3701 WHISPERING WIND DR.	47	52	52	0
R5288	Res	B	1	3125 WHISPERING WIND DR.	46	67	61	6
R5289	Res	B	1	3127 WHISPERING WIND DR.	46	74	64	10
							-NW25- predicted build condition with wall Benefits[1]	**14**

Impact = 5 to 6 dB(A) NLR = ≥ 7 dB(A) NLR =

[1] A receptor is considered benefitted if the predicted Noise Level Reduction (NLR) is at least 5 dB(A).

To be used with Traffic Noise Reports only

NCDOT NOISE WALL

FEASIBILITY & REASONABLENESS WORKSHEET

PROJECT - Complete 540 **TIP# -** R-2721

NOISE WALL # - NW25 **COUNTY(IES) -** Wake and Johnston

 # IMPACTS - 33 **# BENEFITS -** 14 **NAC:** ☐ A ☑ B ☐ C ☐ D ☐ E

A. FEASBILITY:

1.	Can a 5-dB(A) reduction in traffic noise levels be achieved for at least two impacted receptors?	YES
2.	Does topography negatively affect the proposed noise wall?	NO
3.	Does the proposed noise wall negatively affect property access, drainage, utilities or maintenance requirements?	NO
4.	Is there control of access in the vicinity of the proposed noise wall?	YES

B. REASONABLENESS

1.	Can a 7- dB(A) reduction in traffic noise levels be achieved for at least one benefited receptor?	YES
2.	Is the quantity per benefited receptor of 2,113 square feet less than the maximum allowable quantity per benefited receptor of 2,500 square feet?	YES

C. NOISE WALL PRELIMINARY DECISION

1.	Is the noise wall preliminarily feasible?	YES
2.	Is the noise wall preliminarily reasonable?	YES
3.	Is the noise wall likely?	YES

PREPARED BY: D. Shannon **DATE PREPARED:** 12/17/2017

Noise Wall: NW27
Location: Adjacent to westbound lanes of DSA2 mainline, between Deer Meadow and Johnson Pond

-NW27- does NOT preliminarily meet NCDOT feasibility and reasonability criteria
-NW27- is NOT likely to be incorporated into the project.

TNM Run: NW27 SBA: NW27-22ft-OPT

Table A4.20: Noise Barrier Performance Table

-NW27- Acoustical Performance Summary			
Impacts:	21	Benefitted Receptors @≥7dB(A) NLR:	9
Impacted Receptors Benefitted:	15	Total Benefits:	15
Non-Impacted Receptors Benefitted:	0		

-NW27- Parameters			
	Terminus: 19+60 Y10		
	Terminus: 22+35 Y11		
Length:	2033 ft	Area / Benefit:	2,986 ft²
Average Height:	22 ft	Allowable Area / Benefit:	2,500 ft²
Area:	44,784 ft²		

Receptors					Noise Wall Performance			
Rec #	Use	NAC	E.R.s	Address	Existing	Build	W/ Wall	NLR
R0257A	Res	B	1	8009 DEER MEADOW DR	47	52	51	1
R0257B	Res	B	1	8013 DEER MEADOW DR	46	51	50	1
R0258	Res	B	1	7908 PINESLOPE DR	47	53	52	1
R0259	Res	B	1	7900 PINESLOPE DR	50	53	53	0
R0260A	Res	B	1	8029 DEER MEADOW DR	46	55	51	4
R0260B	Res	B	1	7916 PINESLOPE DR	46	56	53	3
R0261A	Res	B	1	5416 BUCKWOOD DR	46	65	57	8
R0261B	Res	B	1	5420 BUCKWOOD DR	46	67	57	10
R0261C	Res	B	1	7924 PINESLOPE DR	46	63	56	7
R0262A	Res	B	1	8008 BAYBARK CIR	50	53	52	1
R0262B	Res	B	1	8004 BAYBARK CIR	53	55	54	1
R0263A	Res	B	1	8017 BAYBARK CIR	55	57	56	1
R0263B	Res	B	1	8001 BAYBARK CIR	59	60	60	0
R0264A	Res	B	1	8004 EVERARD CT	46	52	51	1
R0264B	Res	B	1	8000 EVERARD CT	49	53	52	1
R0265A	Res	B	1	8001 EVERARD CT	47	55	52	3
R0265B	Res	B	1	8020 BAYBARK CIR	48	54	52	2
R0266A	Res	B	1	8008 EVERARD CT	46	55	52	3
R0266B	Res	B	1	8005 EVERARD CT	46	55	53	2
R0267A	Res	B	1	7917 PINESLOPE DR	46	56	53	3
R0267B	Res	B	1	7925 PINESLOPE DR	46	61	55	6
R0268A	Res	B	1	5400 BUCKWOOD DR	46	57	53	4
R0268B	Res	B	1	5401 BUCKWOOD DR	46	59	54	5
R0268C	Res	B	1	5404 BUCKWOOD DR	46	58	53	5
R0269	Res	B	1	5409 BUCKWOOD DR	46	65	56	9
R0270	Res	B	1	5405 BUCKWOOD DR	46	75	61	14
R0271A	Res	B	1	3733 SUNLAKE FARMS RD	46	65	55	10
R0271B	Res	B	1	3736 SUNLAKE FARMS RD	46	63	55	8
R0272	Res	B	1	3729 SUNLAKE FARMS RD	46	69	59	10
R0273A	Res	B	1	3721 SUNLAKE FARMS RD	46	62	57	5

Noise Wall: NW27

Location: Adjacent to westbound lanes of DSA2 mainline, between Deer Meadow and Johnson Pond

R0273B	Res	B	1	3725 SUNLAKE FARMS RD	46	65	57	8
R0280	Res	B	1	3728 JOHNSON POND RD	49	59	59	0
R1746A	Res	B	1	3732 SUNLAKE FARMS RD	47	58	53	5
R1746B	Res	B	1	3728 SUNLAKE FARMS RD	48	58	53	5
R1747	Res	B	1	3724 SUNLAKE FARMS RD	48	58	54	4
R1748	Res	B	1	3717 SUNLAKE FARMS RD	46	60	56	4
R1916	Res	B	1	6600 TEN TEN RD	50	56	54	2
R1917	Res	B	1	6608 TEN TEN RD	51	55	54	1
R5293	Res	B	1	8001 DEER MEADOW DR	52	58	58	0
R5294	Res	B	1	6304 TEN TEN RD	51	55	55	0
R5295	Res	B	1	6308 TEN TEN RD	50	54	54	0
R5296	Res	B	1	6312 TEN TEN RD	52	54	54	0
R5297	Res	B	1	8000 BAYBARK CIR	59	60	60	0
R5298	Res	B	1	8021 DEER MEADOW DR	46	53	51	2
R5299	Res	B	1	8025 DEER MEADOW DR	46	54	51	3
R5300	Res	B	1	8021 BAYBARK CIR	59	60	60	0
R5301	Res	B	1	8024 BAYBARK CIR	51	55	53	2
R5302	Res	B	1	8025 BAYBARK CIR	61	62	61	1
R5303	Res	B	1	8029 BAYBARK CIR	59	60	60	0
R5304	Res	B	1	8028 BAYBARK CIR	54	57	56	1
R5305	Res	B	1	6512 TEN TEN RD	60	61	61	0
R5306	Res	B	1	6612 TEN TEN RD	53	57	56	1
R5307	Res	B	1	6624 TEN TEN RD	56	58	58	0
							-NW27- predicted build condition with wall Benefits[1]	**15**

Impact = 5 to 6 dB(A) NLR = ≥ 7 dB(A) NLR =

[1] A receptor is considered benefitted if the predicted Noise Level Reduction (NLR) is at least 5 dB(A).

To be used with Traffic Noise Reports only

NCDOT NOISE WALL

FEASIBILITY & REASONABLENESS WORKSHEET

PROJECT - Complete 540 **TIP# -** R-2721

NOISE WALL # - NW27 **COUNTY(IES) -** Wake and Johnston

 # IMPACTS - 21 **# BENEFITS -** 15 **NAC:** ☐ A ☑ B ☐ C ☐ D ☐ E

A. FEASBILITY:

1.	Can a 5-dB(A) reduction in traffic noise levels be achieved for at least two impacted receptors?	YES
2.	Does topography negatively affect the proposed noise wall?	NO
3.	Does the proposed noise wall negatively affect property access, drainage, utilities or maintenance requirements?	NO
4.	Is there control of access in the vicinity of the proposed noise wall?	YES

B. REASONABLENESS

1.	Can a 7- dB(A) reduction in traffic noise levels be achieved for at least one benefited receptor?	YES
2.	Is the quantity per benefited receptor of 2,986 square feet less than the maximum allowable quantity per benefited receptor of 2,500 square feet?	YES

C. NOISE WALL PRELIMINARY DECISION

1.	Is the noise wall preliminarily feasible?	YES
2.	Is the noise wall preliminarily reasonable?	NO
3.	Is the noise wall likely?	NO

PREPARED BY: D. Shannon **DATE PREPARED:** 12/17/2017

Noise Wall: NW28
Location: Adjacent to eastbound lanes of DSA2 mainline, between Deer Meadow and Johnson Pond

-NW28- does preliminarily meet NCDOT feasibility and reasonability criteria
-NW28- is likely to be incorporated into the project.

TNM Run: NW28 SBA: NW28-18ft-OPT

Table A4.21: Noise Barrier Performance Table

-NW28- Acoustical Performance Summary			
Impacts:	15	Benefitted Receptors @≥7dB(A) NLR:	6
Impacted Receptors Benefitted:	13	Total Benefits:	16
Non-Impacted Receptors Benefitted:	3		

-NW28- Parameters			
	Terminus: 374+90 L		
	Terminus: 394+50 L		
Length:	2036 ft	Area / Benefit:	2,291 ft²
Average Height:	18 ft	Allowable Area / Benefit:	2,500 ft²
Area:	36,654 ft²		

Receptors					Noise Wall Performance			
Rec #	**Use**	**NAC**	**E.R.s**	**Address**	**Existing**	**Build**	**W/ Wall**	**NLR**
R0249	Res	B	1	8105 DEER MEADOW DR	46	71	60	11
R0250A	Res	B	1	5412 LOWER CREEK CT	46	61	56	5
R0250B	Res	B	1	5408 LOWER CREEK CT	46	61	56	5
R0250C	Res	B	1	5416 LOWER CREEK CT	46	61	58	3
R0253A	Res	B	1	5400 LOWER CREEK CT	46	63	56	7
R0253B	Res	B	1	5401 LOWER CREEK CT	46	60	54	6
R0274A	Res	B	1	3800 DOESKIN DR	46	64	56	8
R0274B	Res	B	1	3804 DOESKIN DR	46	65	56	9
R0274C	Res	B	1	3808 DOESKIN DR	46	62	54	8
R0275	Res	B	1	3904 JOHNSON POND RD	46	53	51	2
R0276	Res	B	1	3900 JOHNSON POND RD	49	58	58	0
R0277	Res	B	1	3824 JOHNSON POND RD	51	63	63	0
R1743A	Res	B	1	5417 LOWER CREEK CT	46	53	52	1
R1743B	Res	B	1	5413 LOWER CREEK CT	46	49	47	2
R1744A	Res	B	1	5405 LOWER CREEK CT	46	56	50	6
R1744B	Res	B	1	5409 LOWER CREEK CT	46	51	47	4
R1745A	Res	B	1	3801 DOESKIN DR	46	56	51	5
R1745B	Res	B	1	3809 DOESKIN DR	46	48	46	2
R1745C	Res	B	1	3820 DOESKIN DR	46	58	51	7
R1745D	Res	B	1	3821 DOESKIN DR	46	49	46	3
R1745E	Res	B	1	8309 WHITETAIL DR	46	53	49	4
R1745F	Res	B	1	3833 DOESKIN DR	46	56	50	6
R1745G	Res	B	1	3832 DOESKIN DR	46	51	46	5
R1745H	Res	B	1	3828 DOESKIN DR	46	53	48	5
R1745I	Res	B	1	3824 DOESKIN DR	46	56	50	6
R5317	Res	B	1	8129 DEER MEADOW DR	46	53	52	1
R5318	Res	B	1	8133 DEER MEADOW DR	46	51	49	2
R5319	Res	B	1	8137 DEER MEADOW DR	46	51	48	3
R5320	Res	B	1	3836 DOESKIN DR	46	51	46	5
R5321	Res	B	1	3840 DOESKIN DR	46	48	46	2

Noise Wall: NW28

Location: Adjacent to eastbound lanes of DSA2 mainline, between Deer Meadow and Johnson Pond

R5322	Res	B	1	8300 WHITETAIL DR	46	46	46	0
R5323	Res	B	1	8304 WHITETAIL DR	46	46	46	0
R5324	Res	B	1	8308 WHITETAIL DR	46	46	46	0
R5325	Res	B	1	8312 WHITETAIL DR	46	50	47	3
R5326	Res	B	1	3908 JOHNSON POND RD	46	47	47	0
R5327	Res	B	1	3908 JOHNSON POND RD	46	48	46	2
							-NW28- predicted build condition with wall Benefits[1]	**16**

Impact = 5 to 6 dB(A) NLR = ≥ 7 dB(A) NLR =

[1] A receptor is considered benefitted if the predicted Noise Level Reduction (NLR) is at least 5 dB(A).

To be used with Traffic Noise Reports only

NCDOT NOISE WALL

FEASIBILITY & REASONABLENESS WORKSHEET

PROJECT - Complete 540 **TIP# -** R-2721

NOISE WALL # - NW28 **COUNTY(IES) -** Wake and Johnston

 # IMPACTS - 15 **# BENEFITS -** 16 **NAC:** ☐ A ☑ B ☐ C ☐ D ☐ E

A. FEASBILITY:

1.	Can a 5-dB(A) reduction in traffic noise levels be achieved for at least two impacted receptors?	YES
2.	Does topography negatively affect the proposed noise wall?	NO
3.	Does the proposed noise wall negatively affect property access, drainage, utilities or maintenance requirements?	NO
4.	Is there control of access in the vicinity of the proposed noise wall?	YES

B. REASONABLENESS

1.	Can a 7- dB(A) reduction in traffic noise levels be achieved for at least one benefited receptor?	YES
2.	Is the quantity per benefited receptor of 2,291 square feet less than the maximum allowable quantity per benefited receptor of 2,500 square feet?	YES

C. NOISE WALL PRELIMINARY DECISION

1.	Is the noise wall preliminarily feasible?	YES
2.	Is the noise wall preliminarily reasonable?	YES
3.	Is the noise wall likely?	YES

PREPARED BY: D. Shannon **DATE PREPARED:** 12/17/2017

Noise Wall: NW32
Location: Adjacent to eastbound lanes of DSA2 mainline, surrounding Lake Wheeler underpass

-NW32- does NOT preliminarily meet NCDOT feasibility and reasonability criteria
-NW32- is NOT likely to be incorporated into the project.

TNM Run: NW32 SBA: NW32-18ft-OPT

Table A4.22: Noise Barrier Performance Table

-NW32- Acoustical Performance Summary			
Impacts:	27	Benefitted Receptors @≥7dB(A) NLR:	8
Impacted Receptors Benefitted:	18	Total Benefits:	20
Non-Impacted Receptors Benefitted:	2		

-NW32- Parameters			
	Terminus: 424+50 L		
	Terminus: 454+65 L		
Length:	3036 ft	Area / Benefit:	2,733 ft²
Average Height:	18 ft	Allowable Area / Benefit:	2,500 ft²
Area:	54,651 ft²		

Receptors					Noise Wall Performance			
Rec #	Use	NAC	E.R.s	Address	Existing	Build	W/ Wall	NLR
R0283A	Res	B	1	8712 LAKE WHEELER RD	60	68	65	3
R0283B	Res	B	1	8700 LAKE WHEELER RD	59	68	64	4
R0284A	Res	B	1	3909 ARNOLD PARK LN	46	64	56	8
R0284B	Res	B	1	3908 ARNOLD PARK LN	47	66	58	8
R0285A	Res	B	1	3907 ARNOLD PARK LN	49	67	58	9
R0285B	Res	B	1	3906 ARNOLD PARK LN	48	66	57	9
R0286A	Res	B	1	3905 ARNOLD PARK LN	49	65	59	6
R0286B	Res	B	1	3904 ARNOLD PARK LN	52	69	59	10
R0287A	Res	B	1	3901 ARNOLD PARK LN	64	71	69	2
R0287B	Res	B	1	3900 ARNOLD PARK LN	62	72	67	5
R0288	Res	B	1	8709 LAKE WHEELER RD	57	67	63	4
R1753A	Res	B	1	8720 LAKE WHEELER RD	59	67	65	2
R1753B	Res	B	1	8732 LAKE WHEELER RD	58	66	63	3
R1754	Res	B	1	8729 LAKE WHEELER RD	52	65	59	6
R5328	Res	B	1	2504 OPTIMIST FARM RD	46	52	49	3
R5329	Res	B	1	2504 OPTIMIST FARM RD	46	53	49	4
R5330	Res	B	1	4033 SUGG FARM LN	46	56	52	4
R5331	Res	B	1	4025 SUGG FARM LN	46	59	54	5
R5332	Res	B	1	4017 SUGG FARM LN	46	60	55	5
R5333	Res	B	1	4232 GLEN SUMMITT CT	46	60	53	7
R5334	Res	B	1	4223 GLEN SUMMITT CT	46	58	52	6
R5335	Res	B	1	4221 GLEN SUMMITT CT	46	53	48	5
R5336	Res	B	1	2428 OPTIMIST FARM RD	46	57	51	6
R5337	Res	B	1	2420 OPTIMIST FARM RD	46	59	52	7
R5338	Res	B	1	4208 PLEASANT VIEW DR	46	55	51	4
R5339	Res	B	1	2412 OPTIMIST FARM RD	46	58	53	5
R5340	Res	B	1	2412 OPTIMIST FARM RD	48	60	55	5
R5341	Res	B	1	8721 LAKE WHEELER RD	56	66	62	4
R5342	Res	B	1	2300 DONNY BROOK RD	46	59	55	4
R5343	Res	B	1	2216 DONNY BROOK RD	46	62	56	6

Noise Wall: NW32

Location: Adjacent to eastbound lanes of DSA2 mainline, surrounding Lake Wheeler underpass

R5344	Res	B	1	2212 DONNY BROOK RD	46	63	54	9
R5630	Res	B	1	2505 OPTIMIST FARM RD	46	49	47	2
R5631	Res	B	1	4204 GLEN SUMMITT CT	46	46	46	0
R5632	Res	B	1	2507 OPTIMIST FARM RD	46	54	49	5
R5633	Res	B	1	8809 RANSDELL RD	54	57	54	3
R5634	Res	B	1	2209 DONNY BROOK RD	54	60	57	3
							-NW32- predicted build condition with wall Benefits[1]	**20**

Impact = 5 to 6 dB(A) NLR = ≥ 7 dB(A) NLR =

[1] A receptor is considered benefitted if the predicted Noise Level Reduction (NLR) is at least 5 dB(A).

To be used with Traffic Noise Reports only

NCDOT NOISE WALL

FEASIBILITY & REASONABLENESS WORKSHEET

PROJECT - Complete 540 **TIP# -** R-2721

NOISE WALL # - NW32 **COUNTY(IES) -** Wake and Johnston

 # IMPACTS - 27 **# BENEFITS -** 20 **NAC:** ☐ A ☑ B ☐ C ☐ D ☐ E

A. FEASBILITY:

1.	Can a 5-dB(A) reduction in traffic noise levels be achieved for at least two impacted receptors?	YES
2.	Does topography negatively affect the proposed noise wall?	NO
3.	Does the proposed noise wall negatively affect property access, drainage, utilities or maintenance requirements?	NO
4.	Is there control of access in the vicinity of the proposed noise wall?	YES

B. REASONABLENESS

1.	Can a 7- dB(A) reduction in traffic noise levels be achieved for at least one benefited receptor?	YES
2.	Is the quantity per benefited receptor of 2,733 square feet less than the maximum allowable quantity per benefited receptor of 2,500 square feet?	NO

C. NOISE WALL PRELIMINARY DECISION

1.	Is the noise wall preliminarily feasible?	YES
2.	Is the noise wall preliminarily reasonable?	NO
3.	Is the noise wall likely?	NO

PREPARED BY: D. Shannon **DATE PREPARED:** 12/17/2017

Noise Wall: NW35-1 & 35-2
Location: Adjacent to US401 Fayetteville Road, southwest quadrant of DSA2 interchange with US401

-NW35- does preliminarily meet NCDOT feasibility and reasonability criteria
-NW35- is likely to be incorporated into the project.

TNM Run: NW35 SBA: NW35-18ft-OPT

Table A4.23: Noise Barrier Performance Table

-NW35- Acoustical Performance Summary			
Impacts:	21	Benefitted Receptors @≥7dB(A) NLR:	19
Impacted Receptors Benefitted:	16	Total Benefits:	34
Non-Impacted Receptors Benefitted:	18		

-NW35- Parameters			
Terminus: 11+85 Y13A			
Terminus: 19+50 Y13			
Length:	694 ft	Area / Benefit:	367 ft²
Average Height:	18 ft	Allowable Area / Benefit:	2,000 ft²
Area:	12,478 ft²		

Receptors					Noise Wall Performance			
Rec #	**Use**	**NAC**	**E.R.s**	**Address**	**Existing**	**Build**	**W/ Wall**	**NLR**
R0338A	Res	B	1	2811 Calculus Lane	54	54	54	0
R0338B	Res	B	1	2821 Calculus Lane	54	54	54	0
R0338C	Res	B	1	2831 Calculus Lane	54	55	54	1
R0338D	Res	B	1	2812 Calculus Lane	54	54	54	0
R0338E	Res	B	1	2822 Calculus Lane	54	54	54	0
R0338F	Res	B	1	2832 Calculus Lane	54	55	54	1
R0338G	Res	B	1	2814 Calculus Lane	54	54	54	0
R0338H	Res	B	1	2824 Calculus Lane	54	56	55	1
R0338I	Res	B	1	2834 Calculus Lane	54	57	57	0
R0338J	Res	B	1	2813 Calculus Lane	54	54	54	0
R0338K	Res	B	1	2823 Calculus Lane	54	55	55	0
R0338L	Res	B	1	2833 Calculus Lane	54	57	56	1
R0338M	Res	B	1	2613 Calculus Lane	54	54	54	0
R0338N	Res	B	1	2623 Calculus Lane	54	57	56	1
R0338O	Res	B	1	2633 Calculus Lane	54	58	57	1
R0338P	Res	B	1	2614 Calculus Lane	54	56	55	1
R0338Q	Res	B	1	2624 Calculus Lane	54	59	58	1
R0338R	Res	B	1	2634 Calculus Lane	55	61	60	1
R0338S	Res	B	1	2612 Calculus Lane	54	55	54	1
R0338T	Res	B	1	2622 Calculus Lane	54	58	57	1
R0338U	Res	B	1	2632 Calculus Lane	55	61	60	1
R0338V	Res	B	1	2611 Calculus Lane	54	54	54	0
R0338W	Res	B	1	2621 Calculus Lane	54	57	55	2
R0338X	Res	B	1	2631 Calculus Lane	55	59	58	1
R0339A	Res	B	1	1514 Dormitory Road	54	56	55	1
R0339B	Res	B	1	1524 Dormitory Road	54	59	58	1
R0339C	Res	B	1	1534 Dormitory Road	56	62	61	1
R0339D	Res	B	1	1513 Dormitory Road	54	54	54	0
R0339E	Res	B	1	1523 Dormitory Road	54	54	54	0
R0339F	Res	B	1	1533 Dormitory Road	54	54	54	0

Noise Wall: NW35-1 & 35-2

Location: Adjacent to US401 Fayetteville Road, southwest quadrant of DSA2 interchange with US401

R0339G	Res	B	1	1511 Dormitory Road	54	54	54	0
R0339H	Res	B	1	1521 Dormitory Road	54	54	54	0
R0339I	Res	B	1	1531 Dormitory Road	54	54	54	0
R0339J	Res	B	1	1512 Dormitory Road	54	56	55	1
R0339K	Res	B	1	1522 Dormitory Road	54	59	58	1
R0339L	Res	B	1	1532 Dormitory Road	57	62	60	2
R0339M	Res	B	1	3614 Chandler Ridge Circle	54	54	54	0
R0339N	Res	B	1	3624 Chandler Ridge Circle	54	56	54	2
R0339O	Res	B	1	3634 Chandler Ridge Circle	54	59	58	1
R0339P	Res	B	1	3613 Chandler Ridge Circle	54	54	54	0
R0339Q	Res	B	1	3623 Chandler Ridge Circle	54	57	54	3
R0339R	Res	B	1	3633 Chandler Ridge Circle	55	60	57	3
R0339S	Res	B	1	3611 Chandler Ridge Circle	54	55	54	1
R0339T	Res	B	1	3621 Chandler Ridge Circle	54	59	56	3
R0339U	Res	B	1	3631 Chandler Ridge Circle	57	62	59	3
R0339V	Res	B	1	3612 Chandler Ridge Circle	54	56	54	2
R0339W	Res	B	1	3622Chandler Ridge Circle	54	59	57	2
R0339X	Res	B	1	3632 Chandler Ridge Circle	57	62	60	2
R0340A	Res	B	1	3813 Chandler Ridge Circle	54	54	54	0
R0340B	Res	B	1	3823 Chandler Ridge Circle	54	55	54	1
R0340C	Res	B	1	3833 Chandler Ridge Circle	54	57	54	3
R0340D	Res	B	1	3811 Chandler Ridge Circle	54	54	54	0
R0340E	Res	B	1	3821 Chandler Ridge Circle	54	55	54	1
R0340F	Res	B	1	3831 Chandler Ridge Circle	54	57	55	2
R0340G	Res	B	1	3812 Chandler Ridge Circle	54	54	54	0
R0340H	Res	B	1	3822 Chandler Ridge Circle	54	55	54	1
R0340I	Res	B	1	3832 Chandler Ridge Circle	54	57	55	2
R0340J	Res	B	1	3814 Chandler Ridge Circle	54	54	54	0
R0340K	Res	B	1	3824 Chandler Ridge Circle	54	54	54	0
R0340L	Res	B	1	3834 Chandler Ridge Circle	54	57	55	2
R0341A	Res	B	1	4811 Chandler Ridge Circle	54	58	54	4
R0341B	Res	B	1	4821 Chandler Ridge Circle	58	63	58	5
R0341C	Res	B	1	4831 Chandler Ridge Circle	61	65	60	5
R0341D	Res	B	1	4812 Chandler Ridge Circle	54	59	54	5
R0341E	Res	B	1	4822 Chandler Ridge Circle	61	64	56	8
R0341F	Res	B	1	4832 Chandler Ridge Circle	63	66	58	8
R0341G	Res	B	1	4813 Chandler Ridge Circle	55	61	54	7
R0341H	Res	B	1	4823 Chandler Ridge Circle	63	67	56	11
R0341I	Res	B	1	4833 Chandler Ridge Circle	66	70	58	12
R0341J	Res	B	1	4814 Chandler Ridge Circle	56	61	54	7
R0341K	Res	B	1	4824 Chandler Ridge Circle	65	68	55	13
R0341L	Res	B	1	4834 Chandler Ridge Circle	68	72	57	15
R0342	REC	C	6	4900 CHANDLER RIDGE CIR	54	55	54	1
R0343A	Res	B	1	3914 Chandler Ridge Circle	54	54	54	0
R0343B	Res	B	1	3924 Chandler Ridge Circle	54	55	54	1
R0343C	Res	B	1	3934 Chandler Ridge Circle	55	59	54	5
R0343D	Res	B	1	3913 Chandler Ridge Circle	54	54	54	0
R0343E	Res	B	1	3923 Chandler Ridge Circle	54	56	54	2
R0343F	Res	B	1	3933 Chandler Ridge Circle	55	59	56	3
R0343G	Res	B	1	3911 Chandler Ridge Circle	54	54	54	0
R0343H	Res	B	1	3921 Chandler Ridge Circle	54	57	54	3
R0343I	Res	B	1	3931 Chandler Ridge Circle	55	60	57	3

Noise Wall: NW35-1 & 35-2
Location: Adjacent to US401 Fayetteville Road, southwest quadrant of DSA2 interchange with US401

