TRAFFIC NOISE ANALYSIS
VOLUME I

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
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:

North Carolina Department of Transportation
North Carolina Turnpike Authority

Prepared By:

H.W. Lochner, Inc.

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May, 2015

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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) have been developed and investigated which consist of various portions of the Orange, Lilac, Purple, Blue, Red, Green, Brown, Mint, Tan and Teal corridors.

This Traffic Noise Analysis was completed using the NCDOT Traffic Noise Abatement Policy, July 13, 2011 (Appendix 6) and the NCDOT Traffic Noise Analysis and Abatement Manual, July 13, 2011.

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 (2012) and design year (2035) were predicted using the FHWA Traffic Noise Model, Version 2.5.

Along the seventeen DSAs 4189 residential receptors, six schools, two child care facilities, eight recreational facilities, one medical facility, sixteen churches and ten commercial receptors were identified. Receptors that experience only Noise Abatement Criteria impacts range from 377 to 618 receptors along the seventeen different alternates, receptors that experience only a substantial increase impacts range from 61 to 129 receptors, and 15 to 57 receptors will experience both types of impact. Noise impacts are generally located at most properties which are located adjacent to the proposed right of way.

Noise abatement in the form of traffic management, alteration of alignments, buffer zones and building insulation was considered and found not to be feasible. Noise barriers were studied in 91 locations. Across all DSAs, one barrier was found to be not feasible and 44 barriers were found to be feasible but not reasonable. Those 45 barriers are not likely to be recommended for further consideration. The other 46 barriers were preliminarily found to be both feasible and reasonable and are likely to be recommended for further consideration, if the corridor which they are located adjacent to is selected for further consideration. DSAs 1, 2 and 5 have 22 likely barriers, DSAs 3, 4, 13, 14, and 15 have 23 likely barriers, DSAs 6 and 7 have 20 likely barriers, DSAs 8, 9 and 12 have 16 likely barriers, DSAs 10 and 11 have 17 likely barriers and DSAs 16 and 17 have 24 likely barriers. A final determination of noise barrier feasibility and reasonableness will be made upon completion of project design and public involvement process.

Detailed Study Alternative Components

DSA	Impacts	Likely Barriers
1	540	1,2,3,6,7,11,16,17,19,20,21,22,24,25,26,27A,33,64,65,66,107,108
2	539	1,2,3,6,7,11,16,17,19,20,21,22,24,25,26,27A,33,64,65,66,107,108
3	565	1,2,3,6,7,11,16,17,19,20,21,22,24,25,26,27A,33,64,65,66,103,107,108
4	551	1,2,3,6,7,11,16,17,19,20,21,22,24,25,26,27A,33,64,65,66,100,107,108
5	541	1,2,3,6,7,11,16,17,19,20,21,22,24,25,26,27A,33,64,65,66,107,108
6	804	1,2,3,6,7,11,34,40,42,43,44,45,47,48,51,64,65,66,107,108
7	804	1,2,3,6,7,11,34,40,42,43,44,45,47,48,51,64,65,66,107,108
8	454	1,2,3,64,65,66,77,78,80,82,84,87,92,94,107,108
9	454	1,2,3,64,65,66,77,78,80,82,84,87,92,94,107,108
10	480	1,2,3,64,65,66,77,78,80,82,84,87,92,94,103,107,108
11	510	1,2,3,64,65,66,77,78,80,82,84,87,92,94,100,107,108
12	456	1,2,3,64,65,66,77,78,80,82,84,87,92,94,107,108
13	598	1,2,3,6,7,11,16,17,19,20,64,65,66,73,74,75,76,77,78,80,82,107,108
14	597	1,2,3,6,7,11,16,17,19,20,64,65,66,73,74,75,76,77,78,80,82,107,108
15	624	1,2,3,6,7,11,16,17,19,20,64,65,66,73,74,75,76,77,78,80,82,107,108
16	610	1,2,3,6,7,11,16,17,19,20,64,65,66,73,74,75,76,77,78,80,82,100,107,108
17	600	1,2,3,6,7,11,16,17,19,20,64,65,66,73,74,75,76,77,78,80,82,103,107,108

Since the project area is predominately residential and commercial, construction is not expected to be disruptive for typical daytime, mid-week activities. Evening or weekend construction should be coordinated with the churches, schools and child care facilities along the project to avoid interrupting activity at any locations.

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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) have been developed and investigated which consist of various combinations and portions of the Orange, Lilac, Purple, Blue, Red, Green, Brown, Mint, Tan and Teal corridors. See Exhibit 1 for a project location map which shows the limits of each Corridor. Each DSA will be a 6 lane fully-controlled access expressway, with a design speed of 70mph.

This Traffic Noise Analysis is the first study of traffic noise in the project area and did not reference any other studies.

Table 1: Detailed Study Alternative (DSA) Components

DSA	Corridors
1	Orange to Green
2	Orange to Green to Mint Green to Green
3	Orange to Brown (South) to Tan (North) to Green
4	Orange to Brown to Green
5	Orange to Green to Teal to Brown to Green
6	Orange to Red to Green
7	Orange to Red to Mint Green to Green
8	Orange to Purple-Blue-Lilac to Green
9	Orange to Purple-Blue-Lilac to Green to Mint Green to Green
10	Orange to Purple-Blue-Lilac to Brown (South) to Tan (North) to Green
11	Orange to Purple-Blue-Lilac to Brown to Green
12	Orange to Purple-Blue-Lilac to Green to Teal to Brown to Green
13	Orange to Lilac (at Sauls Road) to Green
14	Orange to Lilac (at Sauls Road) to Green to Mint Green to Green
15	Orange to Lilac (at Sauls Road) to Brown (South) to Tan (North) to Green
16	Orange to Lilac (at Sauls Road) to Brown to Green
17	Orange to Lilac (at Sauls Road) to Green to Teal to Brown to Green

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 (2035) traffic volumes, 454 to 804 receptors will be impacted by traffic noise by the project's DSAs. Base year (2012) noise levels range from 40 dB(A) to 72 dB(A), no build noise levels for the design year (2035) range from 40 dB(A) to 75 dB(A) and build noise levels for the design year (2035) range from 45 dB(A) to 79 dB(A).

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 2.

Table 2: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 Abatement Policy, July 13, 2011 (Appendix 6).

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 3 represent the noise level at which noise abatement must be considered. The NAC apply to exterior areas of frequent human use and where lowered noise levels are of benefit. 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 3. If, for a given activity, the design year noise levels "approach or exceed the NAC", then the activity is impacted and a variety of abatement measures must be considered. The North Carolina Department of Transportation has defined approach as one decibel less than the NAC.

Table 3: 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 Abatement Policy*, July 13, 2011

[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.

The Federal guidelines provide a second criterion for assessing impact. For some locations, a project may impose a large increase in noise levels over base year levels, although the levels may not reach the NAC. The NCDOT Traffic Noise Abatement Policy defines a sliding scale of increases over base year as a "substantial increase" that justifies consideration of noise abatement measures. The substantial noise level increase criteria are included in Table 4.

Table 4: Substantial Noise Level Increase Criteria

Base year Noise Level[1] Leq(h)	Predicted Design-Year Noise Level Increase[2] Leq(h)
50 or less dB(A)	15 or more dB(A)
51 dB(A)	14 or more dB(A)
52 dB(A)	13 or more dB(A)
53 dB(A)	12 or more dB(A)
54 dB(A)	11 or more dB(A)
55 or more dB(A)	10 or more dB(A)

Source: NCDOT Traffic Noise Abatement Policy, July 13, 2011

[1]Loudest hourly equivalent noise level from the combination of natural and mechanical sources and human activity usually present in a particular area.

[2]Predicted hourly equivalent design year traffic noise level minus the base year 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.

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 5. 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 5: 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 all of the design year (2035) DHV volumes will operate at LOS C or better. Therefore, the DHV volumes were used in the analysis. A design speed of 70 mph was used in the modeling. See Appendix 5 for the traffic data used in this study.

Noise levels in this study have been determined for base year (2012) conditions and the design year (2035) build conditions.

6 Impact Assessment

The initial task in determining noise impacts is to identify activity areas along the project corridors that are sensitive to noise. Impact assessments have been performed for 4236 receptors within the project corridors which represent 4189 residential receptors, ten commercial receptors, six schools, two child care facilities, eight recreational facilities, one medical facility and sixteen churches. These areas are shown in Exhibits 2 through 12. 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.

Throughout the project there are fifteen Historic Properties that were included in the study. These properties consist of eight historic houses, two farms, two schools, one store, one council house 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. Five (5) of the properties are listed on the National Register of Historic Places and the others are eligible for listings on the National Register of Historic Places. The historic residences are represented by receptors R1440, R1749, R2313, R2316, R2318, R2319, R2321, R1440 and R2322. The two farms are represented by receptors R0943 and R2314. The two schools are represented by receptors R0543 and R1423. The store is represented by receptor R2320. The council house is represented by receptor R2317. The country club is represented by receptor R2315. All Historic Properties in the study area can be found in the following table.

Table 6: Summary of Historic Properties

Property Name	Survey Site Number	Eligibility Criteria	Listed?	Corridor	Receptor Number	Land Use	Existing Noise Level	Build Noise Level	Noise Level Increase	Substantial Increase	Barrier Proposed	Barrier Likely?
John Strain House	22	C	Yes	Orange	R1749	B	57	63	6	NO	15	NO
Meadowbrook Country Club	188	A	Yes	Red	R2315	C	55	**66**	11	**YES**	51	YES
				Lilac	R2315	C	55	**66**	11	**YES**	82	YES
				Orange	R2315	C	55	65	10	**YES**	33	YES
Utley-Council House	310	C	Yes	Purple	R2317	C	56	58	2	NO	NA	NA
Dr. Nathan M. Blalock House	332	C	Yes	Blue	R2319	B	54	60	6	NO	NA	NA
Wayland E. Poole House	267	C	Yes	Red	R2321	B	57	61	4	NO	NA	NA
Panther Branch School	56	A	No	Orange	R0543	D	40	43	3	NO	23	NO
				Lilac	R0543	D	40	40	0	NO	NA	NA
William & Lillie Willis House and Store	221	A, C	No	Red	R2313	B	63	**66**	3	NO	NA	NA
Bryan Farms Historic District: C. P. Bryan House, Rand Bryan House, George Bryan Jr. House	247-250	A	No	Red	R2314	C	52	59	7	NO	NA	NA
Yeargan House	259	C	No	Red	R2316	B	49	57	8	NO	NA	NA
				Lilac	R2316	B	49	59	10	NO	NA	NA
Grady Rowland House	325	C	No	Blue	R2318	B	55	61	6	NO	NA	NA
Britt's Store	304	A, C	No	Blue	R2320	C	65	63	-2	NO	NA	NA
				Lilac	R2320	C	65	63	-2	NO	NA	NA
Mount Auburn School	113	A, C	No	Red	R1423	D	40	47	7	NO	48	YES
Penny House	132	C	No	Teal	R1440	B	57	62	5	NO	NA	NA
				Red	R1440	B	57	56	-1	NO	NA	NA
W. A. Gowers Farm	96	A, C	No	Brown	R0943	B	57	60	3	NO	NA	NA
Baucom-Stallings House	114	C	No	Teal	R2322	B	51	55	4	NO	NA	NA
				Tan	No Receptor Remains after Tan Corridor Implementation							
Dr. L. J. Faulhaber Farm	210	A	No	Red	No Receptor Remains after Red Corridor Implementation							
Thomas Store	312	A, C	No	Purple	Not Nearby	NA	NA	NA	NA	NA	NA	NA
Jones-Johnson Farm	317	A, C	No	Purple	Not Nearby	NA	NA	NA	NA	NA	NA	NA
J. Beale Johnson House	316	C	No	Purple	Not Nearby	NA	NA	NA	NA	NA	NA	NA
Jones-Ellington House	331	C	No	Blue	Not Nearby	NA	NA	NA	NA	NA	NA	NA
Joseph M. Blalock Farm	329	A	No	Blue	Not Nearby	NA	NA	NA	NA	NA	NA	NA
Weathers Store	334	A, C	No	Blue	Not Nearby	NA	NA	NA	NA	NA	NA	NA
Gower-Johnson House	99	C	No	Brown	Not Nearby	NA	NA	NA	NA	NA	NA	NA

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

Traffic noise abatement is warranted and 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 3, found on page 4 of this report.
- The predicted traffic noise levels for the design year substantially exceed base year (2012) noise levels as defined in Table 4, found on page 5 of this report.

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 (2012) and design year (2035).

The results of the noise analysis are summarized in Tables 7a, 7b and 7c which include the numbers of various land uses studied, the number of noise impacts for those land uses and the range of noise levels associated with each DSA. The noise prediction results are detailed for each noise sensitive area in Appendix 3. 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 7a: Land Use Summary

Land Use Type	DSA 1	DSA 2	DSA 3	DSA 4	DSA 5	DSA 6	DSA 7	DSA 8	DSA 9	DSA 10	DSA 11	DSA 12	DSA 13	DSA 14	DSA 15	DSA 16	DSA 17
Residences	1930	1948	1964	1933	1945	2515	2531	1674	1692	1714	1966	1695	2131	2149	2171	2140	2152
Schools	4	4	4	4	4	2	2	0	0	0	3	0	4	4	4	4	4
Child Care	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0
Churches	8	8	9	9	8	8	8	8	8	9	9	8	9	9	10	10	9
Recreational	4	4	4	4	4	5	5	5	5	5	6	5	5	5	5	5	5
Commercial	4	4	4	4	4	5	5	8	8	8	8	8	6	6	6	6	6
Medical	0	0	0	0	0	0	0	1	1	1	1	1	0	0	0	0	0
Total Receivers	1950	1968	1985	1954	1965	2536	2552	1696	1714	1737	1993	1717	2155	2173	2196	2165	2176

Table 7b: Impact Summary per Land Use

Land Use Type	Impact Type	DSA 1	DSA 2	DSA 3	DSA 4	DSA 5	DSA 6	DSA 7	DSA 8	DSA 9	DSA 10	DSA 11	DSA 12	DSA 13	DSA 14	DSA 15	DSA 16	DSA 17
Residence	NAC	95	95	97	97	95	129	129	61	61	63	67	61	103	103	105	105	103
	Inc	405	404	427	413	406	615	615	376	375	399	411	378	447	446	470	456	449
	Both	39	39	40	40	39	57	57	15	15	16	30	15	46	46	47	47	46
School	NAC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Inc	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Both	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Child Care	NAC	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
	Inc	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Both	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Church	NAC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Inc	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Both	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Recreational	NAC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Inc	1	1	1	1	1	2	2	2	2	2	2	2	2	2	2	2	2
	Both	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Medical	NAC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Inc	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Both	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Commercial	NAC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Inc	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0
	Both	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Overall	NAC	95	95	97	97	95	129	129	61	62	63	67	61	103	103	105	105	103
	Inc	406	405	428	414	407	618	618	378	377	401	413	380	449	448	472	458	451
	Both	39	39	40	40	39	57	57	15	15	16	30	15	46	46	47	47	46
Totals		**540**	**539**	**565**	**551**	**541**	**804**	**804**	**454**	**454**	**480**	**510**	**456**	**598**	**597**	**624**	**610**	**600**

NAC – Only impacts caused by levels that approach or exceed the Noise Abatement Criteria

Inc – Only impacts caused by increases which are above the substantial noise level increase criteria

Both – Impacts caused by both NAC and Inc

Table 7c: Existing and Proposed Noise Level Summary

	DSA 1	DSA 2	DSA 3	DSA 4	DSA 5	DSA 6	DSA 7	DSA 8	DSA 9	DSA 10	DSA 11	DSA 12	DSA 13	DSA 14	DSA 15	DSA 16	DSA 17
Minimum Noise Level Existing (2012)	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40
Maximum Noise Level Existing (2012)	72	72	72	72	72	72	72	72	72	72	72	72	72	72	72	72	72
Minimum Noise Level Build (2035)	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45
Maximum Noise Level Build (2035)	77	77	77	77	77	79	79	77	77	77	77	77	77	77	77	77	77
Minimum Increase	-3	-3	-3	-3	-3	-6	-6	-6	-6	-6	-6	-6	-3	-3	-3	-3	-3
Maximum Increase	30	30	30	30	30	32	32	28	28	28	28	28	30	30	30	30	30

The results of the traffic noise analysis indicate that the proposed Complete 540 - Triangle Expressway Southeast Extension project will increase noise levels at noise sensitive receptors in the immediate vicinity

of the proposed facility. The proposed improvements will result in design year build noise levels which range from 45 to 79 dB(A), a -6 dB(A) decrease to a 32 dB(A) increase over existing noise levels. A decrease is possible in some areas where the proposed improvements would move traffic farther from the receptor.

For reference purposes, an increase of three decibels is considered barely perceivable, and an increase of ten decibels is considered to double the loudness.

A comparison of the design year (2035) build noise levels (Appendix 3) with the applicable NAC, as shown in Table 3, reveals that depending on the alternate 377 to 618 receptors will receive traffic noise levels which approach or exceed the NAC. A comparison of the design year build noise level increases with the applicable criteria, as shown in Table 4, reveals that depending on the alternate 61 to 129 receptors will experience design year build noise levels that will be substantially higher than base year levels. From 15 to 57 receptors will experience both NAC impacts as well as a substantial noise increase. See Exhibit 2 through 12 for a map of specific receptor locations. See Appendix 3 for an Impact Analysis Table, which shows the specific receivers based on the different segments. Table 6 shows a summary of the noise level impacts based on the different alternates.

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 was not needed.

Noise Barriers

The only remaining feasible 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 one impacted receptor 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 impacted receptor, 2500 square feet (ft^2) of barrier is allowed plus an additional 35 square feet for each dB(A) increase over the base year noise level. In the analysis, each residential unit is considered a single residential property. To remain in compliance with Federal regulations, the allowance analysis must also consider receptors which are not impacted but which would also benefit from the construction of a noise barrier. 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 first-row 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 of the impacted receptors.

The possibility of mitigating noise impacts for single, isolated impacted receptors was explored. Since most isolated impacts are located further than 50' from the right of way, a distance of 50' was selected as a best-case scenario. The rule-of-thumb that a barrier needs to extend along the right of way in each direction 4 times the distance between the proposed right of way and the receptor would result in a barrier being 400 feet long. The maximum allowance per benefited receptor is 2500 square feet which, with a barrier of 400 foot in length, would be exceeded if the barrier was over 6 feet in height. These isolated receptors are also not part of any nearby common noise environment so Quantity Average would not be able to be performed. It is therefore assumed that barriers to protect isolated impacted receptors are not reasonable due to the maximum allowance per benefited receptor being lower than any barrier that would provide the required reduction in noise levels.

Noise barriers were investigated at 114 locations along the 17 alternates. 23 of those locations were eliminated during the study as a result of geometric changes, alignment shifts and the elimination of the Plum and the Red (Modified) corridors. Table 8 shows a summary of the barriers as they pertain to the different DSAs.

Table 8: Noise Barrier Summary

DSA	Investigated Barriers	# of Barriers	Likely Barriers	# of Likely Barriers
1	1-28,30-33,64-66,107-111,113	42	1,2,3,6,7,11,16,17,19,20,21,22,24,25,26,27A,33,64,65,66,107,108	22
2	1-28,30-33,64-66,107-111,113	42	1,2,3,6,7,11,16,17,19,20,21,22,24,25,26,27A,33,64,65,66,107,108	22
3	1-28,30-33,64-66,102-104,107-111,113	45	1,2,3,6,7,11,16,17,19,20,21,22,24,25,26,27A,33,64,65,66,103,107,108	23
4	1-28,30-33,64-66,100-101,107-110,111,113	44	1,2,3,6,7,11,16,17,19,20,21,22,24,25,26,27A,33,64,65,66,100,107,108	23
5	1-28,30-33,64-66,105-111,113	44	1,2,3,6,7,11,16,17,19,20,21,22,24,25,26,27A,33,64,65,66,107,108	22
6	1-12,34-48,51-52,64-66,107-111,113	39	1,2,3,6,7,11,34,40,42,43,44,45,47,48,51,64,65,66,107,108	20
7	1-12,34-48,51-52,64-66,107-111,113	39	1,2,3,6,7,11,34,40,42,43,44,45,47,48,51,64,65,66,107,108	20
8	1-5,64-66,77-82,83-90,92-95,97-99,107-110	34	1,2,3,64,65,66,77,78,80,82,84,87,92,94,107,108	16
9	1-5,64-66,77-82,83-90,92-95,97-99,107-110	34	1,2,3,64,65,66,77,78,80,82,84,87,92,94,107,108	16
10	1-5,64-66,77-82,83-90,92-95,97-99,102-104,107-110	37	1,2,3,64,65,66,77,78,80,82,84,87,92,94,103,107,108	17
11	1-5,64-66,77-82,83-90,92-95,97-99,100-101,107-110	36	1,2,3,64,65,66,77,78,80,82,84,87,92,94,100,107,108	17
12	1-5,64-66,77-82,83-90,92-95,97-99,105-106,107-110	36	1,2,3,64,65,66,77,78,80,82,84,87,92,94,107,108	16
13	1-20,73-82,64-66,107-111,113	39	1,2,3,6,7,11,16,17,19,20,64,65,66,73,74,75,76,77,78,80,82,107,108	23
14	1-20,73-82,64-66,107-111,113	39	1,2,3,6,7,11,16,17,19,20,64,65,66,73,74,75,76,77,78,80,82,107,108	23
15	1-20,73-82,64-66,105-111,113	41	1,2,3,6,7,11,16,17,19,20,64,65,66,73,74,75,76,77,78,80,82,107,108	23
16	1-20,73-82,64-66,100-101,107-111,113	41	1,2,3,6,7,11,16,17,19,20,64,65,66,73,74,75,76,77,78,80,82,100,107, 108	24
17	1-20,73-82,64-66,102-104,107-111,113	42	1,2,3,6,7,11,16,17,19,20,64,65,66,73,74,75,76,77,78,80,82,103,107, 108	24

For each barrier investigated, multiple heights, lengths and locations were studied. Appendix 4 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 13 shows the locations of the 91 barrier locations that were investigated out of the original 114 potential barrier locations.

Barrier 1

A noise barrier was investigated to mitigate the predicted traffic noise level impact to 22 impacted residential receptors (R1605, R1606A, R1606B, R54B, R54D, R54F, R54H, R55B, R55C, R55E, R55F, R55I, R55L, R55, R55W, R55X, R1705F, R1707C, R1707F, R1707L, R1708C, R1708I, R1710C) along the Orange Corridor. Barrier 1 is 3600 ft long and is 16 ft high and would provide a 3 dB(A) to 8 dB(A)

reduction at the impacted receptors, with thirty five front row receptors achieving at least 7 dB(A) reduction. The maximum wall allowance per benefited receptor for this barrier is 3,041 ft^2 and the wall would be 420 ft^2 per benefited receptor which is less than the allowance. This barrier is preliminarily considered feasible and reasonable and is recommended for further consideration.

Receptor 1705 is a recreational area (community pool area) behind barrier 1. It appears that the pool area will be shared by the nearby 144 residential units during daylight hours every day of the week for four months of the year. The pool has an area of 675 square feet which translates to a maximum bather load of approximately 45 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 90.

$$(90/3) \times (12/24) \times (4/12) = 5$$

This equates to 5 residential equivalents for receptor 1705, represented by 5 receptors in a nodal array. Each receptor in the array will be treated as 1 residential equivalent in the barrier analysis.

See Exhibit 13.1 for a location map of this barrier and Appendix 4 for the noise barrier analysis details.

Barrier 2

A noise barrier was investigated to mitigate the predicted traffic noise level impact to 78 impacted residential receptors (R6B, R7B, R14B, R15A, R15B, R16A, R16B, R17A, R17B, R18A, R18B, R19A, R19B, R20A, R20B, R20C, R21A, R21B, R22A, R22B, R23A, R23B, R24A, R24B, R25A, R25B, R26, R27A, R27B, R28A, R28B, R29A, R29B, R30A, R30B, R31A, R31B, R32A, R32B, R33A, R33B, R39A, R39B, R40A, R40B, R41A, R41B, R41C, R42A, R42B, R43A, R43B, R44A, R44B, R45A, R45B, R46A, R46B, R47A, R47B, R48A, R48B, R56A, R56B, R56C, R57A, R57B, R58A, R58B, R58C, R1626, R1627A, R1627B, R1711A, R1711B, R1714B, R1715A, R1715B) along the Orange Corridor. Barrier 2 is 5200 ft long, 16 ft in height and would provide a 5 dB(A) to 11 dB(A) reduction in noise at the impacted receptors, with 35 front row receptors achieving at least 7 dB(A) reduction. The maximum wall allowance per benefited receptor for this barrier is 3,129 ft^2 and the wall would be 699 ft^2 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 13.1 and 13.2 for a location map of this barrier and Appendix 4 for the noise barrier analysis details.

Barrier 3

A noise barrier was investigated to mitigate the predicted traffic noise level impacts to 9 impacted residential receptors (R61A, R61B, R62A, R62B, R65A, R65B, R66A, R66B, R69B) along the Orange Corridor. Barrier 3 is 2600 ft long, with a height of 14 ft and would provide an 3 to 7 dB(A) reduction in

noise at the impacted receptors, with 4 front row receptors achieving at least 7 dB(A) reduction. The maximum wall allowance per benefited receptor for this barrier is 3,103 ft^2 and the wall would be 2,800 ft^2 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 13.2 for a location map of this barrier and Appendix 4 for the noise barrier analysis details.

Barrier 4

A noise barrier was investigated to mitigate the predicted traffic noise level impacts to two residential receptors (R111, R119A) along the Orange Corridor. Barrier 4 is 2589 ft long, with a height of 16 ft and would provide a 6 and 10 dB(A) reduction in noise at the impacted receptors, with 2 front row receptors achieving at least 7 dB(A) reduction. The maximum wall allowance per benefited receptor for this barrier is 2,780 ft^2 and the wall would be 5,919 ft^2 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 13.3 for a location map of this barrier and Appendix 4 for the noise barrier analysis details.

Barrier 5

A noise barrier was investigated to mitigate the predicted traffic noise level impacts to 4 impacted residential receptors (R138A, R138B, R138C, R139A) along the Orange Corridor. Barrier 5 is 1400 ft long, with a height of 16 ft and would provide a 6 dB(A) and 9 dB(A) reduction in noise at the impacted receptors, with 2 front row receptors achieving at least 7 dB(A) reduction. The maximum wall allowance per benefited receptor for this barrier is 3,025 ft^2 and the wall would be 3,734 ft^2 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 13.3 for a location map of this barrier and Appendix 4 for the noise barrier analysis details.

Barrier 6

A noise barrier was investigated to mitigate the predicted traffic noise level impacts to 16 impacted residential receptors (R161A, R161B, R164A, R167A, R167B, R168A, R168B, R169A, R169B, R170A, R170B, R171A, R171B, R172A, R172B, R173) along the Orange Corridor. Barrier 6 is 2000 ft long, with a height of 20 ft and would provide a 4 dB(A) to 11 dB(A) reduction in noise at the impacted receptors, with 8 front row receptors achieving at least 7 dB(A) reduction. The maximum wall allowance per benefited receptor for this barrier is 3,163 ft^2 and the wall would be 2,353 ft^2 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 13.4 for a location map of this barrier and Appendix 4 for the noise barrier analysis details.

Barrier 7

A noise barrier was investigated to mitigate the predicted traffic noise level impacts to 20 impacted residential receptors (R174A, R180A, R180B, R182A, R182B, R182C, R184, R186A, R186B, R187A, R187B, R188A, R188B, R1723A, R1723B, R1724A, R1724B, R1923, R1925B, R1925C) along the Orange Corridor. Barrier 7 is 2600 ft long, with a height of 16 ft and would provide a 1 dB(A) to 11 dB(A) reduction in noise at the impacted receptors, with 9 front row receptors achieving at least 7 dB(A) reduction. The maximum wall allowance per benefited receptor for this barrier is 3,153 ft^2 and the wall would be 1,733 ft^2 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 13.4 for a location map of this barrier and Appendix 4 for the noise barrier analysis details.

Barrier 8

A noise barrier was investigated to mitigate the predicted traffic noise level impacts to 10 impacted residential receptors (R195, R196, R197A, R197B, R1726, R1727, R1728, R1729, R1730, R1926) along the Orange Corridor. Barrier 8 is 2536 ft long, with a height of 16 ft and would provide a 4 dB(A) to 12 dB(A) reduction in noise at the impacted receptors, with 3 front row receptors achieving at least 7 dB(A) reduction.. The maximum wall allowance per benefited receptor for this barrier is 3,165 ft^2 and the wall would be 3,381 ft^2 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 13.5 for a location map of this barrier and Appendix 4 for the noise barrier analysis details.

Barrier 9

A noise barrier was investigated to mitigate the predicted traffic noise level impacts to 4 impacted residential receptors (R198A, R198B, R198C, R203) along the Orange Corridor. Barrier 9 is 1400 ft long, with a height of 20 ft and would provide a 1 d(B)A to 7 dB(A) reduction in noise at the impacted receptors, with one front row receptor achieving at least 7 dB(A) reduction. The maximum wall allowance per benefited receptor for this barrier is 3,121 ft^2 and the wall would be 28,002 ft^2 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 13.5 for a location map of this barrier and Appendix 4 for the noise barrier analysis details.

Barrier 10

A noise barrier was investigated to mitigate the predicted traffic noise level impacts to 5 impacted residential receptors (R214A, R214B, R214C, R216A, R216B) along the Orange Corridor. Barrier 10 is 1707 ft long, with a height of 12 ft and would provide a 2 to 7 dB(A) reduction in noise at the impacted receptors, with one front row receptor achieving at least 7 dB(A) reduction. The maximum wall allowance per benefited receptor for this barrier is 2,969 ft^2 and the wall would be 3,415 ft^2 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 13.6 for a location map of this barrier and Appendix 4 for the noise barrier analysis details.

Barrier 11

A noise barrier was investigated to mitigate the predicted traffic noise level impacts to 28 impacted residential receptors (R233, R234A, R234B, R234C, R235A, R235B, R236A, R237A, R237B, R237C, R238A, R238B, R238C, R239A, R239B, R239C, R240A, R240B, R241A, R241B, R242A, R242B, R256A, R256B, R1739B, R1741A, R1741B, R1742A) along the Orange Corridor. Barrier 11 is 2901 ft long, with a height of 24 ft and would provide a 3 to 16 dB(A) reduction in noise at the impacted receptors, with 15 front row receptors achieving at least 7 dB(A) reduction. The maximum wall allowance per benefited receptor for this barrier is 3,160 ft^2 and the wall would be 2,246 ft^2 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 13.7 for a location map of this barrier and Appendix 4 for the noise barrier analysis details.

Barrier 12

A noise barrier was investigated to mitigate the predicted traffic noise level impacts to 16 impacted residential receptors (R243, R244A, R244B, R245A, R245B, R246A, R246B, R247B, R248, R1733, R1734, R1737A, R2323A, R2323B, R2323C, R2323D) along the Orange Corridor. Barrier 12 is 2145 ft long, with a height of 20 ft and would provide a 1 to 12 dB(A) reduction in noise at the impacted receptors, with 7 front row receptors achieving at least 7 dB(A) reduction. The maximum wall allowance per benefited receptor for this barrier is 3,248 ft^2 and the wall would be 5,362 ft^2 per benefited receptor which is greater than the allowance.

Quantity-averaging with Barrier 11 was investigated. These barriers are on either side of the same section of 540 and are protecting communities that have the same characteristics. However, since Barrier 12 has a wall surface area per benefited receptor that is over two times the base quantity for reasonableness (2500 ft^2), quantity averaging is not appropriate.

This barrier is preliminarily considered feasible but not reasonable and is not recommended for further consideration. See Exhibit 13.7 for a location map of this barrier and Appendix 4 for the noise barrier analysis details.

Barrier 13

A noise barrier was investigated to mitigate the predicted traffic noise level impacts to 17 impacted residential receptors (R261A, R261B, R267B, R268B, R269, R270, R271A, R271B, R272, R273A, R273B, R279, R280, R1746A, R1746B, R1747, R1748) along the Orange Corridor. Barrier 13 is 3317 ft long, with a height of 20 ft and would provide a 2 to 12 dB(A) reduction in noise at the impacted receptors, with 7 front row receptors achieving at least 7 dB(A) reduction. The maximum wall allowance per benefited receptor for this barrier is 3,173 ft^2 and the wall would be 4,422 ft^2 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 13.8 for a location map of this barrier and Appendix 4 for the noise barrier analysis details.

Barrier 14

A noise barrier was investigated to mitigate the predicted traffic noise level impacts to 14 impacted residential receptors (R249, R250A, R250B, R253A, R253B, R274A, R274B, R274C, R277, R1744A, R1745A, R1745B, R1745C, R1745D) along the Orange Corridor. Barrier 14 is 2800 ft long, with a height of 20 ft and would provide a 4 to 10 dB(A) reduction in noise at the impacted receptors, with 6 front row receptors achieving at least a 7 dB(A) reduction. The maximum wall allowance per benefited receptor for this barrier is 3,150 ft^2 and the wall would be 4,000 ft^2 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 13.8 for a location map of this barrier and Appendix 4 for the noise barrier analysis details.

Barrier 15

A noise barrier was investigated to mitigate the predicted traffic noise level impacts to 2 impacted residential receptors (R289, R290) along the Orange Corridor. Barrier 15 is 2201 ft long, with a height of 14 ft and would provide a 5 and 7 dB(A) reduction in noise at the impacted receptors, with one front row receptor achieving at least a 7 dB(A) reduction. The maximum wall allowance per benefited receptor for this barrier is 3,078 ft^2 and the wall would be 15,404 ft^2 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 13.9 for a location map of this barrier and Appendix 4 for the noise barrier analysis details.

Barrier 16

A noise barrier was investigated to mitigate the predicted traffic noise level impacts to 14 impacted residential receptors (R283A, R283B, R284A, R284B, R285A, R285B, R286A, R286B, R287A, R287B, R288, R1753A, R17553B, R1754) along the Orange Corridor. Barrier 16 is 1800 ft long, with a height of 12 ft and would provide a 5 to 8 dB(A) reduction in noise at the impacted receptors, with 2 front row

receptors achieving at least a 7 dB(A) reduction. The maximum wall allowance per benefited receptor for this barrier is 3,018 ft^2 and the wall would be 1,543 ft^2 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 13.9 for a location map of this barrier and Appendix 4 for the noise barrier analysis details.

Barrier 17

A noise barrier was investigated to mitigate the predicted traffic noise level impacts to 16 impacted residential receptors (R341F, R341L, R346B, R346C, R346K, R346L, R347C, R347L, R349F, R350A, R350B, R350C, R350E, R350F, R350H, R350I) along the Orange Corridor. Barrier 17 is 1324 ft long, with a height of 20 ft and would provide a 4 to 13 dB(A) reduction in noise at the impacted receptors, with 17 front row receptors achieving at least a 7 dB(A) reduction. The maximum wall allowance per benefited receptor for this barrier is 2,647 ft^2 and the wall would be 564 ft^2 per benefited receptor which is less than the allowance. This barrier is preliminarily considered feasible and reasonable and is recommended for further consideration.

Receptor 342 is a recreational area (community pool area) behind barrier 17. It appears that the pool area is shared by the nearby 216 residential units during daylight hours every day of the week for four months of the year. The pool has an area of 850 square feet which translates to a maximum bather load of approximately 55 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 110.

$$(110/3) \times (12/24) \times (4/12) = 6$$

This equates to 6 residential equivalents for receptor 342, represented by 6 receptors in a nodal array. Each receptor in the array will be treated as 1 residential equivalents in the barrier analysis.

See Exhibit 13.10 for a location map of this barrier and Appendix 4 for the noise barrier analysis details.

Barrier 18

Barrier 18 was eliminated due to revisions to the Orange Corridor which rendered it not necessary.

Barrier 19

A noise barrier was investigated to mitigate the predicted traffic noise level impacts to 28 impacted residential receptors (R362B, R362C, R363A, R363B, R363C, R364, R365A, R365B, R365C, R366A, R366B, R366C, R367A, R367B, R376A, R376B, R377A, R377B, R377C, R378A, R378B, R378C, R381A, R1756A, R1756B, R1757A, R1758A, R1758B) along the Orange Corridor. Barrier 19 is 5638 ft long, with a height of 14 ft and would provide a 5 to 12 dB(A) reduction in noise at the impacted receptors,

with 24 front row receptors achieving at least a 7dB(A) reduction. The maximum wall allowance per benefited receptor for this barrier is 3,009 ft^2 and the wall would be 1,518 ft^2 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 13.12 for a location map of this barrier and Appendix 4 for the noise barrier analysis details.

Barrier 20

A noise barrier was investigated to mitigate the predicted traffic noise level impacts to 18 impacted residential receptors (R387A, R387B, R388A, R388B, R389B, R390A, R390B, R391A, R391B, R392A, R392B, R393A, R393B, R393C, R404, R406A, R406C, R407A) along the Orange Corridor. Barrier 20 is 3600 ft long, with a height of 12 ft and would provide a 5 to 15 dB(A) reduction in noise at the impacted receptors, with 18 front row receptors achieving at least a 7dB(A) reduction. The maximum wall allowance per benefited receptor for this barrier is 3,052 ft^2 and the wall would be 1,350 ft^2 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 13.12 and 13.13 for a location map of this barrier and Appendix 4 for the noise barrier analysis details.

Barrier 21

A noise barrier was investigated to mitigate the predicted traffic noise level impacts to 29 impacted residential receptors (R497A, R497B, R497C, R498A, R498B, R498C, R499A, R499B, R499C, R500A, R500B, R501A, R501B, R502A, R502B, R503A, R503B, R504A, R504B, R505A, R505B, R506A, R506B, R509A, R513A, R1764A, R1764B, R1765, R1767A) along the Orange Corridor. Barrier 21 is 3041 ft long, with a height of 24 ft and would provide a 4 to 13 dB(A) reduction in noise at the impacted receptors, with 16 front row receptors achieving at least a 7dB(A) reduction. The maximum wall allowance per benefited receptor for this barrier is 3,242 ft^2 and the wall would be 2,212 ft^2 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 13.14 for a location map of this barrier and Appendix 4 for the noise barrier analysis details.

Barrier 22

A noise barrier was investigated to mitigate the predicted traffic noise level impacts to 19 impacted residential receptors (R517, R518A, R518B, R518C, R519A, R519B, R520A, R520B, R521A, R521B, R526B, R526D, R527A, R534B, R534C, R1630, R1653A, R1653B, R1653C) along the Orange Corridor. Barrier 22 is 2440 ft long, with a height of 16 ft and would provide a 5 to 10 dB(A) reduction in noise at the impacted receptors, with six front row receptors achieving at least a 7dB(A) reduction. The maximum wall allowance per benefited receptor for this barrier is 3,229 ft^2 and the wall would be 1,697 ft^2 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 13.14 for a location map of this barrier and Appendix 4 for the noise barrier analysis details.

Barrier 23

A noise barrier was investigated to mitigate the predicted traffic noise level impacts to 3 impacted residential receptors (R544A, R544B, R546) along the Orange Corridor. Barrier 23 is 1400 ft long, with a height of 14 ft and would provide a 5 and 8 dB(A) reduction in noise at the impacted receptors, with 2 front row receptors achieving at least a 7 dB(A) reduction. The maximum wall allowance per benefited receptor for this barrier is 3,305 ft^2 and the wall would be 6,533 ft^2 per benefited receptor which is greater than the allowance.

Quantity-averaging with Barrier 24 was considered. However since Barrier 23 has a wall surface area per benefited receptor that is over two times the base quantity for reasonableness it is not appropriate.

This barrier is preliminarily considered feasible but not reasonable and is not recommended for further consideration. See Exhibit 13.15 for a location map of this barrier and Appendix 4 for the noise barrier analysis details.

Barrier 24

A noise barrier was investigated to mitigate the predicted traffic noise level impacts to 27 impacted residential receptors (R547, R551A, R551B, R552, R553, R554A, R554B, R555A, R555B, R555C, R556A, R556B, R556C, R557A, R557B, R558A, R558B, R559A, R559B, R559C, R560A, R560B, R562, R563A, R563B, R1780A, R1780B) along the Orange Corridor. Barrier 24 is 4200 ft long, with a height of 22 ft and would provide a 5 to 15 dB(A) reduction in noise at the impacted receptors, with 19 front row receptors achieving at least a 7dB(A) reduction. The maximum wall allowance per benefited receptor for this barrier is 3,138 ft^2 and the wall would be 2,053 ft^2 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 13.15 for a location map of this barrier and Appendix 4 for the noise barrier analysis details.

Barrier 25

A noise barrier was investigated to mitigate the predicted traffic noise level impacts to 2 impacted residential receptors (R637, R638) along the Orange Corridor. Barrier 25 is 600 ft long, with a height of 10 ft and would provide a 6 and 9 dB(A) reduction in noise at the impacted receptors, with one front row receptor achieving at least a 7dB(A) reduction. The maximum wall allowance per benefited receptor for this barrier is 3,200 ft^2 and the wall would be 3,001 ft^2 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 13.16 for a location map of this barrier and Appendix 4 for the noise barrier analysis details.

Barrier 26

A noise barrier was investigated to mitigate the predicted traffic noise level impacts to 2 impacted residential receptors (R1632, R644) along the Orange Corridor. Barrier 26 is 677 ft long, with a height of 8 ft and would provide a 8 and 10 dB(A) reduction in noise at the impacted receptors, with 2 front row receptors achieving at least a 7dB(A) reduction. The maximum wall allowance per benefited receptor for this barrier is 3,270 ft^2 and the wall would be 2,708 ft^2 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 13.16 for a location map of this barrier and Appendix 4 for the noise barrier analysis details.

Barrier 27

A noise barrier was investigated to mitigate the predicted traffic noise level impacts to 6 impacted residential receptors (R641A, R641B, R642A, R642B, R643, R651) along the Orange Corridor. Barrier 27 is 1756 ft long, with a height of 12 ft and would provide a 7 and 11 dB(A) reduction in noise at the impacted receptors, with 6 front row receptors achieving at least a 7dB(A) reduction. The maximum wall allowance per benefited receptor for this barrier is 3,183 ft^2 and the wall would be 3,010 ft^2 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 13.16 for a location map of this barrier and Appendix 4 for the noise barrier analysis details.

Barrier 27B

A noise barrier was investigated to mitigate the predicted traffic noise level impacts to 6 impacted residential receptors (R745B, R746B, R746C, R747A, R747B, R747C) along the Orange Corridor. Barrier 27B is 1800 ft long, with a height of 16 ft and would provide a 6 to 8 dB(A) reduction in noise at the impacted receptors, with 5 front row receptors achieving at least a 7dB(A) reduction. The maximum wall allowance per benefited receptor for this barrier is 3,060 ft^2 and the wall would be 3,200 ft^2 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 13.17 for a location map of this barrier and Appendix 4 for the noise barrier analysis details.

Barrier 28

A noise barrier was investigated to mitigate the predicted traffic noise level impacts to 4 impacted residential receptors (R646, R652A, R652B, R2281) along the Orange Corridor. Barrier 28 is 2044 ft long, with a height of 16 ft and would provide an 3 and 11 dB(A) reduction in noise at the impacted

receptors, with one front row receptor achieving at least a 7dB(A) reduction. The maximum wall allowance per benefited receptor for this barrier is 3,183 ft^2 and the wall would be 10,901 ft^2 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 13.16 for a location map of this barrier and Appendix 4 for the noise barrier analysis details.

Barrier 29

Barrier 29 was eliminated due to revisions to the Orange Corridor which rendered it not necessary.

Barrier 30

A noise barrier was investigated to mitigate the predicted traffic noise level impacts to 5 impacted residential receptors (R723A, R723B, R724A, R724B, R1802A) along the Orange Corridor. Barrier 30 is 1627 ft long, with a height of 18 ft and would provide a 6 to 9 dB(A) reduction in noise at the impacted receptors, with 4 front row receptors achieving at least a 7dB(A) reduction. The maximum wall allowance per benefited receptor for this barrier is 3,109 ft^2 and the wall would be 3,661 ft^2 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 13.18 for a location map of this barrier and Appendix 4 for the noise barrier analysis details.

Barrier 31

A noise barrier was investigated to mitigate the predicted traffic noise level impacts to 5 impacted residential receptors (R806, R807, R808A, R809A, R809B) along the Orange Corridor. Barrier 31 is 1424 ft long, with a height of 14 ft and would provide a 5 to 10 dB(A) reduction in noise at the impacted receptors, with one front row receptor achieving at least a 7dB(A) reduction. The maximum wall allowance per benefited receptor for this barrier is 2,696 ft^2 and the wall would be 3,987 ft^2 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 13.19 for a location map of this barrier and Appendix 4 for the noise barrier analysis details.

Barrier 32

A noise barrier was investigated to mitigate the predicted traffic noise level impacts to 9 impacted residential receptors (R856, R857, R858A, R858B, R859, R860A, R860B, R1843A, R1843B) along the Orange Corridor. Barrier 32 is 2200 ft long, with a height of 20 ft and would provide a 6 to 11 dB(A) reduction in noise at the impacted receptors, with 7 front row receptors achieving at least a 7 dB(A) reduction. The maximum wall allowance per benefited receptor for this barrier is 2,722 ft^2 and the wall would be 4,000 ft^2 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 13.20 for a location map of this barrier and Appendix 4 for the noise barrier analysis details.

Barrier 33

A noise barrier was investigated to mitigate the predicted traffic noise level impacts to 16 impacted residential and recreational receptors (R916A, R916B, R916C, R917, R918A, R918B, R918C, R919A, R922A, R922B, R923A, R923B, R931A, R931B, R2315) along the Orange Corridor. Barrier 33 is 2400 ft long, with a height of 16 ft and would provide a 0 to 11 dB(A) reduction in noise at the impacted receptors, with 10 front row receptors receiving at least a 7 dB(A) reduction. The maximum wall allowance per benefited receptor for this barrier is 2,653 ft^2 and the wall would be 2,021 ft^2 per benefited receptor which is less than the allowance. This barrier is preliminarily considered feasible and reasonable and is recommended for further consideration.

Receptor 2315 is a recreational area (Meadow Brook Country Club golf course) behind Barrier 33. 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.

$$(6*4)/3 \times (12/24) \times (10/12) = 3$$

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 of a residential equivalent in the barrier analysis.

See Exhibit 13.21 for a location map of this barrier and Appendix 4 for the noise barrier analysis details.

Barrier 34

A noise barrier was investigated to mitigate the predicted traffic noise level impacts to 15 impacted residential receptors (R261A, R261B, R267B, R268B, R269, R270, R271A, R271B, R272, R273A, R273B, R1746A, R1746B, R1747, R1748) along the Red Corridor. Barrier 34 is 1,947 ft long, with a height of 24 ft and would provide a 2 to 20 dB(A) reduction in noise at the impacted receptors, with 7 front row receptors receiving at least a 7 dB(A) reduction. The maximum wall allowance per benefited receptor for this barrier is 3,172 ft^2 and the wall would be 3,116 ft^2 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 13.22 for a location map of this barrier and Appendix 4 for the noise barrier analysis details.

Barrier 35

A noise barrier was investigated to mitigate the predicted traffic noise level impacts to 11 impacted residential receptors (R249, R250A, R250B, R253A, R253B, R274A, R274B, R274C, R277, R1744A, R1745A) along the Red Corridor. Barrier 35 is 3067 ft long, with a height of 18 ft and would provide a 4 to 13 dB(A) reduction in noise at the impacted receptors, with 7 front row receptors receiving at least a 7 dB(A) reduction. The maximum wall allowance per benefited receptor for this barrier is 3,152 ft^2 and the wall would be 4,602 ft^2 per benefited receptor which is greater than the allowance.

Quantity-averaging with Barrier 34 was considered. Both Barrier 34 and Barrier 35 do not have wall surface area per benefited receptor that is over two times the base quantity for reasonableness (2500 ft^2). However the combined area of 3,776 ft^2 per benefited receptor is higher than the base quantity for reasonableness, therefore quantity averaging is not appropriate.

This barrier is preliminarily considered feasible but not reasonable and is not recommended for further consideration. See Exhibit 13.22 for a location map of this barrier and Appendix 4 for the noise barrier analysis details.

Barrier 36

A noise barrier was investigated to mitigate the predicted traffic noise level impacts to 11 impacted residential receptors (R291A, R291B, R292, R1750A, R1750B, R1751, R1931A, R1932A, R293, R1651, R1652) along the Red Corridor. Barrier 36 is 4600 ft long, with a height of 14 ft and would provide a 3 to 8 dB(A) reduction in noise at the impacted receptors, with 2 front row receptors receiving at least a 7 dB(A) reduction. The maximum wall allowance per benefited receptor for this barrier is 3,035 ft^2 and the wall would be 6,440 ft^2 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 13.23 for a location map of this barrier and Appendix 4 for the noise barrier analysis details.

Barrier 37

A noise barrier was investigated to mitigate the predicted traffic noise level impacts to 5 impacted residential receptors (R395, R396, R397, R398, R399) along the Red Corridor. Barrier 37 is 1678 ft long, with a height of 16 ft and would provide a 5 to 9 dB(A) reduction in noise at the impacted receptors, with 3 front row receptors receiving at least a 7 dB(A) reduction. The maximum wall allowance per benefited receptor for this barrier is 3,277 ft^2 and the wall would be 5,368 ft^2 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 13.24 for a location map of this barrier and Appendix 4 for the noise barrier analysis details.

Barrier 38

A noise barrier was investigated to mitigate the predicted traffic noise level impacts to 3 impacted residential receptors (R977, R978A, R1639) along the Red Corridor. Barrier 38 is 1106 ft long, with a height of 22 ft and would provide a 1 to 6 dB(A) reduction in noise at the impacted receptors, with no front row receptor receiving at least a 7 dB(A) reduction. The maximum wall allowance per benefited receptor for this barrier is 3,037 ft^2 and the wall would be 12,168 ft^2 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 13.25 for a location map of this barrier and Appendix 4 for the noise barrier analysis details.

Barrier 39

A noise barrier was investigated to mitigate the predicted traffic noise level impacts to 5 impacted residential receptors (R1641, R0983C, R0987B, R0992A, R0995A) along the Red Corridor. Barrier 39 is 2815 ft long, with a height of 20 ft and would provide a 7 to 11 dB(A) reduction in noise at the impacted receptors, with 5 front row receptors achieving at least a 7 dB(A) reduction. The maximum wall allowance per benefited receptor for this barrier is 2,948 ft^2 and the wall would be 4,693 ft^2 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 13.34 for a location map of this barrier and Appendix 4 for the noise barrier analysis details.

Barrier 40

A noise barrier was investigated to mitigate the predicted traffic noise level impacts to 38 impacted residential receptors (R1616, R1678A, R1679B, R1679A, R1679B, R1680A, R1680B, R1689A, R1689B, R1690A, R1690B, R1691A, R1691B, R1692A, R1692B, R1693A, R1693B, R1694A, R1694B, R1695A, R1695B, R1696A, R1696B, R1697, R1698A, R1698B, R1699A, R1699B, R1700A, R1700B, R1911A, R1911B, R1911C, R1912A, R1912B, R1913A, R1913B, R1913C) along the Red Corridor. Barrier 40 is 3387 ft long, with a height of 16 ft and would provide a 5 to 14 dB(A) reduction in noise at the impacted receptors, with 10 front row receptors receiving at least a 7 dB(A) reduction. The maximum wall allowance per benefited receptor for this barrier is 3,189 ft^2 and the wall would be 1,129 ft^2 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 13.26 for a location map of this barrier and Appendix 4 for the noise barrier analysis details.

Barrier 41

A noise barrier was investigated to mitigate the predicted traffic noise level impacts to 9 impacted residential receptors (R1065A, R1065B, R1065C, R1066C, R1067A, R1067B, R1067D, R1069A, R1069B) along the Red Corridor. Barrier 41 is 1600 ft long, with a height of 22 ft and would provide a 3

to 16 dB(A) reduction in noise at the impacted receptors, with 4 front row receptors achieving at least a 7 dB(A) reduction. The maximum wall allowance per benefited receptor for this barrier is 3,134 ft^2 and the wall would be 4,400 ft^2 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 13.27 for a location map of this barrier and Appendix 4 for the noise barrier analysis details.

Barrier 42

A noise barrier was investigated to mitigate the predicted traffic noise level impacts to 54 impacted residential receptors (R1142A, R1142C, R1143A, R1143B, R1143C, R1144A, R1144B, R1144C, R1145A, R1145B, R1146A, R1146B, R1148A, R1148B, R1148C, R1148E, R1149A, R1149B, R1149C, R1149D, R1150A, R1150B, R1150C, R1154A, R1154C, R1155, R1158B, R1159A, R1159B, R1164A, R1164B, RR165A, R1165B, R1167A, R1167B, R1172A, R1172B, R1172C, R1178A, R1178B, R1182A, R1182B, R1185A, R1185B, R1117B, R1828, R1829A, R1829B, R1830A, R1830B, R1831A, R1831B, R1832A, R1832B) along the Red Corridor. Barrier 42 is 4019 ft long, with a height of 24 ft and would provide a 0 to 17 dB(A) reduction in noise at the impacted receptors, with 27 front row receptors achieving at least 7 dB(A) reduction. The maximum wall allowance per benefited receptor for this barrier is 2,970 ft^2 and the wall would be 1,855 ft^2 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 13.28 for a location map of this barrier and Appendix 4 for the noise barrier analysis details.

Barrier 43

A noise barrier was investigated to mitigate the predicted traffic noise level impacts to 63 impacted residential receptors (R1218A, R1218B, R1218C, R1219, R1220A, R1220B, R1220C, R1222A, R1222B, R1223A, R1225, R1226A, R1126B, R1229A, R1229B, R1229C, R1229D, R1231B, R1234A, R1234B, R1234C, R1236A, R1236B, R1236C, R1238A, R1238B, R1240A, R1240B, R1240C, R1241A, R1241B, R1241C, R1246A, R1248A, R1248B, R1250A, R1250B, R1252A, R1254A, R1566A, R1566B, R1567A, R1567B, R1568A, R1568B, R1568C, R1569A, R1569B, R1570B, R1571A, R1571B, R1572A, R1572B, R1572C, R1573A, R1573B, R1573C, R1574A, R1574B, R1575A, R1575B, R1576A, R1576B) along the Red Corridor. Barrier 43 is 4957 ft long, with a height of 18 ft and would provide a 7 to 15 dB(A) reduction in noise at the impacted receptors, with 46 front row receptors achieving at least 7 dB(A) reduction. The maximum wall allowance per benefited receptor for this barrier is 3,056 ft^2 and the wall would be 834 ft^2 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 13.29 and 13.30 for a location map of this barrier and Appendix 4 for the noise barrier analysis details.

Barrier 44

A noise barrier was investigated to mitigate the predicted traffic noise level impacts to 31 impacted residential receptors (R1201A, R1201B, R1201C, R1202A, R1202B, R1203, R1204A, R1588, R1589, R1590A, R1590B, R1591A, R1591B, R1592A, R1592B, R1593B, R1595, R1206, R1207A, R1596A, R1596B, R1208A, R1208B, R1209A, R1209B, R1209C, R1210B, R1213B, R1214A, R1214B, R1214C) along the Red Corridor. Barrier 44 is 2908 ft long, with a height of 20 ft and would provide a 5 to 17 dB(A) reduction in noise at the impacted receptors, with 13 front row receptors achieving at least 7 dB(A) reduction. The maximum wall allowance per benefited receptor for this barrier is 3,135 ft^2 and the wall would be 1,237 ft^2 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 13.29 and 13.30 for a location map of this barrier and Appendix 4 for the noise barrier analysis details.

Barrier 45

A noise barrier was investigated to mitigate the predicted traffic noise level impacts to 7 impacted residential receptors (R1277A, R1277B, R1278A, R1280B, R1282, R1283A, R1283B) along the Red Corridor. Barrier 45 is 2003 ft long, with a height of 22 ft and would provide a 7 to 10 dB(A) reduction in noise at the impacted receptors, with 7 front row receptors achieving at least a 7 dB(A) reduction. The maximum wall allowance per benefited receptor for this barrier is 3,080 ft^2 and the wall would be 1,836 ft^2 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 13.31 for a location map of this barrier and Appendix 4 for the noise barrier analysis details.

Barrier 46

A noise barrier was investigated to mitigate the predicted traffic noise level impacts to 4 impacted residential receptors (R1381A, R1381D, R1381E, R1381F) along the Red Corridor. Barrier 46 is 1000 ft long, with a height of 22 ft and would provide a 5 to 7 dB(A) reduction in noise at the impacted receptors, with one front row receptor achieving at least a 7 dB(A) reduction. The maximum wall allowance per benefited receptor for this barrier is 2,815 ft^2 and the wall would be 7,334 ft^2 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 13.35 for a location map of this barrier and Appendix 4 for the noise barrier analysis details.

Barrier 47

A noise barrier was investigated to mitigate the predicted traffic noise level impacts to 171 impacted residential receptors (R1387A, R1387B, R1387C, R1387D, R1387E, R1387F, R1387H, R1387I, R1387K, R1387L, R1388A, R1388B, R1388C, R1388D, R1388E, R1388F, R1388G, R1388H, R1388I, R1388J, R1388K, R1388L, R1388N, R1388O, R1388W, R1388X, R1389A, R1389B, R1389C,

R1389D, R1389E, R1389F, R1389J, R1389K, R1389L, R1389M, R1389N, R1389O, R1389P, R1389Q, R1389R, R1389S, R1389T, R1389U, R1389X, R1390A, R1390B, R1390B, R1390C, R1390D, R1390E, R1390F, R1390G, R1390H, R1390I, R1390K, R1390L, R1390T, R1390U, R1390V, R1390W, R1390X, R1391A, R1391B, R1391C, R1391D, R1391E, R1391F, R1391G, R1391H, R1391I, R1391J, R1391K, R1391L, R1392I, R1392L, R1392R, R1392U, R1392W, R1392X, R1393A, R1393B, R1393C, R1393D, R1393E, R1393F, R1393G, R1393H, R1393I, R1393J, R1393K, R1393L, R1393U, R1393W, R1393X, R1394A, R1394B, R1394C, R1394D, R1394E, R1394F, R1394G, R1394H, R1394I, R1394J, R1394K, R1394L, R1394U, R1394W, R1394X, R1395B, R1395C, R1395E, R1395F, R1396A-X, R1397A-L, R1397N, R1397O, R1834O, R1834R, R1834U, R1834X, R1837F, R1387H, R1387I, R1387K, R1387L, R1839R, R1839U, R1841C, R1841E, R1841F, R1841H, R1841I, R1841K, R1841L. R1841N, R1841O) along the Red Corridor. Barrier 47 is 3021 ft long, with a height of 24 ft and would provide a 4 to 15 dB(A) reduction in noise at the impacted receptors, with 128 front row receptors achieving at least a 7 dB(A) reduction. The maximum wall allowance per benefited receptor for this barrier is 2,718 ft^2 and the wall would be 193 ft^2 per benefited receptor which is less than the allowance. This barrier is preliminarily considered feasible and reasonable and is recommended for further consideration.

Receptor 1840 and 1904 are recreational areas (community pool areas) behind Barrier 47. The areas appear to be used by the 300 residential units in the apartment complex during daylight hours every day of the week for four months of the year. The combined pool area is 3,400 square feet which translates to a maximum bather load of approximately 225 users. Assuming half the pool area users are in the pool at any given moment, the number of pool area users can be estimated at 450.

$$(450/3) \times (12/24) \times (4/12) = 25$$

This comes to approximately 25 residential equivalents each for receptor 1840 and 1904, each represented by 5 receptors in a nodal array. Each receptor in the array will be treated as 5 residential equivalents in the barrier analysis.

See Exhibit 13.32 for a location map of this barrier and Appendix 4 for the noise barrier analysis details.

Barrier 48

A noise barrier was investigated to mitigate the predicted traffic noise level impacts to 5 impacted residential receptors (R1621, R1441B, R1442A, R1442B, R1443) along the Red Corridor. Barrier 48 is 2600 ft long, with a height of 14 ft and would provide a 6 to 8 dB(A) reduction in noise at the impacted receptors, with 4 front row receptors achieving at least a 7 dB(A) reduction. The maximum wall allowance per benefited receptor for this barrier is 2,892 ft^2 and the wall would be 2,275 ft^2 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 13.33 for a location map of this barrier and Appendix 4 for the noise barrier analysis details.

Barrier 49 and Barrier 50

Barriers 49 and 50 were eliminated due to revisions to the Red Corridor which rendered them not necessary.

Barrier 51

A noise barrier was investigated to mitigate the predicted traffic noise level impacts to 21 impacted residential and recreational receptors (R916A, R916B, R916C, R917, R918A, R918B, R918C, 919A, R922A, R922B, R923A, R923B, R931A, R931B, R932A, R932B, R932C, R933, R1637, R2315) along the Red Corridor. Barrier 51 is 3501 ft long, with a height of 18 ft and would provide a 0 to 14 dB(A) reduction in noise at the impacted receptors, with 14 front row receptors achieving at least a 7 dB(A) reduction. The maximum wall allowance per benefited receptor for this barrier is 2,688 ft^2 and the wall would be 2,626 ft^2 per benefited receptor which is less than the allowance. This barrier is preliminarily considered feasible and reasonable and is recommended for further consideration.

Receptor 2315 is a recreational area (Meadow Brook Country Club golf course) behind Barrier 51. 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.

$$(6*4)/3 \times (12/24) \times (10/12) = 3$$

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 of a residential equivalent in the barrier analysis.

See Exhibit 13.36 for a location map of this barrier and Appendix 4 for the noise barrier analysis details.

Barrier 52

A noise barrier was investigated to mitigate the predicted traffic noise level impacts to 10 impacted residential receptors (R856, R857, R858A, R858B, R859, R860A, R860B, R1843A, R1843B, R1844A) along the Red Corridor. Barrier 52 is 1600 ft long, with a height of 24 ft and would provide a 1 to 10 dB(A) reduction in noise at the impacted receptors, with 5 front row receptors achieving at least a 7 dB(A) reduction. The maximum wall allowance per benefited receptor for this barrier is 2,710 ft^2 and the wall would be 4,800 ft^2 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 13.37 for a location map of this barrier and Appendix 4 for the noise barrier analysis details.

Barrier 53 through Barrier 63

Barriers 53 through 63 were eliminated due to revisions to the Red and Green Corridors which rendered them not necessary.

Barrier 64

A noise barrier was investigated to mitigate the predicted traffic noise level impacts to 20 impacted residential receptors (R1490B, R1491, R1492A, R1492B, R1493A, R1493B, R1495A, R1495B, R1496A, R1496B, R1497A, R1497B, R1499A, R1499B, R1499C, R1499D, R1852A, R1853A, R1853B, R1854B) along the Green Corridor. Barrier 64 is 2200 ft long, with a height of 18 ft and would provide a 5 to 12 dB(A) reduction in noise at the impacted receptors, with 11 front row receptors achieving at least a 7 dB(A) reduction. The maximum wall allowance per benefited receptor for this barrier is 2,950 ft^2 and the wall would be 1,650 ft^2 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 13.46 for a location map of this barrier and Appendix 4 for the noise barrier analysis details.

Barrier 65

A noise barrier was investigated to mitigate the predicted traffic noise level impacts to 62 impacted residential receptors (R1515A, R1515B, R1516A, R1516B, R1520A, R1520B, R1520C, R1526, R1527, R1528A, R1528B, R1529A, R1529B, R1529C, R1530A, R1530B, R1531A, R1531B, R1533A, R1533B, R1533C, R1534A, R1534B, R1534C, R1535A, R1535B, R1535C, R1539A, R1539B, R1539C, R1540A, R1540B, R1540C, R1541A, R1541B, R1541C, R1541D, R1542A, R1542B, R1543A, R1543B, R1546, R1547A, R1547B, R1548A, R1548B, R1548C, R1549C, R1857A, R1857B, R1857C, R1858A, R1858B, R1858C, R1859A, R1859B, R1859C, R1859D, R1878B, R1879A, R1879B, R1879D) along the Green Corridor. Barrier 65 is 5398 ft long, with a height of 22 ft and would provide a 7 to 15 dB(A) reduction in noise at the impacted receptors, with 29 front row receptors achieving at least a 7 dB(A) reduction. The maximum wall allowance per benefited receptor for this barrier is 2,982 ft^2 and the wall would be 1,153 ft^2 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 13.47 for a location map of this barrier and Appendix 4 for the noise barrier analysis details.

Barrier 66

A noise barrier was investigated to mitigate the predicted traffic noise level impacts to 8 impacted residential receptors (R1559A, R1559B, R1559C, R1561A, R1561B, R1562A, R1562B, R1562C) along the Green Corridor. Barrier 66 is 1800 ft long, with a height of 22 ft and would provide a 6 to 11 dB(A)

reduction in noise at the impacted receptors, with 5 front row receptors achieving at least a 7 dB(A) reduction. The maximum wall allowance per benefited receptor for this barrier is 2,728 ft^2 and the wall would be 2,640 ft^2 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 13.48 for a location map of this barrier and Appendix 4 for the noise barrier analysis details.

Barrier 67 through Barrier 72

Barriers 67 through 72 were eliminated due to revisions to the Lilac Corridor which rendered them not necessary.

Barrier 73

A noise barrier was investigated to mitigate the predicted traffic noise level impacts to 21 impacted residential receptors (R497A, R497B, R497C, R498A, R498B, R498C, R499A, R499B, R499C, R501A, R501B, R503A, R503B, R505A, R505B, R506A, R506B, R509A, R513B, R1764A, R1764B) along the Lilac Corridor. Barrier 73 is 3400 ft long, with a height of 20 ft and would provide a 4 to 11 dB(A) reduction in noise at the impacted receptors, with 18 front row receptors achieving at least a 7 dB(A) reduction. The maximum wall allowance per benefited receptor for this barrier is 3,267 ft^2 and the wall would be 3,091 ft^2 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 13.51 for a location map of this barrier and Appendix 4 for the noise barrier analysis details.

Barrier 74

A noise barrier was investigated to mitigate the predicted traffic noise level impacts to 16 impacted residential receptors (R516, R517, R518A, R518B, R518C, R519A, R519B, R520A, R520B, R521A, R521B, R526D, R1630, R1653A, R1653B, R1653C) along the Lilac Corridor. Barrier 74 is 2800 ft long, with a height of 12 ft and would provide a 1 to 9 dB(A) reduction in noise at the impacted receptors, with 10 front row receptors achieving at least a 7 dB(A) reduction. The maximum wall allowance per benefited receptor for this barrier is 3,250 ft^2 and the wall would be 2,800 ft^2 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 13.51 for a location map of this barrier and Appendix 4 for the noise barrier analysis details.

Barrier 75

A noise barrier was investigated to mitigate the predicted traffic noise level impacts to 59 impacted residential receptors (R569A, R569B, R572A, R572B, R578, R579, R580, R584, R586A, R586B, R587A, R587B, R587C, R588A, R588B, R592, R593A, R593B, R594A, R594B, R594C, R595A, R595B, R596A, R596B, R596C, R597A, R597B, R1771A, R1771B, R1771C, R1775A, R1775B,

R1776, R1777A, R1777B, R1778A, R1778B, R1779, R1790A, R1790B, R1790C, R1791A, R1791B, R1792A, R1792B, R1793A, R1793B, R1886A, R1887A, R1889, R1890, R1892A, R1892B, R1892C, R1893A, R1893B, R1895, R1899B) along the Lilac Corridor. Barrier 75 is 5936 ft long, with a height of 24 ft and would provide a 5 to 11 dB(A) reduction in noise at the impacted receptors, with 13 front row receptors achieving at least a 7 dB(A) reduction. The maximum wall allowance per benefited receptor for this barrier is 3,125 ft^2 and the wall would be 1,875 ft^2 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 13.52 and 13.53 for a location map of this barrier and Appendix 4 for the noise barrier analysis details.

Barrier 76

A noise barrier was investigated to mitigate the predicted traffic noise level impacts to 65 impacted residential receptors (R515, R550, R551A, R551B, R552, R553, R555B, R555C, R564C, R565A, R565B, R576A, R576B, R577A, R577B, R577C, R582A, R582B, R583A, R583B, R601A, R601B, R601C, R603A, R603B, R604A, R604B, R606A, R606B, R607A, R607B, R608A, R608B, R623, R624A, R624B, R625A, R625B, R626A, R626B, R626C, R628, R1781A, R1781B, R1781C, R1784A, R1785A, R1785B, R1785C, R1786A, R1786B, R1787A, R1787B, R1788A, R17888B, R1789A, R1789B, R1794A, R1794B, R1795A, R1795B, R1796A, R1796B, R1797) along the Lilac Corridor. Barrier 76 is 7193 ft long, with a height of 14 ft and would provide a 5 to 11 dB(A) reduction in noise at the impacted receptors, with 28 front row receptors achieving at least a 7 dB(A) reduction. The maximum wall allowance per benefited receptor for this barrier is 3,148 ft^2 and the wall would be 1,243 ft^2 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 13.52 and 13.53 for a location map of this barrier and Appendix 4 for the noise barrier analysis details.

Barrier 77

A noise barrier was investigated to mitigate the predicted traffic noise level impacts to 17 impacted residential receptors (R668C, R669B, R670A, R670B, R671A, R671B, R691A, R691B, R691C, R693A, R693B, R699A, R699B, R700A, R700B, R701, R708B) along the Lilac Corridor. Barrier 77 is 5893 ft long, with a height of 20 ft and would provide a 5 to 12 dB(A) reduction in noise at the impacted receptors, with 19 front row receptors achieving at least a 7 dB(A) reduction. The recreational facility is represented by 26 residential equivalents. The maximum wall allowance per benefited receptor for this barrier is 3,033 ft^2 and the wall would be 1,998 ft^2 per benefited receptor which is less than the allowance. This barrier is preliminarily considered feasible and reasonable and is recommended for further consideration.

Receptor 694 is a recreational area (community pool and play area) behind barrier 77. The pool area is 3,250 square feet which translates to a maximum bather load of approximately 215 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 430. The play area can be estimated to be used by 35 people at any given time.

Pool area - (430/3) x (12/24) x (4/12) = 24
Play area - (35/3) x (12/24) x (4/12) = 2

This comes to 26 residential equivalents for receptor 694, represented by 10 receptors in a nodal array shown below. Receptors in the array will be treated as 3 residential equivalents for the pool area and one each for the play area in the barrier analysis.

See Exhibit 13.54 for a location map of this barrier and Appendix 4 for the noise barrier analysis details.

Barrier 78

A noise barrier was investigated to mitigate the predicted traffic noise level impacts to 23 impacted residential receptors (R674A, R674B, R676, R677A, R677B, R678A, R678B, R683, R684A, R684B, R685A, R685B, R686, R689A, R689B, R692, R697, R713, R715A, R715B, R715C, R717A, R717B) along the Lilac Corridor. Barrier 78 is 4600 ft long, with a height of 14 ft and would provide a 4 to 11 dB(A) reduction in noise at the impacted receptors, with 18 front row receptors achieving at least a 7 dB(A) reduction. The maximum wall allowance per benefited receptor for this barrier is 3,092 ft^2 and the wall would be 1,533 ft^2 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 13.54 for a location map of this barrier and Appendix 4 for the noise barrier analysis details.

Barrier 79

A noise barrier was investigated to mitigate the predicted traffic noise level impacts to 9 impacted residential receptors (R841A, R841B, R852A, R852B, R853B, R853C, R854B, R855A, R855B) along the Lilac Corridor. Barrier 79 is 2557 ft long, with a height of 16 ft and would provide a 5 to 8 dB(A) reduction in noise at the impacted receptors, with 4 front row receptors achieving at least a 7 dB(A) reduction. The maximum wall allowance per benefited receptor for this barrier is 3,111 ft^2 and the wall would be 4,091 ft^2 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 13.55 for a location map of this barrier and Appendix 4 for the noise barrier analysis details.

Barrier 80

A noise barrier was investigated to mitigate the predicted traffic noise level impacts to 6 impacted residential receptors (R836A, R837A, R837B, R839A, R840A, R840B) along the Lilac Corridor. Barrier 80 is 1760 ft long, with a height of 14 ft and would provide a 5 to 8 dB(A) reduction in noise at the

impacted receptors, with 3 front row receptor achieving at least a 7 dB(A) reduction. The maximum wall allowance per benefited receptor for this barrier is 3,118 ft^2 and the wall would be 3,079 ft^2 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 13.55 for a location map of this barrier and Appendix 4 for the noise barrier analysis details.

Barrier 81

A noise barrier was investigated to mitigate the predicted traffic noise level impacts to 10 impacted residential receptors (R856, R857, R858A, R858B, R859, R860A, R860B, R1843A, R1843B, R1844A) along the Lilac Corridor. Barrier 81 is 2000 ft long, with a height of 16 ft and would provide a 5 to 10 dB(A) reduction in noise at the impacted receptors, with 4 front row receptors achieving at least a 7 dB(A) reduction. The maximum wall allowance per benefited receptor for this barrier is 2,721 ft^2 and the wall would be 2,909 ft^2 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 13.56 for a location map of this barrier and Appendix 4 for the noise barrier analysis details.

Barrier 82

A noise barrier was investigated to mitigate the predicted traffic noise level impacts to 21 impacted residential and recreational receptors (R916A, R916B, R916C, R917, R918A, R918B, R918C, R919A, R922A, R922B, R923A, R923B, R931A, R931B, R932A, R932B, R932C, R933, R1637, R2315) along the Lilac Corridor. Barrier 82 is 3102 ft long, with a height of 18 ft and would provide a 3 to 14 dB(A) reduction in noise at the impacted receptors, with 14 front row receptors achieving at least a 7 dB(A) reduction. The maximum wall allowance per benefited receptor for this barrier is 2,693 ft^2 and the wall would be 2,327 ft^2 per benefited receptor which is less than the allowance. This barrier is preliminarily considered feasible and reasonable and is recommended for further consideration.

Receptor 2315 is a recreational area (Meadow Brook Country Club golf course) behind Barrier 82. 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.

$$(6*4)/3 \times (12/24) \times (10/12) = 3$$

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 of a residential equivalent in the barrier analysis.

See Exhibit 13.57 for a location map of this barrier and Appendix 4 for the noise barrier analysis details.

Barrier 83

A noise barrier was investigated to mitigate the predicted traffic noise level impacts to 6 impacted residential receptors (R2053, R2054, R2055, R2057, R2070, R2071) along the Purple/Blue Corridor. Barrier 83 is 3800 ft long, with a height of 14 ft and would provide a 5 to 8 dB(A) reduction in noise at the impacted receptors, with four front row receptors achieving at least the minimum 7 dB(A) reduction. The maximum wall allowance per benefited receptor for this barrier is 3,183 ft^2 and the wall would be 7,600 ft^2 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 13.58 for a location map of this barrier and Appendix 4 for the noise barrier analysis details.

Barrier 84

A noise barrier was investigated to mitigate the predicted traffic noise level impacts to 21 impacted residential receptors (R2037A, R2037B, R2039A, R2039B, R2040, R2043A, R2043B, R2045A, R2045B, R2047A, R2047B, R2048A, R2048B, R2049A, R2049B, R2050A, R2050B, R2051, R2052, R2072, R1810B) along the Purple/Blue Corridor. Barrier 84 is 4000 ft long, with a height of 14 ft and would provide a 3 to 10 dB(A) reduction in noise at the impacted receptors, with 15 of the front row receptors achieving at least the minimum 7 dB(A) reduction. The maximum wall allowance per benefited receptor for this barrier is 2,987 ft^2 and the wall would be 1,600 ft^2 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 13.58 for a location map of this barrier and Appendix 4 for the noise barrier analysis details.

Barrier 85

A noise barrier was investigated to mitigate the predicted traffic noise level impacts to 8 impacted residential receptors (R2075, R2076, R2078, R2079, R2080, R1812A, R1812B, R1813C) along the Purple/Blue Corridor. Barrier 85 is 3200 ft long, with a height of 22 ft and would provide a 3 to 13 dB(A) reduction in noise at the impacted receptors, with 2 front row receptors achieving at least a 7 dB(A) reduction. The maximum wall allowance per benefited receptor for this barrier is 3,104ft^2 and the wall would be 7,040 ft^2 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 13.59 for a location map of this barrier and Appendix 4 for the noise barrier analysis details.

Barrier 86

A noise barrier was investigated to mitigate the predicted traffic noise level impacts to 9 impacted residential receptors (R2077, R2081A, R2081B, R2082A, R2082B, R2083, R2084, R2085, R2086A) along the Purple/Blue Corridor. Barrier 86 is 4200 ft long, with a height of 20 ft and would provide a 5 to

10 dB(A) reduction in noise at the impacted receptors, with 11 front row receptors achieving at least a 7 dB(A) reduction. The maximum wall allowance per benefited receptor for this barrier is 2,936 ft^2 and the wall would be 3,360 ft^2 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 13.59 for a location map of this barrier and Appendix 4 for the noise barrier analysis details.

Barrier 87

A noise barrier was investigated to mitigate the predicted traffic noise level impacts to 13 impacted residential receptors (R2098, R2112, R2125, R2126, R2127C, R2129A, R2129B, R2129C, R2131A, R2131B, R2132, R2133, R2138) along the Purple/Blue Corridor. Barrier 87 is 4200 ft long, with a height of 14 ft and would provide a 3 to 9 dB(A) reduction in noise at the impacted receptors, with 9 front row receptors achieving at least a 7 dB(A) reduction. The maximum wall allowance per benefited receptor for this barrier is 2,982 ft^2 and the wall would be 2,940 ft^2 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 13.60 for a location map of this barrier and Appendix 4 for the noise barrier analysis details.

Barrier 88

A noise barrier was investigated to mitigate the predicted traffic noise level impacts to 9 impacted residential receptors (R2121, R2122, R2123, R2124, R2128, R2130, R2139, R2140A, R2140B) along the Purple/Blue Corridor. Barrier 88 is 3200 ft long, with a height of 14 ft and would provide a 4 to 11 dB(A) reduction in noise at the impacted receptors, with 3 front row receptors achieving at least a 7 dB(A) reduction. The maximum wall allowance per benefited receptor for this barrier is 3,025 ft^2 and the wall would be 5,600 ft^2 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 13.60 for a location map of this barrier and Appendix 4 for the noise barrier analysis details.

Barrier 89

A noise barrier was investigated to mitigate the predicted traffic noise level impacts to 3 impacted residential receptors (R2150, R2151, R2153) along the Purple/Blue Corridor. Barrier 89 is 1400 ft long, with a height of 18 ft and would provide a 5 to 15 dB(A) reduction in noise at the impacted receptors, with 2 front row receptors achieving at least a 7 dB(A) reduction. The maximum wall allowance per benefited receptor for this barrier is 3,013 ft^2 and the wall would be 6,300 ft^2 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 13.61 for a location map of this barrier and Appendix 4 for the noise barrier analysis details.

Barrier 90

A noise barrier was investigated to mitigate the predicted traffic noise level impacts to 5 impacted residential receptors (R2155A, R2156A, R2156B, R2159, R2163) along the Purple/Blue Corridor. Barrier 90 is 2,423 ft long, with a height of 12 ft and would provide a 0 to 7 dB(A) reduction in noise at the impacted receptors, with 2 front row receptors achieving at least a 7 dB(A) reduction. The maximum wall allowance per benefited receptor for this barrier is 2,864 ft^2 and the wall would be 7,269 ft^2 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 13.61 for a location map of this barrier and Appendix 4 for the noise barrier analysis details.

Barrier 91

Barrier 91 was eliminated due to a revision to the Purple/Blue Corridor which rendered it not necessary.

Barrier 92

A noise barrier was investigated to mitigate the predicted traffic noise level impacts to 3 impacted residential receptors (R2186, R2187, R2188) along the Purple/Blue Corridor. Barrier 92 is 800 ft long, with a height of 10 ft and would provide a 8 to 9 dB(A) reduction in noise at the impacted receptors, with 3 front row receptors achieving at least a 7 dB(A) reduction. The maximum wall allowance per benefited receptor for this barrier is 3,118 ft^2 and the wall would be 2,667 ft^2 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 13.63 for a location map of this barrier and Appendix 4 for the noise barrier analysis details.

Barrier 93

A noise barrier was investigated to mitigate the predicted traffic noise level impacts to 1 impacted residential receptor (R2193) along the Purple/Blue Corridor. Barrier 93 is 1531 ft long, with a height of 12 ft and would provide a 7 dB(A) reduction in noise at the impacted receptor which is a front-row receptor. The maximum wall allowance per benefited receptor for this barrier is 3,025 ft^2 and the wall would be 4,594 ft^2 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 13.63 for a location map of this barrier and Appendix 4 for the noise barrier analysis details.

Barrier 94

A noise barrier was investigated to mitigate the predicted traffic noise level impacts to 9 impacted residential receptors (R2216A, R2216B, R2220A, R2220B, R2220C, R2221A, R2221B, R2222A, R2222B) along the Purple/Blue Corridor. Barrier 94 is 2000 ft long, with a height of 20 ft and would provide a 5 to 13 dB(A) reduction in noise at the impacted receptors, with 6 front row receptors achieving

at least a 7 dB(A) reduction. The maximum wall allowance per benefited receptor for this barrier is 3,122 ft^2 and the wall would be 2,857 ft^2 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 13.65 for a location map of this barrier and Appendix 4 for the noise barrier analysis details.

Barrier 95

A noise barrier was investigated to mitigate the predicted traffic noise level impacts to 8 impacted residential receptors (R2231, R2232, R2243A, R2244, R2248A, R2248B, R2249, R2251) along the Purple/Blue Corridor. Barrier 95 is 3423 ft long, with a height of 16 ft and would provide a 6 to 9 dB(A) reduction in noise at the impacted receptors, with 8 front row receptors achieving at least a 7 dB(A) reduction. The maximum wall allowance per benefited receptor for this barrier is 3,038 ft^2 and the wall would be 3,651 ft^2 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 13.66 for a location map of this barrier and Appendix 4 for the noise barrier analysis details.

Barrier 96

Barrier 96 was eliminated due to a revision to the Purple/Blue Corridor which rendered it not necessary.

Barrier 97

A noise barrier was investigated to mitigate the predicted traffic noise level impacts to 1 impacted residential receptor (R2268) along the Purple/Blue Corridor. Barrier 97 is 1417 ft long, with a height of 16 ft and would provide an 8 dB(A) reduction in noise at the impacted receptor, with 1 front row receptor achieving at least a 7 dB(A) reduction. The maximum wall allowance per benefited receptor for this barrier is 3,165 ft^2 and the wall would be 4,534 ft^2 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 13.64 for a location map of this barrier and Appendix 4 for the noise barrier analysis details.

Barrier 98

A noise barrier was investigated to mitigate the predicted traffic noise level impacts to 10 impacted residential receptors (R2279, R2281, R651, R2282A, R2282B, R2283, R2284A, R2284B, R2286A, R2286B) along the Purple/Blue Corridor. Barrier 98 is 3800 ft long, with a height of 14 ft and would provide a 5 to 10 dB(A) reduction in noise at the impacted receptors, with 7 front row receptors achieving at least a 7 dB(A) reduction. The maximum wall allowance per benefited receptor for this barrier is 3,211 ft^2 and the wall would be 4,433 ft^2 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 13.68 for a location map of this barrier and Appendix 4 for the noise barrier analysis details.