R0343J	Res	B	1	3912 Chandler Ridge Circle	54	54	54	0
R0343K	Res	B	1	3922 Chandler Ridge Circle	54	55	54	1
R0343L	Res	B	1	3932 Chandler Ridge Circle	54	58	56	2
R0344A	Res	B	1	4111 Chandler Ridge Circle	54	54	54	0
R0344B	Res	B	1	4121 Chandler Ridge Circle	54	54	54	0
R0344C	Res	B	1	4131 Chandler Ridge Circle	54	54	54	0
R0344D	Res	B	1	4112 Chandler Ridge Circle	54	54	54	0
R0344E	Res	B	1	4122 Chandler Ridge Circle	54	54	54	0
R0344F	Res	B	1	4132 Chandler Ridge Circle	54	54	54	0
R0344G	Res	B	1	4114 Chandler Ridge Circle	54	54	54	0
R0344H	Res	B	1	4124 Chandler Ridge Circle	54	55	54	1
R0344I	Res	B	1	4134 Chandler Ridge Circle	54	58	54	4
R0344J	Res	B	1	4113 Chandler Ridge Circle	54	54	54	0
R0344K	Res	B	1	4123 Chandler Ridge Circle	54	55	54	1
R0344L	Res	B	1	4133 Chandler Ridge Circle	54	58	54	4
R0345A	Res	B	1	4312 Chandler Ridge Circle	54	54	54	0
R0345B	Res	B	1	4322 Chandler Ridge Circle	54	55	54	1
R0345C	Res	B	1	4332 Chandler Ridge Circle	54	58	56	2
R0345D	Res	B	1	4311 Chandler Ridge Circle	54	54	54	0
R0345E	Res	B	1	4321 Chandler Ridge Circle	54	54	54	0
R0345F	Res	B	1	4331 Chandler Ridge Circle	54	56	54	2
R0345G	Res	B	1	4314 Chandler Ridge Circle	54	54	54	0
R0345H	Res	B	1	4324 Chandler Ridge Circle	56	60	54	6
R0345I	Res	B	1	4334 Chandler Ridge Circle	58	62	54	8
R0345J	Res	B	1	4313 Chandler Ridge Circle	54	54	54	0
R0345K	Res	B	1	4323 Chandler Ridge Circle	54	57	54	3
R0345L	Res	B	1	4333Chandler Ridge Circle	56	60	54	6
R0346A	Res	B	1	4512 Chandler Ridge Circle	60	63	59	4
R0346B	Res	B	1	4522 Chandler Ridge Circle	66	69	64	5
R0346C	Res	B	1	4532 Chandler Ridge Circle	67	70	64	6
R0346D	Res	B	1	4514 Chandler Ridge Circle	54	55	54	1
R0346E	Res	B	1	4524 Chandler Ridge Circle	57	60	54	6
R0346F	Res	B	1	4534 Chandler Ridge Circle	58	62	54	8
R0346G	Res	B	1	4513 Chandler Ridge Circle	54	54	54	0
R0346H	Res	B	1	4523 Chandler Ridge Circle	54	54	54	0
R0346I	Res	B	1	4533 Chandler Ridge Circle	54	57	54	3
R0346J	Res	B	1	4511 Chandler Ridge Circle	60	62	59	3
R0346K	Res	B	1	4521 Chandler Ridge Circle	66	69	64	5
R0346L	Res	B	1	4531 Chandler Ridge Circle	67	69	65	4
R0347A	Res	B	1	4712 Chandler Ridge Circle	60	63	56	7
R0347B	Res	B	1	4722 Chandler Ridge Circle	65	68	60	8
R0347C	Res	B	1	4732 Chandler Ridge Circle	66	69	61	8
R0347D	Res	B	1	4714 Chandler Ridge Circle	54	57	54	3
R0347E	Res	B	1	4724 Chandler Ridge Circle	58	61	54	7
R0347F	Res	B	1	4734 Chandler Ridge Circle	59	63	57	6
R0347G	Res	B	1	4713 Chandler Ridge Circle	54	54	54	0
R0347H	Res	B	1	4723 Chandler Ridge Circle	54	54	54	0
R0347I	Res	B	1	4733 Chandler Ridge Circle	54	59	56	3
R0347J	Res	B	1	4711 Chandler Ridge Circle	60	63	56	7
R0347K	Res	B	1	4721 Chandler Ridge Circle	65	68	61	7
R0347L	Res	B	1	4731 Chandler Ridge Circle	66	69	61	8

Noise Wall: NW35-1 & 35-2

Location: Adjacent to US401 Fayetteville Road, southwest quadrant of DSA2 interchange with US401

R0348A	Res	B	1	5812 Chemistry Road	54	54	54	0
R0348B	Res	B	1	5822 Chemistry Road	54	55	54	1
R0348C	Res	B	1	5832 Chemistry Road	55	59	58	1
R0348D	Res	B	1	5814 Chemistry Road	54	54	54	0
R0348E	Res	B	1	5824 Chemistry Road	54	55	54	1
R0348F	Res	B	1	5834 Chemistry Road	54	58	58	0
R0348G	Res	B	1	5813 Chemistry Road	54	54	54	0
R0348H	Res	B	1	5823 Chemistry Road	54	56	56	0
R0348I	Res	B	1	5833 Chemistry Road	55	60	60	0
R0348J	Res	B	1	5811 Chemistry Road	54	54	54	0
R0348K	Res	B	1	5821 Chemistry Road	55	58	57	1
R0348L	Res	B	1	5831 Chemistry Road	57	62	61	1
R0349A	Res	B	1	4414 Chandler Ridge Circle	55	57	56	1
R0349B	Res	B	1	4424 Chandler Ridge Circle	59	63	62	1
R0349C	Res	B	1	4434 Chandler Ridge Circle	61	65	64	1
R0349D	Res	B	1	4413 Chandler Ridge Circle	56	58	57	1
R0349E	Res	B	1	4423 Chandler Ridge Circle	61	65	64	1
R0349F	Res	B	1	4433 Chandler Ridge Circle	63	66	65	1
R0349G	Res	B	1	4411 Chandler Ridge Circle	54	56	54	2
R0349H	Res	B	1	4421 Chandler Ridge Circle	59	62	60	2
R0349I	Res	B	1	4431 Chandler Ridge Circle	61	64	61	3
R0349J	Res	B	1	4412 Chandler Ridge Circle	54	54	54	0
R0349K	Res	B	1	4422 Chandler Ridge Circle	56	60	56	4
R0349L	Res	B	1	4432 Chandler Ridge Circle	58	61	57	4
R0350A	Res	B	1	4613 Chandler Ridge Circle	64	67	61	6
R0350B	Res	B	1	4623 Chandler Ridge Circle	68	71	66	5
R0350C	Res	B	1	4633 Chandler Ridge Circle	68	71	67	4
R0350D	Res	B	1	4614 Chandler Ridge Circle	61	65	62	3
R0350E	Res	B	1	4624 Chandler Ridge Circle	66	69	66	3
R0350F	Res	B	1	4634 Chandler Ridge Circle	66	69	66	3
R0350G	Res	B	1	4611 Chandler Ridge Circle	60	63	57	6
R0350H	Res	B	1	4621 Chandler Ridge Circle	65	68	61	7
R0350I	Res	B	1	4631 Chandler Ridge Circle	64	69	62	7
R0350J	Res	B	1	4612 Chandler Ridge Circle	55	58	55	3
R0350K	Res	B	1	4622 Chandler Ridge Circle	60	64	60	4
R0350L	Res	B	1	4632 Chandler Ridge Circle	62	65	60	5
R1610A	Res	B	1	3014 Dormitory Road	54	54	54	0
R1610B	Res	B	1	3024 Dormitory Road	54	54	54	0
R1610C	Res	B	1	3034 Dormitory Road	54	55	54	1
R1610D	Res	B	1	3012 Dormitory Road	54	54	54	0
R1610E	Res	B	1	3022 Dormitory Road	54	54	54	0
R1610F	Res	B	1	3032 Dormitory Road	54	54	54	0
R1610G	Res	B	1	3013 Dormitory Road	54	54	54	0
R1610H	Res	B	1	3023 Dormitory Road	54	54	54	0
R1610I	Res	B	1	3033 Dormitory Road	54	54	54	0
R1610J	Res	B	1	3011 Dormitory Road	54	54	54	0
R1610K	Res	B	1	3021 Dormitory Road	54	54	54	0
R1610L	Res	B	1	3031 Dormitory Road	54	54	54	0
							-NW35- predicted build condition with wall Benefits[1]	**34**

Impact = 5 to 6 dB(A) NLR = ≥ 7 dB(A) NLR =

Noise Wall: NW35-1 & 35-2
Location: Adjacent to US401 Fayetteville Road, southwest quadrant of DSA2 interchange with US401

[1] A receptor is considered benefitted if the predicted Noise Level Reduction (NLR) is at least 5 dB(A).

To be used with Traffic Noise Reports only

NCDOT NOISE WALL

FEASIBILITY & REASONABLENESS WORKSHEET

PROJECT - Complete 540 **TIP# -** R-2721

NOISE WALL # - NW35 **COUNTY(IES) -** Wake and Johnston

 # IMPACTS - 21 **# BENEFITS -** 34 **NAC:** ☐ **A** ☑ **B** ☑ **C** ☐ **D** ☐ **E**

A. FEASBILITY:

1.	Can a 5-dB(A) reduction in traffic noise levels be achieved for at least two impacted receptors?	YES
2.	Does topography negatively affect the proposed noise wall?	NO
3.	Does the proposed noise wall negatively affect property access, drainage, utilities or maintenance requirements?	NO
4.	Is there control of access in the vicinity of the proposed noise wall?	YES

B. REASONABLENESS

1.	Can a 7- dB(A) reduction in traffic noise levels be achieved for at least one benefited receptor?	YES
2.	Is the quantity per benefited receptor of 367 square feet less than the maximum allowable quantity per benefited receptor of 2,000 square feet?	YES

C. NOISE WALL PRELIMINARY DECISION

1.	Is the noise wall preliminarily feasible?	YES
2.	Is the noise wall preliminarily reasonable?	YES
3.	Is the noise wall likely?	YES

PREPARED BY: D. Shannon **DATE PREPARED:** 12/17/2017

Noise Wall: NW41
Location: Adjacent to eastbound lanes of the proposed DSA2 route, east of Fanny Brown overpass

-NW41- does preliminarily meet NCDOT feasibility and reasonability criteria
-NW41- is likely to be incorporated into the project.

TNM Run: NW41 SBA: NW41-13ft-OPT

Table A4.24: Noise Barrier Performance Table

-NW41- Acoustical Performance Summary			
Impacts:	2	Benefitted Receptors @≥7dB(A) NLR:	2
Impacted Receptors Benefitted:	2	Total Benefits:	4
Non-Impacted Receptors Benefitted:	2		

-NW41- Parameters			
	Terminus: 8+35 Y16		
	Terminus: 545+55 L		
Length:	887 ft	Area / Benefit:	2,889 ft²
Average Height:	13 ft	Allowable Area / Benefit:	3,000 ft²
Area:	11,554 ft²		

Receptors					Noise Wall Performance			
Rec #	**Use**	**NAC**	**E.R.s**	**Address**	**Existing**	**Build**	**W/ Wall**	**NLR**
R0362A	Res	B	1	4516 CHESHIRE DOWNS CT	54	57	57	0
R0362B	Res	B	1	4512 CHESHIRE DOWNS CT	54	56	54	2
R0362C	Res	B	1	4508 CHESHIRE DOWNS CT	54	60	55	5
R0363A	Res	B	1	4504 CHESHIRE DOWNS CT	58	64	57	7
R0363B	Res	B	1	4500 CHESHIRE DOWNS CT	55	67	62	5
R0363C	Res	B	1	4501 CHESHIRE DOWNS CT	54	71	64	7
R0364	Res	B	1	1400 LANERIDGE CT	54	60	58	2
-NW41- predicted build condition with wall Benefits[1]								**4**

Impact = 5 to 6 dB(A) NLR = ≥ 7 dB(A) NLR =

[1] A receptor is considered benefitted if the predicted Noise Level Reduction (NLR) is at least 5 dB(A).

To be used with Traffic Noise Reports only

NCDOT NOISE WALL

FEASIBILITY & REASONABLENESS WORKSHEET

PROJECT - Complete 540 **TIP# -** R-2828

NOISE WALL # - NW41 **COUNTY(IES) -** Wake and Johnston

 # IMPACTS - 2 **# BENEFITS -** 4 **NAC:** ☐ A ☑ B ☐ C ☐ D ☐ E

A. FEASBILITY:

1.	Can a 5-dB(A) reduction in traffic noise levels be achieved for at least two impacted receptors?	YES
2.	Does topography negatively affect the proposed noise wall?	NO
3.	Does the proposed noise wall negatively affect property access, drainage, utilities or maintenance requirements?	NO
4.	Is there control of access in the vicinity of the proposed noise wall?	YES

B. REASONABLENESS

1.	Can a 7- dB(A) reduction in traffic noise levels be achieved for at least one benefited receptor?	YES
2.	Is the quantity per benefited receptor of 2,889 square feet less than the maximum allowable quantity per benefited receptor of 3,000 square feet?	YES

C. NOISE WALL PRELIMINARY DECISION

1.	Is the noise wall preliminarily feasible?	YES
2.	Is the noise wall preliminarily reasonable?	YES
3.	Is the noise wall likely?	YES

PREPARED BY: D. Shannon **DATE PREPARED:** 12/17/2017

Noise Wall: NW43
Location: Adjacent to westbound lanes of the proposed DSA2 route, northwest quadrant of Old Stage interchange

-NW43- does NOT preliminarily meet NCDOT feasibility and reasonability criteria
-NW43- is NOT likely to be incorporated into the project.

TNM Run: NW43 SBA: NW43-16ft-OPT

Table A4.25: Noise Barrier Performance Table

-NW43- Acoustical Performance Summary			
Impacts:	3	Benefitted Receptors @≥7dB(A) NLR:	0
Impacted Receptors Benefitted:	0	Total Benefits:	2
Non-Impacted Receptors Benefitted:	2		

-NW43- Parameters			
	Terminus: 558+10 L		
	Terminus: 570+00 L		
Length:	1141 ft	Area / Benefit:	9,135 ft²
Average Height:	16 ft	Allowable Area / Benefit:	2,500 ft²
Area:	18,269 ft²		

Receptors					Noise Wall Performance			
Rec #	**Use**	**NAC**	**E.R.s**	**Address**	**Existing**	**Build**	**W/ Wall**	**NLR**
R0387A	Res	B	1	1221 ROLLING FARM DR	54	64	59	5
R0387B	Res	B	1	1225 ROLLING FARM DR	54	69	64	5
R0388A	Res	B	1	1220 ROLLING FARM DR	54	57	55	2
R0388B	Res	B	1	1224 ROLLING FARM DR	54	65	63	2
R0389A	Res	B	1	1216 ROLLING FARM DR	54	54	54	0
R0389B	Res	B	1	1212 ROLLING FARM DR	54	54	54	0
R0389C	Res	B	1	1208 ROLLING FARM DR	54	54	54	0
R0390A	Res	B	1	1217 ROLLING FARM DR	54	55	55	0
R0390B	Res	B	1	1213 ROLLING FARM DR	54	56	55	1
R0391A	Res	B	1	1209 ROLLING FARM DR	54	59	58	1
R0391B	Res	B	1	1205 ROLLING FARM DR	54	57	56	1
R0392A	Res	B	1	1201 ROLLING FARM DR	54	56	56	0
R1759	Res	B	1	4800 WHITE POST DR	54	54	54	0
R1760A	Res	B	1	4808 WHITE POST DR	54	54	54	0
R1760B	Res	B	1	4804 WHITE POST DR	54	54	54	0
				-NW43- predicted build condition with wall Benefits[1]				**2**

Impact = 5 to 6 dB(A) NLR = ≥ 7 dB(A) NLR =

[1] A receptor is considered benefitted if the predicted Noise Level Reduction (NLR) is at least 5 dB(A).

Noise Wall: NW43
Location: Adjacent to westbound lanes of the proposed DSA2 route, northwest quadrant of Old Stage interchange

To be used with Traffic Noise Reports only

NCDOT NOISE WALL

FEASIBILITY & REASONABLENESS WORKSHEET

PROJECT - Complete 540 **TIP# -** R-2828

NOISE WALL # - NW43 **COUNTY(IES) -** Wake and Johnston

 # IMPACTS - 3 **# BENEFITS -** 2 **NAC:** ☐ A ☑ B ☐ C ☐ D ☐ E

A. FEASBILITY:

1.	Can a 5-dB(A) reduction in traffic noise levels be achieved for at least two impacted receptors?	YES
2.	Does topography negatively affect the proposed noise wall?	NO
3.	Does the proposed noise wall negatively affect property access, drainage, utilities or maintenance requirements?	NO
4.	Is there control of access in the vicinity of the proposed noise wall?	YES

B. REASONABLENESS

1.	Can a 7- dB(A) reduction in traffic noise levels be achieved for at least one benefited receptor?	NO
2.	Is the quantity per benefited receptor of 9,135 square feet less than the maximum allowable quantity per benefited receptor of 2,500 square feet?	NO

C. NOISE WALL PRELIMINARY DECISION

1.	Is the noise wall preliminarily feasible?	YES
2.	Is the noise wall preliminarily reasonable?	NO
3.	Is the noise wall likely?	NO

PREPARED BY: D. Shannon **DATE PREPARED:** 12/17/2017

Noise Wall: NW49-1
Location: Adjacent to eastbound lanes of DSA2 mainline, west of Sauls Road overpass

-NW49-1- does NOT preliminarily meet NCDOT feasibility and reasonability criteria
-NW49-1- is NOT likely to be incorporated into the project.

TNM Run: NW49-1 SBA: NW49-1-22ft-OPT

Table A4.26: Noise Barrier Performance Table

-NW49-1- Acoustical Performance Summary			
Impacts:	9	Benefitted Receptors @≥7dB(A) NLR:	0
Impacted Receptors Benefitted:	8	Total Benefits:	8
Non-Impacted Receptors Benefitted:	0		

-NW49-1- Parameters			
	Terminus: 646+05 L		
	Terminus: 664+05 L		
Length:	1841 ft	Area / Benefit:	5,065 ft²
Average Height:	22 ft	Allowable Area / Benefit:	2,500 ft²
Area:	40,519 ft²		

Receptors					Noise Wall Performance			
Rec #	**Use**	**NAC**	**E.R.s**	**Address**	**Existing**	**Build**	**W/ Wall**	**NLR**
R0483A	Res	B	1	5321 HOLLAND CHURCH RD	45	61	57	4
R0483B	Res	B	1	5323 HOLLAND CHURCH RD	45	62	57	5
R5379	Res	B	1	5329 HOLLAND CHURCH RD	51	59	57	2
R5380	Res	B	1	5401 HOLLAND FARMS WAY	45	58	52	6
R5381	Res	B	1	5405 HOLLAND FARMS WAY	45	59	53	6
R5382	Res	B	1	5409 HOLLAND FARMS WAY	45	59	54	5
R5383	Res	B	1	5413 HOLLAND FARMS WAY	45	60	54	6
R5384	Res	B	1	5417 HOLLAND FARMS WAY	45	58	53	5
R5385	Res	B	1	5421 HOLLAND FARMS WAY	45	57	52	5
R5624	Res	B	1	5404 HOLLAND FARMS WAY	45	54	51	3
R5625	Res	B	1	5408 HOLLAND FARMS WAY	45	54	51	3
R5626	Res	B	1	5416 HOLLAND FARMS WAY	45	54	50	4
R5627	Res	B	1	5424 HOLLAND FARMS WAY	45	54	50	4
R5628	Res	B	1	5425 HOLLAND FARMS WAY	45	55	50	5
R5629	Res	B	1	5429 HOLLAND FARMS WAY	45	51	48	3
-NW49-1- predicted build condition with wall Benefits[1]								**8**

Impact = 5 to 6 dB(A) NLR = ≥ 7 dB(A) NLR =

[1] A receptor is considered benefitted if the predicted Noise Level Reduction (NLR) is at least 5 dB(A).

To be used with Traffic Noise Reports only

NCDOT NOISE WALL

FEASIBILITY & REASONABLENESS WORKSHEET

PROJECT - Complete 540 **TIP# -** R-2828

NOISE WALL # - NW49-1 **COUNTY(IES) -** Wake and Johnston

 # IMPACTS - 9 **# BENEFITS -** 8 **NAC:** ☐ **A** ☑ **B** ☐ **C** ☐ **D** ☐ **E**

A. FEASBILITY:

1.	Can a 5-dB(A) reduction in traffic noise levels be achieved for at least two impacted receptors?	YES
2.	Does topography negatively affect the proposed noise wall?	NO
3.	Does the proposed noise wall negatively affect property access, drainage, utilities or maintenance requirements?	NO
4.	Is there control of access in the vicinity of the proposed noise wall?	YES

B. REASONABLENESS

1.	Can a 7- dB(A) reduction in traffic noise levels be achieved for at least one benefited receptor?	NO
2.	Is the quantity per benefited receptor of 5,065 square feet less than the maximum allowable quantity per benefited receptor of 2,500 square feet?	NO

C. NOISE WALL PRELIMINARY DECISION

1.	Is the noise wall preliminarily feasible?	YES
2.	Is the noise wall preliminarily reasonable?	NO
3.	Is the noise wall likely?	NO

PREPARED BY: D. Shannon **DATE PREPARED:** 12/17/2017

Noise Wall: NW49-2
Location: Adjacent to eastbound lanes of the proposed DSA2 route, west of Sauls Road overpass

-NW49-2- does NOT preliminarily meet NCDOT feasibility and reasonability criteria
-NW49-2- is NOT likely to be incorporated into the project.

TNM Run: NW49-2 SBA: NW49-2-16ft-OPT

Table A4.27: Noise Barrier Performance Table

-NW49-2- Acoustical Performance Summary			
Impacts:	17	Benefitted Receptors @≥7dB(A) NLR:	1
Impacted Receptors Benefitted:	6	Total Benefits:	6
Non-Impacted Receptors Benefitted:	0		

-NW49-2- Parameters			
	Terminus: 667+00 L		
	Terminus: 21+90 Y19		
Length:	2130 ft	Area / Benefit:	5,678 ft²
Average Height:	16 ft	Allowable Area / Benefit:	2,500 ft²
Area:	34,066 ft²		

Receptors					Noise Wall Performance			
Rec #	Use	NAC	E.R.s	Address	Existing	Build	W/ Wall	NLR
R0517	Res	B	1	9012 SAULS RD	47	60	55	5
R0518A	Res	B	1	1405 TAVERNIER KNOLL LN	45	61	56	5
R0518B	Res	B	1	1409 TAVERNIER KNOLL LN	45	58	54	4
R0518C	Res	B	1	1401 TAVERNIER KNOLL LN	45	59	56	3
R0519A	Res	B	1	1325 TAVERNIER KNOLL LN	45	62	57	5
R0519B	Res	B	1	1329 TAVERNIER KNOLL LN	45	60	56	4
R0520A	Res	B	1	1317 TAVERNIER KNOLL LN	45	66	59	7
R0520B	Res	B	1	1321 TAVERNIER KNOLL LN	45	61	55	6
R0521A	Res	B	1	1229 TAVERNIER KNOLL LN	45	55	53	2
R0521B	Res	B	1	1233 TAVERNIER KNOLL LN	45	58	56	2
R0522A	Res	B	1	1221 TAVERNIER KNOLL LN	45	52	51	1
R0522B	Res	B	1	1217 TAVERNIER KNOLL LN	45	51	50	1
R0523A	Res	B	1	9108 COCONUT LN	45	52	51	1
R0526A	Res	B	1	9105 KON TIKI CT	45	45	45	0
R0526B	Res	B	1	9101 KON TIKI CT	45	46	45	1
R0526C	Res	B	1	1208 TAVERNIER KNOLL LN	45	46	45	1
R0526D	Res	B	1	9104 KON TIKI CT	45	54	52	2
R0527A	Res	B	1	9012 DUVAL HILL ST	45	48	46	2
R0527B	Res	B	1	9016 DUVAL HILL ST	45	46	45	1
R0528A	Res	B	1	9024 DUVAL HILL ST	45	47	46	1
R0528B	Res	B	1	9020 DUVAL HILL ST	45	46	45	1
R0532A	Res	B	1	1120 TAVERNIER KNOLL LN	45	47	47	0
R0532B	Res	B	1	1112 TAVERNIER KNOLL LN	45	47	47	0
R0533A	Res	B	1	9021 DUVAL HILL ST	45	46	45	1
R0533B	Res	B	1	9017 DUVAL HILL ST	45	48	47	1
R0534A	Res	B	1	9013 DUVAL HILL ST	45	47	47	0
R0534B	Res	B	1	9009 DUVAL HILL ST	45	48	48	0
R0534C	Res	B	1	9005 DUVAL HILL ST	45	49	48	1
R0540	Res	B	1	9114 SAULS RD	51	57	57	0
R0541	PLACE OF WORSHIP	D	1	9104 SAULS RD	40	45	45	0
R0542	Res	B	1	9016 SAULS RD	46	54	53	1
R1630	Res	B	1	1301 TAVERNIER KNOLL LN	45	61	58	3
R1653A	Res	B	1	1309 TAVERNIER KNOLL LN	45	63	59	4
R1653B	Res	B	1	1313 TAVERNIER KNOLL LN	45	64	59	5
R1653C	Res	B	1	1305 TAVERNIER KNOLL LN	45	62	58	4

Noise Wall: NW49-2

Location: Adjacent to eastbound lanes of the proposed DSA2 route, west of Sauls Road overpass

R5403	Res	B	1	9100 KON TIKI CT	45	51	49	2
R5404	Res	B	1	1300 TAVERNIER KNOLL LN	45	57	55	2
R5405	Res	B	1	1308 TAVERNIER KNOLL LN	45	56	52	4
R5406	Res	B	1	1316 TAVERNIER KNOLL LN	45	56	52	4
R5407	Res	B	1	1320 TAVERNIER KNOLL LN	45	54	52	2
R5408	Res	B	1	9000 DUVAL HILL ST	45	52	49	3
R5409	Res	B	1	9004 DUVAL HILL ST	45	51	49	2
R5410	Res	B	1	9008 DUVAL HILL ST	45	49	47	2
R5411	Res	B	1	1400 TAVERNIER KNOLL LN	45	49	48	1
R5412	Res	B	1	1408 TAVERNIER KNOLL LN	45	54	52	2
R5413	Res	B	1	9108 SAULS RD	45	49	48	1
							-NW49-2- predicted build condition with wall Benefits[1]	**6**

Impact = 5 to 6 dB(A) NLR = ≥ 7 dB(A) NLR =

[1] A receptor is considered benefitted if the predicted Noise Level Reduction (NLR) is at least 5 dB(A).

To be used with Traffic Noise Reports only

NCDOT NOISE WALL

FEASIBILITY & REASONABLENESS WORKSHEET

PROJECT - Complete 540 **TIP# -** R-2828

NOISE WALL # - NW49-2 **COUNTY(IES) -** Wake and Johnston

 # IMPACTS - 17 **# BENEFITS -** 6 **NAC:** ☐ **A** ☑ **B** ☐ **C** ☑ **D** ☐ **E**

A. FEASBILITY:

1.	Can a 5-dB(A) reduction in traffic noise levels be achieved for at least two impacted receptors?	YES
2.	Does topography negatively affect the proposed noise wall?	NO
3.	Does the proposed noise wall negatively affect property access, drainage, utilities or maintenance requirements?	NO
4.	Is there control of access in the vicinity of the proposed noise wall?	YES

B. REASONABLENESS

1.	Can a 7- dB(A) reduction in traffic noise levels be achieved for at least one benefited receptor?	YES
2.	Is the quantity per benefited receptor of 5,678 square feet less than the maximum allowable quantity per benefited receptor of 2,500 square feet?	NO

C. NOISE WALL PRELIMINARY DECISION

1.	Is the noise wall preliminarily feasible?	YES
2.	Is the noise wall preliminarily reasonable?	NO
3.	Is the noise wall likely?	NO

PREPARED BY: D. Shannon **DATE PREPARED:** 12/17/2017

Noise Wall: NW50
Location: Adjacent to westbound lanes of the proposed DSA2 route, east of Sauls Road overpass

-NW50- does preliminarily meet NCDOT feasibility and reasonability criteria
-NW50- is likely to be incorporated into the project.

TNM Run: NW50 SBA: NW50-14ft-OPT

Table A4.28: Noise Barrier Performance Table

-NW50- Acoustical Performance Summary			
Impacts:	25	Benefitted Receptors @≥7dB(A) NLR:	7
Impacted Receptors Benefitted:	15	Total Benefits:	15
Non-Impacted Receptors Benefitted:	0		

-NW50- Parameters			
	Terminus: 657+75 L		
	Terminus: 684+35 L		
Length:	2708 ft	Area / Benefit:	2,474 ft²
Average Height:	14 ft	Allowable Area / Benefit:	2,500 ft²
Area:	37,111 ft²		

Receptors					Noise Wall Performance			
Rec #	**Use**	**NAC**	**E.R.s**	**Address**	**Existing**	**Build**	**W/ Wall**	**NLR**
R0497A	Res	B	1	4912 CONTENDER DR	45	67	60	7
R0497B	Res	B	1	4908 CONTENDER DR	45	66	60	6
R0497C	Res	B	1	4916 CONTENDER DR	45	67	61	6
R0498A	Res	B	1	4924 CONTENDER DR	45	66	60	6
R0498B	Res	B	1	4928 CONTENDER DR	45	66	60	6
R0498C	Res	B	1	4920 CONTENDER DR	45	66	60	6
R0499A	Res	B	1	4936 CONTENDER DR	45	66	59	7
R0499B	Res	B	1	4932 CONTENDER DR	45	66	60	6
R0499C	Res	B	1	4940 CONTENDER DR	45	66	59	7
R0500A	Res	B	1	4933 CONTENDER DR	45	56	53	3
R0500B	Res	B	1	8716 NEW RIVER CIR	45	56	52	4
R0501A	Res	B	1	5000 CONTENDER DR	45	68	59	9
R0501B	Res	B	1	5004 CONTENDER DR	45	67	59	8
R0502A	Res	B	1	8713 NEW RIVER CIR	45	57	52	5
R0502B	Res	B	1	5005 CONTENDER DR	45	56	52	4
R0503A	Res	B	1	5012 CONTENDER DR	45	65	58	7
R0503B	Res	B	1	5008 CONTENDER DR	45	67	59	8
R0504A	Res	B	1	5013 CONTENDER DR	45	55	51	4
R0504B	Res	B	1	5021 CONTENDER DR	45	53	50	3
R0505A	Res	B	1	5016 CONTENDER DR	45	61	56	5
R0505B	Res	B	1	5020 CONTENDER DR	45	58	55	3
R0506A	Res	B	1	5024 CONTENDER DR	45	56	54	2
R0506B	Res	B	1	5028 CONTENDER DR	45	55	53	2
R0507A	Res	B	1	8929 CAROLINA MARLIN CT	45	52	50	2
R0507B	Res	B	1	4804 KURE CT	45	50	49	1
R0508A	Res	B	1	4812 KURE CT	49	54	53	1
R0509A	Res	B	1	5032 CONTENDER DR	45	54	53	1
R0509B	Res	B	1	5036 CONTENDER DR	52	58	58	0
R1764A	Res	B	1	4801 CONTENDER DR	45	61	58	3
R1764B	Res	B	1	4805 CONTENDER DR	45	56	54	2

Noise Wall: NW50

Location: Adjacent to westbound lanes of the proposed DSA2 route, east of Sauls Road overpass

R1765	Res	B	1	4809 CONTENDER DR	45	56	53	3
R1766	Res	B	1	8925 OREGON INLET CT	45	54	52	2
R1767A	Res	B	1	8712 NEW RIVER CIR	45	52	50	2
R1767B	Res	B	1	8708 NEW RIVER CIR	45	51	50	1
R1768	Res	B	1	8709 NEW RIVER CIR	45	49	47	2
R1769	Res	B	1	8928 CAROLINA MARLIN CT	45	50	48	2
R1928	Res	B	1	8704 NEW RIVER CIR	45	51	49	2
R1929	Res	B	1	8705 NEW RIVER CIR	45	50	49	1
R2294A	Res	B	1	8916 OREGON INLET CT	45	52	51	1
R2294B	Res	B	1	8908 OREGON INLET CT	45	51	50	1
R5388	Res	B	1	4909 SWORDFISH DR	45	46	46	0
R5389	Res	B	1	4913 SWORDFISH DR	45	50	49	1
R5390	Res	B	1	4917 SWORDFISH DR	45	46	45	1
R5391	Res	B	1	4921 SWORDFISH DR	45	45	45	0
R5392	Res	B	1	8905 OREGON INLET CT	45	51	49	2
R5393	Res	B	1	5000 SWORDFISH DR	45	49	48	1
-NW50- predicted build condition with wall Benefits[1]								**15**

Impact = 5 to 6 dB(A) NLR = ≥ 7 dB(A) NLR =

[1] A receptor is considered benefitted if the predicted Noise Level Reduction (NLR) is at least 5 dB(A).

To be used with Traffic Noise Reports only

NCDOT NOISE WALL

FEASIBILITY & REASONABLENESS WORKSHEET

PROJECT - Complete 540 **TIP# -** R-2828

NOISE WALL # - NW50 **COUNTY(IES) -** Wake and Johnston

 # IMPACTS - 25 **# BENEFITS -** 15 **NAC:** ☐ A ☑ B ☐ C ☐ D ☐ E

A. FEASBILITY:

1.	Can a 5-dB(A) reduction in traffic noise levels be achieved for at least two impacted receptors?	YES
2.	Does topography negatively affect the proposed noise wall?	NO
3.	Does the proposed noise wall negatively affect property access, drainage, utilities or maintenance requirements?	NO
4.	Is there control of access in the vicinity of the proposed noise wall?	YES

B. REASONABLENESS

1.	Can a 7- dB(A) reduction in traffic noise levels be achieved for at least one benefited receptor?	YES
2.	Is the quantity per benefited receptor of 2,474 square feet less than the maximum allowable quantity per benefited receptor of 2,500 square feet?	YES

C. NOISE WALL PRELIMINARY DECISION

1.	Is the noise wall preliminarily feasible?	YES
2.	Is the noise wall preliminarily reasonable?	YES
3.	Is the noise wall likely?	YES

PREPARED BY: D. Shannon **DATE PREPARED:** 12/17/2017

Noise Wall: NW52
Location: Adjacent to eastbound lanes of DSA2 mainline, east of Sauls Road overpass

-NW52- does NOT preliminarily meet NCDOT feasibility and reasonability criteria
-NW52- is NOT likely to be incorporated into the project.

TNM Run: NW52 SBA: NW52-22ft-OPT

Table A4.29: Noise Barrier Performance Table

-NW52- Acoustical Performance Summary			
Impacts:	7	Benefitted Receptors @≥7dB(A) NLR:	4
Impacted Receptors Benefitted:	6	Total Benefits:	6
Non-Impacted Receptors Benefitted:	0		

-NW52- Parameters			
	Terminus: 688+25 L		
	Terminus: 705+75 L		
Length:	1748 ft	Area / Benefit:	6,414 ft²
Average Height:	22 ft	Allowable Area / Benefit:	2,500 ft²
Area:	38,482 ft²		

Receptors					Noise Wall Performance			
Rec #	**Use**	**NAC**	**E.R.s**	**Address**	**Existing**	**Build**	**W/ Wall**	**NLR**
R0543	SCHOOL	D	1	9109 SAULS RD	40	43	42	1
R0544A	Res	B	1	717 COMMUNITY GARDEN RD	46	62	53	9
R0544B	Res	B	1	729 COMMUNITY GARDEN RD	46	65	55	10
R0545	Res	B	1	9137 SAULS RD	46	57	52	5
R0546	Res	B	1	9125 SAULS RD	46	72	60	12
R5414	Res	B	1	9017 SAULS RD	47	69	57	12
R5415	Res	B	1	9115 SAULS RD	51	61	57	4
R5430	Res	B	1	732 COMMUNITY GARDEN RD	46	59	54	5
-NW52- predicted build condition with wall Benefits[1]								**6**

Impact = 5 to 6 dB(A) NLR = ≥ 7 dB(A) NLR =

[1] A receptor is considered benefitted if the predicted Noise Level Reduction (NLR) is at least 5 dB(A).

To be used with Traffic Noise Reports only

NCDOT NOISE WALL

FEASIBILITY & REASONABLENESS WORKSHEET

PROJECT - Complete 540 **TIP# -** R-2828

NOISE WALL # - NW52 **COUNTY(IES) -** Wake and Johnston

 # IMPACTS - 7 **# BENEFITS -** 6 **NAC:** ☐ **A** ☑ **B** ☐ **C** ☑ **D** ☐ **E**

A. FEASBILITY:

1.	Can a 5-dB(A) reduction in traffic noise levels be achieved for at least two impacted receptors?	YES
2.	Does topography negatively affect the proposed noise wall?	NO
3.	Does the proposed noise wall negatively affect property access, drainage, utilities or maintenance requirements?	NO
4.	Is there control of access in the vicinity of the proposed noise wall?	YES

B. REASONABLENESS

1.	Can a 7- dB(A) reduction in traffic noise levels be achieved for at least one benefited receptor?	YES
2.	Is the quantity per benefited receptor of 6,414 square feet less than the maximum allowable quantity per benefited receptor of 2,500 square feet?	NO

C. NOISE WALL PRELIMINARY DECISION

1.	Is the noise wall preliminarily feasible?	YES
2.	Is the noise wall preliminarily reasonable?	NO
3.	Is the noise wall likely?	NO

PREPARED BY: R. Thompson **DATE PREPARED:** 12/5/2017

Noise Wall: NW53
Location: Adjacent to westbound lanes of the proposed DSA2 route, east of Sauls Road overpass

-NW53- does preliminarily meet NCDOT feasibility and reasonability criteria
-NW53- is likely to be incorporated into the project.

TNM Run: NW53 SBA: NW53-21ft-OPT

Table A4.30: Noise Barrier Performance Table

-NW53- Acoustical Performance Summary			
Impacts:	23	Benefitted Receptors @≥7dB(A) NLR:	16
Impacted Receptors Benefitted:	22	Total Benefits:	32
Non-Impacted Receptors Benefitted:	10		

-NW53- Parameters			
	Terminus: 690+20 L		
	Terminus: 728+90 L		
Length:	3844 ft	Area / Benefit:	2,500 ft²
Average Height:	21 ft	Allowable Area / Benefit:	2,500 ft²
Area:	79,997 ft²		

Receptors					Noise Wall Performance			
Rec #	Use	NAC	E.R.s	Address	Existing	Build	W/ Wall	NLR
R0547	Res	B	1	2028 PONDSEDGE TRL	46	57	52	5
R0548A	Res	B	1	9928 HUNTWYCK DR	46	55	50	5
R0548B	Res	B	1	9924 HUNTWYCK DR	46	54	50	4
R0549A	Res	B	1	9937 HUNTWYCK DR	46	48	46	2
R0549B	Res	B	1	9925 HUNTWYCK DR	46	47	46	1
R0550	Res	B	1	9941 HUNTWYCK DR	46	50	47	3
R0551A	Res	B	1	9940 HUNTWYCK DR	46	59	52	7
R0551B	Res	B	1	9936 HUNTWYCK DR	46	56	50	6
R0552	Res	B	1	9944 HUNTWYCK DR	46	60	53	7
R0553	Res	B	1	9948 HUNTWYCK DR	46	64	53	11
R0554A	Res	B	1	9952 HUNTWYCK DR	46	67	55	12
R0554B	Res	B	1	9957 HUNTWYCK DR	46	68	55	13
R0555A	Res	B	1	9953 HUNTWYCK DR	46	64	53	11
R0555B	Res	B	1	9949 HUNTWYCK DR	46	53	47	6
R0555C	Res	B	1	9945 HUNTWYCK DR	46	55	47	8
R0556A	Res	B	1	905 SHANNONDALE DR	46	67	55	12
R0556B	Res	B	1	909 SHANNONDALE DR	46	62	53	9
R0556C	Res	B	1	913 SHANNONDALE DR	46	59	51	8
R0557A	Res	B	1	912 SHANNONDALE DR	46	63	54	9
R0557B	Res	B	1	904 SHANNONDALE DR	46	68	57	11
R0558A	Res	B	1	920 SHANNONDALE DR	46	58	52	6
R0558B	Res	B	1	928 SHANNONDALE DR	46	57	52	5
R0559A	Res	B	1	10136 JOE LEACH RD	46	61	54	7
R0559B	Res	B	1	10132 JOE LEACH RD	46	60	53	7
R0559C	Res	B	1	10140 JOE LEACH RD	46	65	57	8
R0560A	Res	B	1	10173 JOE LEACH RD	46	61	55	6
R0560B	Res	B	1	10165 JOE LEACH RD	46	57	52	5
R0562	Res	B	1	10175 JOE LEACH RD	46	58	54	4
R0563A	Res	B	1	200 LASSITER FARM RD	46	58	51	7

Noise Wall: NW53

Location: Adjacent to westbound lanes of the proposed DSA2 route, east of Sauls Road overpass

R0563B	Res	B	1	204 LASSITER FARM RD	46	56	50	6
R0564A	Res	B	1	208 LASSITER FARM RD	46	54	49	5
R0564B	Res	B	1	212 LASSITER FARM RD	46	53	48	5
R0564C	Res	B	1	10112 JOE LEACH RD	46	53	48	5
R0565A	Res	B	1	201 LASSITER FARM RD	46	53	47	6
R0565B	Res	B	1	205 LASSITER FARM RD	46	50	46	4
R0576A	Res	B	1	10037 JOE LEACH RD	46	49	47	2
R0576B	Res	B	1	10101 JOE LEACH RD	46	46	46	0
R0577A	Res	B	1	10113 JOE LEACH RD	46	48	46	2
R0577B	Res	B	1	10109 JOE LEACH RD	46	49	47	2
R0577C	Res	B	1	10105 JOE LEACH RD	46	47	46	1
R0582A	Res	B	1	1017 SHANNONDALE DR	46	47	46	1
R0582B	Res	B	1	1021 SHANNONDALE DR	46	46	46	0
R0583A	Res	B	1	1025 SHANNONDALE DR	46	46	46	0
R0583B	Res	B	1	1029 SHANNONDALE DR	46	46	46	0
R1780A	Res	B	1	921 SHANNONDALE DR	46	54	48	6
R1780B	Res	B	1	925 SHANNONDALE DR	46	51	47	4
R1780C	Res	B	1	929 SHANNONDALE DR	46	51	47	4
R1781A	Res	B	1	1005 SHANNONDALE DR	46	49	47	2
R1781B	Res	B	1	1013 SHANNONDALE DR	46	47	46	1
R1781C	Res	B	1	10121 JOE LEACH RD	46	49	47	2
R1782A	Res	B	1	10133 JOE LEACH RD	46	55	52	3
R1782B	Res	B	1	1000 SHANNONDALE DR	46	53	50	3
R1783A	Res	B	1	1010 SHANNONDALE DR	46	51	51	0
R1783B	Res	B	1	1012 SHANNONDALE DR	46	50	49	1
R1783C	Res	B	1	1004 SHANNONDALE DR	46	52	50	2
R1784A	Res	B	1	1020 SHANNONDALE DR	46	49	48	1
R1784B	Res	B	1	1016 SHANNONDALE DR	46	50	49	1
R1785A	Res	B	1	1032 SHANNONDALE DR	46	49	48	1
R1785B	Res	B	1	1028 SHANNONDALE DR	46	49	48	1
R1785C	Res	B	1	1040 SHANNONDALE DR	46	49	48	1
R1886A	Res	B	1	9916 HUNTWYCK DR	46	53	48	5
R1886B	Res	B	1	9920 HUNTWYCK DR	46	53	48	5
R5431	Res	B	1	209 LASSITER FARM RD	46	49	46	3
R5432	Res	B	1	213 LASSITER FARM RD	46	49	46	3
R5433	Res	B	1	10036 JOE LEACH RD	46	50	46	4
							-NW53- predicted build condition with wall Benefits[1]	**32**

Impact = 5 to 6 dB(A) NLR = ≥ 7 dB(A) NLR =

[1] A receptor is considered benefitted if the predicted Noise Level Reduction (NLR) is at least 5 dB(A).

To be used with Traffic Noise Reports only

NCDOT NOISE WALL

FEASIBILITY & REASONABLENESS WORKSHEET

PROJECT - Complete 540 **TIP# -** R-2828

NOISE WALL # - NW53 **COUNTY(IES) -** Wake and Johnston

 # IMPACTS - 23 **# BENEFITS -** 32 **NAC:** ☐ A ☑ B ☐ C ☐ D ☐ E

A. FEASBILITY:

1.	Can a 5-dB(A) reduction in traffic noise levels be achieved for at least two impacted receptors?	YES
2.	Does topography negatively affect the proposed noise wall?	NO
3.	Does the proposed noise wall negatively affect property access, drainage, utilities or maintenance requirements?	NO
4.	Is there control of access in the vicinity of the proposed noise wall?	YES

B. REASONABLENESS

1.	Can a 7- dB(A) reduction in traffic noise levels be achieved for at least one benefited receptor?	YES
2.	Is the quantity per benefited receptor of 2,500 square feet less than the maximum allowable quantity per benefited receptor of 2,500 square feet?	YES

C. NOISE WALL PRELIMINARY DECISION

1.	Is the noise wall preliminarily feasible?	YES
2.	Is the noise wall preliminarily reasonable?	YES
3.	Is the noise wall likely?	YES

PREPARED BY: D. Shannon **DATE PREPARED:** 12/20/2017

Noise Wall: NW54
Location: Adjacent to eastbound lanes of the proposed DSA2 route, west of Jordan overpass

-NW54- does NOT preliminarily meet NCDOT feasibility and reasonability criteria
-NW54- is NOT likely to be incorporated into the project.

TNM Run: NW54 SBA: NW54-16ft-OPT

Table A4.31: Noise Barrier Performance Table

-NW54- Acoustical Performance Summary			
Impacts:	9	Benefitted Receptors @≥7dB(A) NLR:	3
Impacted Receptors Benefitted:	8	Total Benefits:	8
Non-Impacted Receptors Benefitted:	0		

-NW54- Parameters			
	Terminus: 751+70 L		
	Terminus: 774+70 L		
Length:	2335 ft	Area / Benefit:	4,667 ft²
Average Height:	16 ft	Allowable Area / Benefit:	2,500 ft²
Area:	37,333 ft²		

Receptors					Noise Wall Performance			
Rec #	**Use**	**NAC**	**E.R.s**	**Address**	**Existing**	**Build**	**W/ Wall**	**NLR**
R0644	Res	B	1	10400 JORDAN RD	46	61	56	5
R0645A	Res	B	1	10416 JORDAN RD	46	57	53	4
R0645B	Res	B	1	10408 JORDAN RD	47	61	55	6
R0646	Res	B	1	10401 JORDAN RD	47	65	56	9
R0647	Res	B	1	10417 JORDAN RD	49	60	54	6
R0648A	Res	B	1	1525 UPCHURCH WOODS DR	46	52	50	2
R0648B	Res	B	1	1521 UPCHURCH WOODS DR	46	53	50	3
R0649A	Res	B	1	1519 UPCHURCH WOODS DR	46	54	51	3
R0649B	Res	B	1	1515 UPCHURCH WOODS DR	46	54	51	3
R0650A	Res	B	1	1509 UPCHURCH WOODS DR	52	58	57	1
R0650B	Res	B	1	1513 UPCHURCH WOODS DR	46	55	52	3
R0650C	Res	B	1	1505 UPCHURCH WOODS DR	53	58	57	1
R0652A	Res	B	1	5933 STANCIL FARM RD	46	62	55	7
R0652B	Res	B	1	6005 STANCIL FARM RD	46	62	56	6
R1632	Res	B	1	10400 JORDAN RD	47	67	60	7
R2279	Res	B	1	6024 STANCIL FARM RD	46	48	46	2
R2280	Res	B	1	6000 STANCIL FARM RD	46	53	50	3
R2281	Res	B	1	6005 STANCIL FARM RD	46	58	53	5
R5434	Res	B	1	1524 UPCHURCH WOODS DR	46	46	46	0
R5435	Res	B	1	1512 UPCHURCH WOODS DR	46	46	46	0
R5436	Res	B	1	1500 UPCHURCH WOODS DR	46	50	47	3
R5437	Res	B	1	1501 UPCHURCH WOODS DR	53	58	57	1
				-NW54- predicted build condition with wall Benefits[1]				**8**

Impact = 5 to 6 dB(A) NLR = ≥ 7 dB(A) NLR =

[1] A receptor is considered benefitted if the predicted Noise Level Reduction (NLR) is at least 5 dB(A).

To be used with Traffic Noise Reports only

NCDOT NOISE WALL

FEASIBILITY & REASONABLENESS WORKSHEET

PROJECT - Complete 540 **TIP# -** R-2828

NOISE WALL # - NW54 **COUNTY(IES) -** Wake and Johnston

 # IMPACTS - 9 **# BENEFITS -** 8 **NAC:** ☐ A ☑ B ☐ C ☐ D ☐ E

A. FEASBILITY:

1.	Can a 5-dB(A) reduction in traffic noise levels be achieved for at least two impacted receptors?	YES
2.	Does topography negatively affect the proposed noise wall?	NO
3.	Does the proposed noise wall negatively affect property access, drainage, utilities or maintenance requirements?	NO
4.	Is there control of access in the vicinity of the proposed noise wall?	YES

B. REASONABLENESS

1.	Can a 7- dB(A) reduction in traffic noise levels be achieved for at least one benefited receptor?	YES
2.	Is the quantity per benefited receptor of 4,667 square feet less than the maximum allowable quantity per benefited receptor of 2,500 square feet?	NO

C. NOISE WALL PRELIMINARY DECISION

1.	Is the noise wall preliminarily feasible?	YES
2.	Is the noise wall preliminarily reasonable?	NO
3.	Is the noise wall likely?	NO

PREPARED BY: D. Shannon **DATE PREPARED:** 12/17/2017

Noise Wall: NW55-1
Location: Adjacent to westbound lanes of the proposed DSA2 route, at Jordan overpass

-NW55-1- does NOT preliminarily meet NCDOT feasibility and reasonability criteria
-NW55-1- is NOT likely to be incorporated into the project.

TNM Run: NW55 SBA: NW55-14ft-OPT

Table A4.32a: Noise Barrier Performance Table

-NW55-1 - Acoustical Performance Summary			
Impacts:	14	Benefitted Receptors @≥7dB(A) NLR:	2
Impacted Receptors Benefitted:	6	Total Benefits:	7
Non-Impacted Receptors Benefitted:	0		

-NW55-1- Parameters			
	Terminus: 749+00 L		
	Terminus: 769+00 L		
Length:	1971 ft	Area / Benefit:	3,944 ft²
Average Height:	14 ft	Allowable Area / Benefit:	2,500 ft²
Area:	27,608 ft²		

Receptors					Noise Wall Performance			
Rec #	**Use**	**NAC**	**E.R.s**	**Address**	**Existing**	**Build**	**W/ Wall**	**NLR**
R0637	Res	B	1	10308 JORDAN RD	46	62	57	5
R0638	Res	B	1	10320 JORDAN RD	49	64	58	6
R0641A	Res	B	1	605 CLEE CIR	46	63	56	7
R0641B	Res	B	1	608 CLEE CIR	46	59	55	4
R0641C	Res	B	1	10237 JORDAN RD	46	60	55	5
R0642A	Res	B	1	613 CLEE CIR	46	57	55	2
R0642B	Res	B	1	609 CLEE CIR	46	59	56	3
R0642C	Res	B	1	612 CLEE CIR	46	54	52	2
R0643	Res	B	1	10337 JORDAN RD	46	64	60	4
R2282A	Res	B	1	5216 WOODTRENT DR	46	57	55	2
R2282B	Res	B	1	5220 WOODTRENT DR	46	56	55	1
R2283	Res	B	1	5213 WOODTRENT DR	46	53	52	1
R2284A	Res	B	1	5204 WOODTRENT DR	46	51	49	2
R2284B	Res	B	1	5208 WOODTRENT DR	46	52	50	2
R2285A	Res	B	1	1016 GRISSOM FARM RD	46	52	51	1
R2285B	Res	B	1	1020 GRISSOM FARM RD	46	51	50	1
R5438	Res	B	1	10313 JORDAN RD	46	65	57	8
R5439	Res	B	1	601 CLEE CIR	46	62	56	6
R5440	Res	B	1	10232 JORDAN RD	51	59	57	2
R5441	Res	B	1	5933 BLOOMING ACRES RD	46	48	46	2
R5442	Res	B	1	5937 BLOOMING ACRES RD	46	54	52	2
R5443	Res	B	1	5932 BLOOMING ACRES RD	46	56	54	2
R5444	Res	B	1	5936 BLOOMING ACRES RD	46	57	55	2
				-NW55-1- predicted build condition with wall Benefits[1]				**6**

Impact = 5 to 6 dB(A) NLR = ≥ 7 dB(A) NLR =

[1] A receptor is considered benefitted if the predicted Noise Level Reduction (NLR) is at least 5 dB(A).

Noise Wall: NW55-1
Location: Adjacent to westbound lanes of the proposed DSA2 route, at Jordan overpass

To be used with Traffic Noise Reports only

NCDOT NOISE WALL

FEASIBILITY & REASONABLENESS WORKSHEET

PROJECT - Complete 540 **TIP# -** R-2828

NOISE WALL # - NW55-1 **COUNTY(IES) -** Wake and Johnston

 # IMPACTS - 14 **# BENEFITS -** 6 **NAC:** ☐ A ☑ B ☐ C ☐ D ☐ E

A. FEASBILITY:

1.	Can a 5-dB(A) reduction in traffic noise levels be achieved for at least two impacted receptors?	YES
2.	Does topography negatively affect the proposed noise wall?	NO
3.	Does the proposed noise wall negatively affect property access, drainage, utilities or maintenance requirements?	NO
4.	Is there control of access in the vicinity of the proposed noise wall?	YES

B. REASONABLENESS

1.	Can a 7- dB(A) reduction in traffic noise levels be achieved for at least one benefited receptor?	YES
2.	Is the quantity per benefited receptor of 4,601 square feet less than the maximum allowable quantity per benefited receptor of 2,500 square feet?	NO

C. NOISE WALL PRELIMINARY DECISION

1.	Is the noise wall preliminarily feasible?	YES
2.	Is the noise wall preliminarily reasonable?	NO
3.	Is the noise wall likely?	NO

PREPARED BY: D. Shannon **DATE PREPARED:** 12/20/2017

Noise Wall: NW55-2
Location: Adjacent to westbound lanes of the proposed DSA2 route, north and west of Benson Road

-NW55-2- does NOT preliminarily meet NCDOT feasibility and reasonability criteria
-NW55-2- is NOT likely to be incorporated into the project.

TNM Run: NW55 SBA: NW55-14ft-OPT

Table A4.32b: Noise Barrier Performance Table

-NW55-2- Acoustical Performance Summary			
Impacts:	8	Benefitted Receptors @≥7dB(A) NLR:	4
Impacted Receptors Benefitted:	7	Total Benefits:	8
Non-Impacted Receptors Benefitted:	0		

-NW55-2- Parameters			
	Terminus: 777+75 L		
	Terminus: 796+45 L		
Length:	1948 ft	Area / Benefit:	3,408 ft²
Average Height:	14 ft	Allowable Area / Benefit:	2,500 ft²
Area:	27,264 ft²		

Receptors					Noise Wall Performance			
Rec #	Use	NAC	E.R.s	Address	Existing	Build	W/ Wall	NLR
R0726A	Res	B	1	921 TURNER POND DR	55	56	56	0
R0726B	Res	B	1	917 TURNER POND DR	58	60	60	0
R0727B	Res	B	1	3753 WAKEFIELD LN	50	50	50	0
R0728A	Res	B	1	3757 WAKEFIELD LN	50	50	50	0
R0728B	Res	B	1	3761 WAKEFIELD LN	50	50	50	0
R0729A	Res	B	1	3756 WAKEFIELD LN	50	50	50	0
R0729B	Res	B	1	3760 WAKEFIELD LN	50	51	50	1
R0729C	Res	B	1	3752 WAKEFIELD LN	50	50	50	0
R0730A	Res	B	1	909 TURNER POND DR	50	52	52	0
R0730B	Res	B	1	913 TURNER POND DR	51	51	51	0
R0731	Res	B	1	905 TURNER POND DR	50	50	50	0
R0732	Res	B	1	901 TURNER POND DR	50	52	52	0
R0733A	Res	B	1	5208 DOUBLE D ACRES DR	50	50	50	0
R0733B	Res	B	1	5204 DOUBLE D ACRES DR	50	51	50	1
R0734	Res	B	1	1236 GRISSOM FARM RD	58	60	60	0
R0735	Res	B	1	1216 GRISSOM FARM RD	50	54	53	1
R0736A	Res	B	1	1200 GRISSOM FARM RD	50	55	53	2
R0736B	Res	B	1	1208 GRISSOM FARM RD	50	55	54	1
R0737A	Res	B	1	1113 GRISSOM FARM RD	50	50	50	0
R0737B	Res	B	1	1201 GRISSOM FARM RD	50	50	50	0
R0738	Res	B	1	1109 GRISSOM FARM RD	50	51	50	1
R0741A	Res	B	1	5505 TREKWOOD DR	50	56	54	2
R0741B	Res	B	1	5501 TREKWOOD DR	50	55	52	3
R0741C	Res	B	1	5509 TREKWOOD DR	50	58	55	3
R0745A	Res	B	1	5517 TREKWOOD DR	50	60	58	2
R0745B	Res	B	1	5521 TREKWOOD DR	50	62	57	5
R0745C	Res	B	1	5513 TREKWOOD DR	50	59	56	3
R0746A	Res	B	1	5324 WOODBREK DR	50	60	55	5
R0746B	Res	B	1	5328 WOODBREK DR	50	62	55	7

Noise Wall: NW55-2

Location: Adjacent to westbound lanes of the proposed DSA2 route, north and west of Benson Road

R0746C	Res	B	1	5332 WOODBREK DR	50	65	57	8
R0747A	Res	B	1	5333 WOODBREK DR	50	65	58	7
R0747B	Res	B	1	5336 WOODBREK DR	50	66	58	8
R0747C	Res	B	1	5525 TREKWOOD DR	50	62	57	5
R0747D	Res	B	1	5528 TREKWOOD DR	50	55	53	2
R0747E	Res	B	1	5520 TREKWOOD DR	50	55	52	3
R5445	Res	B	1	5308 TYWOOD DR	46	52	50	2
R5446	Res	B	1	5221 WOODTRENT DR	46	53	50	3
R5447	Res	B	1	5316 WOODBREK DR	50	55	52	3
R5448	Res	B	1	5312 WOODBREK DR	50	53	51	2
R5449	Res	B	1	5308 WOODBREK DR	50	53	50	3
R5450	Res	B	1	5304 WOODBREK DR	50	50	50	0
R5451	Res	B	1	1104 GRISSOM FARM RD	50	54	52	2
R5452	Res	B	1	5305 WOODBREK DR	50	51	50	1
R5453	Res	B	1	5313 WOODBREK DR	50	56	53	3
R5454	Res	B	1	5512 TREKWOOD DR	50	55	53	2
R5455	Res	B	1	1112 GRISSOM FARM RD	50	53	51	2
							-NW55-2- predicted build condition with wall Benefits[1]	**7**

Impact = 5 to 6 dB(A) NLR = ≥ 7 dB(A) NLR =

[1] A receptor is considered benefitted if the predicted Noise Level Reduction (NLR) is at least 5 dB(A).

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NCDOT NOISE WALL

FEASIBILITY & REASONABLENESS WORKSHEET

PROJECT - Complete 540 **TIP# -** R-2828

NOISE WALL # - NW55-2 **COUNTY(IES) -** Wake and Johnston

 # IMPACTS - 8 **# BENEFITS -** 7 **NAC:** ☐ A ☑ B ☐ C ☐ D ☐ E

A. FEASBILITY:

1.	Can a 5-dB(A) reduction in traffic noise levels be achieved for at least two impacted receptors?	YES
2.	Does topography negatively affect the proposed noise wall?	NO
3.	Does the proposed noise wall negatively affect property access, drainage, utilities or maintenance requirements?	NO
4.	Is there control of access in the vicinity of the proposed noise wall?	YES

B. REASONABLENESS

1.	Can a 7- dB(A) reduction in traffic noise levels be achieved for at least one benefited receptor?	YES
2.	Is the quantity per benefited receptor of 3,895 square feet less than the maximum allowable quantity per benefited receptor of 2,500 square feet?	NO

C. NOISE WALL PRELIMINARY DECISION

1.	Is the noise wall preliminarily feasible?	YES
2.	Is the noise wall preliminarily reasonable?	NO
3.	Is the noise wall likely?	NO

PREPARED BY: D. Shannon **DATE PREPARED:** 12/20/2017

Noise Wall: NW58
Location: Adjacent to eastbound lanes of the proposed DSA2 route, southwest quadrant of Benson interchange

-NW58- does NOT preliminarily meet NCDOT feasibility and reasonability criteria
-NW58- is NOT likely to be incorporated into the project.