Barrier 99

A noise barrier was investigated to mitigate the predicted traffic noise level impacts to 6 impacted residential receptors (R0641A, R0641B, R0641C, R0642A, R0642B, R0642C) along the Purple/Blue Corridor. Barrier 99 is 2200 ft long, with a height of 14 ft and would provide a 4 to 10 dB(A) reduction in noise at the impacted receptors, with 3 front row receptors achieving at least a 7 dB(A) reduction. The maximum wall allowance per benefited receptor for this barrier is 3,177 ft^2 and the wall would be 6,160 ft^2 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 13.68 for a location map of this barrier and Appendix 4 for the noise barrier analysis details.

Barrier 100

A noise barrier was investigated to mitigate the predicted traffic noise level impacts to 6 impacted residential receptors (R961C, R962C, R963A, R963B, R966, R969) along the Brown Corridor. Barrier 100 is 2000 ft long, with a height of 14 ft and would provide a 1 to 8 dB(A) reduction in noise at the impacted receptors, with 4 front row receptors achieving at least 7 dB(A) reduction. The maximum wall allowance per benefited receptor for this barrier is 2,949 ft^2 and the wall would be 2,545 ft^2 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 13.69 for a location map of this barrier and Appendix 4 for the noise barrier analysis details.

Barrier 101

A noise barrier was investigated to mitigate the predicted traffic noise level impacts to 9 impacted residential receptors (R970A, R970B, R971A, R971B, R972A, R972B, R973A, R973B, R974) along the Brown Corridor. Barrier 101 is 2000 ft long, with a height of 20 ft and would provide a 6 to 8 dB(A) reduction in noise at the impacted receptors, with 5 front row receptor achieving at least 7 dB(A) reduction. The maximum wall allowance per benefited receptor for this barrier is 3,044 ft^2 and the wall would be 4,444 ft^2 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 13.69 for a location map of this barrier and Appendix 4 for the noise barrier analysis details.

Barrier 102

A noise barrier was investigated to mitigate the predicted traffic noise level impacts to 6 impacted residential receptors (R961C, R962C, R963A, R963B, R966, R969) along the Tan Corridor. Barrier 102 is 1800 ft long, with a height of 16 ft and would provide a 2 to 9 dB(A) reduction in noise at the impacted receptors, with 4 front row receptor achieving a 7 dB(A) reduction. The maximum wall allowance per benefited receptor for this barrier is 2,973 ft^2 and the wall would be 3,200 ft^2 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 13.70 for a location map of this barrier and Appendix 4 for the noise barrier analysis details.

Barrier 103

A noise barrier was investigated to mitigate the predicted traffic noise level impacts to 9 impacted residential receptors (R970A, R970B, R971A, R971B, R972A, R972B, R973A, R973B, R974) along the Tan Corridor. Barrier 103 is 1699 ft long, with a height of 16 ft and would provide a 5 to 7 dB(A) reduction in noise at the impacted receptors, with 1 front row receptor achieving the minimum 7 dB(A) reduction. The maximum wall allowance per benefited receptor for this barrier is 3,041 ft^2 and the wall would be 3,020 ft^2 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 13.70 for a location map of this barrier and Appendix 4 for the noise barrier analysis details.

Barrier 104

A noise barrier was investigated to mitigate the predicted traffic noise level impacts to 17 impacted residential receptors (R1464A, R1464B, R1468A, R1468B, R1473, R1474, R1476A, R1476B, R1476C, R1477, R1478B, R1479A, R1479B, R1479C, R1480A, R1480B, R1481) along the Tan Corridor. Barrier 104 is 3200 ft long, with a height of 16 ft and would provide a 3 to 10 dB(A) reduction in noise at the impacted receptors, with 7 of the front row receptors achieving at least the minimum 7 dB(A) reduction. The maximum wall allowance per benefited receptor for this barrier is 3,124 ft^2 and the wall would be 3,658 ft^2 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 13.71 for a location map of this barrier and Appendix 4 for the noise barrier analysis details.

Barrier 105

A noise barrier was investigated to mitigate the predicted traffic noise level impacts to 1 impacted residential receptor (R1431A) along the Teal Corridor. Barrier 105 is 2400 ft long, with a height of 18 ft and would provide a 5 dB(A) reduction in noise at the impacted receptors, with no front row receptors achieving the minimum 7 dB(A) reduction. The maximum wall allowance per benefited receptor for this barrier is 2,815 ft^2 and the wall would be 43,200 ft^2 per benefited receptor which is greater than the allowance. This barrier is preliminarily considered not feasible or reasonable and is not recommended for further consideration. See Exhibit 13.72 for a location map of this barrier and Appendix 4 for the noise barrier analysis details.

Barrier 106

A noise barrier was investigated to mitigate the predicted traffic noise level impacts to 2 impacted residential receptors (R1620, R1648) along the Teal Corridor. Barrier 106 is 2000 ft long, with a height of 14 ft and would provide a 4 to 7 dB(A) reduction in noise at the impacted receptors, with one of the front row receptors achieving the minimum 7 dB(A) reduction. The maximum wall allowance per benefited receptor for this barrier is 2,868 ft^2 and the wall would be 27,999 ft^2 per benefited receptor which is greater than the allowance. This barrier is preliminarily considered feasible and not reasonable and is not recommended for further consideration. See Exhibit 13.72 for a location map of this barrier and Appendix 4 for the noise barrier analysis details.

Barrier 107

A noise barrier was investigated to mitigate the predicted traffic noise level impacts to 31 impacted residential receptors (R1556A, R1556B, R2303A, R2303B, R2303C, R2304A, R2304B, R2304C, R2305A, R2305B, R2305C, R2306A, R2306B, R2306C, R2307A, R2307B, R2307C, R2308A, R2308B, R2309A, R2309B, R2310A, R2310B, R2310C, R2328A, R2328C, R2333A, R2333B, R2334A, R2334B, R2334C) along the Green Corridor. Barrier 107 is 3302 ft long, with a height of 20 ft and would provide a 4 to 10 dB(A) reduction in noise at the impacted receptors, with 23 of the front row receptors achieving the minimum 7 dB(A) reduction. The maximum wall allowance per benefited receptor for this barrier is 2,700 ft^2 and the wall would be 1,065 ft^2 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 13.48 for a location map of this barrier and Appendix 4 for the noise barrier analysis details.

Barrier 108

A noise barrier was investigated to mitigate the predicted traffic noise level impacts to 42 impacted residential and recreational receptors (R75, R2287A, R2287B, R2342B, R2346C, R2346D, R2346F, R2347A, R2347B, R2347C, R2347D, R2348A, R2348B, R2348C, R2348D, R2348E, R2348F, R2349A, R2349B, R2349C, R2349D, R2349E, R2350A, R2350B, R2350C, R2350D, R2350E, R2350F, R2351A, R2351B, R2351C) along the Orange Corridor. Barrier 108 is 3,600 ft long, with a height of 16 ft and would provide a 6 to 10 dB(A) reduction in noise at the impacted receptors, with 24 of the front row receptors achieving the minimum 7 dB(A) reduction. The maximum wall allowance per benefited receptor for this barrier is 3,053 ft^2 and the wall would be 613 ft^2 per benefited receptor which is less than the allowance. This barrier is preliminarily considered feasible and reasonable and is recommended for further consideration.

Receptor 75 is a recreational area (community pool, fields and playground area) behind Barrier 108. The area is being developed but it appears it will be used by the adjacent residential development during daylight hours every day of the week for four 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.

$$(725/3) \times (12/24) \times (4/12) = 40$$

This comes to 40 residential equivalents for receptor 75, represented by 10 receptors in a nodal array. Each receptor in the array will be treated as 4 residential equivalents in the barrier analysis.

See Exhibit 13.73 for a location map of this barrier and Appendix 4 for the noise barrier analysis details.

Barrier 109

Barrier 109 was eliminated due to a revision to the Orange Corridor which rendered it not necessary.

Barrier 110

A noise barrier was investigated to mitigate the predicted traffic noise level impacts to 1 impacted residential receptor (R0142A) along the Orange Corridor. Barrier 110 is 1335 ft long, with a height of 22 ft and would provide a 5 dB(A) reduction in noise at the impacted receptor, with no front row receptors achieving at least a 7 dB(A) reduction. The maximum wall allowance per benefited receptor for this barrier is 2,850 ft^2 and the wall would be 9,792 ft^2 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 13.3 for a location map of this barrier and Appendix 4 for the noise barrier analysis details.

Barrier 111

A noise barrier was investigated to mitigate the predicted traffic noise level impacts to 3 impacted residential receptors (R0192A, R0192B, R0192C) along the Orange Corridor. Barrier 111 is 1409 ft long, with a height of 20 ft and would provide a 5 to 7 dB(A) reduction in noise at the impacted receptors, with 2 front row receptors achieving at least a 7 dB(A) reduction. The maximum wall allowance per benefited receptor for this barrier is 3,037 ft^2 and the wall would be 9,394 ft^2 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 13.4 for a location map of this barrier and Appendix 4 for the noise barrier analysis details.

Barrier 112

A noise barrier was investigated to mitigate the predicted traffic noise level impacts to 3 impacted residential receptors (R1557A, R1557B, R1557C) along the Green Corridor. Barrier 112 is 1200 ft long,

with a height of 20 ft and would provide a 5 to 8 dB(A) reduction in noise at the impacted receptors, with 2 front row receptors achieving at least a 7 dB(A) reduction. The maximum wall allowance per benefited receptor for this barrier is 2,757 ft^2 and the wall would be 8,001 ft^2 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 13.48 for a location map of this barrier and Appendix 4 for the noise barrier analysis details.

Barrier 113

A noise barrier was investigated to mitigate the predicted traffic noise level impacts to 3 impacted residential receptors (R189A, R189B, R189C) along the Orange Corridor. Barrier 113 is 2000 ft long, with a height of 18 ft and would provide a 5 to 7 dB(A) reduction in noise at the impacted receptors, with 1 front row receptor achieving at least a 7 dB(A) reduction. The maximum wall allowance per benefited receptor for this barrier is 3,212 ft^2 and the wall would be 9,001 ft^2 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 13.48 for a location map of this barrier and Appendix 4 for the noise barrier analysis details.

8 Construction Noise

The major construction elements of this project are expected to be bridge building, earth removal, hauling, grading, and paving. General construction noise impacts, such as temporary speech interference for passersby and those individuals living or working near the project, can be expected particularly from bridge construction, paving operations and grading equipment. Extremely loud construction noise activities such as the usage of impact hammers will provide sporadic, temporary and potentially significant noise impacts in localized areas.

Whenever possible, measures should be taken to reduce the duration and intensity of construction noise impacts, such as work-hour limitations, enforcing equipment muffler and maintenance requirements, locating haul-road locations sensitive to neighboring land use, and the restriction of tailgate banging. In addition, the neighboring property owners and users should be provided with a means to register complaints about construction noise that includes timely response and follow-up procedures.

To reduce the potential for noise impacts at the majority of residential receptors, work should not be allowed during typical sleeping hours and limited during weekends. Impact-type activities especially should be conducted in residential areas while people are at work and children are at school. Any construction activities that are necessary during evening and overnight hours should be closely coordinated so that appropriate mitigation strategies can be put into place before the construction activities are started.

There are eighteen churches among the residential and commercial receptors along this project. Evening and weekend work should be scheduled to be sensitive to not interrupting activities and services being conducted at the church property.

There are also three schools and three child care facilities. Daytime work should be scheduled to be sensitive to not interrupting activities at the properties. None of these properties are within 700 feet of a proposed bridge so no bridge construction activities, such as pile driving, should cause impacts. Truck traffic should be routed away from the schools during school hours and at arrival and dismissal times.

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 3. The seventeen DSAs are located in multiple local jurisdictions which are listed in Table 9.

Table 9: Local Jurisdictions within Project Area

Local Jurisdiction
Town of Apex
Town of Clayton
Town of Fuquay-Varina
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 10 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 10 is based on the results of the noise modeling, it is not site-specific for any area along proposed 540. 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 10: Typical Distances to 66 and 71 dB(A) Noise Contours

Corridor	Segment	Distance[1] to 66 dB(A) Contour (feet)	Distance[1] to 71 dB(A) Contour (feet)
Red	Bells Lake Rd to Fayetteville Hwy	440	285
Red	Fayetteville Hwy to Old Stage Rd	460	215
Red	Old Stage Rd to Benson Hwy	410	245
Red	Benson Hwy to I-40	470	295
Red	I-40 to Rock Quarry Rd	690	--
Lilac	Old Stage Rd to Benson Hwy	390	190
Lilac	Benson Hwy to I-40	325	--
Lilac	I-40 to White Oak Rd	305	--
Orange	55 Bypass to Holly Springs Rd	420	270
Orange	Holly Springs Rd to Bells Lake Rd	390	265
Orange	Bells Lake Rd to Fayetteville Hwy	420	205
Orange	Fayetteville Hwy to Old Stage Rd	425	275
Orange	Old Stage Rd to Benson Hwy	325	--
Orange	Benson Hwy to I-40	425	240
Orange	Benson Hwy to I-40	430	275
Purple	Holly Springs Rd to Hilltop Needmore Rd	350	180
Purple	Hilltop Needmore Rd to Fayetteville Hwy	425	270
Blue	Fayetteville Hwy to Old Stage Rd	410	270
Blue	Old Stage Rd to Benson Hwy	365	245
Green	White Oak Rd to I-70	440	--
Green	I-70 to Old Baucom Rd	325	185
Green	Old Baucom Rd to Auburn Knightdale Rd	450	320
Green	Auburn Knightdale Rd to Poole Rd	375	230
Green	Poole Rd to I-64	430	210
Mint	Old Baucom Rd to Auburn Knightdale Rd	365	250
Tan	I-70 to Old Baucom Rd	395	270
Tan	Old Baucom Rd to Auburn Knightdale Rd	465	315
Brown	White Oak Rd to I-70	285	--
Brown	I-70 to Old Baucom Rd	365	255
Brown	Old Baucom Rd to Auburn Knightdale Rd	420	260
Teal	I-70 to Old Baucom Rd	395	260

[1]Distances measured from centerline of roadway

10 Conclusion

This Traffic Noise Analysis for the Complete 540 project (STIP R-2721, R-2828, R-2829) was conducted according to the requirements of 23 CFR 772, the NCDOT Traffic Noise Abatement Policy, July 13, 2011 and the Traffic Noise Analysis and Abatement Manual, July 13, 2011. 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 454 to 804 receptors across the 17 DSAs studied.

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.
- Across all DSAs, one barrier was found not to be feasible.
- Across all DSAs, 44 barriers were found to be feasible but were above the maximum allowable wall area per benefited receptor and are therefore not considered reasonable.
- Across all DSAs, 46 barriers were preliminarily found to be both feasible and reasonable and are likely to be included in the final design if the corridor they are associated with is selected for further consideration.
- 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.

For DSA 1, 540 noise impacts were identified and it is likely that Barriers 1, 2, 3, 6, 7, 11, 16, 17, 19, 20, 21, 22, 24, 25, 26, 27A, 33, 64, 65, 66, 107, 108 will be included in the final design of the project.

For DSA 2, 539 noise impacts were identified and it is likely that Barriers 1, 2, 3, 6, 7, 11, 16, 17, 19, 20, 21, 22, 24, 25, 26, 27A, 33, 64, 65, 66, 107, 108 will be included in the final design of the project.

For DSA 3, 565 noise impacts were identified and it is likely that Barriers 1, 2, 3, 6, 7, 11, 16, 17, 19, 20, 21, 22, 24, 25, 26, 27A, 33, 64, 65, 66, 103, 107, 108 will be included in the final design of the project.

For DSA 4, 551 noise impacts were identified and it is likely that Barriers 1, 2, 3, 6, 7, 11, 16, 17, 19, 20, 21, 22, 24, 25, 26, 27A, 33, 64, 65, 66, 100, 107, 108 will be included in the final design of the project.

For DSA 5, 541 noise impacts were identified and it is likely that Barriers 1, 2, 3, 6, 7, 11, 16, 17, 19, 20, 21, 22, 24, 25, 26, 27A, 33, 64, 65, 66, 107, 108 will be included in the final design of the project.

For DSA 6, 804 noise impacts were identified and it is likely that Barriers 1, 2, 3, 6, 7, 11, 34, 40, 42, 43, 44, 45, 47, 48, 51, 64, 65, 66, 107, 108 will be included in the final design of the project.

For DSA 7, 804 noise impacts were identified and it is likely that Barriers 1, 2, 3, 6, 7, 11, 34, 40, 42, 43, 44, 45, 47, 48, 51, 64, 65, 66, 107, 108 will be included in the final design of the project.

For DSA 8, 454 noise impacts were identified and it is likely that Barriers 1, 2, 3, 64, 65, 66, 77, 78, 80, 82, 84, 87, 92, 94, 107, 108 will be included in the final design of the project.

For DSA 9, 454 noise impacts were identified and it is likely that 1, 2, 3, 64, 65, 66, 77, 78, 80, 82, 84, 87, 92, 94, 107, 108 will be included in the final design of the project.

For DSA 10, 480 noise impacts were identified and it is likely that 1, 2, 3, 64, 65, 66, 77, 78, 80, 82, 84, 87, 92, 94, 103, 107, 108 will be included in the final design of the project.

For DSA 11, 510 noise impacts were identified and it is likely that 1, 2, 3, 64, 65, 66, 77, 78, 80, 82, 84, 87, 92, 94, 100, 107, 108 will be included in the final design of the project.

For DSA 12, 456 noise impacts were identified and it is likely that 1, 2, 3, 64, 65, 66, 77, 78, 80, 82, 84, 87, 92, 94, 107, 108 will be included in the final design of the project.

For DSA 13, 598 noise impacts were identified and it is likely that Barriers 1, 2, 3, 6, 7, 11, 16, 17, 19, 20, 64, 65, 66, 73, 74, 75, 76, 77, 78, 80, 82, 107, 108 will be included in the final design of the project.

For DSA 14, 597 noise impacts were identified and it is likely that Barriers 1, 2, 3, 6, 7, 11, 16, 17, 19, 20, 64, 65, 66, 73, 74, 75, 76, 77, 78, 80, 82, 107, 108 will be included in the final design of the project.

For DSA 15, 624 noise impacts were identified and it is likely that Barriers 1, 2, 3, 6, 7, 11, 16, 17, 19, 20, 64, 65, 66, 73, 74, 75, 76, 77, 78, 80, 82, 107, 108 will be included in the final design of the project.

For DSA 16, 610 noise impacts were identified and it is likely that Barriers 1, 2, 3, 6, 7, 11, 16, 17, 19, 20, 64, 65, 66, 73, 74, 75, 76, 77, 78, 80, 82, 100, 107, 108 will be included in the final design of the project.

For DSA 17, 600 noise impacts were identified and it is likely that Barriers 1, 2, 3, 6, 7, 11, 16, 17, 19, 20, 64, 65, 66, 73, 74, 75, 76, 77, 78, 80, 82, 103, 107, 108 will be included in the final design of the project.

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 approval. 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.

11 References

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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*".

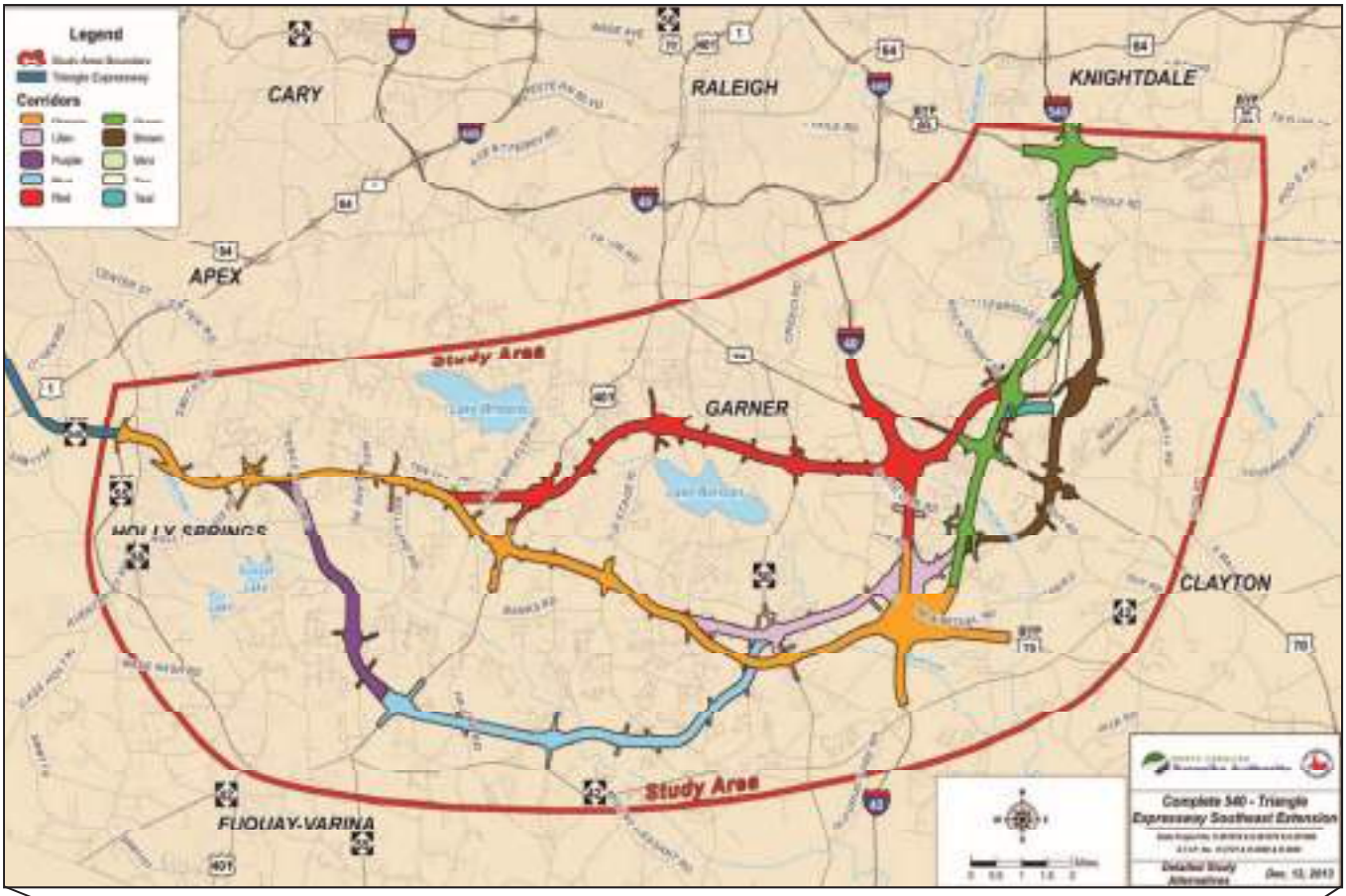
North Carolina Department of Transportation. July 2011. "*Traffic Noise Abatement Policy.*"

North Carolina Department of Transportation. July 2011. "*Traffic Noise Analysis and Abatement Manual.*"

EXHIBITS

EXHIBIT 1

PROJECT LOCATION MAP

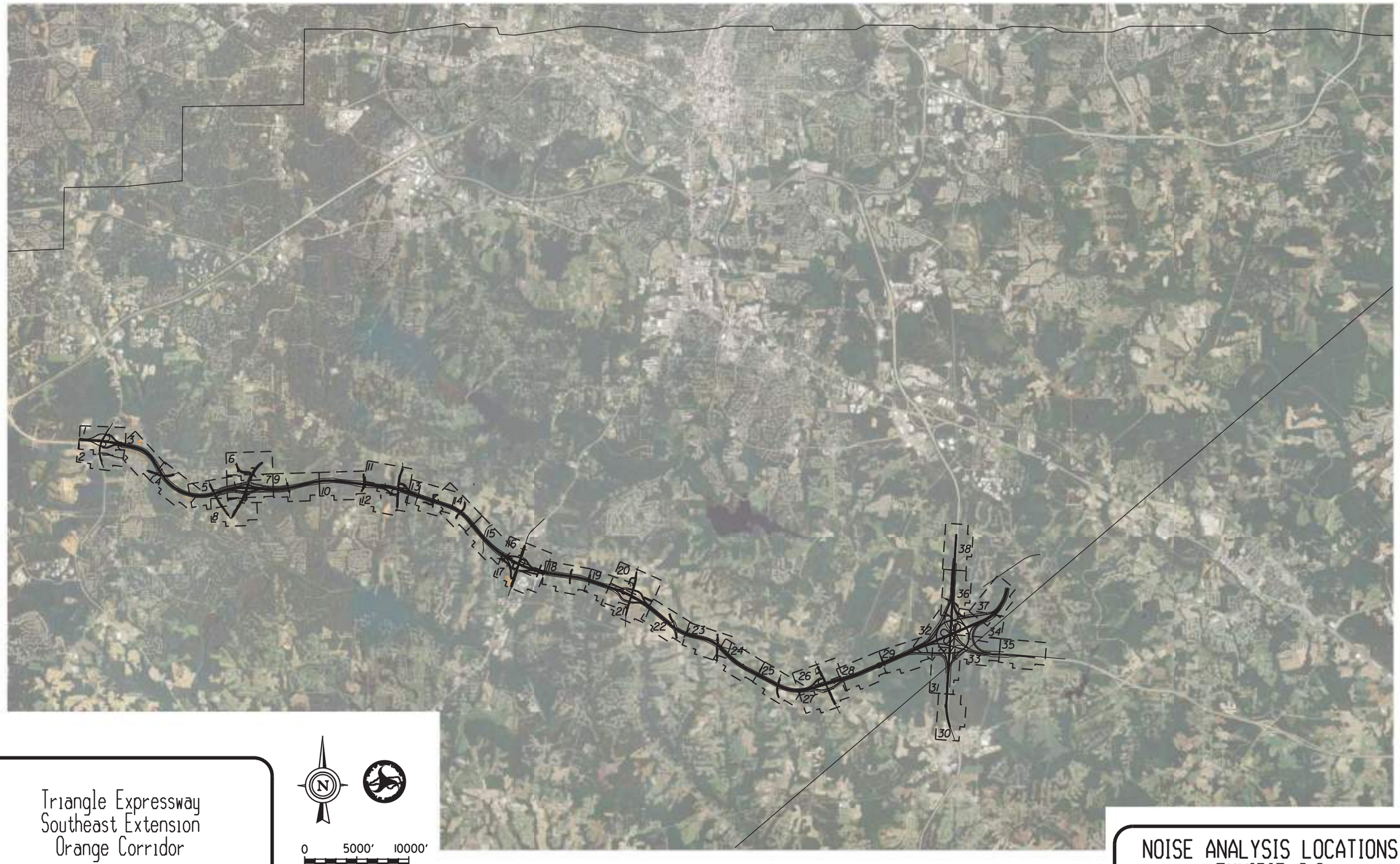




Triangle Expressway Southeast Extension
Project Location Map
Exhibit 1

EXHIBIT 2

ORANGE CORRIDOR
NOISE ANALYSIS LOCATIONS

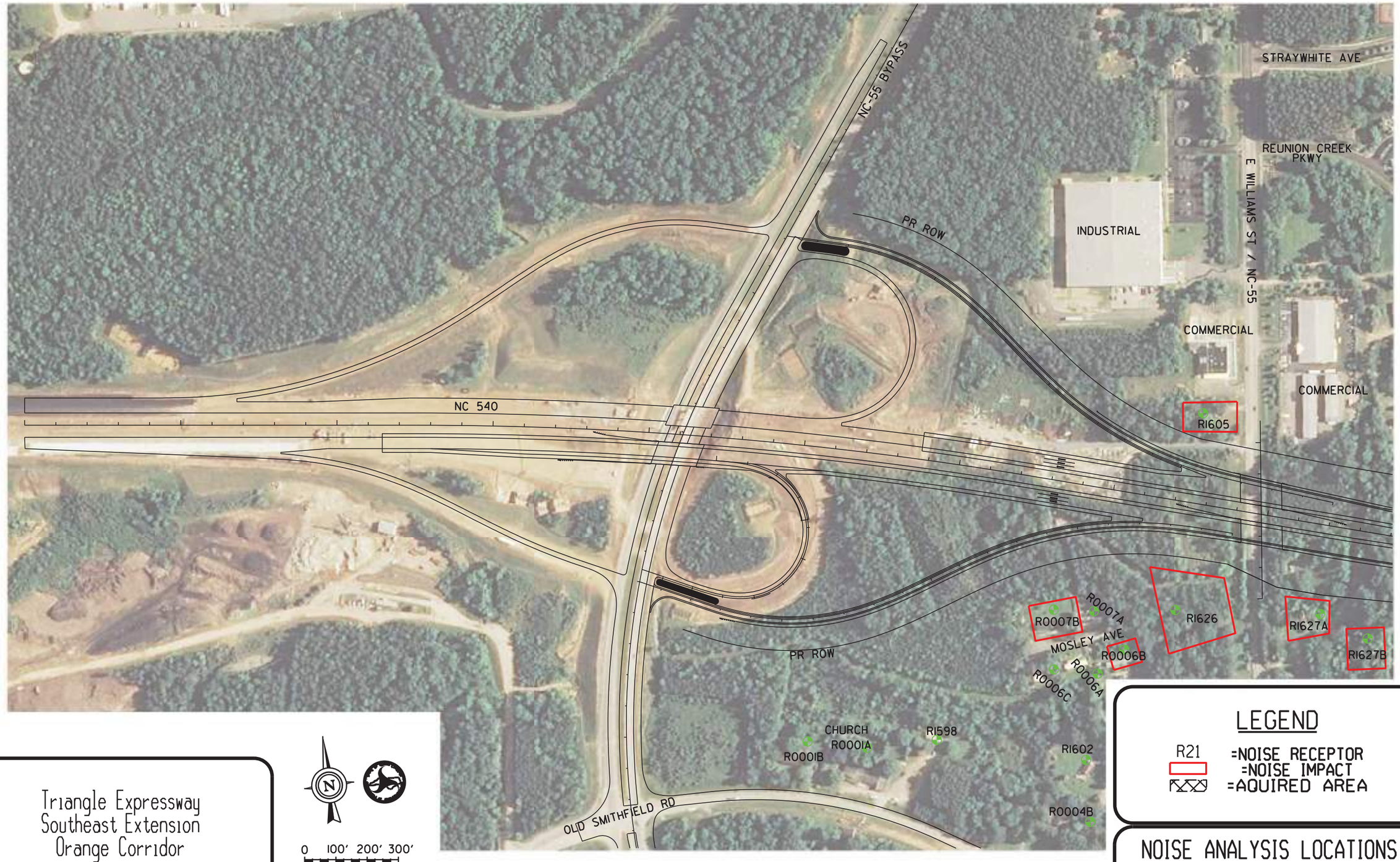


Triangle Expressway
Southeast Extension
Orange Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

N

0 5000' 10000'

NOISE ANALYSIS LOCATIONS
EXHIBIT 2.0

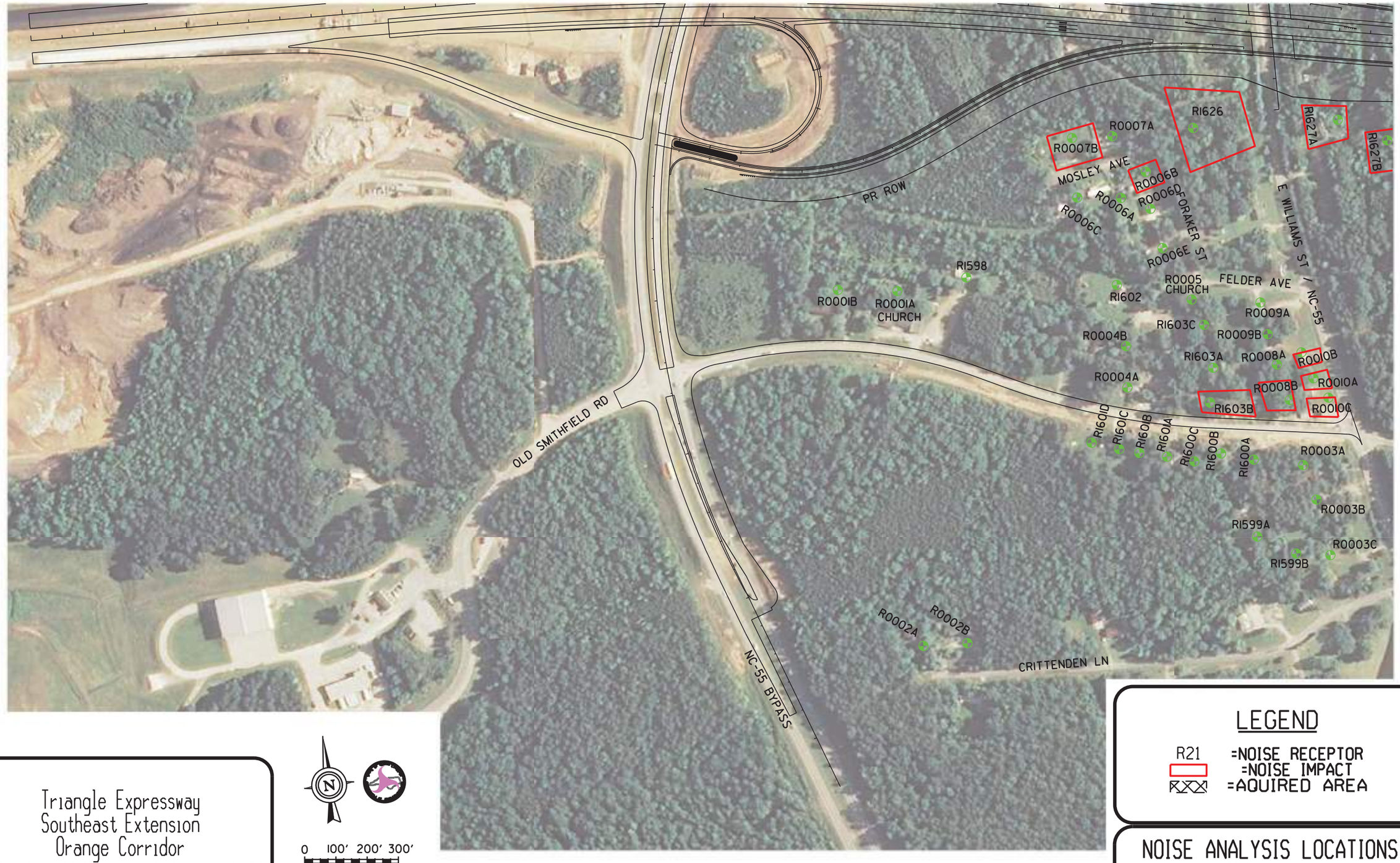


Triangle Expressway
Southeast Extension
Orange Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=AQUIRED AREA

NOISE ANALYSIS LOCATIONS
EXHIBIT 2.1



Triangle Expressway
Southeast Extension
Orange Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=AQUIRED AREA

NOISE ANALYSIS LOCATIONS
EXHIBIT 2.2



R0006 R0009
Triangle Expressway
Southeast Extension
Orange Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=AQUIRED AREA

NOISE ANALYSIS LOCATIONS
EXHIBIT 2.3



Triangle Expressway
Southeast Extension
Orange Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=AQUIRED AREA

NOISE ANALYSIS LOCATIONS
EXHIBIT 2.4

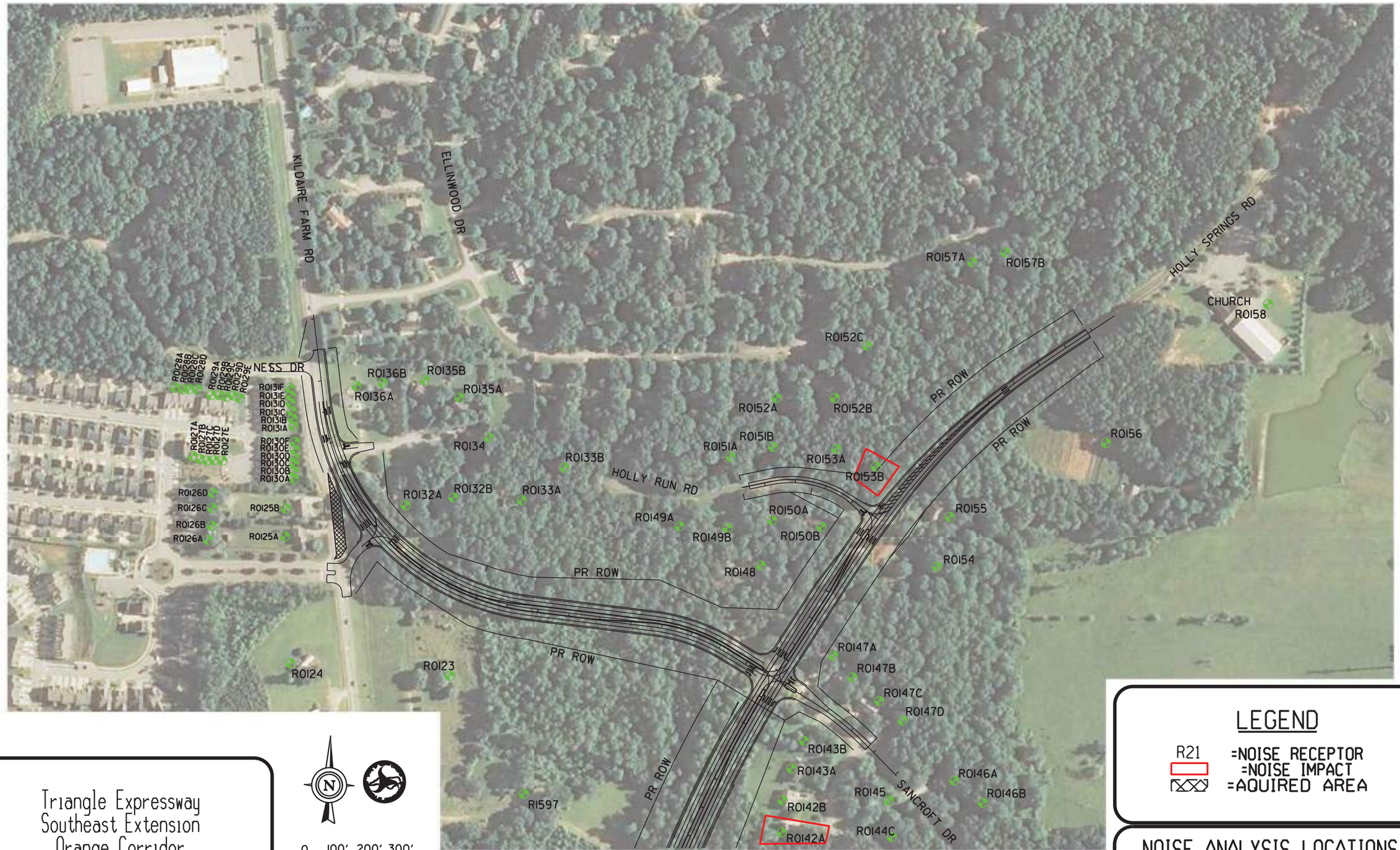


Triangle Expressway
Southeast Extension
Orange Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=AQUIRED AREA

NOISE ANALYSIS LOCATIONS
EXHIBIT 2.5

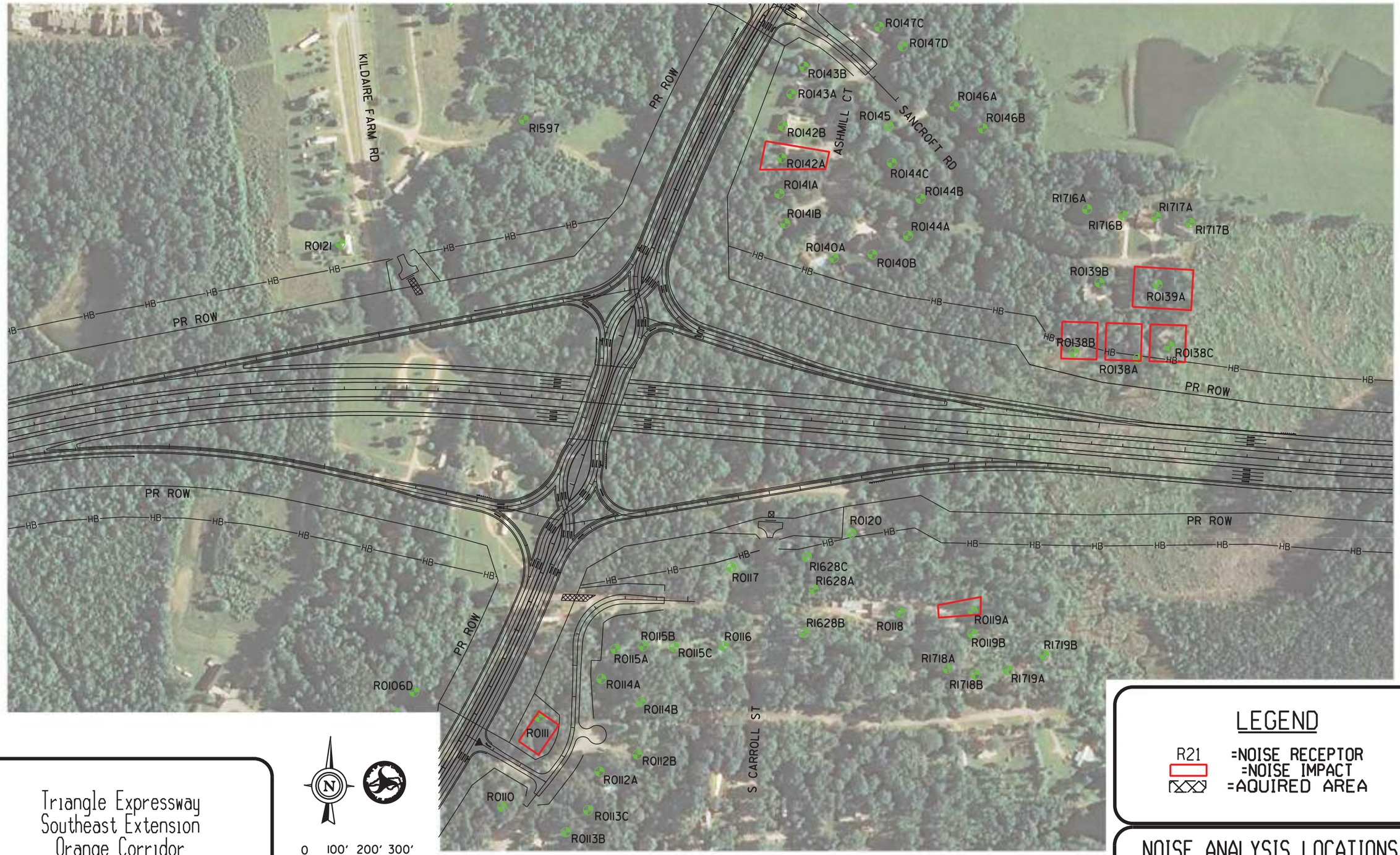


Triangle Expressway
Southeast Extension
Orange Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=AQUIRED AREA

NOISE ANALYSIS LOCATIONS
EXHIBIT 2.6



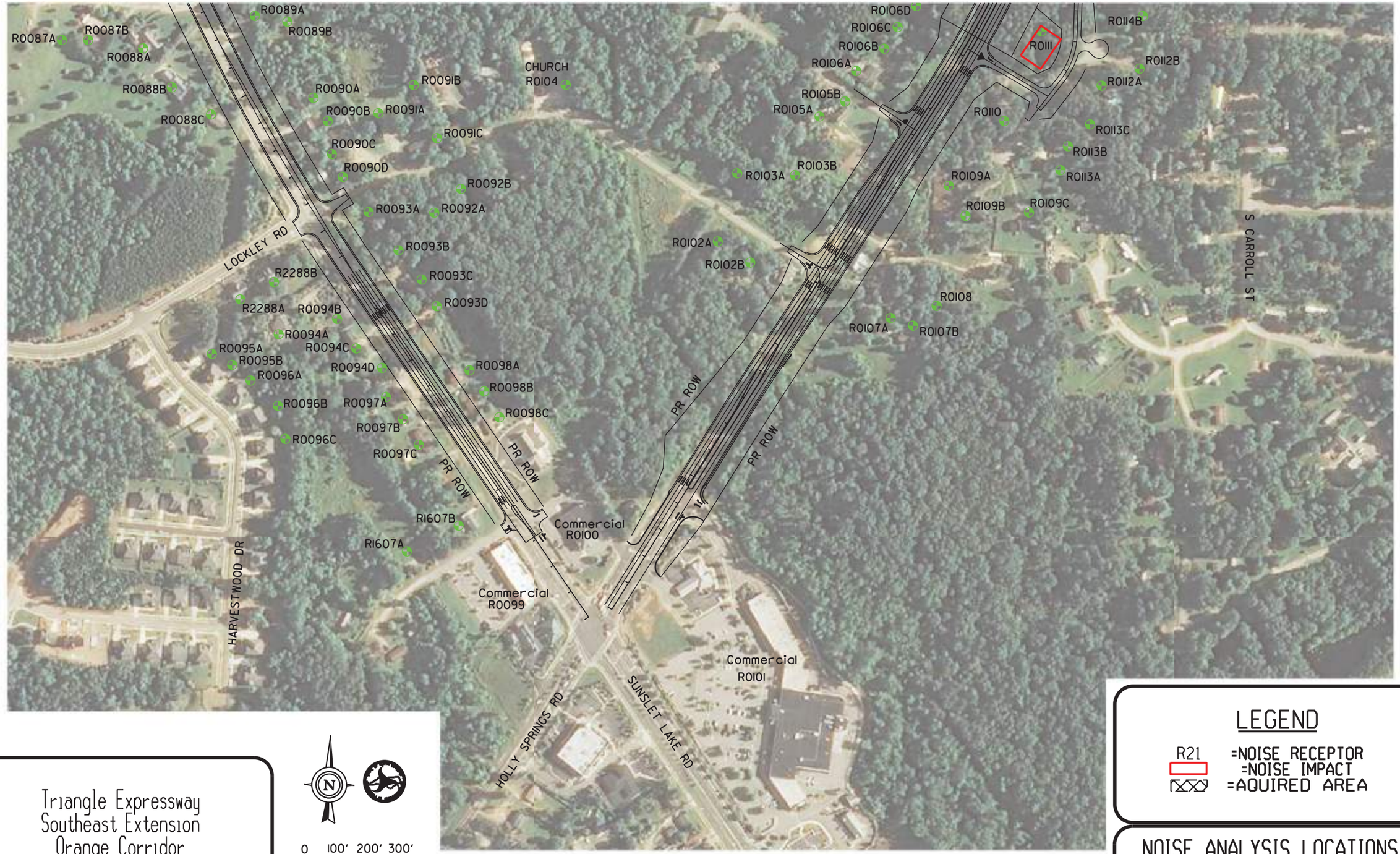
Triangle Expressway
Southeast Extension
Orange Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=AQUIRED AREA

NOISE ANALYSIS LOCATIONS
EXHIBIT 2.7



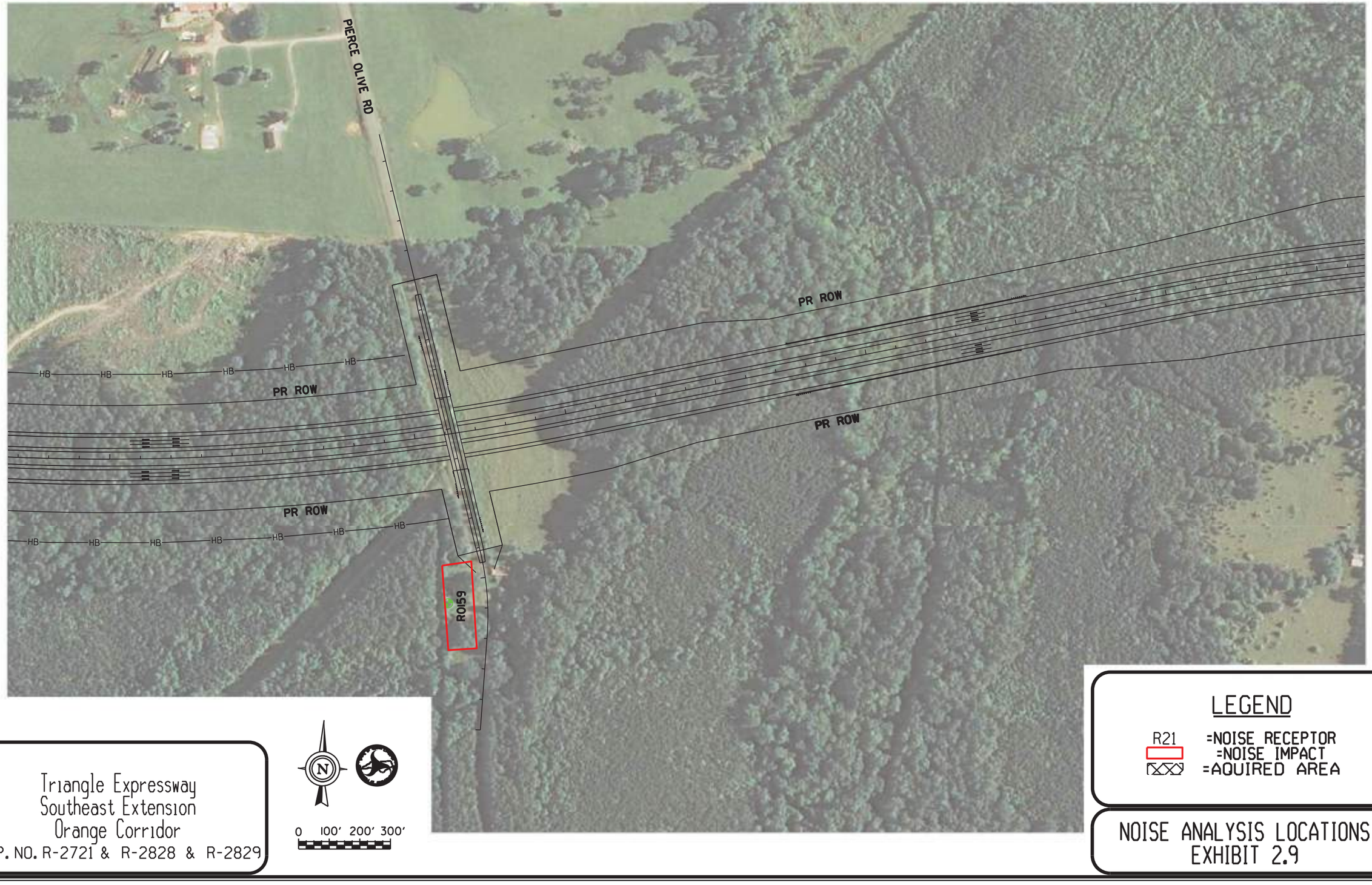
Triangle Expressway
Southeast Extension
Orange Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=AQUIRED AREA

NOISE ANALYSIS LOCATIONS
EXHIBIT 2.8



Triangle Expressway
Southeast Extension
Orange Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

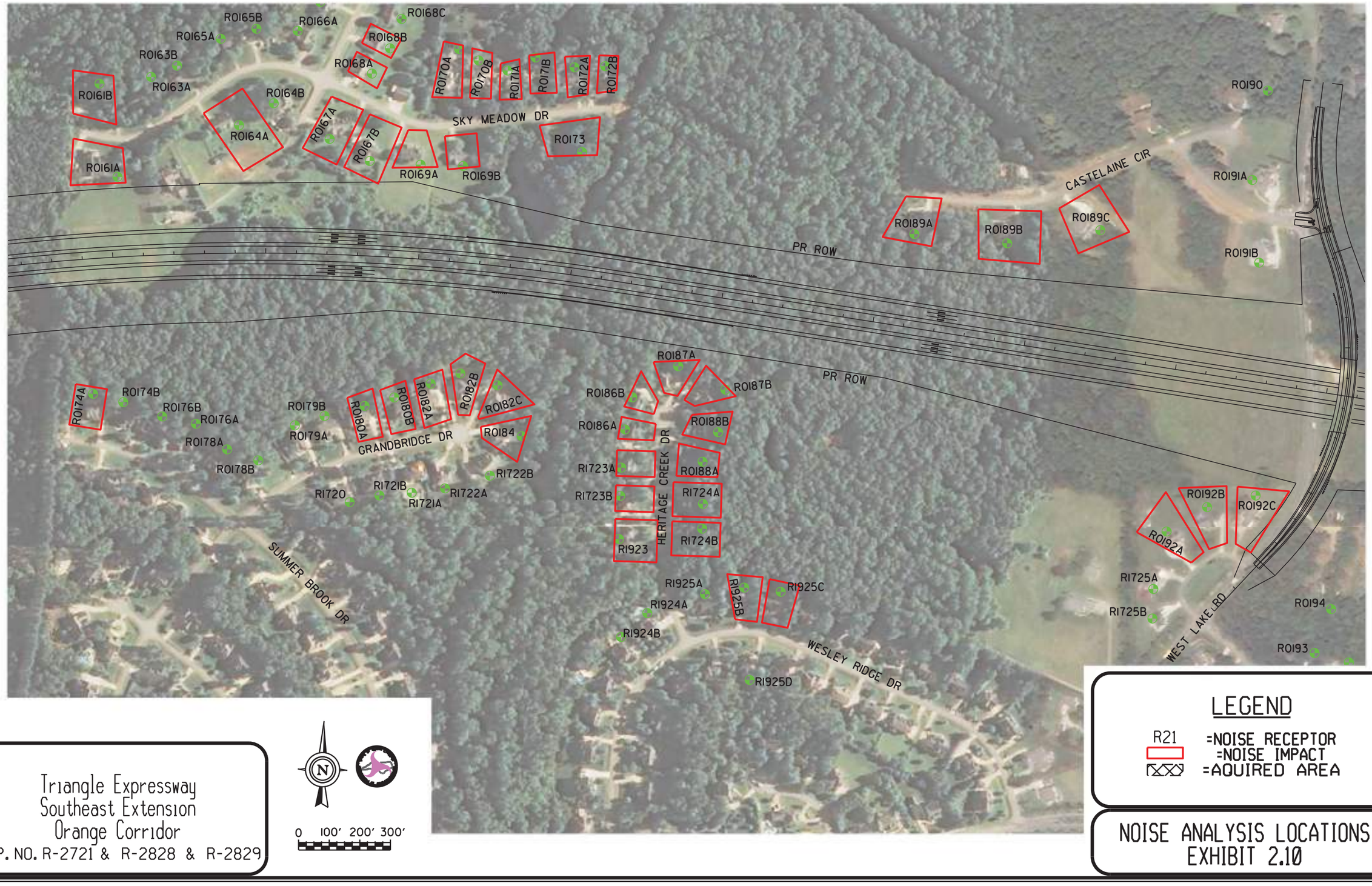
N

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=AQUIRED AREA

NOISE ANALYSIS LOCATIONS
EXHIBIT 2.9



Triangle Expressway
Southeast Extension
Orange Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

NOISE ANALYSIS LOCATIONS
EXHIBIT 2.10



Triangle Expressway
Southeast Extension
Orange Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=AQUIRED AREA

NOISE ANALYSIS LOCATIONS
EXHIBIT 2.11

PR ROW

PR ROW

PR ROW

WEST LAKE RD

BELLS LAKE RD

R0196

R0197A

R0197B

R0195

RI726

RI727

RI728

RI729

RI730

RI731

R0198B

R0198A

R0198C

R0194

RI926

RI927

HARRIAT DR

OXFORD GREEN DR

R0199A

R0199C

R0199B

R0203

R0204

R0205

R0193A

R0193B

RI926A

R2289A

R2290B

R2289B

R2290A

R0206

R0207

R0208

ALPHAWOOD DR

PONY SOLDIER DR

R0210

R0209

R0211B

R0211A

R0213A

R0213B

R0212

LANGSTON CIR

HENDERSON RD

Triangle Expressway
Southeast Extension
Orange Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

N

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=AQUIRED AREA

NOISE ANALYSIS LOCATIONS
EXHIBIT 2.12



Triangle Expressway
Southeast Extension
Orange Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=AQUIRED AREA

NOISE ANALYSIS LOCATIONS
EXHIBIT 2.13



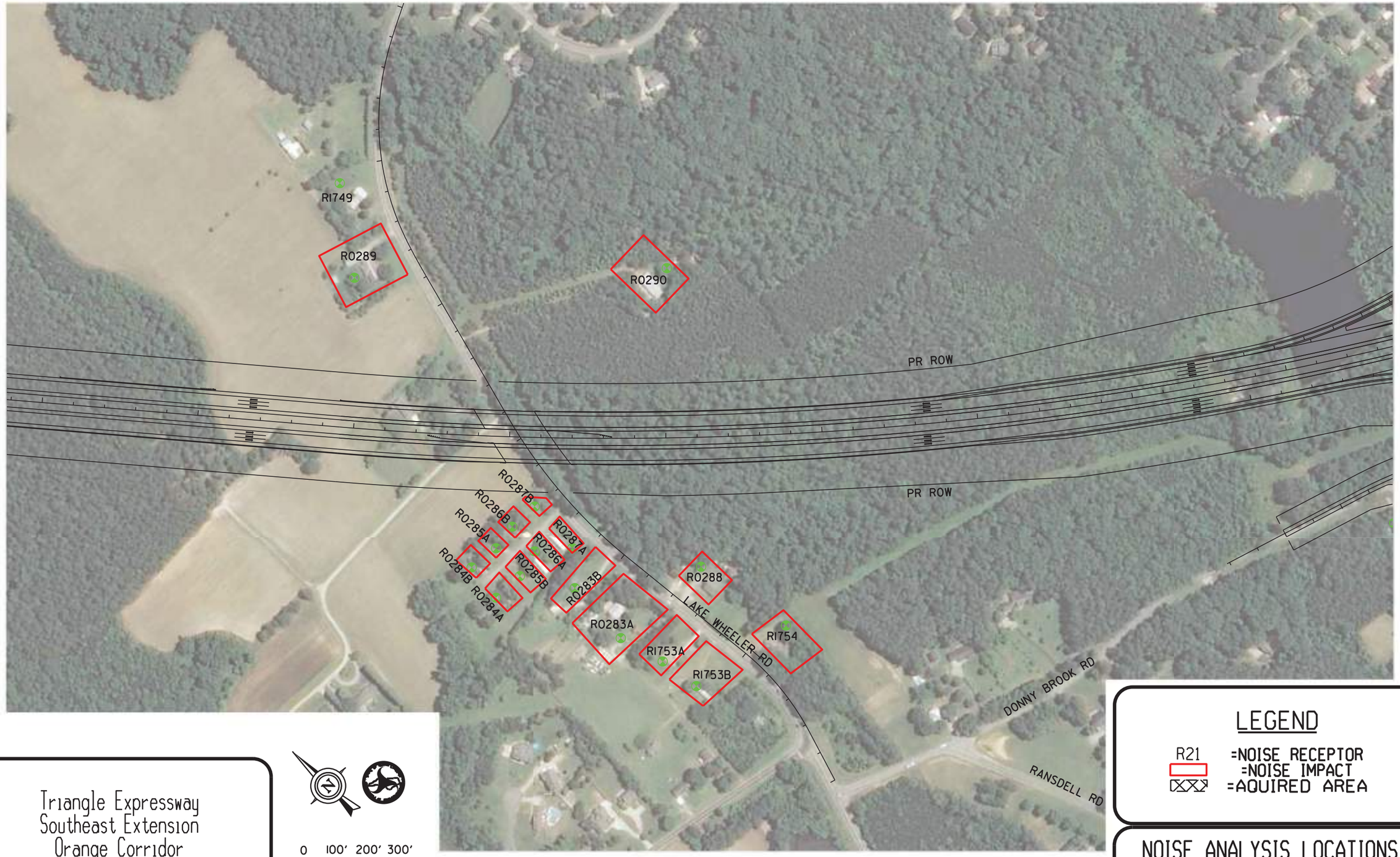
Triangle Expressway
Southeast Extension
Orange Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=AQUIRED AREA

NOISE ANALYSIS LOCATIONS
EXHIBIT 2.14



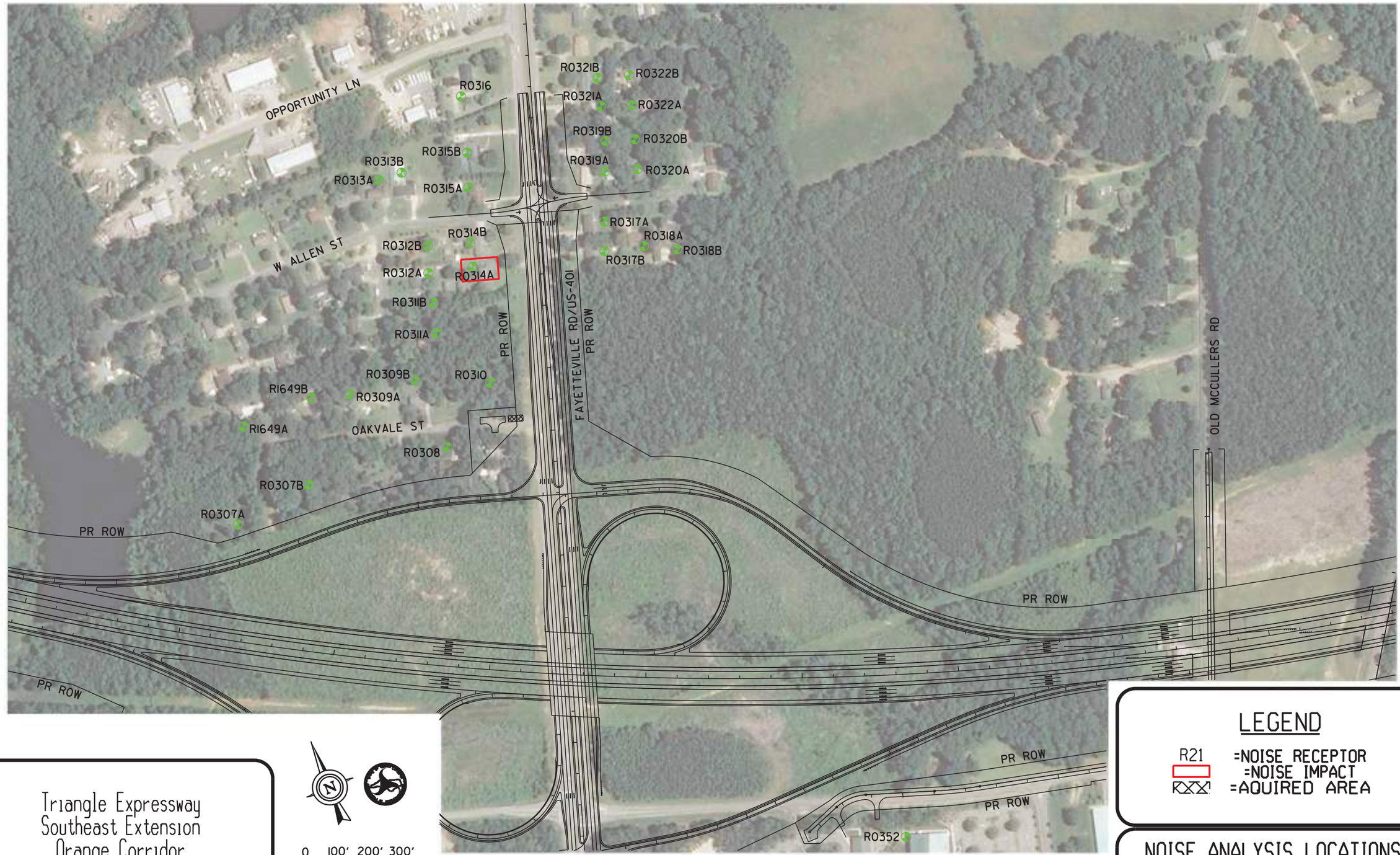
Triangle Expressway
Southeast Extension
Orange Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=AQUIRED AREA

NOISE ANALYSIS LOCATIONS
EXHIBIT 2.15



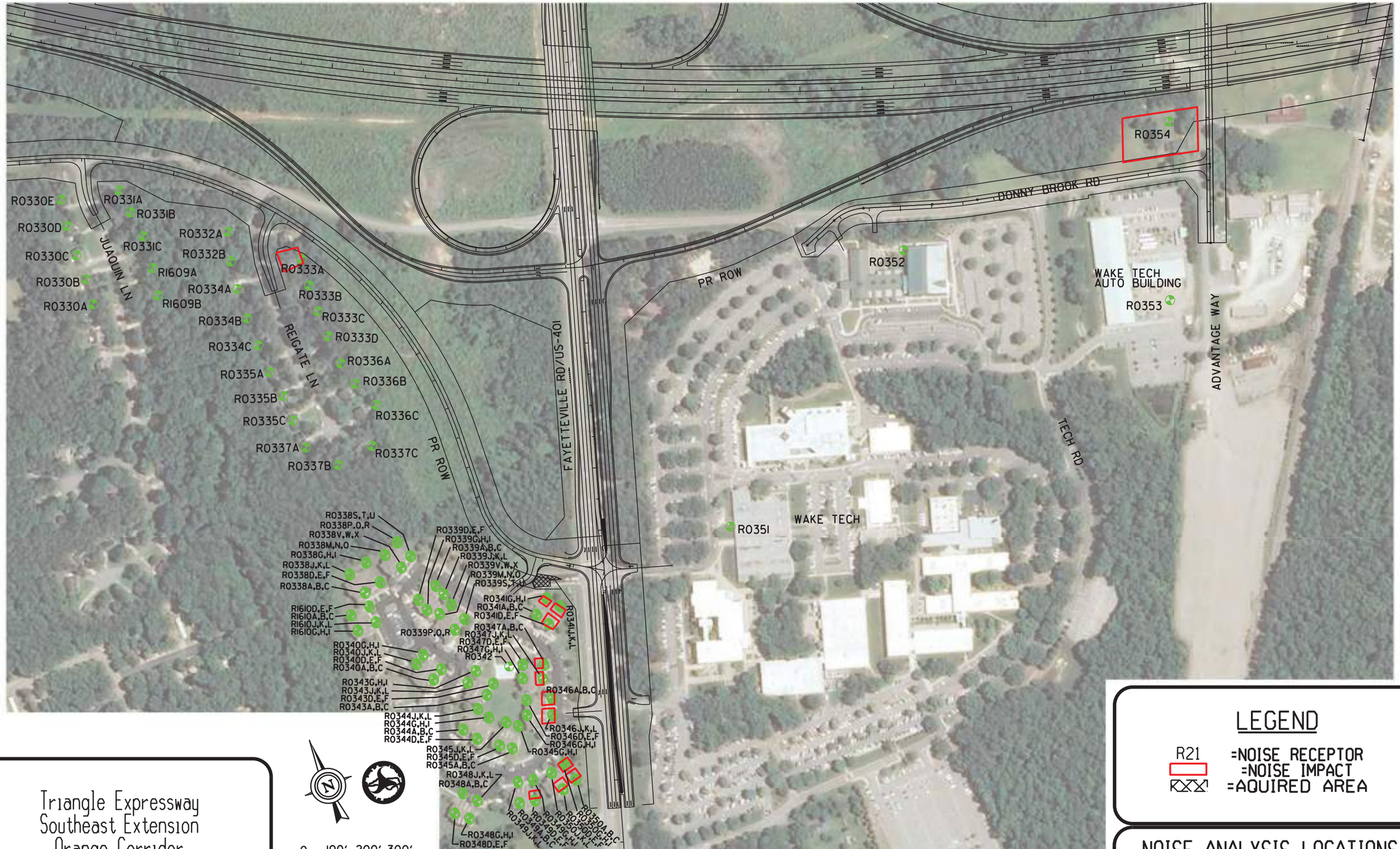
Triangle Expressway
Southeast Extension
Orange Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=AQUIRED AREA

NOISE ANALYSIS LOCATIONS
EXHIBIT 2.16

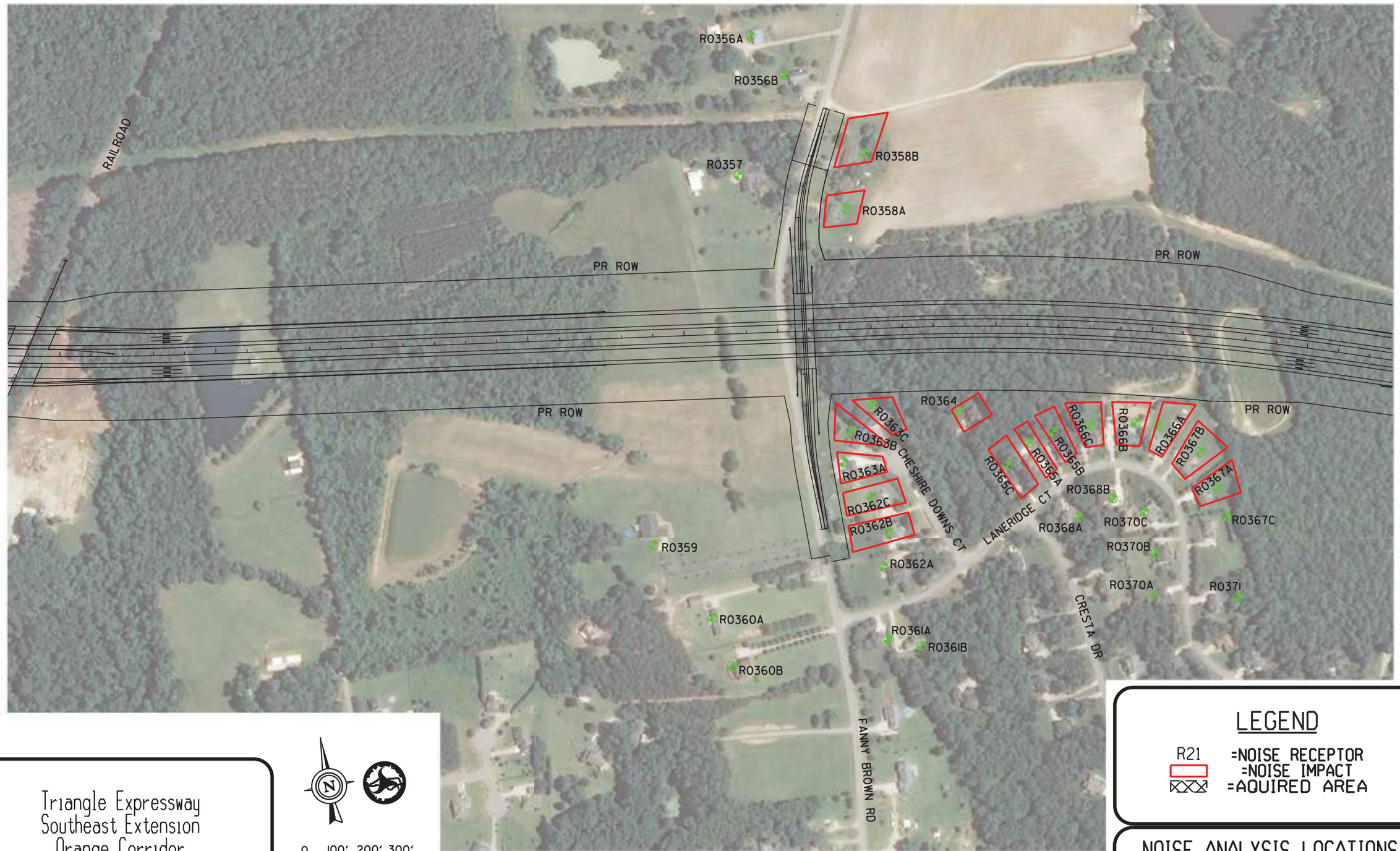


Triangle Expressway
Southeast Extension
Orange Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=AQUIRED AREA

NOISE ANALYSIS LOCATIONS
EXHIBIT 2.17

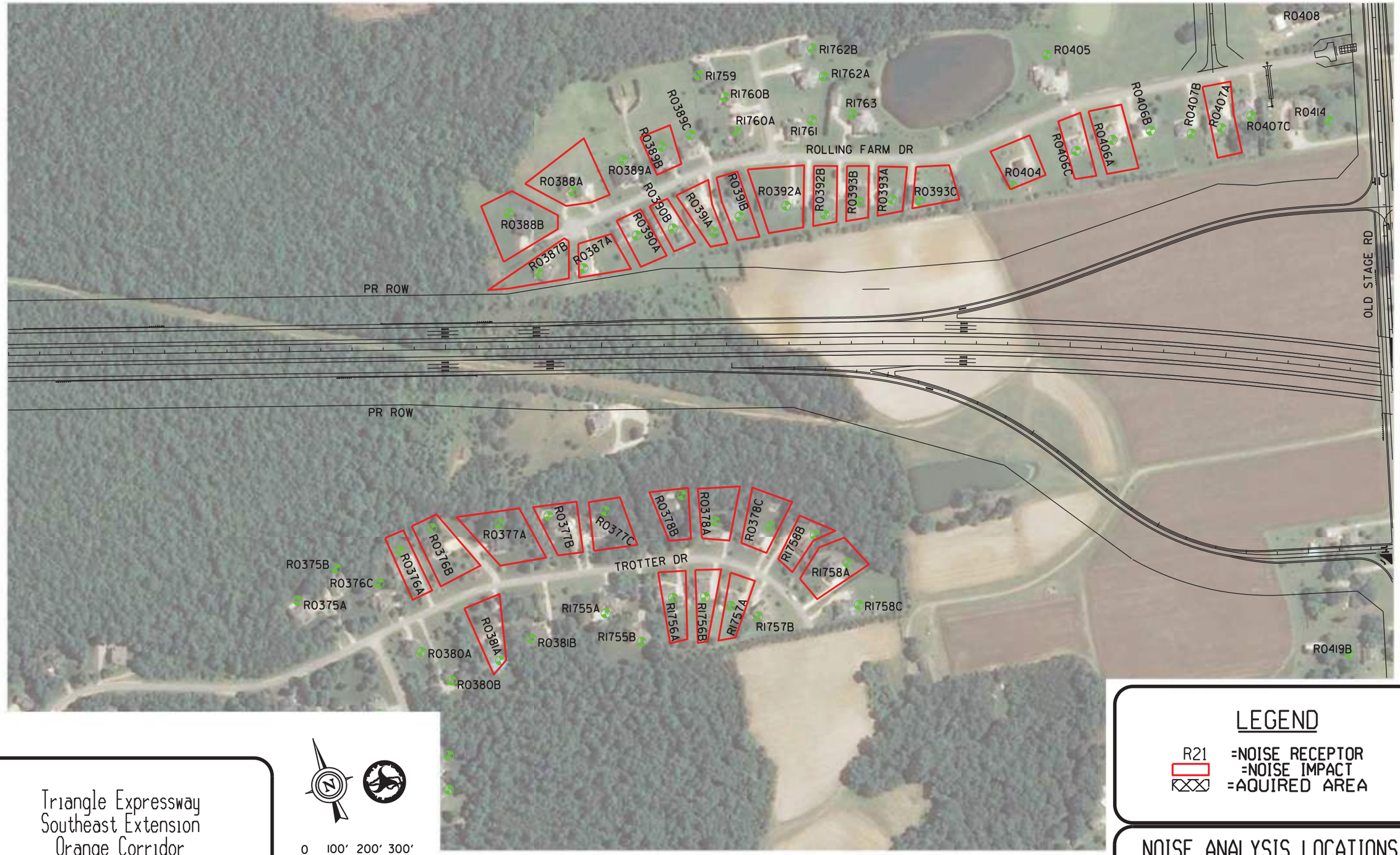


Triangle Expressway
Southeast Extension
Orange Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=AQUIRED AREA

NOISE ANALYSIS LOCATIONS
EXHIBIT 2.18



Triangle Expressway
Southeast Extension
Orange Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=AQUIRED AREA

NOISE ANALYSIS LOCATIONS
EXHIBIT 2.19



Triangle Expressway
Southeast Extension
Orange Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=AQUIRED AREA

NOISE ANALYSIS LOCATIONS
EXHIBIT 2.20



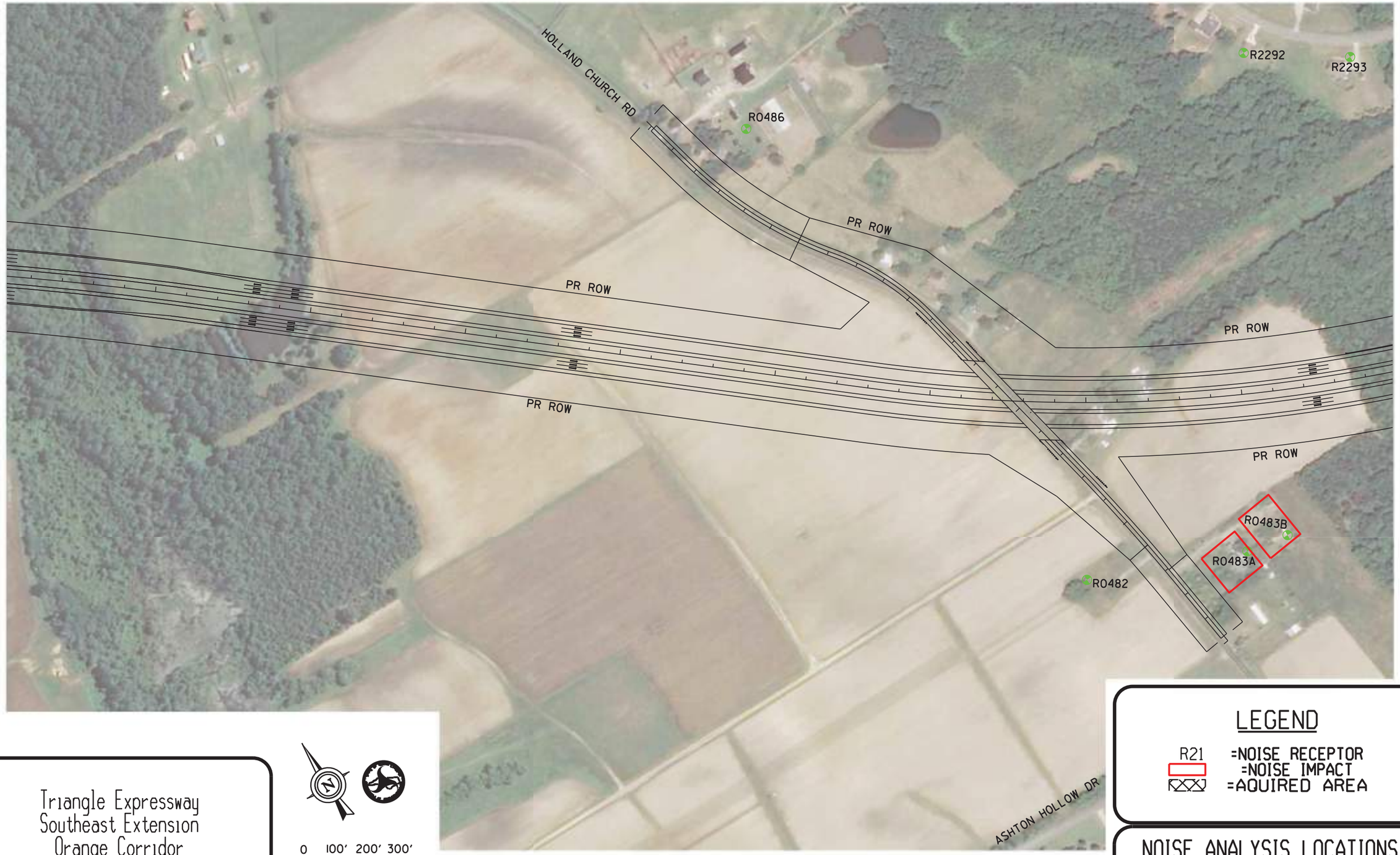
Triangle Expressway
Southeast Extension
Orange Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=AQUIRED AREA

NOISE ANALYSIS LOCATIONS
EXHIBIT 2.21



Triangle Expressway
Southeast Extension
Orange Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=AQUIRED AREA

NOISE ANALYSIS LOCATIONS
EXHIBIT 2.22



Triangle Expressway
Southeast Extension
Orange Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=AQUIRED AREA

NOISE ANALYSIS LOCATIONS
EXHIBIT 2.23



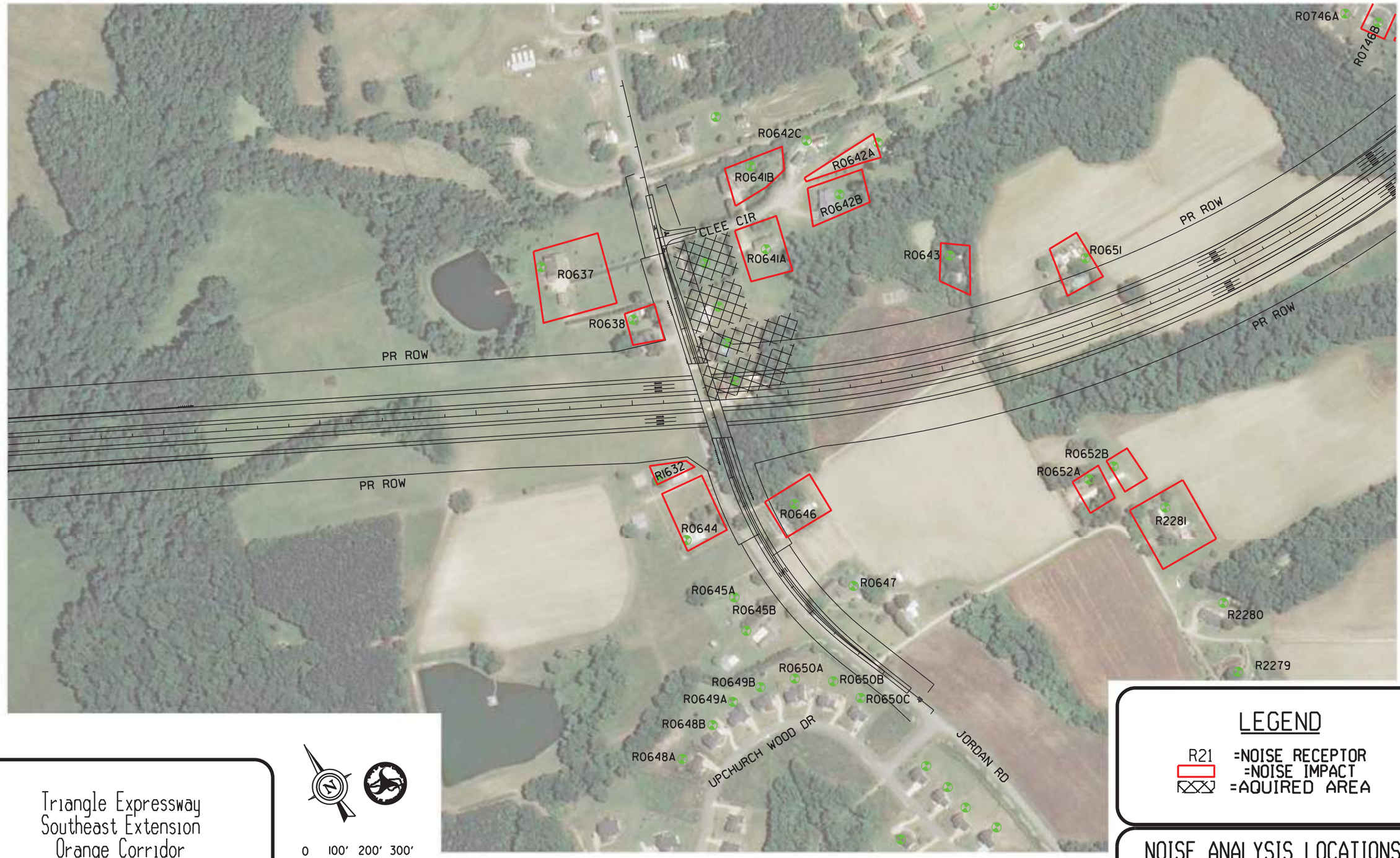
Triangle Expressway
Southeast Extension
Orange Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=AQUIRED AREA