TNM Run: NW58 SBA: NW58-18ft-OPT

Table A4.33: Noise Barrier Performance Table

-NW58- Acoustical Performance Summary			
Impacts:	3	Benefitted Receptors @≥7dB(A) NLR:	0
Impacted Receptors Benefitted:	1	Total Benefits:	4
Non-Impacted Receptors Benefitted:	3		

-NW58- Parameters			
	Terminus: 789+85 L		
	Terminus: 803+50 L		
Length:	1551 ft	Area / Benefit:	6,976 ft²
Average Height:	18 ft	Allowable Area / Benefit:	2,500 ft²
Area:	27,902 ft²		

Receptors					Noise Wall Performance			
Rec #	**Use**	**NAC**	**E.R.s**	**Address**	**Existing**	**Build**	**W/ Wall**	**NLR**
R0748B	Res	B	1	929 OPEN FIELD DR	50	57	52	5
R0748A	Res	B	1	933 OPEN FIELD DR	50	57	55	2
R0749A	Res	B	1	1001 OPEN FIELD DR	50	56	51	5
R0749B	Res	B	1	1005 OPEN FIELD DR	50	57	53	4
R0750A	Res	B	1	932 OPEN FIELD DR	50	53	52	1
R0750B	Res	B	1	928 OPEN FIELD DR	50	55	54	1
R0750C	Res	B	1	1004 OPEN FIELD DR	50	53	52	1
R0751A	Res	B	1	1012 OPEN FIELD DR	50	50	50	0
R0751B	Res	B	1	1020 OPEN FIELD DR	50	50	50	0
R0752A	Res	B	1	1009 OPEN FIELD DR	50	57	53	4
R0752B	Res	B	1	1013 OPEN FIELD DR	50	57	54	3
R0753A	Res	B	1	1017 OPEN FIELD DR	53	58	55	3
R0753B	Res	B	1	1021 OPEN FIELD DR	50	52	52	0
R0755	Res	B	1	4012 BENSON RD	56	58	58	0
R1613	Res	B	1	6808 CALI CT	50	59	53	6
R1614	Res	B	1	913 OPEN FIELD DR	50	55	54	1
R1798	Res	B	1	6801 PAYTON VIEW DR	50	52	52	0
R1799	Res	B	1	6821 PAYTON VIEW DR	50	50	50	0
R1800	Res	B	1	5312 SERATHER CT	50	51	51	0
R5456	Res	B	1	921 OPEN FIELD DR	50	56	55	1
R5457	Res	B	1	6816 CALI CT	50	64	60	4
R5458	Res	B	1	6812 CALI CT	50	62	59	3
R5459	Res	B	1	6804 CALI CT	50	60	55	5
				-NW58- predicted build condition with wall Benefits[1]				**4**

Impact = 5 to 6 dB(A) NLR = ≥ 7 dB(A) NLR =

[1] A receptor is considered benefitted if the predicted Noise Level Reduction (NLR) is at least 5 dB(A).

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NCDOT NOISE WALL

FEASIBILITY & REASONABLENESS WORKSHEET

PROJECT - Complete 540 **TIP# -** R-2828

NOISE WALL # - NW58 **COUNTY(IES) -** Wake and Johnston

 # IMPACTS - 3 **# BENEFITS -** 4 **NAC:** ☐ A ☑ B ☐ C ☐ D ☐ E

A. FEASBILITY:

1.	Can a 5-dB(A) reduction in traffic noise levels be achieved for at least two impacted receptors?	NO
2.	Does topography negatively affect the proposed noise wall?	NO
3.	Does the proposed noise wall negatively affect property access, drainage, utilities or maintenance requirements?	NO
4.	Is there control of access in the vicinity of the proposed noise wall?	YES

B. REASONABLENESS

1.	Can a 7- dB(A) reduction in traffic noise levels be achieved for at least one benefited receptor?	NO
2.	Is the quantity per benefited receptor of 6,976 square feet less than the maximum allowable quantity per benefited receptor of 2,500 square feet?	NO

C. NOISE WALL PRELIMINARY DECISION

1.	Is the noise wall preliminarily feasible?	NO
2.	Is the noise wall preliminarily reasonable?	NO
3.	Is the noise wall likely?	NO

PREPARED BY: D. Shannon **DATE PREPARED:** 12/20/2017

Noise Wall: NW60
Location: Adjacent to westbound lanes of the proposed DSA2 route, east of Benson interchange

-NW60- does preliminarily meet NCDOT feasibility and reasonability criteria
-NW60- is likely to be incorporated into the project.

TNM Run: NW60 SBA: NW60-20ft-OPT

Table A4.34: Noise Barrier Performance Table

-NW60- Acoustical Performance Summary			
Impacts:	22	Benefitted Receptors @≥7dB(A) NLR:	19
Impacted Receptors Benefitted:	20	Total Benefits:	29
Non-Impacted Receptors Benefitted:	9		

-NW60- Parameters					
		Terminus: 811+94 L			
		Terminus: 845+90 L			
Length:	3430	ft	Area / Benefit:	2,365	ft²
Average Height:	20	ft	Allowable Area / Benefit:	2,500	ft²
Area:	68,578	ft²			

Receptors					Noise Wall Performance			
Rec #	**Use**	**NAC**	**E.R.s**	**Address**	**Existing**	**Build**	**W/ Wall**	**NLR**
R0722A	Res	B	1	5308 SERATHER CT	50	57	52	5
R0722B	Res	B	1	5304 SERATHER CT	50	59	52	7
R0723A	Res	B	1	5301 SERATHER CT	50	68	59	9
R0723B	Res	B	1	5300 SERATHER CT	50	63	56	7
R0724A	Res	B	1	5305 SERATHER CT	50	63	56	7
R0724B	Res	B	1	5309 SERATHER CT	50	61	55	6
R1801	Res	B	1	5313 SERATHER CT	50	57	53	4
R1802A	Res	B	1	5317 SERATHER CT	50	60	54	6
R1802B	Res	B	1	5317 SERATHER CT	50	57	53	4
R5461	Res	B	1	5321 SERATHER CT	50	55	53	2
R5462	Res	B	1	5325 SERATHER CT	50	52	51	1
R5463	Res	B	1	5425 ROLLING FIELD DR	50	52	51	1
R5464	Res	B	1	5416 ROLLING FIELD DR	50	54	51	3
R5465	Res	B	1	5416 ROLLING FIELD DR	50	54	52	2
R5466	Res	B	1	5417 ROLLING FIELD DR	50	55	53	2
R5467	Res	B	1	5413 ROLLING FIELD DR	50	57	50	7
R5468	Res	B	1	5304 FANTASY MOTH DR	50	56	50	6
R5469	Res	B	1	5000 MAPLE SHADY CT	50	52	50	2
R5470	Res	B	1	5008 MAPLE SHADY CT	50	56	54	2
R5471	Res	B	1	5012 MAPLE SHADY CT	50	58	53	5
R5472	Res	B	1	5321 FANTASY MOTH DR	50	65	57	8
R5473	Res	B	1	5401 FANTASY MOTH DR	50	65	58	7
R5474	Res	B	1	5405 FANTASY MOTH DR	50	67	60	7
R5475	Res	B	1	5009 MAPLE SHADY CT	50	58	51	7
R5476	Res	B	1	5005 MAPLE SHADY CT	50	56	52	4
R5477	Res	B	1	5412 FANTASY MOTH DR	50	59	55	4
R5478	Res	B	1	5409 FANTASY MOTH DR	50	67	59	8

Noise Wall: NW60

Location: Adjacent to westbound lanes of the proposed DSA2 route, east of Benson interchange

R5479	Res	B	1	5413 FANTASY MOTH DR	50	67	59	8
R5480	Res	B	1	5229 HARTFELT DR	50	58	52	6
R5481	Res	B	1	5233 HARTFELT DR	50	58	52	6
R5482	Res	B	1	5237 HARTFELT DR	50	61	53	8
R5483	Res	B	1	5241 HARTFELT DR	50	62	56	6
R5484	Res	B	1	5245 HARTFELT DR	50	63	56	7
R5485	Res	B	1	5421 FANTASY MOTH DR	50	67	57	10
R5486	Res	B	1	5429 FANTASY MOTH DR	50	68	58	10
R5487	Res	B	1	5433 FANTASY MOTH DR	50	67	58	9
R5488	Res	B	1	5433 FANTASY MOTH DR	50	67	58	9
R5489	Res	B	1	5437 FANTASY MOTH DR	50	65	58	7
R5490	Res	B	1	5441 FANTASY MOTH DR	50	64	58	6
R5491	Res	B	1	5244 HARTFELT DR	50	60	58	2
R5492	Res	B	1	5501 FANTASY MOTH DR	50	61	57	4
R5493	Res	B	1	5236 HARTFELT DR	50	58	56	2
R5494	Res	B	1	5508 FANTASY MOTH DR	50	57	56	1
R5495	Res	B	1	5509 FANTASY MOTH DR	50	57	55	2
R5496	Res	B	1	5505 FANTASY MOTH DR	50	59	56	3
R5608	Res	B	1	5417 FANTASY MOTH DR	50	67	58	9
R5647	Res	B	1	5221 HARTFELT DR	50	54	50	4
R5648	Res	B	1	5225 HARTFELT DR	50	56	50	6
R5649	Res	B	1	5228 HARTFELT DR	50	52	52	0
R5650	Res	B	1	5232 HARTFELT DR	50	54	53	1
R5651	Res	B	1	5524 FANTASY MOTH DR	50	53	53	0
R5652	Res	B	1	5520 FANTASY MOTH DR	50	51	50	1
R5653	Res	B	1	5521 FANTASY MOTH DR	50	53	52	1
R5654	Res	B	1	5517 FANTASY MOTH DR	50	54	53	1
							-NW60- predicted build condition with wall Benefits[1]	**29**

Impact = 5 to 6 dB(A) NLR = ≥ 7 dB(A) NLR =

[1] A receptor is considered benefitted if the predicted Noise Level Reduction (NLR) is at least 5 dB(A).

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NCDOT NOISE WALL

FEASIBILITY & REASONABLENESS WORKSHEET

PROJECT - Complete 540 **TIP# -** R-2828

NOISE WALL # - NW60 **COUNTY(IES) -** Wake and Johnston

 # IMPACTS - 22 **# BENEFITS -** 29 **NAC:** ☐ A ☑ B ☐ C ☐ D ☐ E

A. FEASBILITY:

1.	Can a 5-dB(A) reduction in traffic noise levels be achieved for at least two impacted receptors?	YES
2.	Does topography negatively affect the proposed noise wall?	NO
3.	Does the proposed noise wall negatively affect property access, drainage, utilities or maintenance requirements?	NO
4.	Is there control of access in the vicinity of the proposed noise wall?	YES

B. REASONABLENESS

1.	Can a 7- dB(A) reduction in traffic noise levels be achieved for at least one benefited receptor?	YES
2.	Is the quantity per benefited receptor of 2,365 square feet less than the maximum allowable quantity per benefited receptor of 2,500 square feet?	YES

C. NOISE WALL PRELIMINARY DECISION

1.	Is the noise wall preliminarily feasible?	YES
2.	Is the noise wall preliminarily reasonable?	YES
3.	Is the noise wall likely?	YES

PREPARED BY: D. Shannon **DATE PREPARED:** 12/17/2017

Noise Wall: NW67
Location: Adjacent to northbound I-40 approaching northern project limit

-NW67- does preliminarily meet NCDOT feasibility and reasonability criteria
-NW67- is likely to be incorporated into the project.

TNM Run: NW67 SBA: NW67-18ft-OPT

Table A4.35: Noise Barrier Performance Table

-NW67- Acoustical Performance Summary			
Impacts:	16	Benefitted Receptors @≥7dB(A) NLR:	11
Impacted Receptors Benefitted:	16	Total Benefits:	32
Non-Impacted Receptors Benefitted:	16		

-NW67- Parameters			
	Terminus: 366+15		
	Terminus: 404+10		
Length:	3990 ft	Area / Benefit:	1,941 ft²
Average Height:	16 ft	Allowable Area / Benefit:	2,000 ft²
Area:	62,126 ft²		

Receptors					Noise Wall Performance			
Rec #	Use	NAC	E.R.s	Address	Existing	Build	W/ Wall	NLR
R0856	Res	B	1	4608 SELLIE DR	65	70	61	9
R0857	Res	B	1	4517 HICKS RD	67	73	62	11
R0858A	Res	B	1	4501 HICKS RD	62	66	60	6
R0858B	Res	B	1	4425 HICKS RD	60	64	58	6
R0859	Res	B	1	4302 HICKS RD	66	72	62	10
R0860A	Res	B	1	4312 SMITH LANDING DR	74	76	63	13
R0860B	Res	B	1	4308 SMITH LANDING DR	71	75	64	11
R1842	Res	B	1	4425 HICKS RD	58	61	56	5
R1843A	Res	B	1	4302 HICKS RD	63	67	60	7
R1843B	Res	B	1	4302 HICKS RD	61	65	58	7
R1844A	Res	B	1	4302 HICKS RD	60	64	57	7
R1844B	Res	B	1	4302 HICKS RD	60	63	57	6
R2291A	Res	B	1	4305 SMITH LANDING DR	54	60	55	5
R2291B	Res	B	1	225 LANE OF SIR KAY	49	56	52	4
R5523	Res	B	1	4621 SELLIE DR	66	70	60	10
R5524	Res	B	1	4300 SMITH LANDING DR	65	71	62	9
R5525	Res	B	1	4301 SMITH LANDING DR	65	69	62	7
R5526	Res	B	1	2301 HIGH PASTURE PL	62	66	60	6
R5527	Res	B	1	8501 BOVINE PL	63	67	62	5
R5528	Res	B	1	8501 BOVINE PL	63	68	63	5
R5529	Res	B	1	8501 BOVINE PL	61	66	61	5
R5655	Res	B	1	2302 HIGH PASTURE PL	59	63	57	6
R5656	Res	B	1	2304 HIGH PASTURE PL	56	60	55	5
R5657	Res	B	1	2303 HIGH PASTURE PL	59	63	58	5
R5658	Res	B	1	2305 HIGH PASTURE PL	54	57	53	4
R5659	Res	B	1	8502 BOVINE PL	57	61	56	5
R5660	Res	B	1	8504 BOVINE PL	57	60	57	3
R8050	Res	B	1	2201 Horse Apple Ct	60	64	58	6
R8051	Res	B	1	2200 Horse Apple Ct	62	66	59	7

Noise Wall: NW67

Location: Adjacent to northbound I-40 approaching northern project limit

R8052	Res	B	1	2208 Horse Apple Ct	62	65	59	6
R8053	Res	B	1	4513 Alonzo Road	61	64	58	6
R8054	Res	B	1	4520 Alonzo Road	64	67	60	7
R8055	Res	B	1	4517 Alonzo Road	60	63	58	5
R8056	Res	B	1	4521 Alonzo Road	59	62	58	4
R8057	Res	B	1	4525 Alonzo Road	62	65	60	5
R8058	Res	B	1	4524 Alonzo Road	62	65	60	5
R8059	Res	B	1	4528 Alonzo Road	60	63	59	4
R8060	Res	B	1	4532 Alonzo Road	60	63	59	4
R8061	Res	B	1	4536 Alonzo Road	60	63	60	3
R8062	Res	B	1	4529 Alonzo Road	60	62	59	3
R8063	Res	B	1	4540 Alonzo Road	57	60	58	2
							-NW67- predicted build condition with wall Benefits[1]	**32**

Impact = 5 to 6 dB(A) NLR = ≥ 7 dB(A) NLR =

[1] A receptor is considered benefitted if the predicted Noise Level Reduction (NLR) is at least 5 dB(A).

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NCDOT NOISE WALL

FEASIBILITY & REASONABLENESS WORKSHEET

PROJECT - Complete 540 **TIP# -** R-2828

NOISE WALL # - NW67 **COUNTY(IES) -** Wake and Johnston

 # IMPACTS - 16 **# BENEFITS -** 32 **NAC:** ☐ **A** ☑ **B** ☐ **C** ☐ **D** ☐ **E**

A. FEASBILITY:

1.	Can a 5-dB(A) reduction in traffic noise levels be achieved for at least two impacted receptors?	YES
2.	Does topography negatively affect the proposed noise wall?	NO
3.	Does the proposed noise wall negatively affect property access, drainage, utilities or maintenance requirements?	NO
4.	Is there control of access in the vicinity of the proposed noise wall?	YES

B. REASONABLENESS

1.	Can a 7- dB(A) reduction in traffic noise levels be achieved for at least one benefited receptor?	YES
2.	Is the quantity per benefited receptor of 1,941 square feet less than the maximum allowable quantity per benefited receptor of 2,500 square feet?	YES

C. NOISE WALL PRELIMINARY DECISION

1.	Is the noise wall preliminarily feasible?	YES
2.	Is the noise wall preliminarily reasonable?	YES
3.	Is the noise wall likely?	YES

PREPARED BY: D. Shannon **DATE PREPARED:** 12/17/2017

Noise Wall: NW68
Location: Adjacent to southbound I-40 approaching northern project limit

-NW68- does preliminarily meet NCDOT feasibility and reasonability criteria
-NW68- is likely to be incorporated into the project.

TNM Run: NW68 SBA: NW68-10ft-OPT

Table A4.36: Noise Barrier Performance Table

-NW68- Acoustical Performance Summary			
Impacts:	18	Benefitted Receptors @≥7dB(A) NLR:	9
Impacted Receptors Benefitted:	12	Total Benefits:	12
Non-Impacted Receptors Benefitted:	0		

-NW68- Parameters			
	Terminus: 350+35		
	Terminus: 378+45		
Length:	2811 ft	Area / Benefit:	2,345 ft²
Average Height:	10 ft	Allowable Area / Benefit:	2,500 ft²
Area:	28,135 ft²		

Receptors					Noise Wall Performance			
Rec #	**Use**	**NAC**	**E.R.s**	**Address**	**Existing**	**Build**	**W/ Wall**	**NLR**
R0916A	Res	B	1	4219 BATTLE FIELD DR	70	73	65	8
R0916B	Res	B	1	4215 BATTLE FIELD DR	71	74	67	7
R0916C	Res	B	1	4211 BATTLE FIELD DR	71	74	67	7
R0917	Res	B	1	4214 BATTLE FIELD DR	60	62	59	3
R0918A	Res	B	1	4201 BATTLE FIELD DR	70	74	67	7
R0918B	Res	B	1	4205 BATTLE FIELD DR	70	74	67	7
R0918C	Res	B	1	4151 BATTLE FIELD DR	71	75	68	7
R0919A	Res	B	1	2605 RIFLE RIDGE CT	58	61	57	4
R0919B	Res	B	1	2609 RIFLE RIDGE CT	56	58	56	2
R0920	Res	B	1	2608 RIFLE RIDGE CT	51	53	52	1
R0921A	Res	B	1	2604 RIFLE RIDGE CT	54	55	54	1
R0921B	Res	B	1	2600 RIFLE RIDGE CT	57	58	57	1
R0921C	Res	B	1	4144 BATTLE FIELD DR	52	53	52	1
R0922A	Res	B	1	4143 BATTLE FIELD DR	69	73	67	6
R0922B	Res	B	1	4147 BATTLE FIELD DR	70	74	68	6
R0923A	Res	B	1	4139 BATTLE FIELD DR	66	71	64	7
R0923B	Res	B	1	4135 BATTLE FIELD DR	63	66	60	6
R0924A	Res	B	1	4132 BATTLE FIELD DR	51	52	50	2
R0924B	Res	B	1	4136 BATTLE FIELD DR	50	51	50	1
R2315	REC	C		8025 COUNTRY CLUB DR	50	65		
R2315-1	NODE	C	1	8025 COUNTRY CLUB DR	50	62	60	2
R2315-2	NODE	C	1	8025 COUNTRY CLUB DR	50	61	59	2
R2315-3	NODE	C	1	8025 COUNTRY CLUB DR	50	61	60	1
R2315-4	NODE	C	1	8025 COUNTRY CLUB DR	50	61	60	1
R2315-5	NODE	C	1	8025 COUNTRY CLUB DR	50	65	64	1
R2315-6	NODE	C	1	8025 COUNTRY CLUB DR	50	66	65	1
R0928	Res	B	1	4127 BATTLE FIELD DR	67	58	56	2
R0931A	Res	B	1	3921 LAUROB LN	68	72	64	8
R0931B	Res	B	1	3917 LAUROB LN	73	76	66	10
-NW68- predicted build condition with wall Benefits[1]								**12**

Impact = 5 to 6 dB(A) NLR = ≥ 7 dB(A) NLR =

[1] A receptor is considered benefitted if the predicted Noise Level Reduction (NLR) is at least 5 dB(A).

TABLE NSA68-NW68
CALCULATION OF EQUIVALENT RECEPTOR VALUE FOR A GOLF COURSE
ACTIVITY CATEGORY C

Golf Course Exterior Use Areas (Activity Category B)		
CASE:	3 greens and 3 tee boxes of the Meadow Brook Country Golf Course are impacted by noise. It can be assumed that one group of four golfers is located at each of these 6 places at any given time, during daylight hours for ten months of the year. None of the areas on the golf course are predicted to receive benefits from NW68 being considered for the project.	
Line	**For an Average Single Family Residential Unit in North Carolina**	
A	People per Residence	3
B	Hours Available for Use per Year	8,760
C	**Person-hours per Year Available for Use = A x B**	**26,280**
	For the Golf Course	
D	Average Hourly Occupancy for Golf Course	24
E	Hours Per Day Golf Course is Available for Use	12
F	Days per Month Golf Course is Available for Use	30
G	Months per Year Golf Course is Available for Use	10
H	**Person-hours per Year Available for Use = D x E x F x G**	**86,400**
I	**Equivalent Receptor Unit Value for Golf Course = H/C**	**3**
J	For most golf courses, using one receptor point in TNM placed closest to the proposed highway project is sufficient. If more than one exterior receptor point was used to model large areas, enter the number of receptor points.	6
K	**Equivalent Receptor Value Assigned to Each Receiver = I/J**	**1**
L	Number of Votes Assigned to Golf Course in Barrier Voting Process = I	3
	For the Apartment Complex Residential Units, Each Apartment Unit Gets Analyzed as One Receptor	
M	Number of Apartment Units	N/A
N	Number of Impacted Units	N/A
O	Number of Benefited Units	N/A
P	**Number of Votes Assigned to Apartment Complex in Barrier Voting Process = L + O, not to Exceed M**	**#VALUE!**
KEY:	Input Values	
	Calculated Values in Bold Text	

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NCDOT NOISE WALL

FEASIBILITY & REASONABLENESS WORKSHEET

PROJECT - Complete 540 **TIP# -** R-2828

NOISE WALL # - NW68 **COUNTY(IES) -** Wake and Johnston

 # IMPACTS - 18 **# BENEFITS -** 12 **NAC:** ☐ **A** ☑ **B** ☑ **C** ☐ **D** ☐ **E**

A. FEASBILITY:

1.	Can a 5-dB(A) reduction in traffic noise levels be achieved for at least two impacted receptors?	YES
2.	Does topography negatively affect the proposed noise wall?	NO
3.	Does the proposed noise wall negatively affect property access, drainage, utilities or maintenance requirements?	NO
4.	Is there control of access in the vicinity of the proposed noise wall?	YES

B. REASONABLENESS

1.	Can a 7- dB(A) reduction in traffic noise levels be achieved for at least one benefited receptor?	YES
2.	Is the quantity per benefited receptor of 2,345 square feet less than the maximum allowable quantity per benefited receptor of 2,500 square feet?	YES

C. NOISE WALL PRELIMINARY DECISION

1.	Is the noise wall preliminarily feasible?	YES
2.	Is the noise wall preliminarily reasonable?	YES
3.	Is the noise wall likely?	YES

PREPARED BY: D. Shannon **DATE PREPARED:** 12/17/2017

Noise Wall: NW83
Location: Adjacent to northbound lanes of DSA2 mainline, between Rock Quarry and Battle bridge

-NW83- does NOT preliminarily meet NCDOT feasibility and reasonability criteria
-NW83- is NOT likely to be incorporated into the project.

TNM Run: NW83 SBA: NW83-24ft-OPT

Table A4.37: Noise Barrier Performance Table

-NW83- Acoustical Performance Summary			
Impacts:	3	Benefitted Receptors @≥7dB(A) NLR:	2
Impacted Receptors Benefitted:	2	Total Benefits:	3
Non-Impacted Receptors Benefitted:	1		

-NW83- Parameters			
	Terminus: 1238+90 L		
	Terminus: 1258+65 L		
Length:	1999 ft	Area / Benefit:	15,978 ft²
Average Height:	24 ft	Allowable Area / Benefit:	2,500 ft²
Area:	47,935 ft²		

Receptors					Noise Wall Performance			
Rec #	**Use**	**NAC**	**E.R.s**	**Address**	**Existing**	**Build**	**W/ Wall**	**NLR**
R1469	Res	B	1	2440 BRANCH RD	51	68	56	12
R1470	Res	B	1	2441 BRANCH RD	51	65	57	8
R5550	Res	B	1	7004 FARMDALE RD	51	54	51	3
R5551	Res	B	1	7009 FARMDALE RD	51	57	52	5
R5552	Res	B	1	2402 BRANCH RD	51	63	60	3
R5554	Res	B	1	7000 FARMDALE RD	51	51	51	0
				-NW83- predicted build condition with wall Benefits[1]				**3**

Impact = 5 to 6 dB(A) NLR = ≥ 7 dB(A) NLR =

[1] A receptor is considered benefitted if the predicted Noise Level Reduction (NLR) is at least 5 dB(A).

To be used with Traffic Noise Reports only

NCDOT NOISE WALL

FEASIBILITY & REASONABLENESS WORKSHEET

PROJECT - Complete 540 **TIP# -** R-2829

NOISE WALL # - NW83 **COUNTY(IES) -** Wake and Johnston

 # IMPACTS - 3 **# BENEFITS -** 3 **NAC:** ☐ **A** ☑ **B** ☐ **C** ☐ **D** ☐ **E**

A. FEASBILITY:

1.	Can a 5-dB(A) reduction in traffic noise levels be achieved for at least two impacted receptors?	YES
2.	Does topography negatively affect the proposed noise wall?	NO
3.	Does the proposed noise wall negatively affect property access, drainage, utilities or maintenance requirements?	NO
4.	Is there control of access in the vicinity of the proposed noise wall?	YES

B. REASONABLENESS

1.	Can a 7- dB(A) reduction in traffic noise levels be achieved for at least one benefited receptor?	YES
2.	Is the quantity per benefited receptor of 15,978 square feet less than the maximum allowable quantity per benefited receptor of 2,500 square feet?	NO

C. NOISE WALL PRELIMINARY DECISION

1.	Is the noise wall preliminarily feasible?	YES
2.	Is the noise wall preliminarily reasonable?	NO
3.	Is the noise wall likely?	NO

PREPARED BY: D. Shannon **DATE PREPARED:** 12/17/2017

TABLE NSA85
CALCULATION OF EQUIVALENT RECEPTOR VALUE FOR A TRAIL
ACTIVITY CATEGORY C

CASE:	The Neause River walking and jogging trail extends into and along an area adjacent to a highway improvement project. On average, 25 people per hour use the trail. Approximately 1,700 feet of the trail lies within the area that is predicted to be impacted by a highway project and approxmately 1,700 feet of the trail is predicted to be benefited by a noise wall. NCDOT assumes the trail is available for use 12 hours per day, 7 days per week for 52 weeks per year.

Trail (Activity Category C)		
Line	**For an Average Single Family Residential Unit in North Carolina**	
A	People per Residence	3.0
B	Hours Available for Use per Year	8,760
C	**Person-hours per Year Available for Use = A x B**	**26,280**
	For the Trail Area Being Evaluated	
D	Average Number of Persons per Hour Using Trail	25
E	Length of Trail Within Impacted Area (feet)	1700
F	Length of Trail Within Benefited Area (feet)	1700
G	**Maximum of E and F**	**1700**
H	**Hours that each Person is on the Impacted or Benefited Portion of the Trail (based on average of 2 mph) = (F/5280)/2**	**0.16**
I	Hours that Trail is Available for Use per Day	12
J	Days per Week that Trail is Available for Use	7
K	Weeks per Year that Trail is Availble for Use	52
L	**Person-hours per Year Available for Use = D x H x I x J x K**	**17,580**
M	**EQUIVALENT RESIDENCE VALUE = L/C**	**1**
N	Spacing of Receptors Used to Model Trail (feet)	100
O	**Number of Receptors Used to Model Trail within Benefited Area = G/N**	**17**
P	**Equivalent Residence Value Assigned to Each Grid Point = M/O**	**0.04**
Q	Number of Votes Assigned to Trail in Barrier Voting Process = M	1

KEY:	Input Values
	Calculated Values in Bold Text

Noise Wall: NW90
Location: Adjacent to southbound lanes of DSA2 mainline, south of Poole interchange

-NW90- does preliminarily meet NCDOT feasibility and reasonability criteria
-NW90- is likely to be incorporated into the project.