NOISE ANALYSIS LOCATIONS
EXHIBIT 2.24



Triangle Expressway
Southeast Extension
Orange Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=AQUIRED AREA

NOISE ANALYSIS LOCATIONS
EXHIBIT 2.25



Triangle Expressway
Southeast Extension
Orange Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=AQUIRED AREA

NOISE ANALYSIS LOCATIONS
EXHIBIT 2.26

PR ROW

R1613

R1614

R0748A

R0748B

R0749A

R0749B

R0752A

R0752B

R0753A

R1798

R1799

R0750A

R0750B

R0750C

R0753B

R1800

R0751B

R0751A

R0755

OPEN FIELD DR

R0754

R0758A

R0757A

R0758B

R0757B

R0760C

R0759A

R0760A

STEVENS OAKS DR

R0759B

R0760B

R0761A

R0762A

R0761B

R0762B

R0762C

R0763

R0764

PR ROW

R0756

PR ROW

BENSON RD / NC-50

R0765B

R0765A

CLEVELAND SCHOOL RD

Triangle Expressway
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Orange Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

N

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=AQUIRED AREA

NOISE ANALYSIS LOCATIONS
EXHIBIT 2.27



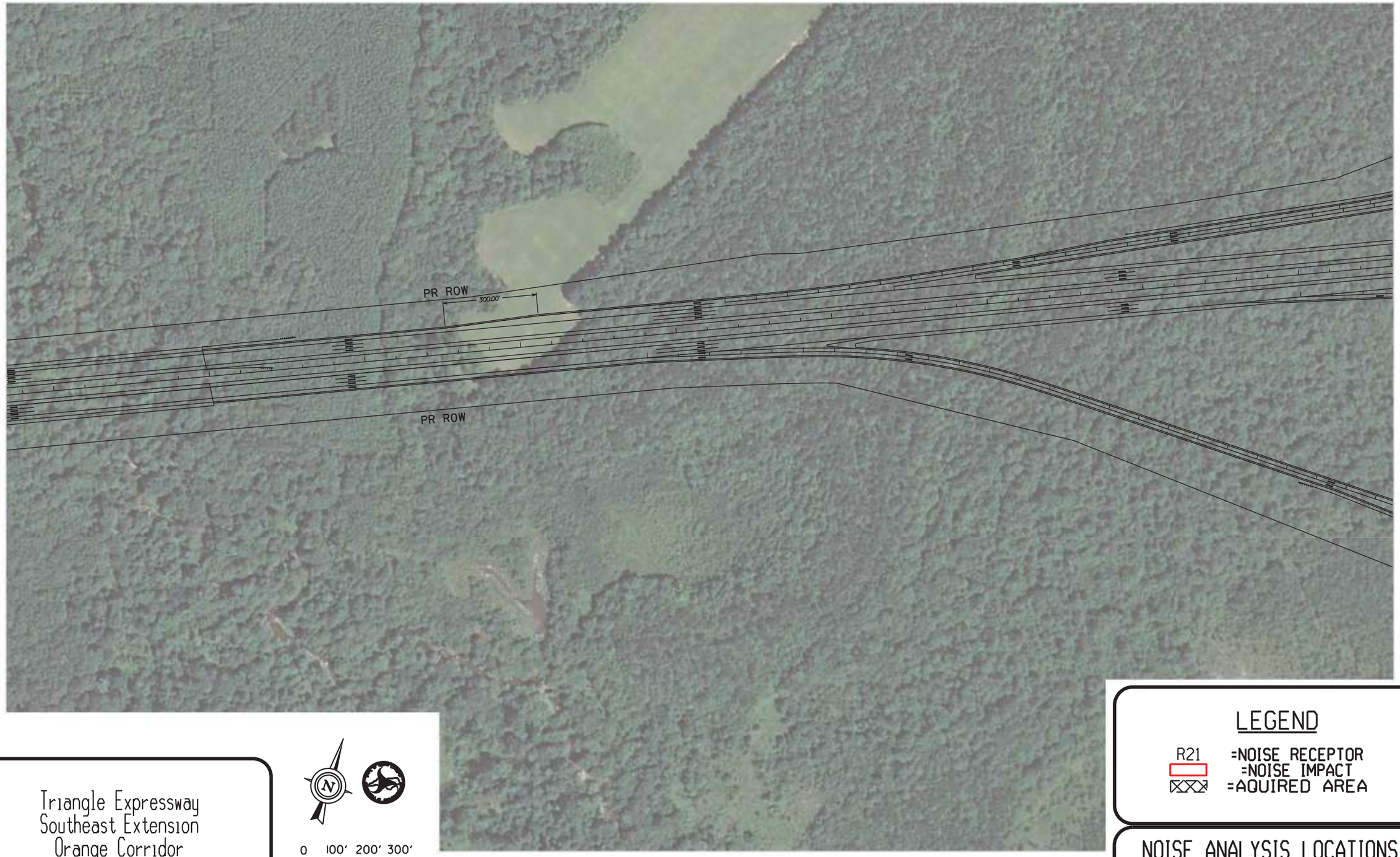
Triangle Expressway
Southeast Extension
Orange Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=AQUIRED AREA

NOISE ANALYSIS LOCATIONS
EXHIBIT 2.28



Triangle Expressway
Southeast Extension
Orange Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=AQUIRED AREA

NOISE ANALYSIS LOCATIONS
EXHIBIT 2.29



Triangle Expressway
Southeast Extension
Orange Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=AQUIRED AREA

NOISE ANALYSIS LOCATIONS
EXHIBIT 2.30



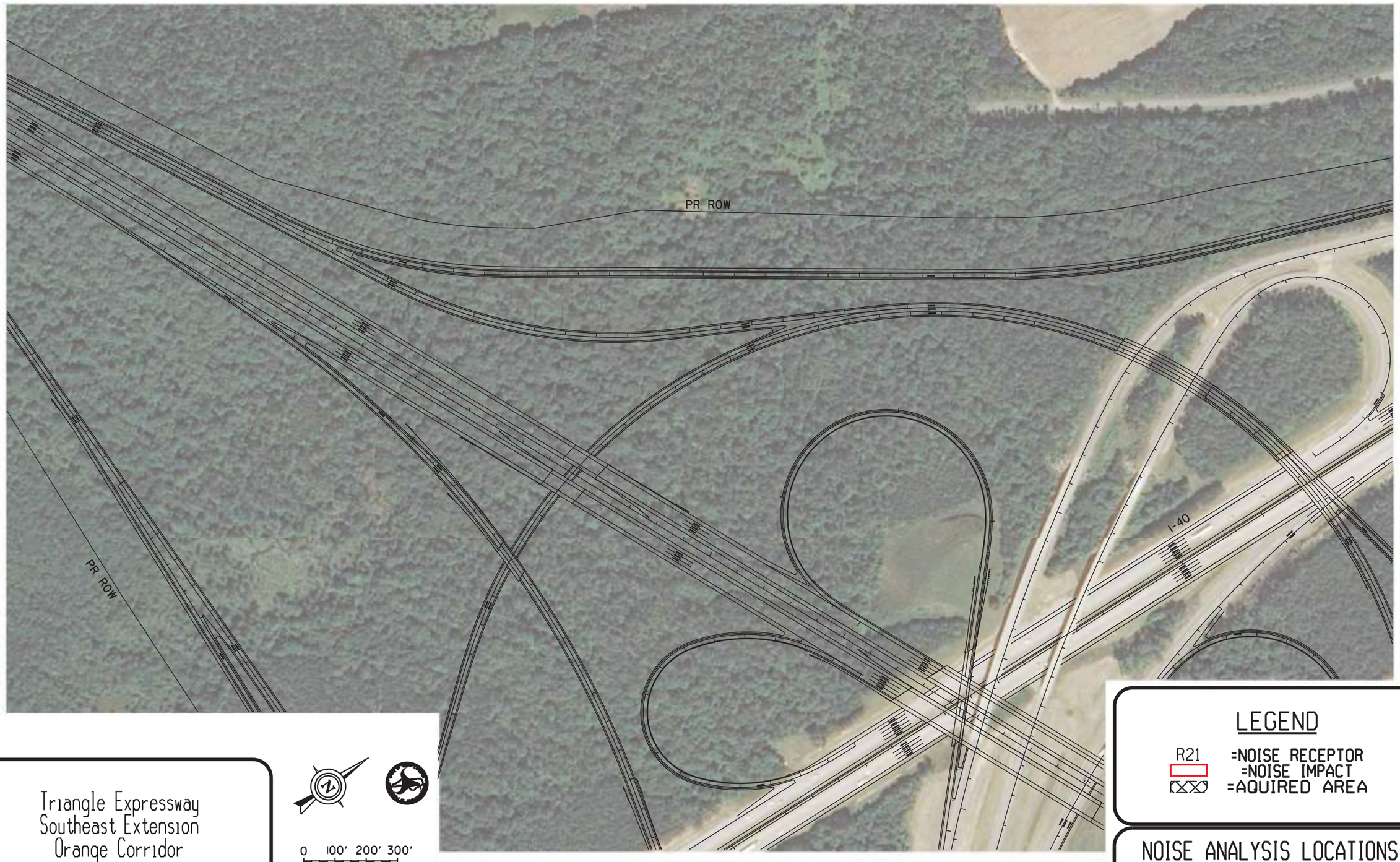
Triangle Expressway
Southeast Extension
Orange Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=AQUIRED AREA

NOISE ANALYSIS LOCATIONS
EXHIBIT 2.31



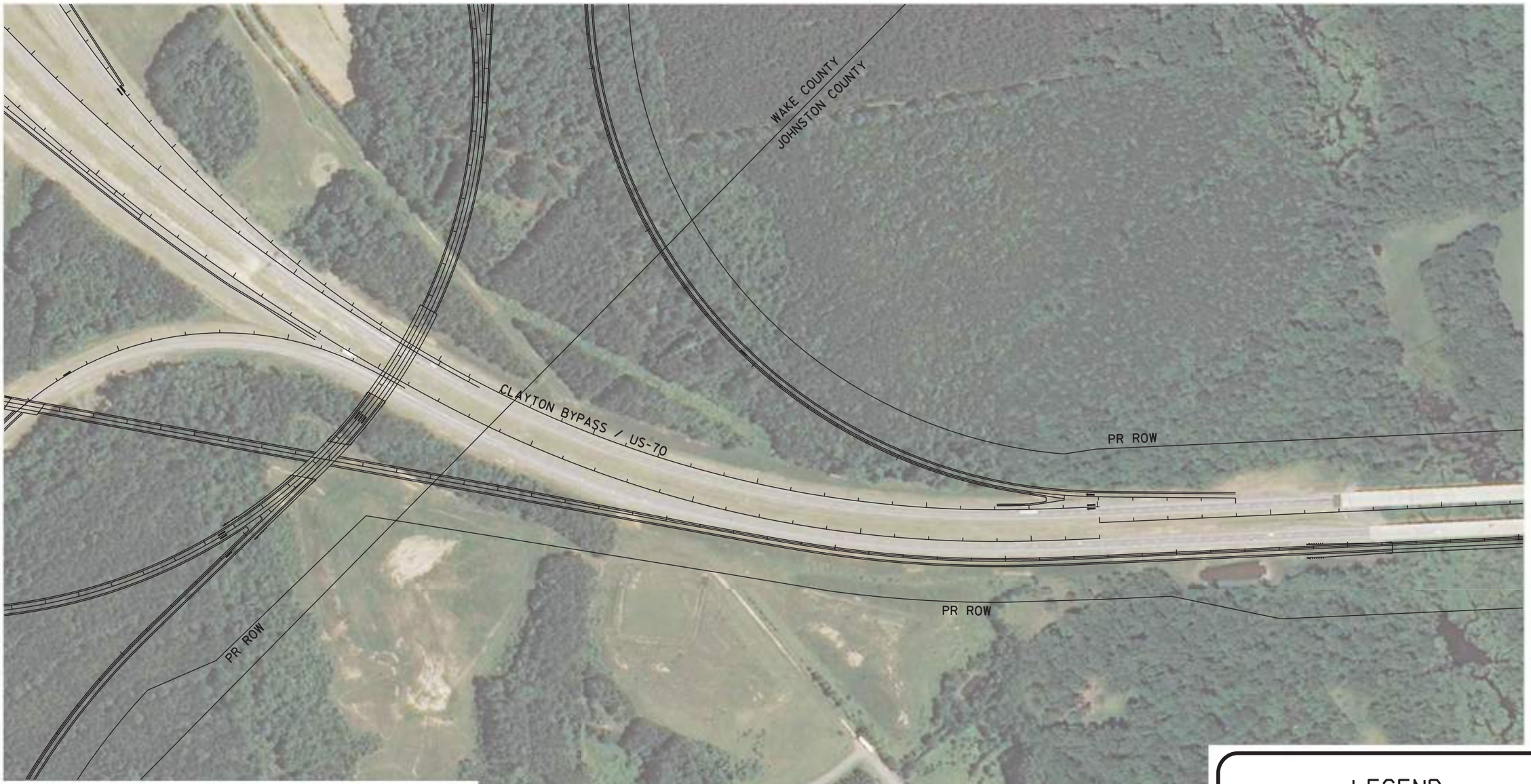
Triangle Expressway
Southeast Extension
Orange Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=AQUIRED AREA

NOISE ANALYSIS LOCATIONS
EXHIBIT 2.32



Triangle Expressway
Southeast Extension
Orange Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

N

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=AQUIRED AREA

NOISE ANALYSIS LOCATIONS
EXHIBIT 2.33



Triangle Expressway
Southeast Extension
Orange Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=AQUIRED AREA

NOISE ANALYSIS LOCATIONS
EXHIBIT 2.34



Triangle Expressway
Southeast Extension
Orange Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

N

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=AQUIRED AREA

NOISE ANALYSIS LOCATIONS
EXHIBIT 2.35



Triangle Expressway
Southeast Extension
Orange Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

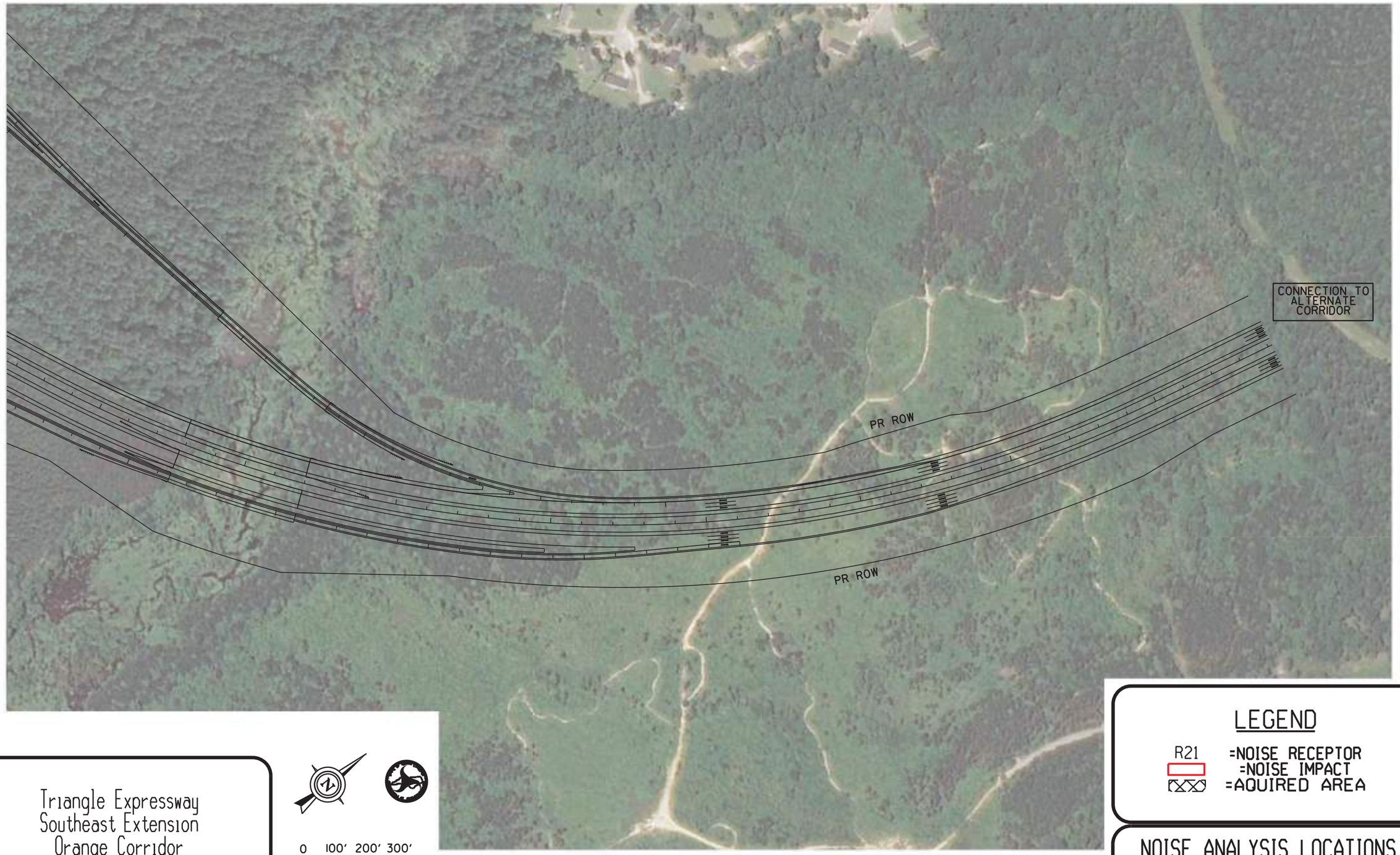
N

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=AQUIRED AREA

NOISE ANALYSIS LOCATIONS
EXHIBIT 2.36



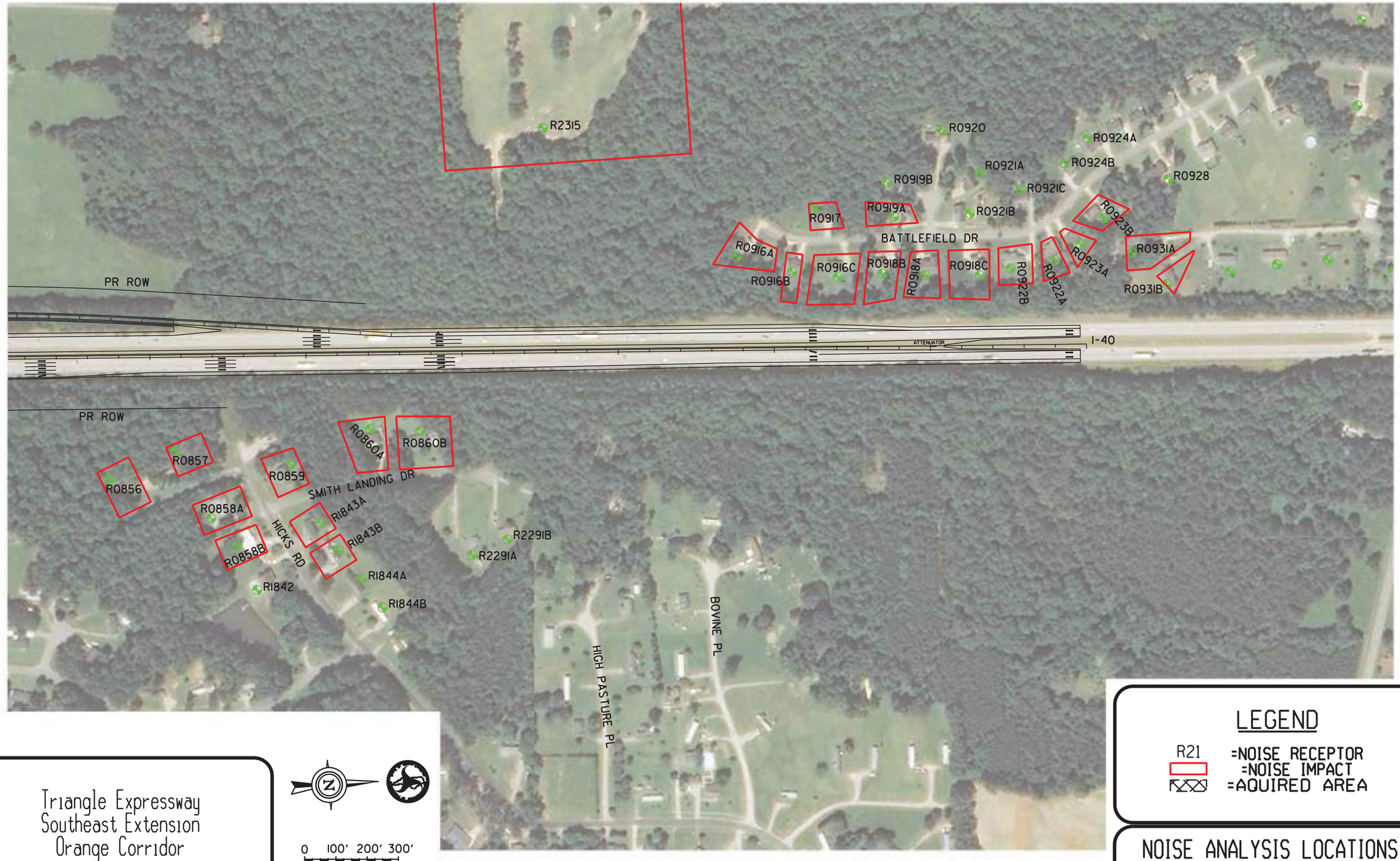
Triangle Expressway
Southeast Extension
Orange Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=AQUIRED AREA

NOISE ANALYSIS LOCATIONS
EXHIBIT 2.37



Triangle Expressway
Southeast Extension
Orange Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

N

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=AQUIRED AREA

NOISE ANALYSIS LOCATIONS
EXHIBIT 2.38

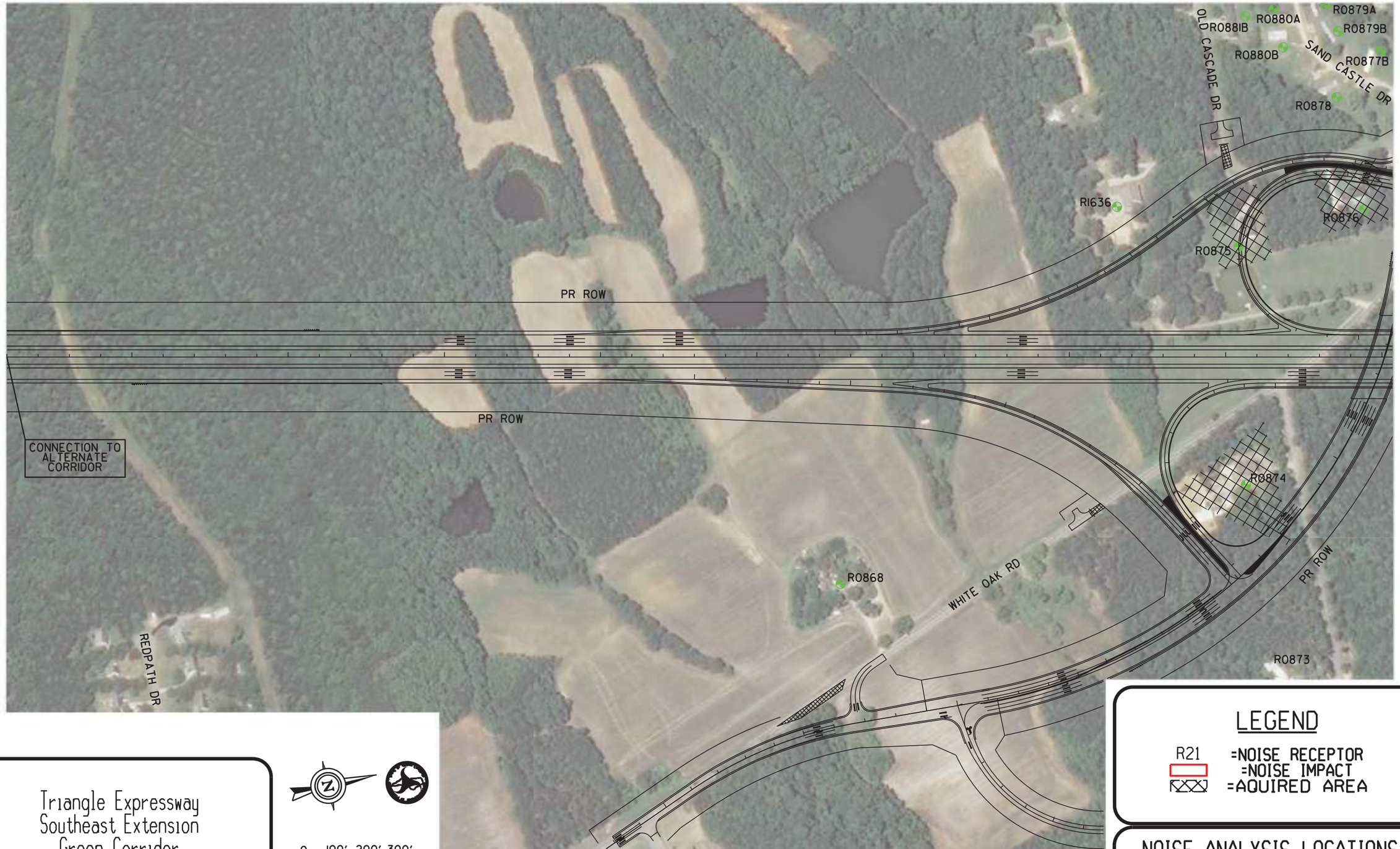
EXHIBIT 3

GREEN CORRIDOR
NOISE ANALYSIS LOCATIONS



Triangle Expressway
Southeast Extension
Green Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

NOISE ANALYSIS LOCATIONS
EXHIBIT 3.0



Triangle Expressway
Southeast Extension
Green Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=AQUIRED AREA

NOISE ANALYSIS LOCATIONS
EXHIBIT 3.1

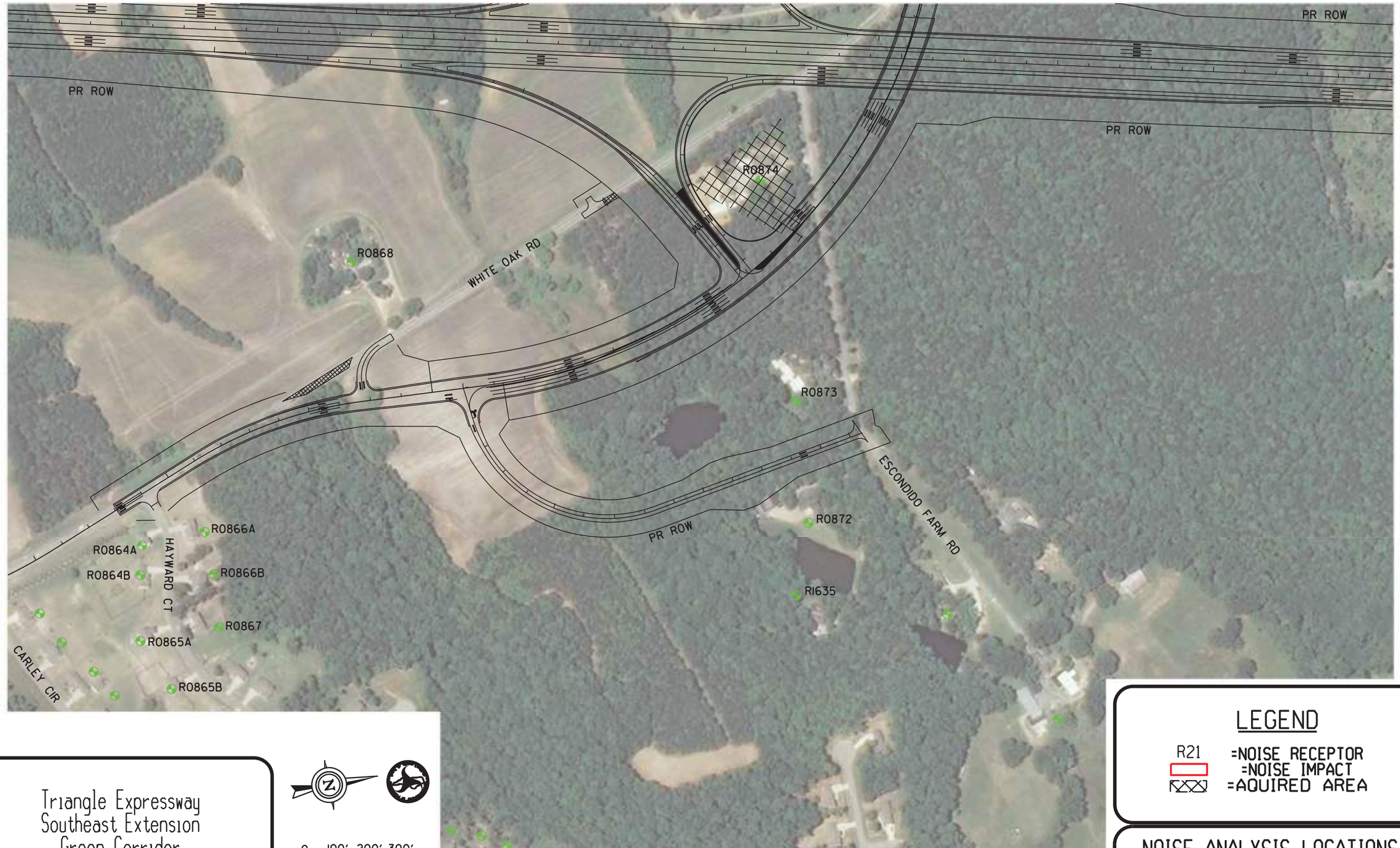


Triangle Expressway
Southeast Extension
Green Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=AQUIRED AREA

NOISE ANALYSIS LOCATIONS
EXHIBIT 3.2



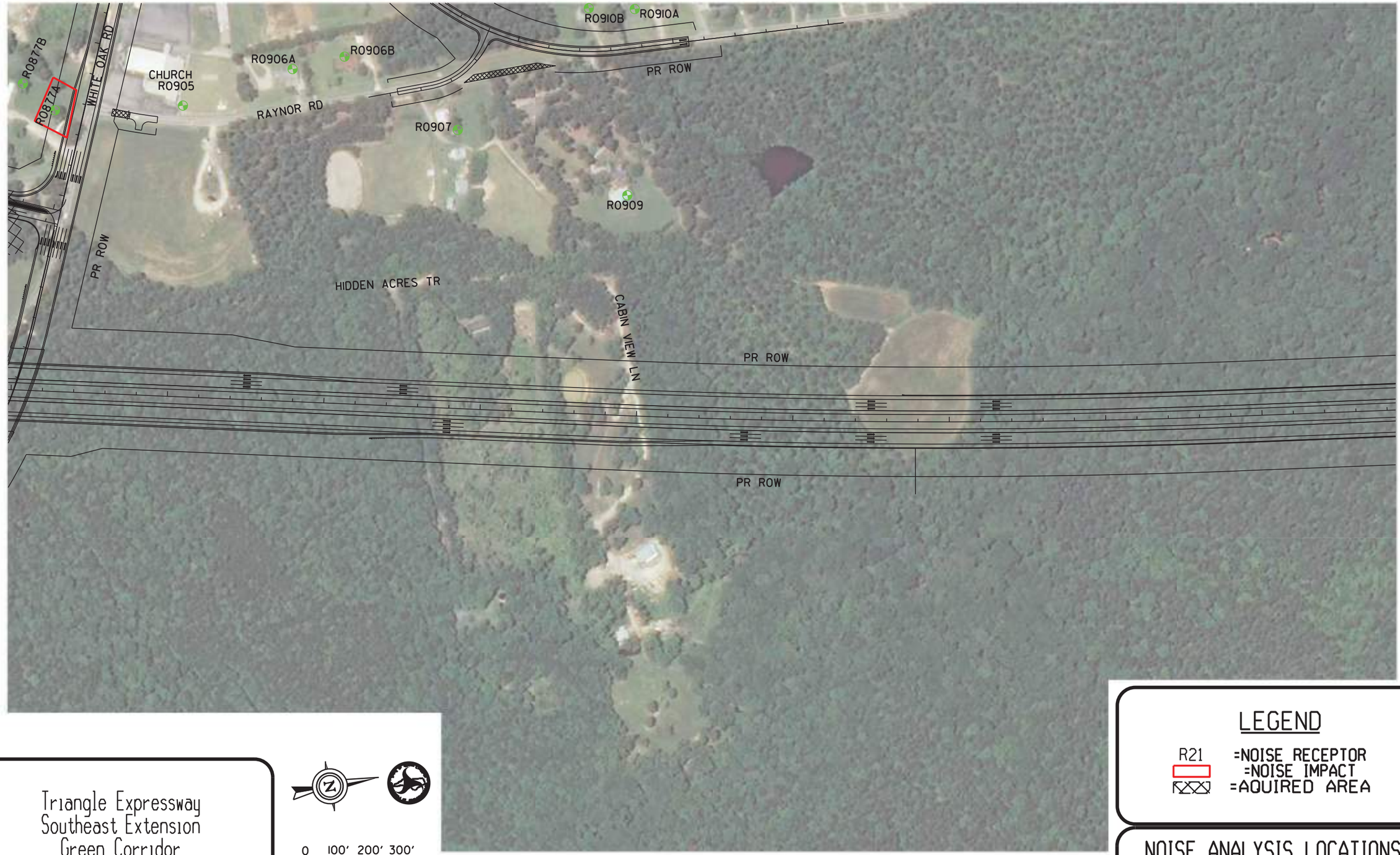
Triangle Expressway
Southeast Extension
Green Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=AQUIRED AREA

NOISE ANALYSIS LOCATIONS
EXHIBIT 3.3



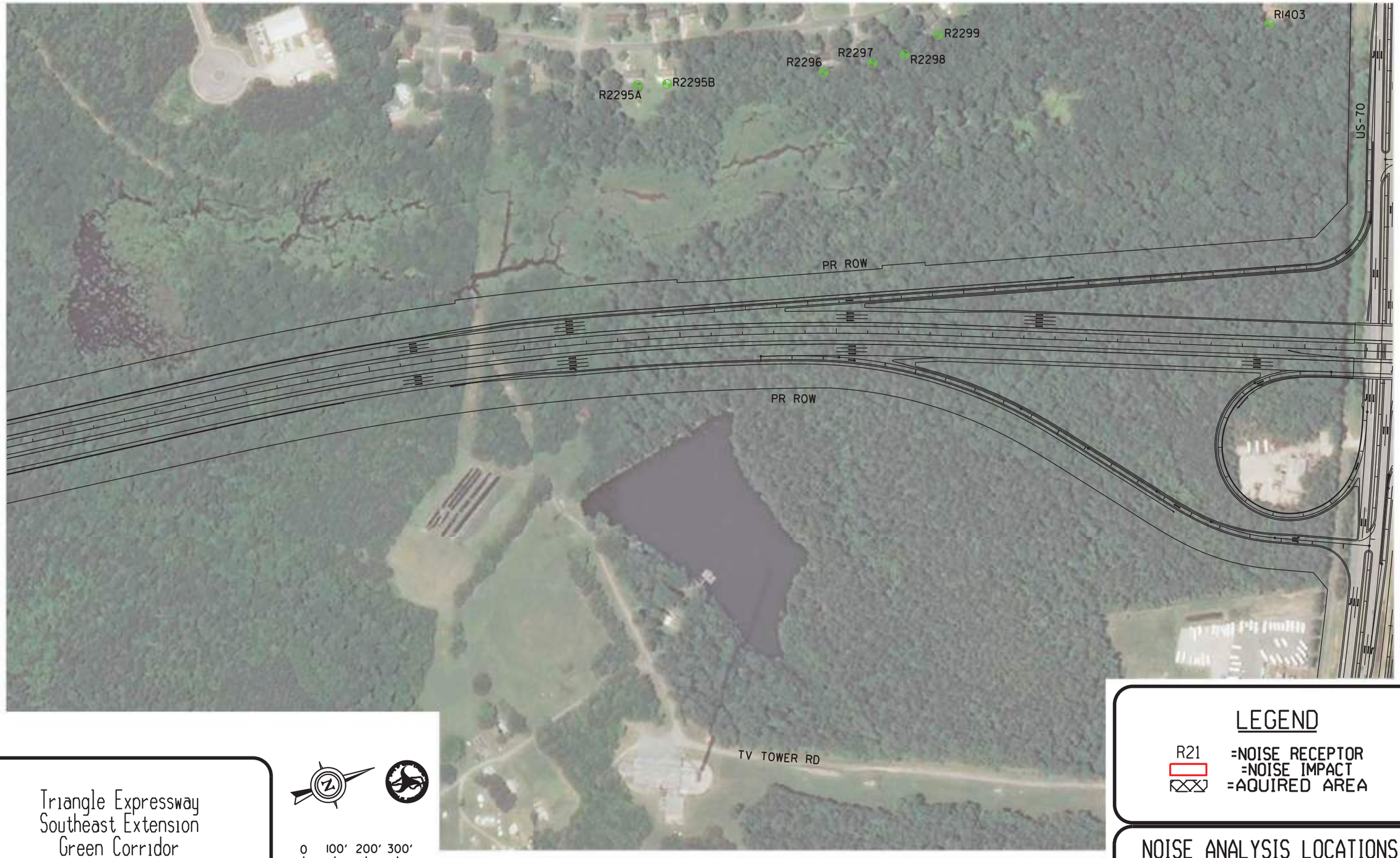
Triangle Expressway
Southeast Extension
Green Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=AQUIRED AREA

NOISE ANALYSIS LOCATIONS
EXHIBIT 3.4



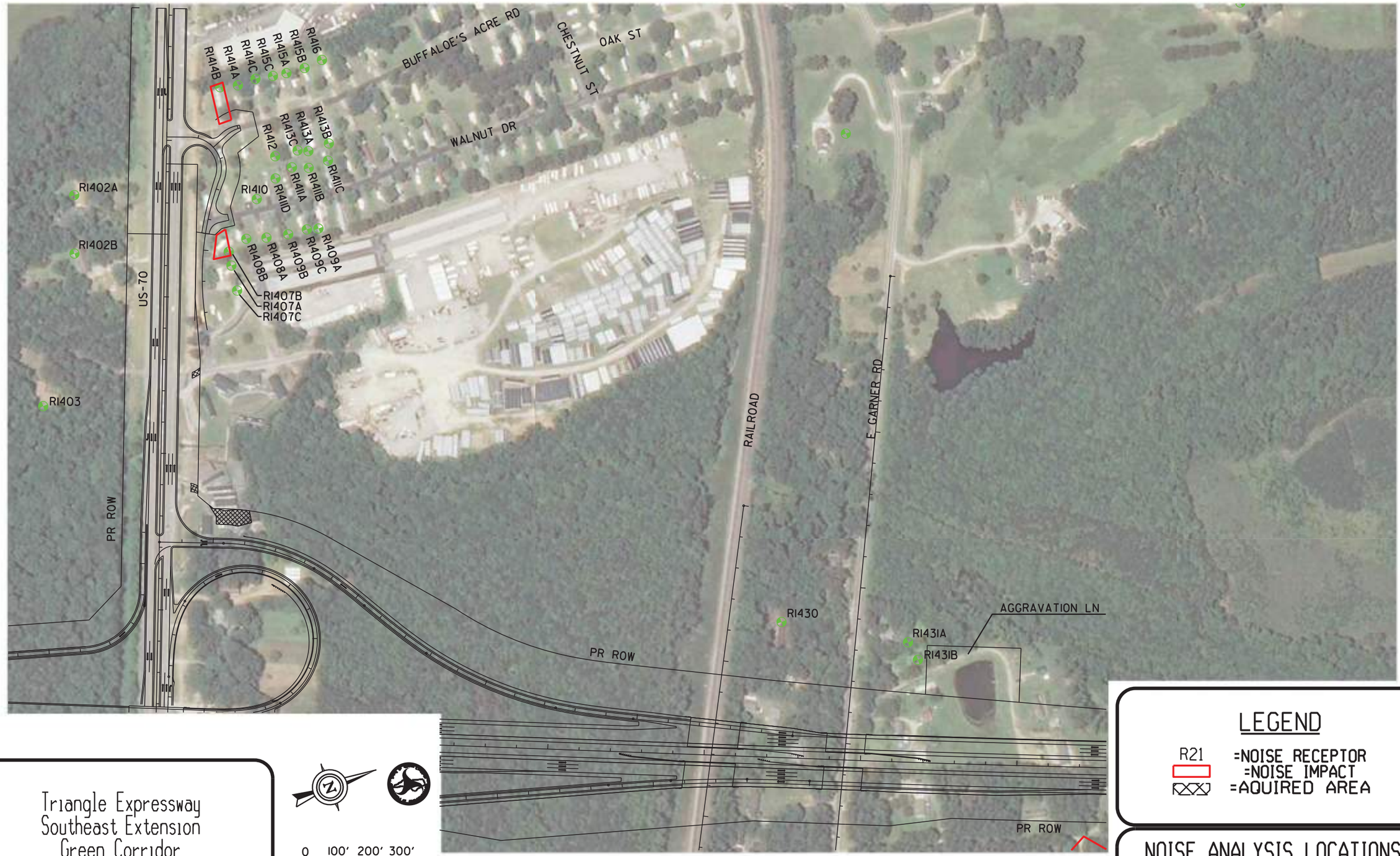
Triangle Expressway
Southeast Extension
Green Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=AQUIRED AREA

NOISE ANALYSIS LOCATIONS
EXHIBIT 3.5



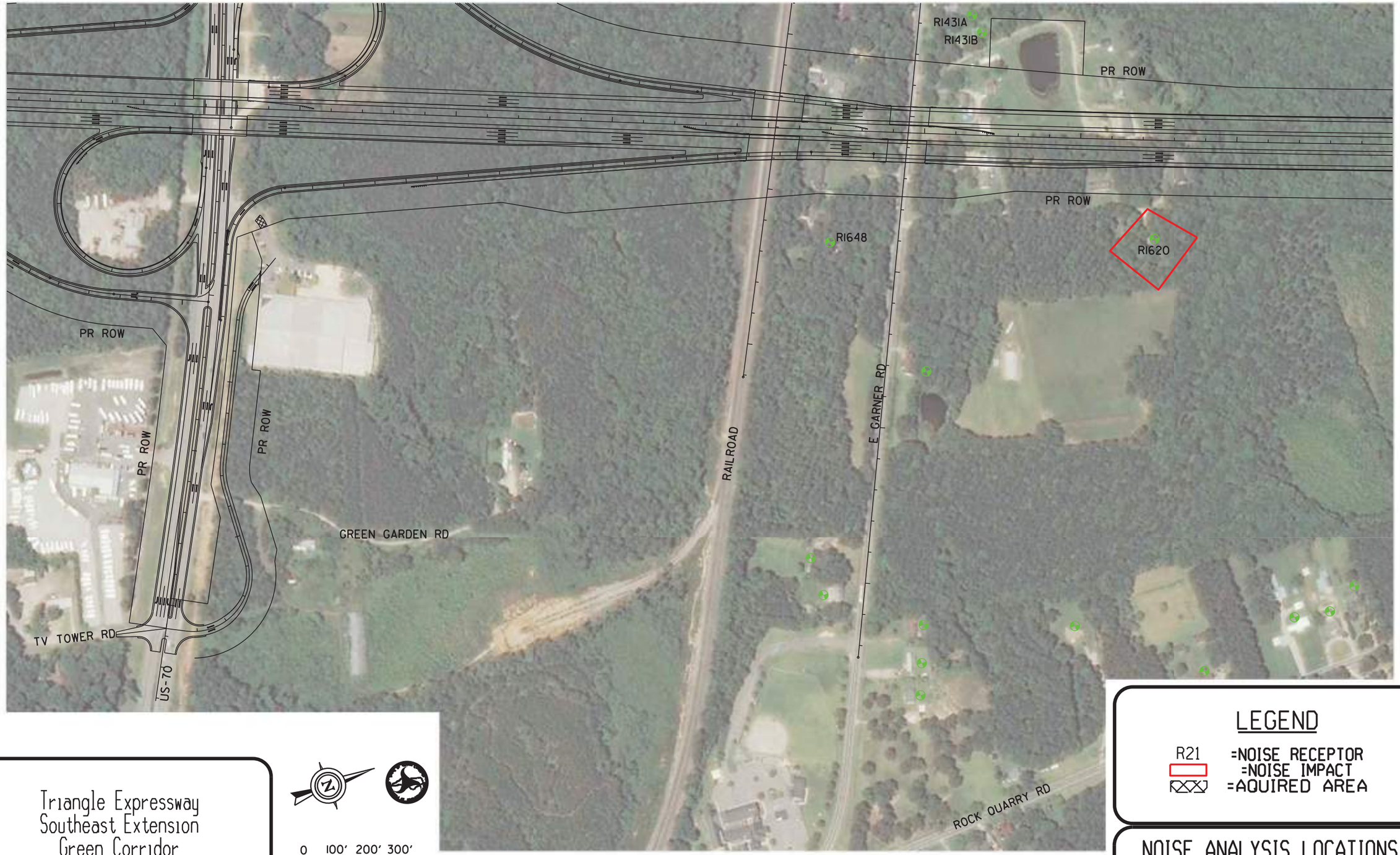
Triangle Expressway
Southeast Extension
Green Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=AQUIRED AREA

NOISE ANALYSIS LOCATIONS
EXHIBIT 3.6



Triangle Expressway
Southeast Extension
Green Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=AQUIRED AREA

NOISE ANALYSIS LOCATIONS
EXHIBIT 3.7



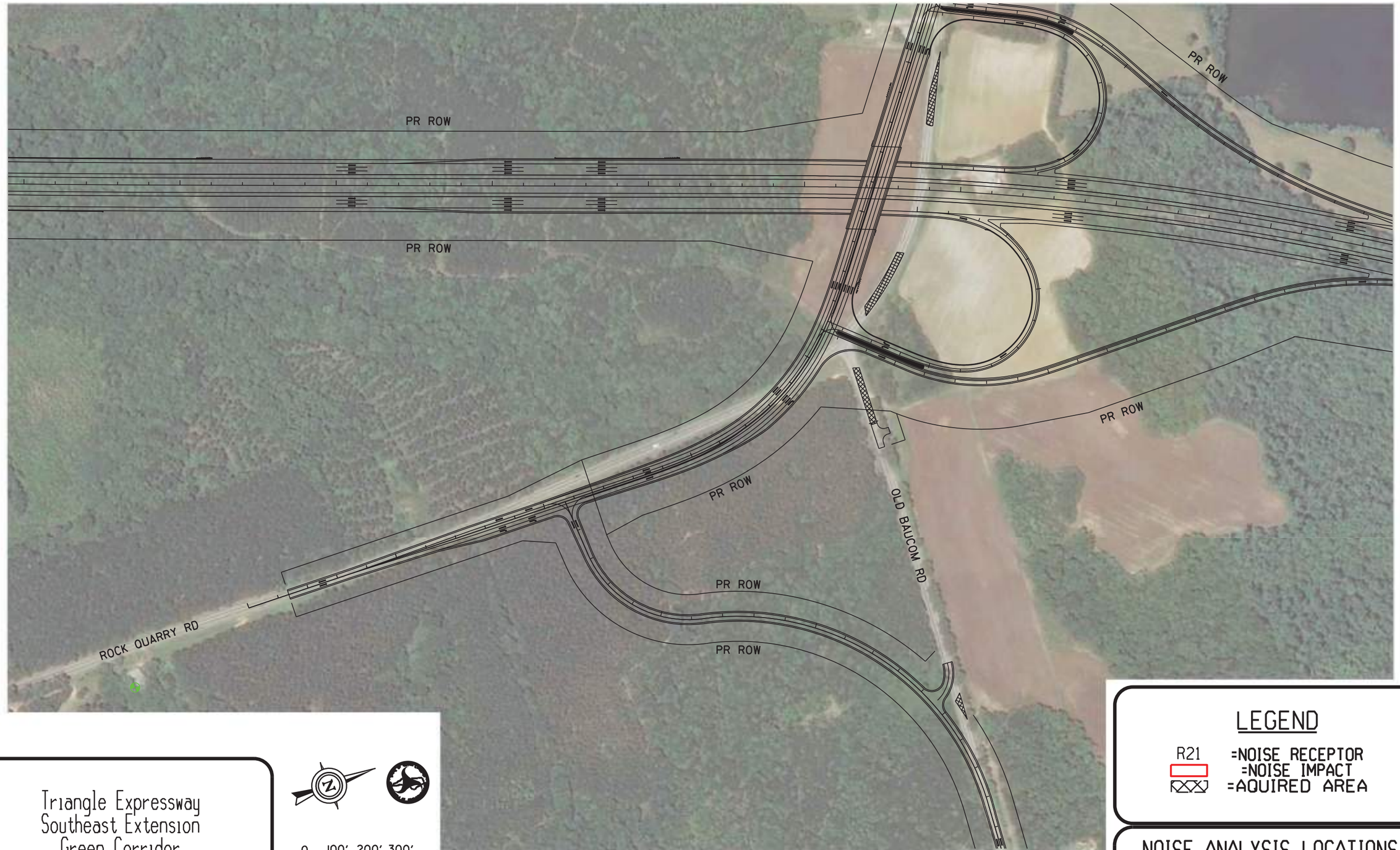
Triangle Expressway
Southeast Extension
Green Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=AQUIRED AREA

NOISE ANALYSIS LOCATIONS
EXHIBIT 3.8



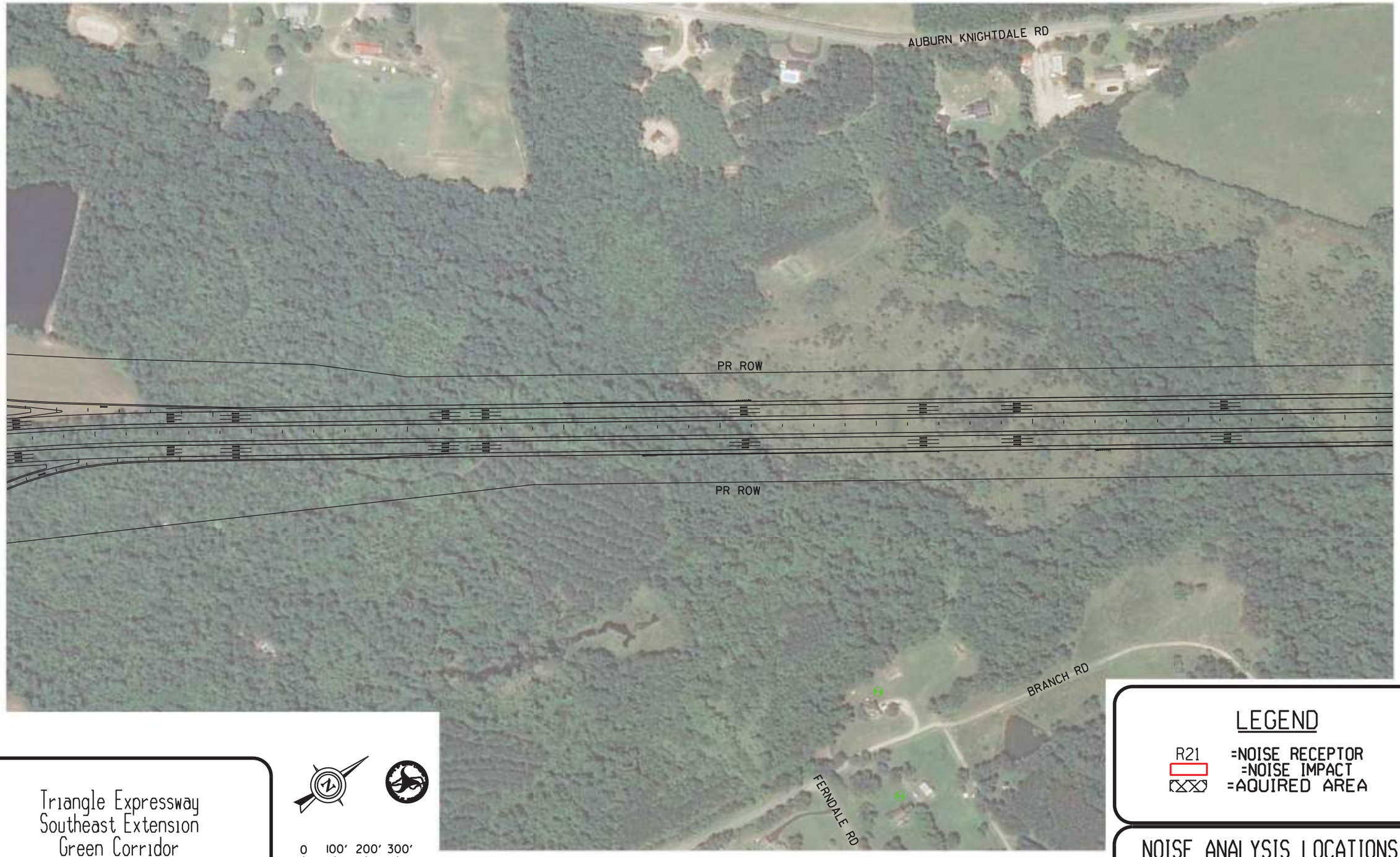
Triangle Expressway
Southeast Extension
Green Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=AQUIRED AREA

NOISE ANALYSIS LOCATIONS
EXHIBIT 3.9



Triangle Expressway
Southeast Extension
Green Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=AQUIRED AREA

NOISE ANALYSIS LOCATIONS
EXHIBIT 3.10



Triangle Expressway
Southeast Extension
Green Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=AQUIRED AREA

NOISE ANALYSIS LOCATIONS
EXHIBIT 3.11

AUBURN KNIGHTDALE RD.

NEUSE RIVER GREENWAY TR

PR ROW

PROP. GRASS MEDIAN

PR ROW

PR ROW

PR ROW

PR ROW

RI625A

RI625B

RI484

RI482A

RI482B

RI482C

RI485

RI486

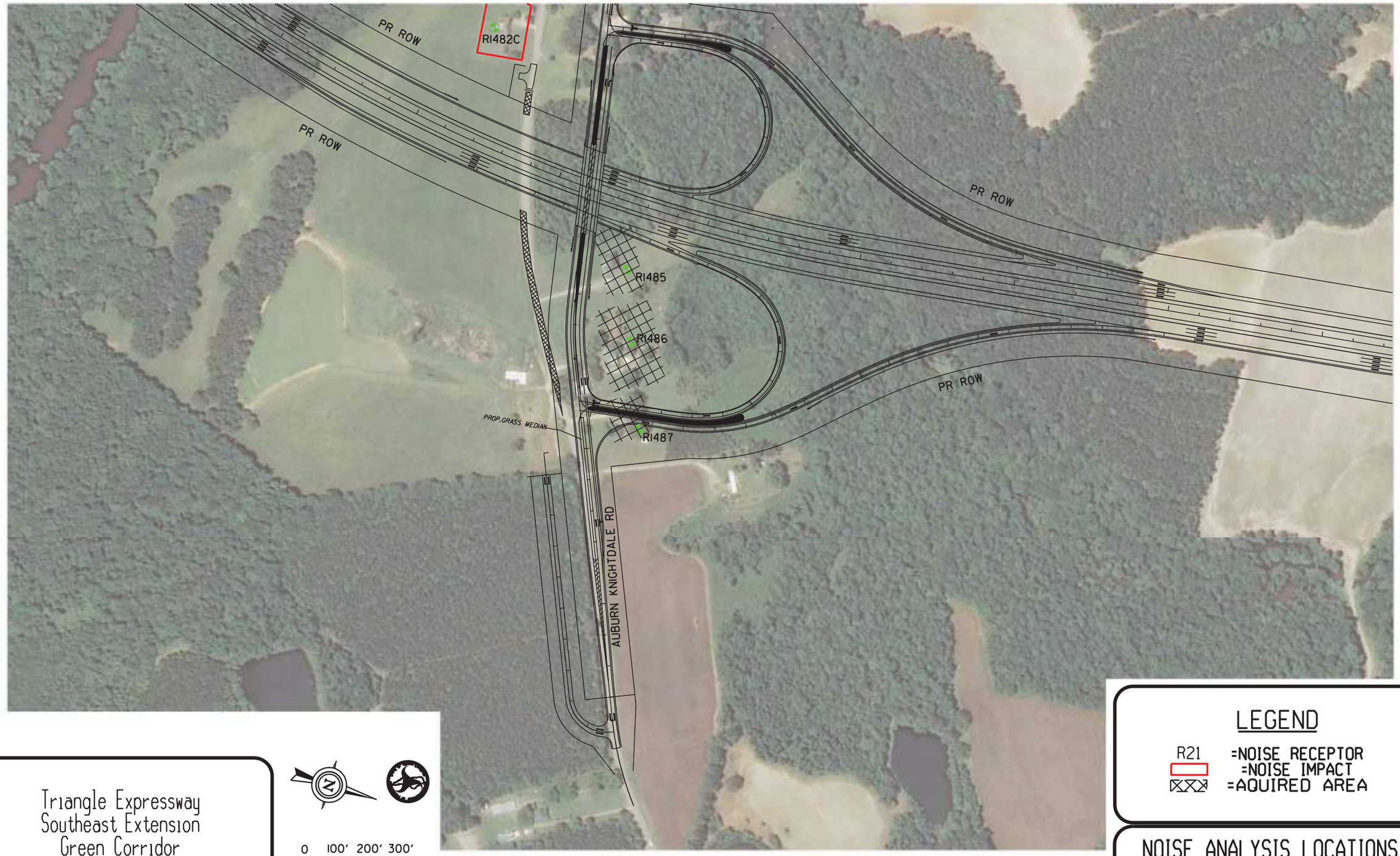
Triangle Expressway
Southeast Extension
Green Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=AQUIRED AREA

NOISE ANALYSIS LOCATIONS
EXHIBIT 3.12



Triangle Expressway
Southeast Extension
Green Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=AQUIRED AREA

NOISE ANALYSIS LOCATIONS
EXHIBIT 3.13



Triangle Expressway
Southeast Extension
Green Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=AQUIRED AREA

NOISE ANALYSIS LOCATIONS
EXHIBIT 3.14



Triangle Expressway
Southeast Extension
Green Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=AQUIRED AREA

NOISE ANALYSIS LOCATIONS
EXHIBIT 3.15



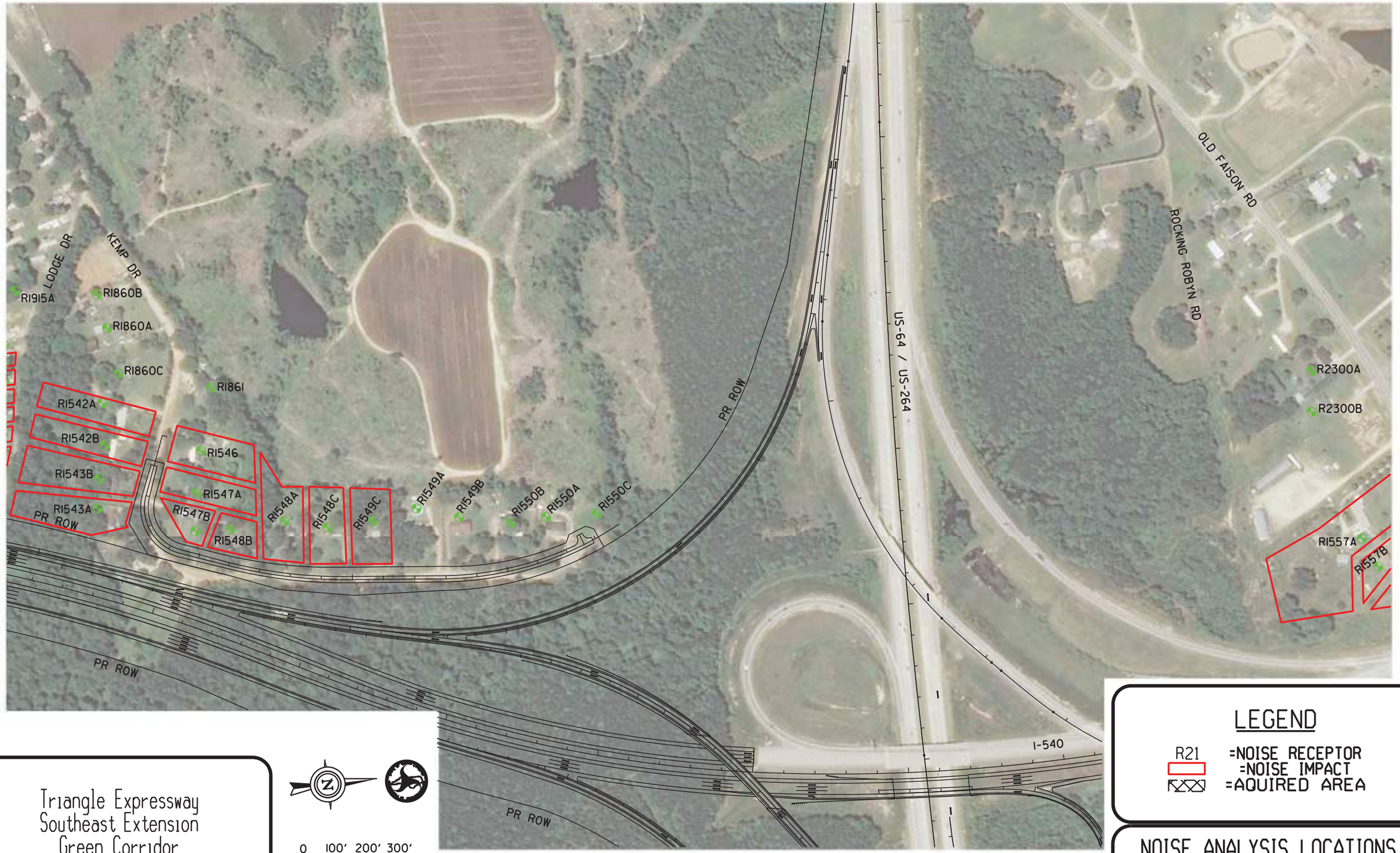
Triangle Expressway
Southeast Extension
Green Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=AQUIRED AREA

NOISE ANALYSIS LOCATIONS
EXHIBIT 3.16



Triangle Expressway
Southeast Extension
Green Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=AQUIRED AREA

NOISE ANALYSIS LOCATIONS
EXHIBIT 3.17



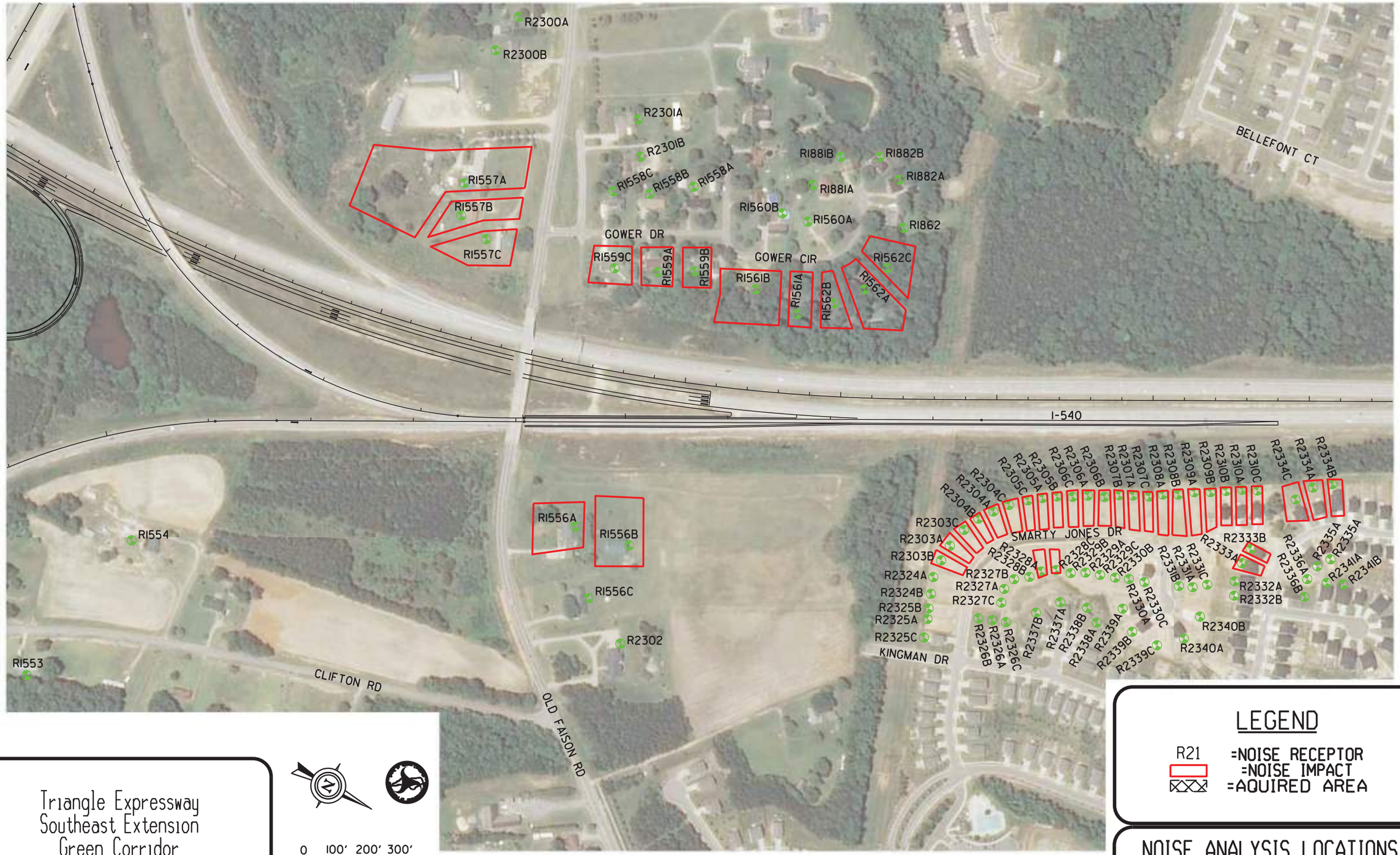
Triangle Expressway
Southeast Extension
Green Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=AQUIRED AREA

NOISE ANALYSIS LOCATIONS
EXHIBIT 3.18



Triangle Expressway
Southeast Extension
Green Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=AQUIRED AREA

NOISE ANALYSIS LOCATIONS
EXHIBIT 3.19

EXHIBIT 4

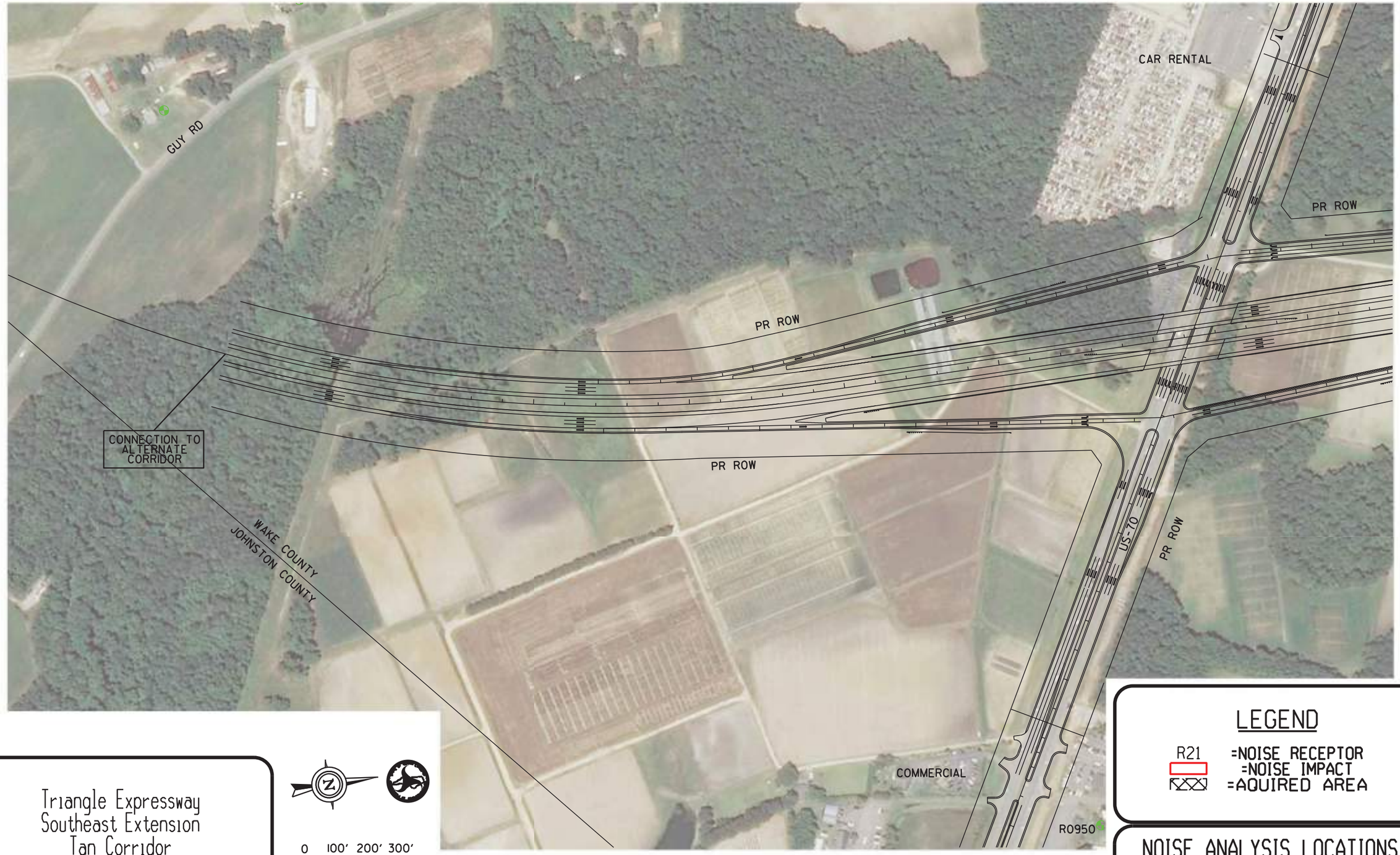
TAN CORRIDOR
NOISE ANALYSIS LOCATIONS



Triangle Expressway
Southeast Extension
Tan Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

0 5000' 10000'

NOISE ANALYSIS LOCATIONS
EXHIBIT 4.0



Triangle Expressway
Southeast Extension
Tan Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=AQUIRED AREA

NOISE ANALYSIS LOCATIONS
EXHIBIT 4.1



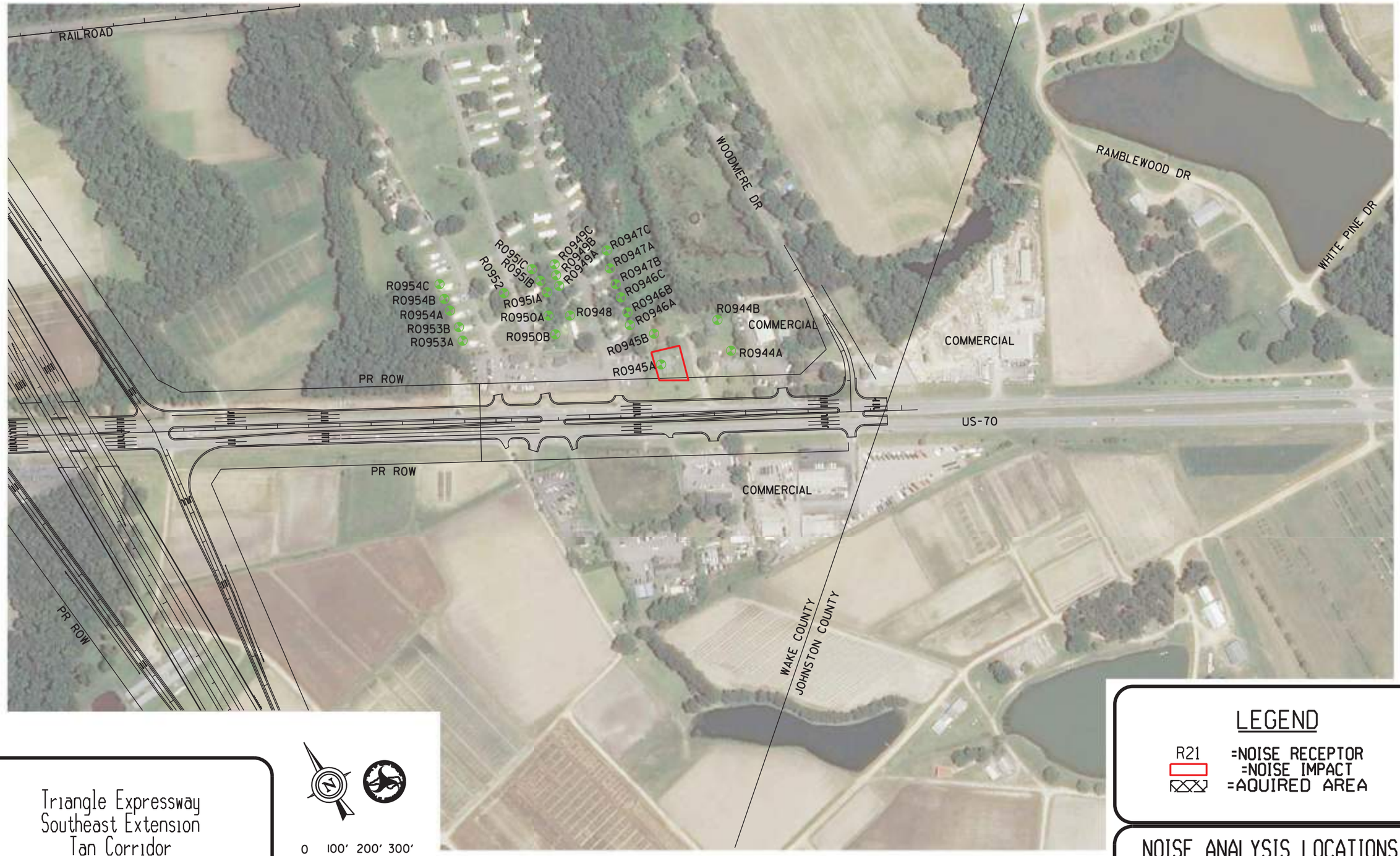
Triangle Expressway
Southeast Extension
Tan Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=AQUIRED AREA

NOISE ANALYSIS LOCATIONS
EXHIBIT 4.2



Triangle Expressway
Southeast Extension
Tan Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=AQUIRED AREA

NOISE ANALYSIS LOCATIONS
EXHIBIT 4.3



Triangle Expressway
Southeast Extension
Tan Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=AQUIRED AREA

NOISE ANALYSIS LOCATIONS
EXHIBIT 4.4



Triangle Expressway
Southeast Extension
Tan Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=AQUIRED AREA

NOISE ANALYSIS LOCATIONS
EXHIBIT 4.5



Triangle Expressway
Southeast Extension
Tan Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

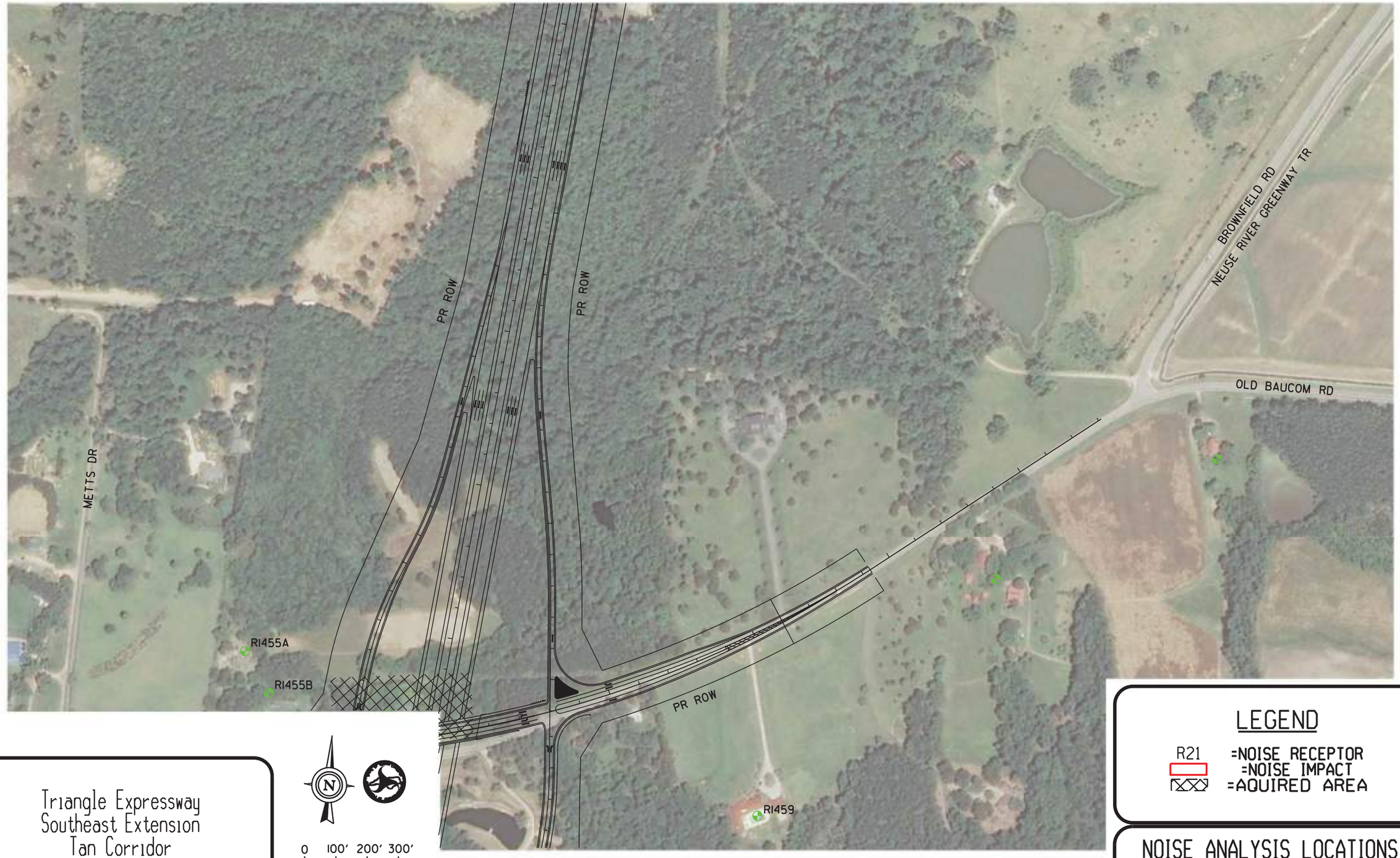
N

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=AQUIRED AREA

NOISE ANALYSIS LOCATIONS
EXHIBIT 4.6



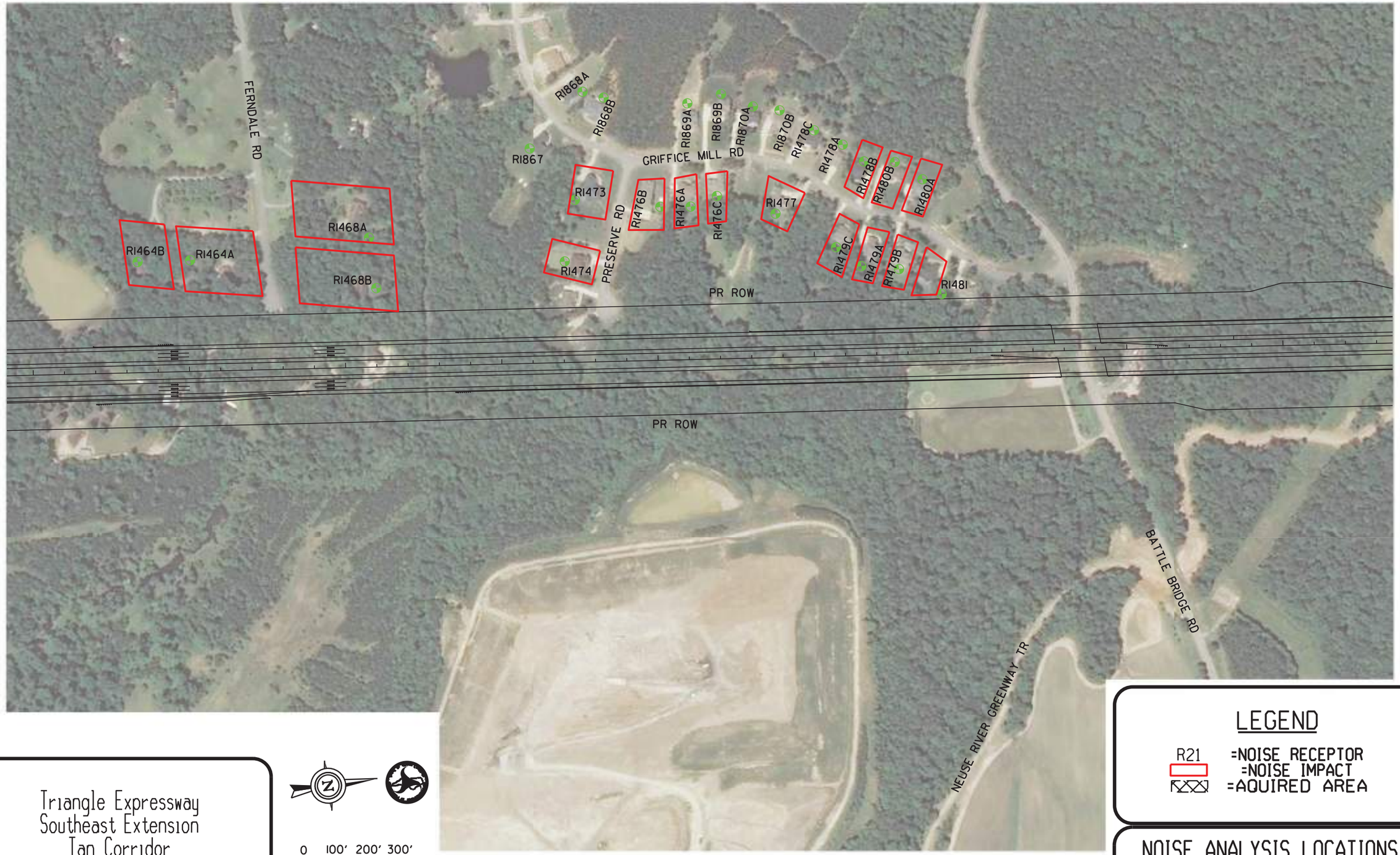
Triangle Expressway
Southeast Extension
Tan Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=AQUIRED AREA

NOISE ANALYSIS LOCATIONS
EXHIBIT 4.7



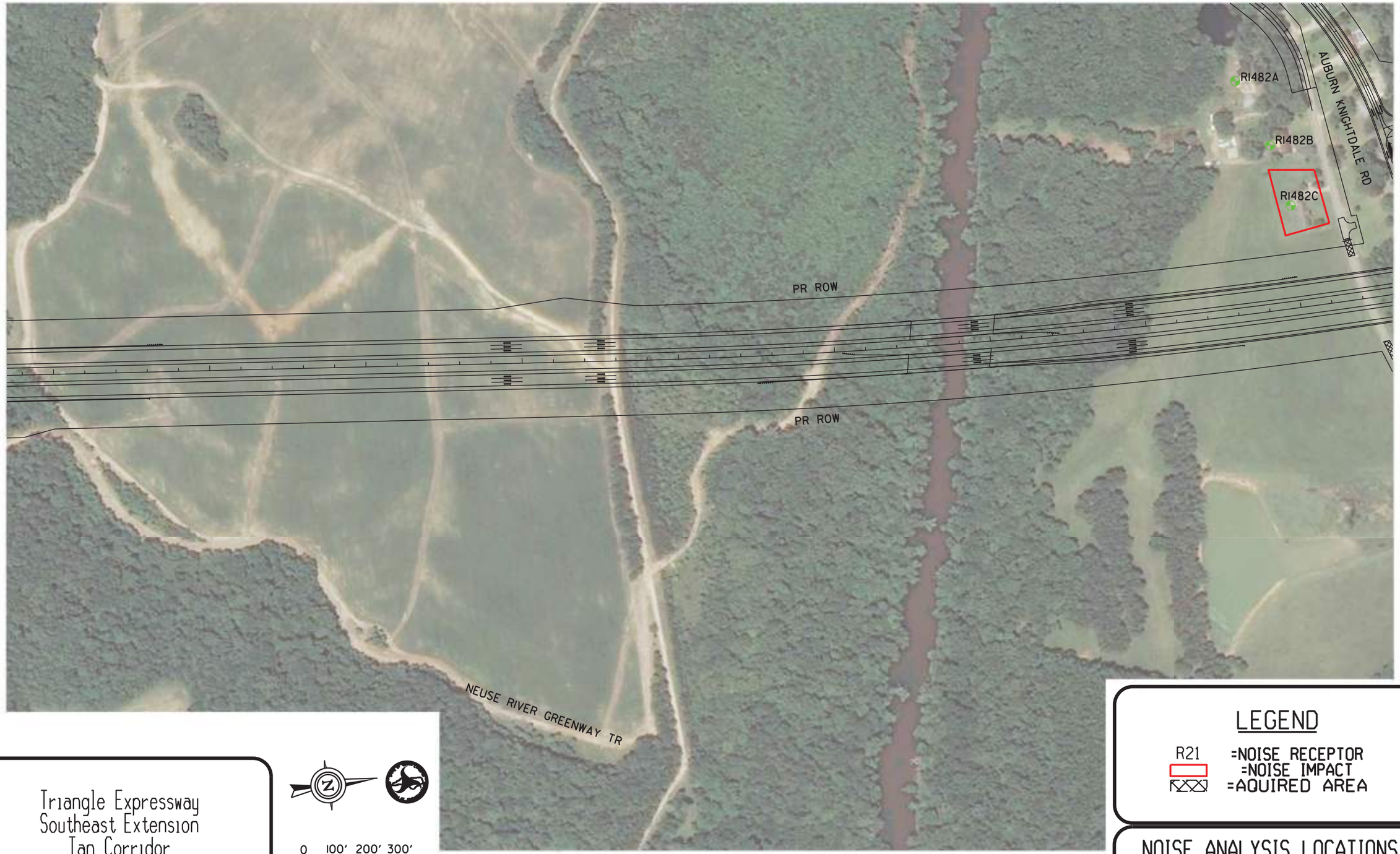
Triangle Expressway
Southeast Extension
Tan Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=AQUIRED AREA

NOISE ANALYSIS LOCATIONS
EXHIBIT 4.8



Triangle Expressway
Southeast Extension
Tan Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=AQUIRED AREA

NOISE ANALYSIS LOCATIONS
EXHIBIT 4.9



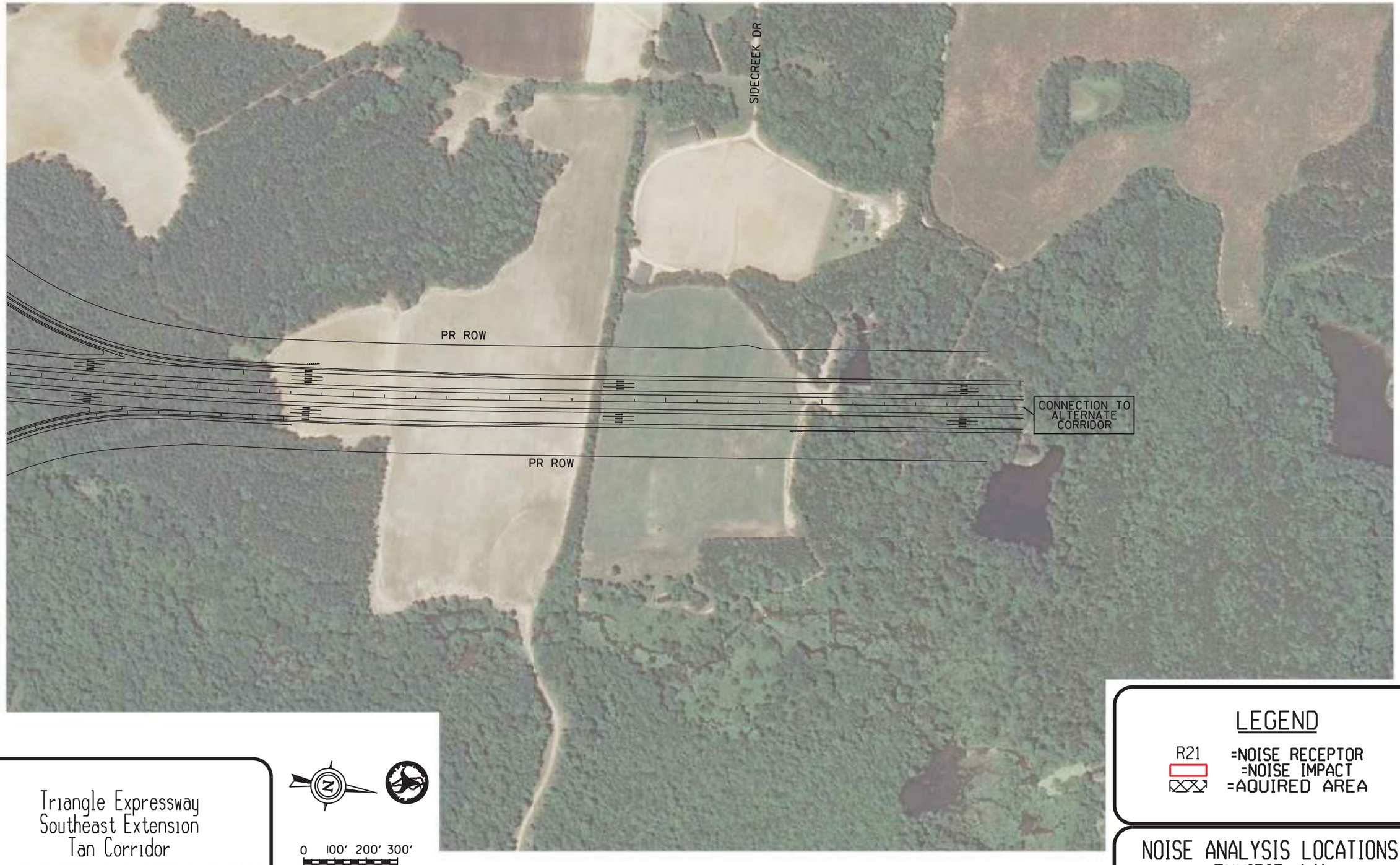
Triangle Expressway
Southeast Extension
Tan Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=AQUIRED AREA

NOISE ANALYSIS LOCATIONS
EXHIBIT 4.10



Triangle Expressway
Southeast Extension
Tan Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=AQUIRED AREA

NOISE ANALYSIS LOCATIONS
EXHIBIT 4.11

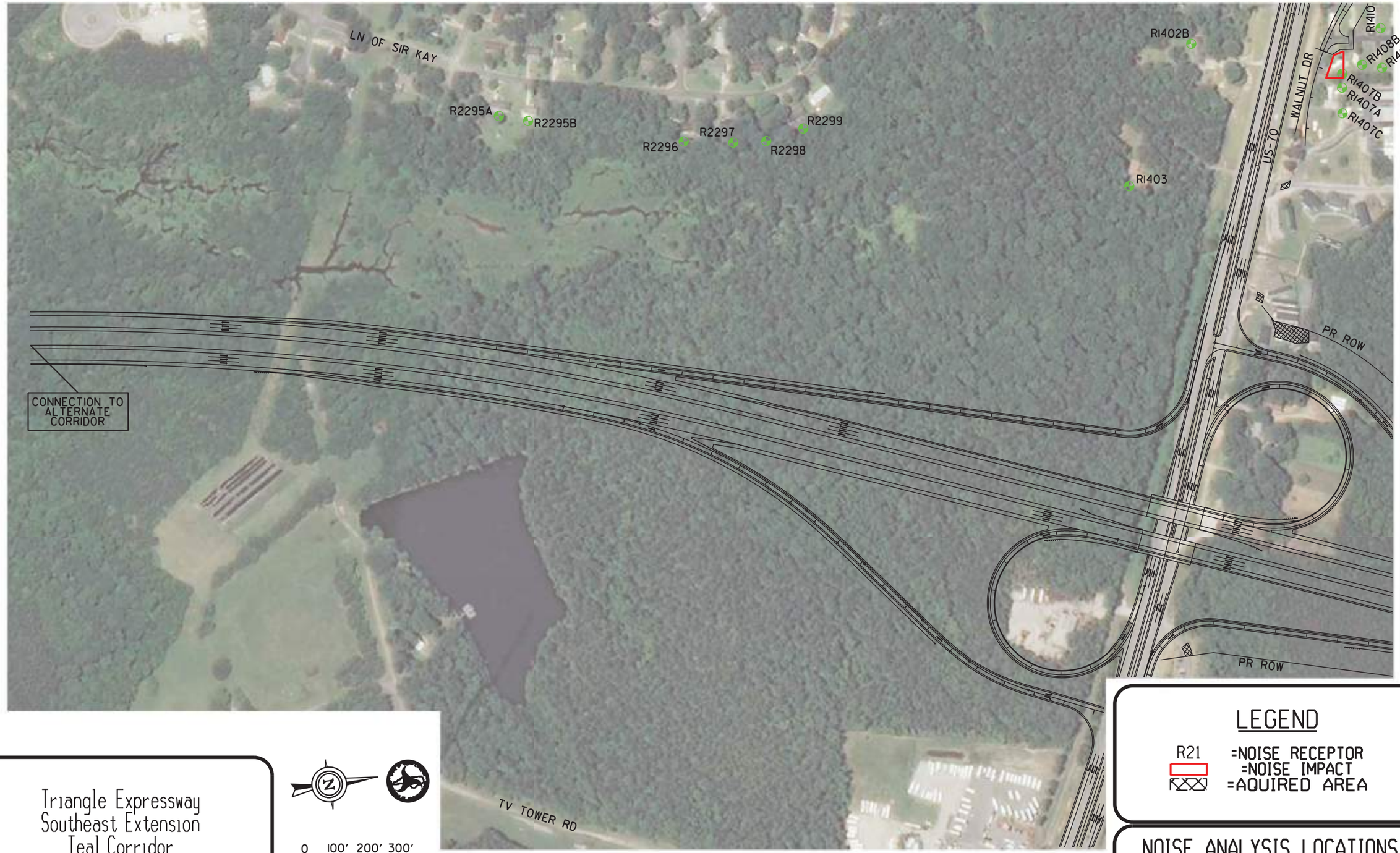
EXHIBIT 5

TEAL CORRIDOR
NOISE ANALYSIS LOCATIONS



Triangle Expressway
Southeast Extension
Teal Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

NOISE ANALYSIS LOCATIONS
EXHIBIT 5.0



Triangle Expressway
Southeast Extension
Teal Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=AQUIRED AREA

NOISE ANALYSIS LOCATIONS
EXHIBIT 5.1

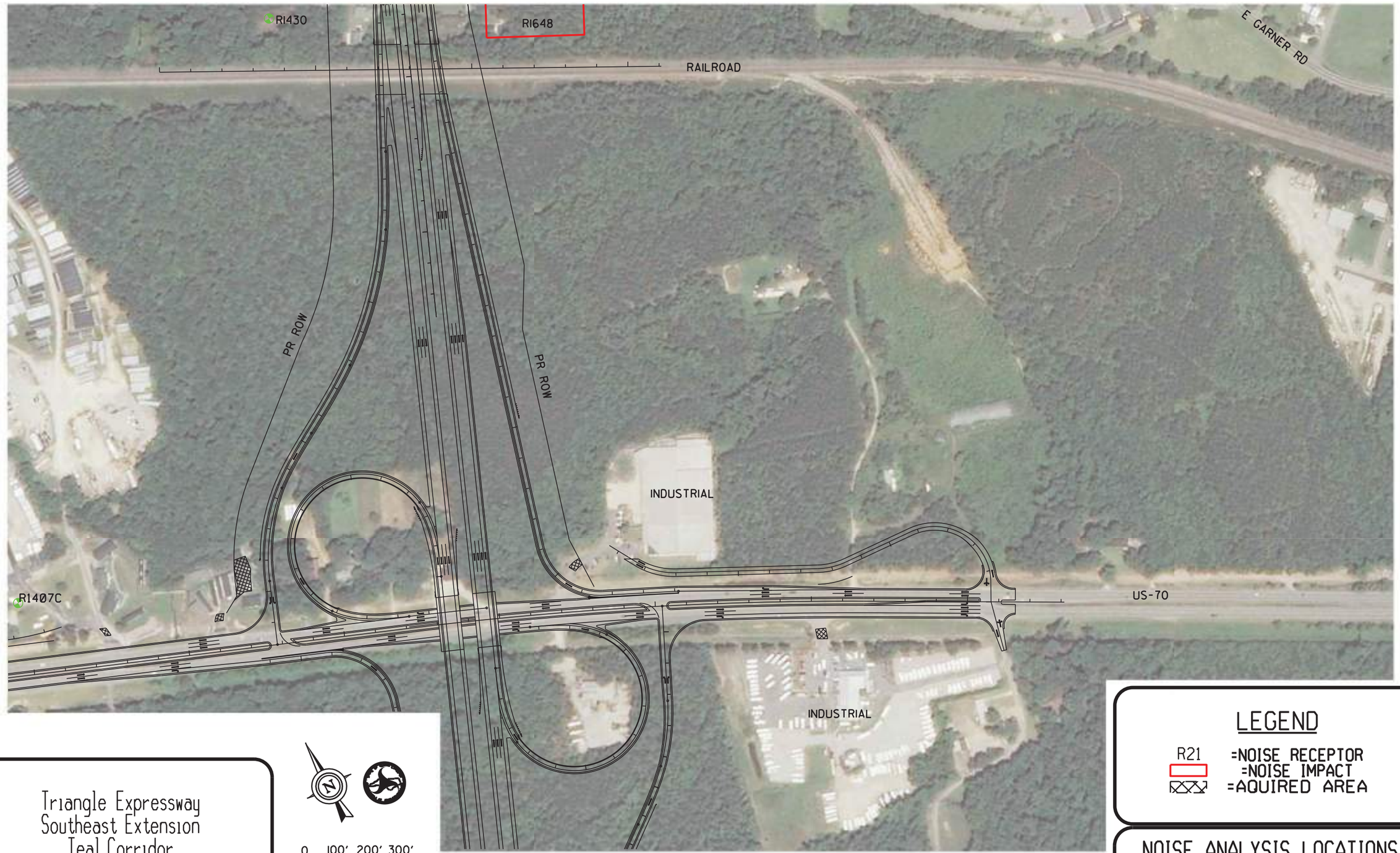


Triangle Expressway
Southeast Extension
Teal Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
XXX =AQUIRED AREA

NOISE ANALYSIS LOCATIONS
EXHIBIT 5.2



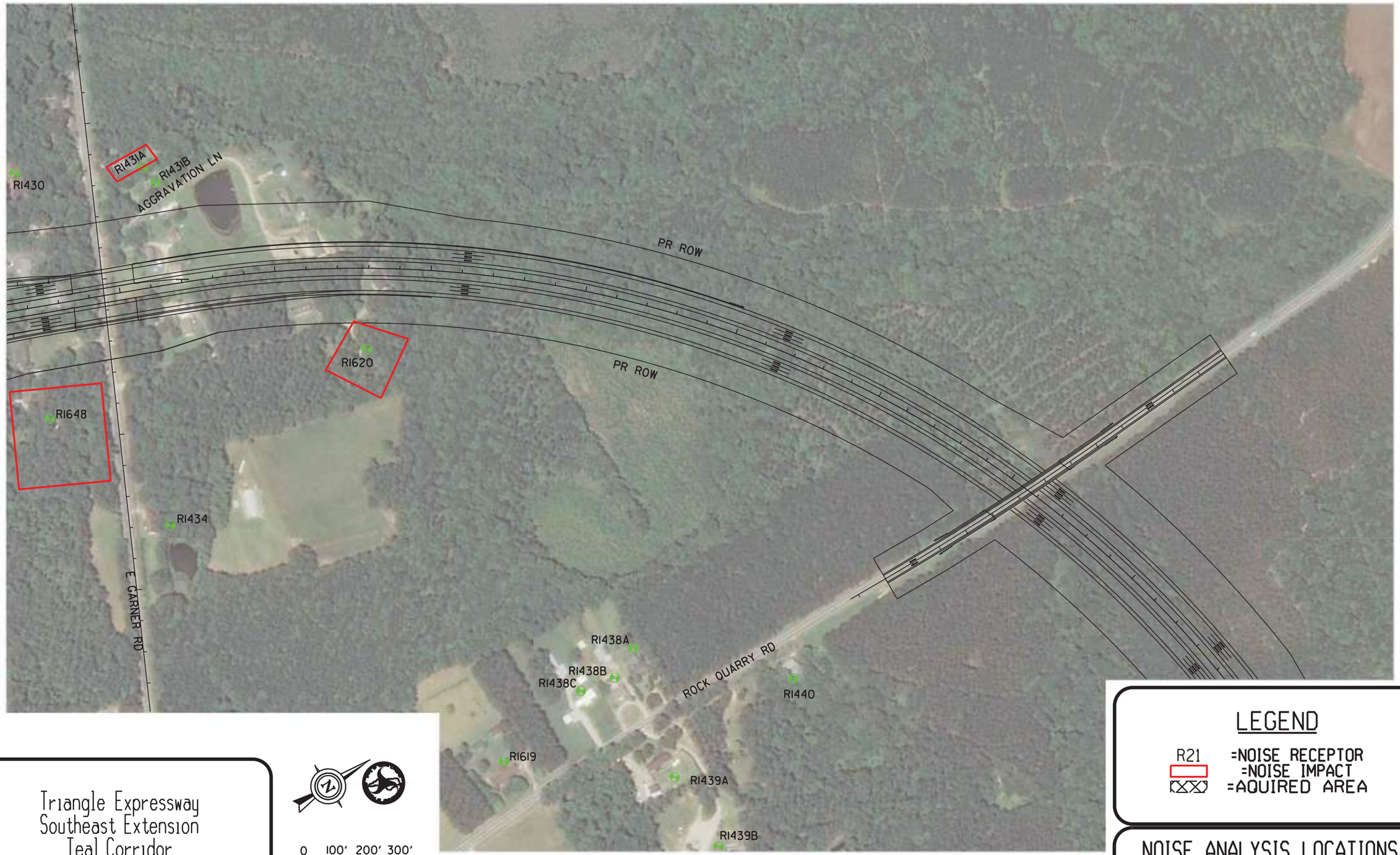
Triangle Expressway
Southeast Extension
Teal Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=AQUIRED AREA

NOISE ANALYSIS LOCATIONS
EXHIBIT 5.3



Triangle Expressway
Southeast Extension
Teal Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=AQUIRED AREA

NOISE ANALYSIS LOCATIONS
EXHIBIT 5.4



Triangle Expressway
Southeast Extension
Teal Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

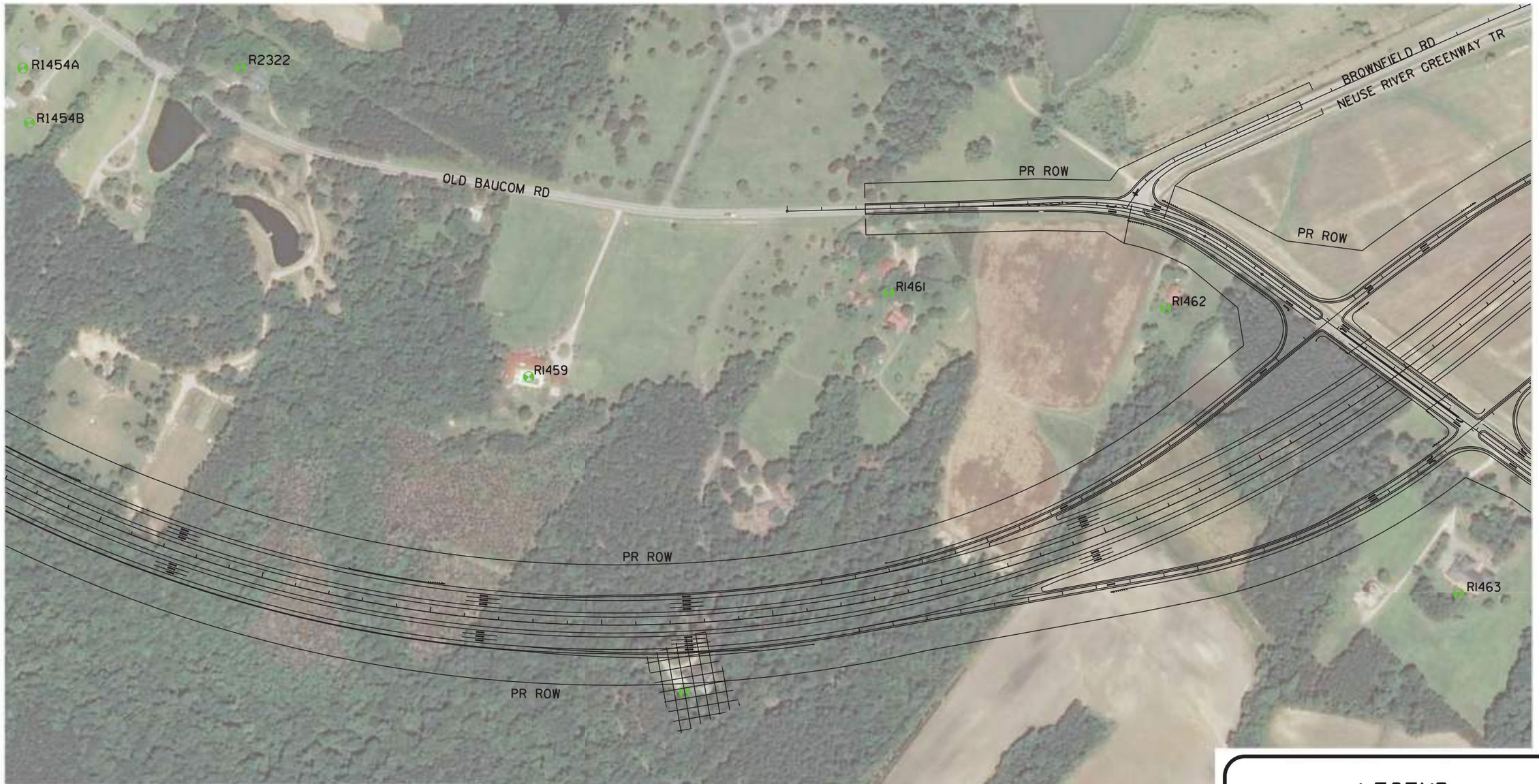
N

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=AQUIRED AREA

NOISE ANALYSIS LOCATIONS
EXHIBIT 5.5



Triangle Expressway
Southeast Extension
Teal Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=AQUIRED AREA

NOISE ANALYSIS LOCATIONS
EXHIBIT 5.6



Triangle Expressway
Southeast Extension
Teal Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

0 100' 200' 300'

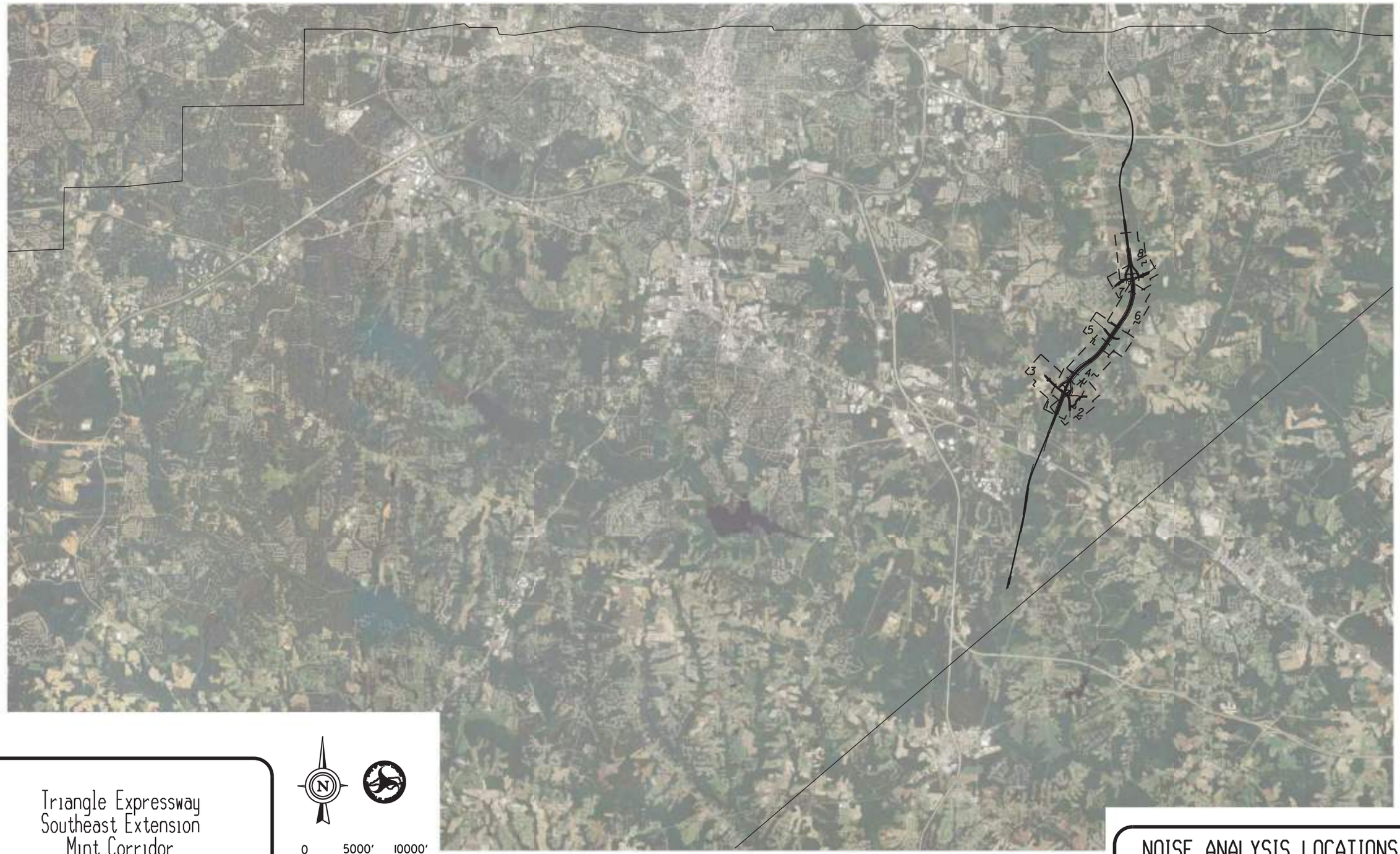
LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=AQUIRED AREA

NOISE ANALYSIS LOCATIONS
EXHIBIT 5.7

EXHIBIT 6

MINT CORRIDOR
NOISE ANALYSIS LOCATIONS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Triangle Expressway
Southeast Extension
Mint Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=AQUIRED AREA

NOISE ANALYSIS LOCATIONS
EXHIBIT 6.1



Triangle Expressway
Southeast Extension
Mint Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=AQUIRED AREA

NOISE ANALYSIS LOCATIONS
EXHIBIT 6.2



Triangle Expressway
Southeast Extension
Mint Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=AQUIRED AREA

NOISE ANALYSIS LOCATIONS
EXHIBIT 6.3



Triangle Expressway
Southeast Extension
Mint Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=AQUIRED AREA

NOISE ANALYSIS LOCATIONS
EXHIBIT 6.4



Triangle Expressway
Southeast Extension
Mint Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=AQUIRED AREA

NOISE ANALYSIS LOCATIONS
EXHIBIT 6.5



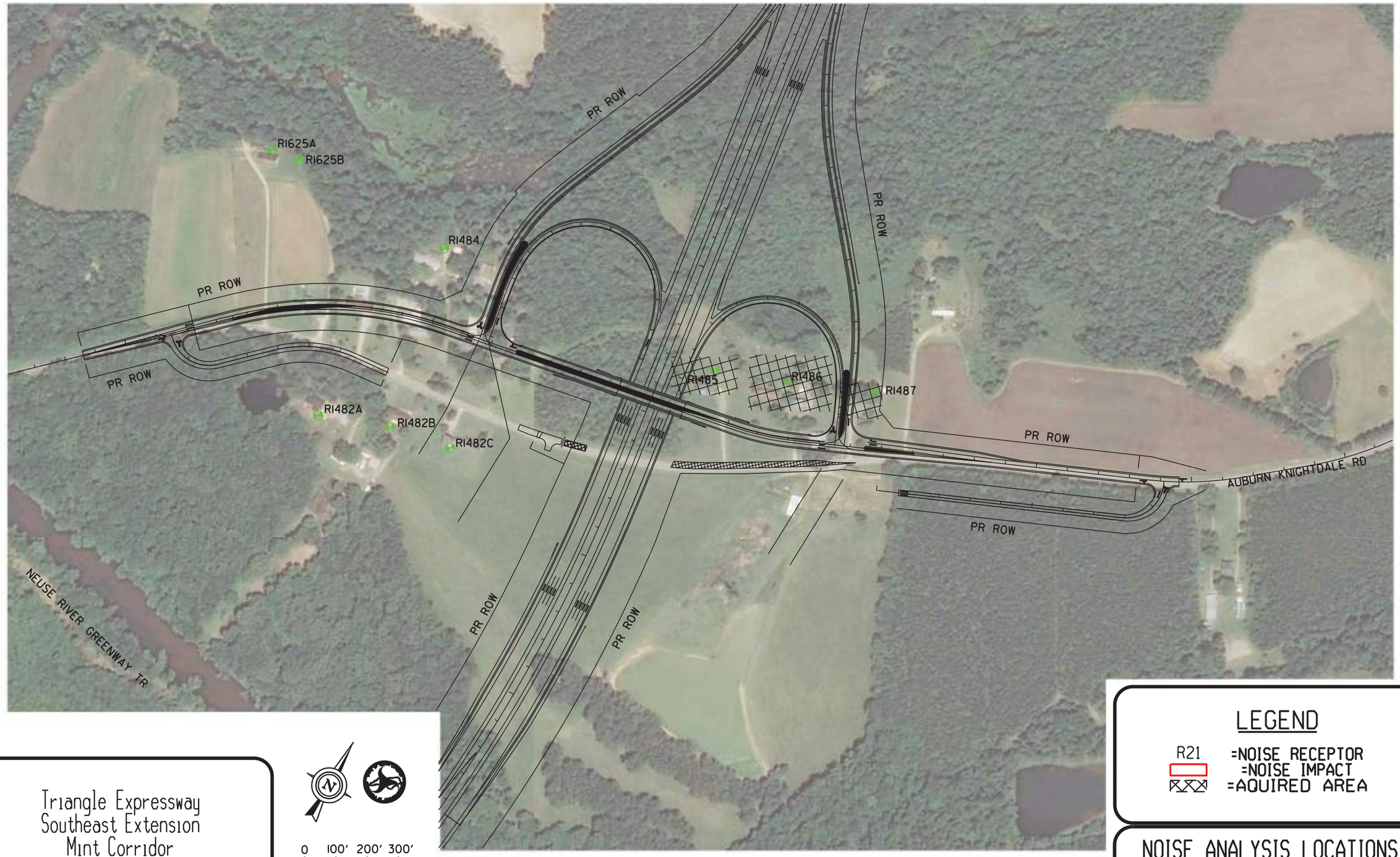
Triangle Expressway
Southeast Extension
Mint Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=AQUIRED AREA

NOISE ANALYSIS LOCATIONS
EXHIBIT 6.6



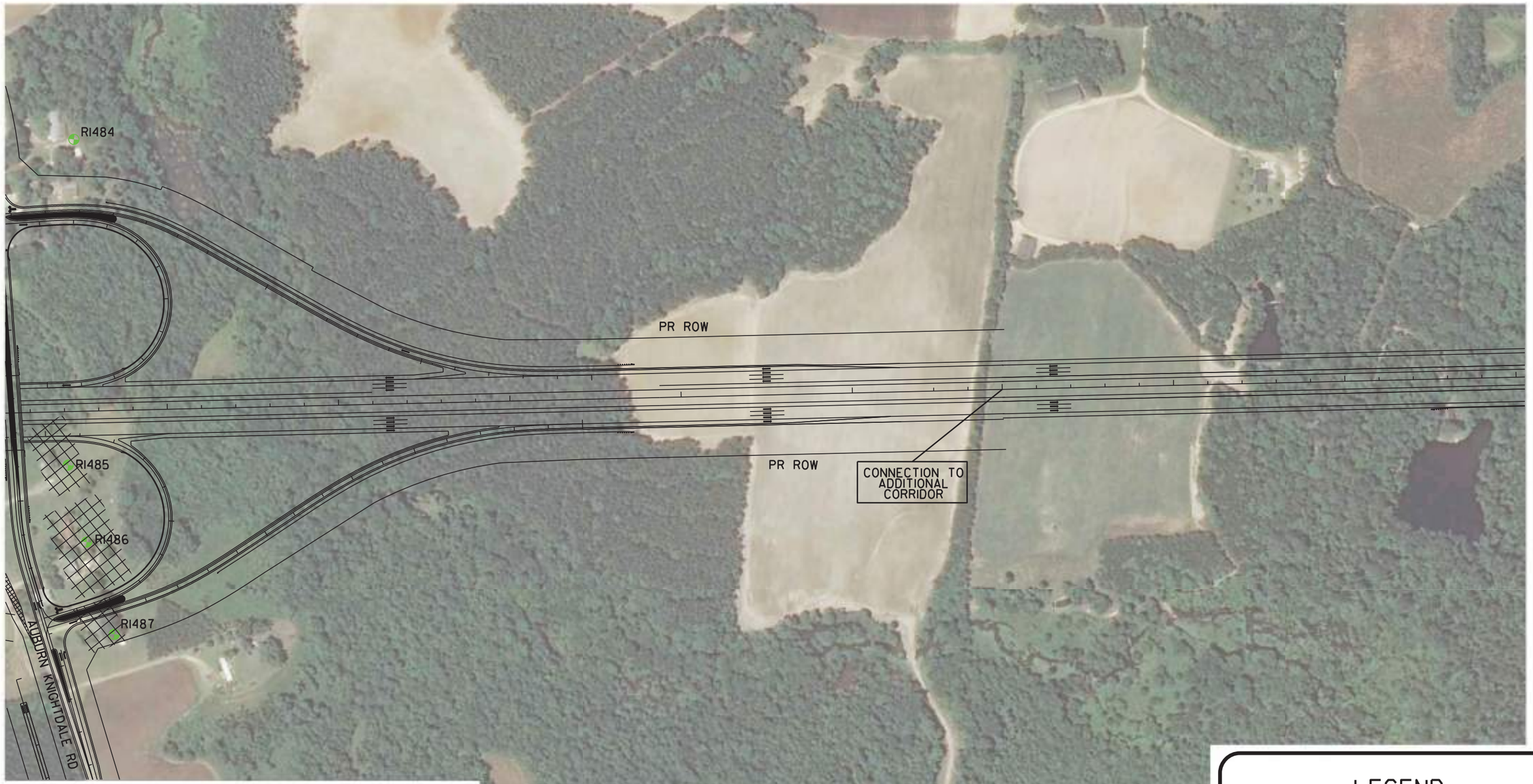
Triangle Expressway
Southeast Extension
Mint Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=AQUIRED AREA

NOISE ANALYSIS LOCATIONS
EXHIBIT 6.7



Triangle Expressway
Southeast Extension
Mint Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

N

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=AQUIRED AREA

NOISE ANALYSIS LOCATIONS
EXHIBIT 6.8

TRAFFIC NOISE ANALYSIS
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.

May, 2015

EXHIBIT 7

BROWN CORRIDOR
NOISE ANALYSIS LOCATIONS



Triangle Expressway
Southeast Extension
Brown Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

N

0 5000' 10000'

NOISE ANALYSIS LOCATIONS
EXHIBIT 7.0



Triangle Expressway
Southeast Extension
Brown Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=AQUIRED AREA

NOISE ANALYSIS LOCATIONS
EXHIBIT 7.1



Triangle Expressway
Southeast Extension
Brown Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

N

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=AQUIRED AREA

NOISE ANALYSIS LOCATIONS
EXHIBIT 7.2



Triangle Expressway
Southeast Extension
Brown Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=AQUIRED AREA

NOISE ANALYSIS LOCATIONS
EXHIBIT 7.3



Triangle Expressway
Southeast Extension
Brown Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=AQUIRED AREA

NOISE ANALYSIS LOCATIONS
EXHIBIT 7.4



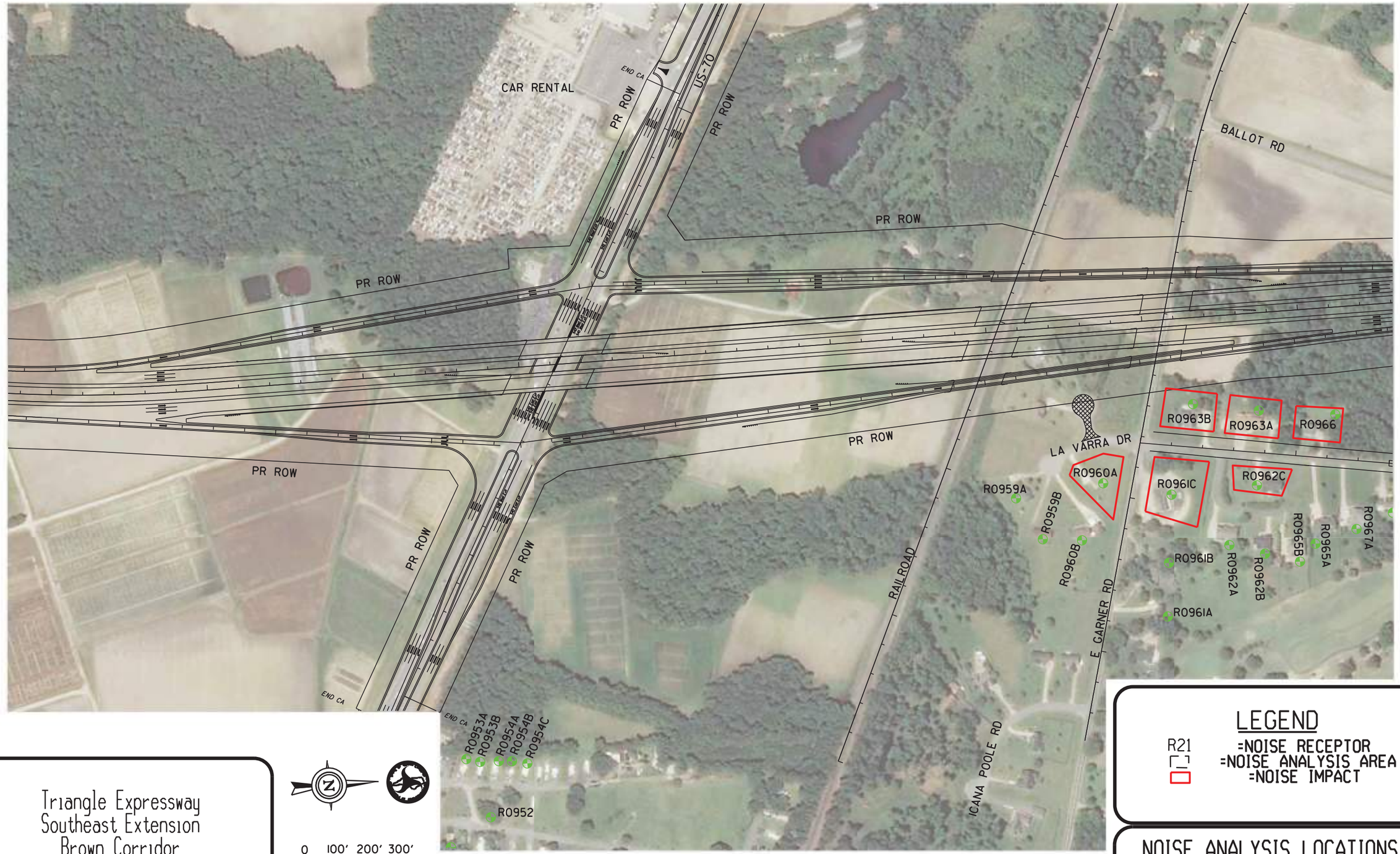
Triangle Expressway
Southeast Extension
Brown Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=AQUIRED AREA

NOISE ANALYSIS LOCATIONS
EXHIBIT 7.5

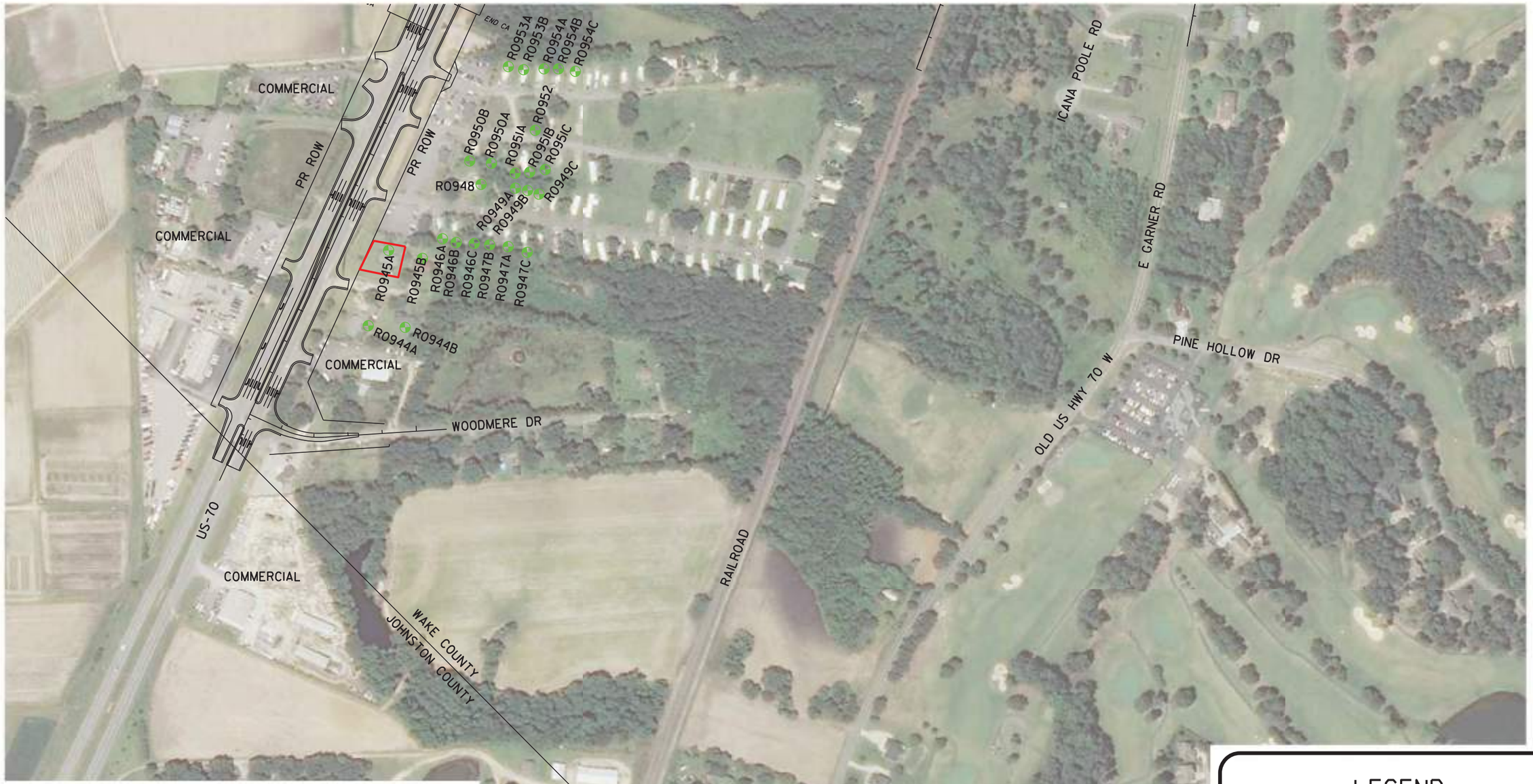


Triangle Expressway
Southeast Extension
Brown Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

LEGEND

R21 =NOISE RECEPTOR
=NOISE ANALYSIS AREA
=NOISE IMPACT

NOISE ANALYSIS LOCATIONS
EXHIBIT 7.6



Triangle Expressway
Southeast Extension
Brown Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=AQUIRED AREA

NOISE ANALYSIS LOCATIONS
EXHIBIT 7.7



Triangle Expressway
Southeast Extension
Brown Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=AQUIRED AREA

NOISE ANALYSIS LOCATIONS
EXHIBIT 7.8



Triangle Expressway
Southeast Extension
Brown Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=AQUIRED AREA

NOISE ANALYSIS LOCATIONS
EXHIBIT 7.9



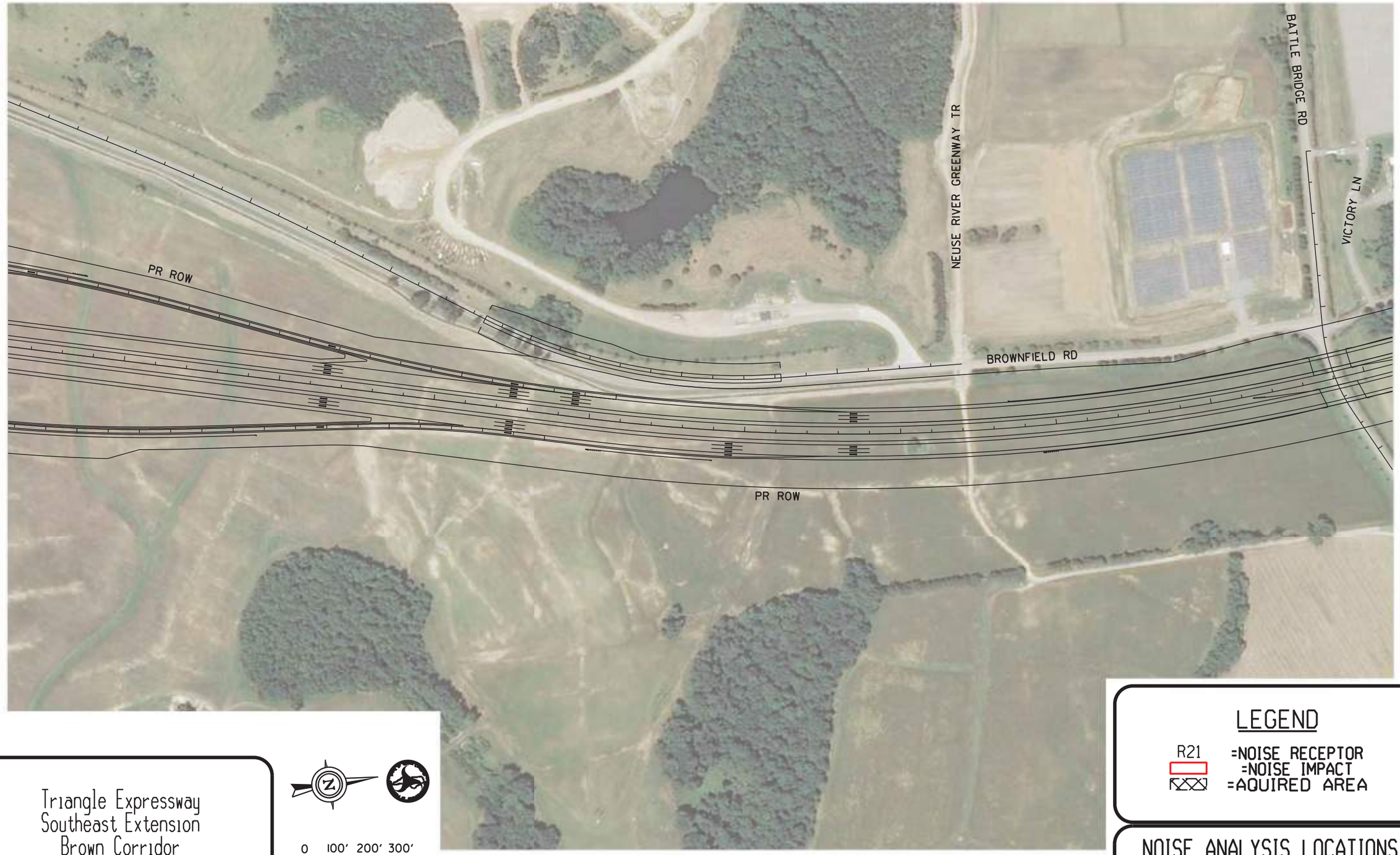
Triangle Expressway
Southeast Extension
Brown Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=AQUIRED AREA

NOISE ANALYSIS LOCATIONS
EXHIBIT 7.10



Triangle Expressway
Southeast Extension
Brown Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=AQUIRED AREA

NOISE ANALYSIS LOCATIONS
EXHIBIT 7.11



Triangle Expressway
Southeast Extension
Brown Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=AQUIRED AREA

NOISE ANALYSIS LOCATIONS
EXHIBIT 7.12



Triangle Expressway
Southeast Extension
Brown Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=AQUIRED AREA

NOISE ANALYSIS LOCATIONS
EXHIBIT 7.13



Triangle Expressway
Southeast Extension
Brown Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=AQUIRED AREA

NOISE ANALYSIS LOCATIONS
EXHIBIT 7.14

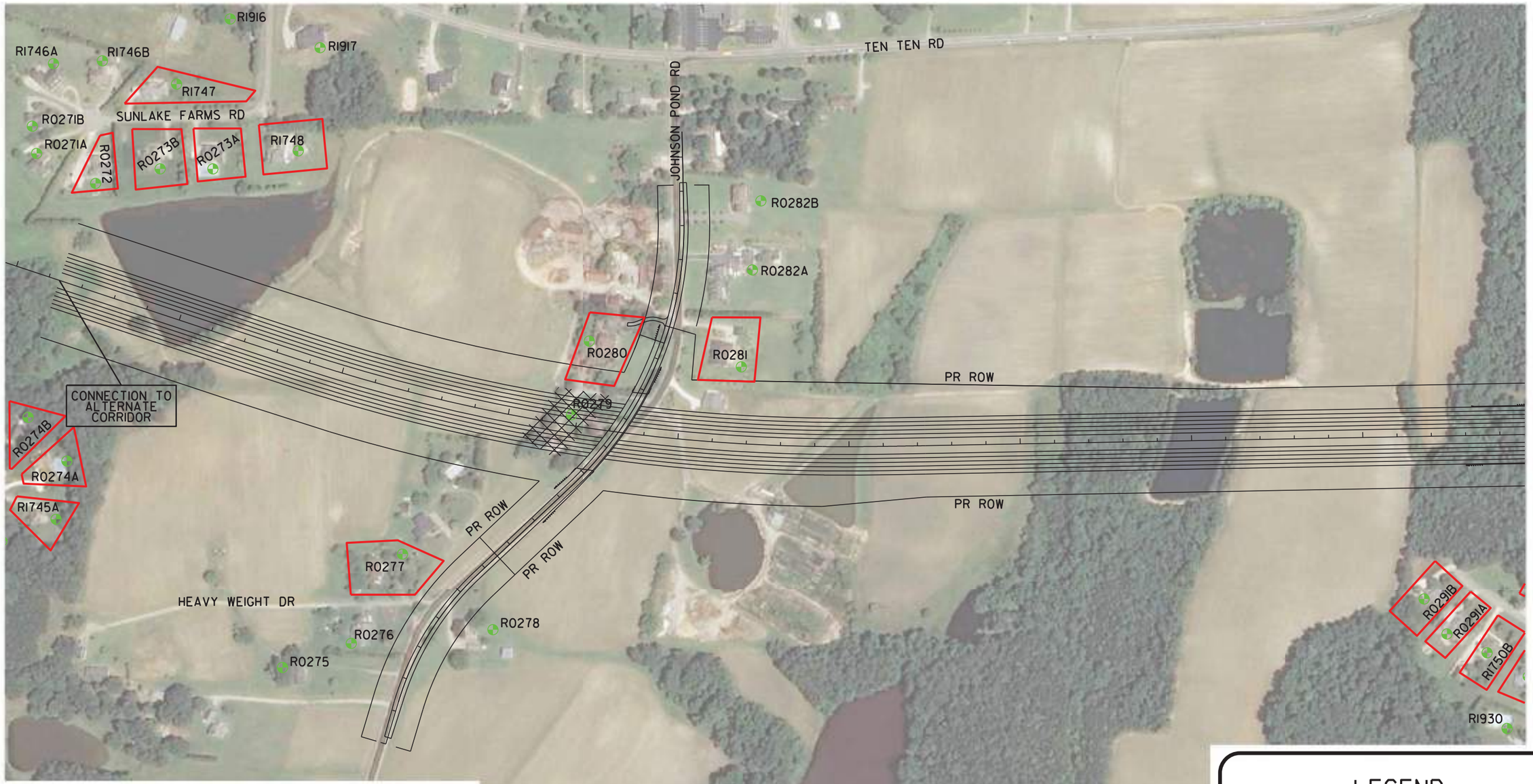
EXHIBIT 8

RED CORRIDOR
NOISE ANALYSIS LOCATIONS



Triangle Expressway
Southeast Extension
Red Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

NOISE ANALYSIS LOCATIONS
EXHIBIT 8.0



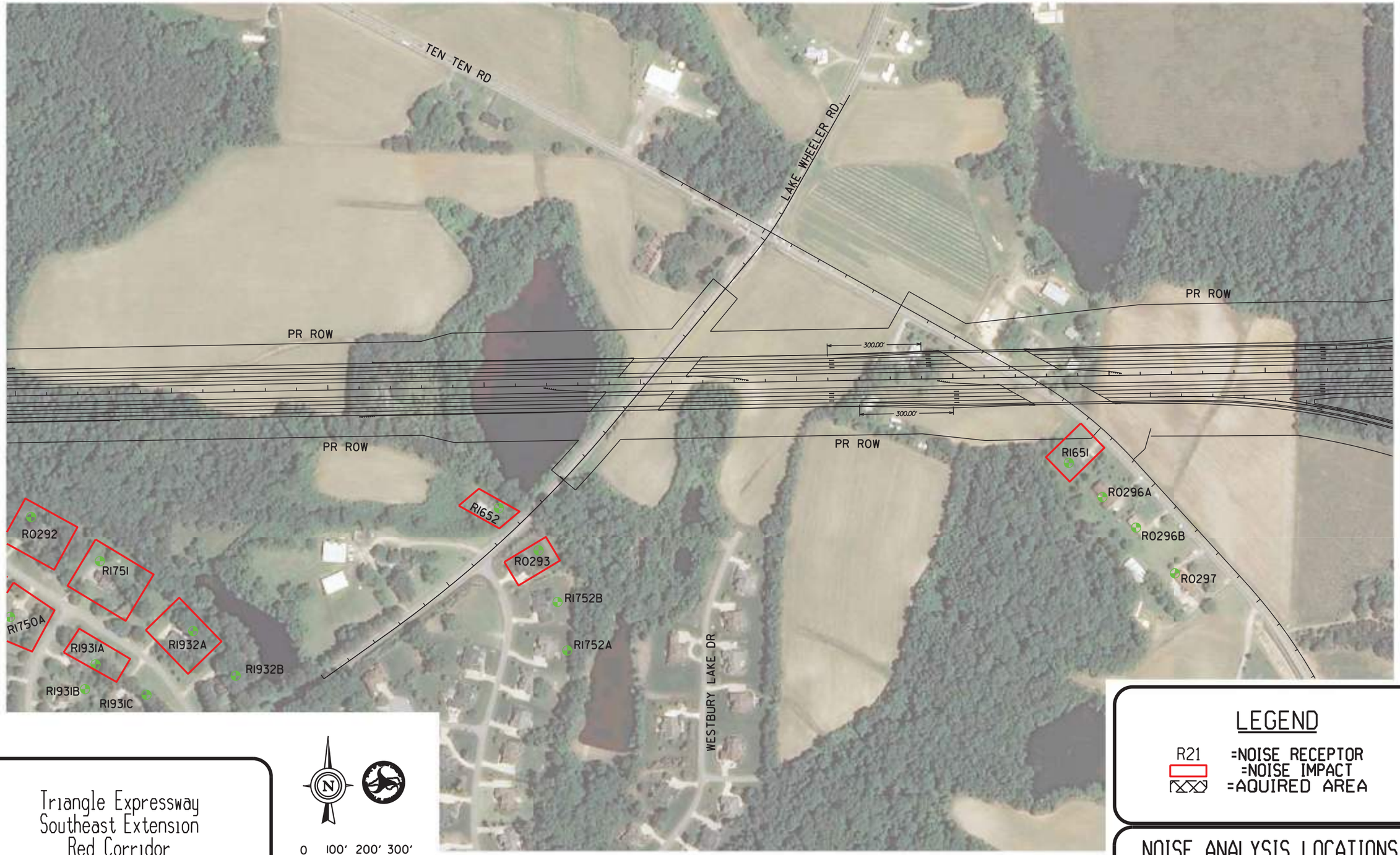
Triangle Expressway
Southeast Extension
Red Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=AQUIRED AREA

NOISE ANALYSIS LOCATIONS
EXHIBIT 8.1



Triangle Expressway
Southeast Extension
Red Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=AQUIRED AREA

NOISE ANALYSIS LOCATIONS
EXHIBIT 8.2



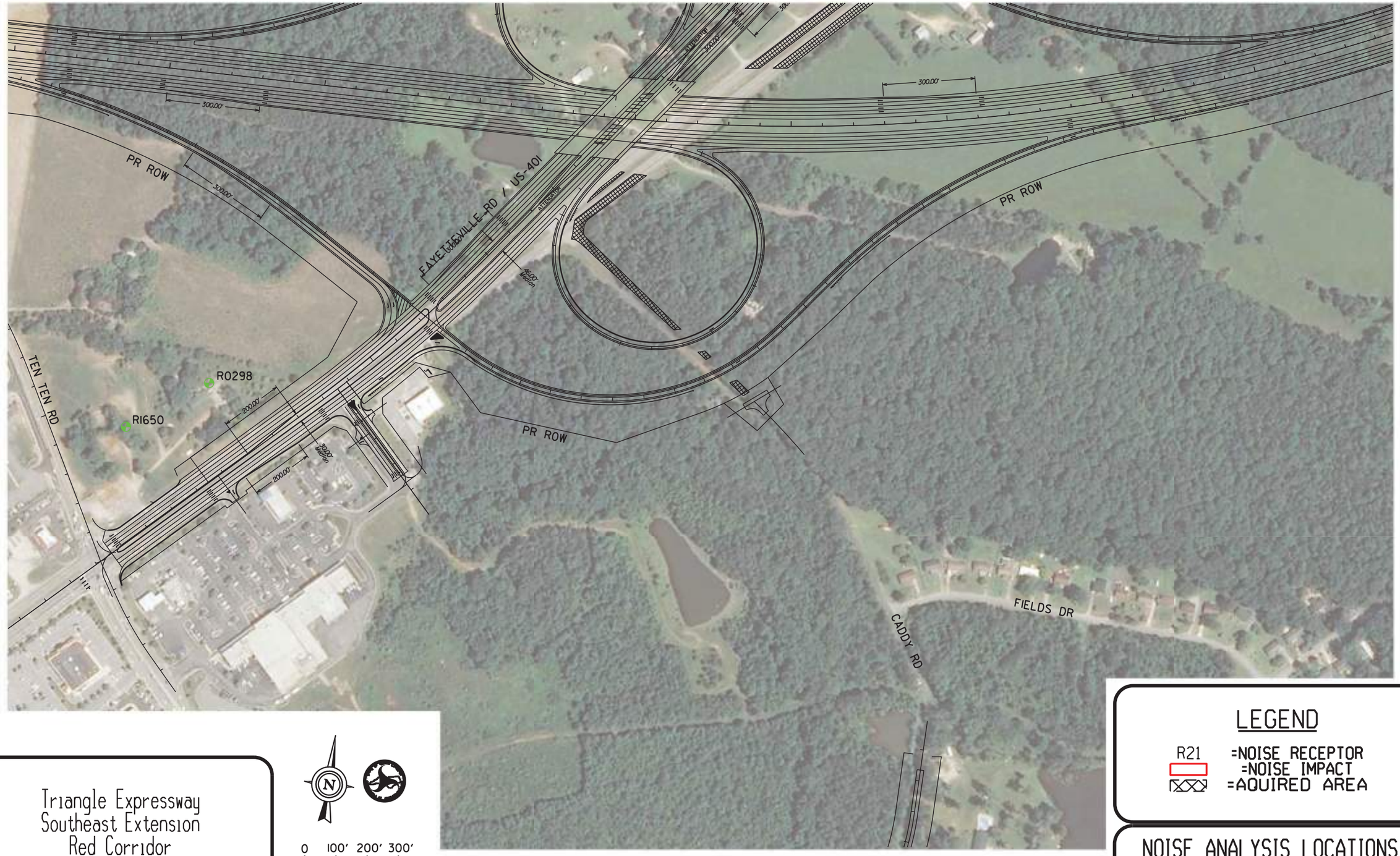
Triangle Expressway
Southeast Extension
Red Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=AQUIRED AREA

NOISE ANALYSIS LOCATIONS
EXHIBIT 8.3



Triangle Expressway
Southeast Extension
Red Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=AQUIRED AREA

NOISE ANALYSIS LOCATIONS
EXHIBIT 8.4



Triangle Expressway
Southeast Extension
Red Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

N

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=AQUIRED AREA

NOISE ANALYSIS LOCATIONS
EXHIBIT 8.5



Triangle Expressway
Southeast Extension
Red Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=AQUIRED AREA

NOISE ANALYSIS LOCATIONS
EXHIBIT 8.6



Triangle Expressway
Southeast Extension
Red Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=AQUIRED AREA

NOISE ANALYSIS LOCATIONS
EXHIBIT 8.7



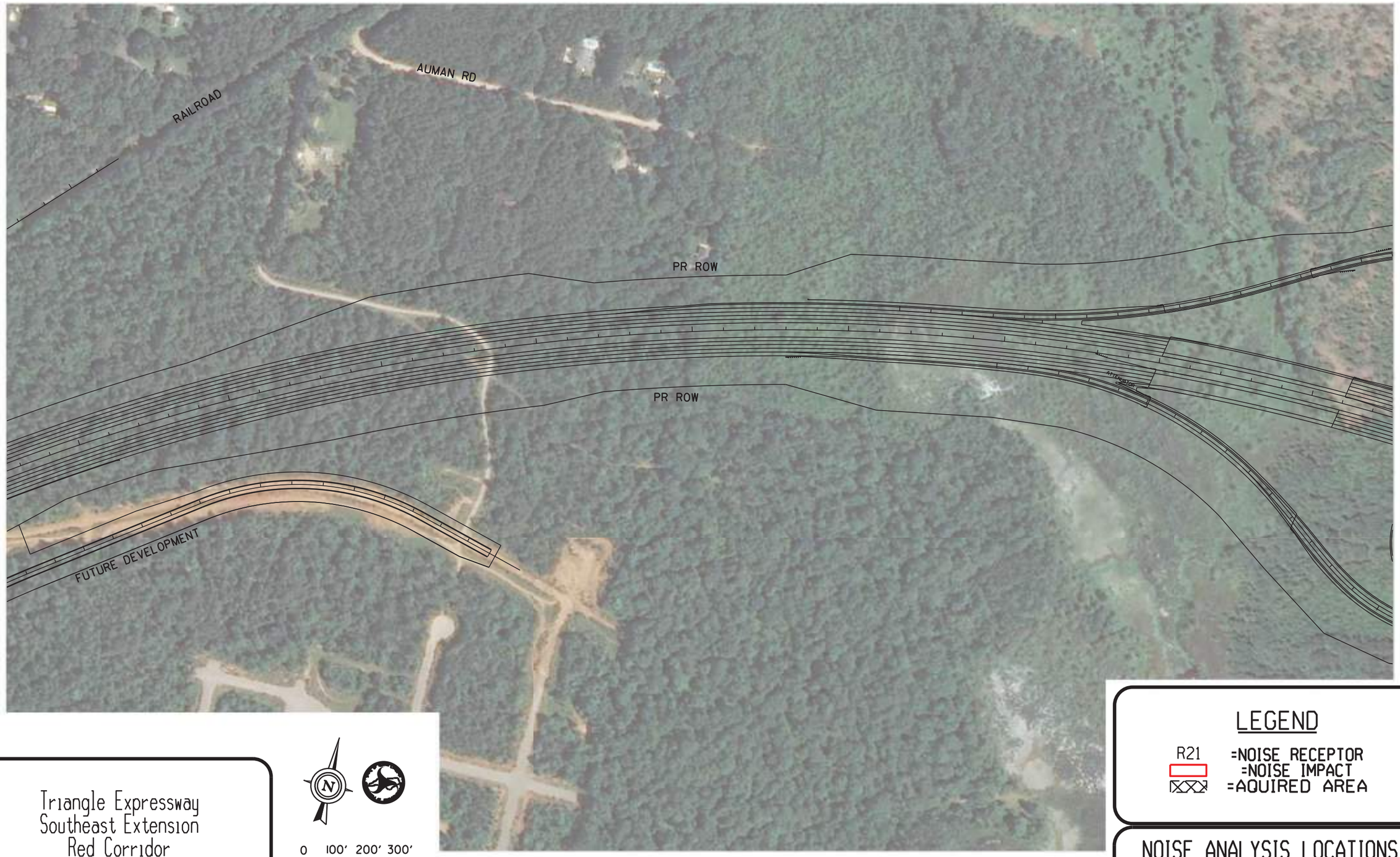
Triangle Expressway
Southeast Extension
Red Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=AQUIRED AREA

NOISE ANALYSIS LOCATIONS
EXHIBIT 8.8



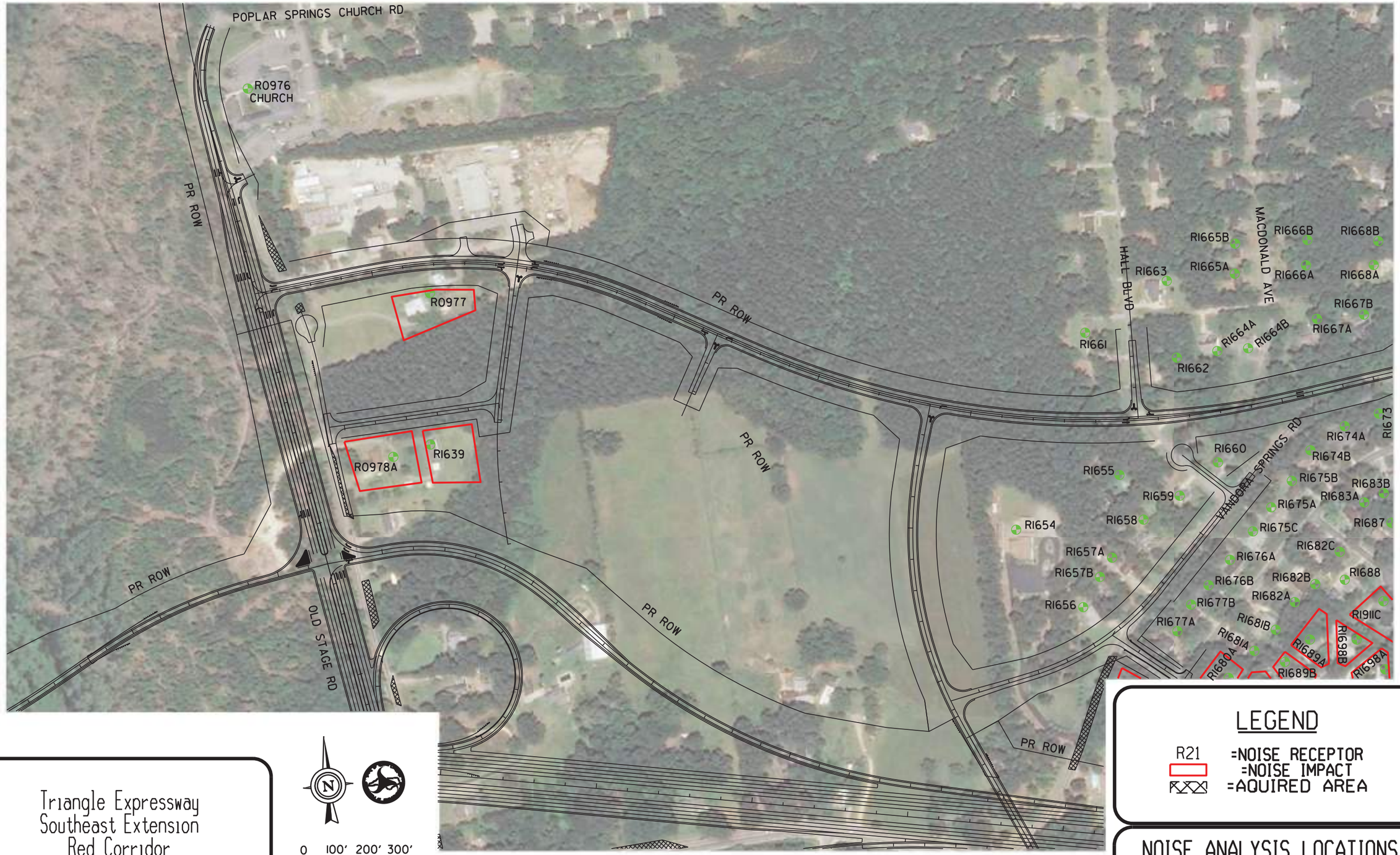
Triangle Expressway
Southeast Extension
Red Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=AQUIRED AREA

NOISE ANALYSIS LOCATIONS
EXHIBIT 8.9



Triangle Expressway
Southeast Extension
Red Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=AQUIRED AREA

NOISE ANALYSIS LOCATIONS
EXHIBIT 8.10

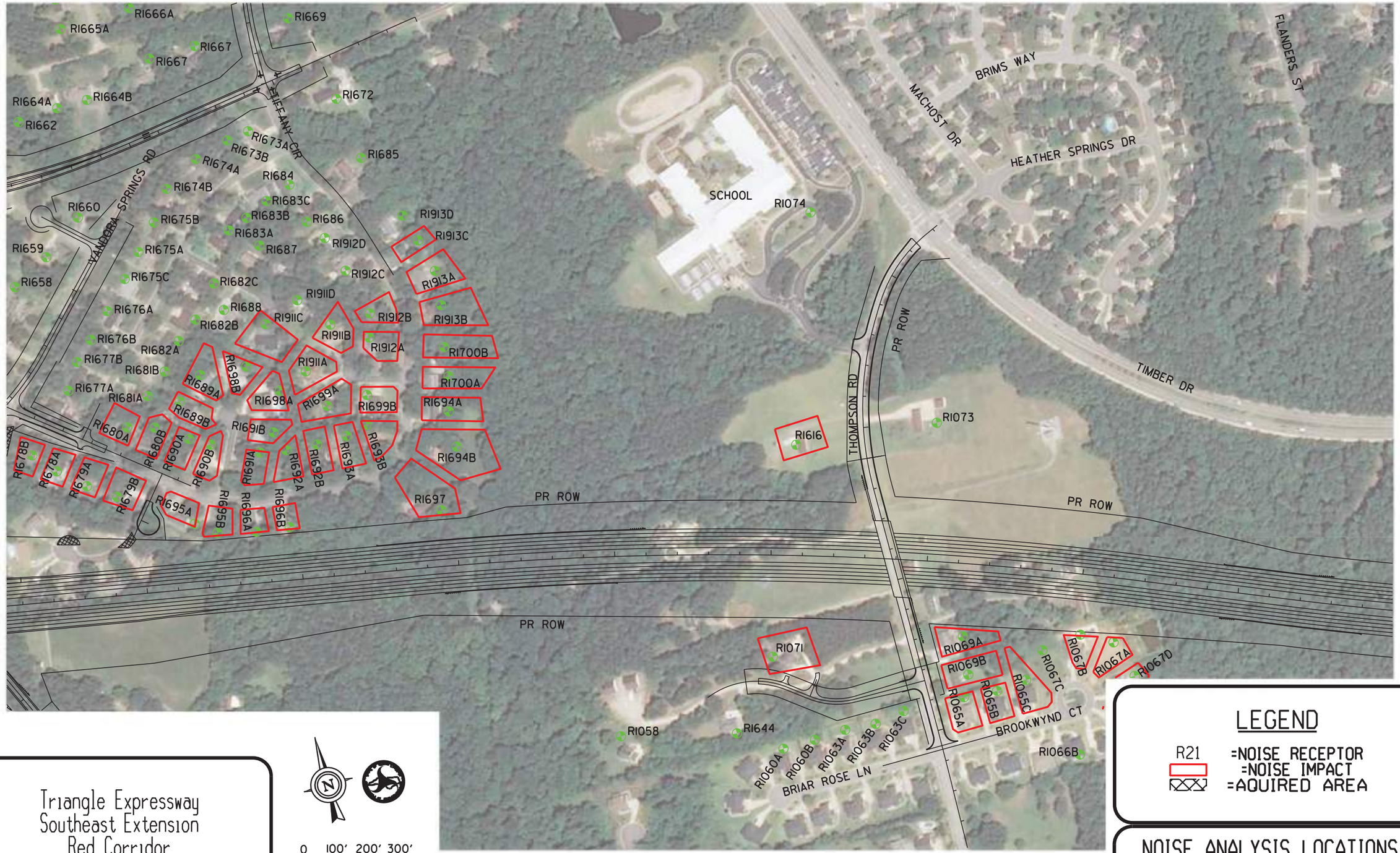


Triangle Expressway
Southeast Extension
Red Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=AQUIRED AREA

NOISE ANALYSIS LOCATIONS
EXHIBIT 8.11



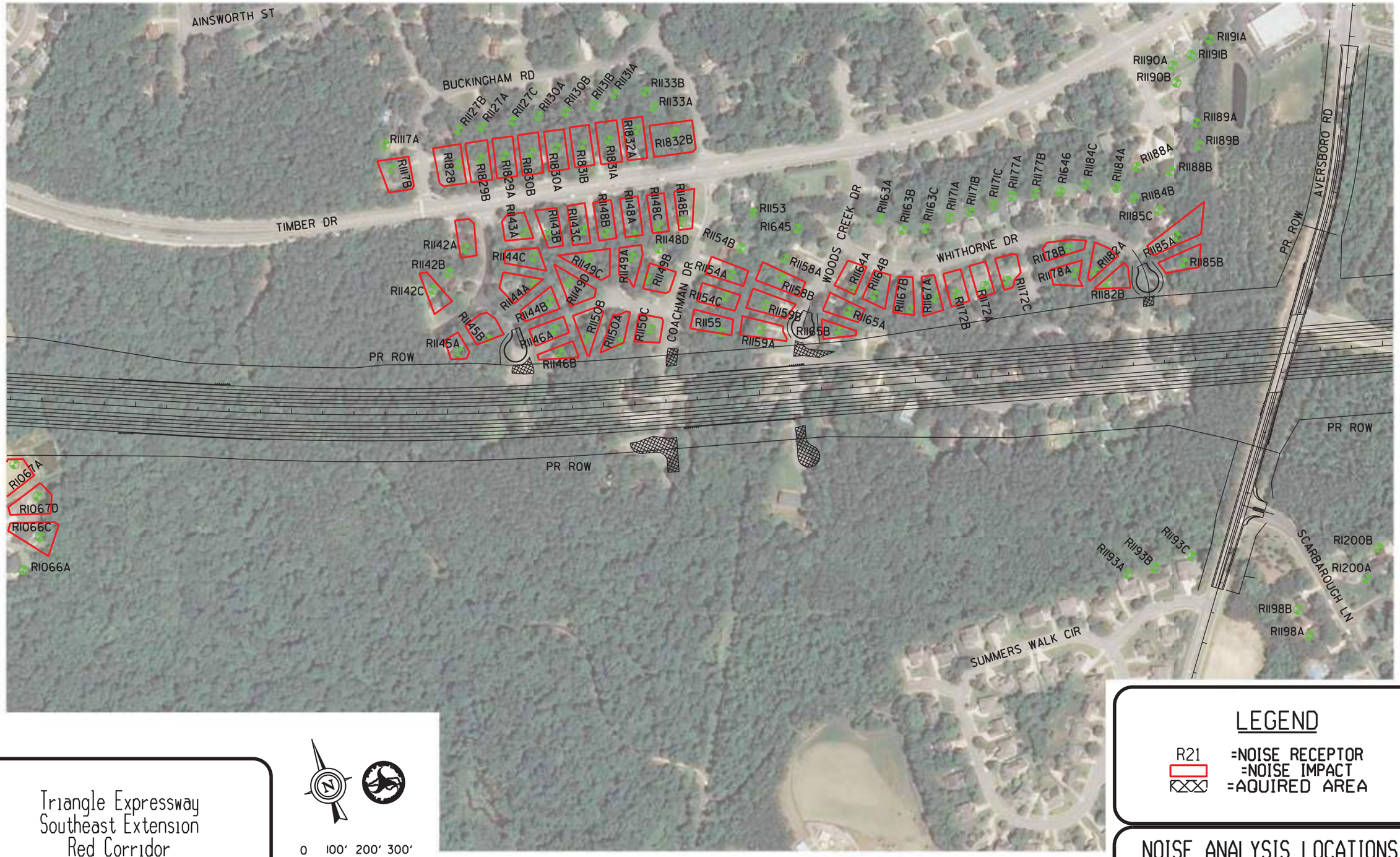
Triangle Expressway
Southeast Extension
Red Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=AQUIRED AREA

NOISE ANALYSIS LOCATIONS
EXHIBIT 8.12



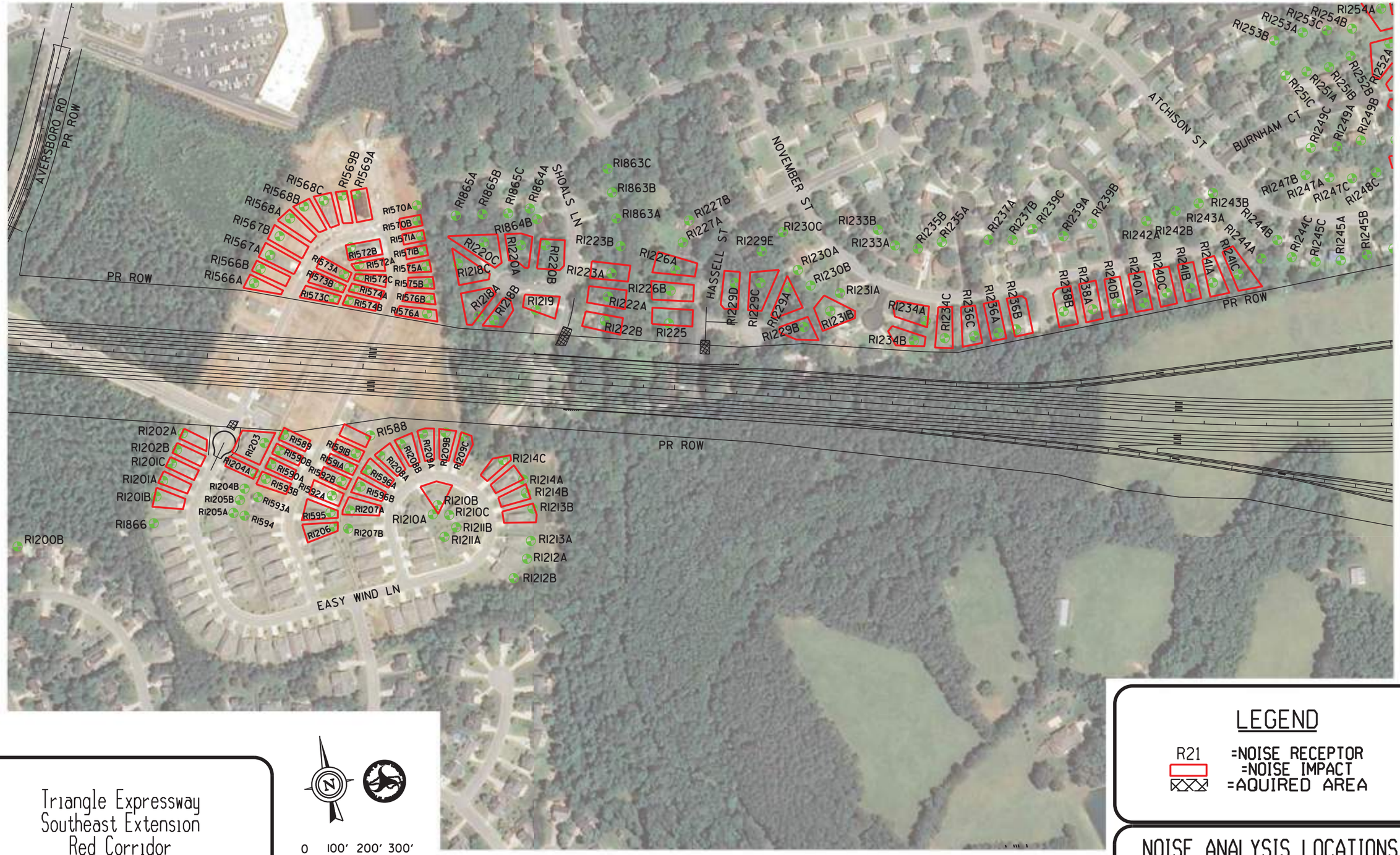
Triangle Expressway
Southeast Extension
Red Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=AQUIRED AREA