TNM Run: NW90 SBA: NW90-16ft-OPT

Table A4.38: Noise Barrier Performance Table

-NW90- Acoustical Performance Summary			
Impacts:	9	Benefitted Receptors @≥7dB(A) NLR:	16
Impacted Receptors Benefitted:	9	Total Benefits:	21
Non-Impacted Receptors Benefitted:	12		

-NW90- Parameters			
	Terminus: 1394+45 L		
	Terminus: 1418+15 L		
Length:	2400 ft	Area / Benefit:	1,827 ft²
Average Height:	16 ft	Allowable Area / Benefit:	3,000 ft²
Area:	38,374 ft²		

Receptors					Noise Wall Performance			
Rec #	Use	NAC	E.R.s	Address	Existing	Build	W/ Wall	NLR
R1490A	Res	B	1	7341 SCENIC WOODS DR	56	60	56	4
R1490B	Res	B	1	7353 SCENIC WOODS DR	56	64	60	4
R1491	Res	B	1	7357 SCENIC WOODS DR	56	73	66	7
R1492A	Res	B	1	1608 STONE STREAM DR	56	61	56	5
R1493A	Res	B	1	1704 SHALLOW WATER DR.	56	68	58	10
R1492B	Res	B	1	3916 BRANCH PARK DR	56	61	56	5
R1493B	Res	B	1	1700 SHALLOW WATER DR.	56	65	58	7
R1495A	Res	B	1	1513 STONE STREAM DR	56	68	58	10
R1495B	Res	B	1	1705 SHALLOW WATER DR.	56	71	59	12
R1496A	Res	B	1	1709 SHALLOW WATER DR.	56	65	58	7
R1496B	Res	B	1	1713 SHALLOW WATER DR.	56	67	58	9
R1497A	Res	B	1	1717 SHALLOW WATER DR.	56	67	57	10
R1497B	Res	B	1	1721 SHALLOW WATER DR.	56	70	59	11
R1499A	Res	B	1	1708 SHALLOW WATER DR	56	65	57	8
R1499B	Res	B	1	1712 SHALLOW WATER DR.	56	65	57	8
R1499C	Res	B	1	1716 SHALLOW WATER DR.	56	66	57	9
R1499D	Res	B	1	1718 SHALLOW WATER DR.	56	66	59	7
R1852A	Res	B	1	1602 STONE STREAM DR	56	63	56	7
R1852B	Res	B	1	2805 HODGE RD	56	60	56	4
R1853A	Res	B	1	2805 HODGE RD	56	64	56	8
R1853B	Res	B	1	2805 HODGE RD	56	65	58	7
R1854A	Res	B	1	2805 HODGE RD	56	64	58	6
R1854B	Res	B	1	2805 HODGE RD	56	65	59	6
R1871A	Res	B	1	1513 STONE STREAM DR	56	56	56	0
R1871B	Res	B	1	3913 BRANCH PARK DR	56	60	56	4
R1872B	Res	B	1	1508 WOOD BRANCH CT	56	57	56	1
R1872A	Res	B	1	1600 STONE STREAM DR	56	61	56	5
R1873A	Res	B	1	3720 CRYSTAL CREEK DR.	56	63	59	4
R1873B	Res	B	1	3721 CRYSTAL CREEK DR.	56	56	56	0

Noise Wall: NW90

Location: Adjacent to southbound lanes of DSA2 mainline, south of Poole interchange

R1874A	Res	B	1	3716 CRYSTAL CREEK DR	56	60	58	2
R1874B	Res	B	1	3717 CRYSTAL CREEK DR.	56	57	56	1
R5562	Res	B	1	7333 SCENIC WOODS DR	56	56	56	0
R5563	Res	B	1	7333 SCENIC WOODS DR	56	57	56	1
R5564	Res	B	1	7333 SCENIC WOODS DR	56	56	56	0
R5565	Res	B	1	2805 HODGE RD	56	56	56	0
R5566	Res	B	1	2805 HODGE RD	56	56	56	0
R5567	Res	B	1	2805 HODGE RD	56	57	56	1
							-NW90- predicted build condition with wall Benefits[1]	**21**

Impact = 5 to 6 dB(A) NLR = ≥ 7 dB(A) NLR =

[1] A receptor is considered benefitted if the predicted Noise Level Reduction (NLR) is at least 5 dB(A).

To be used with Traffic Noise Reports only

NCDOT NOISE WALL

FEASIBILITY & REASONABLENESS WORKSHEET

PROJECT - Complete 540 **TIP# -** R-2829

NOISE WALL # - NW90 **COUNTY(IES) -** Wake and Johnston

 # IMPACTS - 9 **# BENEFITS -** 21 **NAC:** ☐ **A** ☑ **B** ☐ **C** ☐ **D** ☐ **E**

A. FEASBILITY:

1.	Can a 5-dB(A) reduction in traffic noise levels be achieved for at least two impacted receptors?	YES
2.	Does topography negatively affect the proposed noise wall?	NO
3.	Does the proposed noise wall negatively affect property access, drainage, utilities or maintenance requirements?	NO
4.	Is there control of access in the vicinity of the proposed noise wall?	YES

B. REASONABLENESS

1.	Can a 7- dB(A) reduction in traffic noise levels be achieved for at least one benefited receptor?	YES
2.	Is the quantity per benefited receptor of 1,827 square feet less than the maximum allowable quantity per benefited receptor of 3,000 square feet?	YES

C. NOISE WALL PRELIMINARY DECISION

1.	Is the noise wall preliminarily feasible?	YES
2.	Is the noise wall preliminarily reasonable?	YES
3.	Is the noise wall likely?	YES

PREPARED BY: D. Shannon **DATE PREPARED:** 12/17/2017

Noise Wall: NW92
Location: Adjacent to southbound lanes of DSA2 mainline, between Poole innterchange and northern terminus

-NW92- does preliminarily meet NCDOT feasibility and reasonability criteria
-NW92- is likely to be incorporated into the project.

TNM Run: NW92 SBA: NW92-18ft-OPT

Table A4.39: Noise Barrier Performance Table

-NW92- Acoustical Performance Summary			
Impacts:	25	Benefitted Receptors @≥7dB(A) NLR:	35
Impacted Receptors Benefitted:	22	Total Benefits:	52
Non-Impacted Receptors Benefitted:	30		

-NW92- Parameters			
Terminus: 19+40 Y30			
Terminus: 22+00 Y31RPB			
Length:	4733 ft	Area / Benefit:	1,638 ft²
Average Height:	18 ft	Allowable Area / Benefit:	3,000 ft²
Area:	85,198 ft²		

Receptors					Noise Wall Performance			
Rec #	**Use**	**NAC**	**E.R.s**	**Address**	**Existing**	**Build**	**W/ Wall**	**NLR**
R5576	Res	B	1	4109 Revine Drive	56	64	59	5
R1516A	Res	B	1	4205 Flower Garden Drive	61	67	56	11
R1516B	Res	B	1	7333 Poole Road	59	67	57	10
R1517	Res	B	1	7317 Poole Road & 7325 Poole	61	64	64	0
R1518	Res	B	1	2529 Hodge Road	60	64	64	0
R1519A	Res	B	1	2521 Hodge Road	56	56	56	0
R1519B	Res	B	1	1204 Paradise Valley Court	56	58	57	1
R1520A	Res	B	1	1213 Oaradise Valley Court	56	63	58	5
R1520B	Res	B	1	4105 Revine Drive	56	63	57	6
R1520C	Res	B	1	4008 Old Stones Mill Street	56	63	57	6
R1521A	Res	B	1	4004 Old Stones Mill Street	56	62	59	3
R1521B	Res	B	1	4000 Old Stones Mill Street	56	61	57	4
R1521C	Res	B	1	1120 Southern Living Drive	56	61	57	4
R1522A	Res	B	1	1116 Southern Living Drive	56	56	56	0
R1522B	Res	B	1	1124 Southern Living Drive	56	57	56	1
R1522C	Res	B	1	1124 Southern Living Drive	56	56	56	0
R1523A	Res	B	1	3901 Old Woodard Street	56	56	56	0
R1523B	Res	B	1	1113 Southern Living Drive	56	56	56	0
R1524A	Res	B	1	1116 Riverdale Street	56	58	56	2
R1524B	Res	B	1	3905 Old Woodward Street	56	58	56	2
R1525A	Res	B	1	4005 Old Stones Mill Street	56	57	56	1
R1525B	Res	B	1	4009 Old Stones Mill Street	56	60	56	4
R1525C	Res	B	1	4001 Old Stones Mill Street	56	56	56	0
R1526	Res	B	1	4013 Old Stones Mill Street	56	66	62	4
R1527	Res	B	1	1005 Hinnants Creek Street	56	66	61	5
R1528A	Res	B	1	1004 Southern Living Drive	56	65	60	5
R1528B	Res	B	1	1000 Southern Living Drive	56	70	63	7
R1529A	Res	B	1	2425 THICKET CT	56	69	60	9
R1529B	Res	B	1	2421 THICKET CT	56	74	62	12
R1529C	Res	B	1	2417 THICKET CT	56	77	65	12

Noise Wall: NW92

Location: Adjacent to southbound lanes of DSA2 mainline, between Poole innterchange and northern terminus

R1530A	Res	B	1	2416 RADIANCE CT	56	66	59	7
R1530B	Res	B	1	2415 RADIANCE CT	56	65	58	7
R1531A	Res	B	1	2412 RADIANCE CT	56	62	58	4
R1531B	Res	B	1	2416 RADIANCE CT	56	64	58	6
R1533A	Res	B	1	5600 KNIGHTDALE ESTATES DR	56	74	63	11
R1533B	Res	B	1	2404 THICKET CT	56	75	64	11
R1533C	Res	B	1	2408 THICKET CT	56	75	64	11
R1534A	Res	B	1	2405 RADIANCE CT	56	65	59	6
R1534B	Res	B	1	2401 RADIANCE CT	56	65	59	6
R1534C	Res	B	1	2409 RADIANCE CT	56	67	60	7
R1535A	Res	B	1	2404 Raidiace Ct	56	62	58	4
R1535B	Res	B	1	2400 RADIANCE CT.	56	62	57	5
R1535C	Res	B	1	2408 RADIANCE CT	56	62	58	4
R1539A	Res	B	1	3809 KNIGHTDALE ESTATES DR	56	76	64	12
R1539B	Res	B	1	3666 LODGE DR.	56	76	63	13
R1539C	Res	B	1	3656 LODGE DR	56	69	59	10
R1540A	Res	B	1	3801 KNIGHTDALE ESTATES DR	56	65	58	7
R1540B	Res	B	1	3805 KNIGHTDALE ESTATES DR	56	70	61	9
R1540C	Res	B	1	3652 LODGE DR.	56	64	56	8
R1541A	Res	B	1	3729 KNIGHTDALE ESTATES DR	56	64	58	6
R1541B	Res	B	1	3648 LODGE DR.	56	63	56	7
R1541C	Res	B	1	3644 LODGE DR.	56	59	56	3
R1541D	Res	B	1	3725 KNIGHTDALE ESTATES DR	56	61	56	5
R1542A	Res	B	1	3612 KEMP DR	56	63	57	6
R1542B	Res	B	1	3616 KEMP DR	56	65	57	8
R1543A	Res	B	1	3624 KEMP DR	56	69	58	11
R1543B	Res	B	1	3620 KEMP DR	56	68	58	10
R1546	Res	B	1	3613 KEMP DR	56	65	57	8
R1547A	Res	B	1	3621 KEMP DR	56	67	58	9
R1547B	Res	B	1	3625 KEMP DR	56	67	57	10
R1548A	Res	B	1	3707 KEMP DR	56	63	56	7
R1548B	Res	B	1	3701 KEMP DR	56	67	58	9
R1548C	Res	B	1	3709 KEMP DR	56	65	56	9
R1549A	Res	B	1	3717 KEMP DR	56	64	57	7
R1549B	Res	B	1	3721 KEMP DR	56	64	56	8
R1549C	Res	B	1	3713 KEMP DR	56	65	57	8
R1550A	Res	B	1	3729 KEMP DR	56	63	56	7
R1550B	Res	B	1	3725 KEMP DR	56	63	56	7
R1550C	Res	B	1	3733 KEMP DR	56	62	60	2
R1857A	Res	B	1	2417 Prairie Court	56	60	56	4
R1857B	Res	B	1	2421 Prairie Court	56	61	56	5
R1857C	Res	B	1	2413 Prairie Court	56	58	56	2
R1858A	Res	B	1	2405 Prairie Court	56	59	56	3
R1858B	Res	B	1	2409 Prairie Court	56	58	56	2
R1858C	Res	B	1	2401 Prairie Court	56	60	56	4
R1859A	Res	B	1	3636 Lodge Drive	56	56	56	0
R1859B	Res	B	1	3717 Knightdale Estates Drive	56	58	56	2
R1859C	Res	B	1	3721 Knightdale Estates Drive	56	59	56	3
R1859D	Res	B	1	3640 Lodge Drive	56	56	56	0
R1860A	Res	B	1	3604 KEMP DR	56	61	56	5
R1860B	Res	B	1	3600 KEMP DR	56	58	56	2
R1860C	Res	B	1	3608 KEMP DR	56	62	56	6
R1861	Res	B	1	3609 KEMP DR	56	62	56	6

Noise Wall: NW92

Location: Adjacent to southbound lanes of DSA2 mainline, between Poole innterchange and northern terminus

R1875A	Res	B	1	2436 Prairie Court	56	56	56	0
R1875B	Res	B	1	2432 Prairie Court	56	56	56	0
R1876A	Res	B	1	2428 Prairie Court	56	57	56	1
R1876B	Res	B	1	2424 Prairie Court	56	57	56	1
R1883A	Res	B	1	1017 Southern Living Drive	56	56	56	0
R1883B	Res	B	1	1021 Southern Living Drive	56	56	56	0
R1883C	Res	B	1	1013 Southern Living Drive	56	57	56	1
R5574	Res	B	1	1133 Southern Living Drive	56	59	58	1
R5575	Res	B	1	1120 Riverdale Street	58	64	58	6
R5577	Res	B	1	4012 Old Stones Mill Street	56	66	63	3
R5578	Res	B	1	1012 Southern Living Drive	56	57	56	1
R1515A	Res	B	1	4201 Flower Garden Drive	56	67	63	4
R1515B	Res	B	1	7407 POOLE RD	56	72	63	9
R1879A	Res	B	1	3713 Knightdale Estates Drive	56	57	56	1
R1879B	Res	B	1	3632 Lodge Drive	56	56	56	0
							-NW92- predicted build condition with wall Benefits[1]	**52**

Impact = 5 to 6 dB(A) NLR = ≥ 7 dB(A) NLR =

[1] A receptor is considered benefitted if the predicted Noise Level Reduction (NLR) is at least 5 dB(A).

To be used with Traffic Noise Reports only

NCDOT NOISE WALL

FEASIBILITY & REASONABLENESS WORKSHEET

PROJECT - Complete 540 **TIP# -** R-2829

NOISE WALL # - NW92 **COUNTY(IES) -** Wake and Johnston

 # IMPACTS - 25 **# BENEFITS -** 52 **NAC:** ☐ **A** ☑ **B** ☐ **C** ☐ **D** ☐ **E**

A. FEASBILITY:

1.	Can a 5-dB(A) reduction in traffic noise levels be achieved for at least two impacted receptors?	YES
2.	Does topography negatively affect the proposed noise wall?	NO
3.	Does the proposed noise wall negatively affect property access, drainage, utilities or maintenance requirements?	NO
4.	Is there control of access in the vicinity of the proposed noise wall?	YES

B. REASONABLENESS

1.	Can a 7- dB(A) reduction in traffic noise levels be achieved for at least one benefited receptor?	YES
2.	Is the quantity per benefited receptor of 1,638 square feet less than the maximum allowable quantity per benefited receptor of 3,000 square feet?	YES

C. NOISE WALL PRELIMINARY DECISION

1.	Is the noise wall preliminarily feasible?	YES
2.	Is the noise wall preliminarily reasonable?	YES
3.	Is the noise wall likely?	YES

PREPARED BY: D. Shannon **DATE PREPARED:** 12/17/2017

Noise Wall: NW97
Location: Adjacent to southbound lanes of DSA2 mainline, at northern project terminus

-NW97- does preliminarily meet NCDOT feasibility and reasonability criteria
-NW97- is likely to be incorporated into the project.

TNM Run: NW97 SBA: NW97-16ft-OPT

Table A4.40: Noise Barrier Performance Table

-NW97- Acoustical Performance Summary			
Impacts:	8	Benefitted Receptors @≥7dB(A) NLR:	3
Impacted Receptors Benefitted:	8	Total Benefits:	9
Non-Impacted Receptors Benefitted:	1		

-NW97- Parameters			
	Terminus: 1497+75 L		
	Terminus: 1511+10 L		
Length:	1362 ft	Area / Benefit:	2,423 ft²
Average Height:	16 ft	Allowable Area / Benefit:	2,500 ft²
Area:	21,810 ft²		

Receptors					Noise Wall Performance			
Rec #	**Use**	**NAC**	**E.R.s**	**Address**	**Existing**	**Build**	**W/ Wall**	**NLR**
R1558A	Res	B	1	105 GOWER DR	57	59	58	1
R1558B	Res	B	1	103 GOWER DR	57	59	59	0
R1558C	Res	B	1	101 GOWER DR	57	60	60	0
R1559A	Res	B	1	102 GOWER DR	64	66	61	5
R1559B	Res	B	1	104 GOWER DR	64	67	62	5
R1559C	Res	B	1	100 GOWER DR	65	65	62	3
R1560A	Res	B	1	205 GOWER CIR	57	66	61	5
R1560B	Res	B	1	201 GOWER CIR	57	65	60	5
R1561A	Res	B	1	202 GOWER CIR	67	74	64	10
R1561B	Res	B	1	200 GOWER CIR	64	67	61	6
R1562A	Res	B	1	206 GOWER CIR	64	69	62	7
R1562B	Res	B	1	204 GOWER CIR	66	71	63	8
R1562C	Res	B	1	208 GOWER CIR	63	66	61	5
R1862	Res	B	1	210 GOWER CIR	59	63	60	3
R1881A	Res	B	1	207 GOWER CIR	56	61	59	2
R1881B	Res	B	1	209 GOWER CIR	56	60	56	4
R1882A	Res	B	1	212 GOWER CIR	56	59	57	2
R1882B	Res	B	1	211 GOWER CIR	56	57	56	1
R2301A	Res	B	1	4808 OLD FAISON RD	57	57	57	0
R2301B	Res	B	1	4806 OLD FAISON RD	57	57	57	0
				-NW97- predicted build condition with wall Benefits[1]				**9**

Impact = 5 to 6 dB(A) NLR = ≥ 7 dB(A) NLR =

[1] A receptor is considered benefitted if the predicted Noise Level Reduction (NLR) is at least 5 dB(A).

To be used with Traffic Noise Reports only

NCDOT NOISE WALL

FEASIBILITY & REASONABLENESS WORKSHEET

PROJECT - Complete 540 **TIP# -** R-2829

NOISE WALL # - NW97 **COUNTY(IES) -** Wake and Johnston

 # IMPACTS - 8 **# BENEFITS -** 9 **NAC:** ☐ A ☑ B ☐ C ☐ D ☐ E

A. FEASBILITY:

1.	Can a 5-dB(A) reduction in traffic noise levels be achieved for at least two impacted receptors?	YES
2.	Does topography negatively affect the proposed noise wall?	NO
3.	Does the proposed noise wall negatively affect property access, drainage, utilities or maintenance requirements?	NO
4.	Is there control of access in the vicinity of the proposed noise wall?	YES

B. REASONABLENESS

1.	Can a 7- dB(A) reduction in traffic noise levels be achieved for at least one benefited receptor?	YES
2.	Is the quantity per benefited receptor of 2,423 square feet less than the maximum allowable quantity per benefited receptor of 2,500 square feet?	YES

C. NOISE WALL PRELIMINARY DECISION

1.	Is the noise wall preliminarily feasible?	YES
2.	Is the noise wall preliminarily reasonable?	YES
3.	Is the noise wall likely?	YES

PREPARED BY: D. Shannon **DATE PREPARED:** 12/20/2017

Noise Wall: NW98
Location: Adjacent to northbound lanes of DSA2 mainline, at northern project terminus

-NW98- does preliminarily meet NCDOT feasibility and reasonability criteria
-NW98- is likely to be incorporated into the project.

TNM Run: NW98 SBA: NW98-18ft-OPT

Table A4.41: Noise Barrier Performance Table

-NW98- Acoustical Performance Summary			
Impacts:	42	Benefitted Receptors @≥7dB(A) NLR:	22
Impacted Receptors Benefitted:	34	Total Benefits:	35
Non-Impacted Receptors Benefitted:	1		

-NW98- Parameters			
	Terminus: 1497+40 L		
	Terminus: 1527+45 L		
Length:	2389 ft	Area / Benefit:	1,229 ft²
Average Height:	18 ft	Allowable Area / Benefit:	2,000 ft²
Area:	43,017 ft²		

Receptors					Noise Wall Performance			
Rec #	Use	NAC	E.R.s	Address	Existing	Build	W/ Wall	NLR
R2303A	Res	B	1	4713 SMARTY JONES DR	61	65	60	5
R2303B	Res	B	1	4711 SMARTY JONES DR	60	64	60	4
R2303C	Res	B	1	4715 SMARTY JONES DR	62	66	60	6
R2304A	Res	B	1	4719 SMARTY JONES DR	65	69	62	7
R2304B	Res	B	1	4717 SMARTY JONES DR	64	68	61	7
R2304C	Res	B	1	4721 SMARTY JONES DR	66	70	62	8
R2305A	Res	B	1	4725 SMARTY JONES DR	66	70	62	8
R2305B	Res	B	1	4727 SMARTY JONES DR	67	70	62	8
R2305C	Res	B	1	4723 SMARTY JONES DR	66	70	62	8
R2306A	Res	B	1	4731 SMARTY JONES DR	67	71	62	9
R2306B	Res	B	1	4733 SMARTY JONES DR	67	70	62	8
R2306C	Res	B	1	4729 SMARTY JONES DR	67	70	62	8
R2307A	Res	B	1	4737 SMARTY JONES DR	67	70	61	9
R2307B	Res	B	1	4735 SMARTY JONES DR	67	70	61	9
R2307C	Res	B	1	4739 SMARTY JONES DR	67	70	61	9
R2308A	Res	B	1	4741 SMARTY JONES DR	67	70	62	8
R2308B	Res	B	1	4801 SMARTY JONES DR	67	70	62	8
R2309A	Res	B	1	4803 SMARTY JONES DR	67	71	63	8
R2309B	Res	B	1	4805 SMARTY JONES DR	67	71	64	7
R2310A	Res	B	1	4809 SMARTY JONES DR	68	72	65	7
R2310B	Res	B	1	4807 SMARTY JONES DR	68	72	65	7
R2310C	Res	B	1	4811 SMARTY JONES DR	68	72	65	7
R2324A	Res	B	1	4709 SMARTY JONES DR	59	62	59	3
R2324B	Res	B	1	4707 SMARTY JONES DR	57	61	59	2
R2325A	Res	B	1	4703 SMARTY JONES DR	57	59	57	2
R2325B	Res	B	1	4705 SMARTY JONES DR	57	60	57	3
R2325C	Res	B	1	4701 SMARTY JONES DR	57	58	57	1
R2326A	Res	B	1	1608 KINGMAN DR	57	57	57	0
R2326B	Res	B	1	1610 KINGMAN DR	57	57	57	0
R2326C	Res	B	1	1606 KINGMAN DR	57	57	57	0

Noise Wall: NW98

Location: Adjacent to northbound lanes of DSA2 mainline, at northern project terminus

R2327A	Res	B	1	4712 SMARTY JONES DR	57	57	57	0
R2327B	Res	B	1	4716 SMARTY JONES DR	57	57	57	0
R2327C	Res	B	1	4708 SMARTY JONES DR	57	57	57	0
R2328A	Res	B	1	4724 SMARTY JONES DR	57	57	57	0
R2328B	Res	B	1	4720 SMARTY JONES DR	57	57	57	0
R2328C	Res	B	1	4726 SMARTY JONES DR	57	57	57	0
R2329A	Res	B	1	4730 SMARTY JONES DR	57	57	57	0
R2329B	Res	B	1	4728 SMARTY JONES DR	57	57	57	0
R2329C	Res	B	1	4732 SMARTY JONES DR	57	57	57	0
R2330A	Res	B	1	4738 SMARTY JONES DR	57	57	57	0
R2330B	Res	B	1	4736 SMARTY JONES DR	57	57	57	0
R2330C	Res	B	1	4740 SMARTY JONES DR	57	57	57	0
R2331A	Res	B	1	4804 SMARTY JONES DR	57	57	57	0
R2331B	Res	B	1	4802 SMARTY JONES DR	57	57	57	0
R2331C	Res	B	1	4806 SMARTY JONES DR	57	57	57	0
R2332A	Res	B	1	1206 KINGMAN DR	57	57	57	0
R2332B	Res	B	1	1208 KINGMAN DR	57	57	57	0
R2333A	Res	B	1	1204 KINGMAN DR	57	60	57	3
R2333B	Res	B	1	1202 KINGMAN DR	58	62	58	4
R2334A	Res	B	1	1134 KINGMAN DR	68	71	64	7
R2334B	Res	B	1	1132 KINGMAN DR	68	70	63	7
R2334C	Res	B	1	1136 KINGMAN DR	67	71	63	8
R2335A	Res	B	1	1135 KINGMAN DR	57	58	57	1
R2335B	Res	B	1	1137 KINGMAN DR	57	57	57	0
R2336A	Res	B	1	1203 KINGMAN DR	57	57	57	0
R2336B	Res	B	1	1207 KINGMAN DR	57	58	57	1
R2337A	Res	B	1	4507 ARCARO DR	57	57	57	0
R2337B	Res	B	1	4505 ARCARO DR	57	57	57	0
R2338A	Res	B	1	4506 ARCARO DR	57	57	57	0
R2338B	Res	B	1	4508 ARCARO DR	57	57	57	0
R2339A	Res	B	1	4605 FONSO DR	57	57	57	0
R2339B	Res	B	1	4603 FONSO DR	57	57	57	0
R2339C	Res	B	1	4601 FONSO DR	57	57	57	0
R2340A	Res	B	1	4602 FONSO DR	57	57	57	0
R2340B	Res	B	1	4604 FONSO DR	57	57	57	0
R2341A	Res	B	1	4510 JOE COTTON DR	57	57	57	0
R2341B	Res	B	1	4508 JOE COTTON DR	57	57	57	0
R8001	Res	B	1	1130 Kingman Drive	66	69	63	6
R8002	Res	B	1	1128 Kingman Drive	67	69	63	6
R8003	Res	B	1	1126 Kingman Drive	66	69	63	6
R8004	Res	B	1	1124 Kingman Drive	66	69	63	6
R8005	Res	B	1	1122 Kingman Drive	65	69	64	5
R8006	Res	B	1	1120 Kingman Drive	65	68	64	4
R8007	Res	B	1	1118 Kingman Drive	64	68	63	5
R8008	Res	B	1	1116 Kingman Drive	64	68	64	4
R8009	Res	B	1	1114 Kingman Drive	66	70	65	5
R8010	Res	B	1	1112 Kingman Drive	69	73	67	6
R8011	Res	B	1	1110 Kingman Drive	70	74	68	6
R8012	Res	B	1	1108 Kingman Drive	71	75	68	7
R8013	Res	B	1	1106 Kingman Drive	70	74	69	5
R8014	Res	B	1	1104 Kingman Drive	68	72	69	3
R8015	Res	B	1	1102 Kingman Drive	67	71	68	3
R8016	Res	B	1	1008 Kingman Drive	66	70	68	2

Noise Wall: NW98

Location: Adjacent to northbound lanes of DSA2 mainline, at northern project terminus

R8017	Res	B	1	1006 Kingman Drive	67	70	68	2
R8018	Res	B	1	1004 Kingman Drive	65	69	68	1
R8019	Res	B	1	1002 Kingman Drive	63	67	67	0
R8020	Res	B	1	1001 Kingman Drive	60	64	64	0
R8021	Res	B	1	1005 Kingman Drive	57	59	59	0
R8022	Res	B	1	1007 Kingman Drive	57	57	57	0
R8023	Res	B	1	1101 Kingman Drive	57	59	59	0
R8024	Res	B	1	1103 Kingman Drive	57	57	57	0
R8025	Res	B	1	1105 Kingman Drive	57	57	57	0
R8026	Res	B	1	1109 Kingman Drive	57	57	57	0
R8027	Res	B	1	1111 Kingman Drive	57	57	57	0
R8028	Res	B	1	1113 Kingman Drive	57	57	57	0
R8029	Res	B	1	1115 Kingman Drive	57	57	57	0
R8030	Res	B	1	1117 Kingman Drive	57	57	57	0
R8031	Res	B	1	1119 Kingman Drive	57	57	57	0
R8032	Res	B	1	1121 Kingman Drive	57	57	57	0
R8033	Res	B	1	1123 Kingman Drive	57	57	57	0
R8034	Res	B	1	1125 Kingman Drive	57	57	57	0
R8035	Res	B	1	1127 Kingman Drive	57	57	57	0
R8036	Res	B	1	1129 Kingman Drive	57	57	57	0
R8037	Res	B	1	1131 Kingman Drive	57	57	57	0
							-NW98- predicted build condition with wall Benefits[1]	**35**

Impact = 5 to 6 dB(A) NLR = ≥ 7 dB(A) NLR =

[1] A receptor is considered benefitted if the predicted Noise Level Reduction (NLR) is at least 5 dB(A).