NOISE ANALYSIS LOCATIONS
EXHIBIT 8.13

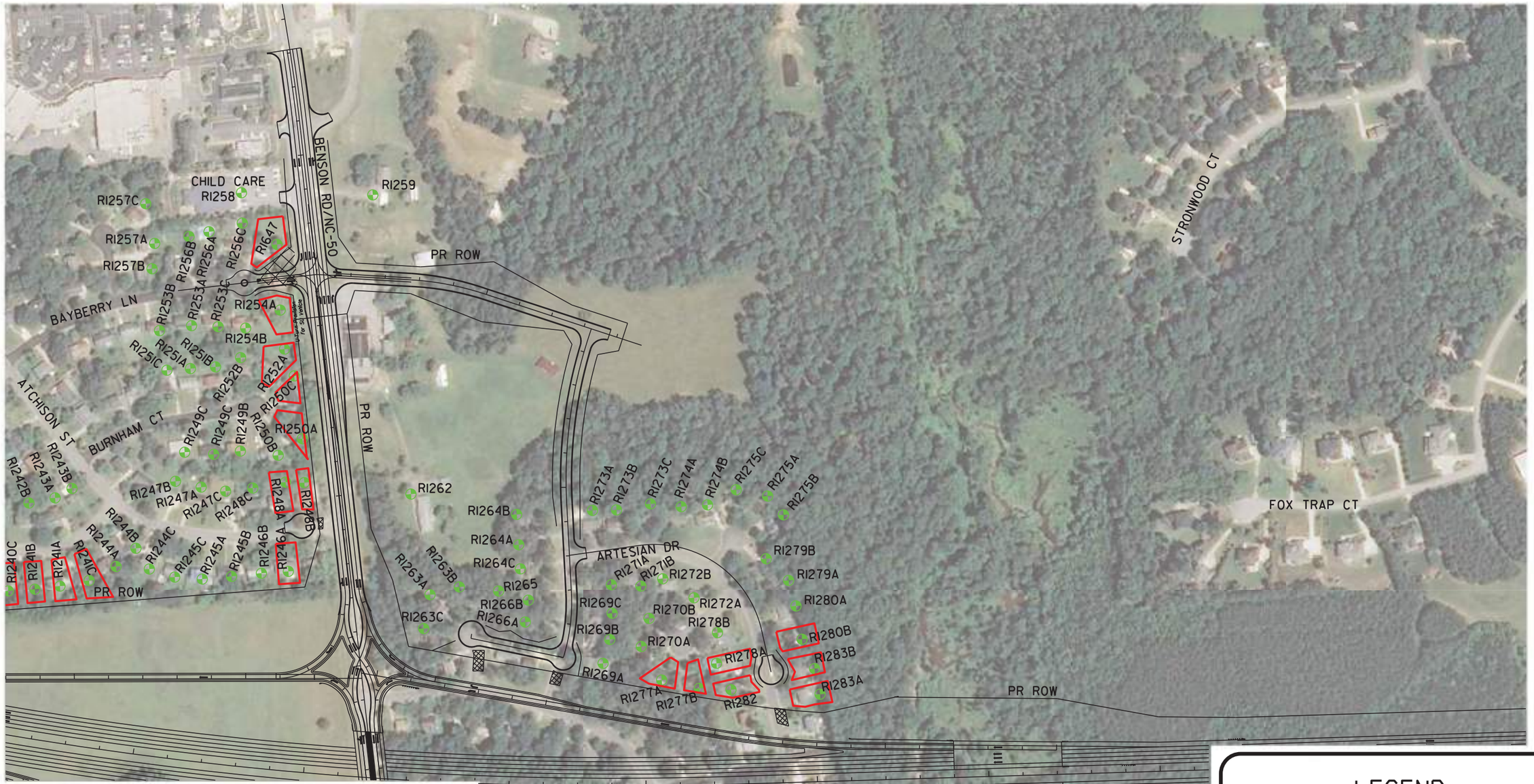


Triangle Expressway
Southeast Extension
Red Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=AQUIRED AREA

NOISE ANALYSIS LOCATIONS
EXHIBIT 8.14



Triangle Expressway
Southeast Extension
Red Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=AQUIRED AREA

NOISE ANALYSIS LOCATIONS
EXHIBIT 8.15



Triangle Expressway
Southeast Extension
Red Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=AQUIRED AREA

NOISE ANALYSIS LOCATIONS
EXHIBIT 8.16



Triangle Expressway
Southeast Extension
Red Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=AQUIRED AREA

NOISE ANALYSIS LOCATIONS
EXHIBIT 8.17



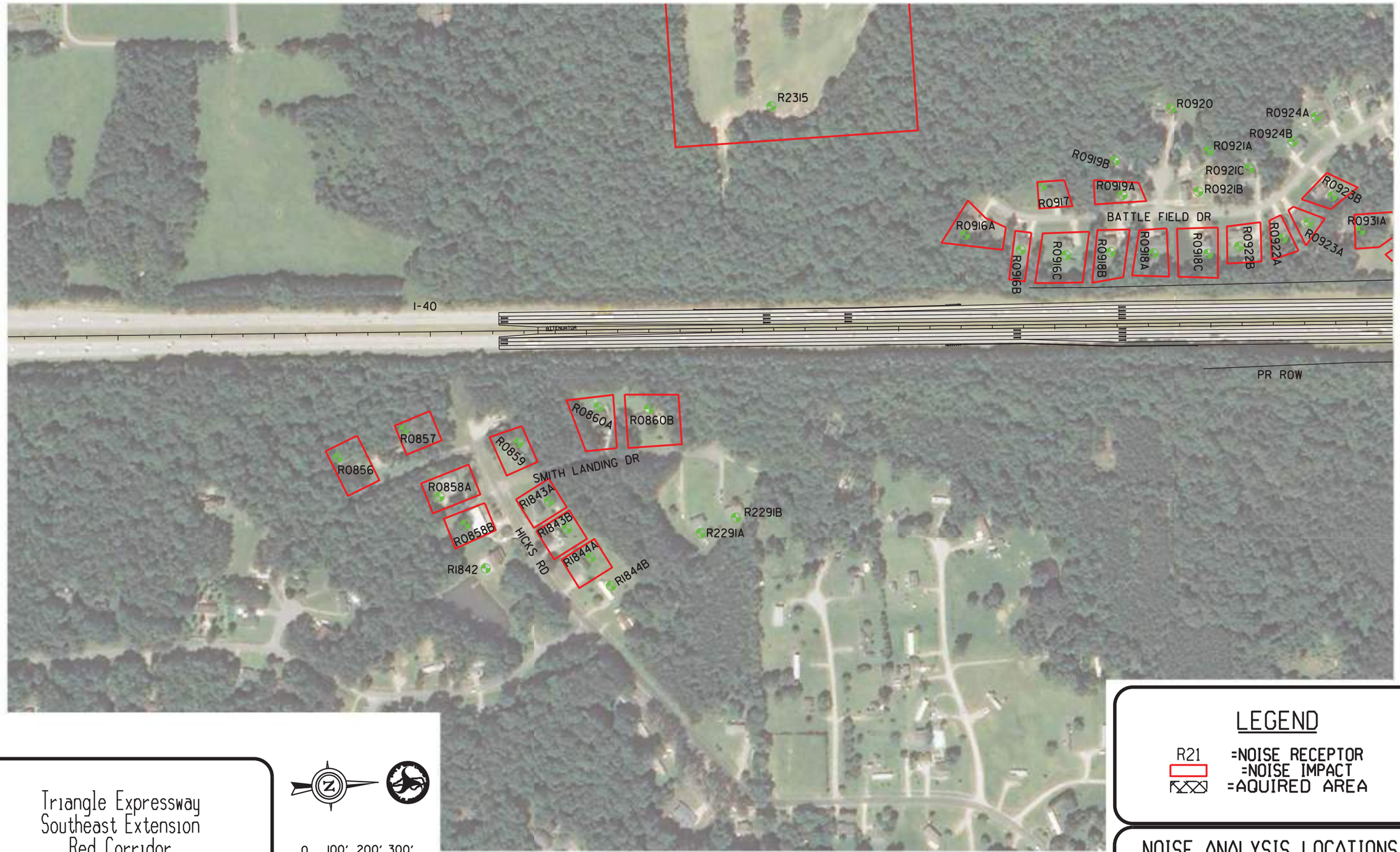
Triangle Expressway
Southeast Extension
Red Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=AQUIRED AREA

NOISE ANALYSIS LOCATIONS
EXHIBIT 8.18



Triangle Expressway
Southeast Extension
Red Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

N

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=AQUIRED AREA

NOISE ANALYSIS LOCATIONS
EXHIBIT 8.19



Triangle Expressway
Southeast Extension
Red Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=AQUIRED AREA

NOISE ANALYSIS LOCATIONS
EXHIBIT 8.20



Triangle Expressway
Southeast Extension
Red Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

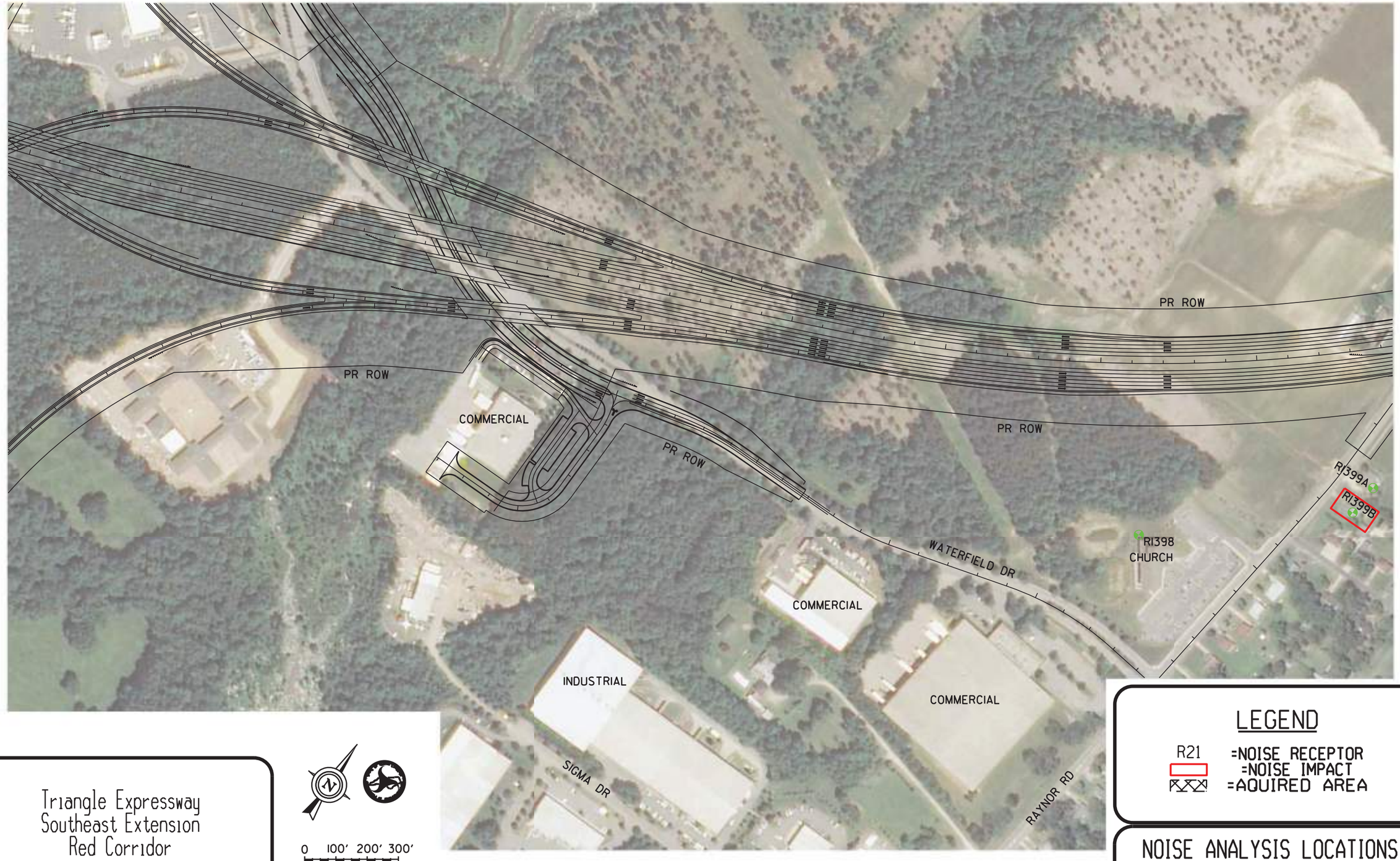
N

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=AQUIRED AREA

NOISE ANALYSIS LOCATIONS
EXHIBIT 8.21



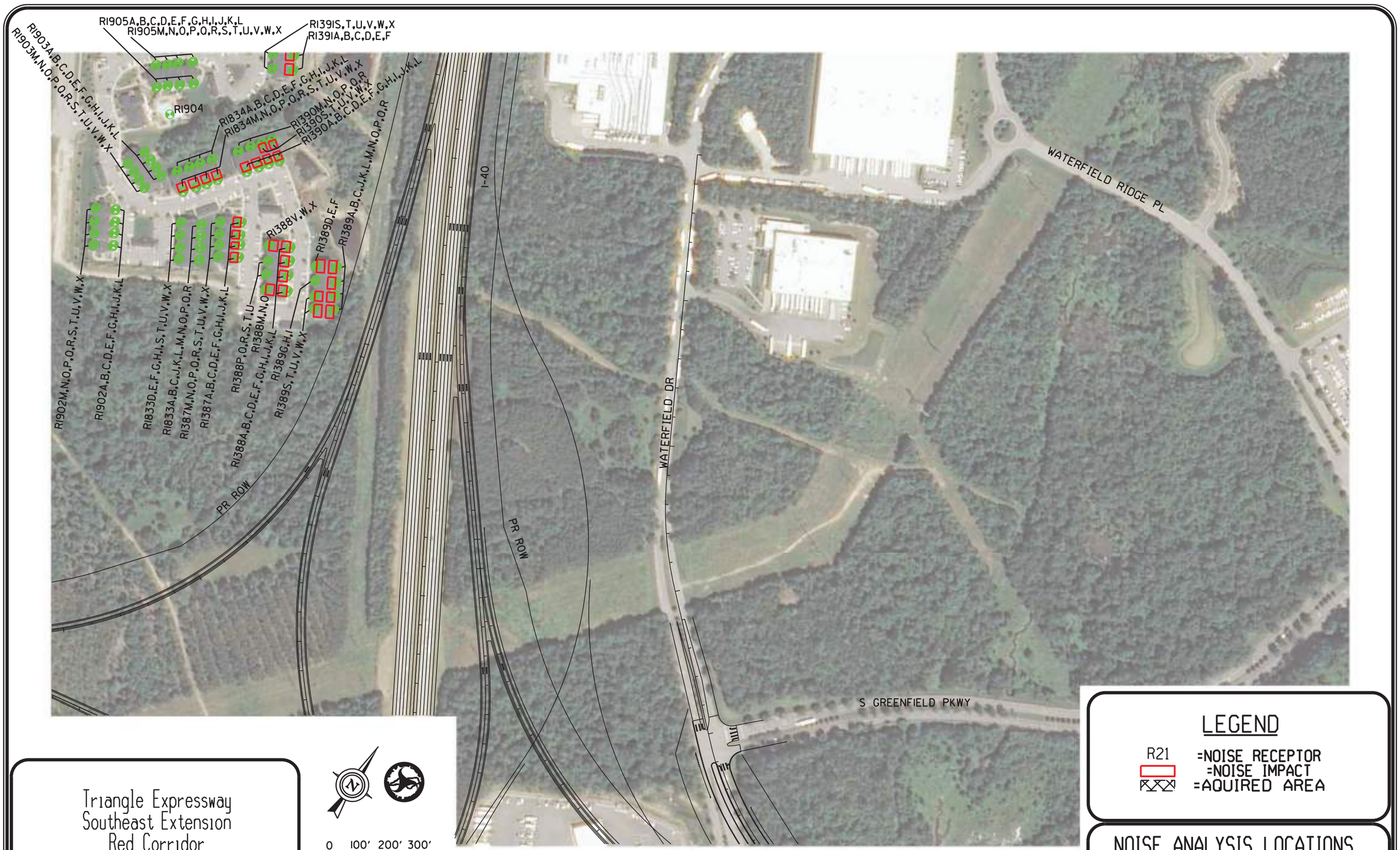
Triangle Expressway
Southeast Extension
Red Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=AQUIRED AREA

NOISE ANALYSIS LOCATIONS
EXHIBIT 8.22



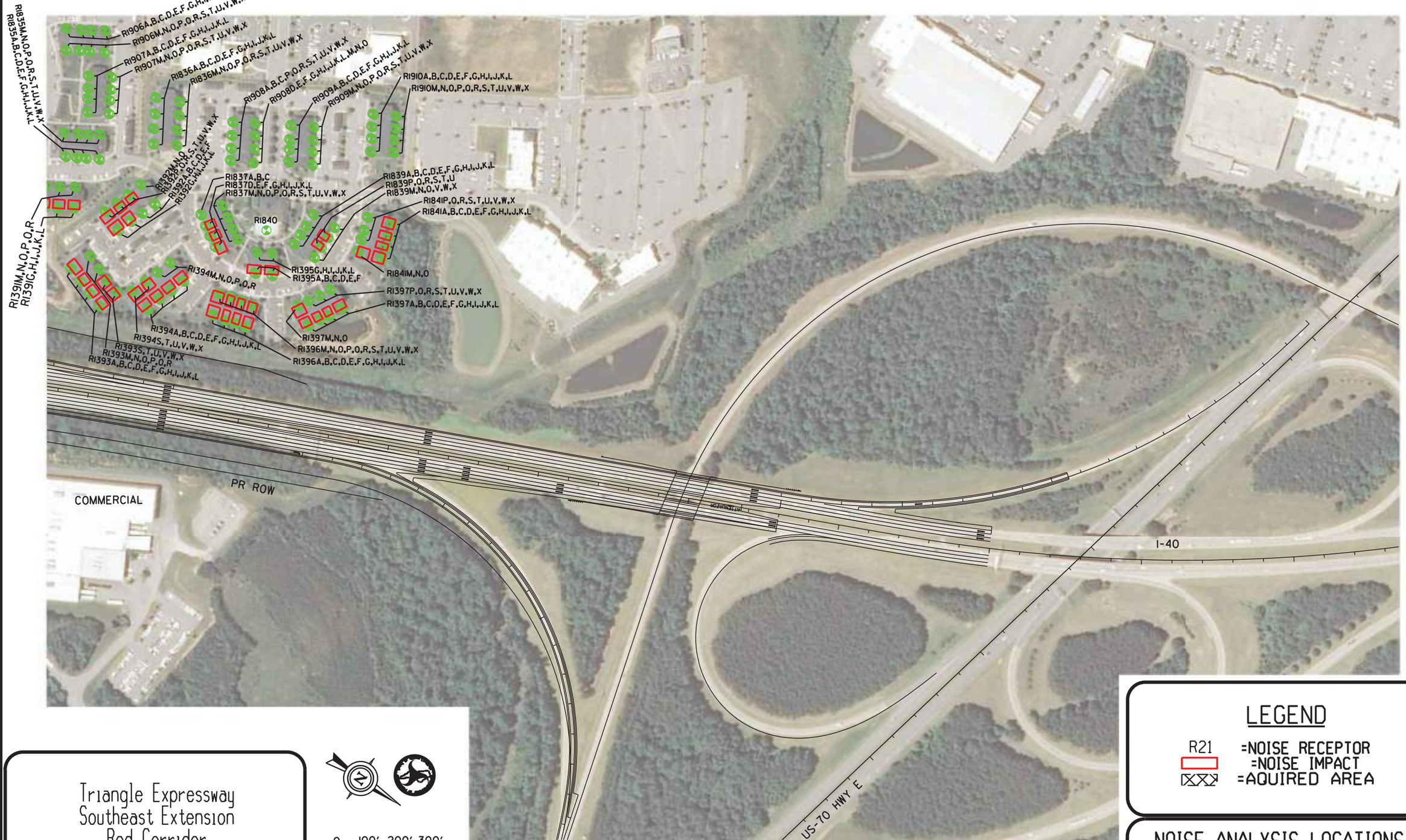
Triangle Expressway
Southeast Extension
Red Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=AQUIRED AREA

NOISE ANALYSIS LOCATIONS
EXHIBIT 8.23



Triangle Expressway
Southeast Extension
Red Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=AQUIRED AREA

NOISE ANALYSIS LOCATIONS
EXHIBIT 8.24



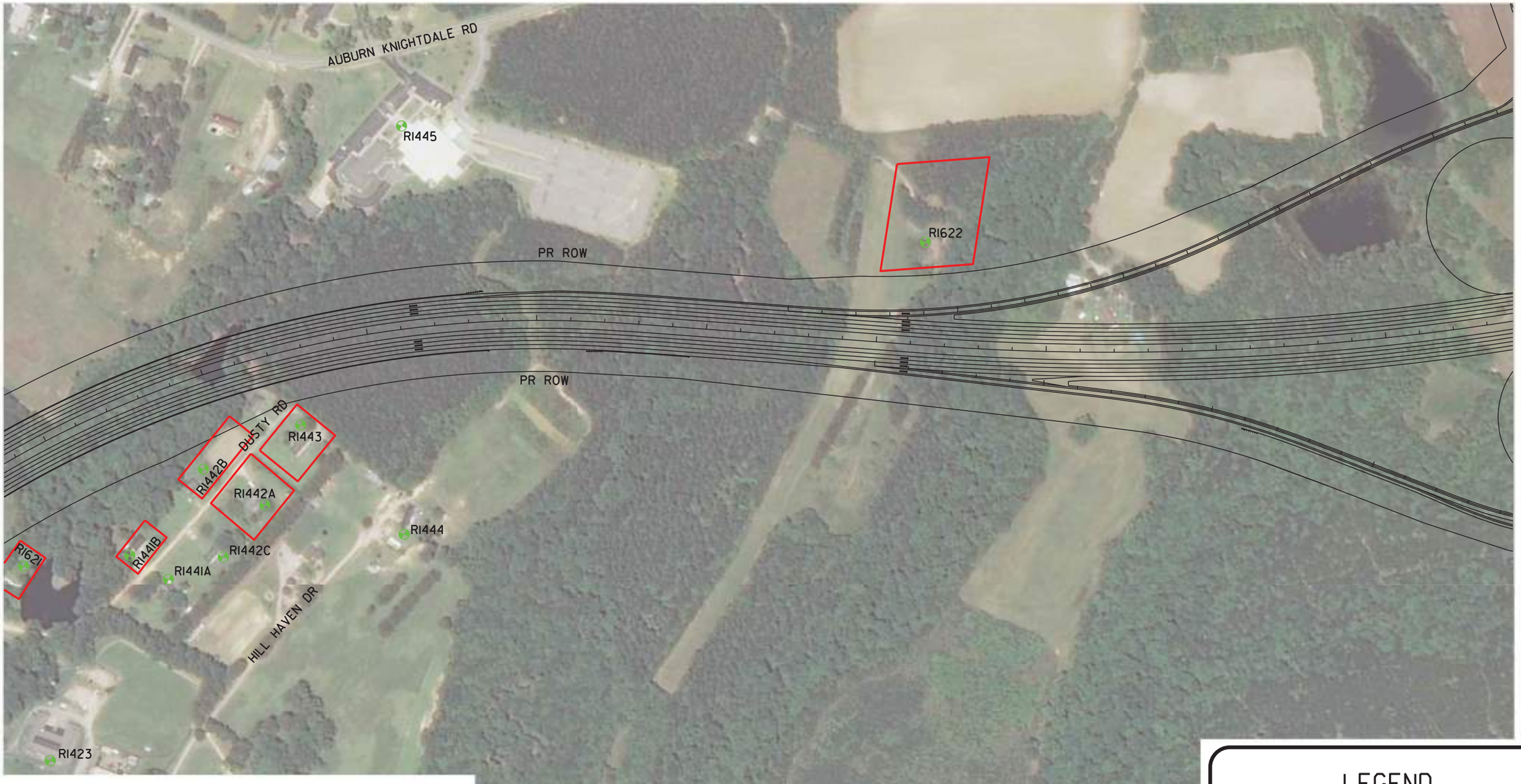
Triangle Expressway
Southeast Extension
Red Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=AQUIRED AREA

NOISE ANALYSIS LOCATIONS
EXHIBIT 8.25



Triangle Expressway
Southeast Extension
Red Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=AQUIRED AREA

NOISE ANALYSIS LOCATIONS
EXHIBIT 8.26



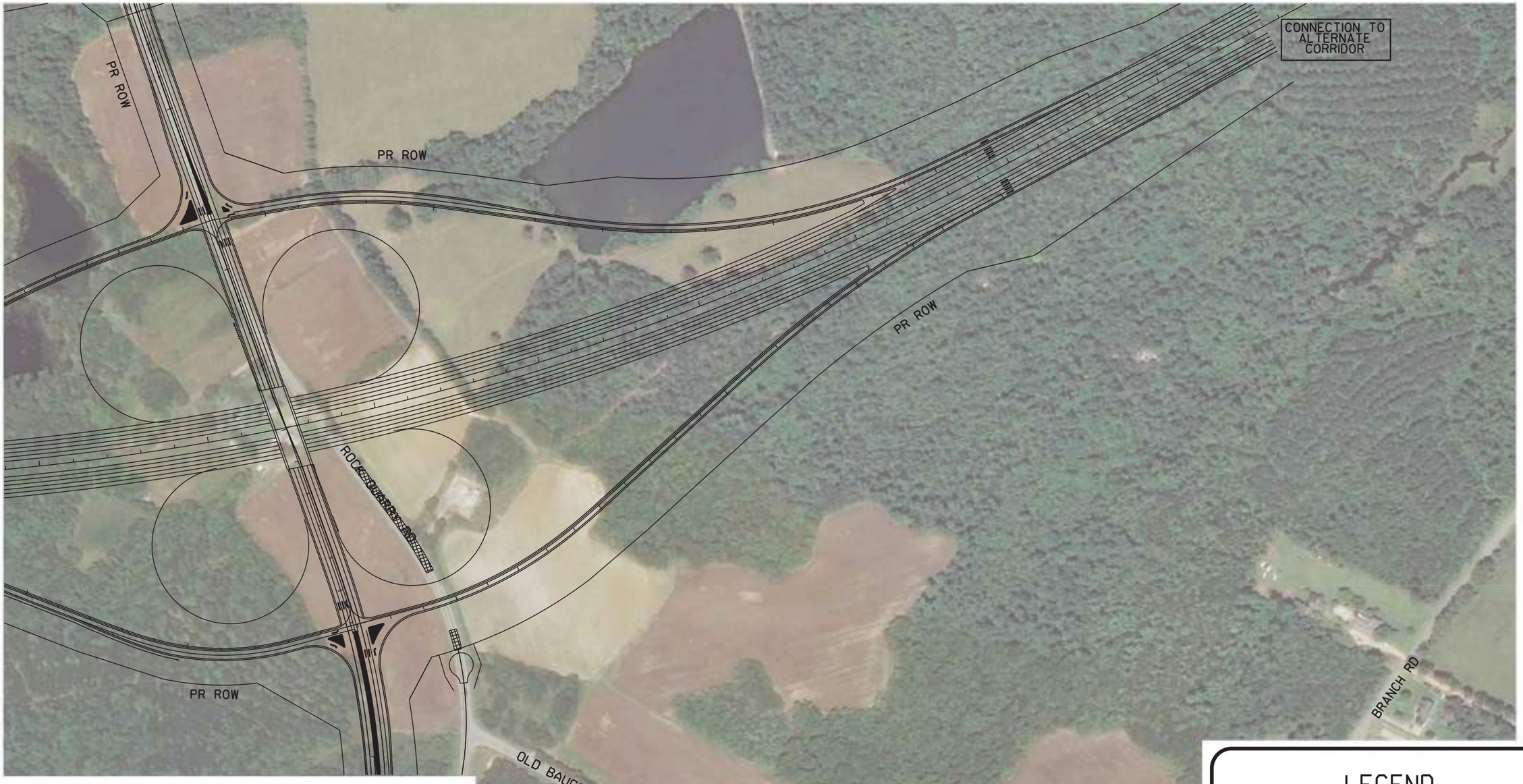
Triangle Expressway
Southeast Extension
Red Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=AQUIRED AREA

NOISE ANALYSIS LOCATIONS
EXHIBIT 8.27



Triangle Expressway
Southeast Extension
Red Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=AQUIRED AREA

NOISE ANALYSIS LOCATIONS
EXHIBIT 8.28



Triangle Expressway
Southeast Extension
Red Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

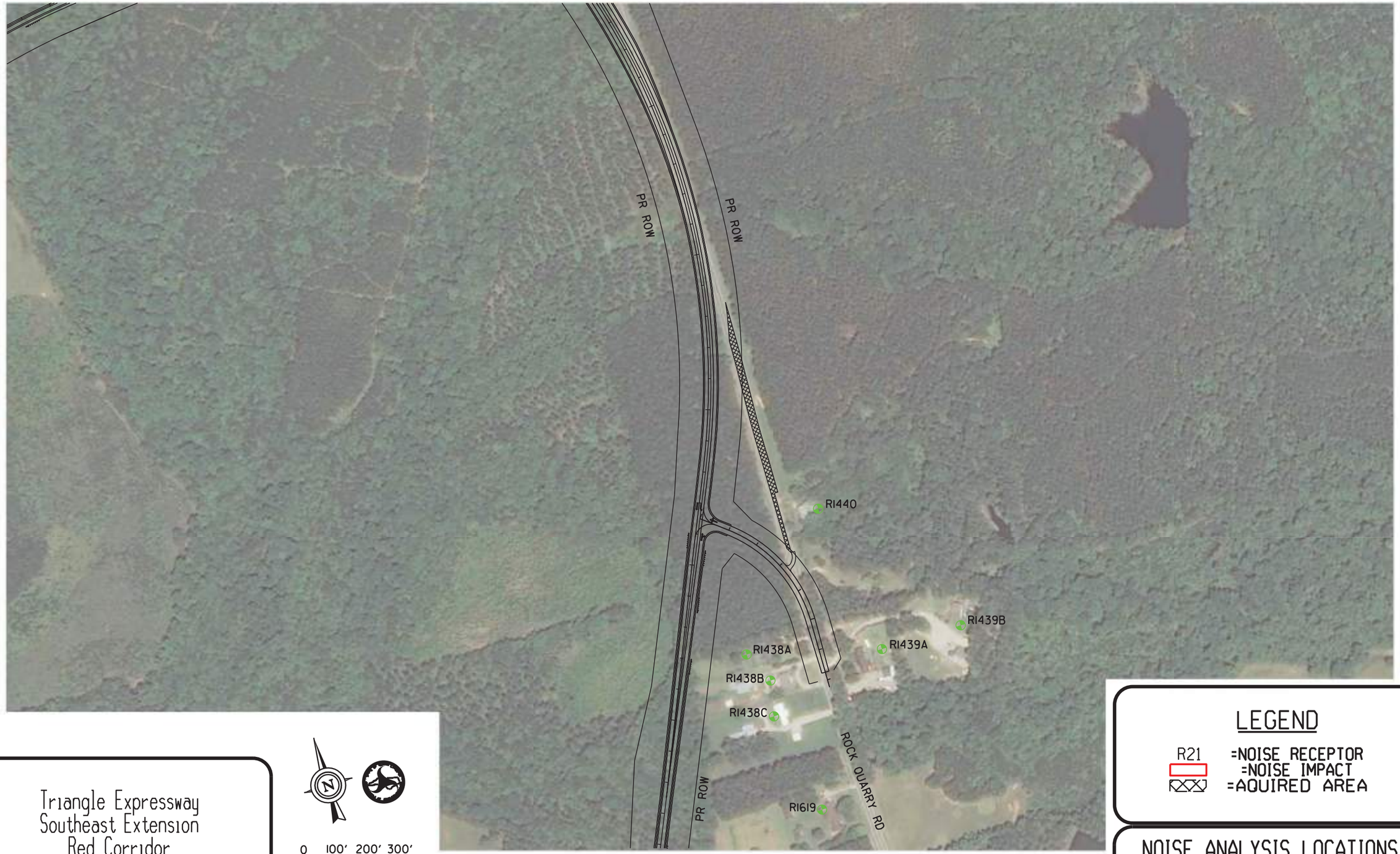
N

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=AQUIRED AREA

NOISE ANALYSIS LOCATIONS
EXHIBIT 8.29



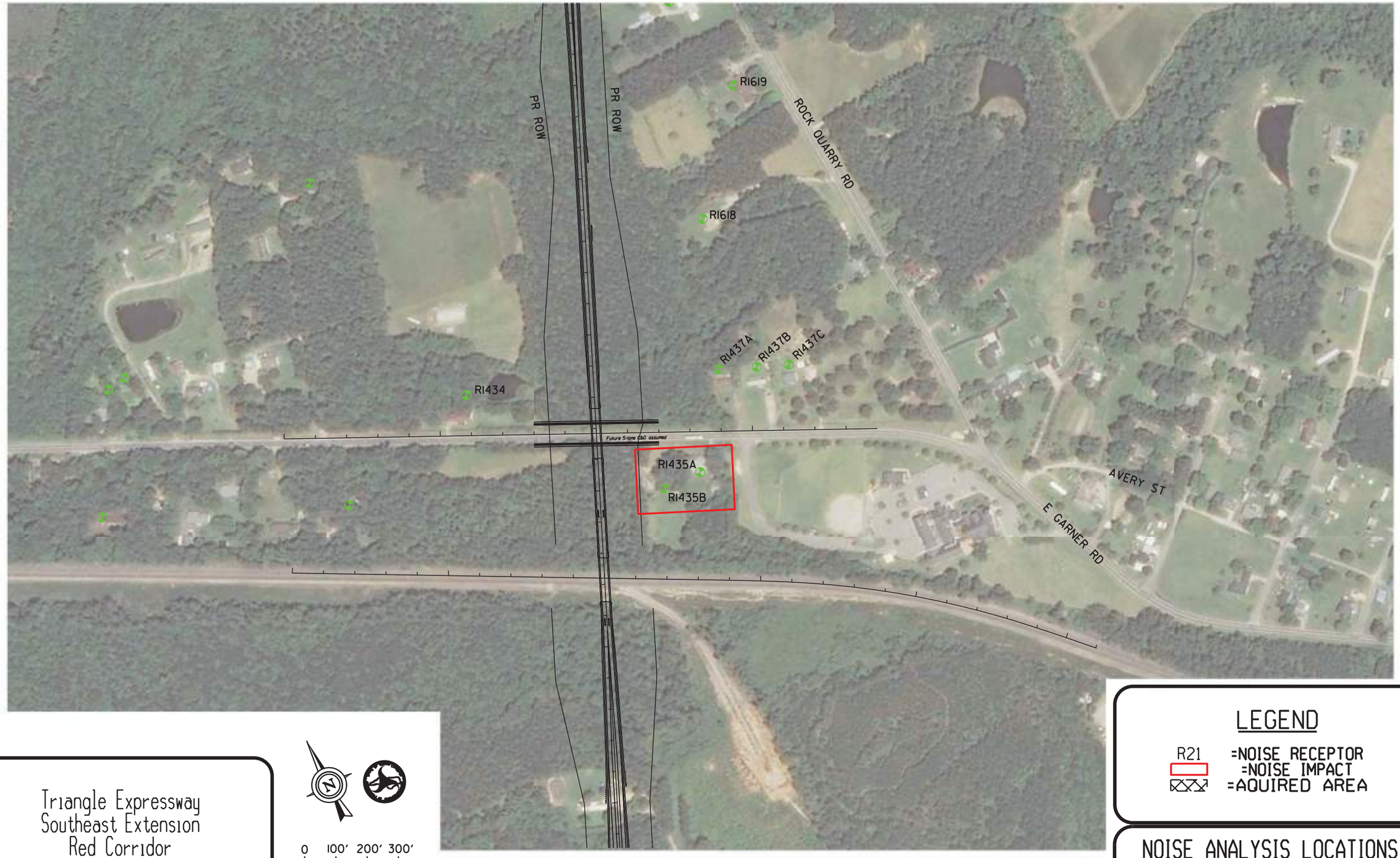
Triangle Expressway
Southeast Extension
Red Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=AQUIRED AREA

NOISE ANALYSIS LOCATIONS
EXHIBIT 8.30



Triangle Expressway
Southeast Extension
Red Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=AQUIRED AREA

NOISE ANALYSIS LOCATIONS
EXHIBIT 8.31



Triangle Expressway
Southeast Extension
Red Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=AQUIRED AREA

NOISE ANALYSIS LOCATIONS
EXHIBIT 8.32

EXHIBIT 9

RED (MODIFIED) CORRIDOR NOISE ANALYSIS LOCATIONS

Note: The Red (Modified) corridor was removed from consideration.

EXHIBIT 10

LILAC CORRIDOR
NOISE ANALYSIS LOCATIONS



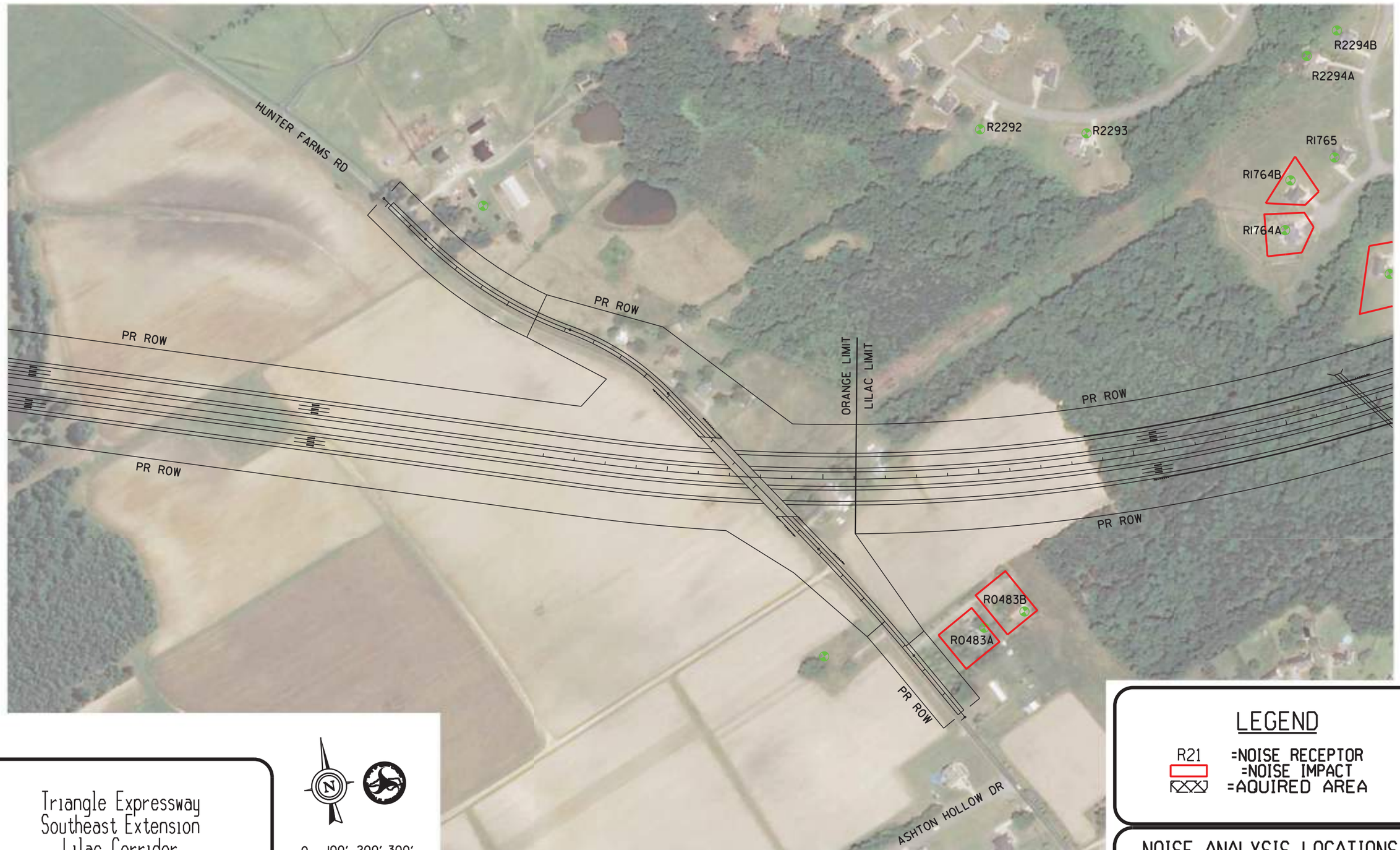
Triangle Expressway
Southeast Extension
Lilac Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

0 5000' 10000'

LEGEND

R21 =NOISE RECEPTOR
=NOISE ANALYSIS AREA
=NOISE IMPACT

NOISE ANALYSIS LOCATIONS
EXHIBIT 10.0



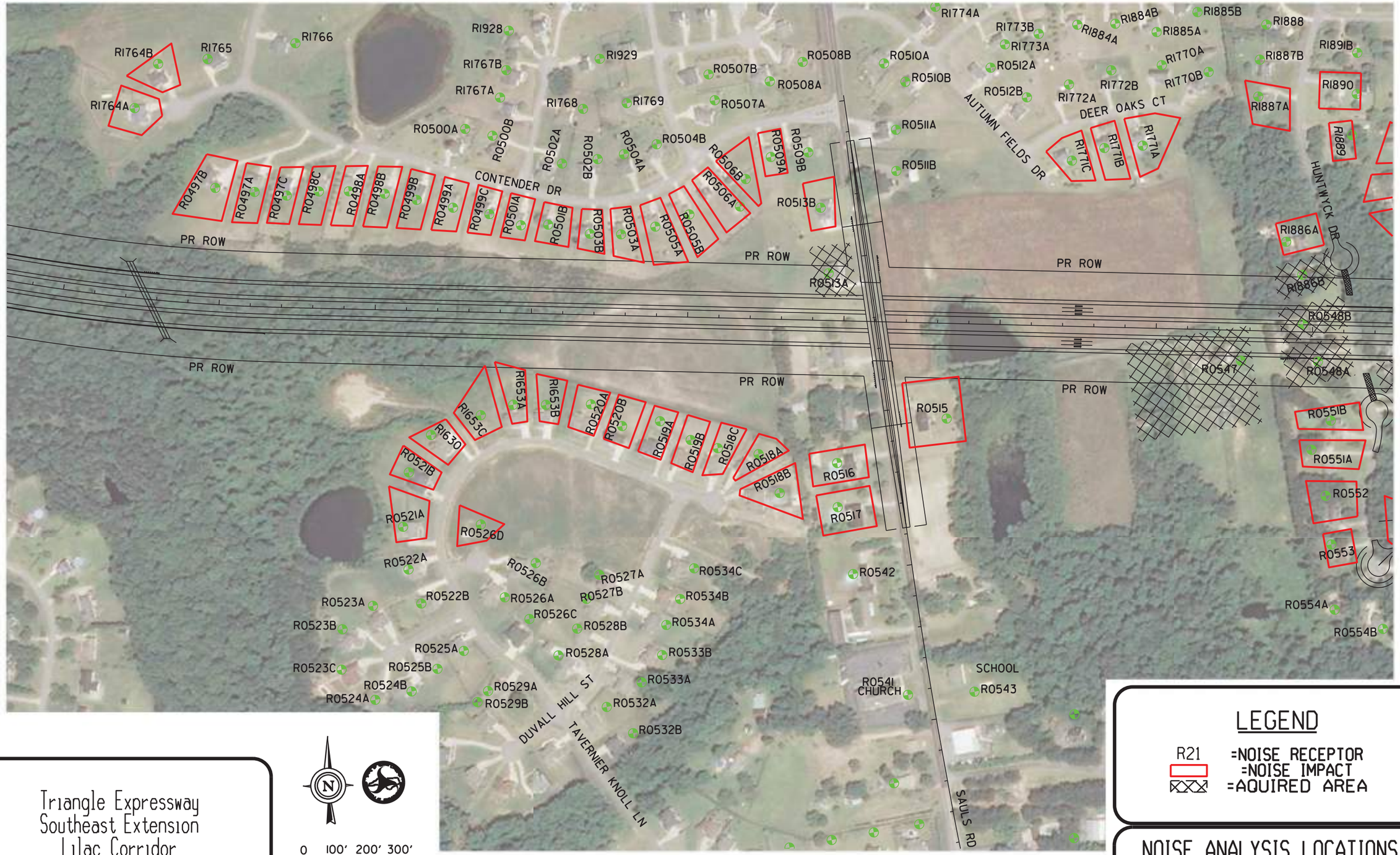
Triangle Expressway
Southeast Extension
Lilac Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=AQUIRED AREA

NOISE ANALYSIS LOCATIONS
EXHIBIT 10.5



Triangle Expressway
Southeast Extension
Lilac Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

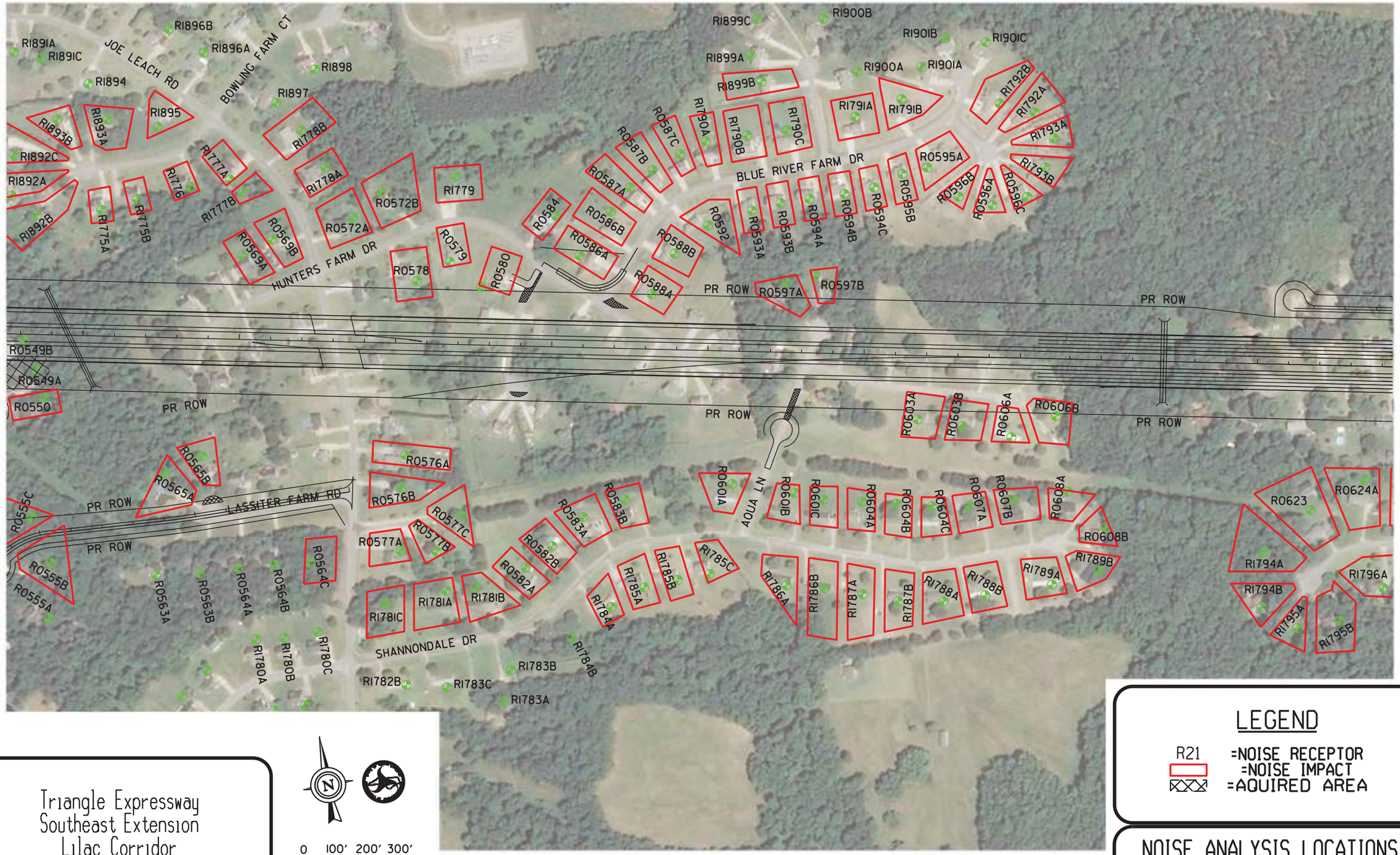
N

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=AQUIRED AREA

NOISE ANALYSIS LOCATIONS
EXHIBIT 10.6



Triangle Expressway
Southeast Extension
Lilac Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=AQUIRED AREA

NOISE ANALYSIS LOCATIONS
EXHIBIT 10.7



Triangle Expressway
Southeast Extension
Lilac Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

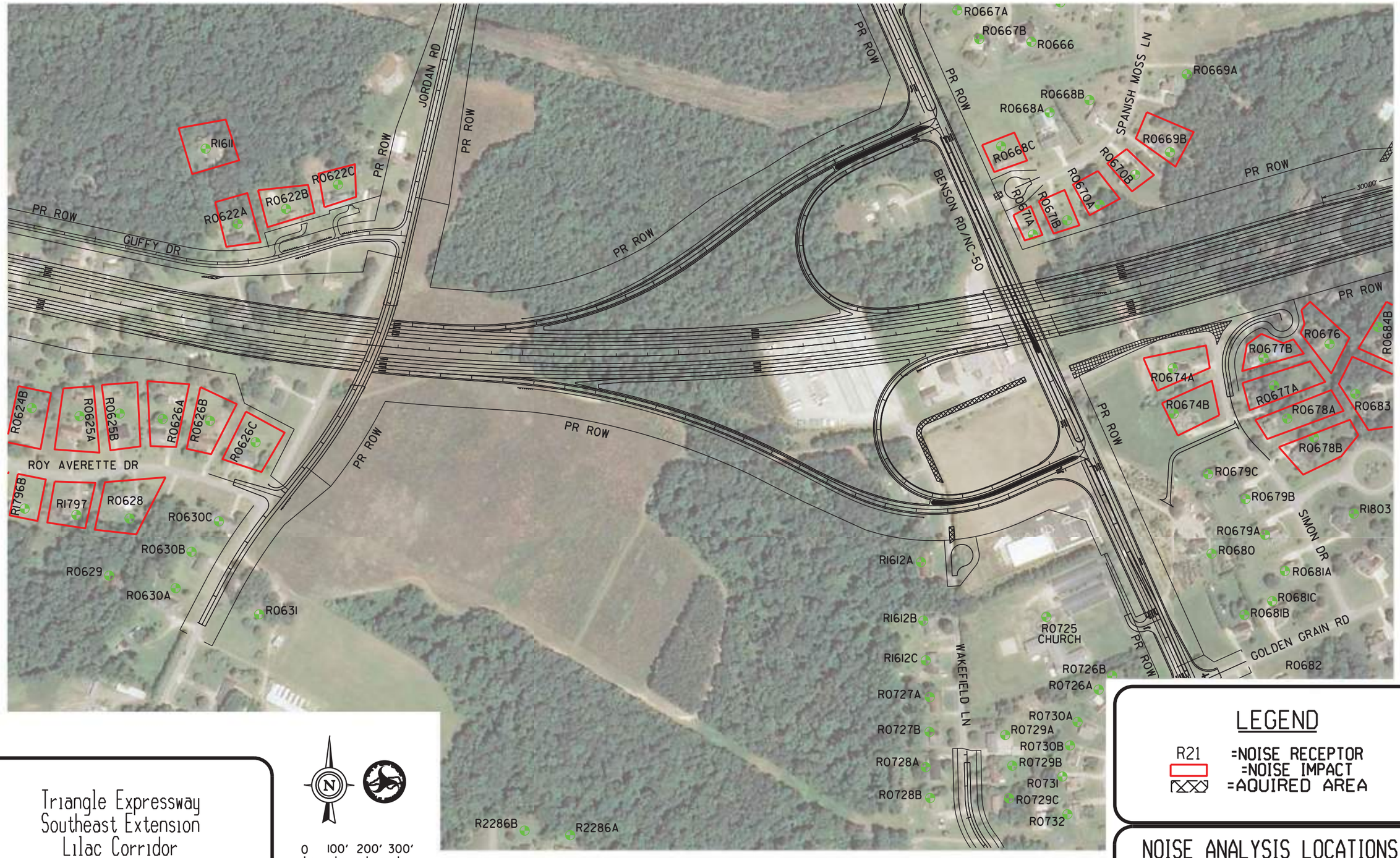
N

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=AQUIRED AREA

NOISE ANALYSIS LOCATIONS
EXHIBIT 10.8



Triangle Expressway
Southeast Extension
Lilac Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=AQUIRED AREA

NOISE ANALYSIS LOCATIONS
EXHIBIT 10.9



Triangle Expressway
Southeast Extension
Lilac Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=AQUIRED AREA

NOISE ANALYSIS LOCATIONS
EXHIBIT 10.10



Triangle Expressway
Southeast Extension
Lilac Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=AQUIRED AREA

NOISE ANALYSIS LOCATIONS
EXHIBIT 10.11



Triangle Expressway
Southeast Extension
Lilac Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=AQUIRED AREA

NOISE ANALYSIS LOCATIONS
EXHIBIT 10.12



Triangle Expressway
Southeast Extension
Lilac Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=AQUIRED AREA

NOISE ANALYSIS LOCATIONS
EXHIBIT 10.13



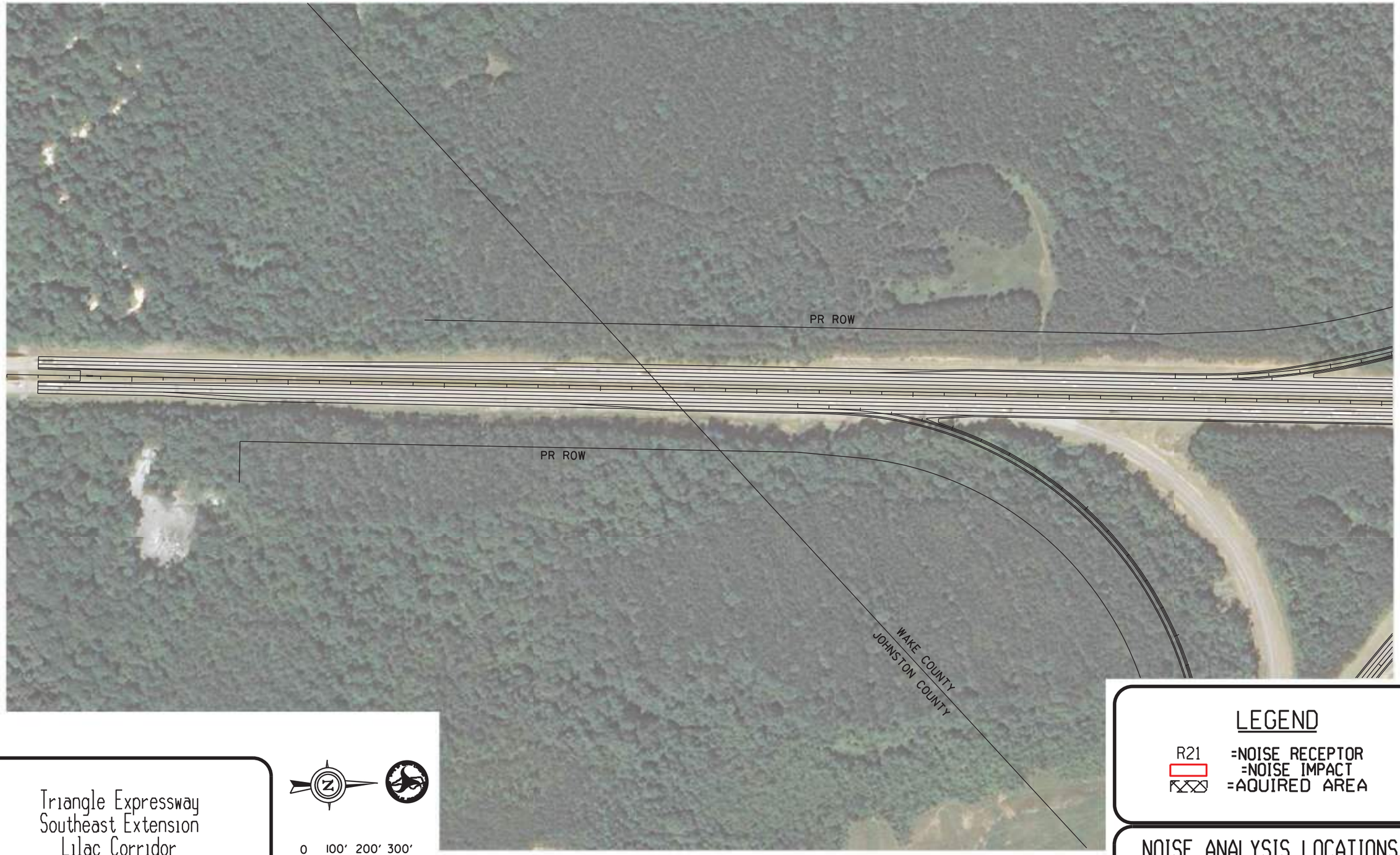
Triangle Expressway
Southeast Extension
Lilac Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=AQUIRED AREA

NOISE ANALYSIS LOCATIONS
EXHIBIT 10.14



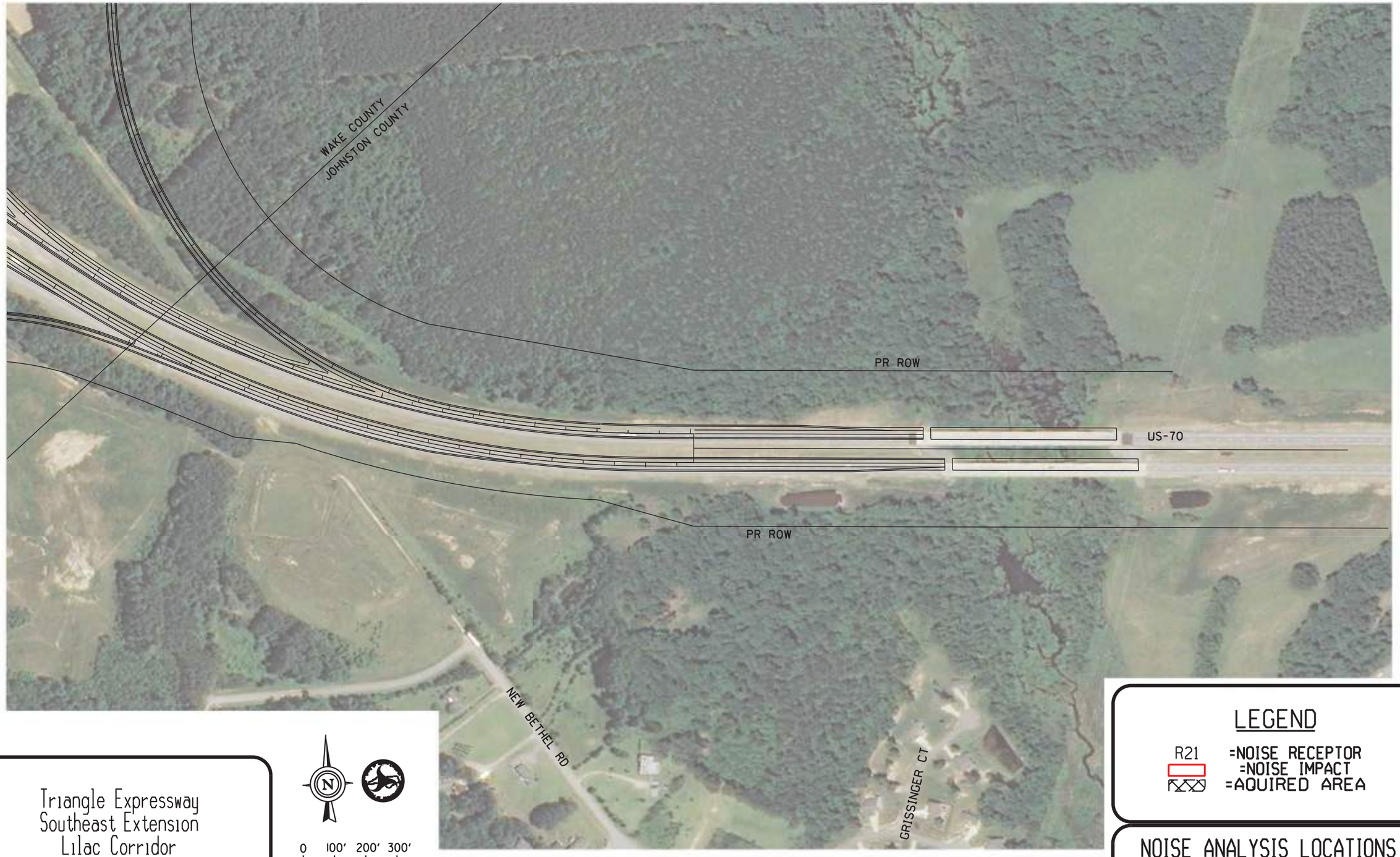
Triangle Expressway
Southeast Extension
Lilac Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=AQUIRED AREA

NOISE ANALYSIS LOCATIONS
EXHIBIT 10.15



Triangle Expressway
Southeast Extension
Lilac Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=AQUIRED AREA

NOISE ANALYSIS LOCATIONS
EXHIBIT 10.16



Triangle Expressway
Southeast Extension
Lilac Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

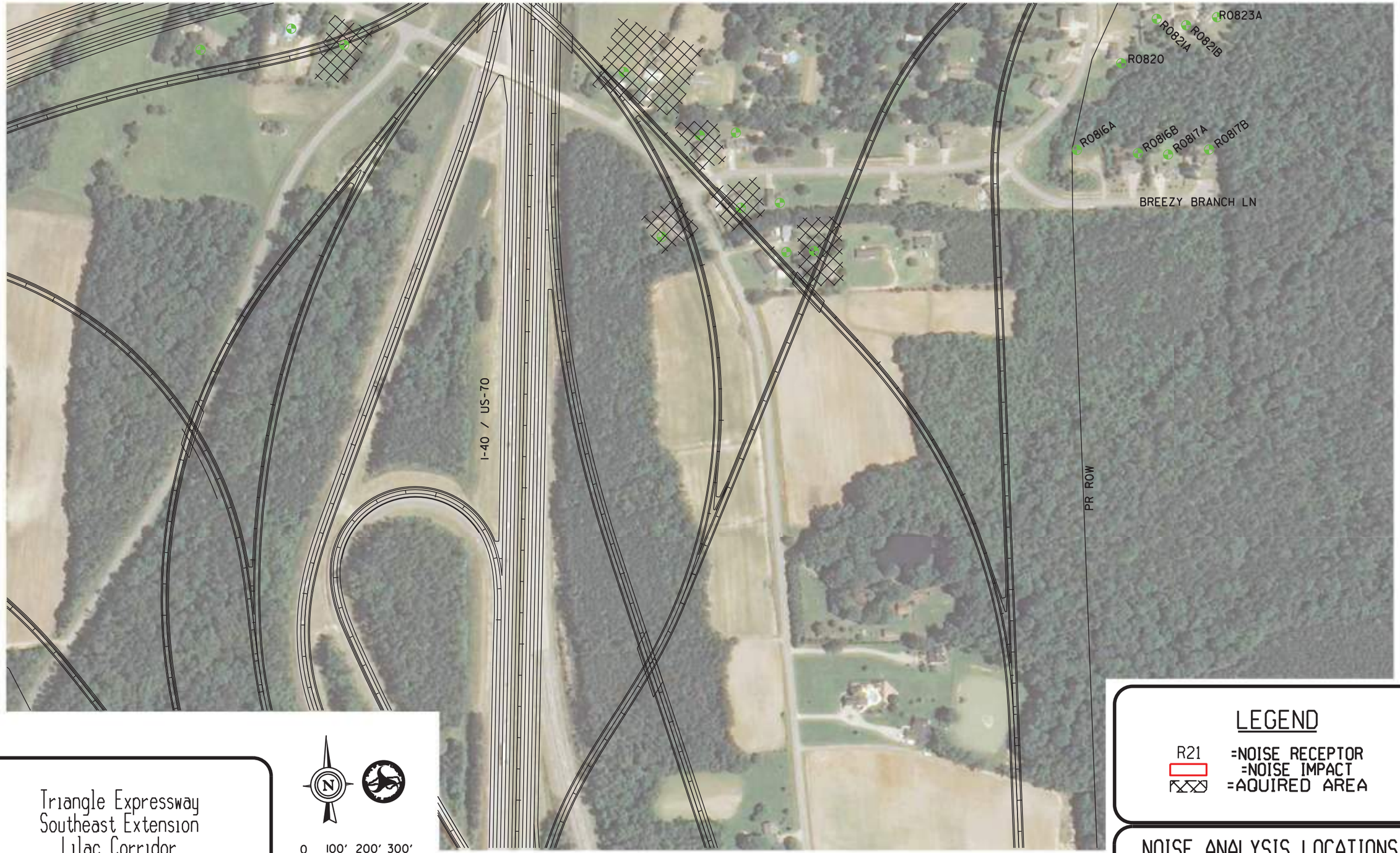
N

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=AQUIRED AREA

NOISE ANALYSIS LOCATIONS
EXHIBIT 10.17



Triangle Expressway
Southeast Extension
Lilac Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

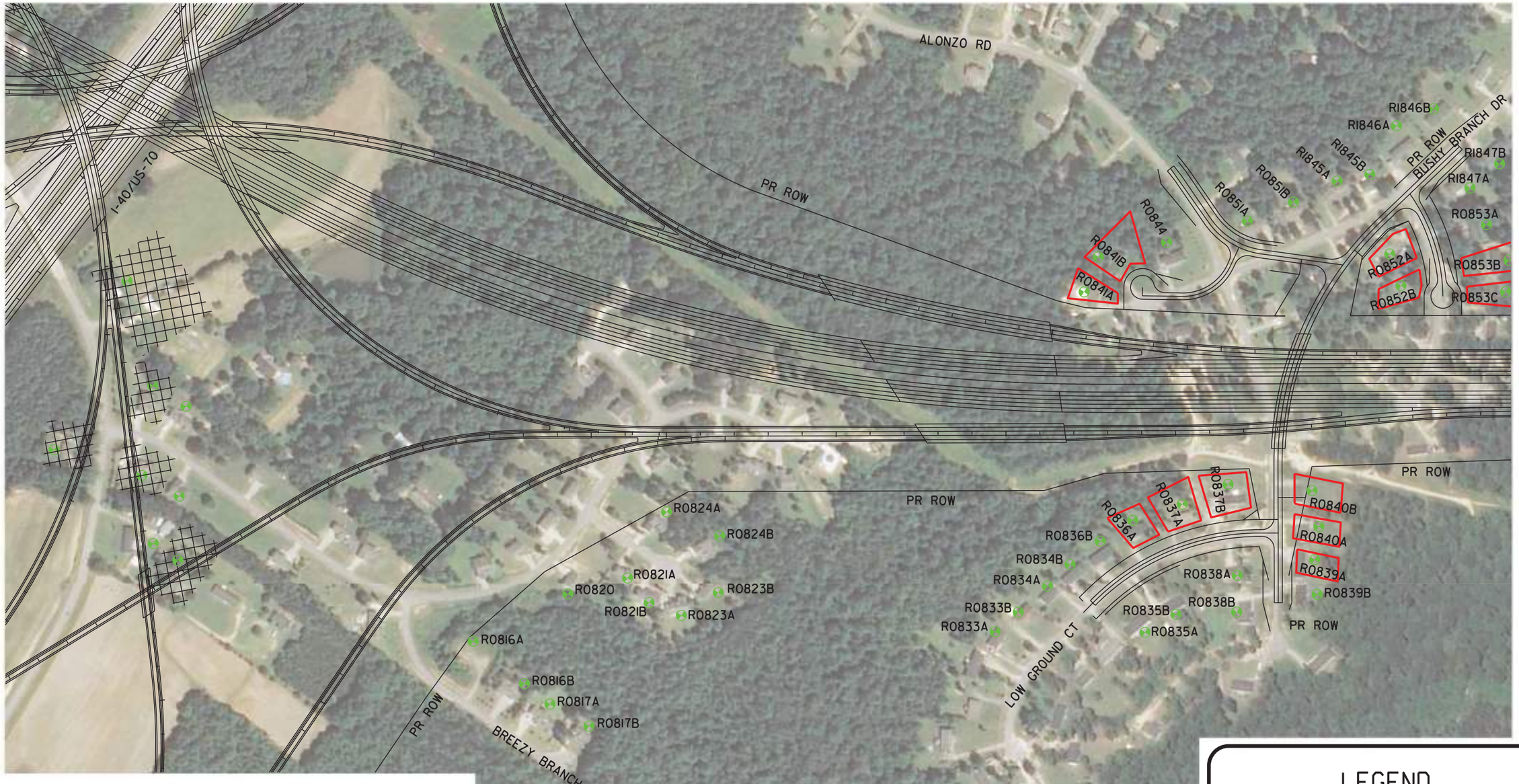
N

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=AQUIRED AREA

NOISE ANALYSIS LOCATIONS
EXHIBIT 10.18



Triangle Expressway
Southeast Extension
Lilac Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=AQUIRED AREA

NOISE ANALYSIS LOCATIONS
EXHIBIT 10.19



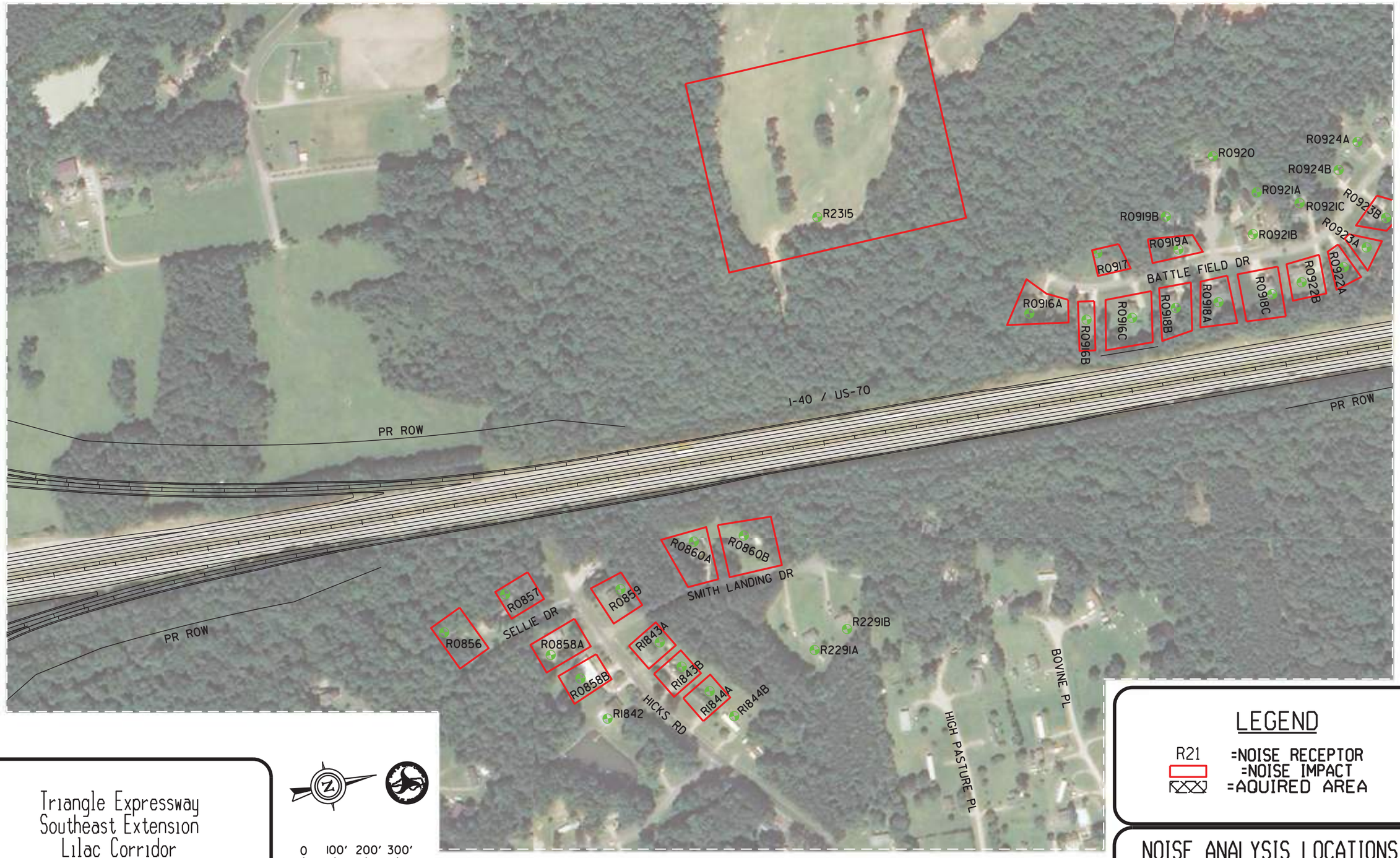
Triangle Expressway
Southeast Extension
Lilac Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=AQUIRED AREA

NOISE ANALYSIS LOCATIONS
EXHIBIT 10.20



Triangle Expressway
Southeast Extension
Lilac Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=AQUIRED AREA

NOISE ANALYSIS LOCATIONS
EXHIBIT 10.21



Triangle Expressway
Southeast Extension
Lilac Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=AQUIRED AREA

NOISE ANALYSIS LOCATIONS
EXHIBIT 10.22



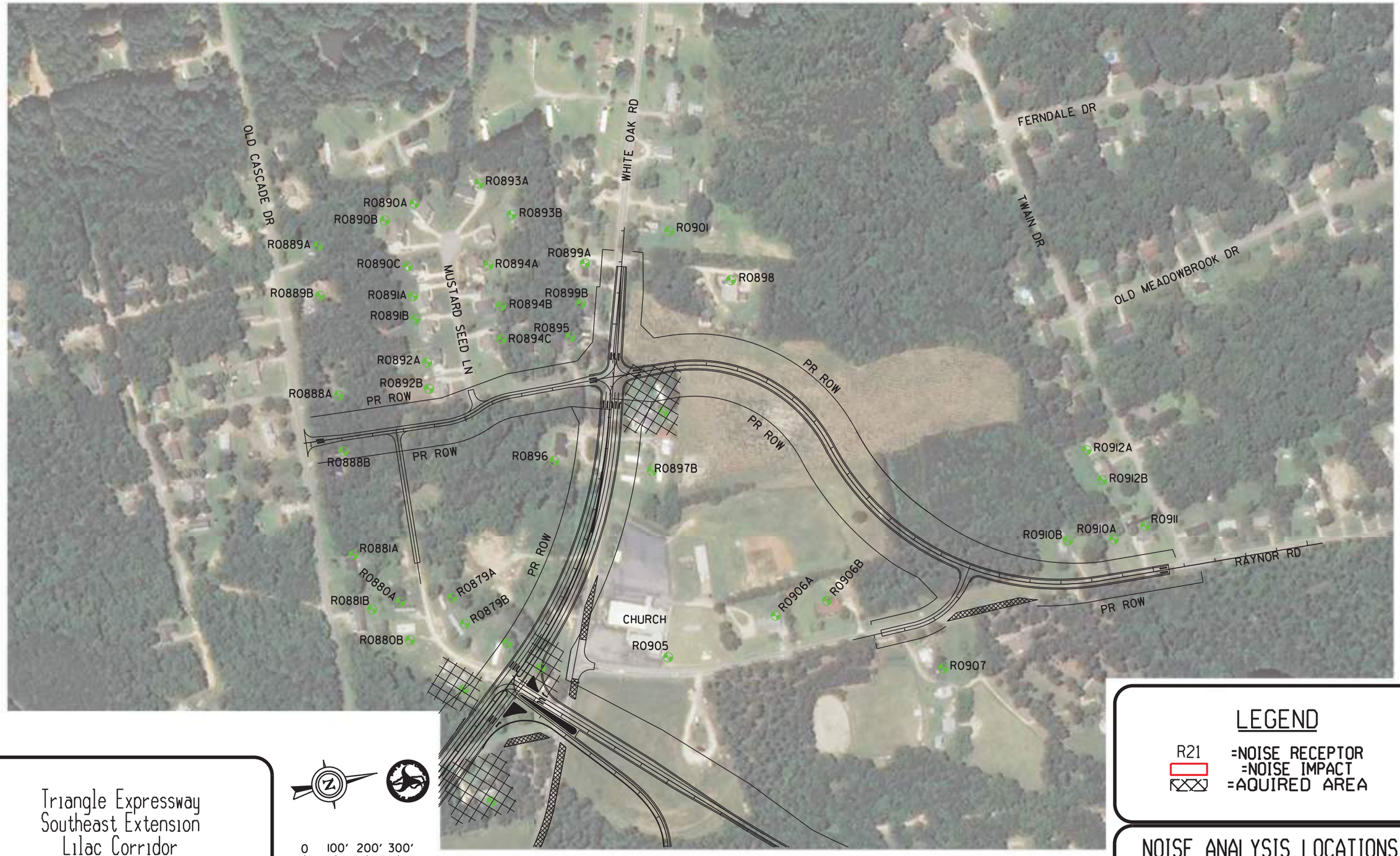
Triangle Expressway
Southeast Extension
Lilac Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=AQUIRED AREA

NOISE ANALYSIS LOCATIONS
EXHIBIT 10.23



Triangle Expressway
Southeast Extension
Lilac Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=AQUIRED AREA

NOISE ANALYSIS LOCATIONS
EXHIBIT 10.24



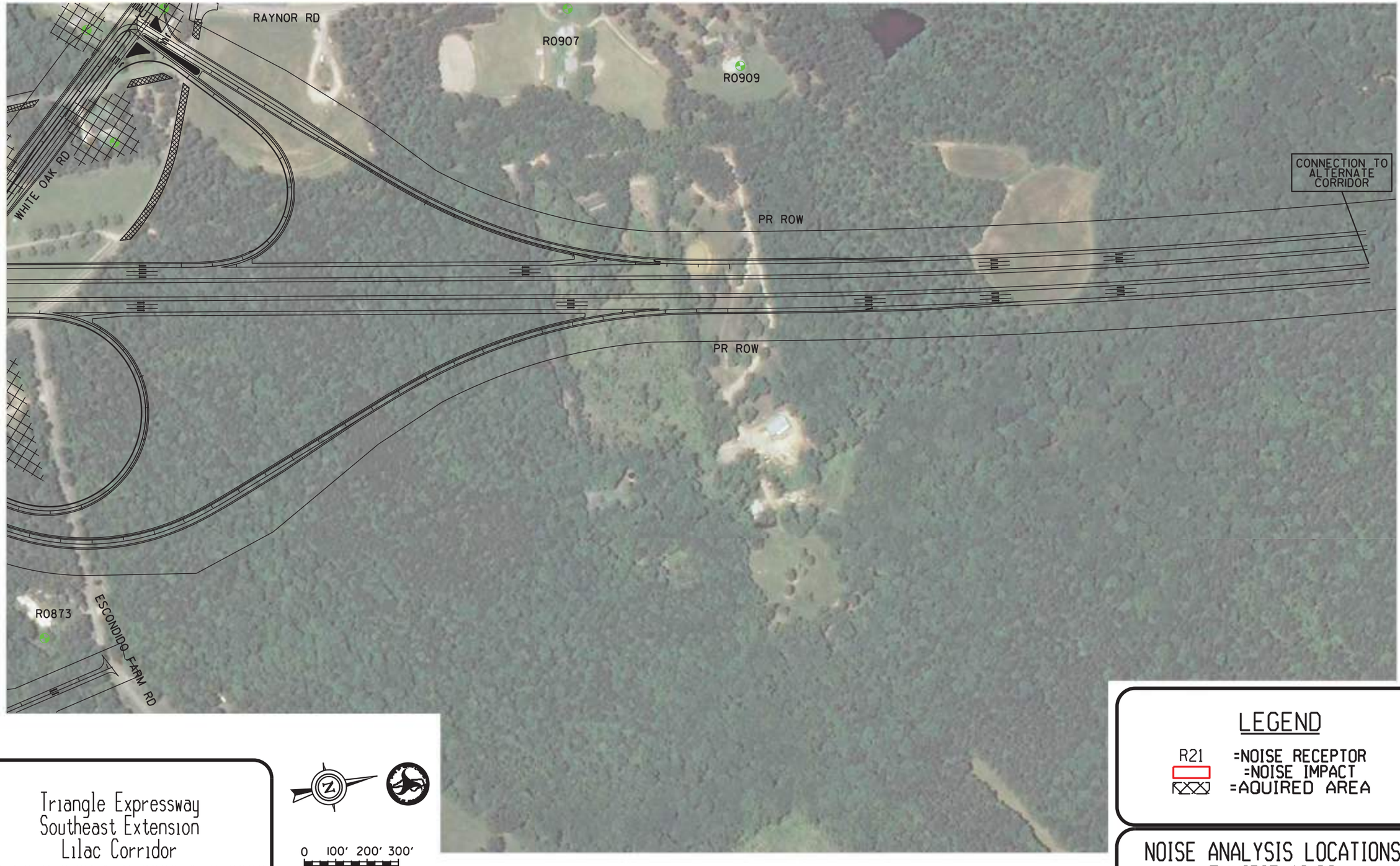
Triangle Expressway
Southeast Extension
Lilac Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=AQUIRED AREA

NOISE ANALYSIS LOCATIONS
EXHIBIT 10.25



Triangle Expressway
Southeast Extension
Lilac Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=AQUIRED AREA

NOISE ANALYSIS LOCATIONS
EXHIBIT 10.26

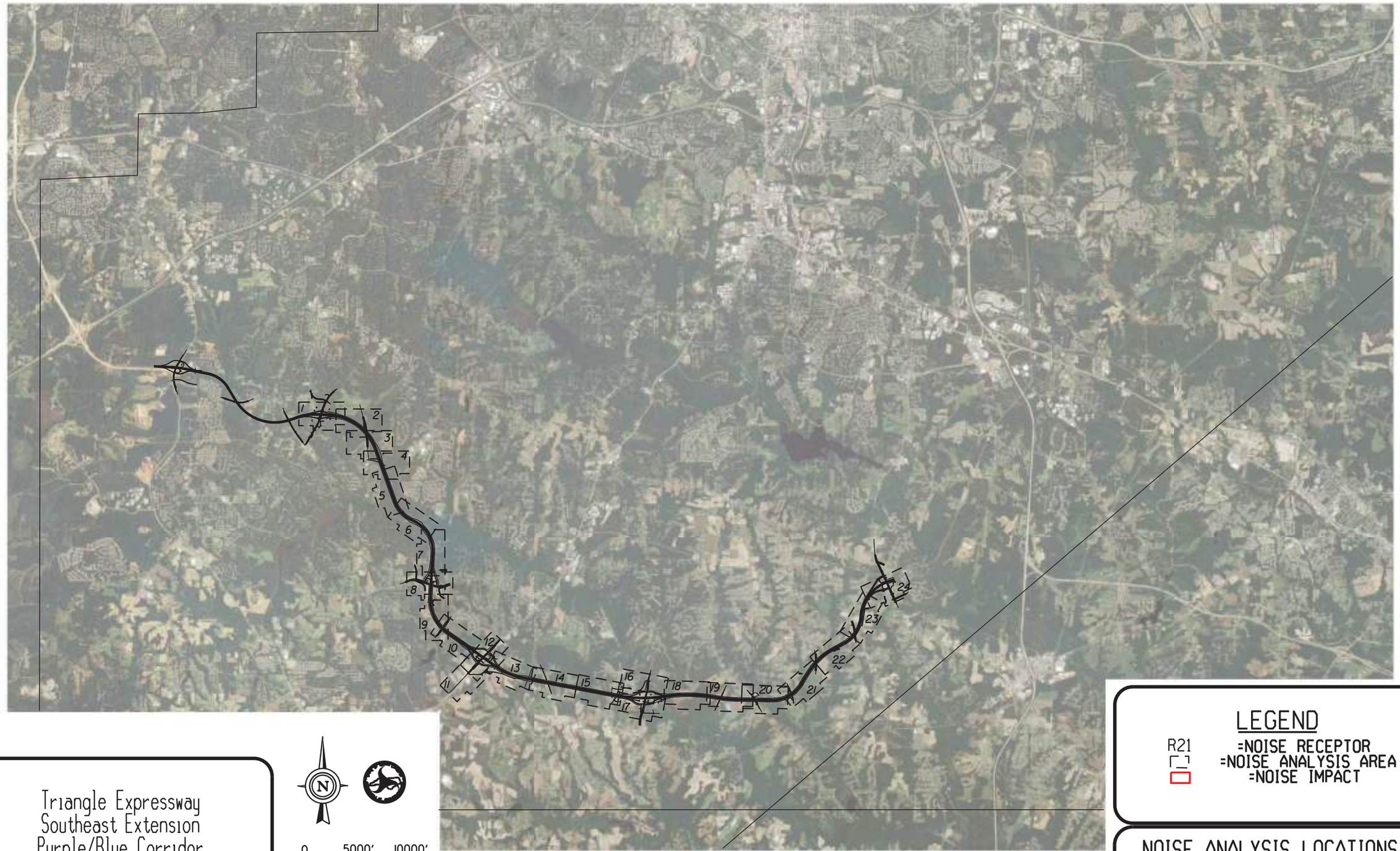
EXHIBIT 11

PLUM CORRIDOR
NOISE ANALYSIS LOCATIONS

Note: The Plum corridor was removed from consideration.