To be used with Traffic Noise Reports only

NCDOT NOISE WALL

FEASIBILITY & REASONABLENESS WORKSHEET

PROJECT - Complete 540 **TIP# -** R-2829

NOISE WALL # - NW98 **COUNTY(IES) -** Wake and Johnston

 # IMPACTS - 42 **# BENEFITS -** 35 **NAC:** ☐ A ☑ B ☐ C ☐ D ☐ E

A. FEASBILITY:

1.	Can a 5-dB(A) reduction in traffic noise levels be achieved for at least two impacted receptors?	YES
2.	Does topography negatively affect the proposed noise wall?	NO
3.	Does the proposed noise wall negatively affect property access, drainage, utilities or maintenance requirements?	NO
4.	Is there control of access in the vicinity of the proposed noise wall?	YES

B. REASONABLENESS

1.	Can a 7- dB(A) reduction in traffic noise levels be achieved for at least one benefited receptor?	YES
2.	Is the quantity per benefited receptor of 1,229 square feet less than the maximum allowable quantity per benefited receptor of 2,000 square feet?	YES

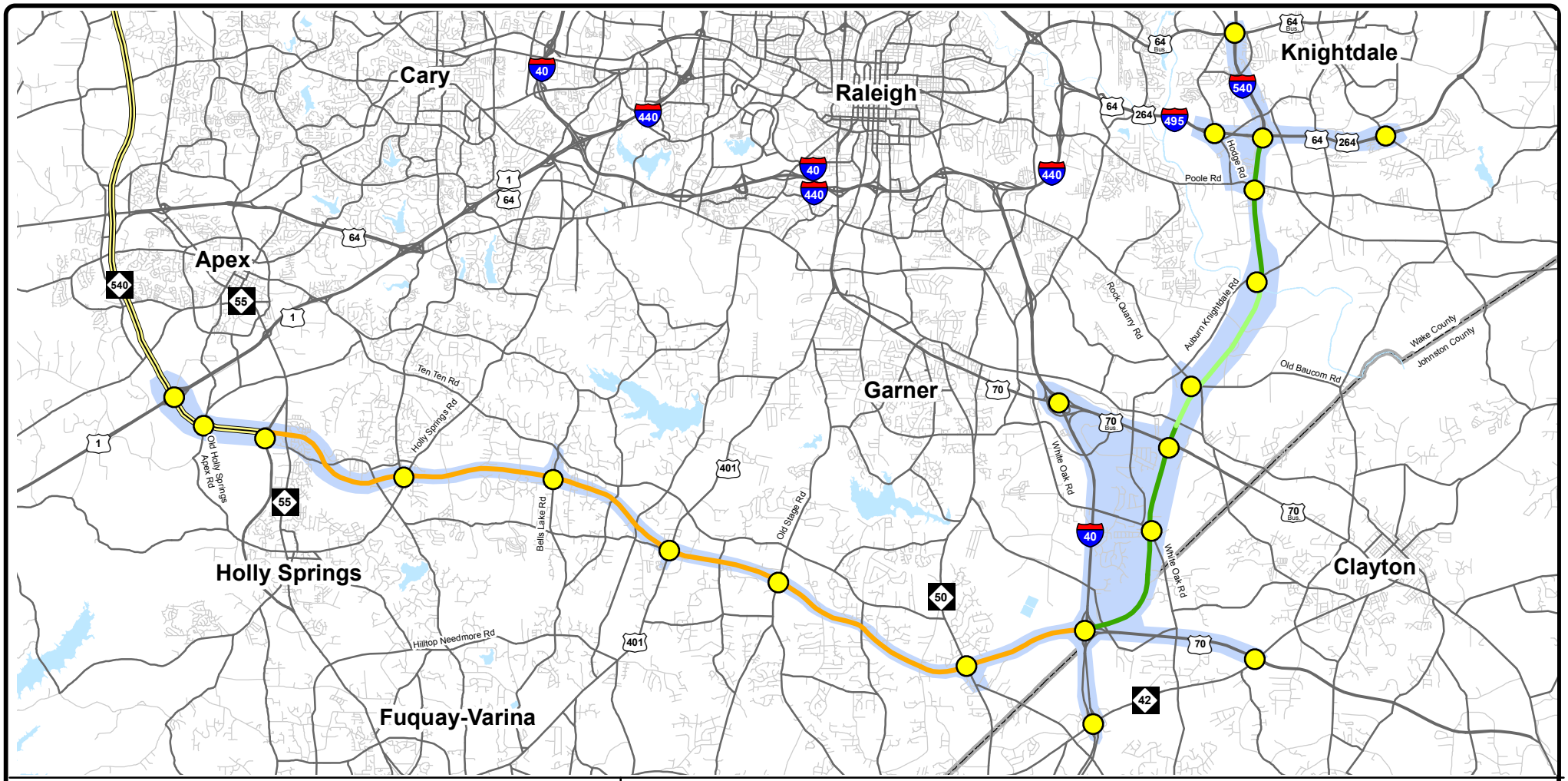
C. NOISE WALL PRELIMINARY DECISION

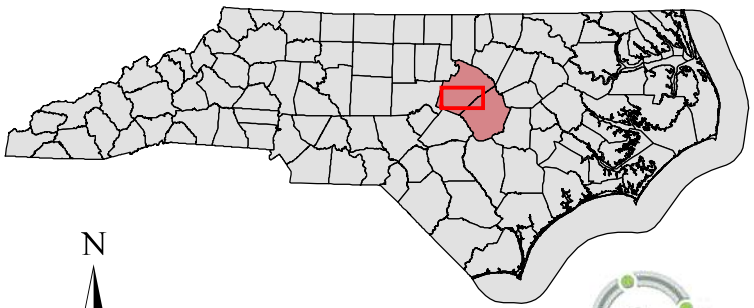
1.	Is the noise wall preliminarily feasible?	YES
2.	Is the noise wall preliminarily reasonable?	YES
3.	Is the noise wall likely?	YES

PREPARED BY: D. Shannon **DATE PREPARED:** 12/17/2017

APPENDIX 4

TRAFFIC USED IN THIS ANALYSIS





Traffic Forecast Study Area

Legend

- Interchanges
- Triangle Expressway
- Major Roads
- Traffic Forecast Study Area
- Counties

NCDOT Recommended DSA Corridors

- Orange
- Green
- Mint

STIP: R-2721, R-2828, R-2829	**WBS:** 37673.1.TA2, 35516.1.TA2, 35517.1.TA1
COUNTY: Wake/Johnston	**DIVISION:** 5/4
DATE: October 2016	
PREPARED BY: HNTB North Carolina, P.C. 343 E. Six Forks Rd, Suite 200 Raleigh, NC 27609	
LOCATION: NC 55 Bypass (Holly Springs) to I-495 / US 64 Bypass / US 264 (Knightdale)	
PROJECT: Complete 540 Triangle Expressway Southeast Extension	**Figure 1**

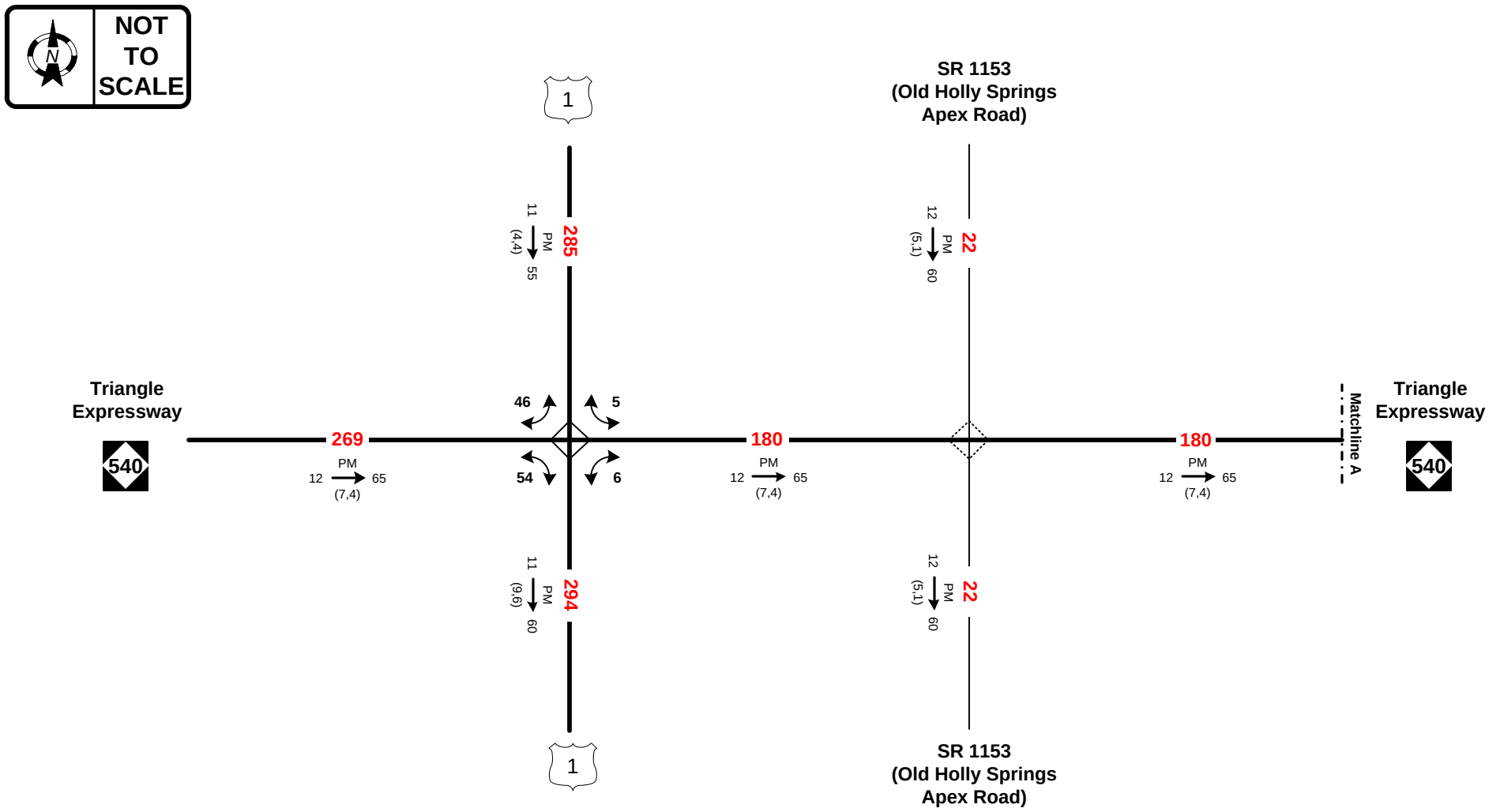


Figure 8.1 corresponds to **Figure 6 – Sheet Key 1**

2016 AVERAGE ANNUAL DAILY TRAFFIC

No-Build

LEGEND

K —PM (d,t)→ D

###	No. of Vehicles Per Day (VPD) in 100s
1-	Less than 50 VPD
X	Movement Prohibited
--------	Proposed Interchange R-2635D
K	Design Hour Factor (%)
PM	PM Peak Period
D	Peak Hour Directional Split (%)
→	Indicates Direction of D
(d,t)	Duals, TT-STs (%)

STIP: R2721, R-2828, R-2829	**WBS:** 37673.1.TA2, 35516.1.TA1, 35517.1.TA1
COUNTY: Wake/Johnston	**DIVISION:** 5/4
DATE: October 2016	
PREPARED BY: HNTB North Carolina, P.C. 343 East Six Forks Rd Suite 200 Raleigh, North Carolina 27609	
LOCATION: NC 55 Bypass (Holly Springs) to I-495 / US 64 Bypass / US 264 (Knightdale)	
PROJECT: Complete 540 Triangle Expressway Southeast Extension	**Figure 8.1**

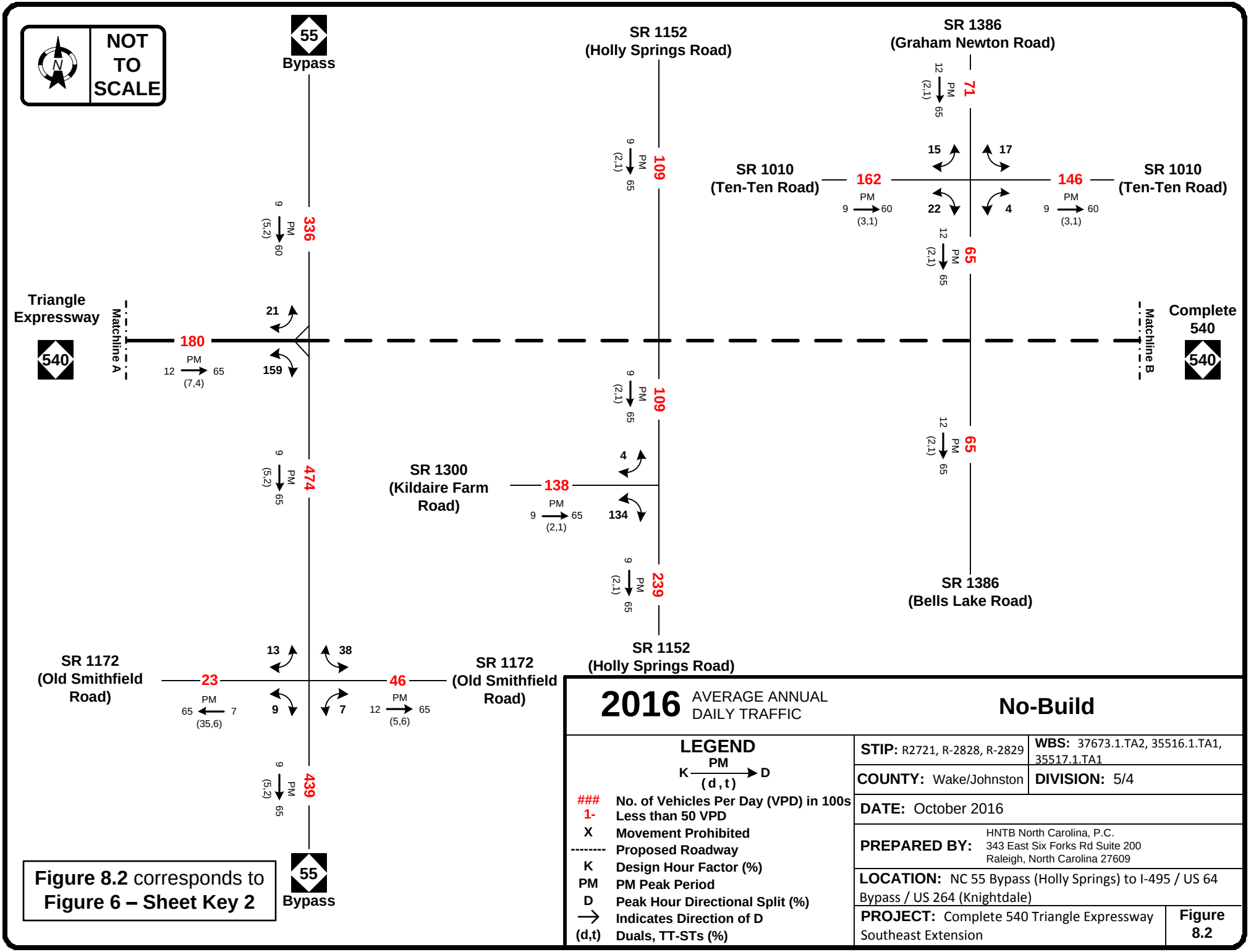


Figure 8.2 corresponds to **Figure 6 – Sheet Key 2**

2016 AVERAGE ANNUAL DAILY TRAFFIC

No-Build

LEGEND

PM
K → D
(d, t)

###	No. of Vehicles Per Day (VPD) in 100s
1-	Less than 50 VPD
X	Movement Prohibited
--------	Proposed Roadway
K	Design Hour Factor (%)
PM	PM Peak Period
D	Peak Hour Directional Split (%)
→	Indicates Direction of D
(d,t)	Duals, TT-STs (%)

STIP: R2721, R-2828, R-2829

WBS: 37673.1.TA2, 35516.1.TA1, 35517.1.TA1

COUNTY: Wake/Johnston

DIVISION: 5/4

DATE: October 2016

PREPARED BY: HNTB North Carolina, P.C.
343 East Six Forks Rd Suite 200
Raleigh, North Carolina 27609

LOCATION: NC 55 Bypass (Holly Springs) to I-495 / US 64 Bypass / US 264 (Knightdale)

PROJECT: Complete 540 Triangle Expressway Southeast Extension

Figure 8.2

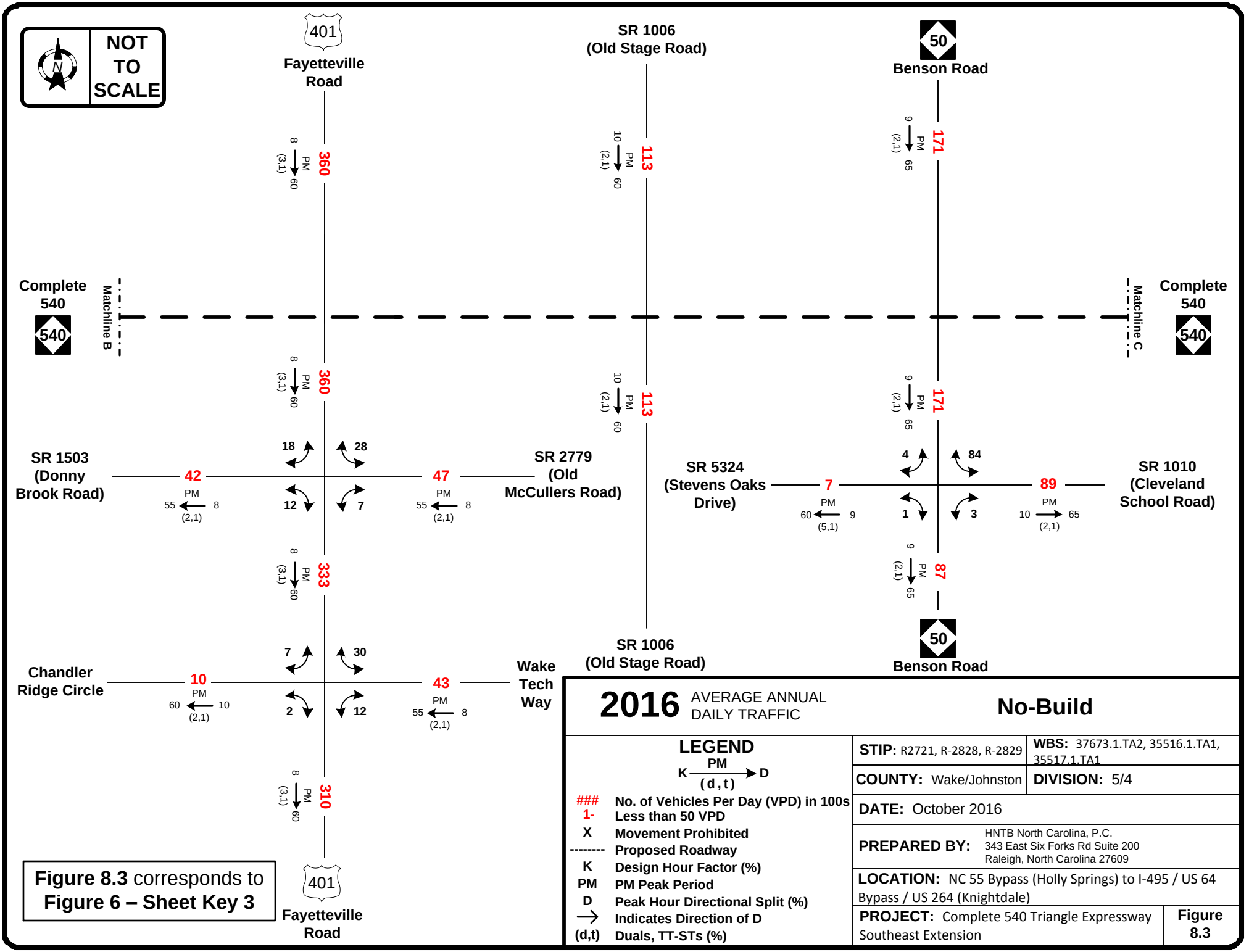


Figure 8.3 corresponds to **Figure 6 – Sheet Key 3**

2016 AVERAGE ANNUAL DAILY TRAFFIC

No-Build

LEGEND

PM
K → D
(d, t)

###	No. of Vehicles Per Day (VPD) in 100s
1-	Less than 50 VPD
X	Movement Prohibited
--------	Proposed Roadway
K	Design Hour Factor (%)
PM	PM Peak Period
D	Peak Hour Directional Split (%)
→	Indicates Direction of D
(d,t)	Duals, TT-STs (%)

STIP: R2721, R-2828, R-2829

WBS: 37673.1.TA2, 35516.1.TA1, 35517.1.TA1

COUNTY: Wake/Johnston

DIVISION: 5/4

DATE: October 2016

PREPARED BY: HNTB North Carolina, P.C.
343 East Six Forks Rd Suite 200
Raleigh, North Carolina 27609

LOCATION: NC 55 Bypass (Holly Springs) to I-495 / US 64 Bypass / US 264 (Knightdale)

PROJECT: Complete 540 Triangle Expressway Southeast Extension

Figure 8.3

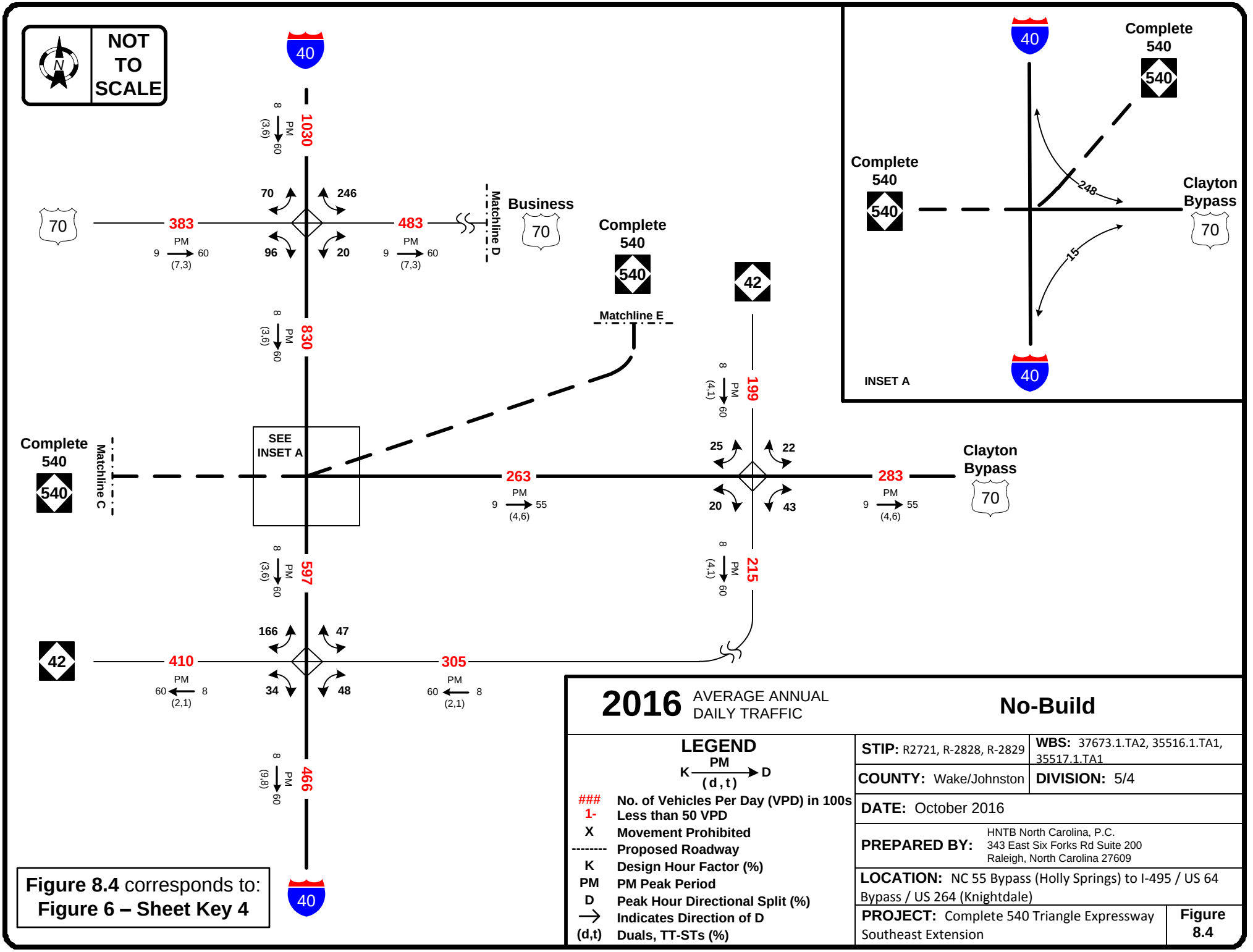


Figure 8.4 corresponds to:
Figure 6 – Sheet Key 4

2016 AVERAGE ANNUAL DAILY TRAFFIC

No-Build

LEGEND

PM
K → D
(d, t)

###	No. of Vehicles Per Day (VPD) in 100s
1-	Less than 50 VPD
X	Movement Prohibited
--------	Proposed Roadway
K	Design Hour Factor (%)
PM	PM Peak Period
D	Peak Hour Directional Split (%)
→	Indicates Direction of D
(d,t)	Duals, TT-STs (%)

STIP: R2721, R-2828, R-2829

WBS: 37673.1.TA2, 35516.1.TA1, 35517.1.TA1

COUNTY: Wake/Johnston

DIVISION: 5/4

DATE: October 2016

PREPARED BY: HNTB North Carolina, P.C.
343 East Six Forks Rd Suite 200
Raleigh, North Carolina 27609

LOCATION: NC 55 Bypass (Holly Springs) to I-495 / US 64 Bypass / US 264 (Knightdale)

PROJECT: Complete 540 Triangle Expressway Southeast Extension

Figure 8.4

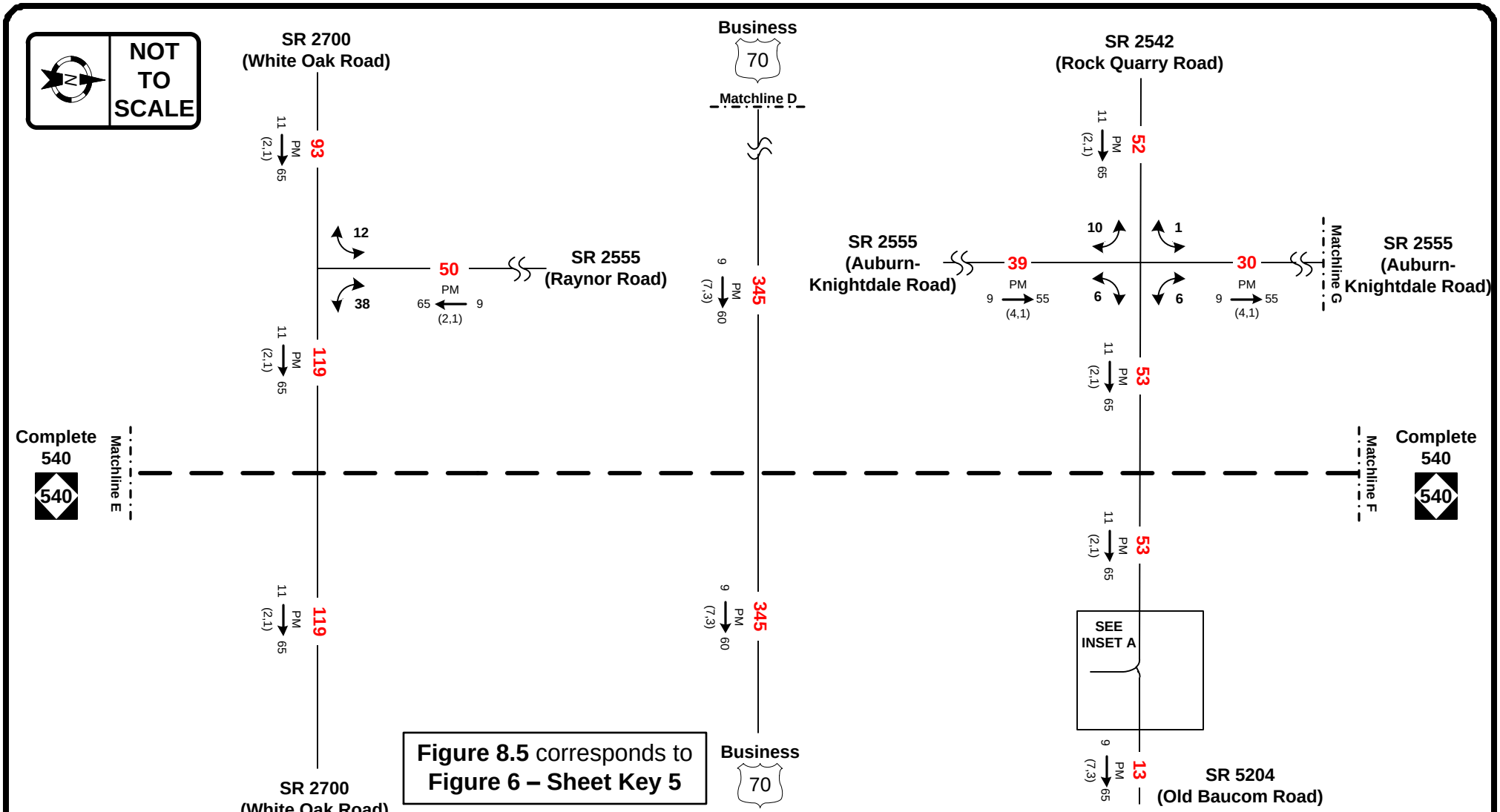
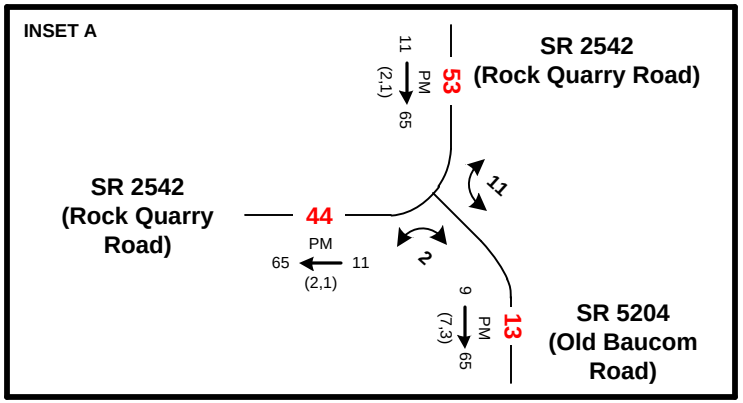