EXHIBIT 12

PURPLE/BLUE CORRIDOR
NOISE ANALYSIS LOCATIONS



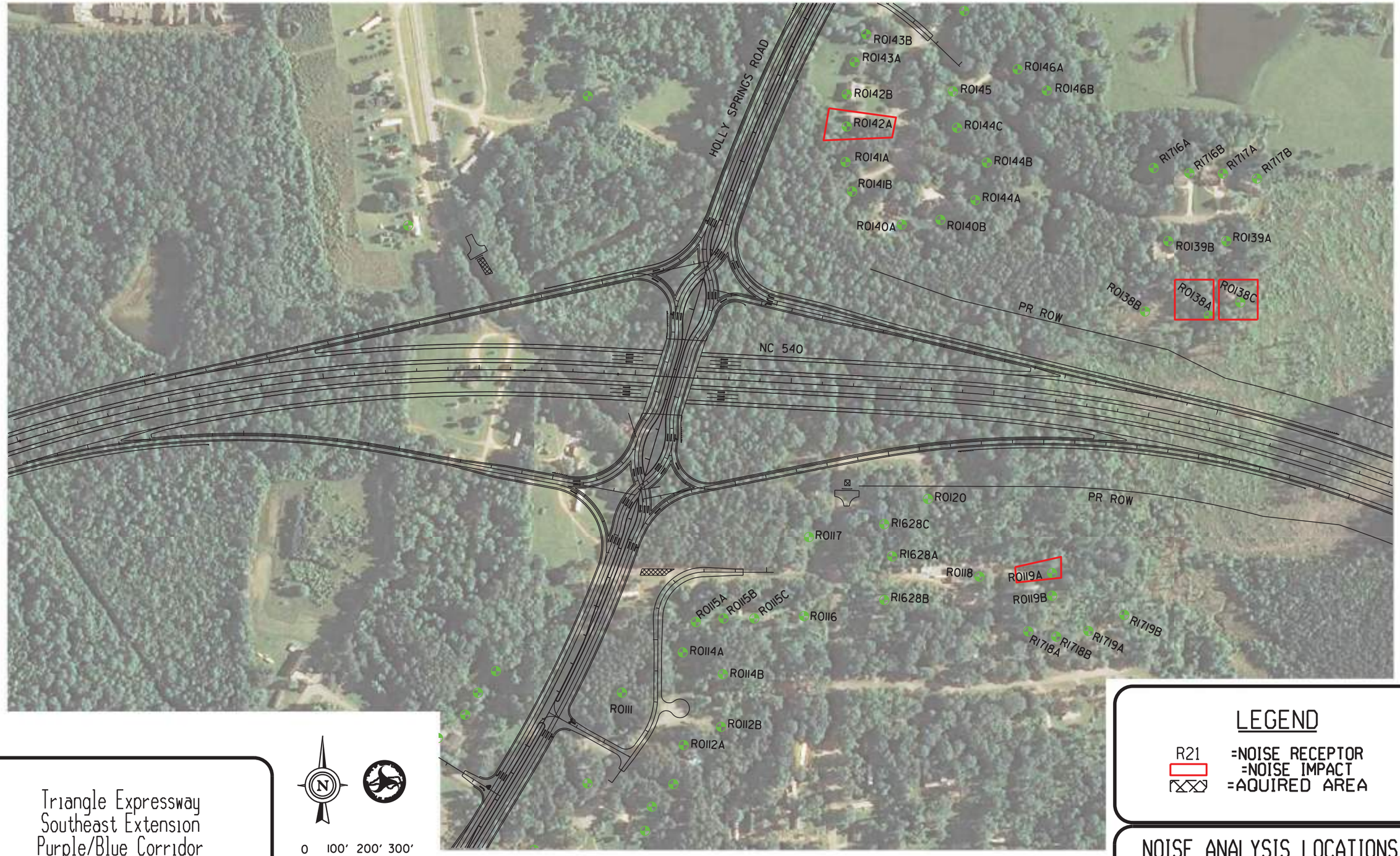
Triangle Expressway
Southeast Extension
Purple/Blue Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

0 5000' 10000'

LEGEND

R21 =NOISE RECEPTOR
=NOISE ANALYSIS AREA
=NOISE IMPACT

NOISE ANALYSIS LOCATIONS
EXHIBIT 12.0



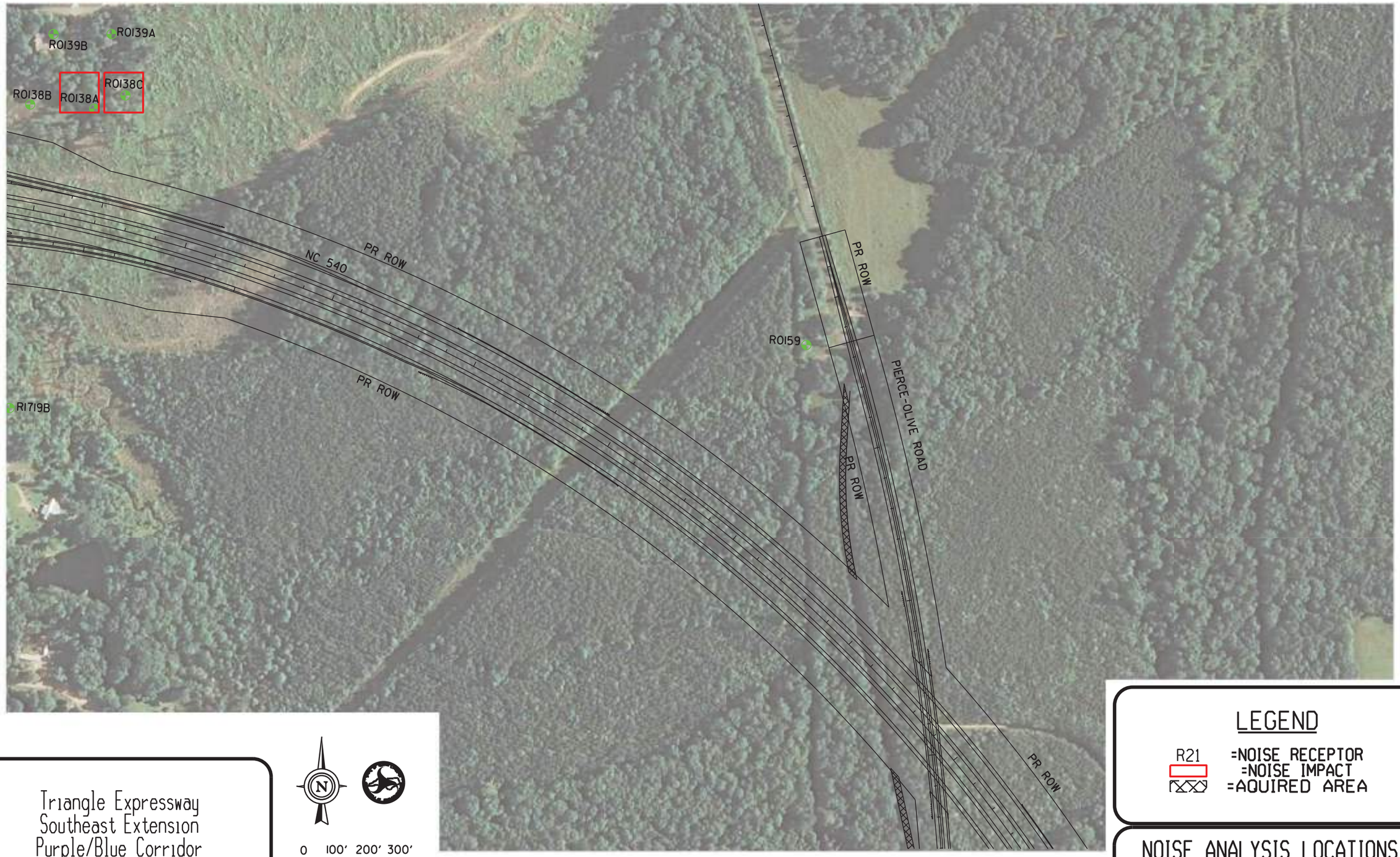
Triangle Expressway
Southeast Extension
Purple/Blue Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=AQUIRED AREA

NOISE ANALYSIS LOCATIONS
EXHIBIT 12.1



Triangle Expressway
Southeast Extension
Purple/Blue Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

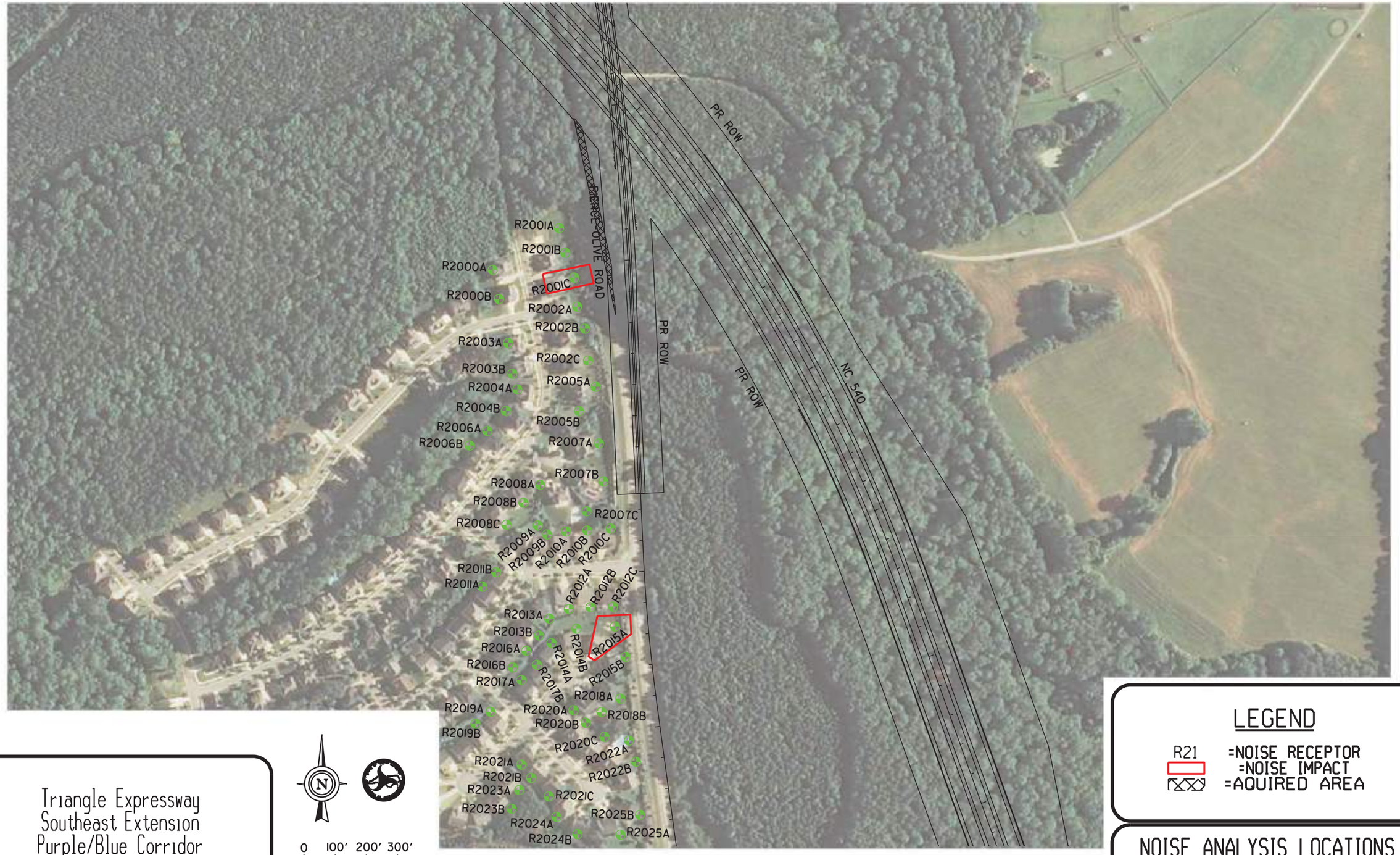
N

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=AQUIRED AREA

NOISE ANALYSIS LOCATIONS
EXHIBIT 12.2



Triangle Expressway
Southeast Extension
Purple/Blue Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=AQUIRED AREA

NOISE ANALYSIS LOCATIONS
EXHIBIT 12.3



Triangle Expressway
Southeast Extension
Purple/Blue Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

N

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=AQUIRED AREA

NOISE ANALYSIS LOCATIONS
EXHIBIT 12.4



Triangle Expressway
Southeast Extension
Purple/Blue Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=AQUIRED AREA

NOISE ANALYSIS LOCATIONS
EXHIBIT 12.5



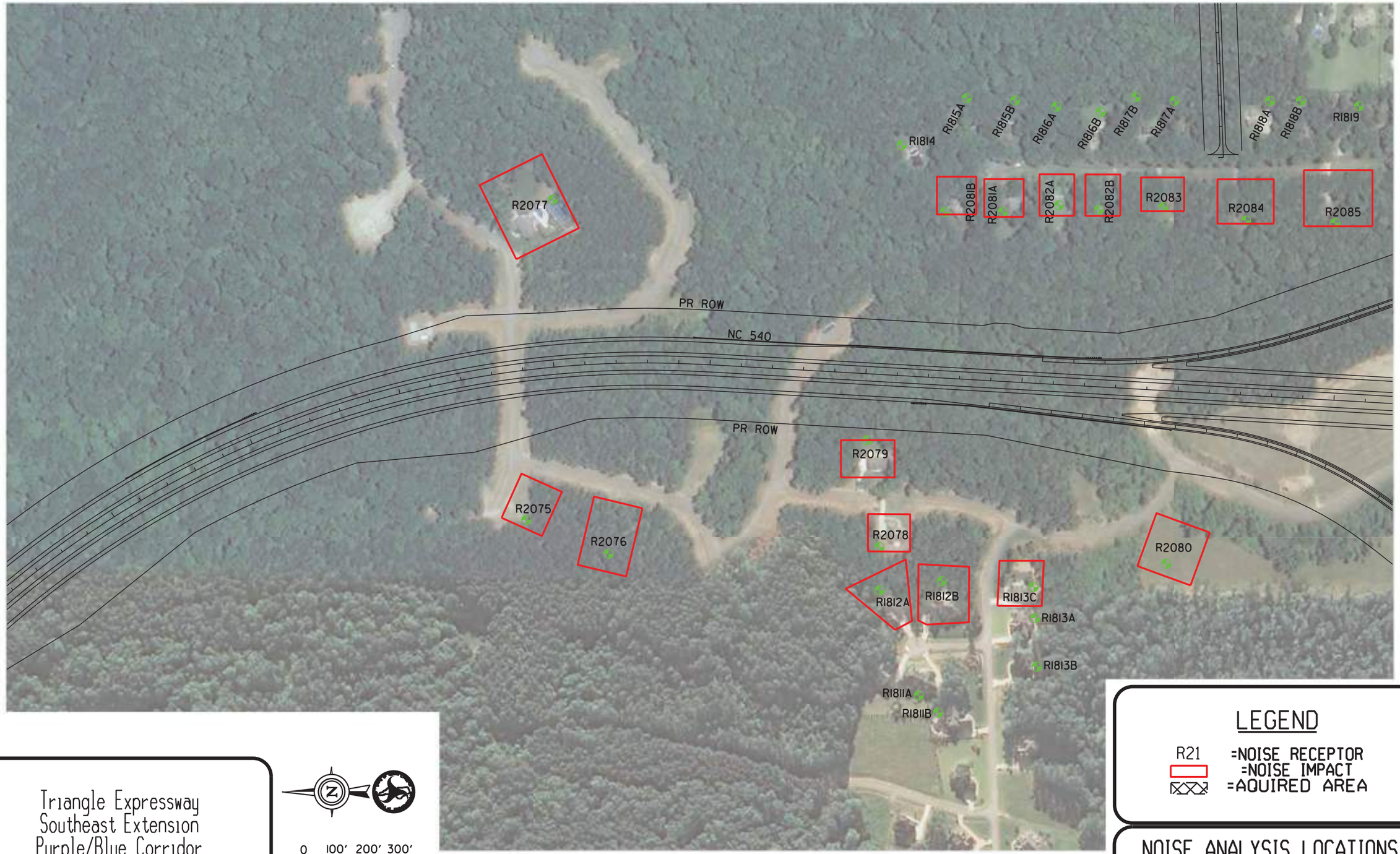
Triangle Expressway
Southeast Extension
Purple/Blue Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=AQUIRED AREA

NOISE ANALYSIS LOCATIONS
EXHIBIT 12.6



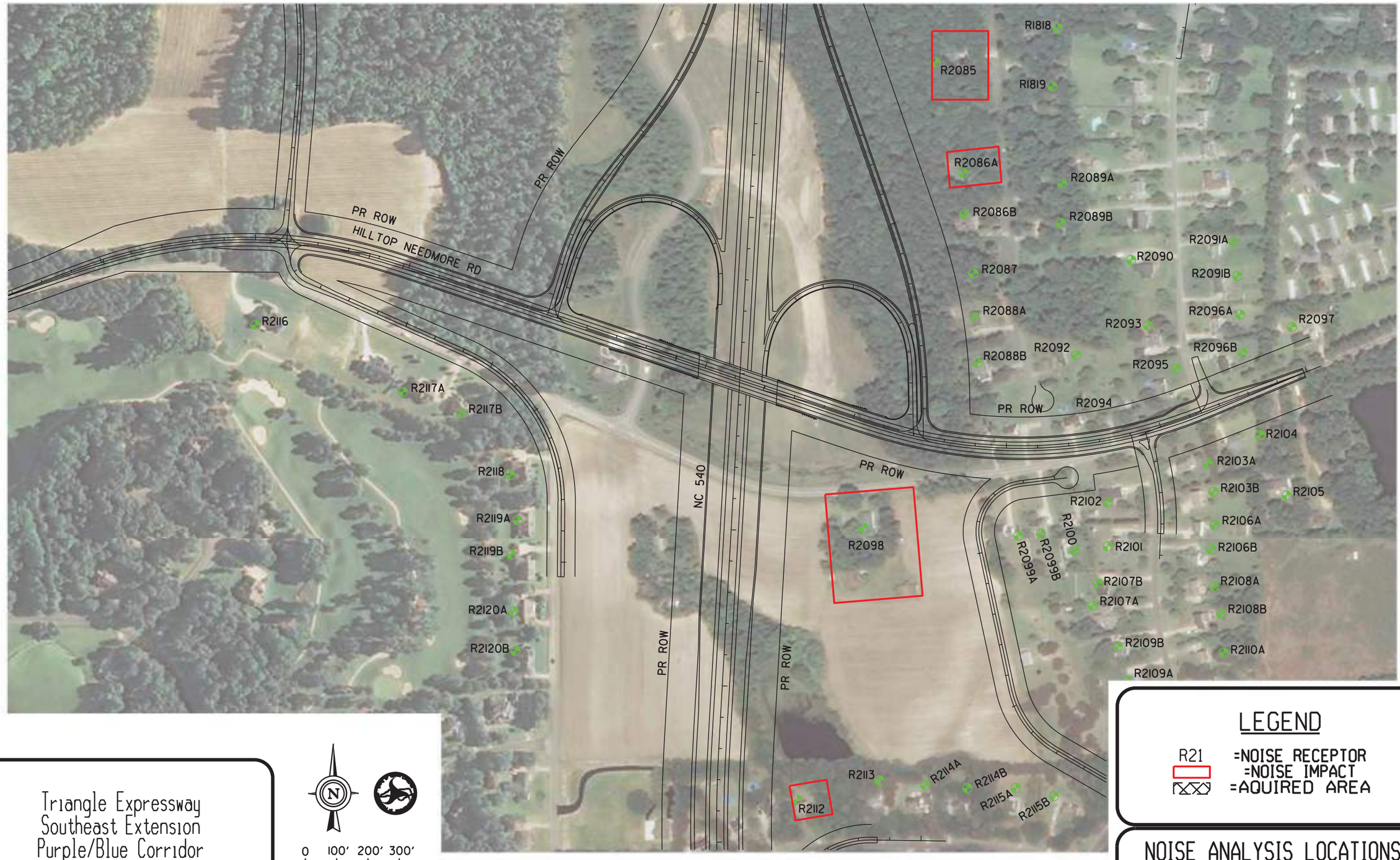
Triangle Expressway
Southeast Extension
Purple/Blue Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=AQUIRED AREA

NOISE ANALYSIS LOCATIONS
EXHIBIT 12.7



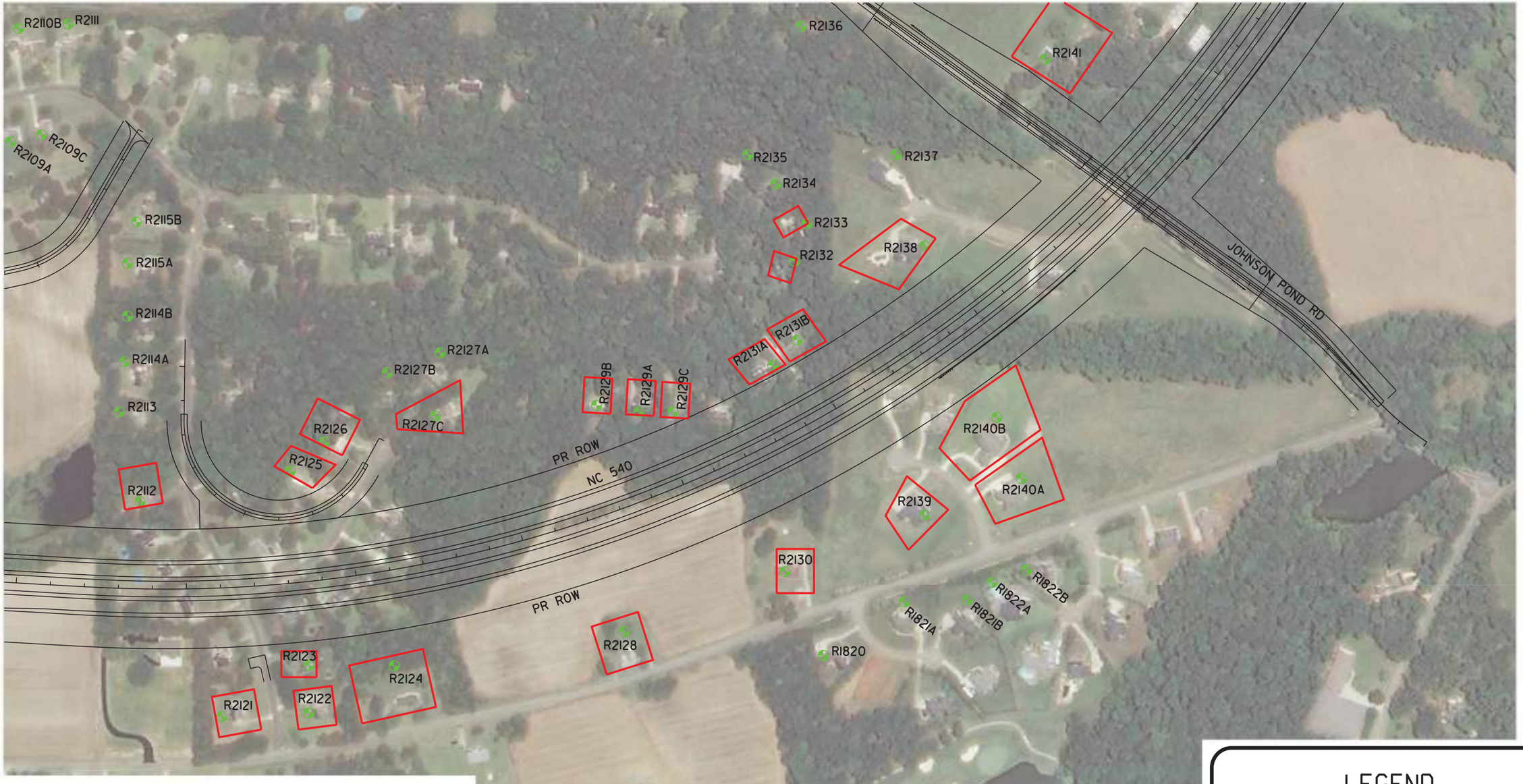
Triangle Expressway
Southeast Extension
Purple/Blue Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=AQUIRED AREA

NOISE ANALYSIS LOCATIONS
EXHIBIT 12.8



Triangle Expressway
Southeast Extension
Purple/Blue Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

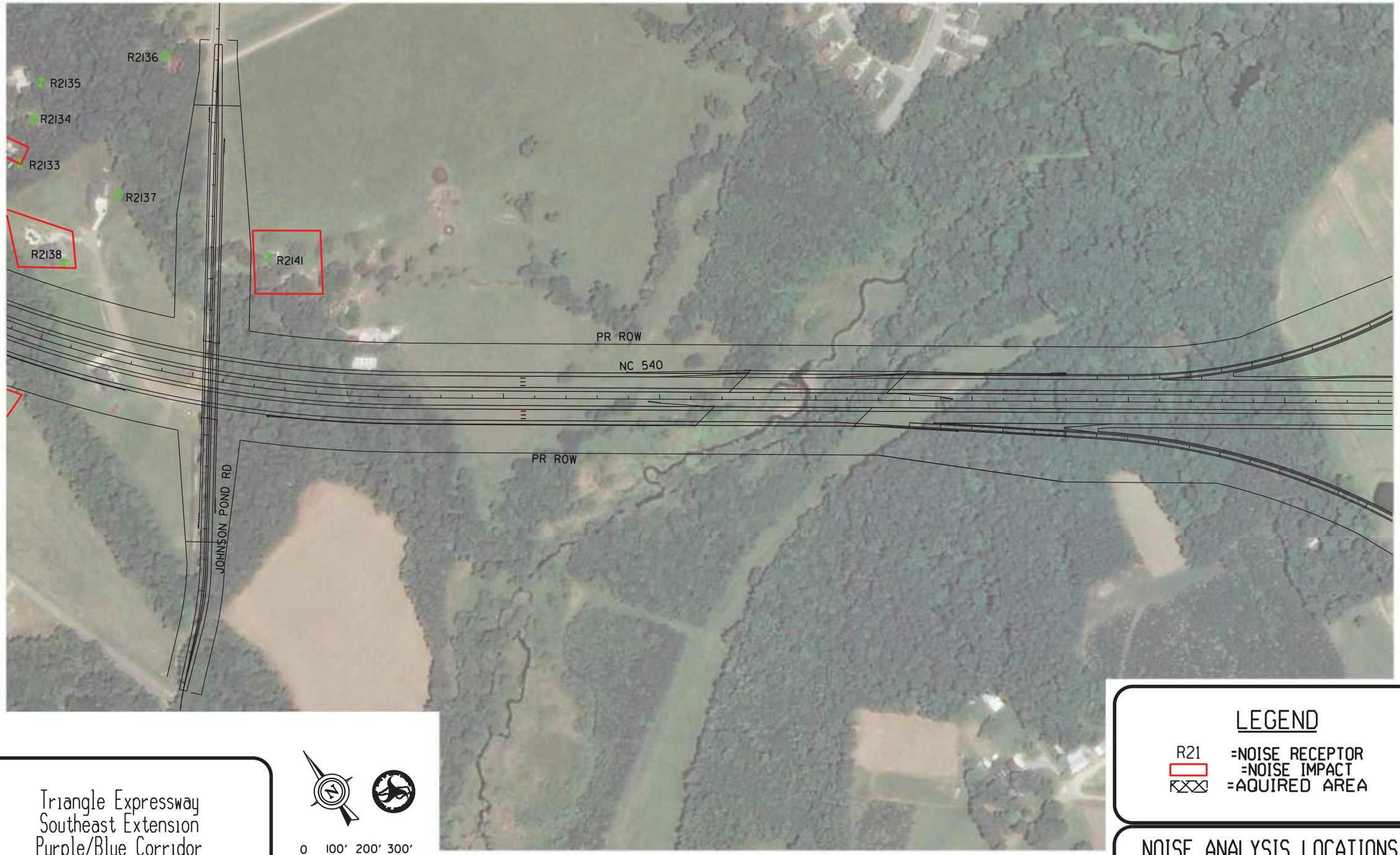
N

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=AQUIRED AREA

NOISE ANALYSIS LOCATIONS
EXHIBIT 12.9



Triangle Expressway
Southeast Extension
Purple/Blue Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=AQUIRED AREA

NOISE ANALYSIS LOCATIONS
EXHIBIT 12.10



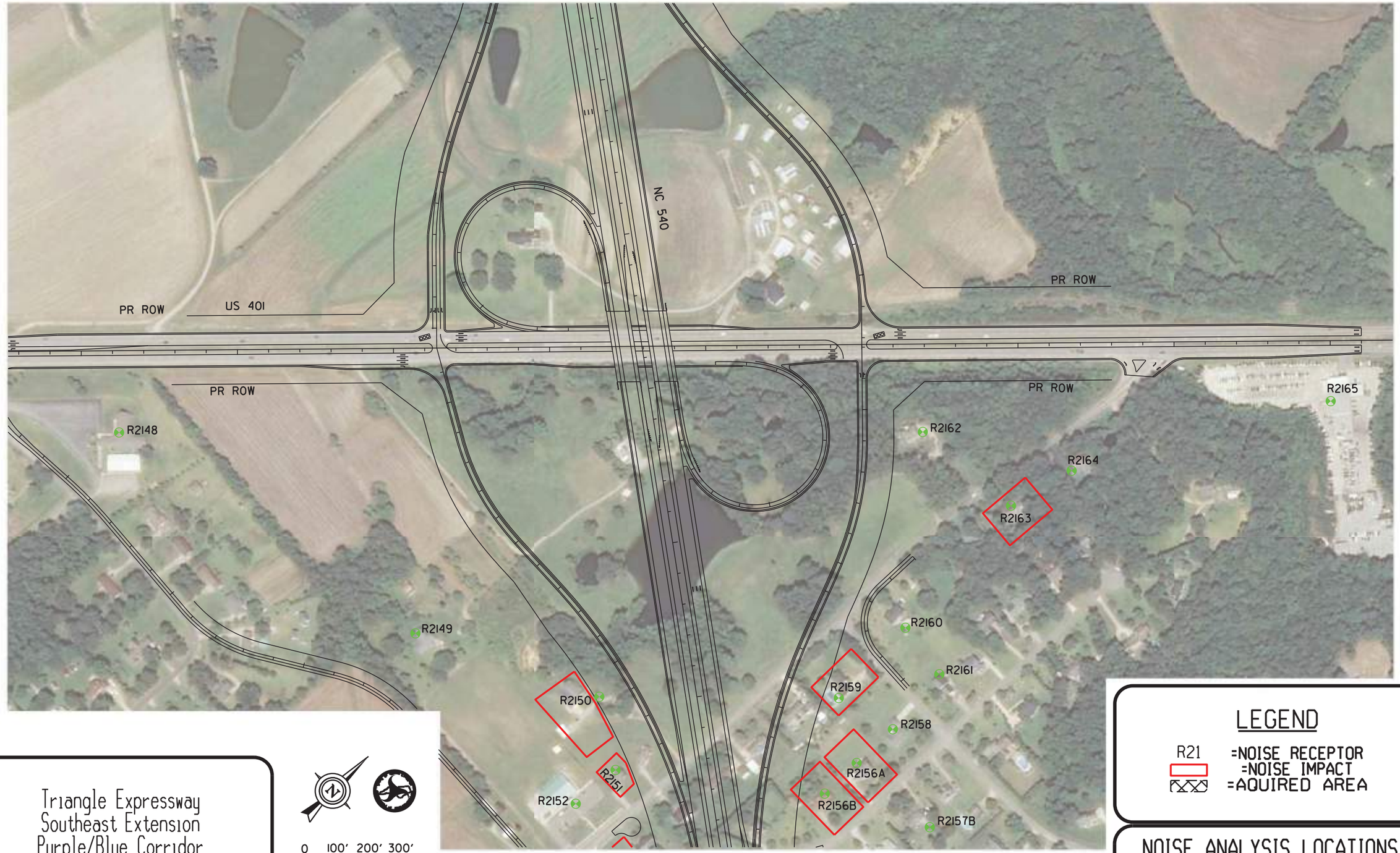
Triangle Expressway
Southeast Extension
Purple/Blue Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=AQUIRED AREA

NOISE ANALYSIS LOCATIONS
EXHIBIT 12.11

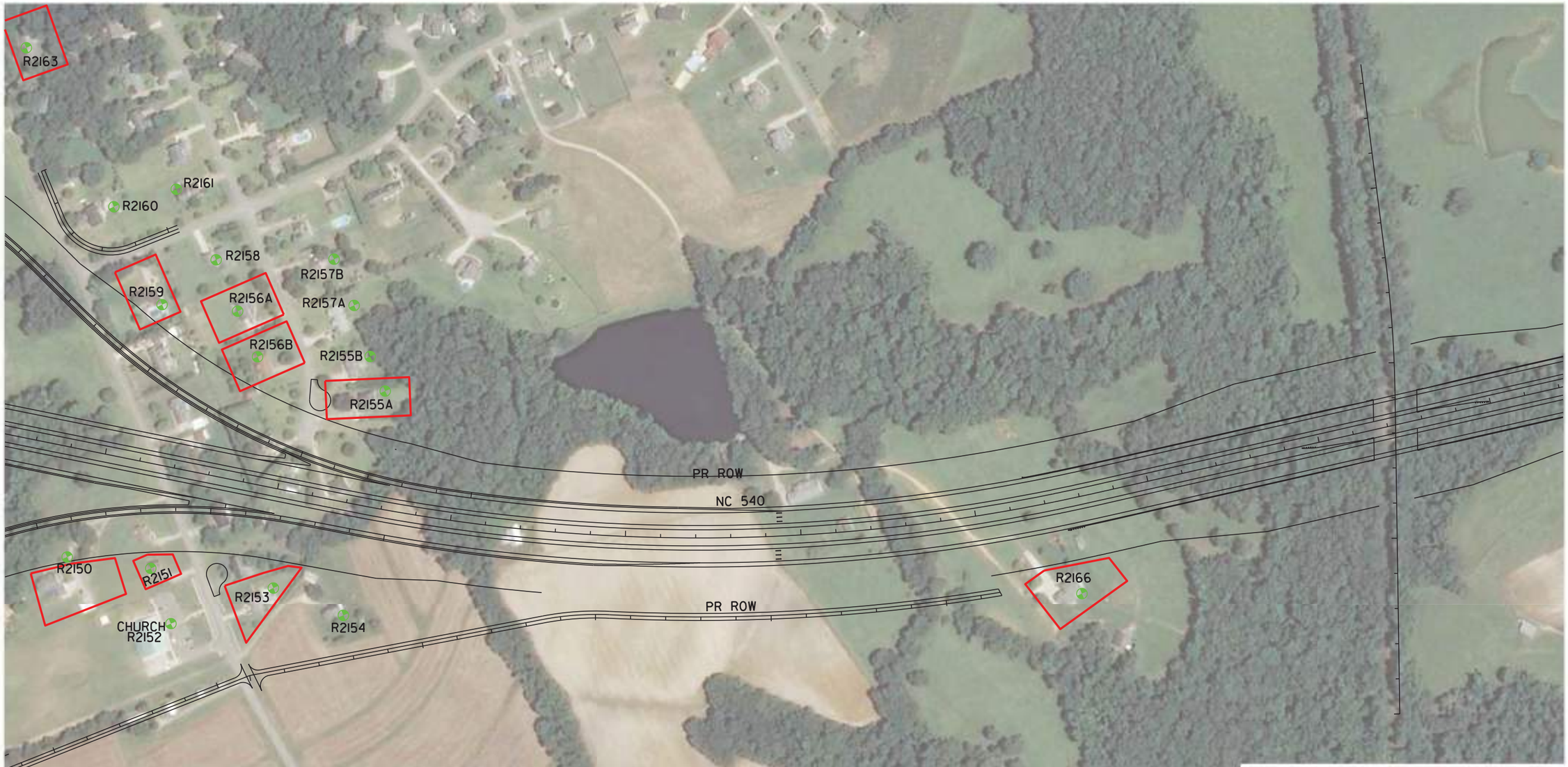


Triangle Expressway
Southeast Extension
Purple/Blue Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=AQUIRED AREA

NOISE ANALYSIS LOCATIONS
EXHIBIT 12.12



Triangle Expressway
Southeast Extension
Purple/Blue Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=AQUIRED AREA

NOISE ANALYSIS LOCATIONS
EXHIBIT 12.13



Triangle Expressway
Southeast Extension
Purple/Blue Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=AQUIRED AREA

NOISE ANALYSIS LOCATIONS
EXHIBIT 12.14



Triangle Expressway
Southeast Extension
Purple/Blue Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=AQUIRED AREA

NOISE ANALYSIS LOCATIONS
EXHIBIT 12.15



Triangle Expressway
Southeast Extension
Purple/Blue Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=AQUIRED AREA

NOISE ANALYSIS LOCATIONS
EXHIBIT 12.16

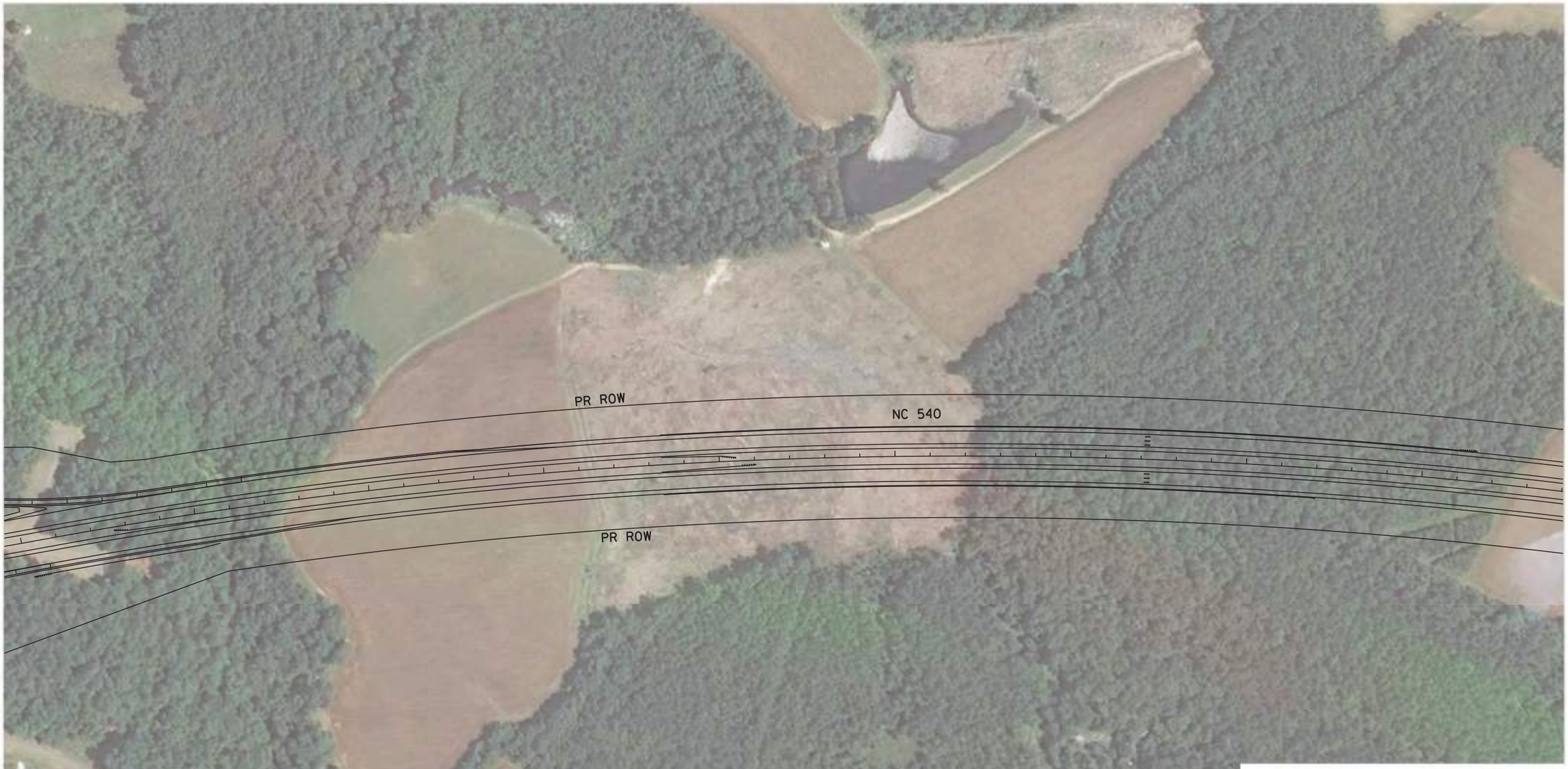


Triangle Expressway
Southeast Extension
Purple/Blue Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=AQUIRED AREA

NOISE ANALYSIS LOCATIONS
EXHIBIT 12.17



Triangle Expressway
Southeast Extension
Purple/Blue Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=AQUIRED AREA

NOISE ANALYSIS LOCATIONS
EXHIBIT 12.18



Triangle Expressway
Southeast Extension
Purple/Blue Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=AQUIRED AREA

NOISE ANALYSIS LOCATIONS
EXHIBIT 12.19



Triangle Expressway
Southeast Extension
Purple/Blue Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=AQUIRED AREA

NOISE ANALYSIS LOCATIONS
EXHIBIT 12.20



Triangle Expressway
Southeast Extension
Purple/Blue Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=AQUIRED AREA

NOISE ANALYSIS LOCATIONS
EXHIBIT 12.21



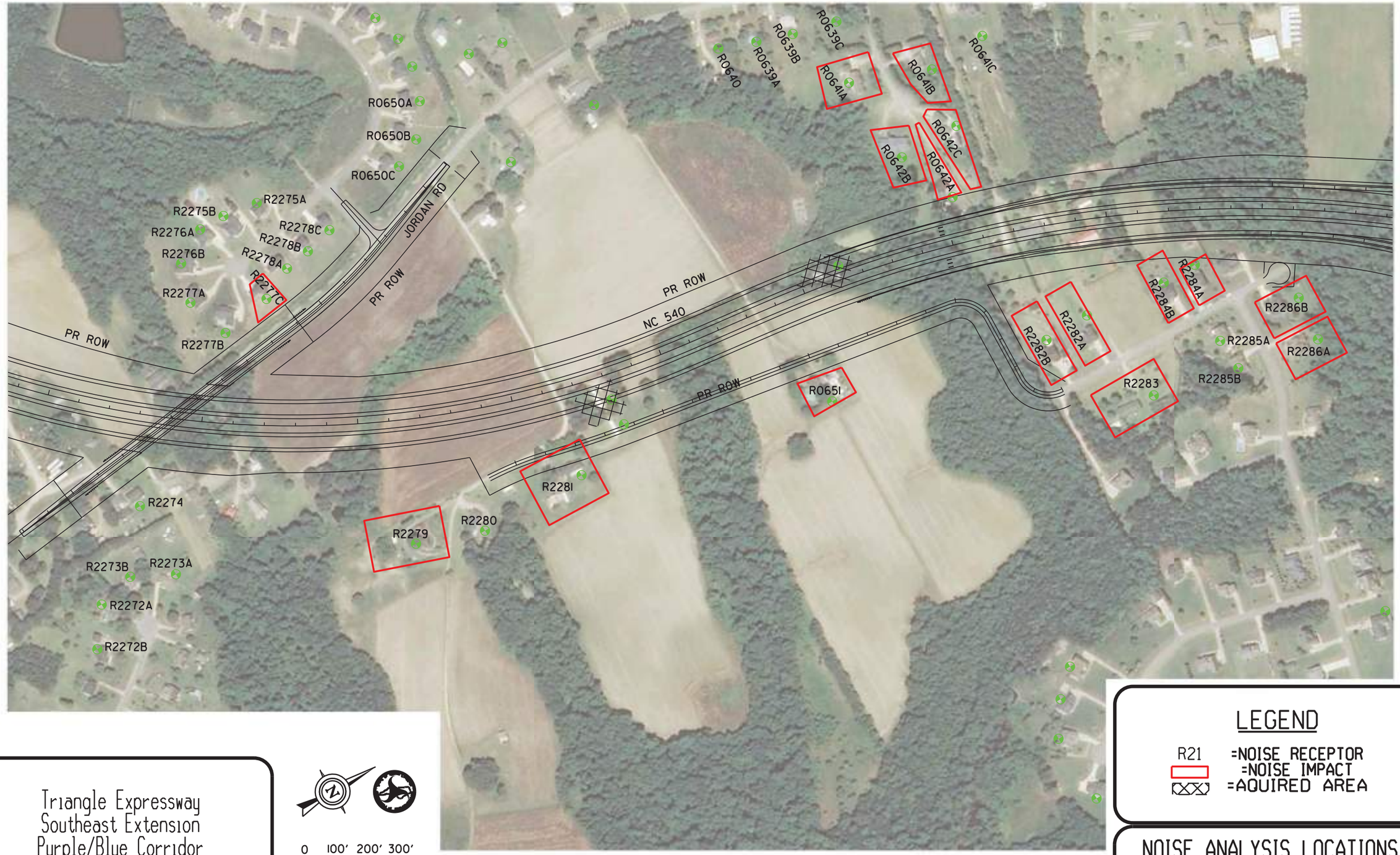
Triangle Expressway
Southeast Extension
Purple/Blue Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=AQUIRED AREA

NOISE ANALYSIS LOCATIONS
EXHIBIT 12.22



Triangle Expressway
Southeast Extension
Purple/Blue Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=AQUIRED AREA

NOISE ANALYSIS LOCATIONS
EXHIBIT 12.23

PR ROW

NC 540

PR ROW

R1612B

R1612C

R0727A

R0727B

R0725

R0726B

R0726A

R0730A

R0730B

BENSON HWY

R2284A

R2286B

R2286A

R2285A

R2285B

R2283

Triangle Expressway
Southeast Extension
Purple/Blue Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=AQUIRED AREA

NOISE ANALYSIS LOCATIONS
EXHIBIT 12.24



Triangle Expressway
Southeast Extension
Purple/Blue Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=AQUIRED AREA

NOISE ANALYSIS LOCATIONS
EXHIBIT 12.25

TRAFFIC NOISE ANALYSIS
VOLUME III

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.

May, 2015

EXHIBIT 13

NOISE BARRIER LOCATIONS


NC-55 BYPASS
E WILLIAMS ST / NC-55
INDUSTRIAL
COMMERCIAL
COMMERCIAL
CHURCH
R0013
PR ROW
PR ROW
PR ROW
BARRIER 1
BARRIER 2
NC 540
OLD SMITHFIELD RD
MOSLEY AVE
RI606A
RI606B
RI605
RI627A
RI627B
RI626
RI602
RI603A
RI603B
RI603C
RI598
R0001A
CHURCH
RI706J,K,L
RI706M,N,O
RI706G,H,I
RI706P,Q,R
RI706A,B,C
RI706S,T,U
RI706D,E,F
RI706V,W,X
RI708V,W,X
RI708M,N,O
RI705S,T,U
RI708P,Q,R
RI708D,E,F
RI708A,B,C
RI708J,K,L
RI708G,H,I
RI709H
RI709G
RI709F
RI709E
RI709D
RI709C
RI709B
RI709A
RI710H
RI710G
RI710F
RI710E
RI710D
RI710C
RI710B
RI710A
RI705V,W,X
RI705P,Q,R
RI705S,T,U
RI705M,N,O
RI705J,K,L
RI705G,H,I
RI705D,E,F
RI705A,B,C
RI707S,T,U
RI707V,W,X
RI707P,Q,R
RI707M,N,O
RI707A,B,C
RI707D,E,F
RI707G,H,I
RI707J,K,L
R0055M,N,O
R0055P,Q,R
R0055M,N,O
R0055V,W,X
R0055J,K,L
R0055G,H,I
R0055D,E,F
R0055A,B,C
R0054I,J
R0054K,L
R0054M,N
R0054O,P
R0054A,B
R0054C,D
R0054E,F
R0054G,H
R0007A
R0007B
R0006B
R0006D
R0006C
R0006A
R0006E
R0005
R0009A
R0009B
R0010B
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R0010C
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RI600C
RI600B
RI600A
R0023A
R0024A
R0031A
R0031B
R0032A
R0017A
R0017B
R0016B
R0016A
R0022A
R0023B
R0024B
R0030B
R0030A
R0029A
R0032B
R0033A
R0039B
R0040A
R0040B
R0042B
R0042A
R0043A
R0043B
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R0052A
R0053A
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R0056B
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R0014A
RI701A
RI701B
RI702B
RI702A
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RI704J
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R0038B
R0034A
R0034B
R0033B
R0041A
R0041C
RI712A
RI712B
RI711A
RI711B
RI919A
RI919B
RI919C
RI920A
RI920C
RI918A
RI918B
RI918C
0 100' 200' 300'
Triangle Expressway
Southeast Extension
ORANGE CORRIDOR
T.I.P. NO. R-2721 & R-2828 & R-2829
LEGEND
R21 =NOISE RECEPTOR
=NOISE IMPACT
=NOISE BARRIER
=BENEFITED PROPERTY
NOISE BARRIER LOCATIONS
EXHIBIT 13.1



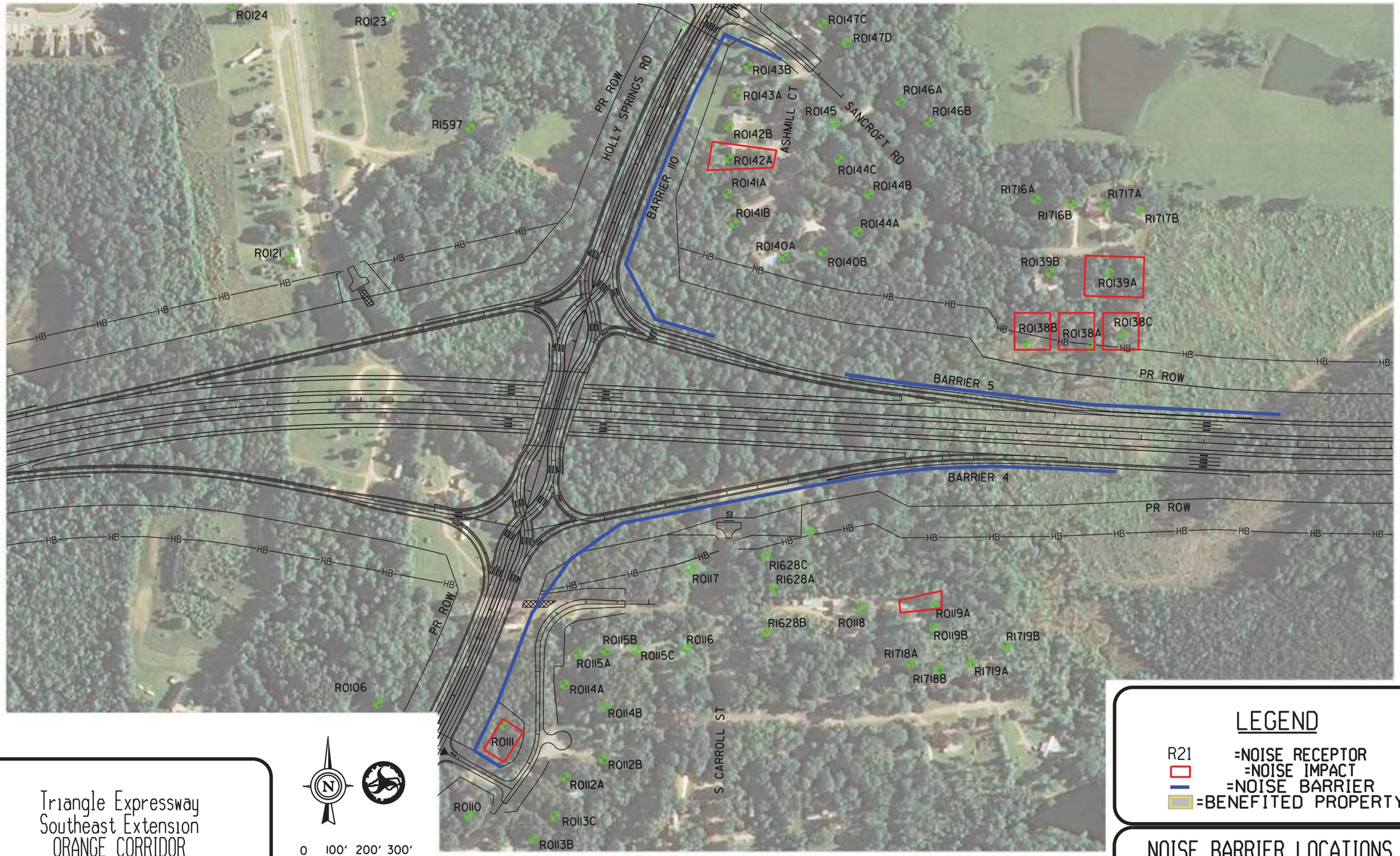
Triangle Expressway
Southeast Extension
ORANGE CORRIDOR
T.I.P. NO. R-2721 & R-2828 & R-2829

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=NOISE BARRIER
=BENEFITED PROPERTY

NOISE BARRIER LOCATIONS
EXHIBIT 13.2



Triangle Expressway
Southeast Extension
ORANGE CORRIDOR
T.I.P. NO. R-2721 & R-2828 & R-2829

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=NOISE BARRIER
=BENEFITED PROPERTY

NOISE BARRIER LOCATIONS
EXHIBIT 13.3



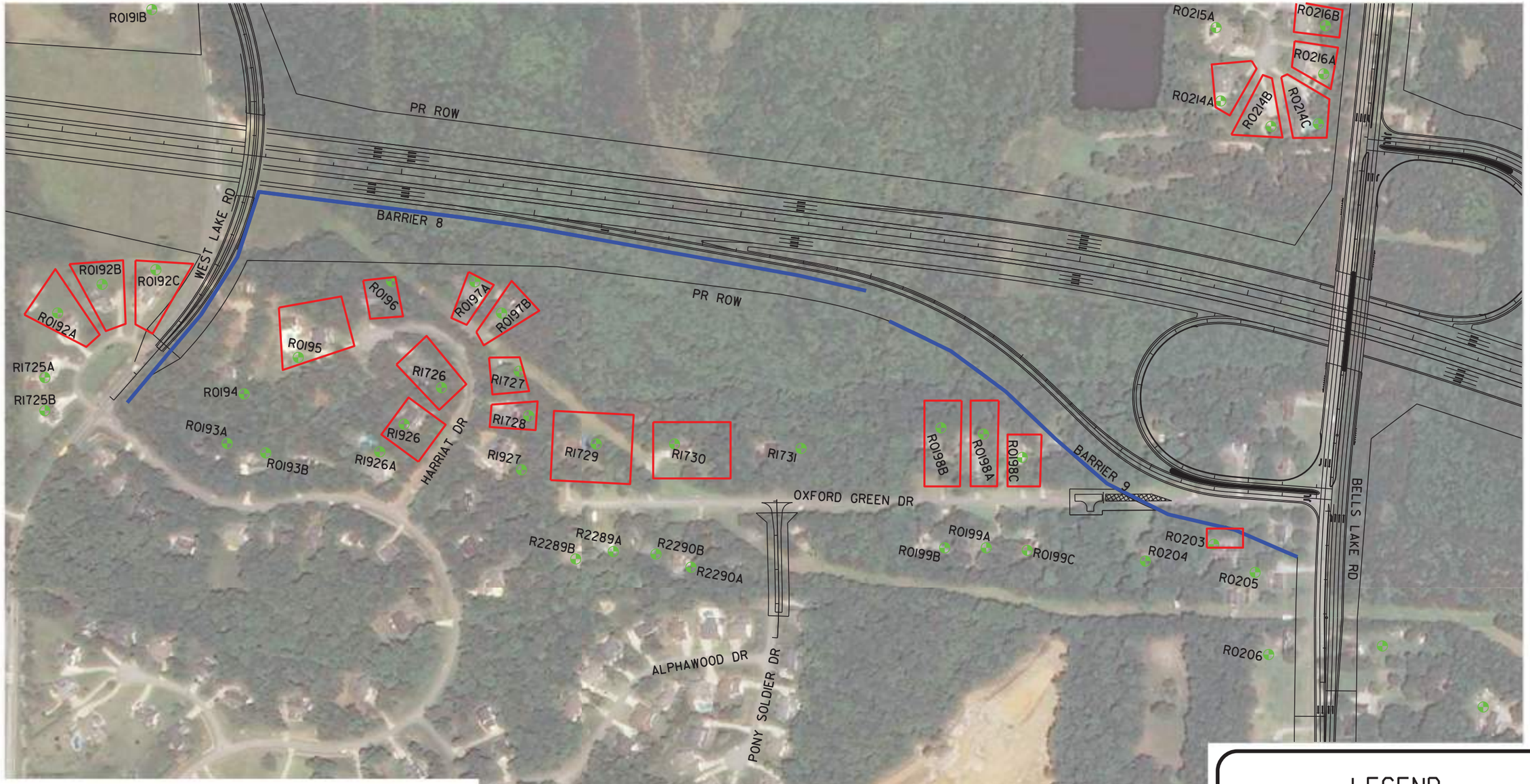
Triangle Expressway
Southeast Extension
ORANGE CORRIDOR
T.I.P. NO. R-2721 & R-2828 & R-2829

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=NOISE BARRIER
=BENEFITED PROPERTY

NOISE BARRIER LOCATIONS
EXHIBIT 13.4



Triangle Expressway
Southeast Extension
ORANGE CORRIDOR
T.I.P. NO. R-2721 & R-2828 & R-2829

N

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=NOISE BARRIER
=BENEFITED PROPERTY

NOISE BARRIER LOCATIONS
EXHIBIT 13.5



Triangle Expressway
Southeast Extension
ORANGE CORRIDOR
T.I.P. NO. R-2721 & R-2828 & R-2829

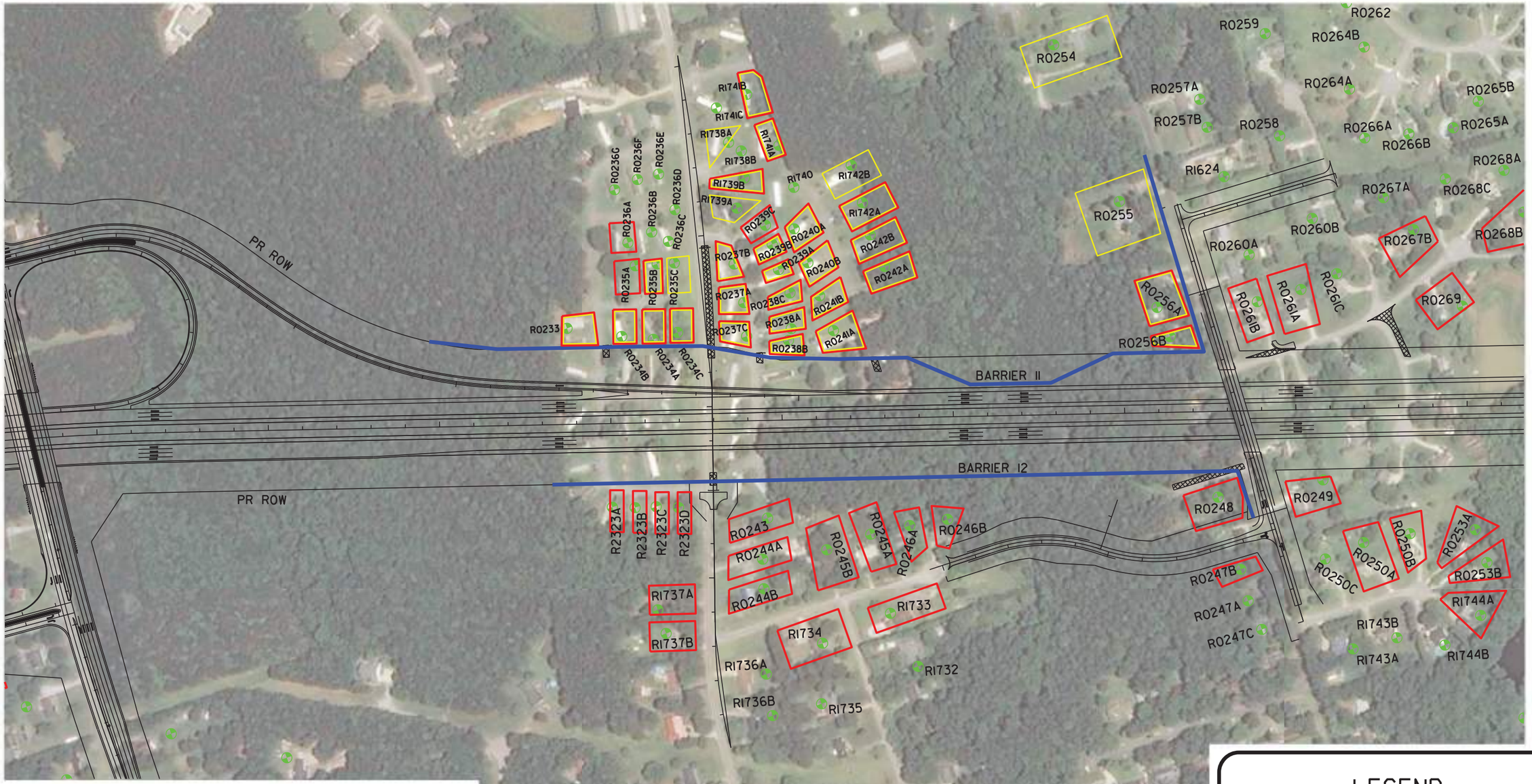
N

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=NOISE BARRIER
=BENEFITED PROPERTY

NOISE BARRIER LOCATIONS
EXHIBIT 13.6

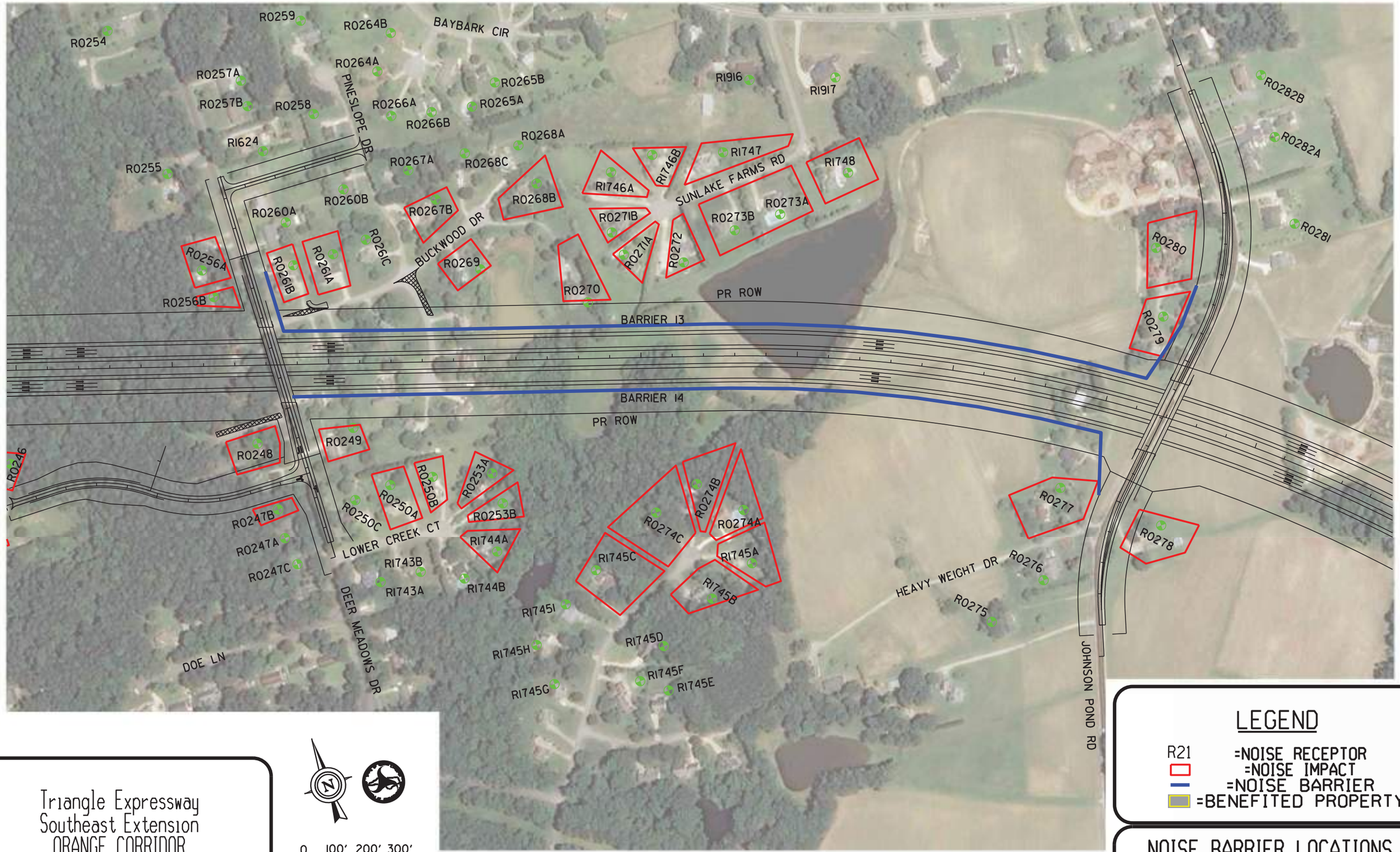


Triangle Expressway
Southeast Extension
ORANGE CORRIDOR
T.I.P. NO. R-2721 & R-2828 & R-2829

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=NOISE BARRIER
=BENEFITED PROPERTY

NOISE BARRIER LOCATIONS
EXHIBIT 13.7

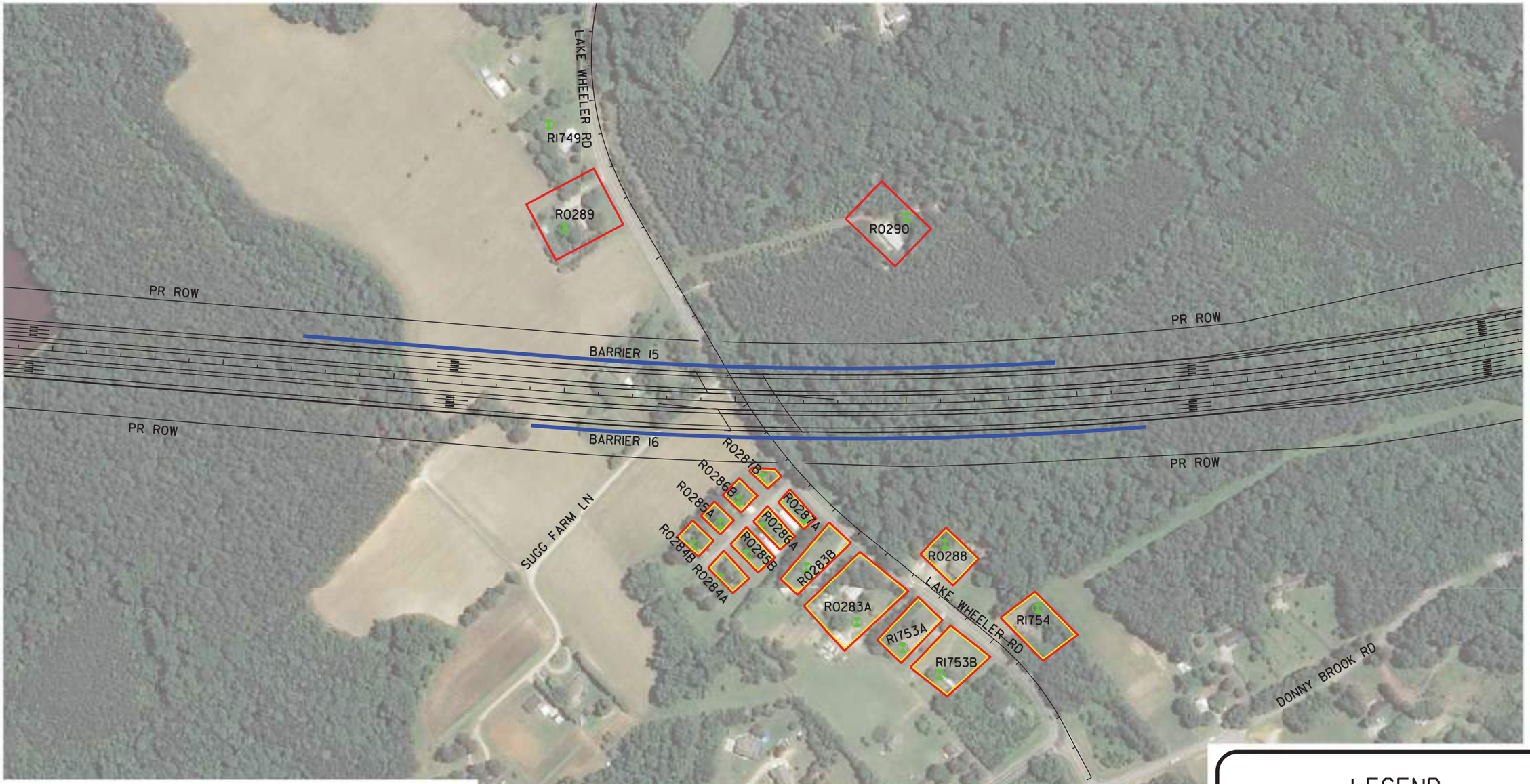


Triangle Expressway
Southeast Extension
ORANGE CORRIDOR
T.I.P. NO. R-2721 & R-2828 & R-2829

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=NOISE BARRIER
=BENEFITED PROPERTY

NOISE BARRIER LOCATIONS
EXHIBIT 13.8



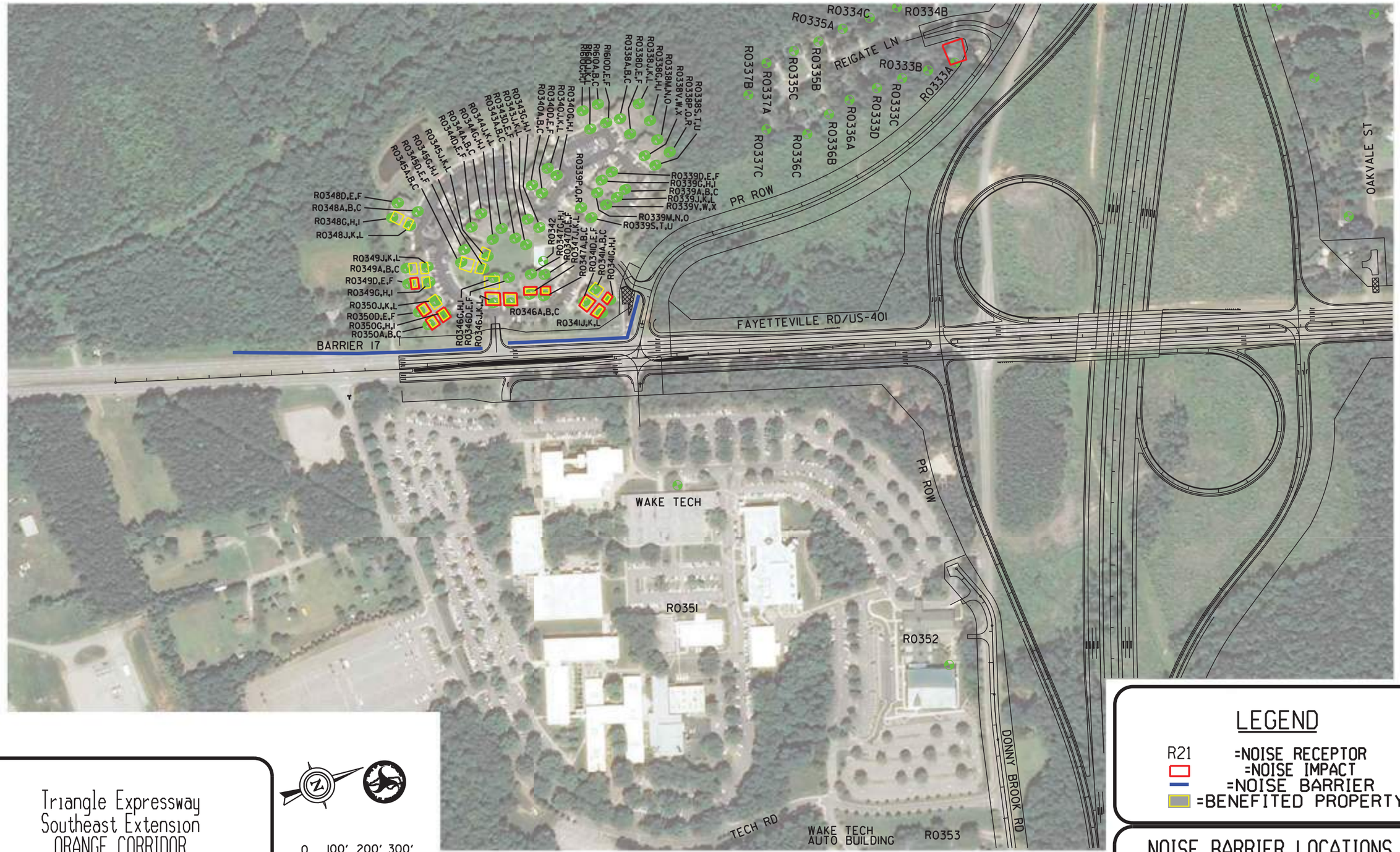
Triangle Expressway
Southeast Extension
ORANGE CORRIDOR
T.I.P. NO. R-2721 & R-2828 & R-2829

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=NOISE BARRIER
=BENEFITED PROPERTY

NOISE BARRIER LOCATIONS
EXHIBIT 13.9



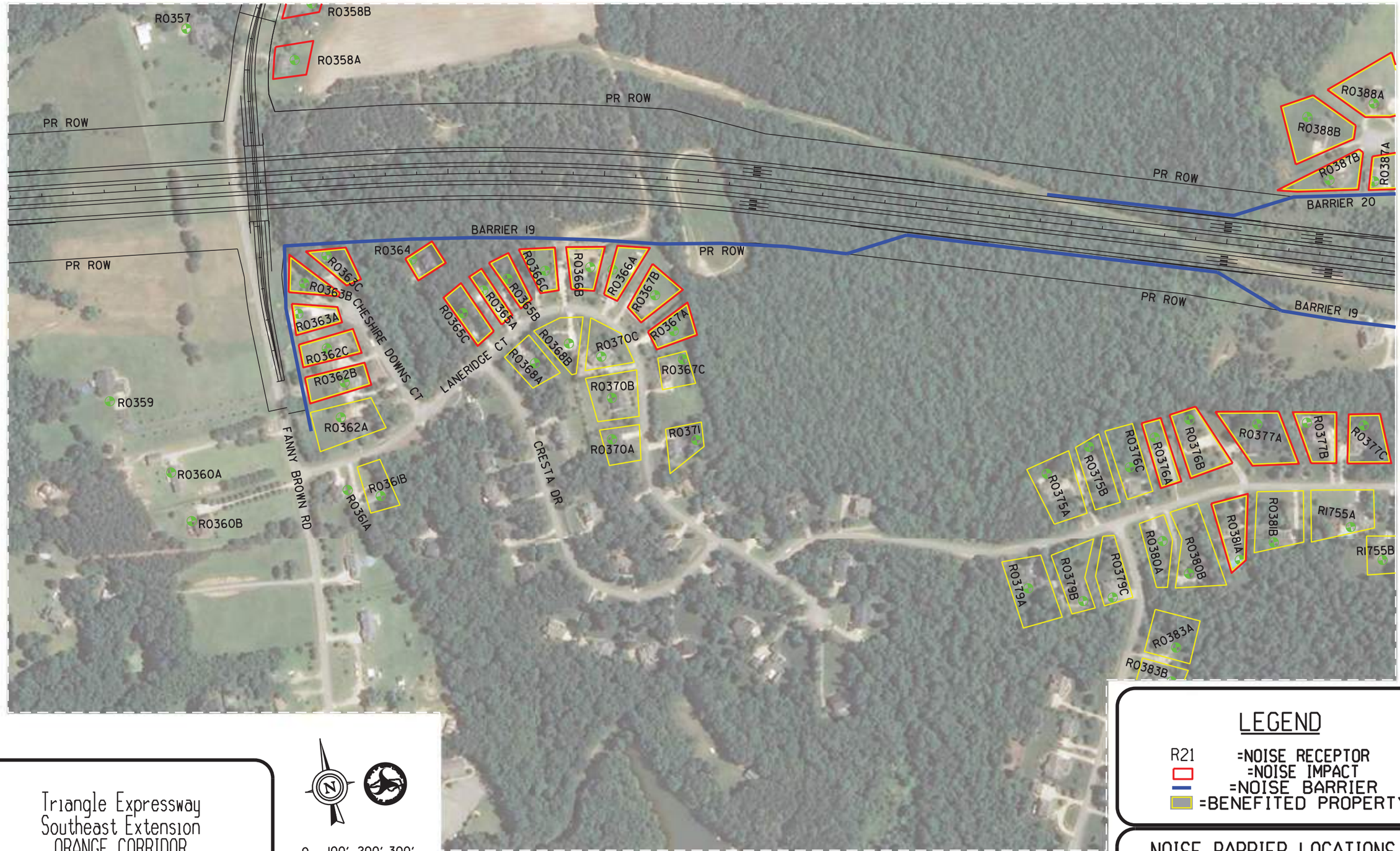
Triangle Expressway
Southeast Extension
ORANGE CORRIDOR
T.I.P. NO. R-2721 & R-2828 & R-2829

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=NOISE BARRIER
=BENEFITED PROPERTY

NOISE BARRIER LOCATIONS
EXHIBIT 13.10



Triangle Expressway
Southeast Extension
ORANGE CORRIDOR
T.I.P. NO. R-2721 & R-2828 & R-2829

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=NOISE BARRIER
=BENEFITED PROPERTY

NOISE BARRIER LOCATIONS
EXHIBIT 13.12



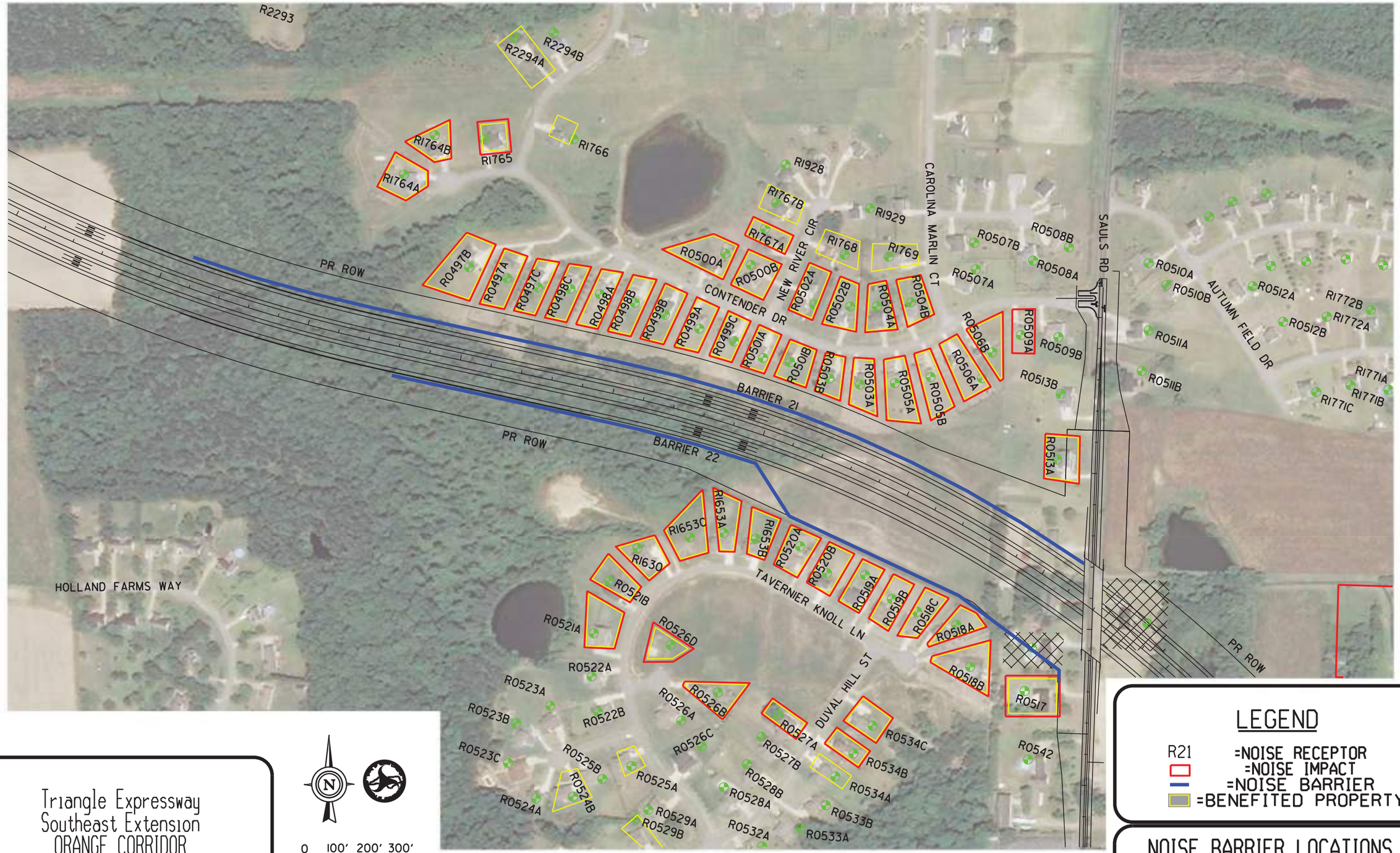
Triangle Expressway
Southeast Extension
ORANGE CORRIDOR
T.I.P. NO. R-2721 & R-2828 & R-2829

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=NOISE BARRIER
=BENEFITED PROPERTY

NOISE BARRIER LOCATIONS
EXHIBIT 13.13



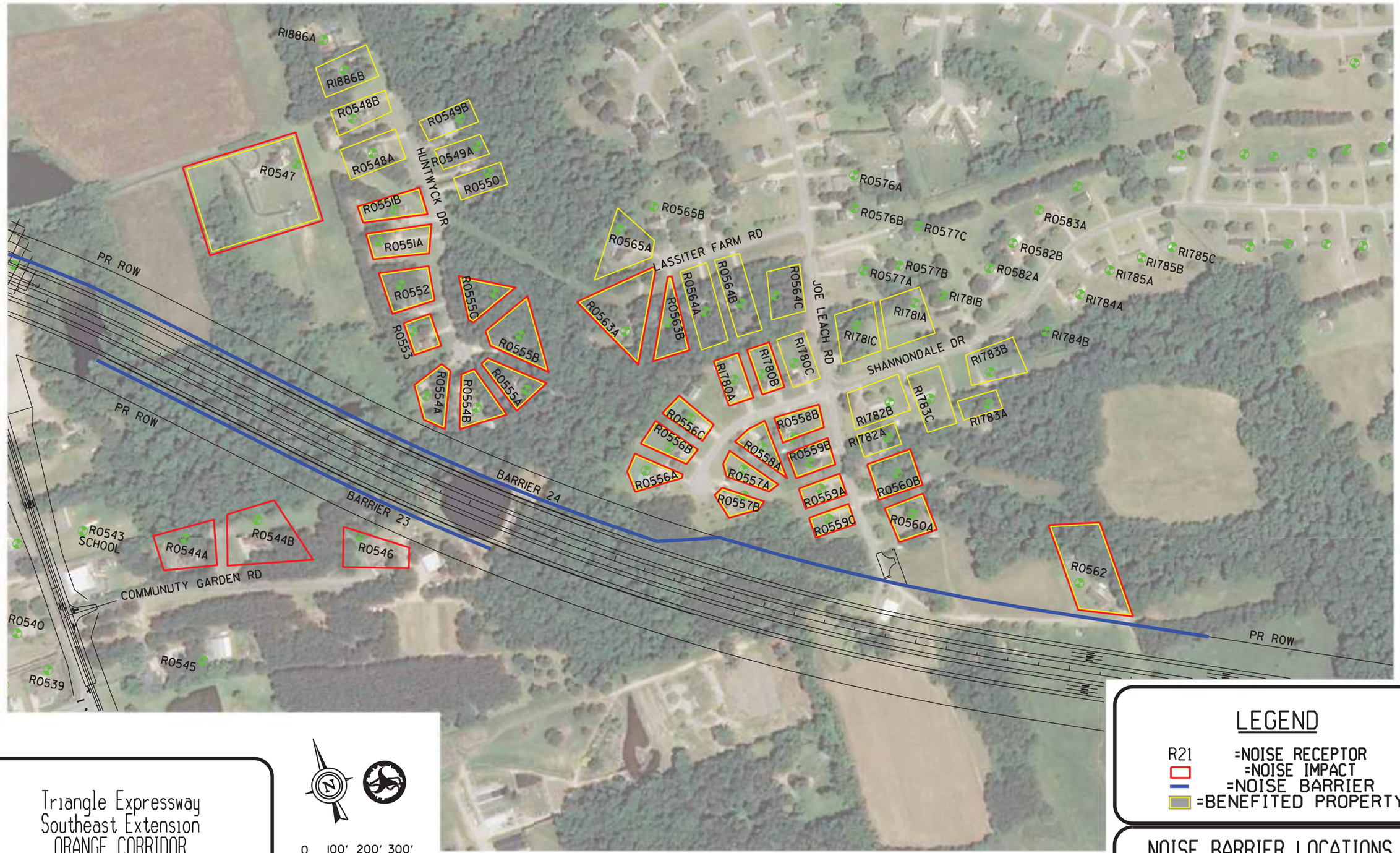
Triangle Expressway
Southeast Extension
ORANGE CORRIDOR
T.I.P. NO. R-2721 & R-2828 & R-2829

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=NOISE BARRIER
=BENEFITED PROPERTY

NOISE BARRIER LOCATIONS
EXHIBIT 13.14



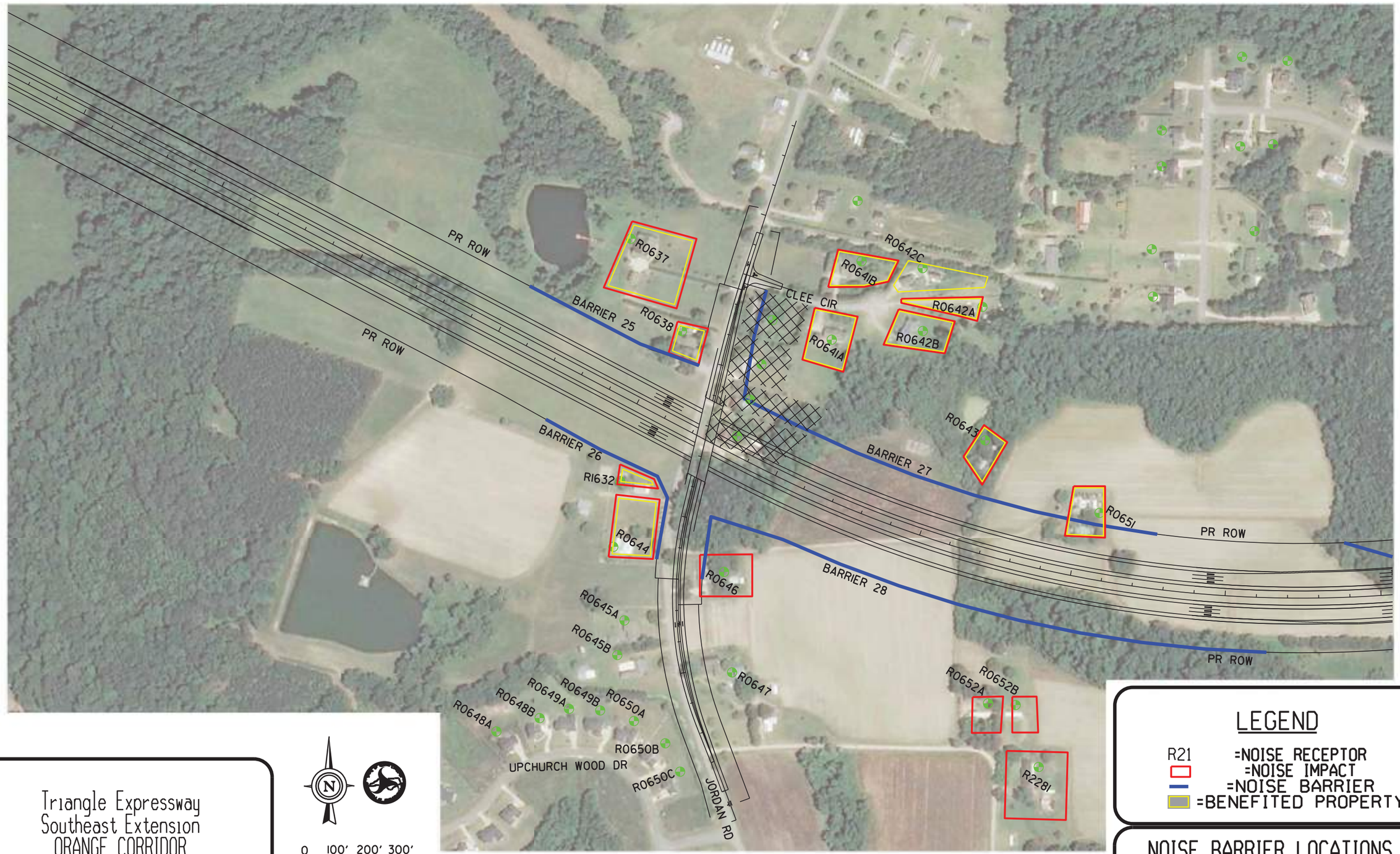
Triangle Expressway
Southeast Extension
ORANGE CORRIDOR
T.I.P. NO. R-2721 & R-2828 & R-2829

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=NOISE BARRIER
=BENEFITED PROPERTY

NOISE BARRIER LOCATIONS
EXHIBIT 13.15



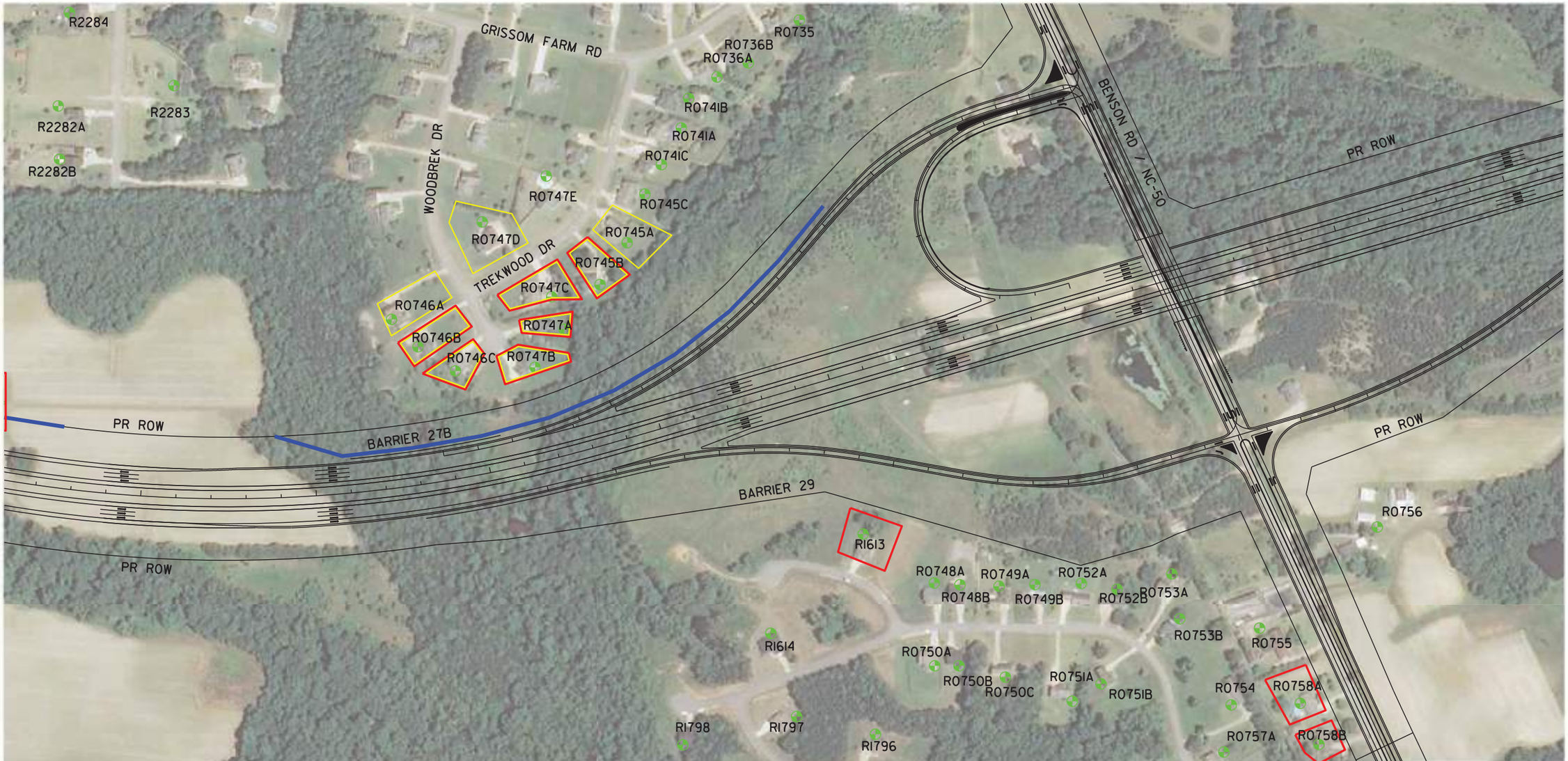
Triangle Expressway
Southeast Extension
ORANGE CORRIDOR
T.I.P. NO. R-2721 & R-2828 & R-2829

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=NOISE BARRIER
=BENEFITED PROPERTY

NOISE BARRIER LOCATIONS
EXHIBIT 13.16



Triangle Expressway
Southeast Extension
ORANGE CORRIDOR
T.I.P. NO. R-2721 & R-2828 & R-2829

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE ANALYSIS AREA
=NOISE IMPACT
=NOISE BARRIER
=BENEFITED PROPERTY

NOISE BARRIER LOCATIONS
EXHIBIT 13.17



Triangle Expressway
Southeast Extension
ORANGE CORRIDOR
T.I.P. NO. R-2721 & R-2828 & R-2829

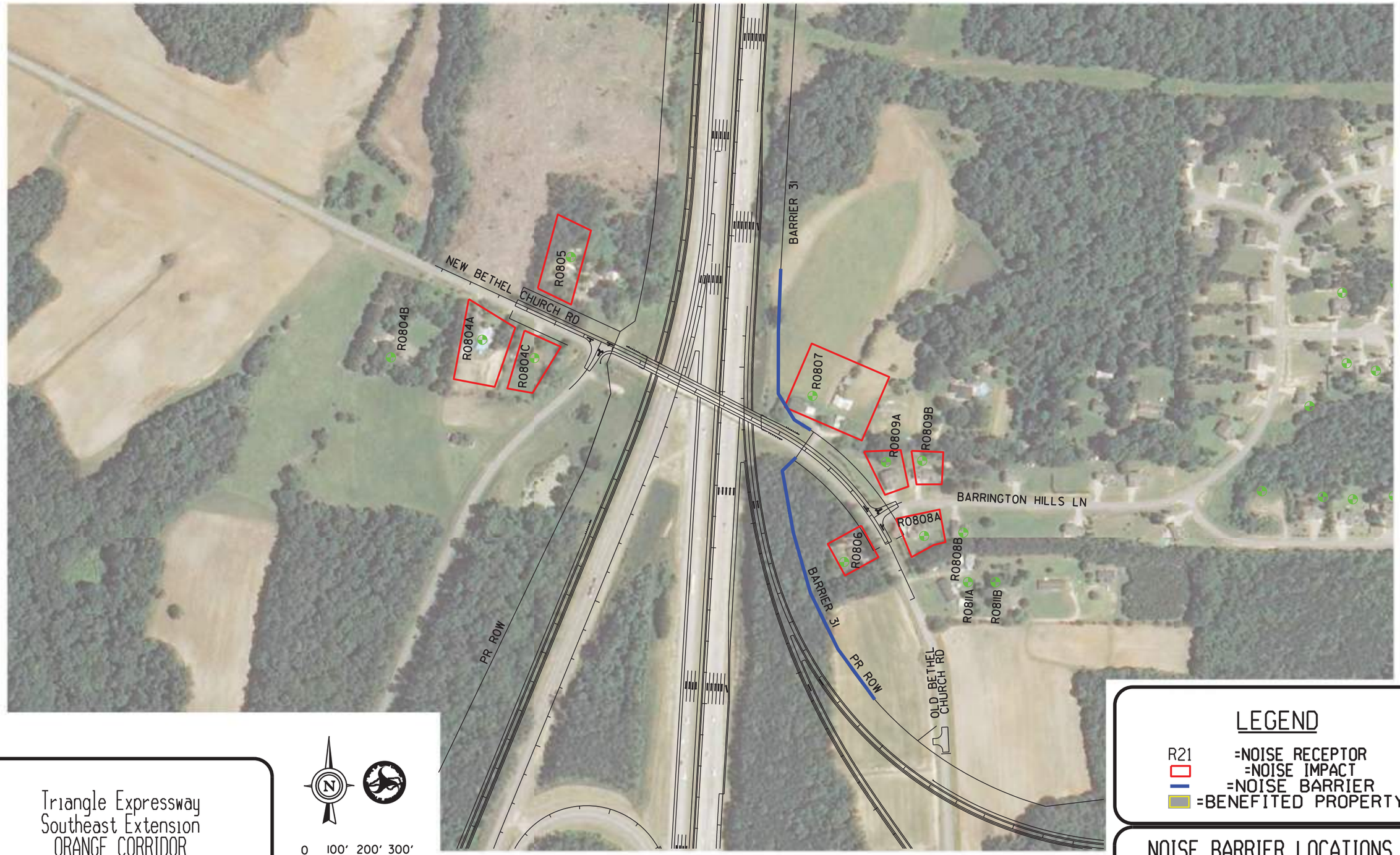
N

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=NOISE BARRIER
=BENEFITED PROPERTY

NOISE BARRIER LOCATIONS
EXHIBIT 13.18



Triangle Expressway
Southeast Extension
ORANGE CORRIDOR
T.I.P. NO. R-2721 & R-2828 & R-2829

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=NOISE BARRIER
=BENEFITED PROPERTY

NOISE BARRIER LOCATIONS
EXHIBIT 13.19



Triangle Expressway
Southeast Extension
ORANGE CORRIDOR
T.I.P. NO. R-2721 & R-2828 & R-2829

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=NOISE BARRIER
=BENEFITED PROPERTY

NOISE BARRIER LOCATIONS
EXHIBIT 13.20



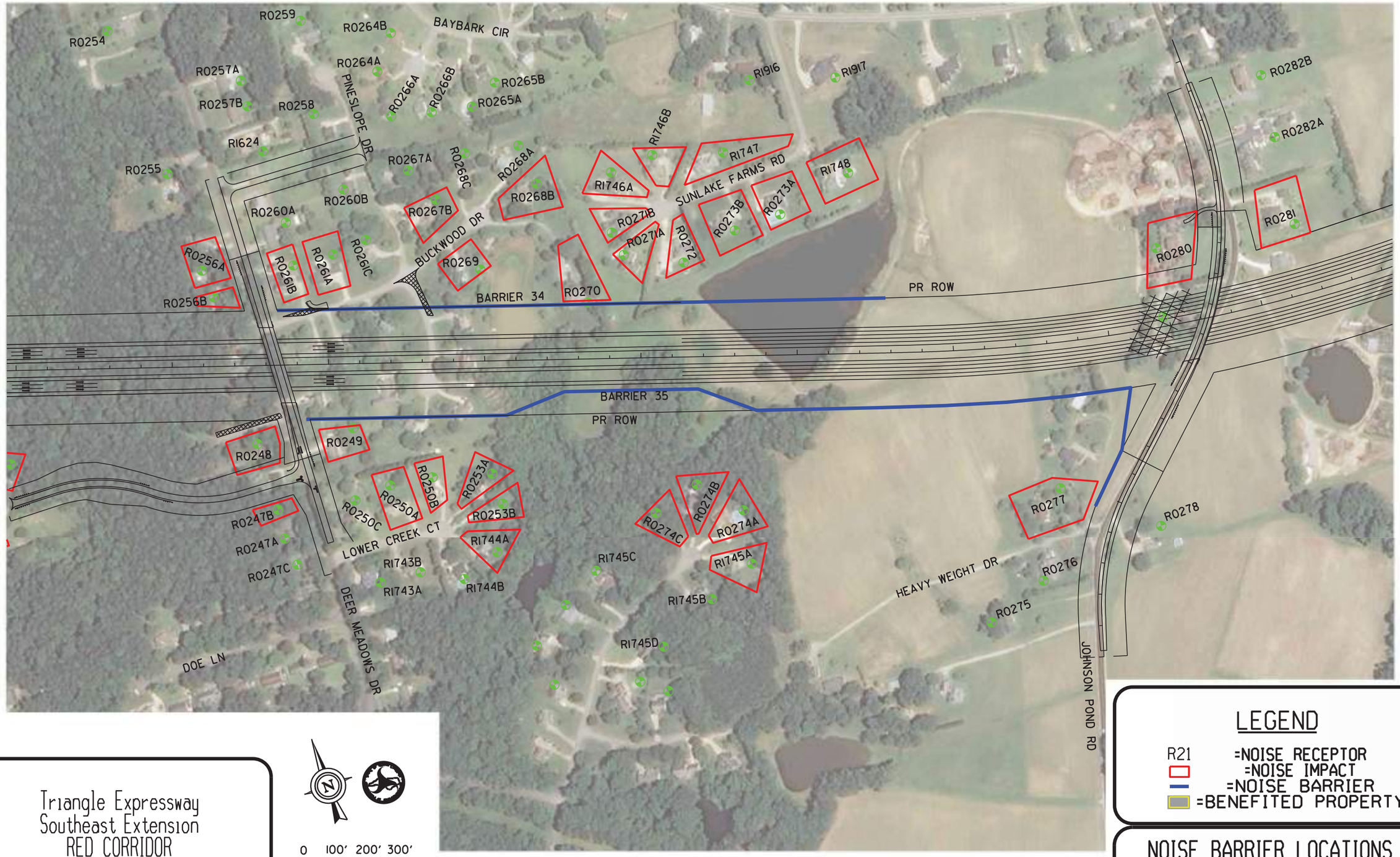
Triangle Expressway
Southeast Extension
ORANGE CORRIDOR
T.I.P. NO. R-2721 & R-2828 & R-2829

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=NOISE BARRIER
=BENEFITED PROPERTY

BARRIER LOCATIONS
EXHIBIT 13.21

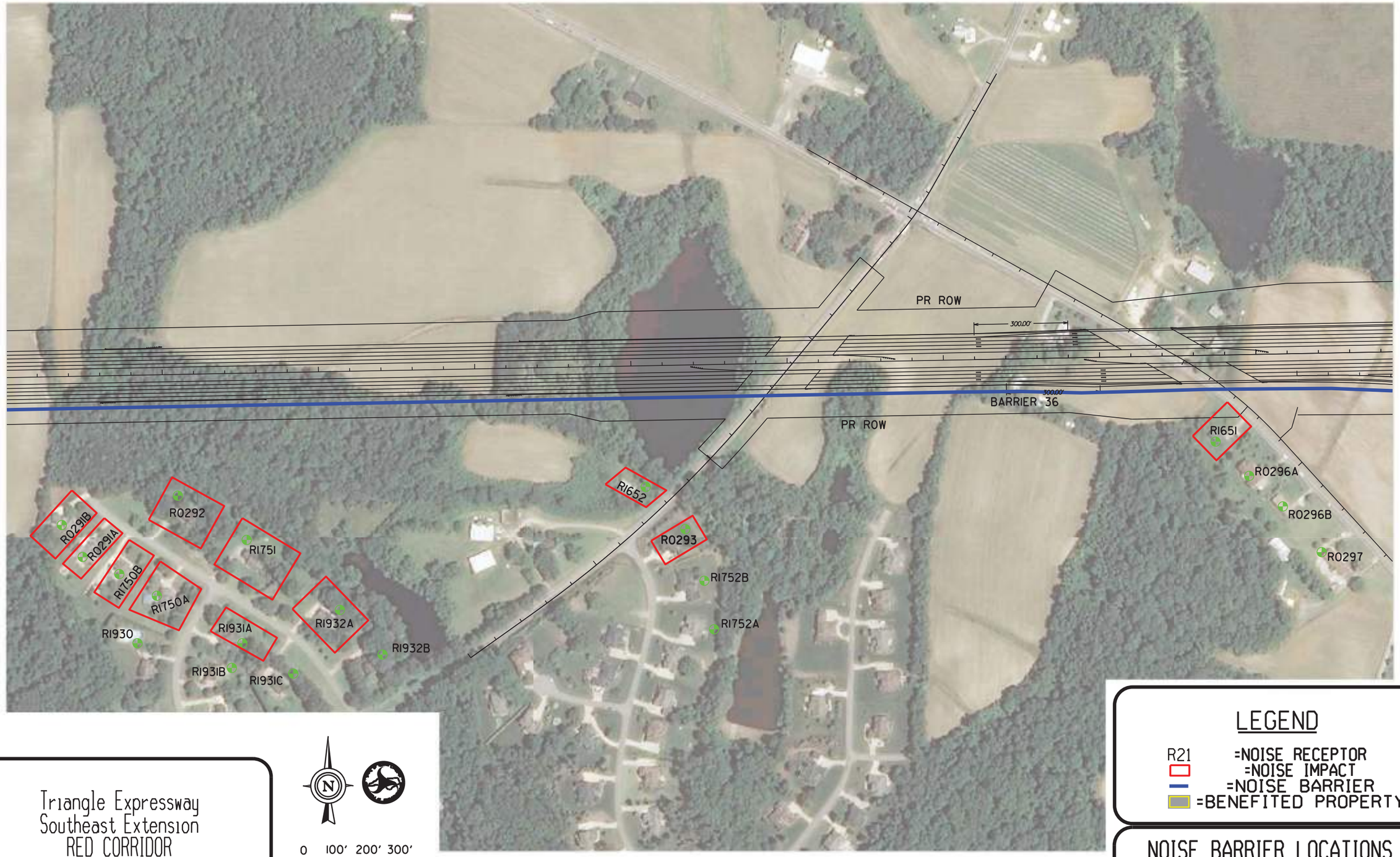


Triangle Expressway
Southeast Extension
RED CORRIDOR
T.I.P. NO. R-2721 & R-2828 & R-2829

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=NOISE BARRIER
=BENEFITED PROPERTY

NOISE BARRIER LOCATIONS
EXHIBIT 13.22



Triangle Expressway
Southeast Extension
RED CORRIDOR
T.I.P. NO. R-2721 & R-2828 & R-2829

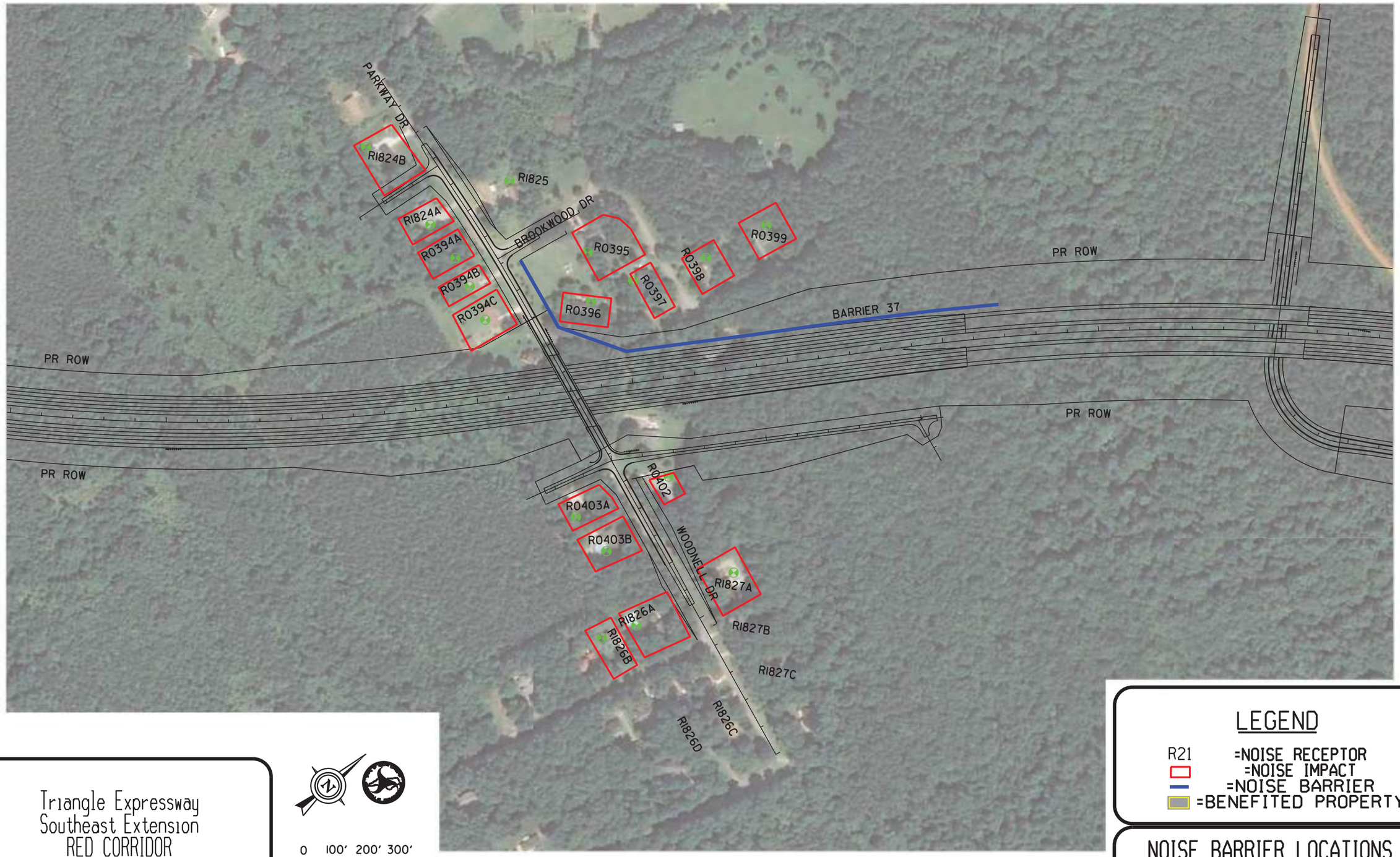
N

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=NOISE BARRIER
=BENEFITED PROPERTY

NOISE BARRIER LOCATIONS
EXHIBIT 13.23



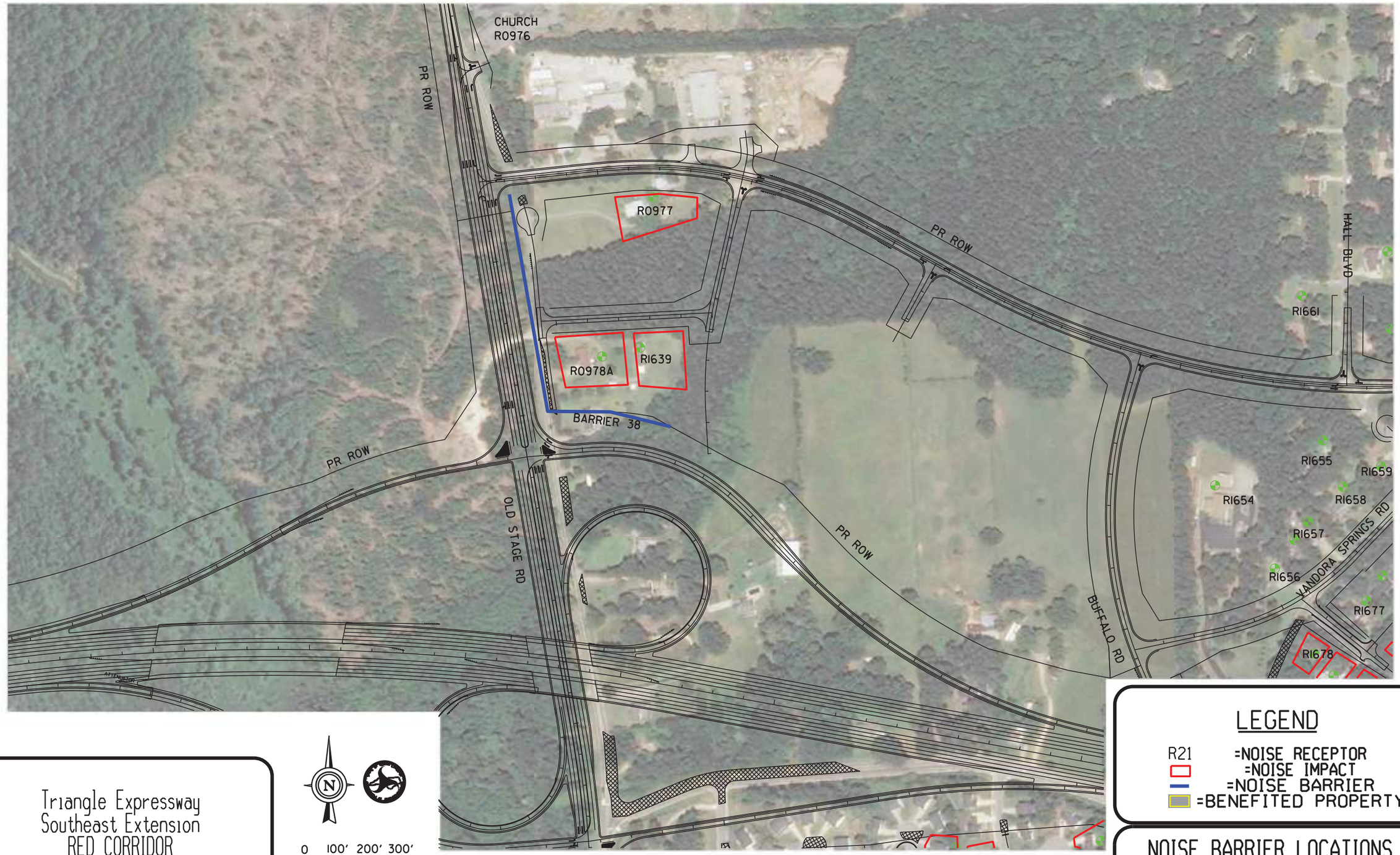
Triangle Expressway
Southeast Extension
RED CORRIDOR
T.I.P. NO. R-2721 & R-2828 & R-2829

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=NOISE BARRIER
=BENEFITED PROPERTY

NOISE BARRIER LOCATIONS
EXHIBIT 13.24



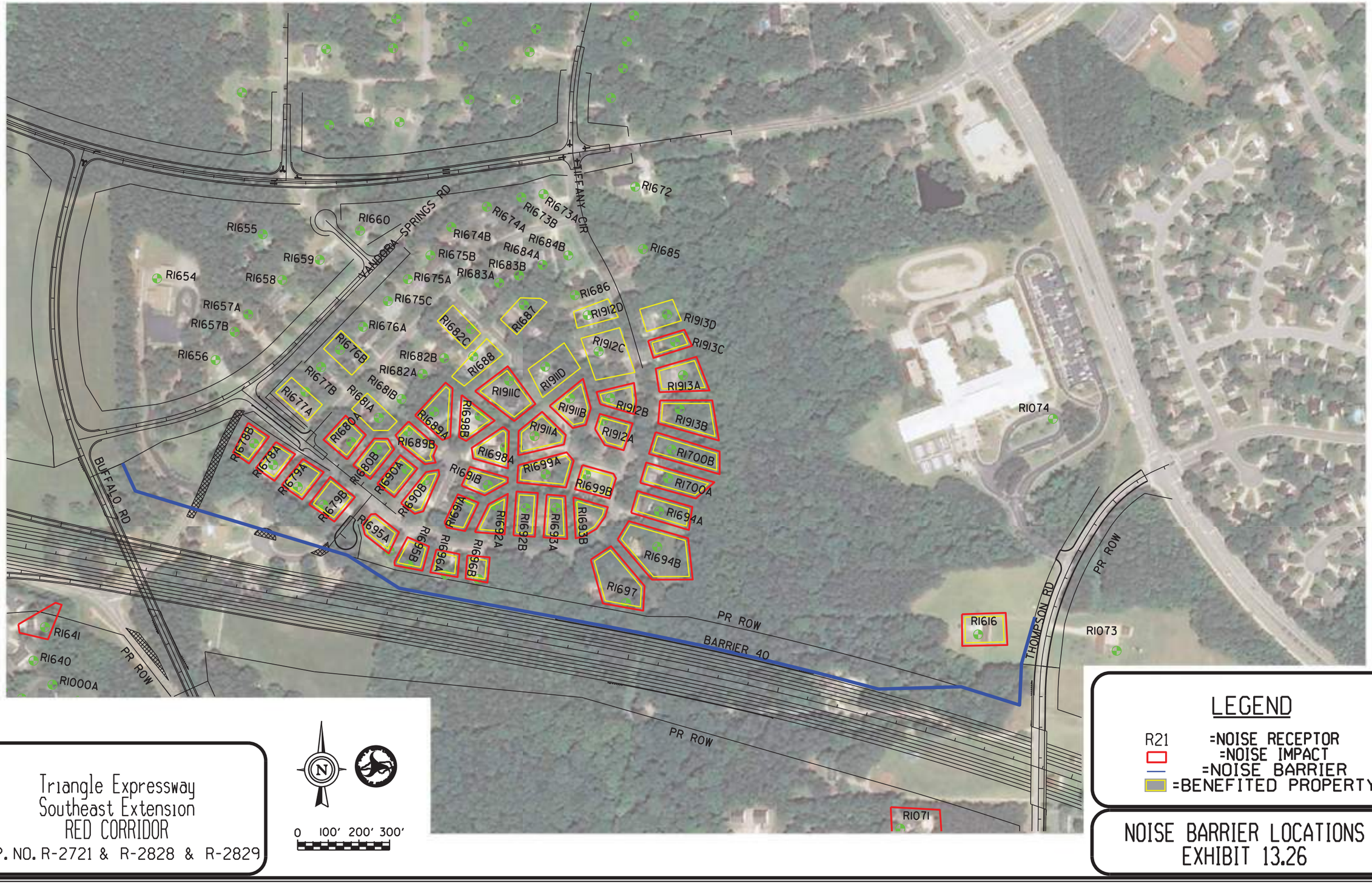
Triangle Expressway
Southeast Extension
RED CORRIDOR
T.I.P. NO. R-2721 & R-2828 & R-2829

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=NOISE BARRIER
=BENEFITED PROPERTY

NOISE BARRIER LOCATIONS
EXHIBIT 13.25

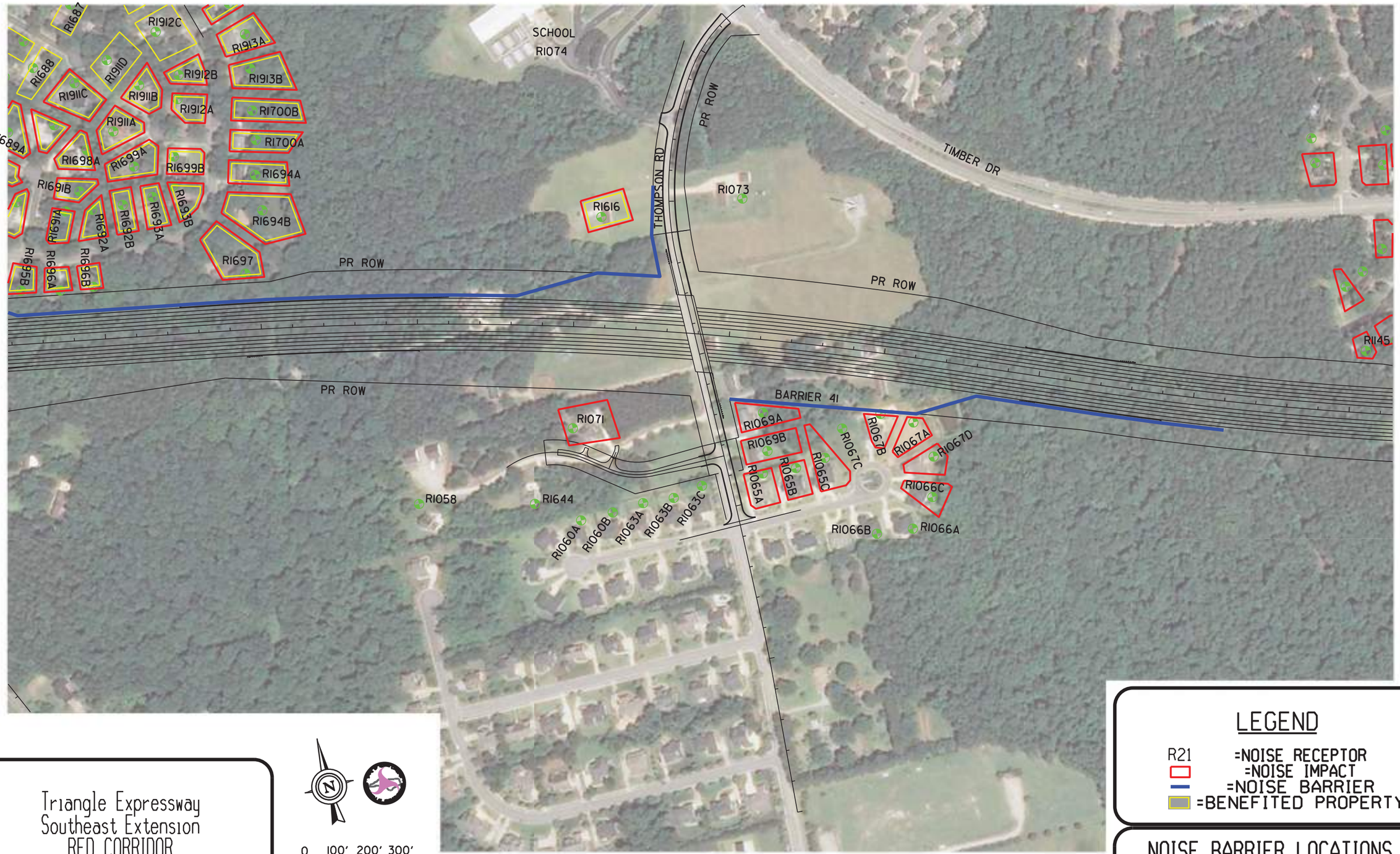


Triangle Expressway
Southeast Extension
RED CORRIDOR
T.I.P. NO. R-2721 & R-2828 & R-2829

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=NOISE BARRIER
=BENEFITED PROPERTY

NOISE BARRIER LOCATIONS
EXHIBIT 13.26



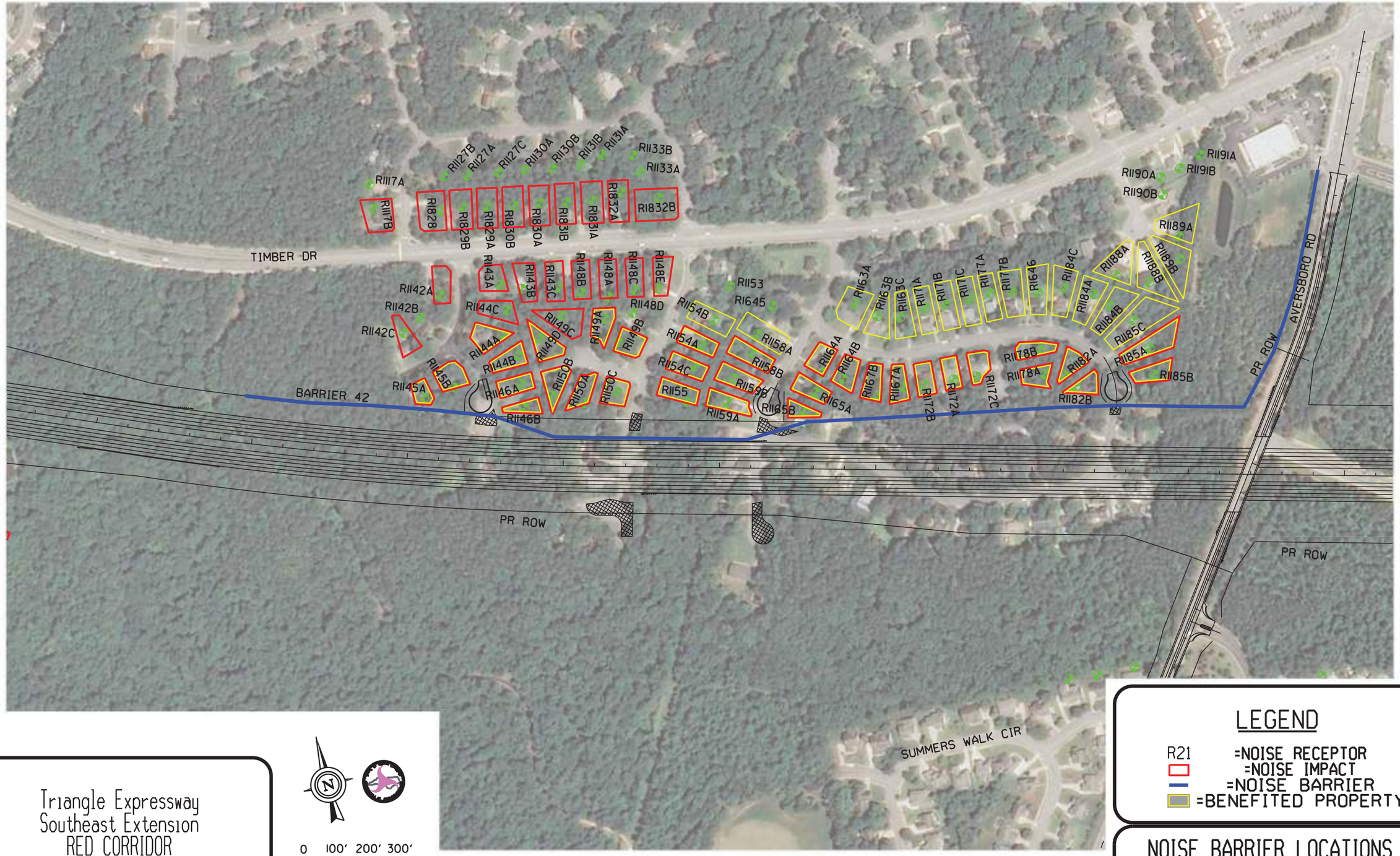
Triangle Expressway
Southeast Extension
RED CORRIDOR
T.I.P. NO. R-2721 & R-2828 & R-2829

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=NOISE BARRIER
=BENEFITED PROPERTY

NOISE BARRIER LOCATIONS
EXHIBIT 13.27



Triangle Expressway
Southeast Extension
RED CORRIDOR
T.I.P. NO. R-2721 & R-2828 & R-2829

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=NOISE BARRIER
=BENEFITED PROPERTY

NOISE BARRIER LOCATIONS
EXHIBIT 13.28



Triangle Expressway
Southeast Extension
RED CORRIDOR
T.I.P. NO. R-2721 & R-2828 & R-2829

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=NOISE BARRIER
=BENEFITED PROPERTY

NOISE BARRIER LOCATIONS
EXHIBIT 13.29



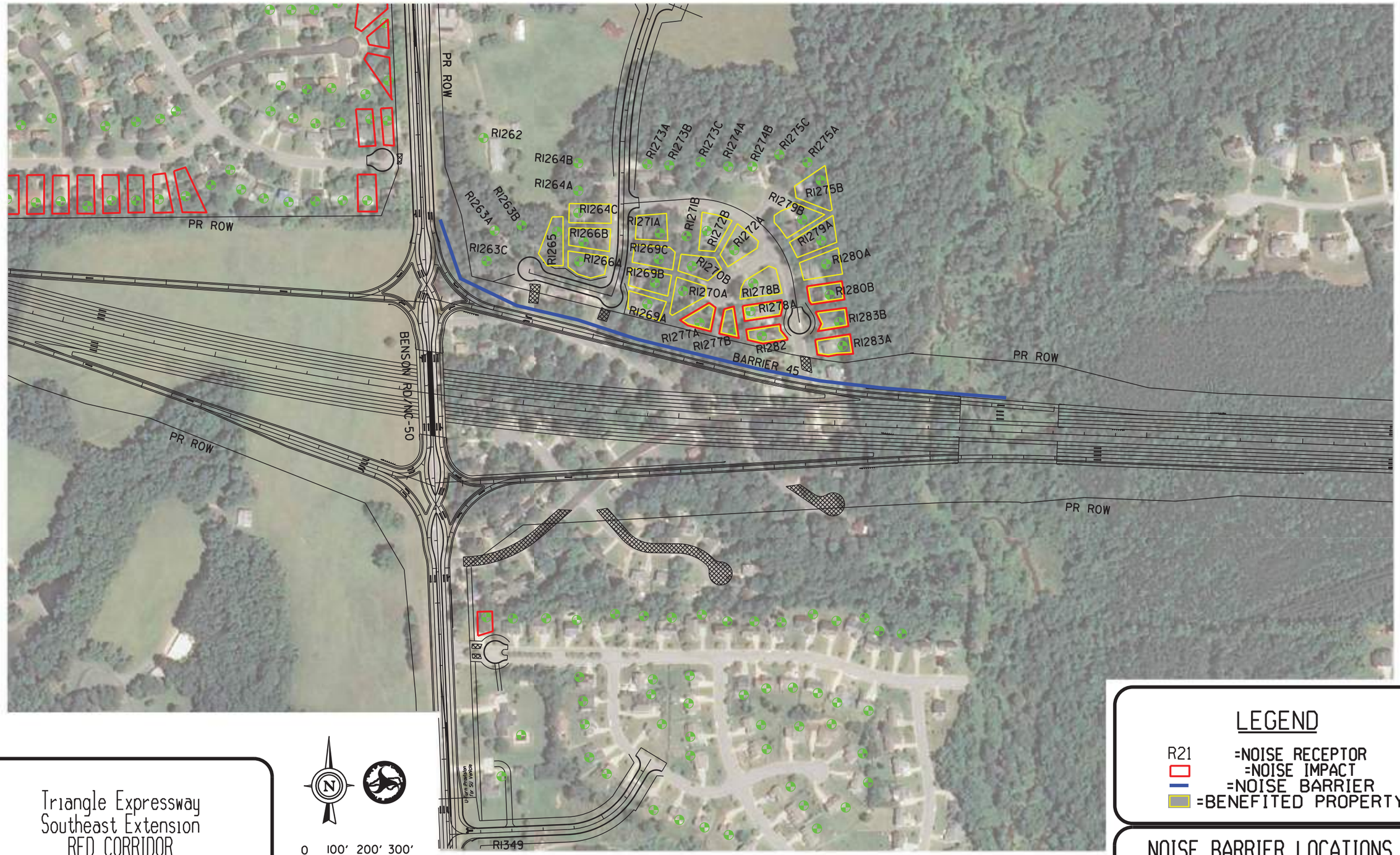
Triangle Expressway
Southeast Extension
RED CORRIDOR
T.I.P. NO. R-2721 & R-2828 & R-2829

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=NOISE BARRIER
=BENEFITED PROPERTY

NOISE BARRIER LOCATIONS
EXHIBIT 13.30



Triangle Expressway
Southeast Extension
RED CORRIDOR
T.I.P. NO. R-2721 & R-2828 & R-2829

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=NOISE BARRIER
=BENEFITED PROPERTY

NOISE BARRIER LOCATIONS
EXHIBIT 13.31

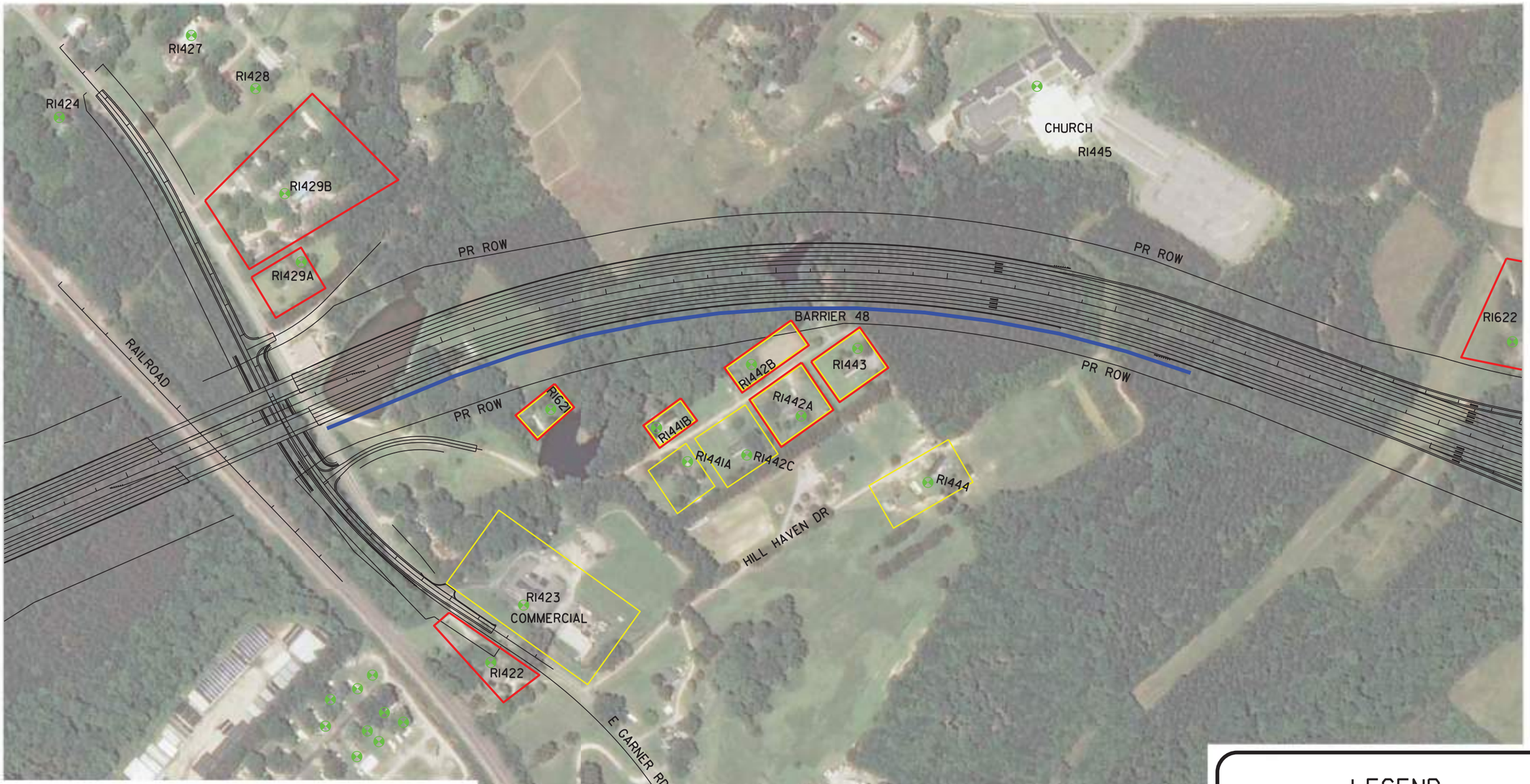


Triangle Expressway
Southeast Extension
RED CORRIDOR
T.I.P. NO. R-2721 & R-2828 & R-2829

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=NOISE BARRIER
=BENEFITED PROPERTY

NOISE BARRIER LOCATIONS EXHIBIT 13.32



Triangle Expressway
Southeast Extension
RED CORRIDOR
T.I.P. NO. R-2721 & R-2828 & R-2829

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=NOISE BARRIER
=BENEFITED PROPERTY

NOISE BARRIER LOCATIONS
EXHIBIT 13.33



Triangle Expressway
Southeast Extension
RED CORRIDOR
T.I.P. NO. R-2721 & R-2828 & R-2829

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=NOISE BARRIER
=BENEFITED PROPERTY

NOISE BARRIER LOCATIONS
EXHIBIT 13.34



Triangle Expressway
Southeast Extension
RED CORRIDOR
T.I.P. NO. R-2721 & R-2828 & R-2829

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=NOISE BARRIER
=BENEFITED PROPERTY

NOISE BARRIER LOCATIONS
EXHIBIT 13.35



Triangle Expressway
Southeast Extension
RED CORRIDOR
T.I.P. NO. R-2721 & R-2828 & R-2829

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=NOISE BARRIER
=BENEFITED PROPERTY

BARRIER LOCATIONS
EXHIBIT 13.36



Triangle Expressway
Southeast Extension
RED CORRIDOR
T.I.P. NO. R-2721 & R-2828 & R-2829

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=NOISE BARRIER
=BENEFITED PROPERTY

NOISE BARRIER LOCATIONS
EXHIBIT 13.37



Triangle Expressway
Southeast Extension
Green Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=NOISE BARRIER
=BENEFITED PROPERTY

NOISE BARRIER LOCATIONS
EXHIBIT 13.46



Triangle Expressway
Southeast Extension
Green Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

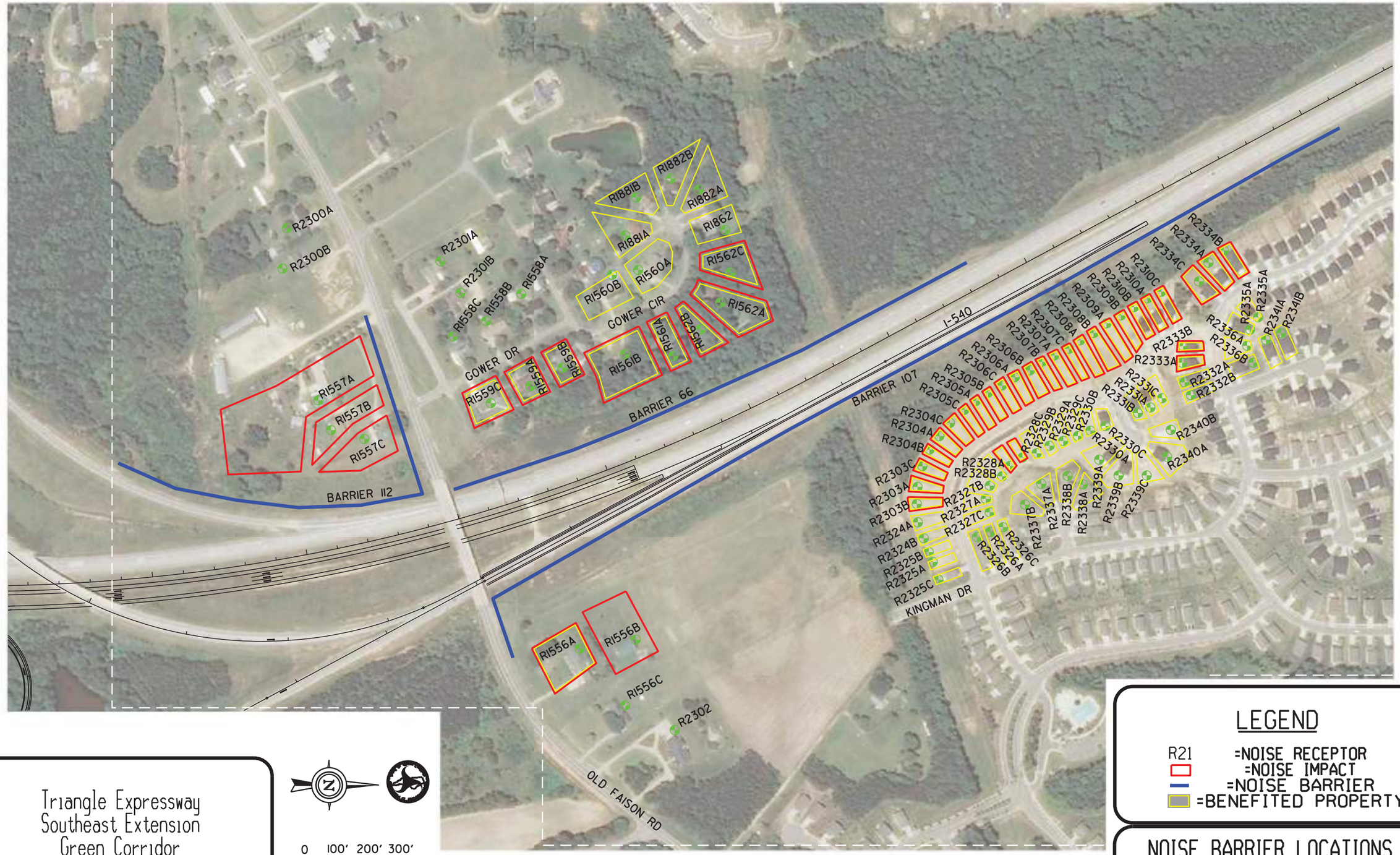
N

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=NOISE BARRIER
=BENEFITED PROPERTY

NOISE BARRIER LOCATIONS
EXHIBIT 13.47



Triangle Expressway
Southeast Extension
Green Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=NOISE BARRIER
=BENEFITED PROPERTY

NOISE BARRIER LOCATIONS
EXHIBIT 13.48



Triangle Expressway
Southeast Extension
Lilac Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=NOISE BARRIER
=BENEFITED PROPERTY

NOISE BARRIER LOCATIONS
EXHIBIT 13.51

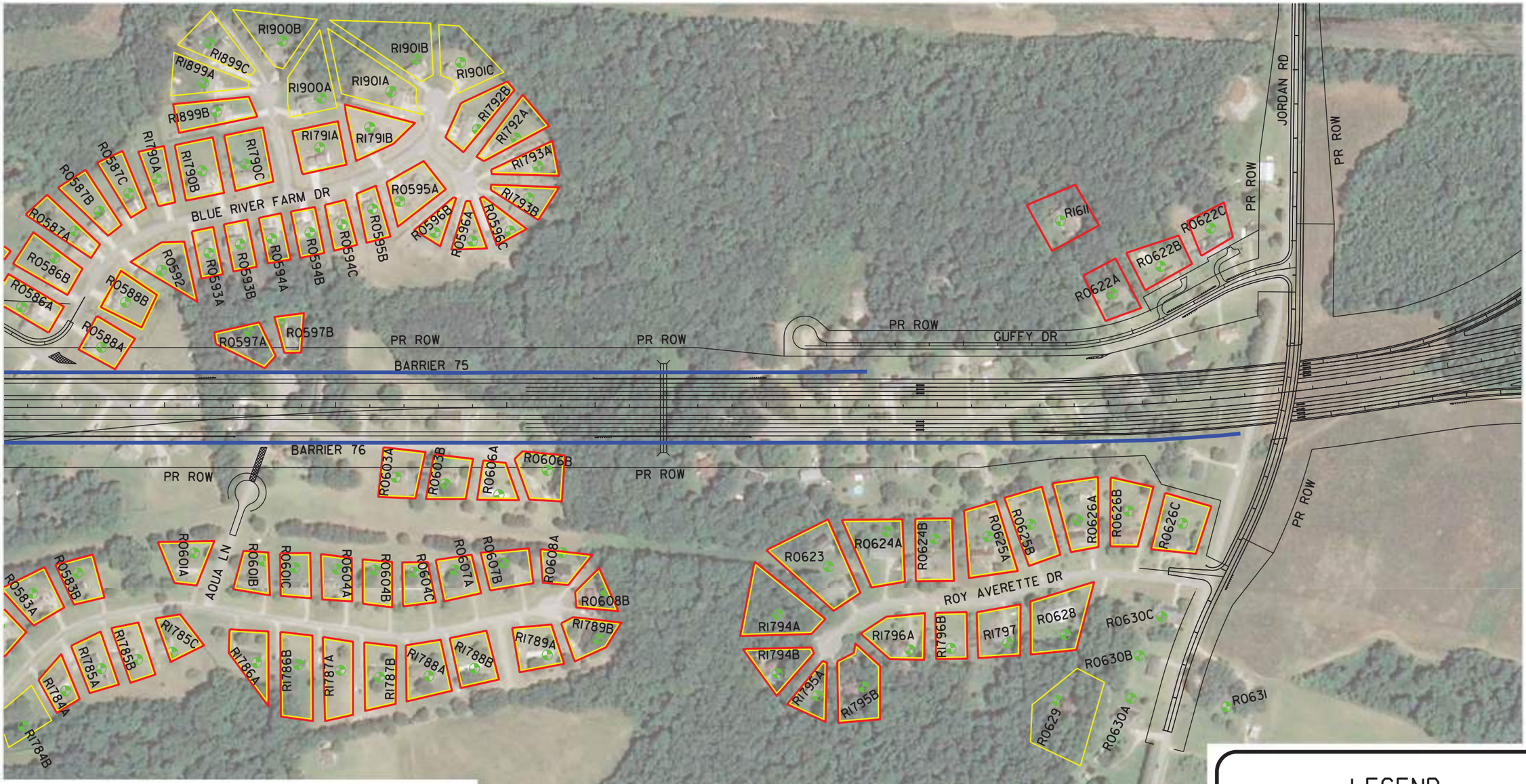


Triangle Expressway
Southeast Extension
Lilac Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=NOISE BARRIER
=BENEFITED PROPERTY

NOISE BARRIER LOCATIONS
EXHIBIT 13.52



Triangle Expressway
Southeast Extension
Lilac Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=NOISE BARRIER
=BENEFITED PROPERTY

NOISE BARRIER LOCATIONS
EXHIBIT 13.53



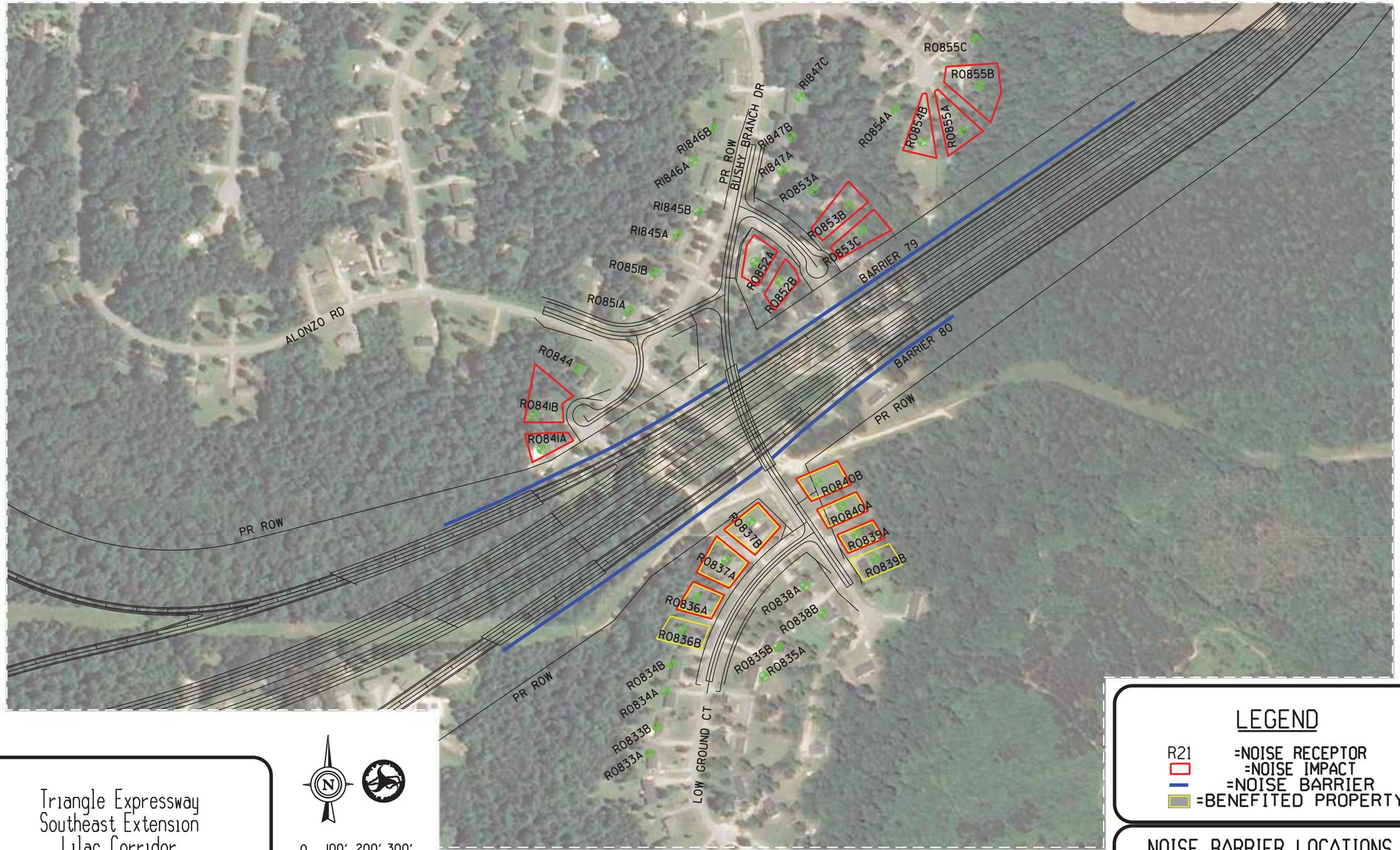
Triangle Expressway
Southeast Extension
Lilac Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=NOISE BARRIER
=BENEFITED PROPERTY

NOISE BARRIER LOCATIONS
EXHIBIT 13.54



Triangle Expressway
Southeast Extension
Lilac Corridor
T.I.P. NO. R-2721 & R-2828 & R-2829

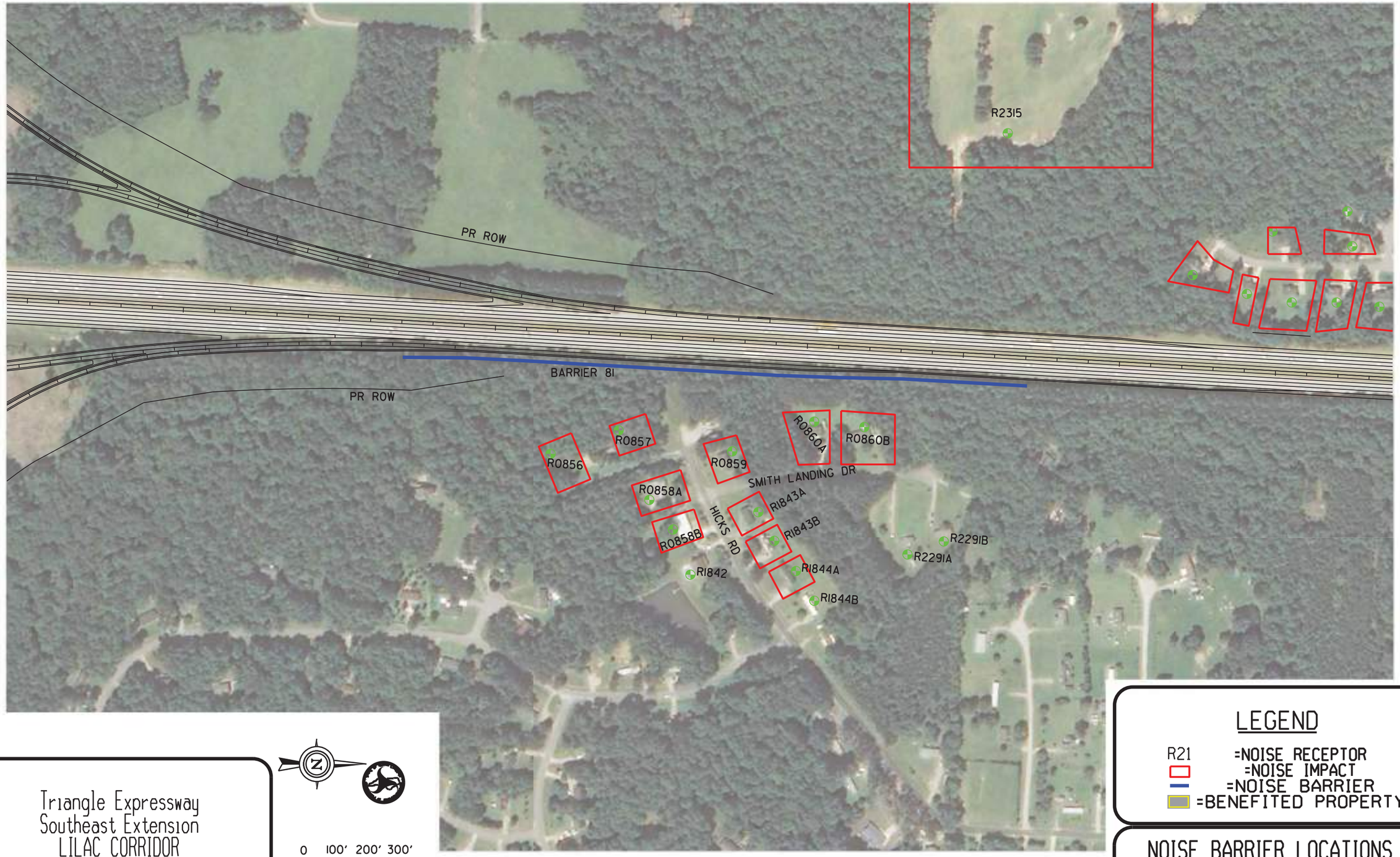
N

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=NOISE BARRIER
=BENEFITED PROPERTY

NOISE BARRIER LOCATIONS
EXHIBIT 13.55



Triangle Expressway
Southeast Extension
LILAC CORRIDOR
T.I.P. NO. R-2721 & R-2828 & R-2829

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=NOISE BARRIER
=BENEFITED PROPERTY

NOISE BARRIER LOCATIONS
EXHIBIT 13.56



Triangle Expressway
Southeast Extension
LILAC CORRIDOR
T.I.P. NO. R-2721 & R-2828 & R-2829

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=NOISE BARRIER
=BENEFITED PROPERTY

BARRIER LOCATIONS
EXHIBIT 13.57



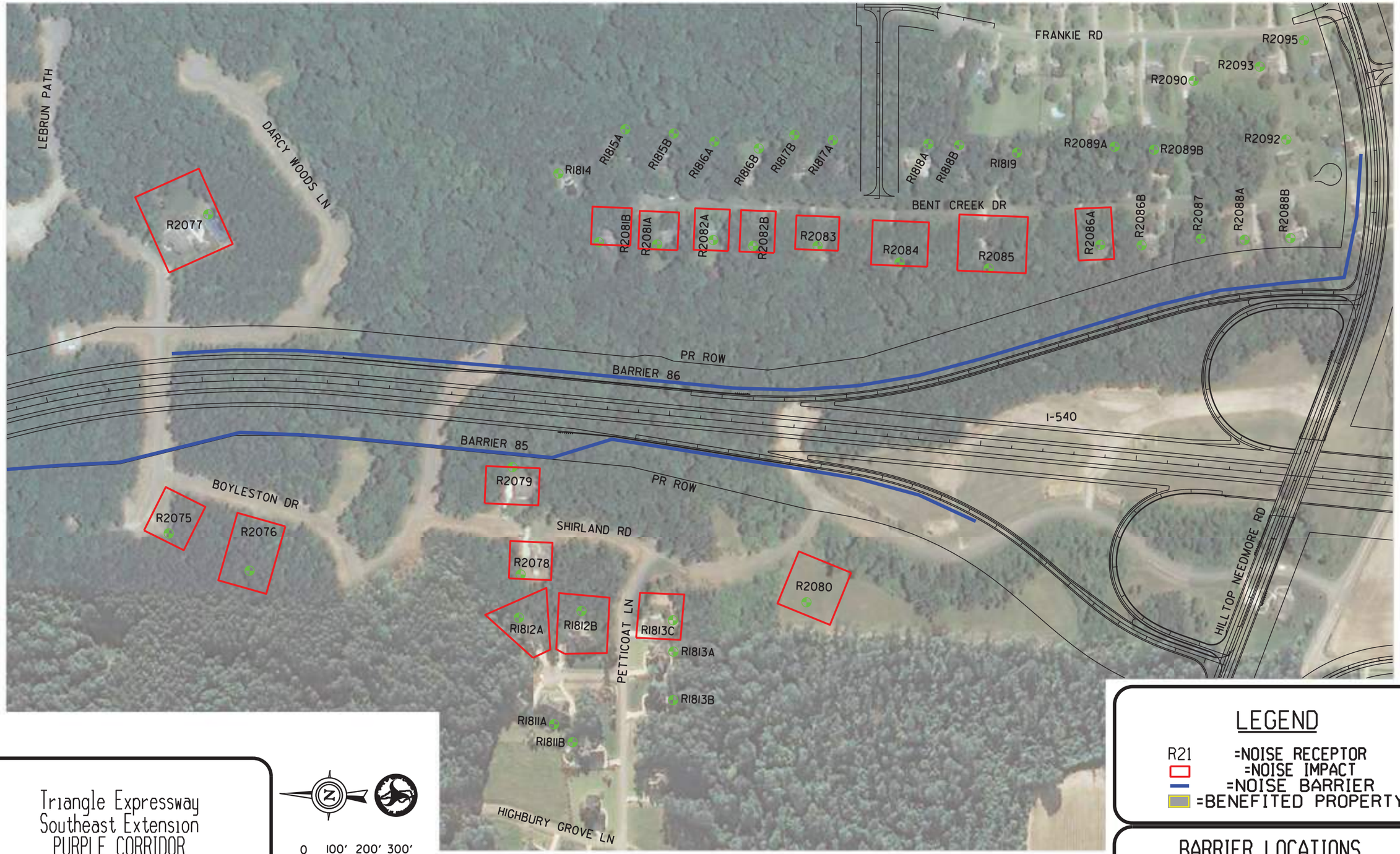
Triangle Expressway
Southeast Extension
PURPLE CORRIDOR
T.I.P. NO. R-2721 & R-2828 & R-2829

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=NOISE BARRIER
=BENEFITED PROPERTY

BARRIER LOCATIONS
EXHIBIT 13.58



Triangle Expressway
Southeast Extension
PURPLE CORRIDOR
T.I.P. NO. R-2721 & R-2828 & R-2829

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=NOISE BARRIER
=BENEFITED PROPERTY

BARRIER LOCATIONS
EXHIBIT 13.59



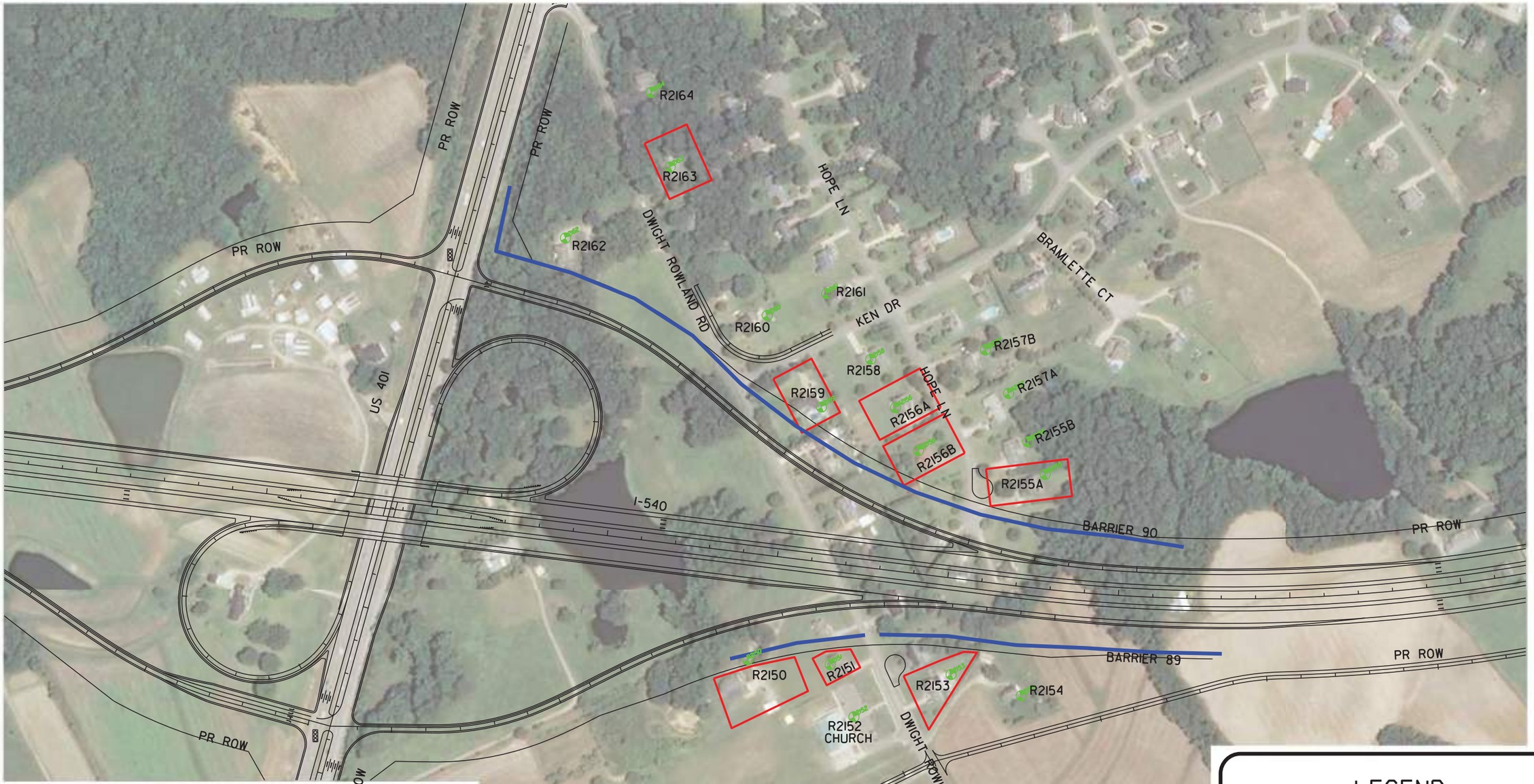
Triangle Expressway
Southeast Extension
PURPLE CORRIDOR
T.I.P. NO. R-2721 & R-2828 & R-2829

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=NOISE BARRIER
=BENEFITED PROPERTY

BARRIER LOCATIONS
EXHIBIT 13.60



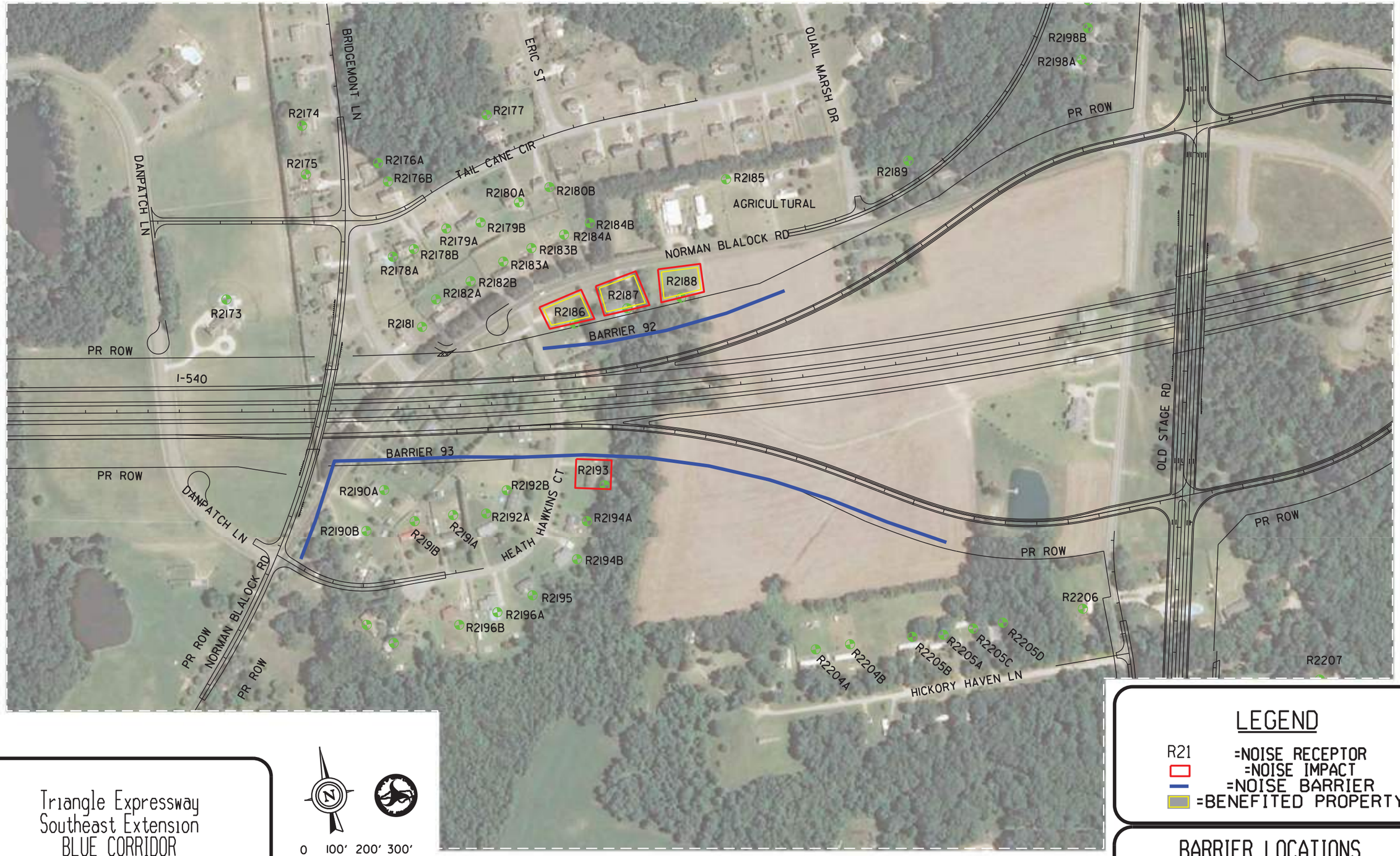
Triangle Expressway
Southeast Extension
BLUE CORRIDOR
T.I.P. NO. R-2721 & R-2828 & R-2829

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=NOISE BARRIER
=BENEFITED PROPERTY

BARRIER LOCATIONS
EXHIBIT 13.61



Triangle Expressway
Southeast Extension
BLUE CORRIDOR
T.I.P. NO. R-2721 & R-2828 & R-2829

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=NOISE BARRIER
=BENEFITED PROPERTY

BARRIER LOCATIONS
EXHIBIT 13.63



Triangle Expressway
Southeast Extension
BLUE CORRIDOR
T.I.P. NO. R-2721 & R-2828 & R-2829