Figure 8.5 corresponds to **Figure 6 – Sheet Key 5**



2016 AVERAGE ANNUAL DAILY TRAFFIC

No-Build

LEGEND

K PM (d, t) D

###	No. of Vehicles Per Day (VPD) in 100s
1-	Less than 50 VPD
X	Movement Prohibited
--------	Proposed Roadway
K	Design Hour Factor (%)
PM	PM Peak Period
D	Peak Hour Directional Split (%)
→	Indicates Direction of D
(d,t)	Duals, TT-STs (%)

STIP: R2721, R-2828, R-2829

WBS: 37673.1.TA2, 35516.1.TA1, 35517.1.TA1

COUNTY: Wake/Johnston

DIVISION: 5/4

DATE: October 2016

PREPARED BY: HNTB North Carolina, P.C.
343 East Six Forks Rd Suite 200
Raleigh, North Carolina 27609

LOCATION: NC 55 Bypass (Holly Springs) to I-495 / US 64 Bypass / US 264 (Knightdale)

PROJECT: Complete 540 Triangle Expressway Southeast Extension

Figure 8.5

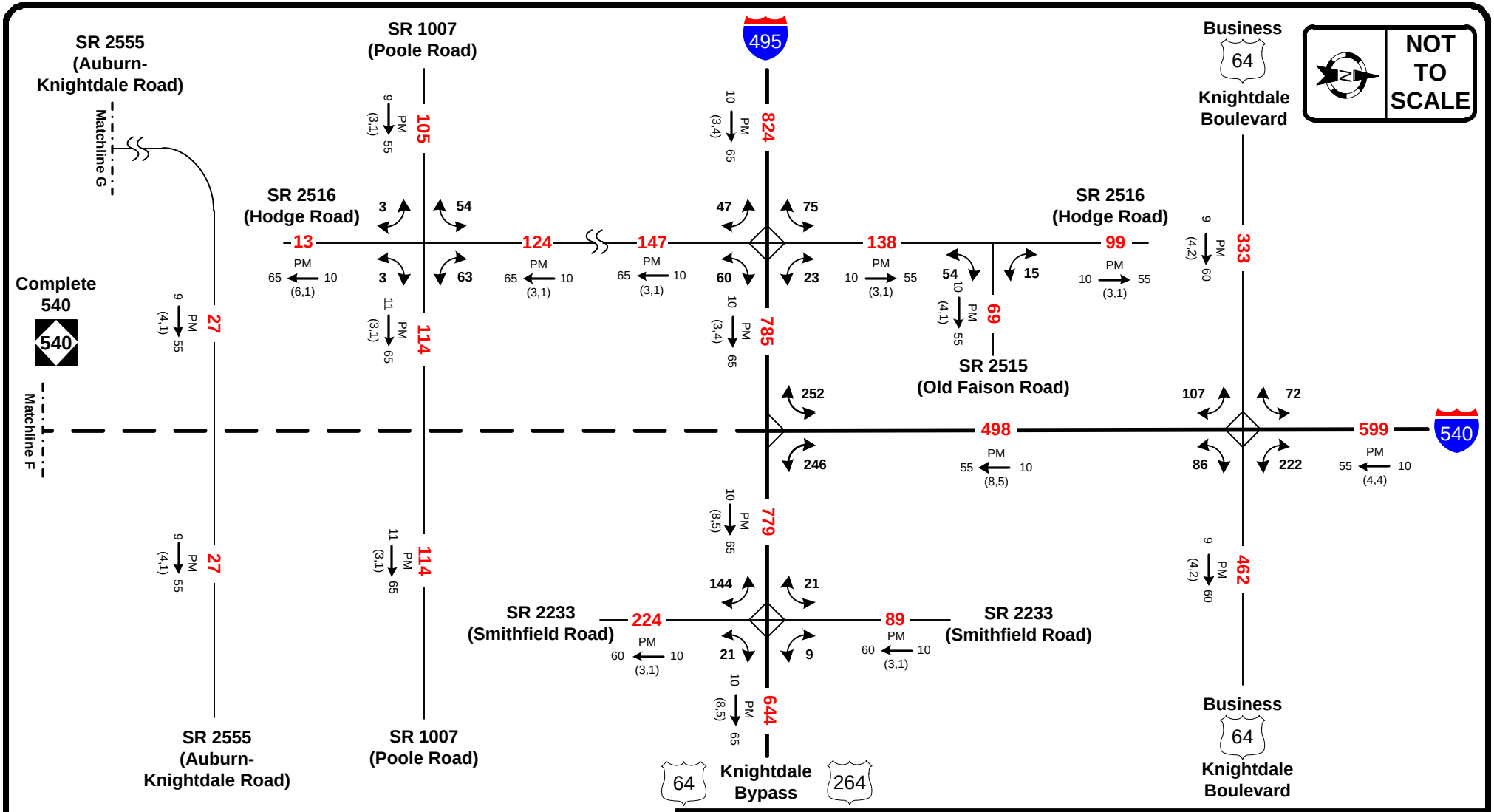


Figure 8.6 corresponds to:
Figure 6 – Sheet Key 6

2016 AVERAGE ANNUAL DAILY TRAFFIC

No-Build

LEGEND

PM
K → D
(d, t)

###	No. of Vehicles Per Day (VPD) in 100s
1-	Less than 50 VPD
X	Movement Prohibited
--------	Proposed Roadway
K	Design Hour Factor (%)
PM	PM Peak Period
D	Peak Hour Directional Split (%)
→	Indicates Direction of D
(d,t)	Duals, TT-STs (%)

STIP: R2721, R-2828, R-2829

WBS: 37673.1.TA2, 35516.1.TA1, 35517.1.TA1

COUNTY: Wake/Johnston

DIVISION: 5/4

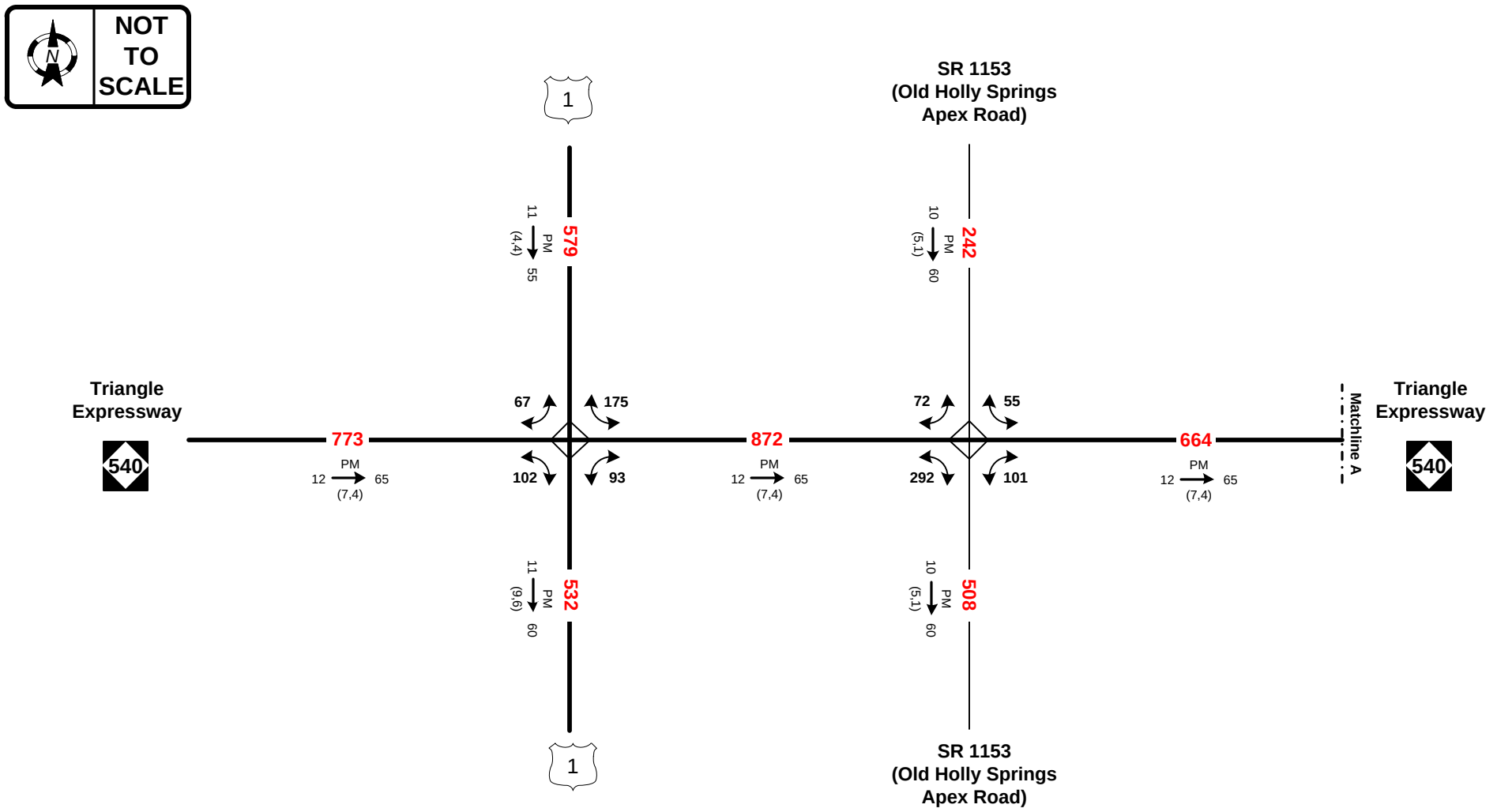
DATE: October 2016

PREPARED BY: HNTB North Carolina, P.C.
343 East Six Forks Rd Suite 200
Raleigh, North Carolina 27609

LOCATION: NC 55 Bypass (Holly Springs) to I-495 / US 64 Bypass / US 264 (Knightdale)

PROJECT: Complete 540 Triangle Expressway Southeast Extension

Figure 8.6



2040 AVERAGE ANNUAL DAILY TRAFFIC

Build

LEGEND

PM
K → D
(d, t)

###	No. of Vehicles Per Day (VPD) in 100s
1-	Less than 50 VPD
X	Movement Prohibited
———	Roadway on New Location
K	Design Hour Factor (%)
PM	PM Peak Period
D	Peak Hour Directional Split (%)
→	Indicates Direction of D
(d,t)	Duals, TT-STs (%)

STIP: R2721, R-2828, R-2829

WBS: 37673.1.TA2, 35516.1.TA1, 35517.1.TA1

COUNTY: Wake/Johnston

DIVISION: 5/4

DATE: October 2016

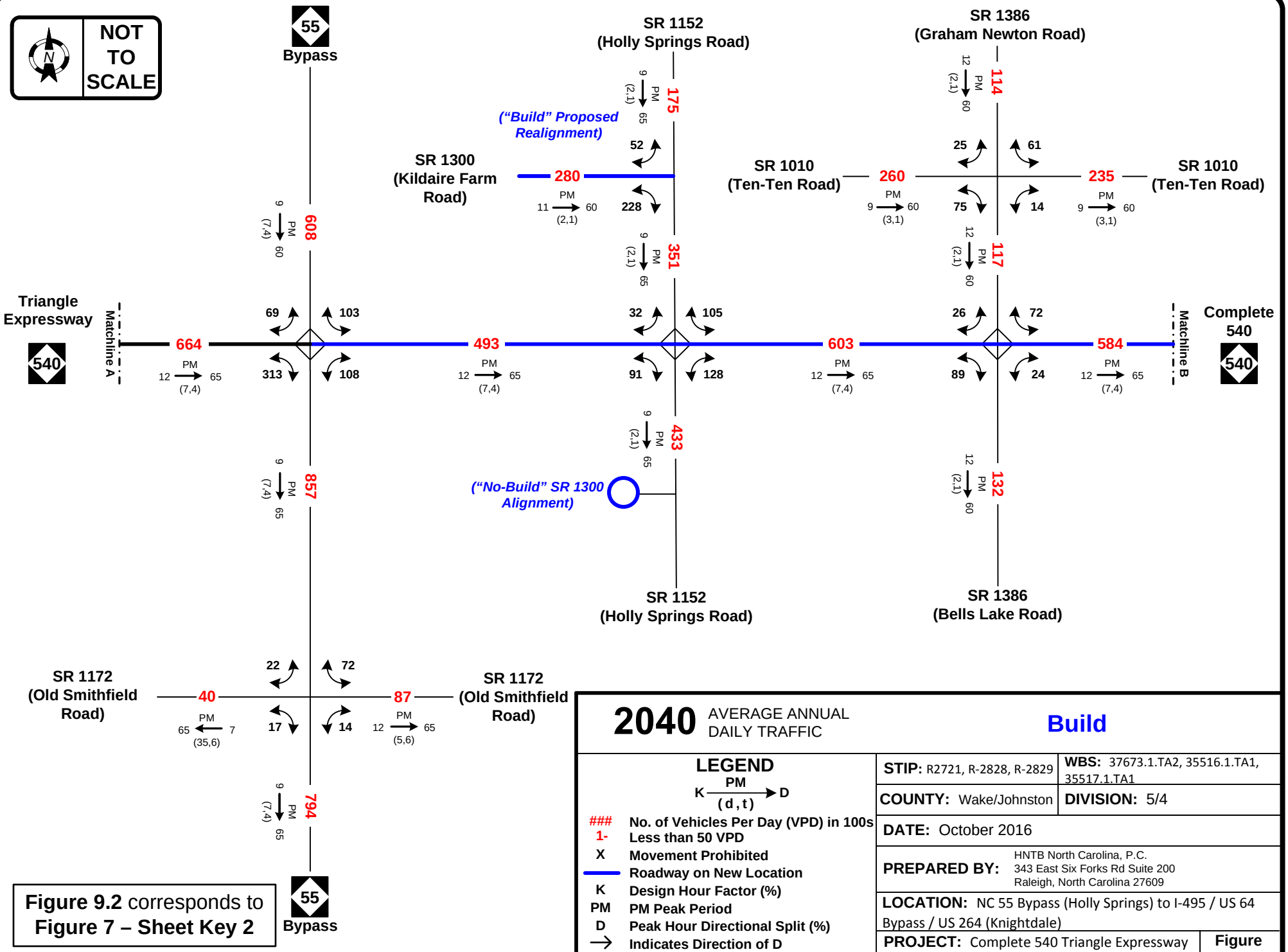
PREPARED BY: HNTB North Carolina, P.C.
343 East Six Forks Rd Suite 200
Raleigh, North Carolina 27609

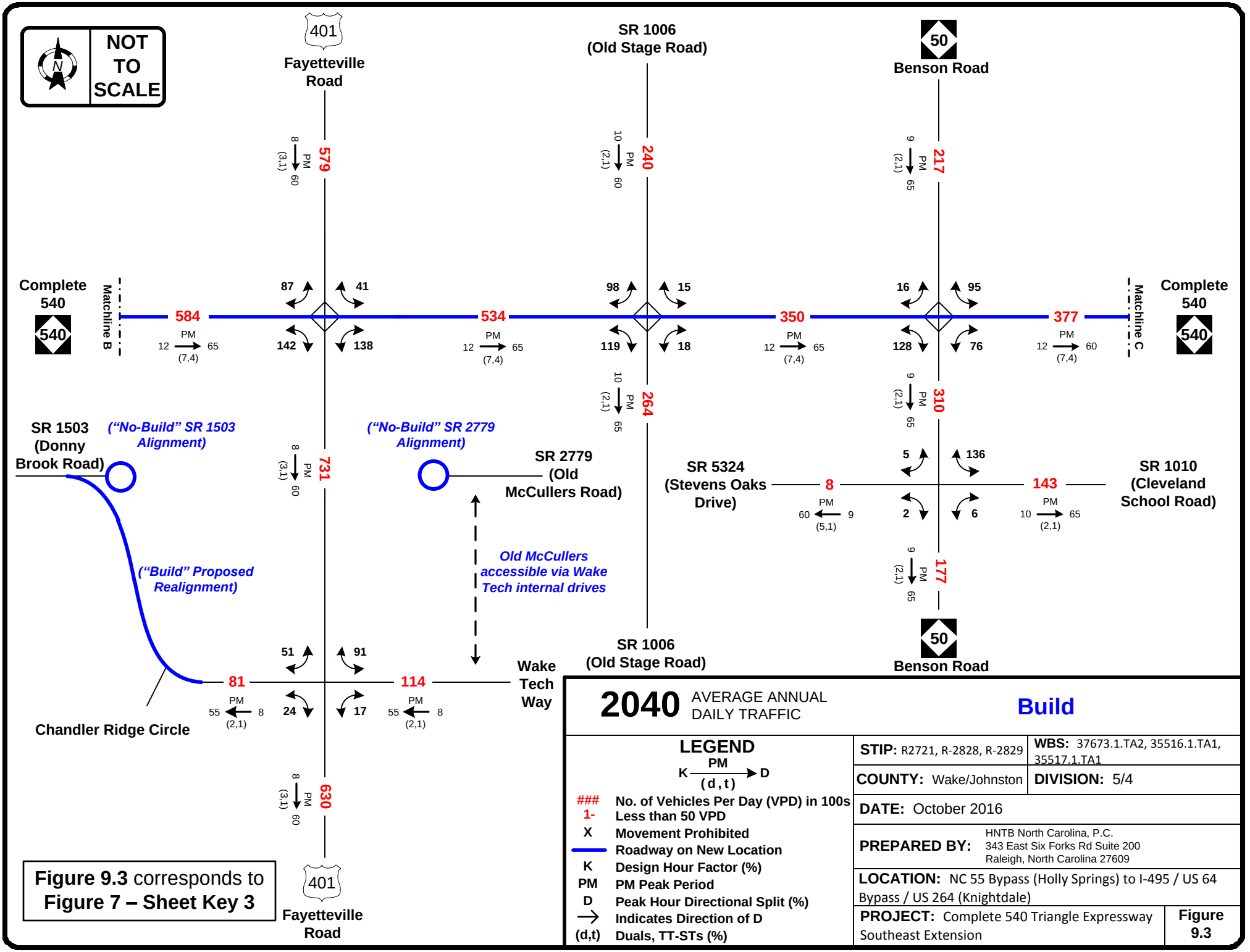
LOCATION: NC 55 Bypass (Holly Springs) to I-495 / US 64 Bypass / US 264 (Knightdale)

PROJECT: Complete 540 Triangle Expressway Southeast Extension

Figure 9.1

Figure 9.1 corresponds to **Figure 7 – Sheet Key 1**


NOT TO SCALE
55 Bypass
SR 1152 (Holly Springs Road)
SR 1386 (Graham Newton Road)
("Build" Proposed Realignment)
SR 1300 (Kildaire Farm Road)
SR 1010 (Ten-Ten Road)
SR 1010 (Ten-Ten Road)
Triangle Expressway
540
Matchline A
Matchline B
Complete 540
("No-Build" SR 1300 Alignment)
SR 1152 (Holly Springs Road)
SR 1386 (Bells Lake Road)
SR 1172 (Old Smithfield Road)
SR 1172 (Old Smithfield Road)
55 Bypass
Figure 9.2 corresponds to Figure 7 – Sheet Key 2
2040 AVERAGE ANNUAL DAILY TRAFFIC
Build
LEGEND
PM
K → D
(d,t)
No. of Vehicles Per Day (VPD) in 100s
1- Less than 50 VPD
X Movement Prohibited
Roadway on New Location
K Design Hour Factor (%)
PM PM Peak Period
D Peak Hour Directional Split (%)
→ Indicates Direction of D
(d,t) Duals, TT-STs (%)
STIP: R2721, R-2828, R-2829
WBS: 37673.1.TA2, 35516.1.TA1, 35517.1.TA1
COUNTY: Wake/Johnston
DIVISION: 5/4
DATE: October 2016
PREPARED BY: HNTB North Carolina, P.C. 343 East Six Forks Rd Suite 200 Raleigh, North Carolina 27609
LOCATION: NC 55 Bypass (Holly Springs) to I-495 / US 64 Bypass / US 264 (Knightdale)
PROJECT: Complete 540 Triangle Expressway Southeast Extension
Figure 9.2


NOT TO SCALE
N
401
Fayetteville Road
SR 1006 (Old Stage Road)
50
Benson Road
579
240
217
Complete 540
540
Matchline B
Matchline C
584
534
350
377
87
41
142
138
98
15
119
18
16
95
128
76
264
310
SR 1503 (Donny Brook Road)
("No-Build" SR 1503 Alignment)
("No-Build" SR 2779 Alignment)
SR 2779 (Old McCullers Road)
SR 5324 (Stevens Oaks Drive)
SR 1010 (Cleveland School Road)
731
8
143
5
136
2
6
("Build" Proposed Realignment)
Old McCullers accessible via Wake Tech internal drives
177
81
114
51
91
24
17
Wake Tech Way
Chandler Ridge Circle
630
401
Fayetteville Road
Figure 9.3 corresponds to Figure 7 – Sheet Key 3
2040 AVERAGE ANNUAL DAILY TRAFFIC
Build
LEGEND
K PM D (d,t)
No. of Vehicles Per Day (VPD) in 100s
1- Less than 50 VPD
X Movement Prohibited
Roadway on New Location
K Design Hour Factor (%)
PM PM Peak Period
D Peak Hour Directional Split (%)
→ Indicates Direction of D
(d,t) Duals, TT-STs (%)
STIP: R2721, R-2828, R-2829
WBS: 37673.1.TA2, 35516.1.TA1, 35517.1.TA1
COUNTY: Wake/Johnston
DIVISION: 5/4
DATE: October 2016
PREPARED BY: HNTB North Carolina, P.C. 343 East Six Forks Rd Suite 200 Raleigh, North Carolina 27609
LOCATION: NC 55 Bypass (Holly Springs) to I-495 / US 64 Bypass / US 264 (Knightdale)
PROJECT: Complete 540 Triangle Expressway Southeast Extension
Figure 9.3

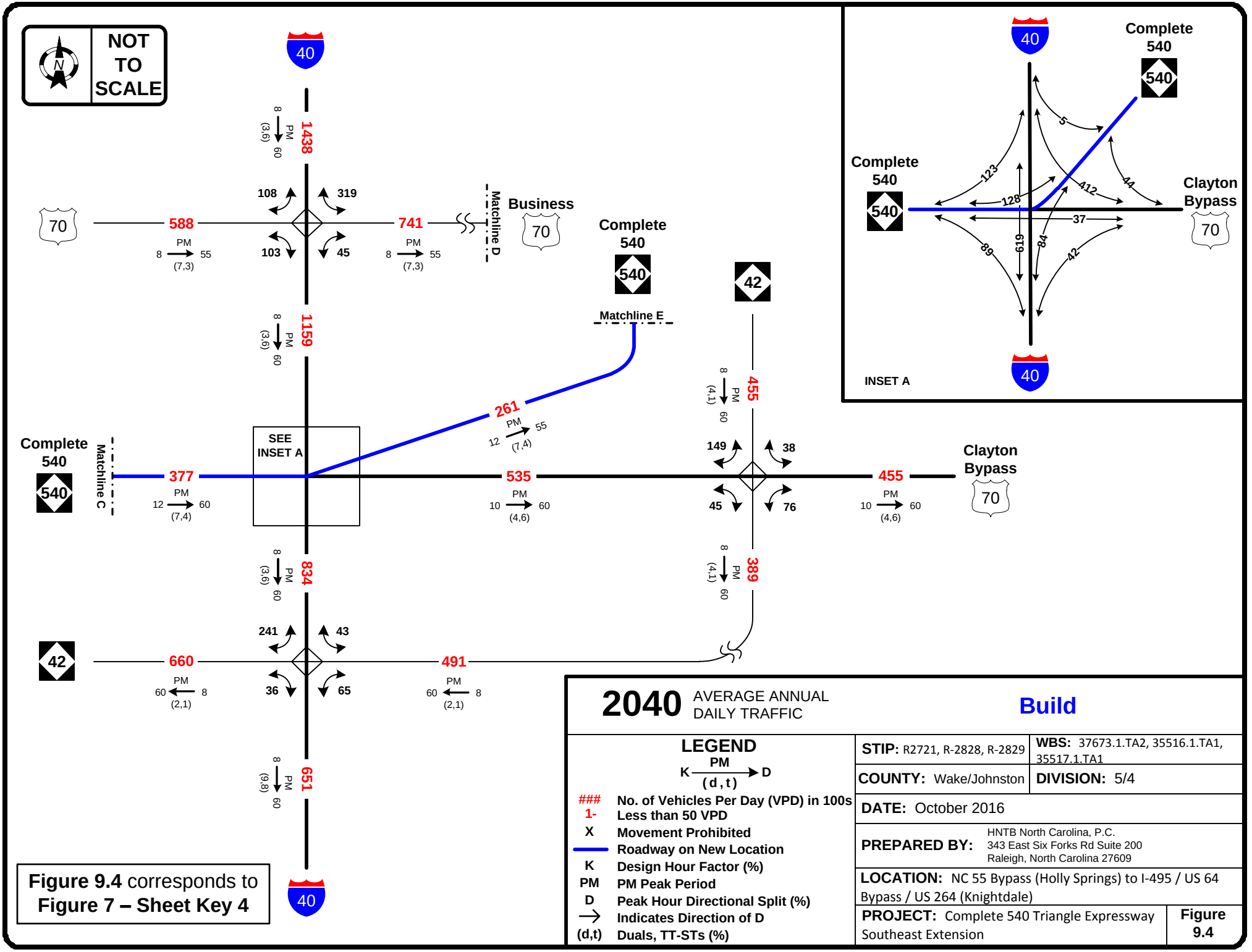


Figure 9.4 corresponds to **Figure 7 – Sheet Key 4**

2040 AVERAGE ANNUAL DAILY TRAFFIC

Build

LEGEND

PM
K → D
(d, t)

###	No. of Vehicles Per Day (VPD) in 100s
1-	Less than 50 VPD
X	Movement Prohibited
———	Roadway on New Location
K	Design Hour Factor (%)
PM	PM Peak Period
D	Peak Hour Directional Split (%)
→	Indicates Direction of D
(d,t)	Duals, TT-STs (%)

STIP: R2721, R-2828, R-2829	**WBS:** 37673.1.TA2, 35516.1.TA1, 35517.1.TA1
COUNTY: Wake/Johnston	**DIVISION:** 5/4
DATE: October 2016	
PREPARED BY: HNTB North Carolina, P.C. 343 East Six Forks Rd Suite 200 Raleigh, North Carolina 27609	
LOCATION: NC 55 Bypass (Holly Springs) to I-495 / US 64 Bypass / US 264 (Knightdale)	
PROJECT: Complete 540 Triangle Expressway Southeast Extension	**Figure 9.4**

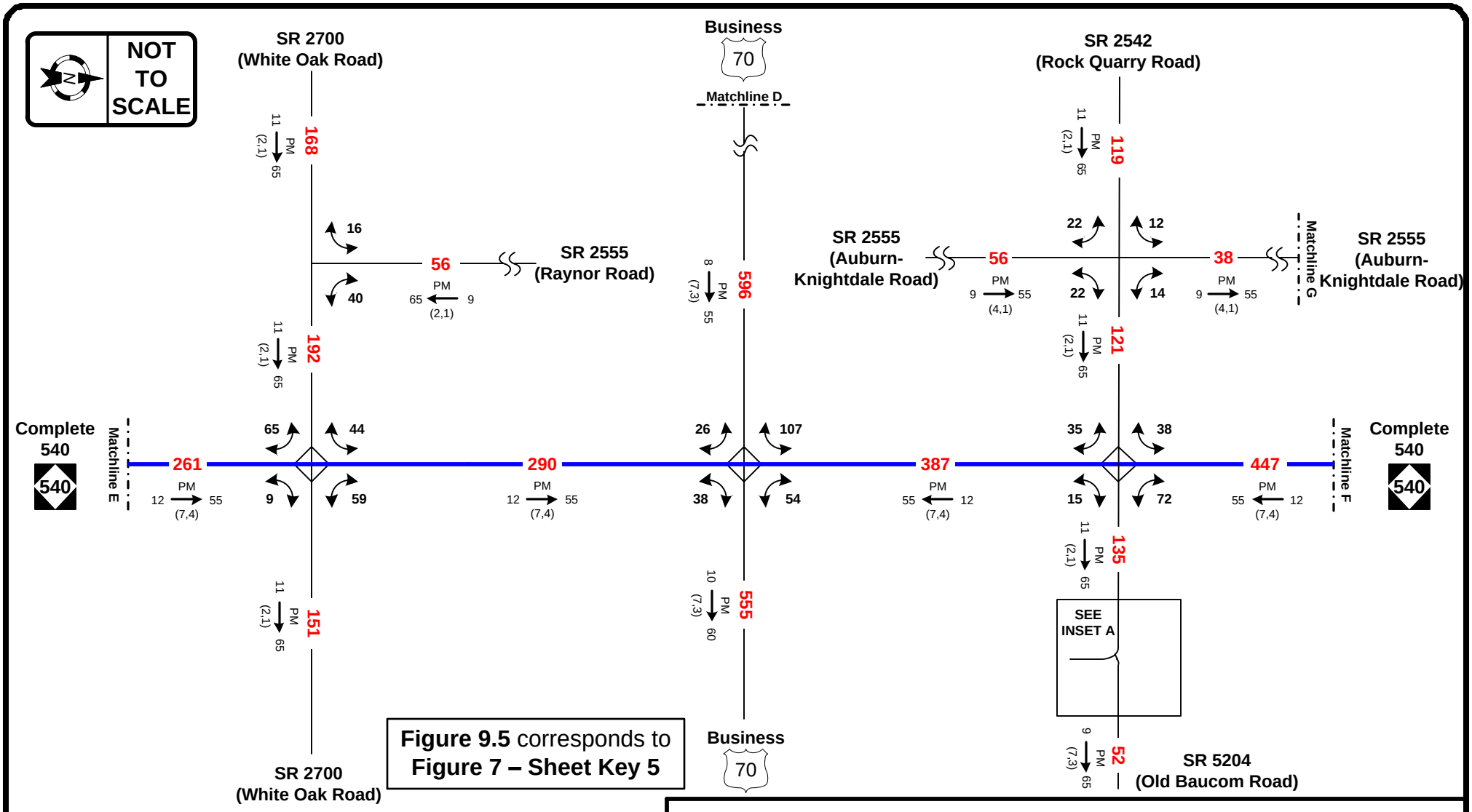
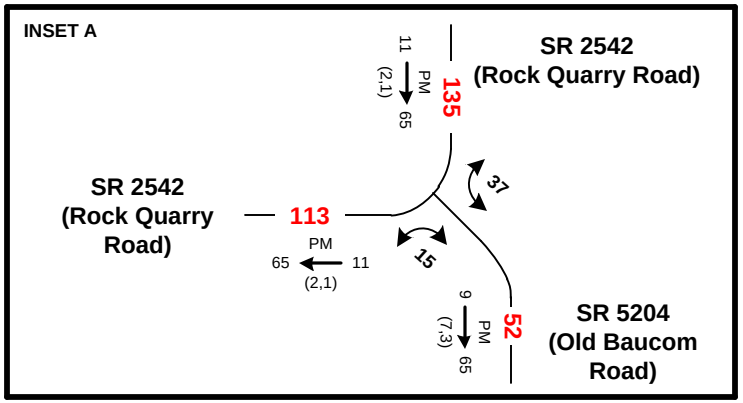


Figure 9.5 corresponds to **Figure 7 – Sheet Key 5**



2040 AVERAGE ANNUAL DAILY TRAFFIC

Build

LEGEND

K PM → D
(d , t)

###	No. of Vehicles Per Day (VPD) in 100s
1-	Less than 50 VPD
X	Movement Prohibited
———	Roadway on New Location
K	Design Hour Factor (%)
PM	PM Peak Period
D	Peak Hour Directional Split (%)
→	Indicates Direction of D
(d,t)	Duals, TT-STs (%)

STIP: R2721, R-2828, R-2829

WBS: 37673.1.TA2, 35516.1.TA1, 35517.1.TA1

COUNTY: Wake/Johnston

DIVISION: 5/4

DATE: October 2016

PREPARED BY: HNTB North Carolina, P.C.
343 East Six Forks Rd Suite 200
Raleigh, North Carolina 27609

LOCATION: NC 55 Bypass (Holly Springs) to I-495 / US 64 Bypass / US 264 (Knightdale)

PROJECT: Complete 540 Triangle Expressway Southeast Extension

Figure 9.5

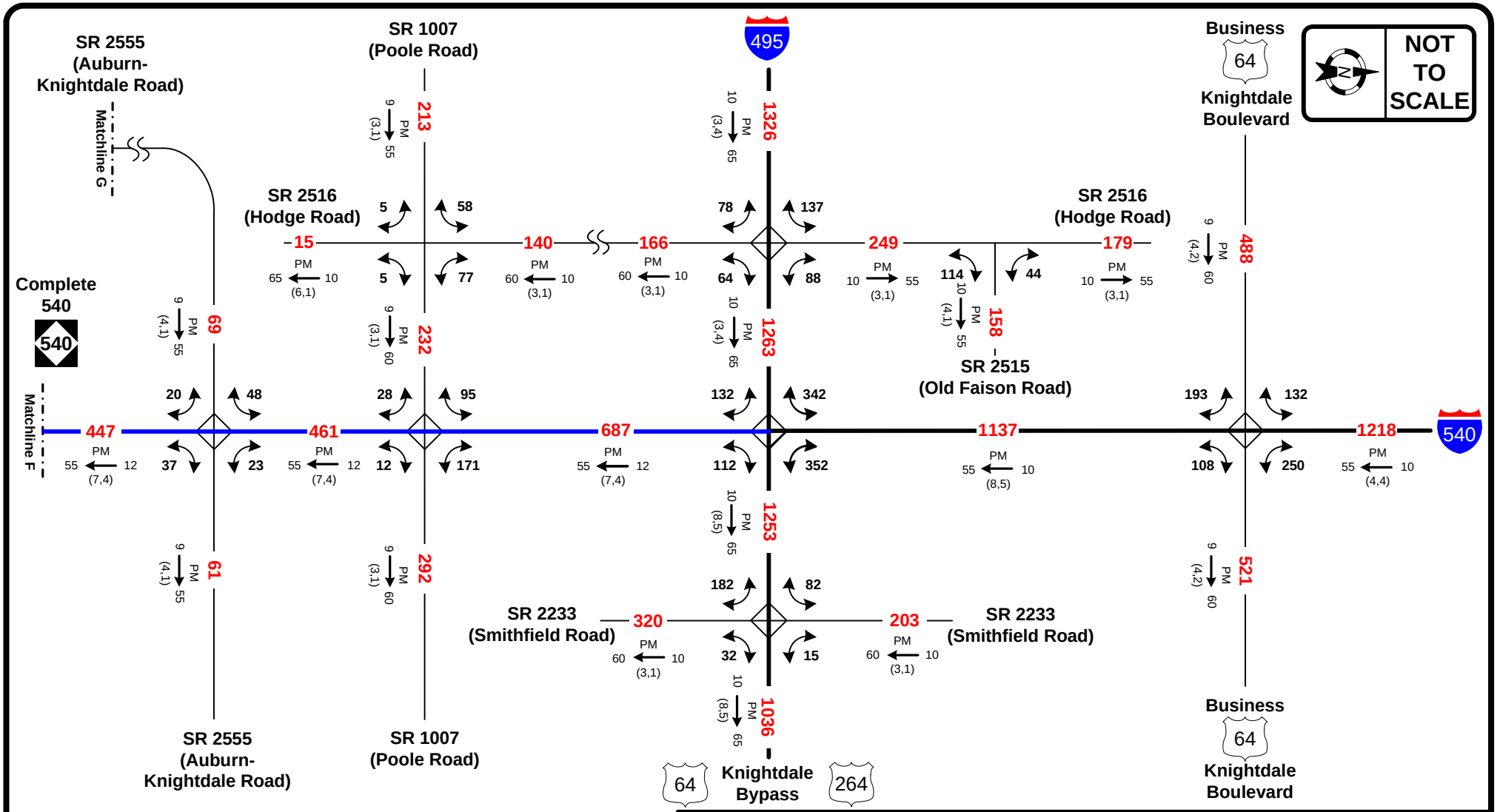


Figure 9.6 corresponds to **Figure 7 – Sheet Key 6**

2040 AVERAGE ANNUAL DAILY TRAFFIC

Build

LEGEND

PM
K → D
(d, t)

###	No. of Vehicles Per Day (VPD) in 100s
1-	Less than 50 VPD
X	Movement Prohibited
———	Roadway on New Location
K	Design Hour Factor (%)
PM	PM Peak Period
D	Peak Hour Directional Split (%)
→	Indicates Direction of D
(d,t)	Duals, TT-STs (%)

STIP: R2721, R-2828, R-2829

WBS: 37673.1.TA2, 35516.1.TA1, 35517.1.TA1

COUNTY: Wake/Johnston

DIVISION: 5/4

DATE: October 2016

PREPARED BY: HNTB North Carolina, P.C.
343 East Six Forks Rd Suite 200
Raleigh, North Carolina 27609

LOCATION: NC 55 Bypass (Holly Springs) to I-495 / US 64 Bypass / US 264 (Knightdale)

PROJECT: Complete 540 Triangle Expressway Southeast Extension

Figure 9.6

APPENDIX 5

NCDOT TRAFFIC NOISE POLICY

NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

TRAFFIC NOISE POLICY

Effective Date: October 6, 2016

Noise Policy Committee:

Glenn Mumford, PE .....Roadway Design Unit
Drew Joyner, PE.....Human Environment Section
Brian Hanks, PE.....Structures Management Unit
Daniel Keel, PE.....Division of Highways
Mike Mills, PE.....Division Engineer
Pat Ivey, PE.....Division Engineer
Greg Smith, PE.....Human Environment Section

Sponsors:

Clarence Coleman, PE .....Federal Highway Administration
Felix Davila, PE.....Federal Highway Administration
Edward L. Curran.....Board of Transportation

APPROVED BY:

10-6-16
Date of Approval

John F. Sullivan, III, PE, Division Administrator
Federal Highway Administration

10.6.16
Date of Approval

Nicholas J. Tennyson
Secretary of Transportation

10-5-16
Date of Approval

Edward L. Curran, Chairman
Board of Transportation

Person Responsible
for Policy:

Traffic Noise & Air Quality Supervisor
Human Environment Section
1598 Mail Service Center
Raleigh, North Carolina 27699-1598
(919) 707-6087

DEFINITIONS

a) Decibel (dB) - The logarithmic unit for measuring sound pressure levels. For traffic noise measurements, decibels are most commonly reported in terms of the A-weighing frequency scale, which best includes the frequencies to which human hearing is typically most sensitive and is denoted by the abbreviation dB(A).

b) Leq – The equivalent steady -state sound level which, in a defined period of time, contains the same amount of acoustic energy as a time-varying sound level during the same period of time.

c) Receptor – Any location that receives traffic noise.

d) Impacted Receptor – A receptor for which the predicted hourly equivalent traffic noise level 1) meets or exceeds the approach criteria value found in Table 1 of this policy or 2) exceeds the existing ambient noise level by 10 dB(A) or more.

e) Benefited Receptor - All receptors, both impacted and non-impacted, that receive a noise level reduction of 5 dB(A) or more through placement of a noise abatement measure.

f) Noise Abatement Measure – Any method used to reduce traffic noise levels, such as noise walls and earthen berms.

g) Worst Noise Hour – The hour within a day in which the highest magnitude hourly equivalent sound level occurs. The worst traffic noise hour typically occurs when traffic is flowing freely at a high volume relative to the peak traffic hour volume, with a high percentage of trucks.

h) Practicable – Available and capable of being done after taking into consideration cost, existing technology, and logistics in light of overall project purposes.

INTRODUCTION

This document represents the North Carolina Department of Transportation (hereinafter NCDOT) policy on highway traffic noise and construction noise and describes the implementation of the requirements of the Federal Highway Administration (hereinafter FHWA) Noise Standard at 23 Code of Federal Regulations Part 772 (23 CFR 772) as they relate to federal-aid and select state-funded highway construction in North Carolina. This policy was developed by the NCDOT and reviewed and approved by the FHWA.

The North Carolina Department of Transportation Traffic Noise Manual and 23 CFR 772 are intended to be companion documents to this policy.

PURPOSE

This policy describes the NCDOT process that is used in determining traffic noise impacts and abatement measures and the equitable and cost-effective expenditure of public funds for noise abatement. Where the FHWA has given highway agencies flexibility in implementing the 23 CFR 772 standards, this policy describes the NCDOT approach to implementation.

APPLICABILITY

Projects with a Date of Public Knowledge on or after the effective date of this policy shall comply with the criteria of this policy.

Federal–Aid Projects

This policy applies to all "Type I" federal or federal-aid highway projects in the State of North Carolina, including federal projects that are administered by local public agencies. Therefore, this policy applies to any highway project that is funded with federal-aid highway funds or requires FHWA approval regardless of funding sources. NCDOT does not participate in nor fund Type II (retrofit) projects along existing transportation facilities. Noise analyses are not required for Type III projects. Each of these project types are defined below. This policy shall be applied uniformly and consistently to all Type I federal projects throughout North Carolina.

Type I Project

(a) The construction of a highway on new location; or,

(b) The physical alteration of an existing highway where there is either:
   (i) Substantial Horizontal Alteration. A project that halves the distance between the traffic noise source and the closest receptor between the existing condition to the future build condition; or,
   (ii) Substantial Vertical Alteration. A project that removes shielding, therefore exposing the line-of-sight between the receptor and the traffic noise source. This is done by either altering the vertical alignment of the highway or by altering the topography between the highway traffic noise source and the receptor; or,

(c) The addition of a through-traffic lane(s). This includes the addition of a through-traffic lane that functions as a HOV lane, High-Occupancy Toll (HOT) lane, bus lane, or truck climbing lane; or,

(d) The addition of an auxiliary lane, except for when the auxiliary lane is a turn lane; or,

(e) The addition or relocation of interchange lanes or ramps added to a quadrant to complete an existing partial interchange; or,

(f) Restriping existing pavement for the purpose of adding a through-traffic lane or an auxiliary lane; or,

(g) The addition of a new or substantial alteration of a weigh station, rest stop, ride-share lot or toll plaza.

(h) If a project is determined to be a Type I project under this definition then the entire project area as defined in the environmental document is a Type I project.

Type II Project.

A Federal or Federal-aid highway project for noise abatement on an existing highway. For a Type II project to be eligible for Federal-aid funding, the highway agency must develop and implement a Type II program in accordance with 23 CFR 772.7(e).

Type III Project

A Federal or Federal-aid highway project that does not meet the classifications of a Type I or Type II project. Type III projects do not require a noise analysis.

The highway traffic noise prediction requirements, noise analyses, noise abatement criteria, and requirements for informing local officials in 23 CFR 772 and this policy constitute the noise standards mandated by 23 U.S.C. 109(1). All federally-funded highway projects which are developed in conformance with this policy shall be deemed to be in accordance with the FHWA noise standards.

State-Funded Projects

Projects that are State funded do not use the federal project type designation for applicability.

This policy will apply to State funded projects located on a US or Interstate route that is full control of access where the project involves adding a through-traffic lane.

All other State-funded projects for which a State Environmental Assessment (EA) or State Environmental Impact Statement (EIS) is prepared will comply with the North Carolina Environmental Policy Act (SEPA) and the North Carolina Administrative Code. For these projects, noise barriers will be considered where practicable.

DATE OF PUBLIC KNOWLEDGE

The Date of Public Knowledge of the location and potential noise impacts of a proposed highway project is the approval date of the final environmental document, e.g., Categorical Exclusion (CE), State or Federal Finding of No Significant Impact (FONSI) or State or Federal Record of Decision (ROD).

NCDOT is not responsible for evaluating or implementing any noise barriers to protect developed lands that were not permitted before the Date of Public Knowledge.

The criterion for determining when undeveloped land is permitted for development is the approval date of a building permit for an individual lot or site. Approval of a development plat or any other development plan does not meet the permitted criteria.

NCDOT advocates use of local government authority to regulate land development, planning, design and construction in such a way that noise impacts are minimized.

TRAFFIC NOISE PREDICTION

All traffic noise analyses performed by or for NCDOT must utilize the most current version of the FHWA Traffic Noise Model (TNM®) or any other model determined by the FHWA to be consistent with the methodology of the TNM® model, pursuant to 23 CFR 772.9.

Average pavement type shall be used in the FHWA TNM® for future noise level prediction.

Noise contour lines may be used only for project alternative screening or for providing information to local officials for their land use planning efforts associated with undeveloped lands as per 23 CFR 772.17. Noise contours shall not be used for determining highway traffic noise impacts or assessing noise barriers.

Traffic characteristics that yield the worst noise hour equivalent traffic noise levels, expressed in Leq(h), for the Design Year shall be used in predicting noise levels and assessing noise impacts.

Traffic noise prediction must adhere to all direction contained in the NCDOT Traffic Noise Manual.

NOISE IMPACT DETERMINATION

Noise abatement measures for NCDOT highway projects must be considered when traffic noise impacts are created by either of the following two conditions:

(a) The predicted worst noise hour Leq(h) traffic noise levels for the Design Year approach (reach one decibel less than) or exceed the Noise Abatement Criteria (NAC) contained in 23 CFR 772 and in Table 1 of this policy, OR

(b) The predicted worst noise hour Leq(h) traffic noise levels for the Design Year substantially exceed existing noise by 10 dB(A) or more.

A receptor is a discrete or representative location within a noise sensitive area(s) for any of the land uses listed in Table 1. For multifamily dwellings, each residence shall be counted as one receptor when determining impacted and benefited receptors. Non-residential receptors shall be represented by Equivalent Receptors calculated according to direction contained in the NCDOT Traffic Noise Manual.

Primary consideration shall be given to exterior areas where frequent human use occurs in the determination of traffic noise impacts.

A traffic noise analysis shall be completed for each project alternative under detailed study and for all receptors and Equivalent Receptors defined to represent land use activities A, B, C, D, and E listed in Table 1 that are present in the study area. FHWA approval is required for designating a Category A Activity on federally-funded projects. Traffic noise analyses are not required for Activity Category F land uses. Noise predictions are required for Activity Category G land uses to the extent needed to develop estimated noise levels to provide to local officials for planning purposes.

Table 1

Noise Abatement Criteria

Hourly Equivalent A-Weighted Sound Level (decibels (dB(A))

Activity Category	Activity Criteria[1] Leq(h)[2]	Evaluation Location	Activity Description
A	57	Exterior	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.
B [3]	67	Exterior	Residential
C [3]	67	Exterior	Active sport areas, amphitheaters, auditoriums, campgrounds, cemeteries, daycare centers, hospitals, libraries, medical facilities, parks, picnic areas, places of worship, playgrounds, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, recreation areas, Section4(f) sites, schools, television studios, trails, and trail crossings
D	52	Interior	Auditoriums, day care centers, hospitals, libraries, medical facilities, places of worship, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, schools, and television studios
E [3]	72	Exterior	Hotels, motels, offices, restaurants/bars, and other developed lands, properties or activities not included in A-D or F
F	--	--	Agriculture, airports, bus yards, emergency services, industrial, logging maintenance facilities, manufacturing, mining, rail yards, retail facilities, shipyards, utilities (water resources, water treatment, electrical), and warehousing
G	--	--	Undeveloped lands that are not permitted

[1] The Leq(h) Activity Criteria values are for impact determination only, and are not design standards for noise abatement measures.

[2] The equivalent steady-state sound level which in a stated period of time contains the same acoustic energy as the time-varying sound level during the same time period, with Leq(h) being the hourly value of Leq.

[3] Includes undeveloped lands permitted for this activity category.

ANALYSIS OF NOISE ABATEMENT MEASURES

When traffic noise impacts are identified, noise abatement measures shall be considered and evaluated for feasibility for all impacted receptors and reasonableness for all benefited receptors. All of the following conditions must be met in order for noise abatement measures to be justified and incorporated into project design, as applicable. Failure to achieve any single element of feasibility or reasonableness will result in the noise abatement measure being deemed not feasible or not reasonable, whichever applies.

NCDOT will provide noise barriers for all possible impacted receptors that meet the feasibility and reasonableness criteria found in this policy. Noise barriers will not be extended solely to provide noise reduction for non-impacted receptors. Benefits for non-impacted receptors will only occur when they are incidental in noise barriers designed for impacted receptors.

Feasibility

The combination of acoustical and engineering factors considered in the evaluation of a noise barrier.

(a) Any receptor that receives a minimum noise level reduction of five dB(A) due to a noise barrier shall be considered a benefited receptor. Noise reduction of five dB(A) must be achieved for at least two impacted receptors.

(b) Engineering feasibility of noise barriers shall consider adverse impacts created by or upon property access, drainage, topography, utilities, safety, and maintenance requirements.

Reasonableness

The combination of social, economic, and environmental factors considered in the evaluation of a noise barrier.

(a) Property owners and tenants of all benefited receptors shall be solicited to obtain their preferences for or against a proposed noise barrier. No tenant ballots are distributed for vacant rental property. Points per ballot shall be distributed in the following weighted manner:

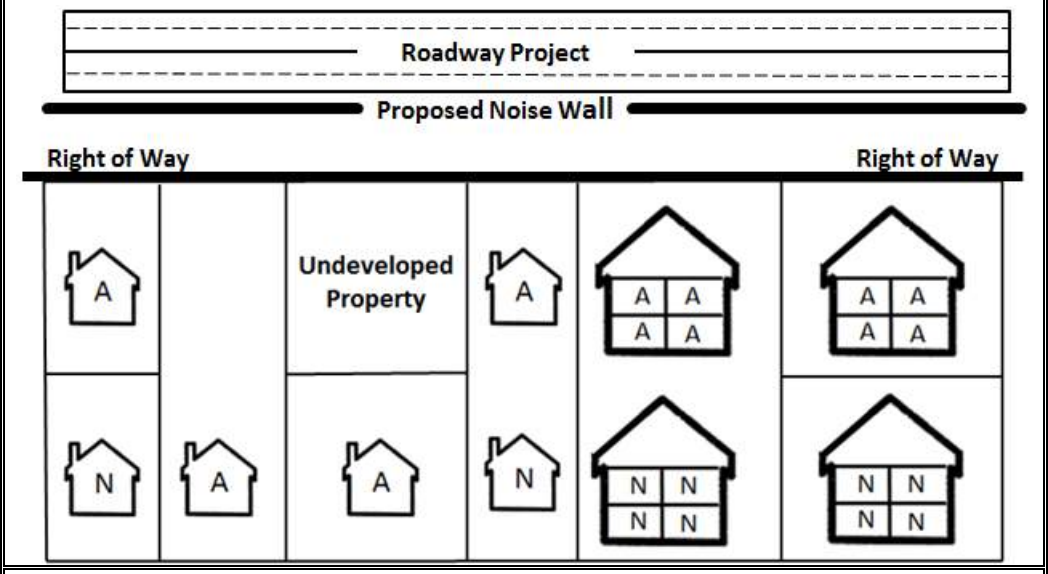
- 5 points/ballot for adjacent property owners who reside at property
- 4 points/ballot for adjacent property owners who rent property to others
- 3 points/ballot for all non-adjacent property owners who reside at property
- 2 points/ballot for all non-adjacent property owners who rent property to others
- 1 point/ballot vote for all tenants of rental property

Adjacent Receptor is a benefited receptor that 1) represents a property that abuts the highway right of way or 2) has no benefited receptor between it and the highway. Where multiple buildings containing benefited receptors are on the same property, such as an apartment or condominium complex, only the building closest to the highway is an adjacent receptor. Adjacent receptors will most often, but not always, be part of the front row of benefited receptors. Figure 1 provides graphic examples of Adjacent Receptors.

Owners of multi-unit rental locations will receive the applicable number of owner points for each individual benefited receptor (rental unit) owned.

Figure 1

Examples of Adjacent Receptors



A = Adjacent Receptor N = Non-Adjacent Receptor
Undeveloped Property = Vacant property for which no building permit has been issued and is not a park or recreation area

If 50% or greater of all possible voting points from benefited receptors for each noise barrier are received on the first solicitation, a simple majority of voting points cast will be used to determine if the proposed noise barrier will be constructed.

If less than 50% of all possible points for each noise barrier are received on the first solicitation, a second solicitation will be sent to benefited receptors who did not respond to the first solicitation.

If a second solicitation is conducted and 50% or greater of all possible voting points for each noise barrier are received after the second solicitation, a simple majority of voting points cast will be used to determine whether or not the proposed noise barrier will be constructed.

If less than 50% of total possible points for a noise barrier are received after the second solicitation, the noise barrier will not be constructed.

Noise barriers will be constructed in the case of a tie (equal number of points for and against a noise barrier).

All balloting soliciting the viewpoints of benefited property owners and applicable residents/tenants that occurs after the effective date of this policy, regardless of the Date of Public Knowledge, shall comply with the criteria of this policy.

(b) The allowable quantities for noise barriers per benefited receptor, with allowances for incremental increases based upon existing and predicted noise levels of all impacted receptors within each noise study area, are shown in Table 2.

For the purpose of calculating the incremental increase, the Noise Abatement Criteria (NAC) values for Activity Categories A, B, C, D, and E, as shown in Table 1, are to be used and not the NCDOT "approach" values used in traffic noise impact determinations.

Table 2

Allowable Noise Barrier Base Quantities

Maximum Allowable Base Quantity	Noise Level Consideration	Noise Wall	Earthen Berm
		1,500 ft^2	4,200 yd^3
Average dB(A) Increase Between Existing and Future Build for All Impacted Receptors	< 5 dB(A)	+ 0 ft^2	+ 0 yd^3
	5-10 dB(A)	+ 500 ft^2	+ 1,400 yd^3
	> 10 dB(A)	+ 1,000 ft^2	+ 2,800 yd^3
Average Exposure to Absolute Noise Levels for All Impacted Receptors	< 5 dB(A) Over NAC Activity Category	+ 0 ft2	+ 0 yd^3
	5-10 dB(A) Over NAC Activity Category	+ 500 ft^2	+ 1,400 yd^3
	> 10 dB(A) Over NAC Activity Category	+ 1,000 ft^2	+ 2,800 yd^3

(c) A noise reduction design goal of at least 7 dB(A) must be evaluated for all benefited receptors. At least one benefited receptor must achieve the noise reduction design goal of 7 dB(A) to indicate the proposed noise barrier effectively reduces traffic noise.

Other Considerations

Prior to CE approval or issuance of a FONSI or ROD, NCDOT shall identify in all applicable environmental documents:

(a) Noise barriers that are feasible and reasonable,

(b) Noise impacts for which no noise barrier appears to be feasible and reasonable;

(c) Locations where noise impacts will occur, where noise barriers are feasible and reasonable, and the locations that have no feasible and reasonable noise barriers.

(d) Whether it is “likely” or “unlikely” that noise barriers will be installed for each noise sensitive area identified. "Likely" does not mean a firm commitment. The final decision on the installation of noise barriers shall be made upon completion of the project design, the public involvement process, compliance with the NCDOT Policy, and FHWA approval.

Third Party Participation

(a) Third party funding of noise barriers cannot be used to make up the difference between the reasonable quantity allowance and the actual quantity of noise barriers. Third party funding is allowed only by local, state and federal government agencies, and can only be used to pay for additional features such as landscaping and aesthetic treatments for noise barriers that meet all feasible and reasonable criteria previously detailed in this policy. Private parties may freely enter into agreements with government agencies to develop noise barrier enhancements; however, all funding for enhancements paid to NCDOT must come from government agencies

(b) Traditional highway construction resources pay for required noise barriers. Should a local government request that materials be used that are more costly than the standard materials proposed by NCDOT, the requesting entity must assume 100% of the actual additional construction cost.

(c) If a local government insists on the provision of a noise barrier deemed not reasonable by NCDOT, a noise barrier may be installed provided the local government assumes 100% of the costs and obtains an encroachment permit from NCDOT to perform the work. These costs include, but are not limited to, preliminary and final engineering, actual construction and all related maintenance. In addition, local governments must ensure that NCDOT's material, design and construction specifications are met. The local government must also assume 100% of the liability associated with the measure and hold harmless the NCDOT.

(d) For (b) and (c) above, the settlement agreement shall be signed before third party noise barrier design begins and payment shall be made to NCDOT in accordance with N.C.G.S. 136-66.3(e).

ARCHITECTURAL TREATMENT OF NOISE WALLS

The standard noise wall architectural treatment consists of:

(a) Concrete columns; Steel piles may be used when necessary to address site conditions adverse to the use of concrete columns;

(b) Precast concrete panels textured on both sides;

(c) No texture on the uppermost foot of each wall segment;

(d) A single color of stain in brown or gray tones applied to both sides of textured panels;

(e) No stain applied to the uppermost foot of each wall segment and the concrete columns.

All enhancements to this standard noise wall must be paid for in accordance with Third Party Participation provisions in this policy.

NCDOT Division Engineers are responsible for determining noise wall textures and colors in their respective Divisions.

PUBLIC INVOLVEMENT

Communication with the community regarding noise impacts and possible noise abatement shall occur at the start of the noise study process and continue throughout the development of the project. NCDOT will communicate with citizens to present information on the nature of highway traffic noise and discuss the effects of noise abatement and how public preferences for noise abatement is solicited via a balloting process.

Noise study areas showing "likely" noise barriers and/or proposed locations of any "recommended" noise barriers will be presented and discussed when holding Public Hearings and Public Meetings. Likely noise barriers are based on preliminary design traffic noise analyses and are described in environmental documents. Recommended noise barriers are based on final design noise analyses and are usually identified after the environmental document is completed. Property owners and tenants who are being balloted for a recommended noise barrier will be provided a visual of the noise barrier location prior to their casting a ballot.

COORDINATION WITH LOCAL OFFICIALS

NCDOT will provide all traffic noise analyses to local government officials within whose jurisdiction a highway project is proposed as early in the project planning process as possible to protect future development from becoming incompatible with traffic noise levels. Specifically, environmental documents and design noise reports will contain information identifying areas that may be impacted by traffic noise, predicted noise level contour information, the best estimation of future noise levels for developed and undeveloped lands or properties in the immediate vicinity of the project and other appropriate design information. If requested, NCDOT will assist local officials with coordination and distribution of this information to residents, property owners and developers. NCDOT will provide information to assist local jurisdictions in the development of local noise controls, when requested. NCDOT strongly advocates the planning, design and construction of noise-compatible development and encourage its practice among planners, building officials, developers and others.

CONSTRUCTION NOISE

To minimize the impacts of construction noise on the public, NCDOT shall:

(a) Identify land uses or activities that may be affected by noise from construction of the project.

(b) Determine the measures that are needed in the plans and specifications to minimize or eliminate adverse construction noise impacts to the community. This determination shall consider the benefits achieved and the overall adverse social, economic, and environmental effects and costs of the abatement measures.

(c) Consider construction techniques and scheduling to reduce construction noise impacts to nearby receptors and incorporate the needed abatement measures in the project plans and specifications.

FEDERAL PARTICIPATION

The costs of noise barriers may be included in federal-aid participating project costs with the federal share being the same as that for the system on which the project is located when:

(a) Traffic noise impacts have been identified; and

(b) Noise barriers have been determined to be feasible and reasonable pursuant to 23 CFR 772 and this policy.

REVIEW OF POLICY

This policy shall be reviewed by the NCDOT Board of Transportation at least every five years.