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=NOISE BARRIER
=BENEFITED PROPERTY

BARRIER LOCATIONS
EXHIBIT 13.64



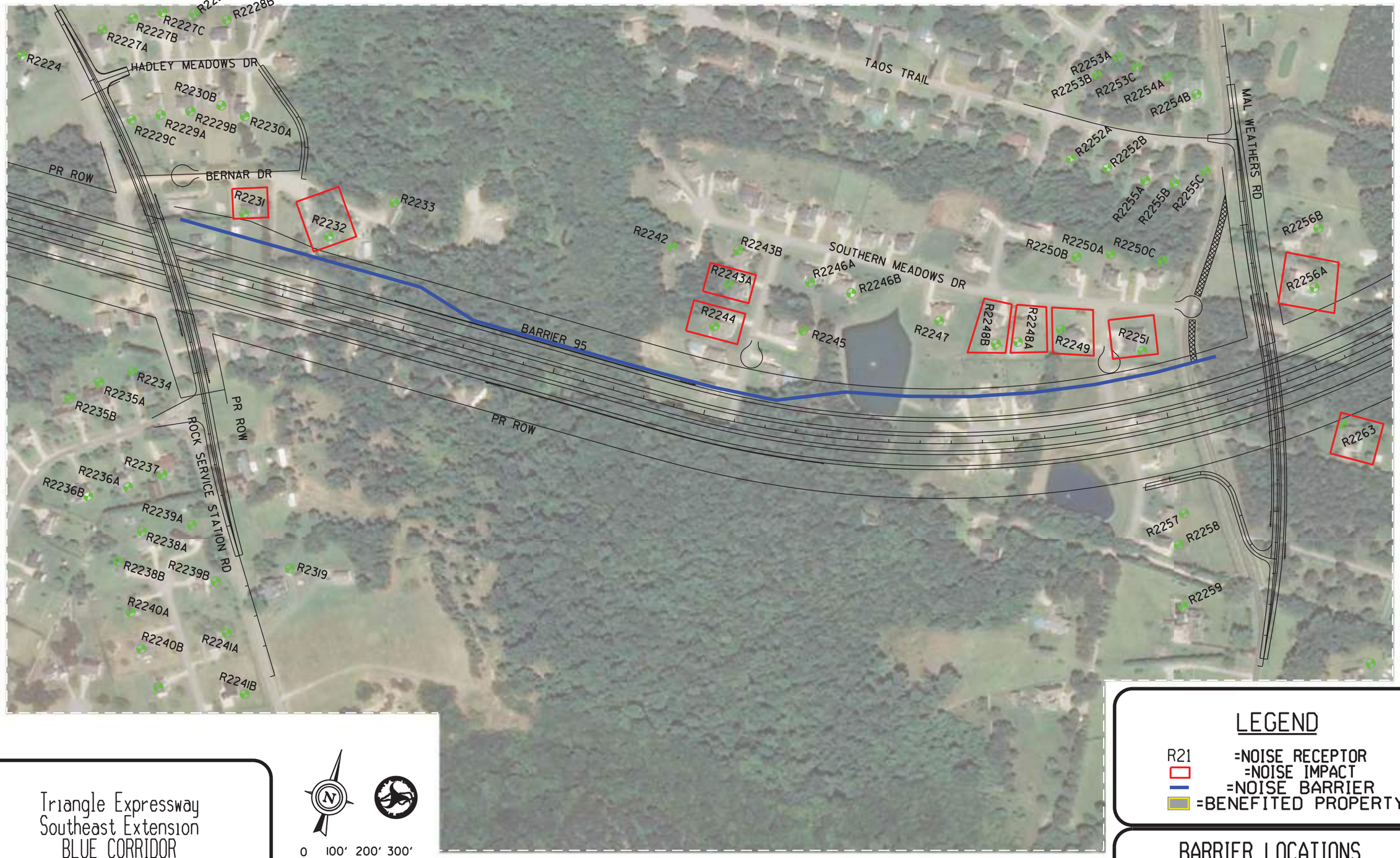
Triangle Expressway
Southeast Extension
BLUE CORRIDOR
T.I.P. NO. R-2721 & R-2828 & R-2829

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=NOISE BARRIER
=BENEFITED PROPERTY

BARRIER LOCATIONS
EXHIBIT 13.65



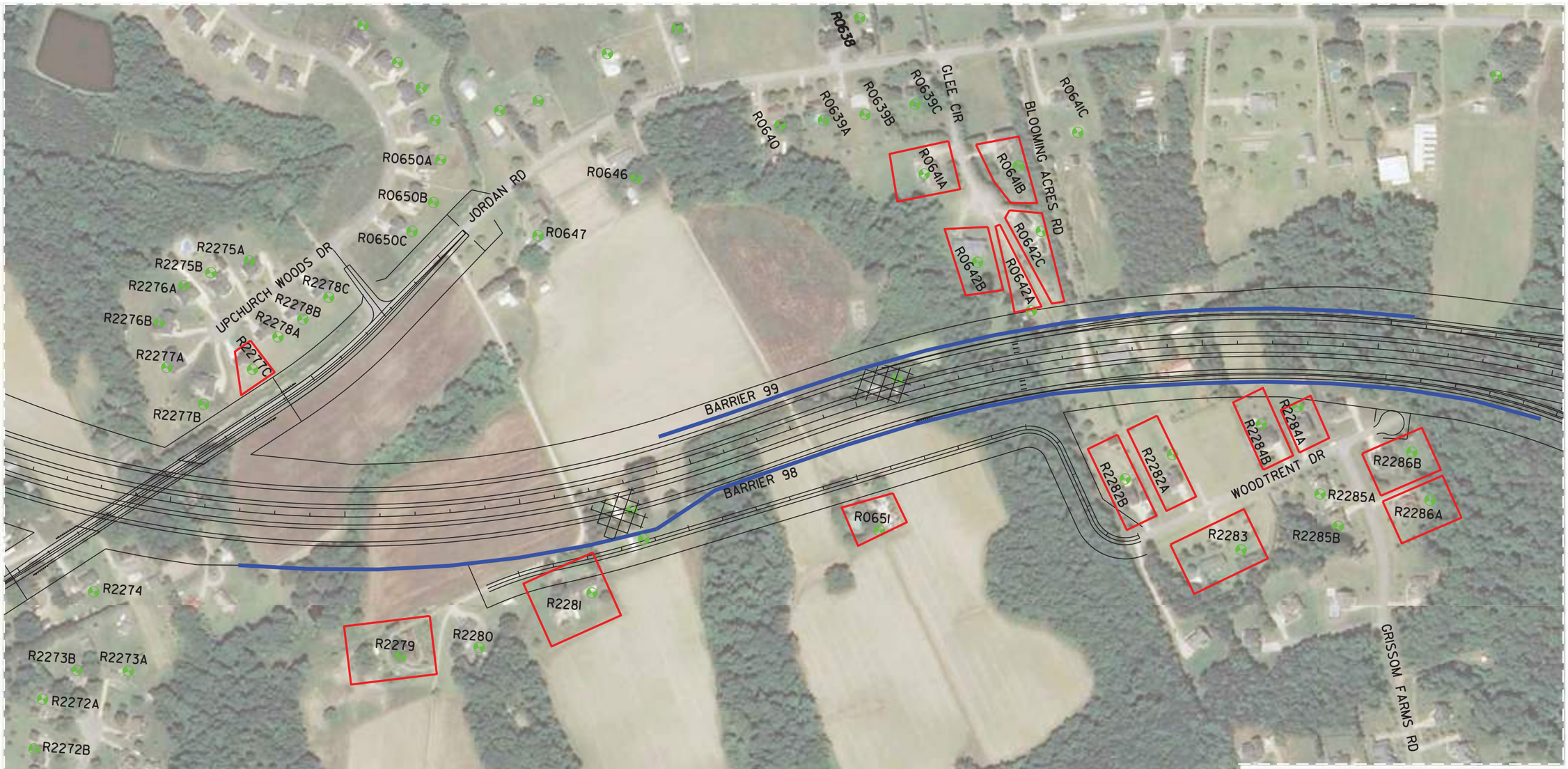
Triangle Expressway
Southeast Extension
BLUE CORRIDOR
T.I.P. NO. R-2721 & R-2828 & R-2829

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=NOISE BARRIER
=BENEFITED PROPERTY

BARRIER LOCATIONS
EXHIBIT 13.66



Triangle Expressway
Southeast Extension
BLUE CORRIDOR
T.I.P. NO. R-2721 & R-2828 & R-2829

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=NOISE BARRIER
=BENEFITED PROPERTY

BARRIER LOCATIONS
EXHIBIT 13.68



Triangle Expressway
Southeast Extension
BROWN CORRIDOR
T.I.P. NO. R-2721 & R-2828 & R-2829

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=NOISE BARRIER
=BENEFITED PROPERTY

BARRIER LOCATIONS
EXHIBIT 13.69



Triangle Expressway
Southeast Extension
TAN CORRIDOR
T.I.P. NO. R-2721 & R-2828 & R-2829

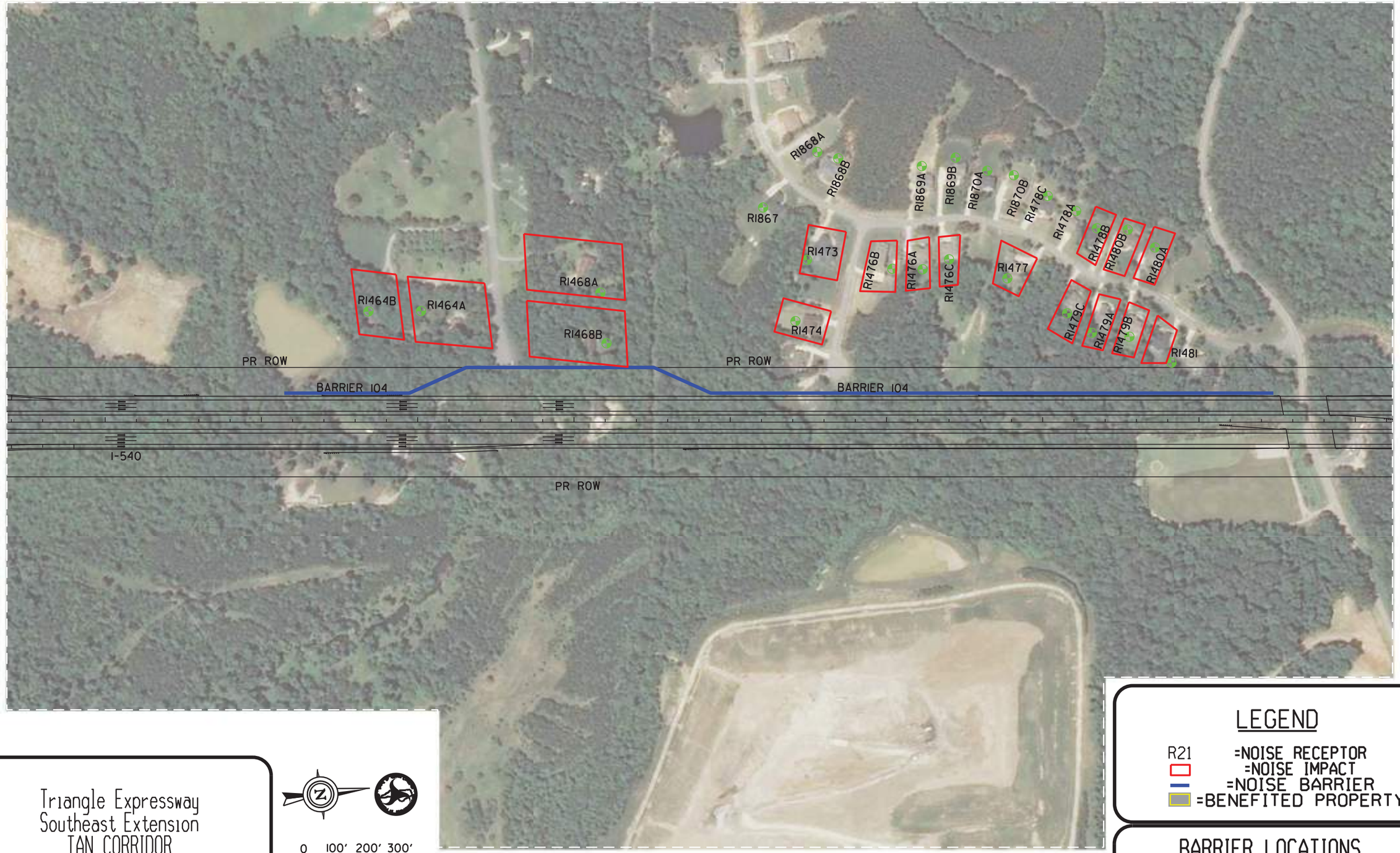
N

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=NOISE BARRIER
=BENEFITED PROPERTY

BARRIER LOCATIONS
EXHIBIT 13.70



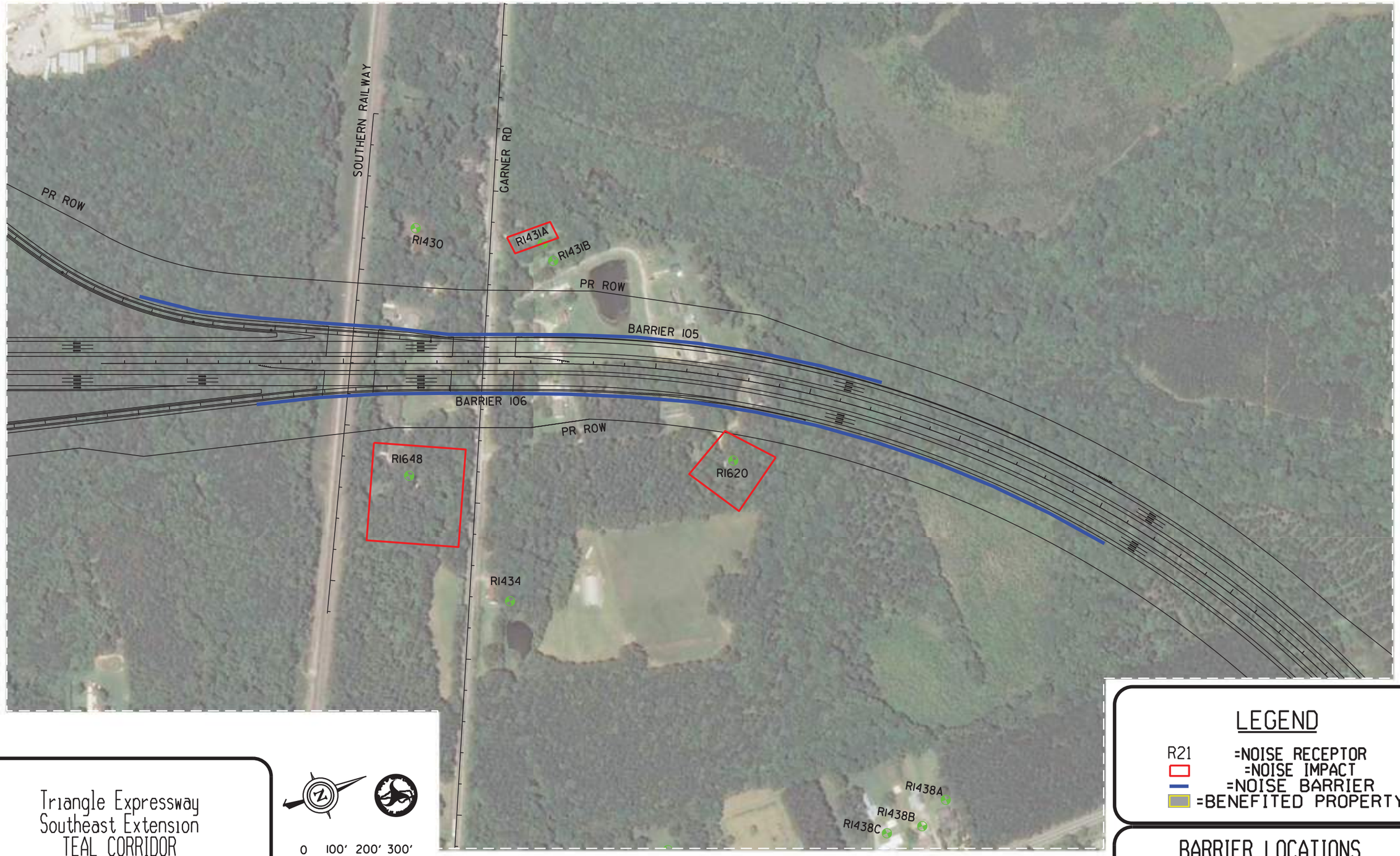
Triangle Expressway
Southeast Extension
TAN CORRIDOR
T.I.P. NO. R-2721 & R-2828 & R-2829

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=NOISE BARRIER
=BENEFITED PROPERTY

BARRIER LOCATIONS
EXHIBIT 13.71



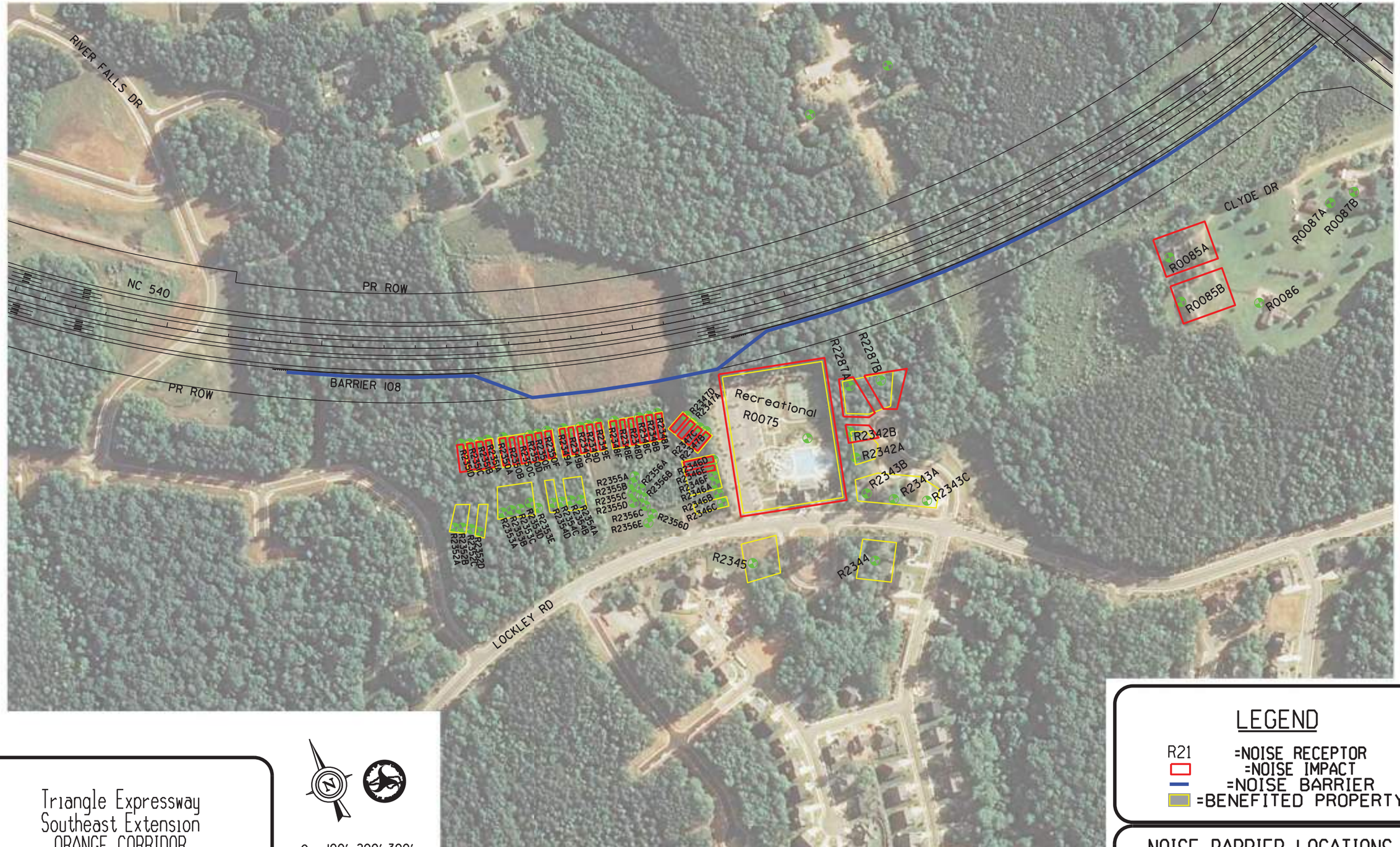
Triangle Expressway
Southeast Extension
TEAL CORRIDOR
T.I.P. NO. R-2721 & R-2828 & R-2829

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=NOISE BARRIER
=BENEFITED PROPERTY

BARRIER LOCATIONS
EXHIBIT 13.72



Triangle Expressway
Southeast Extension
ORANGE CORRIDOR
T.I.P. NO. R-2721 & R-2828 & R-2829

0 100' 200' 300'

LEGEND

R21 =NOISE RECEPTOR
=NOISE IMPACT
=NOISE BARRIER
=BENEFITED PROPERTY

NOISE BARRIER LOCATIONS
EXHIBIT 13.73

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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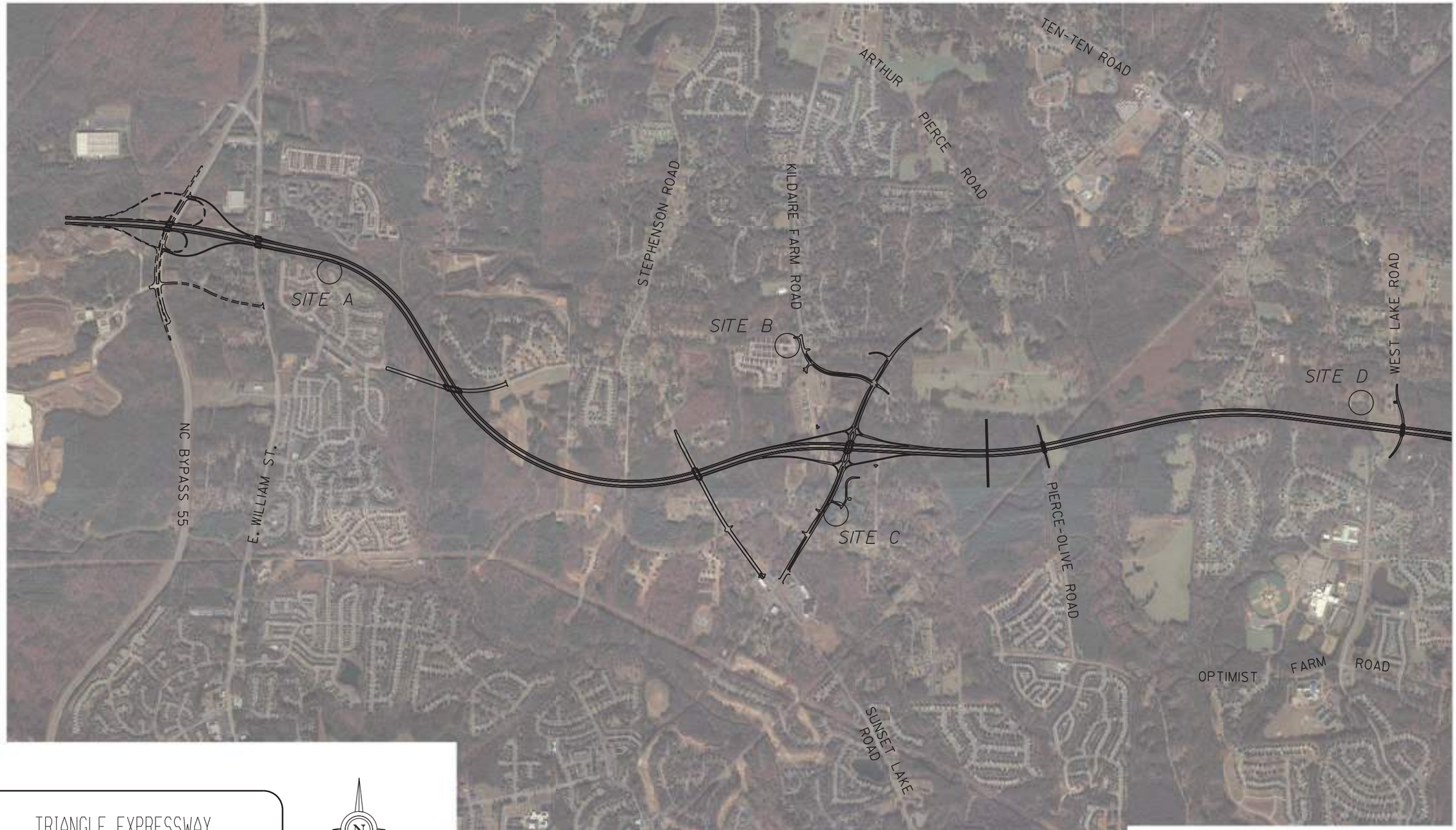
TRIANGLE EXPRESSWAY
SOUTHEAST EXTENSION

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

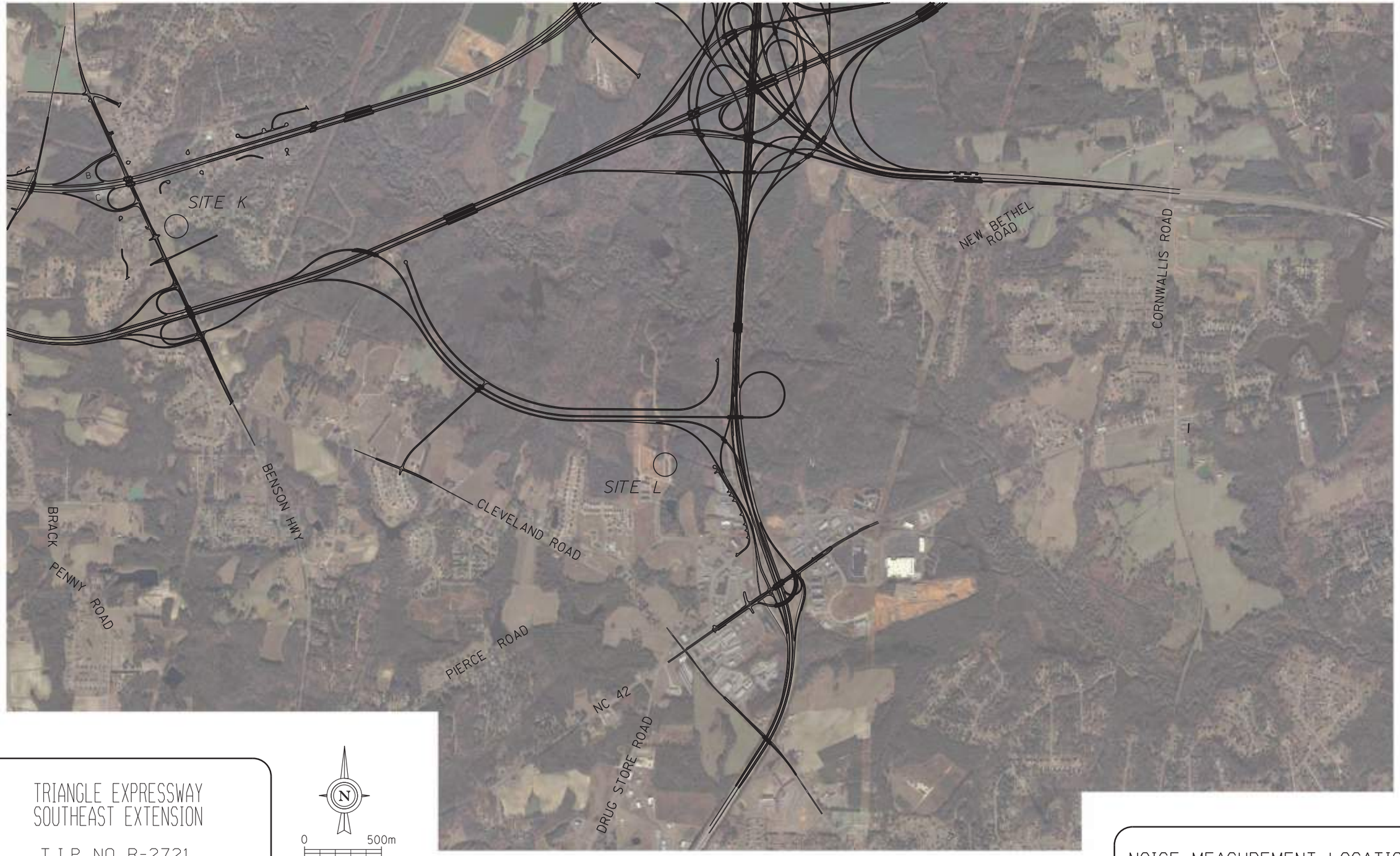
T.I.P. NO. R-2721,
R-2828, R-2829

N

0 500m

0 1000′ 2000′

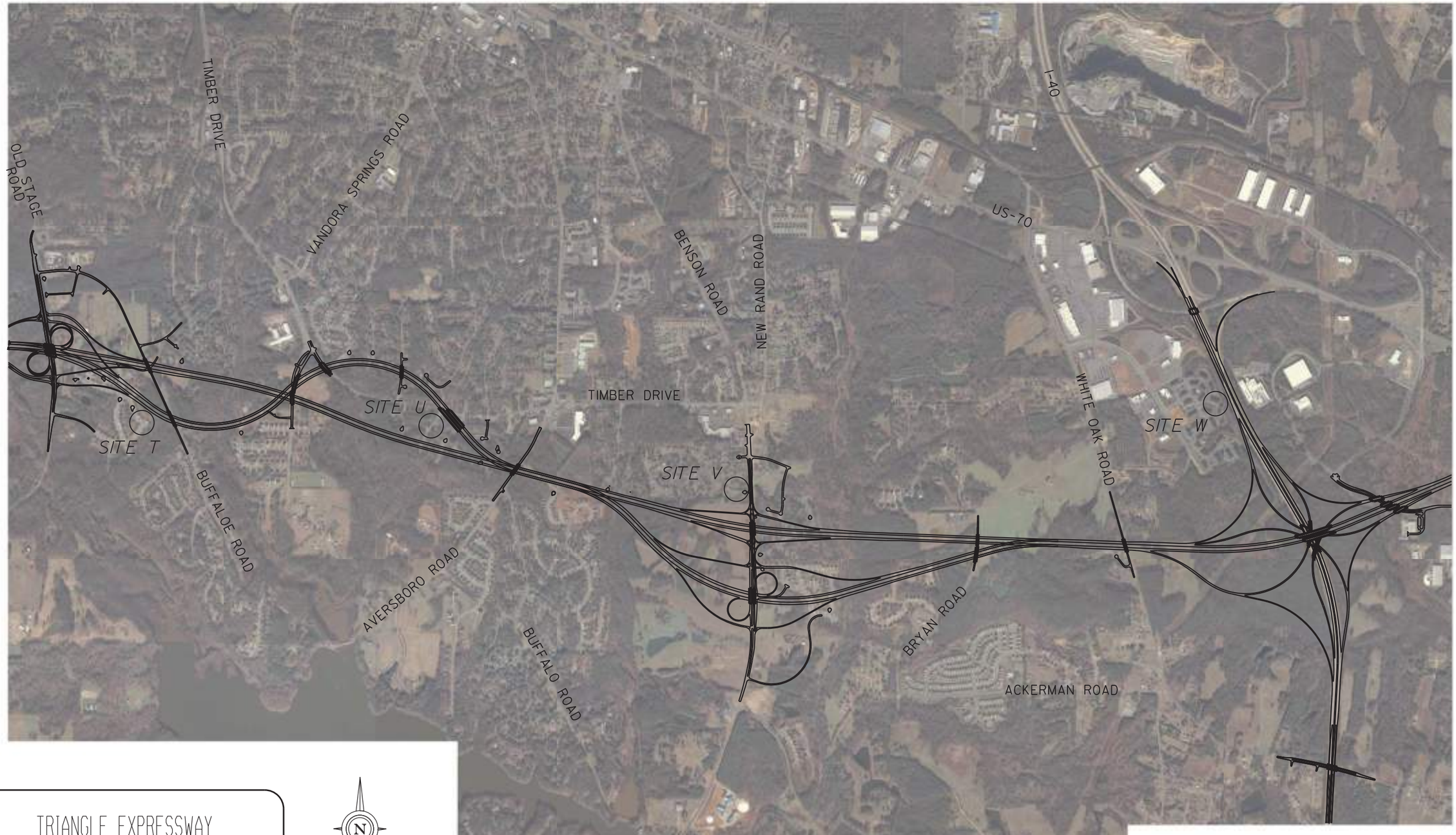
NOISE MEASUREMENT LOCATIONS



TRIANGLE EXPRESSWAY
SOUTHEAST EXTENSION

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

NOISE MEASUREMENT LOCATIONS



TRIANGLE EXPRESSWAY
SOUTHEAST EXTENSION

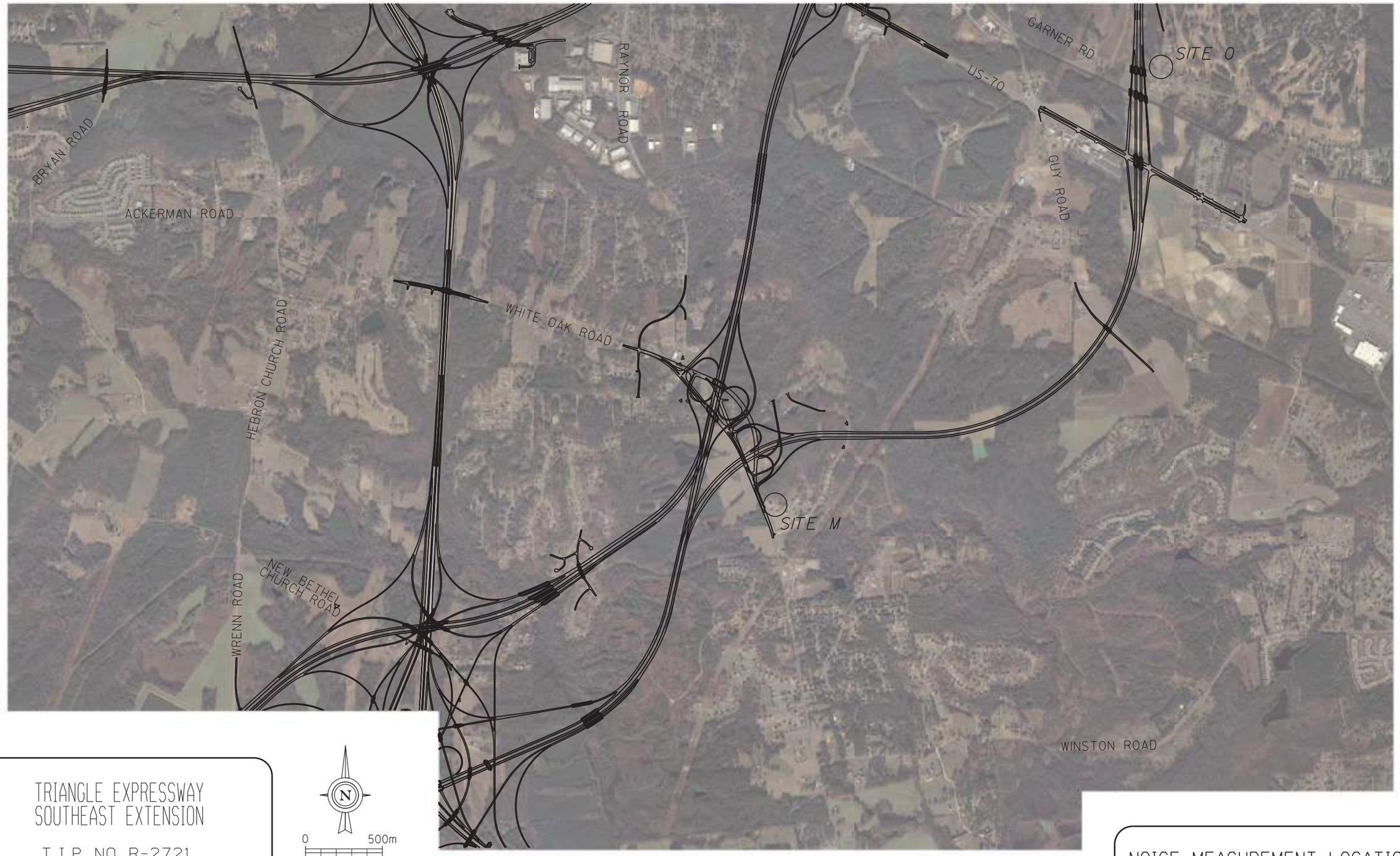
T.I.P. NO. R-2721,
R-2828, R-2829

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

NOISE MEASUREMENT LOCATIONS

H.W. LOCHNER, INC.

NOISE MEASUREMENT DATA SHEET

SITE NUMBER: 1 PROJECT: Tri-Ex
SITE DESCRIPTION: _____ DATE: 9/10/13
START TIME: 5:25
EVENT NUMBER: _____ END TIME: 5:45
TECHNICIAN: Shannon / Schutte / Bollman 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.

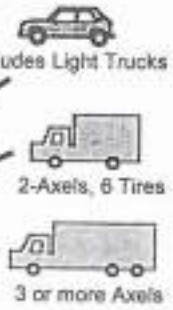
NOISE MEASUREMENT DATA SHEET

SITE NUMBER: B
SITE DESCRIPTION: _____
_____
EVENT NUMBER: _____
TECHNICIAN: Shannon/Schulte/Ballman
CALIBRATION: START _____ DB
WEATHER DATA: SKY CONDITION Clear
WIND: START 0 MPH
EQUIPMENT: METER 9:10.2 12:11.6 14:11.8
RESPONSE: FAST _____ SLOW _____
RESULTS: Leq 9:38.5 12:51.6 14:60.5 Lmax _____

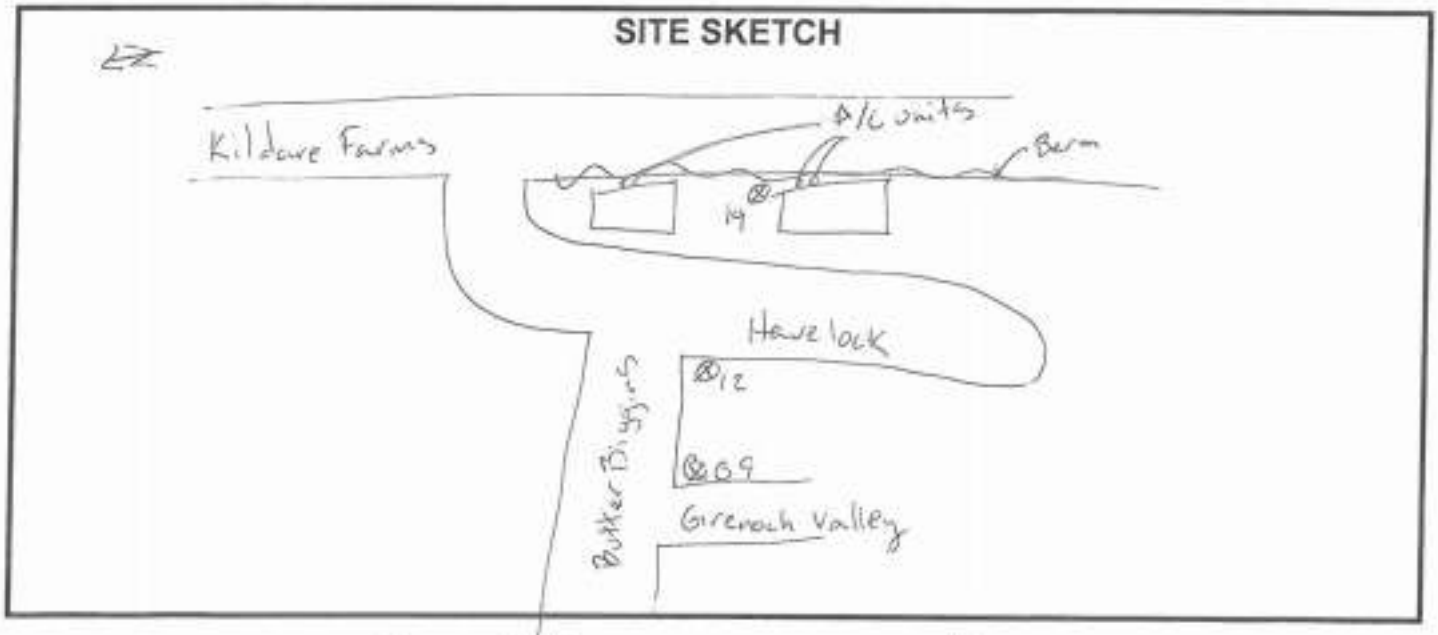
PROJECT: Tri-Ex
DATE: 9/16/13
START TIME: 4:49
END TIME: 5:09
DURATION: 20±
END _____ DB
TEMP 90+
END 0 MPH
DIRECTION _____
CALIBRATOR _____
BATTERY CHECK _____

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'

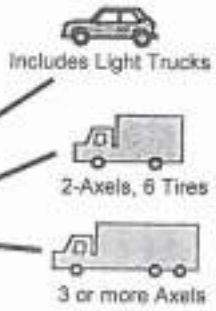
NOISE MEASUREMENT
LOCATION B

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

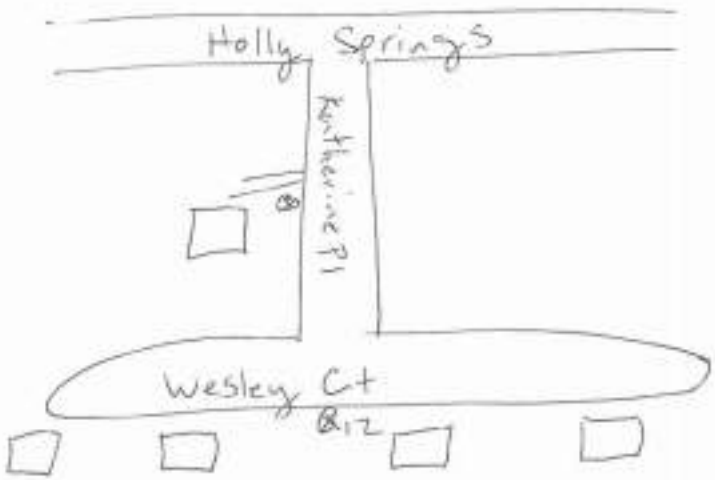
SITE NUMBER: C **PROJECT:** Tri-Ex
SITE DESCRIPTION: _____ **DATE:** 9/10/13
START TIME: 4:16
EVENT NUMBER: _____ **END TIME:** 4:36
TECHNICIAN: Sherman / Schutz / Bullman **DURATION:** 20'
CALIBRATION: START 123/116.6 14:111.5 DB END _____ DB
WEATHER DATA: SKY CONDITION Clear TEMP 90+
WIND: START 0 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



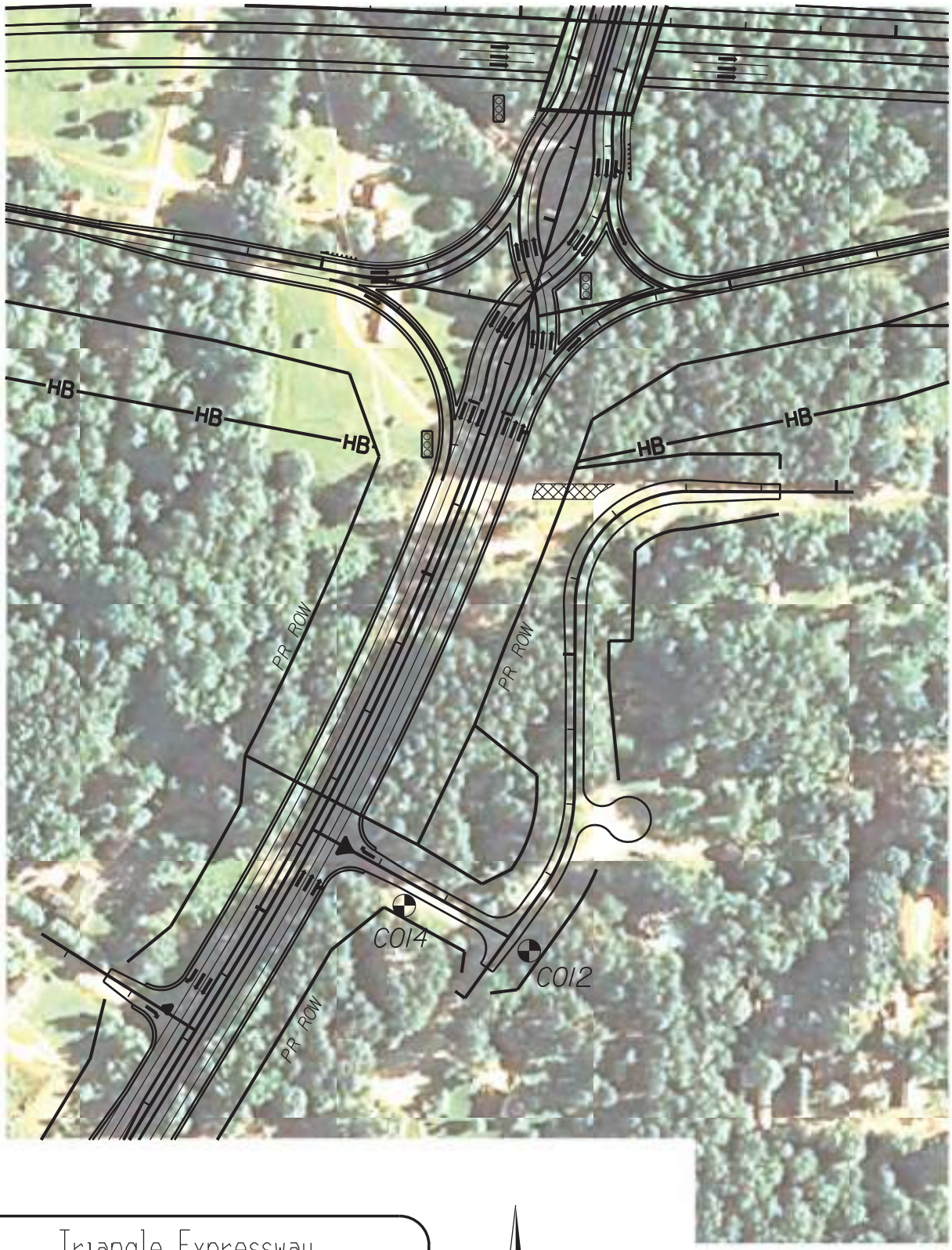
Site C – Far Meter



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:** TRI-Ex

SITE DESCRIPTION: _____ **DATE:** 9/10/17

START TIME: 3:36

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

TECHNICIAN: Stevenson / Schultz / Bollmann **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: 1166 14: 113.0 9: 401.1 CALIBRATOR _____

RESPONSE: FAST _____ SLOW _____ BATTERY CHECK _____

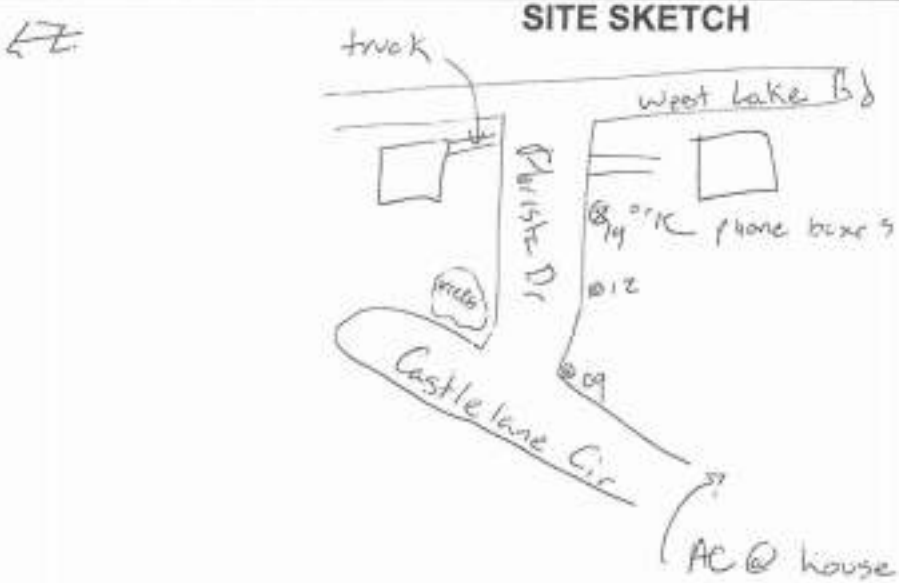
RESULTS: Leq 12: 48.5 9: 52.3 14: 56.5 Lmax _____

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 007

OTHER NOTES: A/C near 007

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=**	**45**	**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



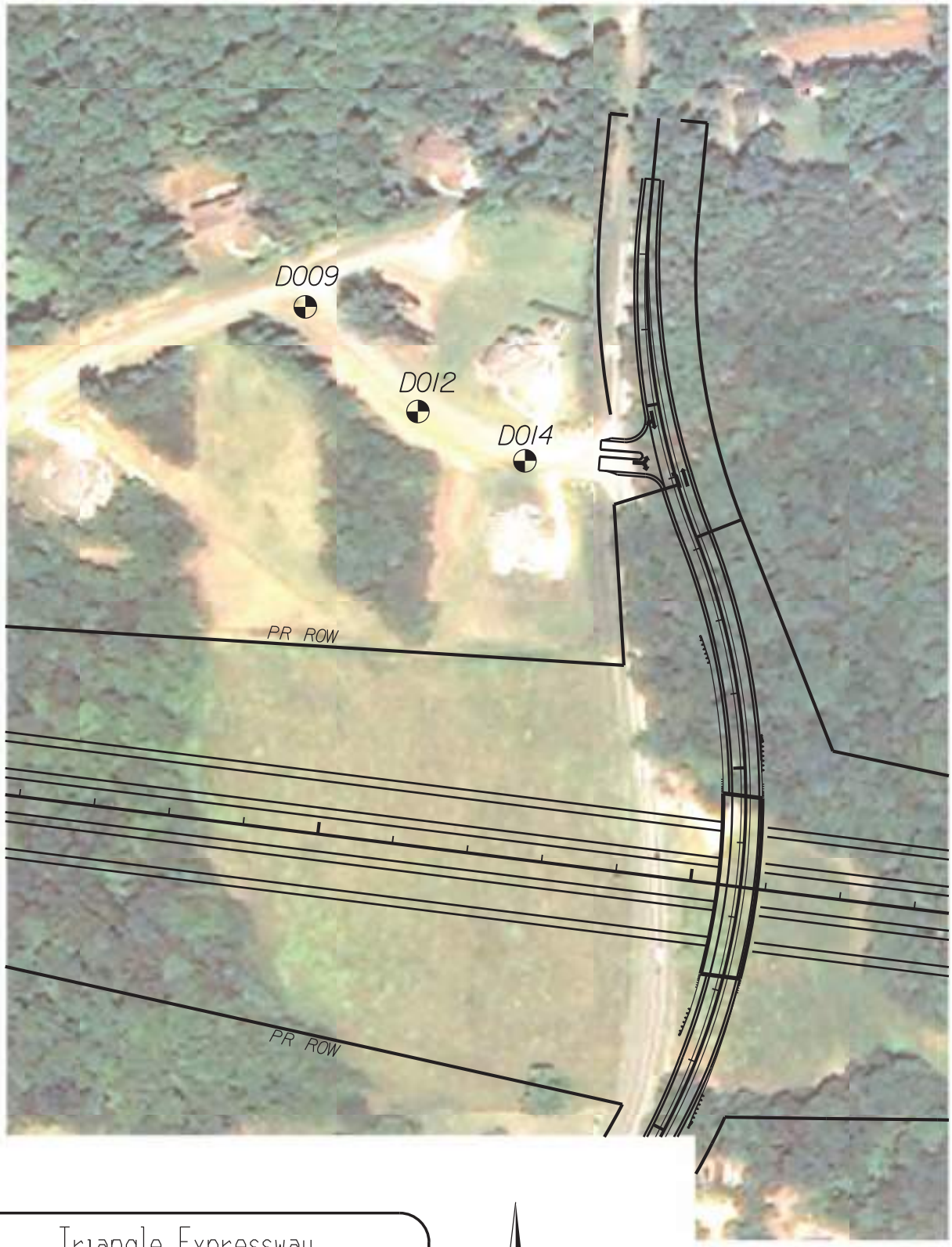
Site D – Middle Meter



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.

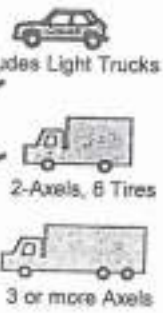
NOISE MEASUREMENT DATA SHEET

SITE NUMBER: E
SITE DESCRIPTION: _____
_____
EVENT NUMBER: _____
TECHNICIAN: SHANNON / SALUTZ
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 _____

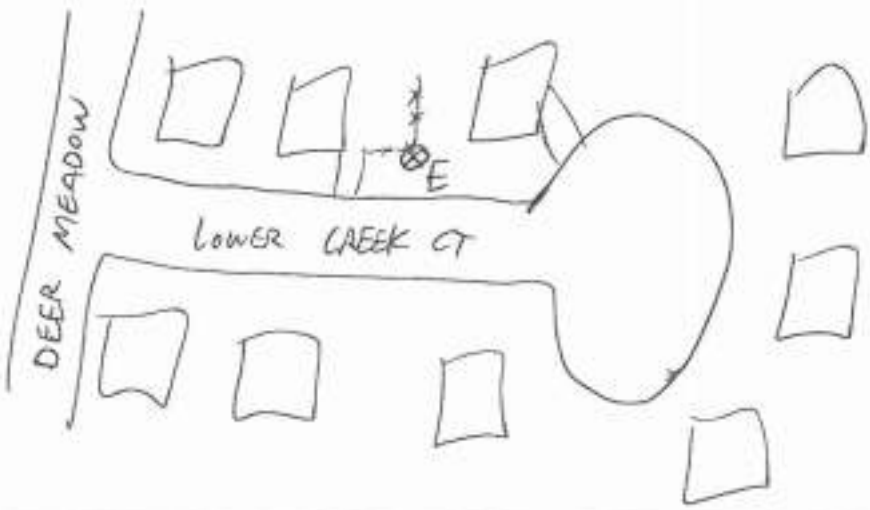
PROJECT: TRI-EX
DATE: 9/10/13
START TIME: 7:15 AM
END TIME: 8:00 PM
DURATION: _____

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

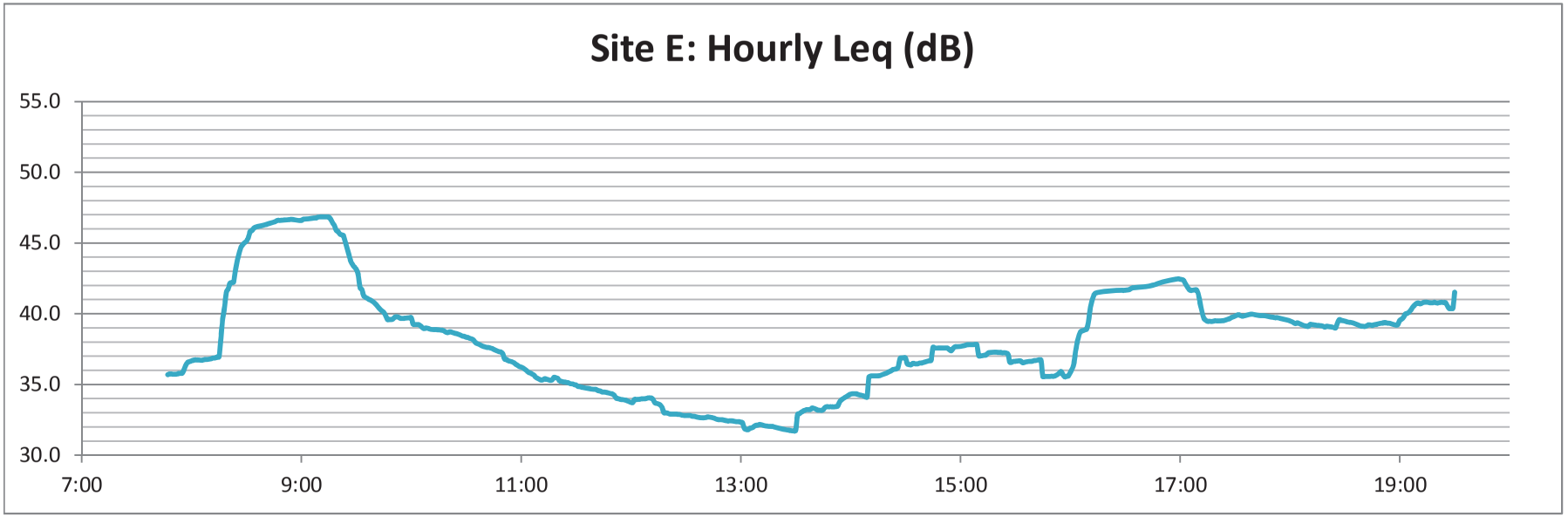
Triangle Expressway Southeast Extension

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:** In-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 12:114.5 9:101.2 14:118.5 DB END 12:114.7 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 _____

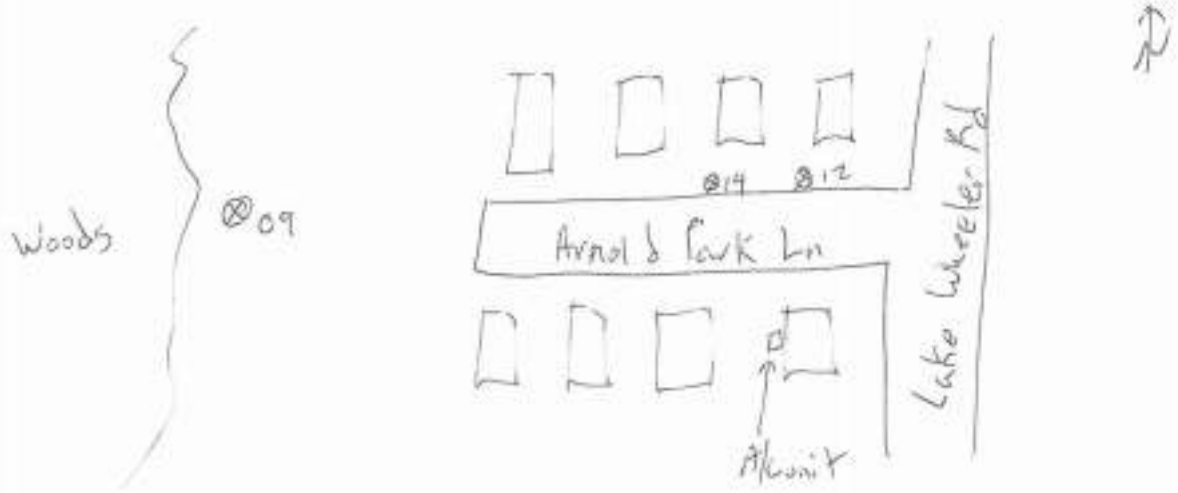
RESULTS: Leq 12:100.6a 9: 14:57.1 Lmax _____

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**



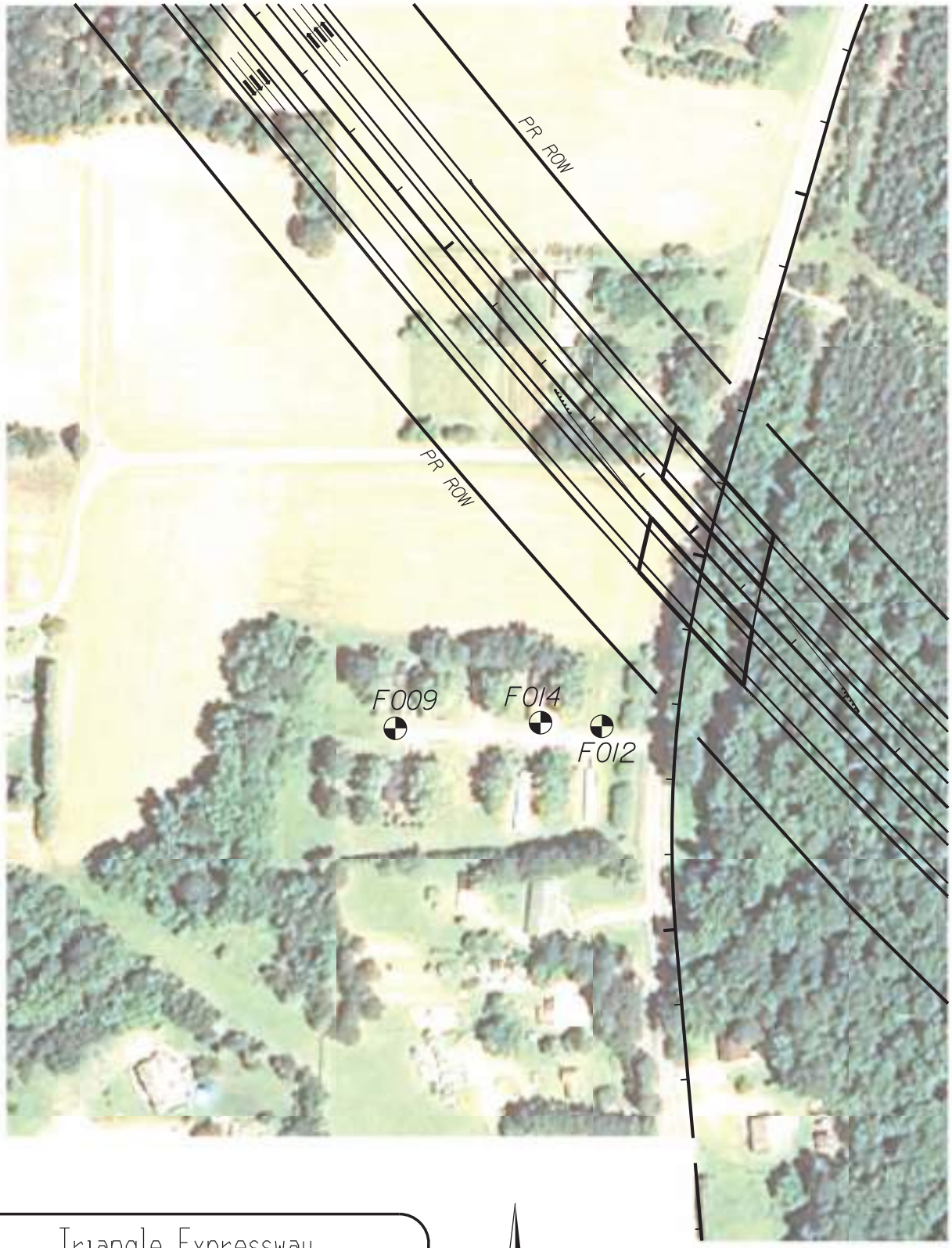
Site F – Far meter



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 E-SE

EQUIPMENT: METER _____ CALIBRATOR _____

RESPONSE: FAST _____ SLOW _____ BATTERY CHECK _____

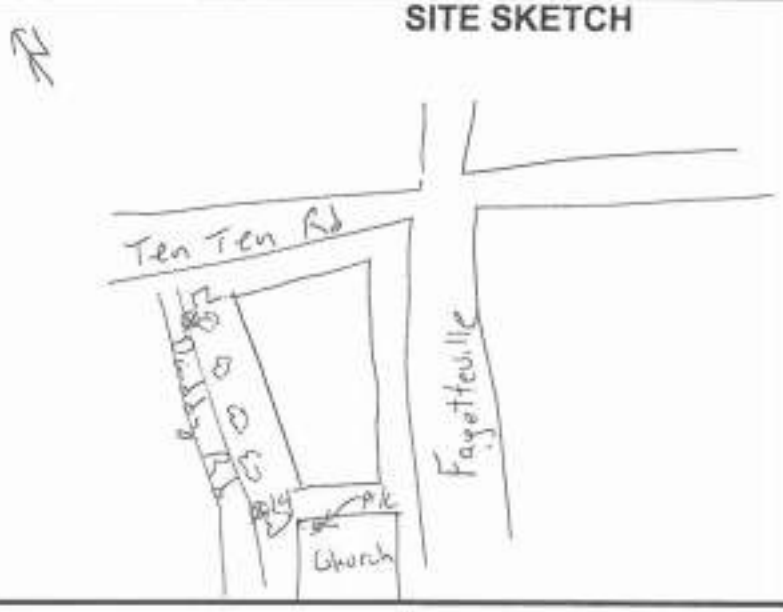
RESULTS: Leq 12:58.9 14:55.4 Lmax _____

TRAFFIC DATA

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



SITE SKETCH



MAJOR SOURCES: Traffic on Ten-Ten, A/C unit on church

BACKGROUND NOISE: Traffic on Fayetteville Rd

UNUSUAL EVENTS: Car on Paddy @ 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



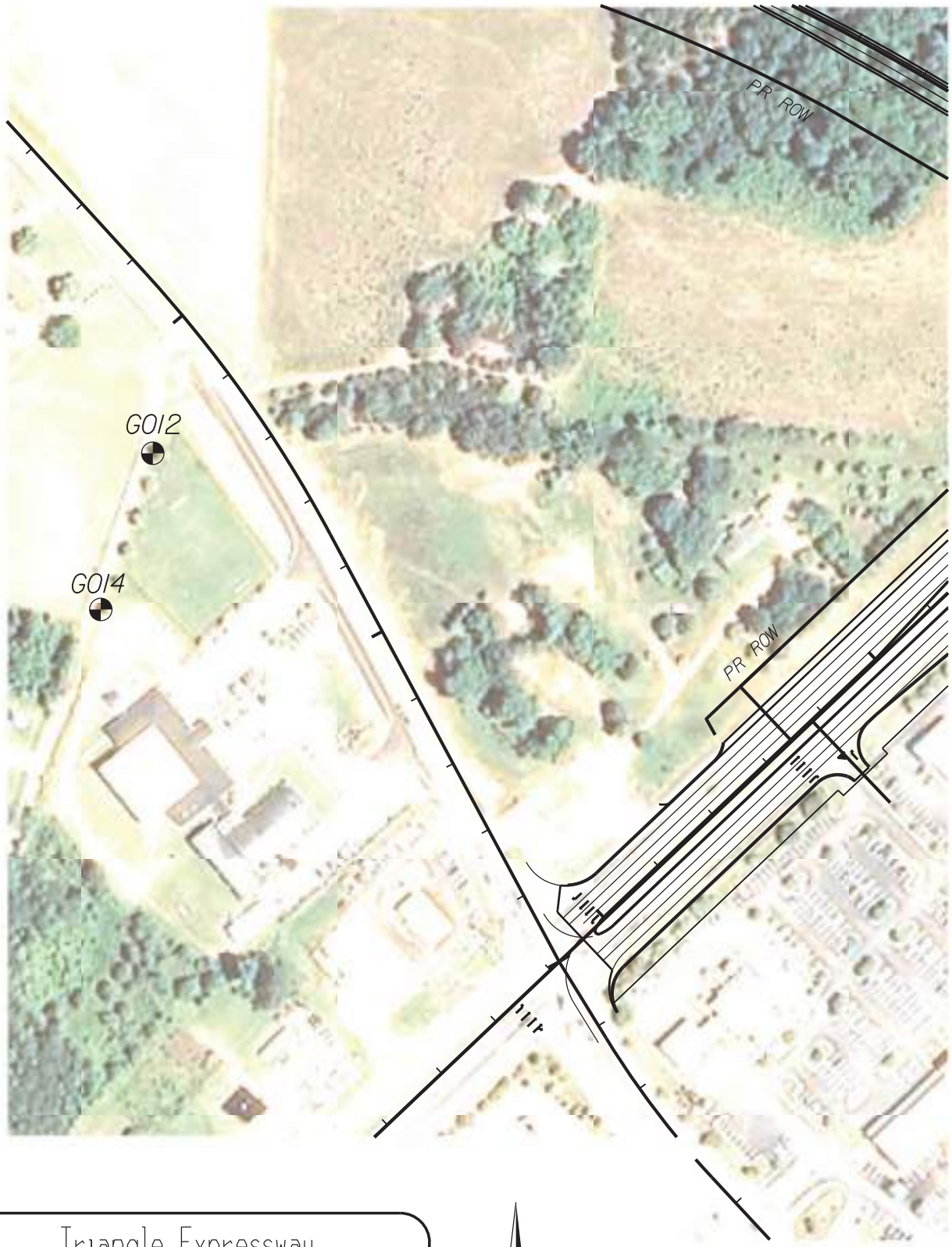
Site G – Close Meter



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: Sherman/Saliba/Bollman **DURATION:** 22 min

CALIBRATION: START 14:118.7 12:116.5 9:10.1 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 _____

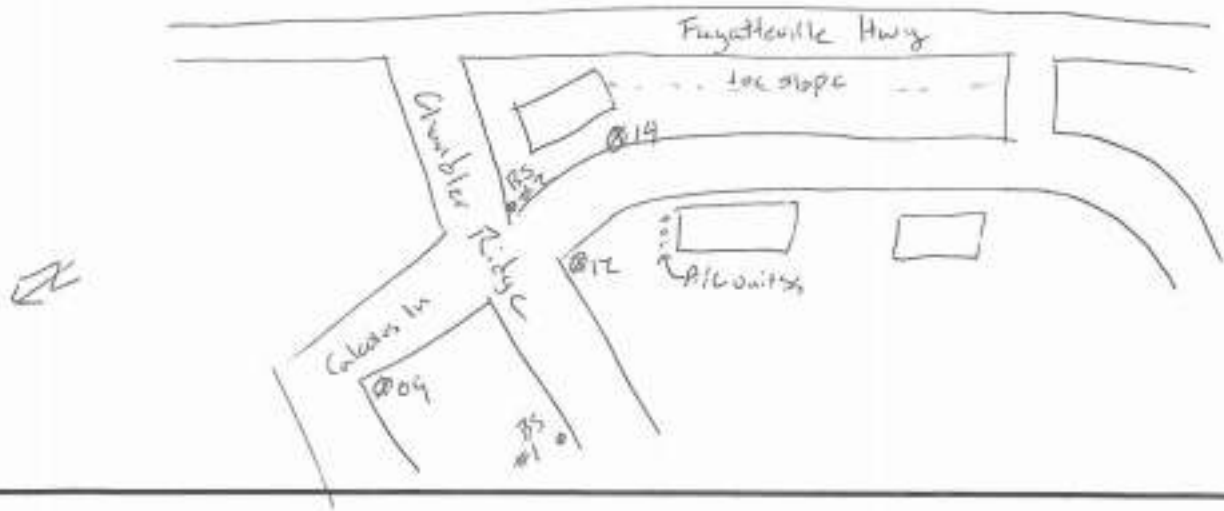
RESULTS: Leq 14:61.8 9:39.7 12:63.7 Lmax _____

TRAFFIC DATA

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



SITE SKETCH



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 @ 2:41 & @ 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



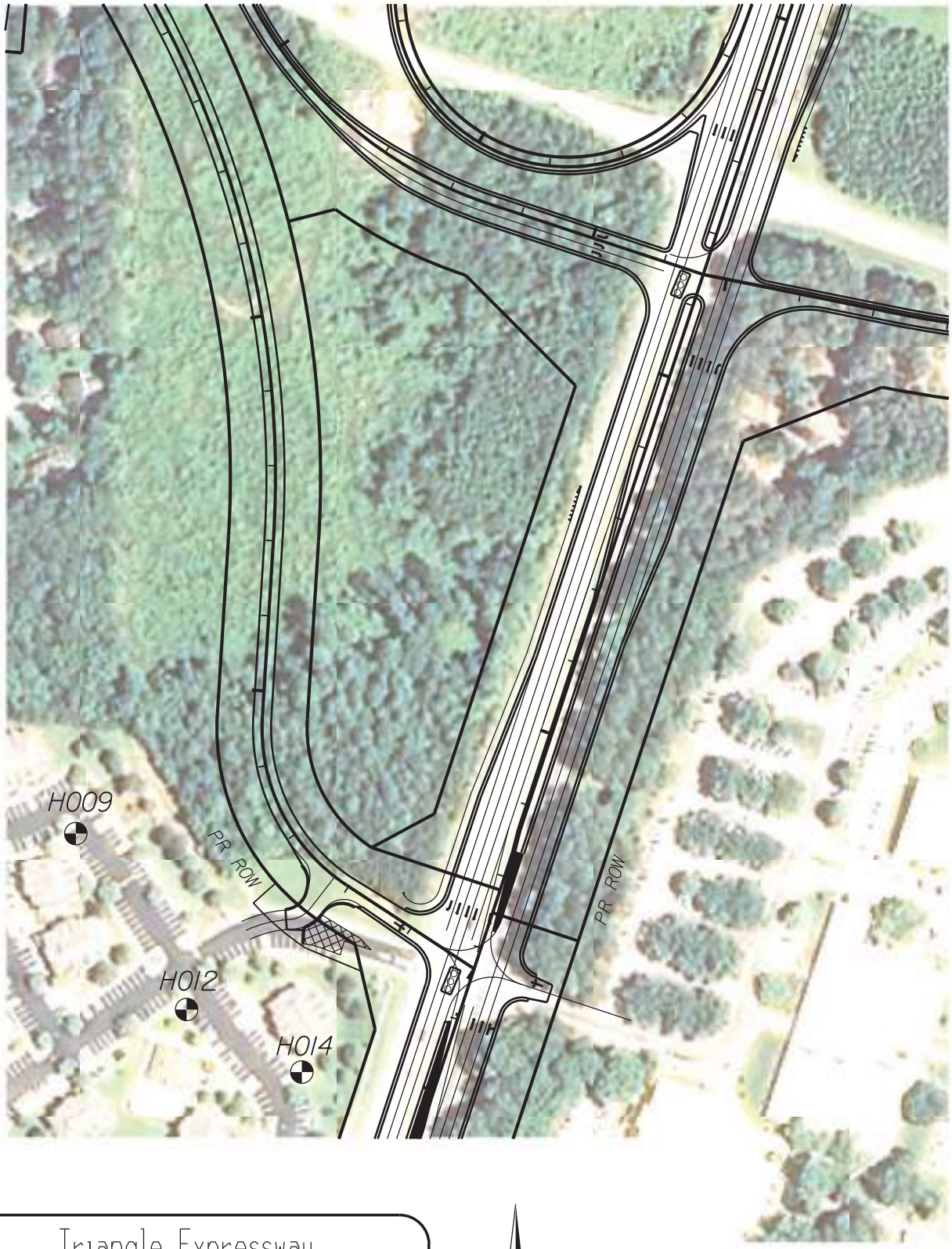
Site H – Far Meter



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/Schultz/Bollman **DURATION:** 20

CALIBRATION: START 94.8 DB END _____ DB

WEATHER DATA: SKY CONDITION _____ TEMP _____

WIND: START Ø MPH END Ø MPH DIRECTION Breeze < 5mph

EQUIPMENT: METER _____ CALIBRATOR _____

RESPONSE: FAST _____ SLOW _____ BATTERY CHECK _____

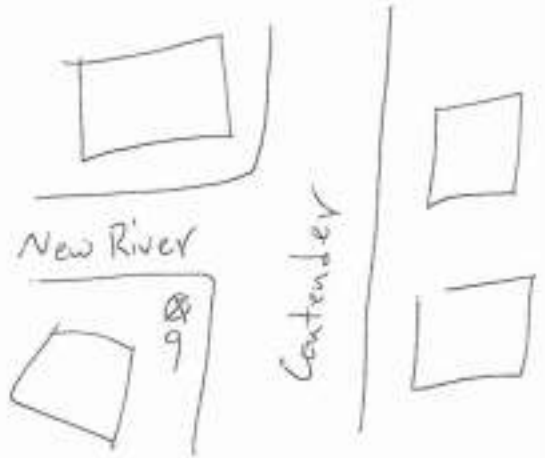
RESULTS: Leq 95.5 Lmax _____

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=	**39**
Adjustment =	**4**
Adjusted Loudest Hour =	**43**

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

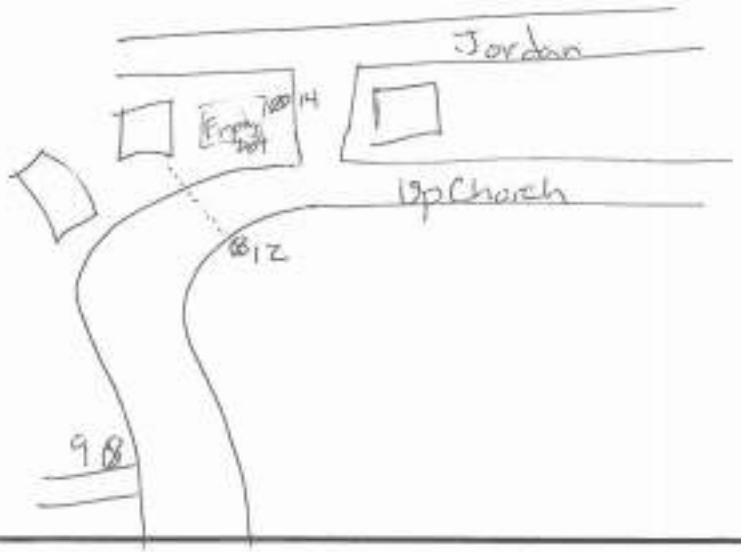
SITE NUMBER: J
PROJECT: To-Ex
SITE DESCRIPTION:
DATE: 9/11/13
START TIME: 11:10
EVENT NUMBER:
END TIME: 11:30
TECHNICIAN: Shannon/Schultz/Ballman
DURATION:
CALIBRATION: START 9:114 12:114.2 14:1136 DB END DB
WEATHER DATA: SKY CONDITION Clear TEMP 85
WIND: START ø MPH END ø MPH DIRECTION breezy
EQUIPMENT: 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



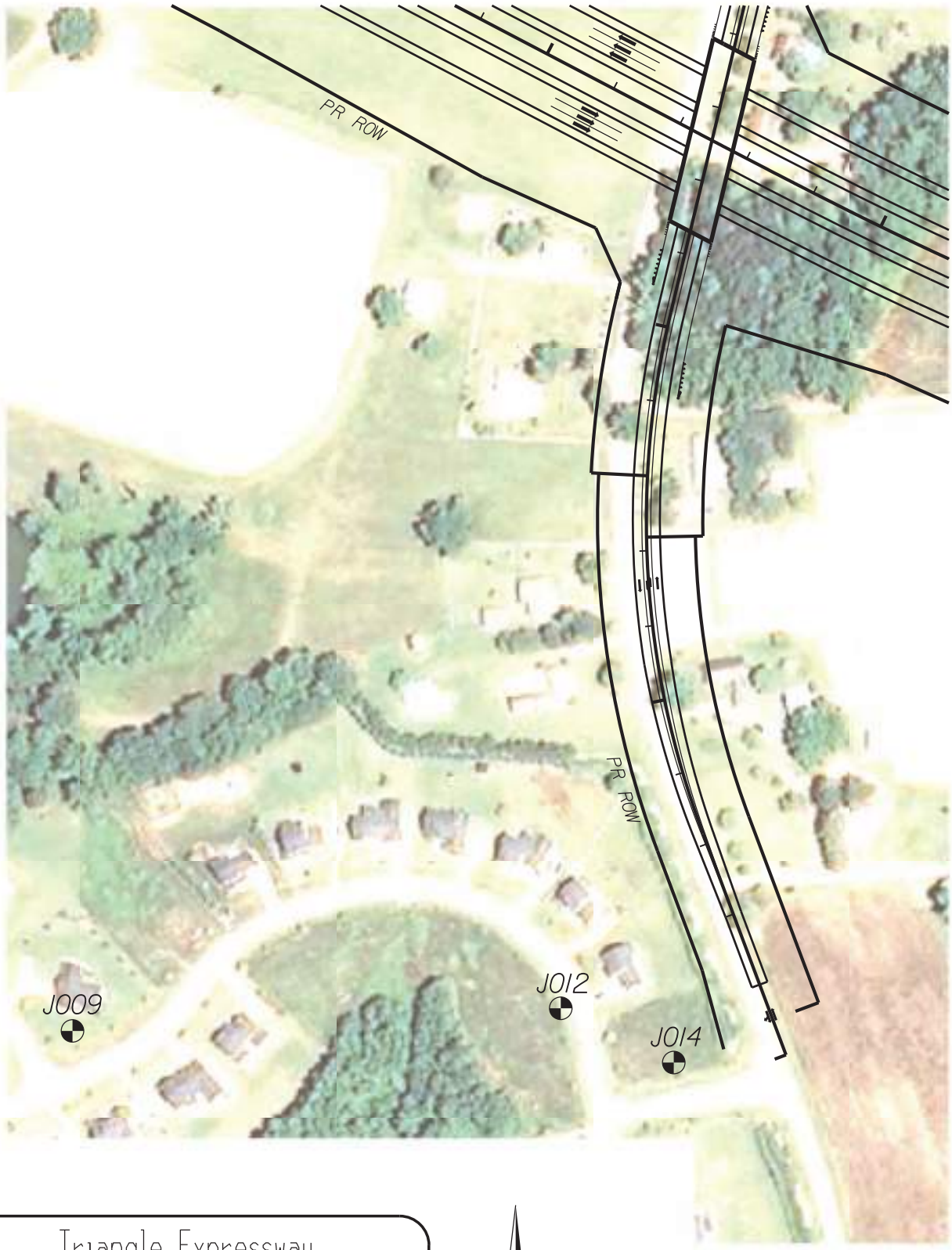
Site J – Close Meter



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-Eye

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

START TIME: 10:23

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

TECHNICIAN: Shannon/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

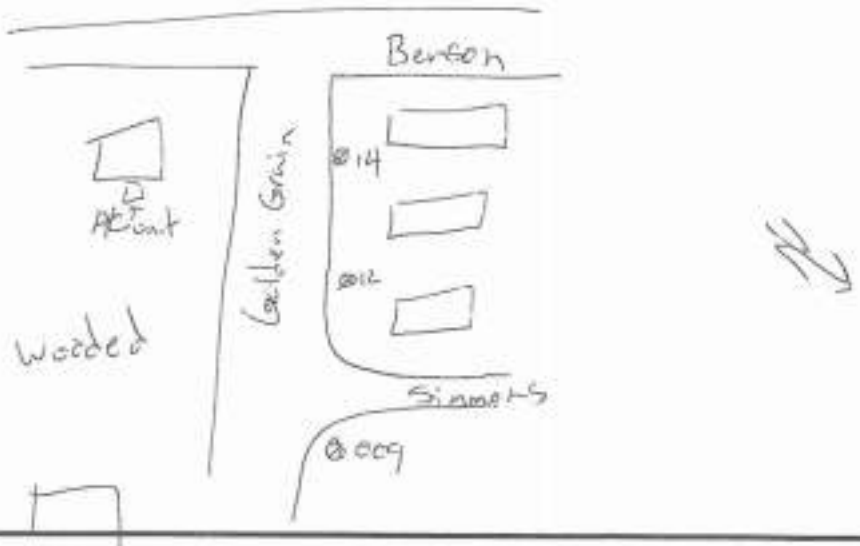
RESULTS: Leq 9:57.7 12:56.5 14:47.7 Lmax

TRAFFIC DATA

ROAD						
	N	S	E	W		
TRAFFIC SPEED						
AUTOMOBILES	116	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
Adjustment = 4
Adjusted Loudest Hour = 50

Avg Leq= 38
Loudest Hour at Site T = 42
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



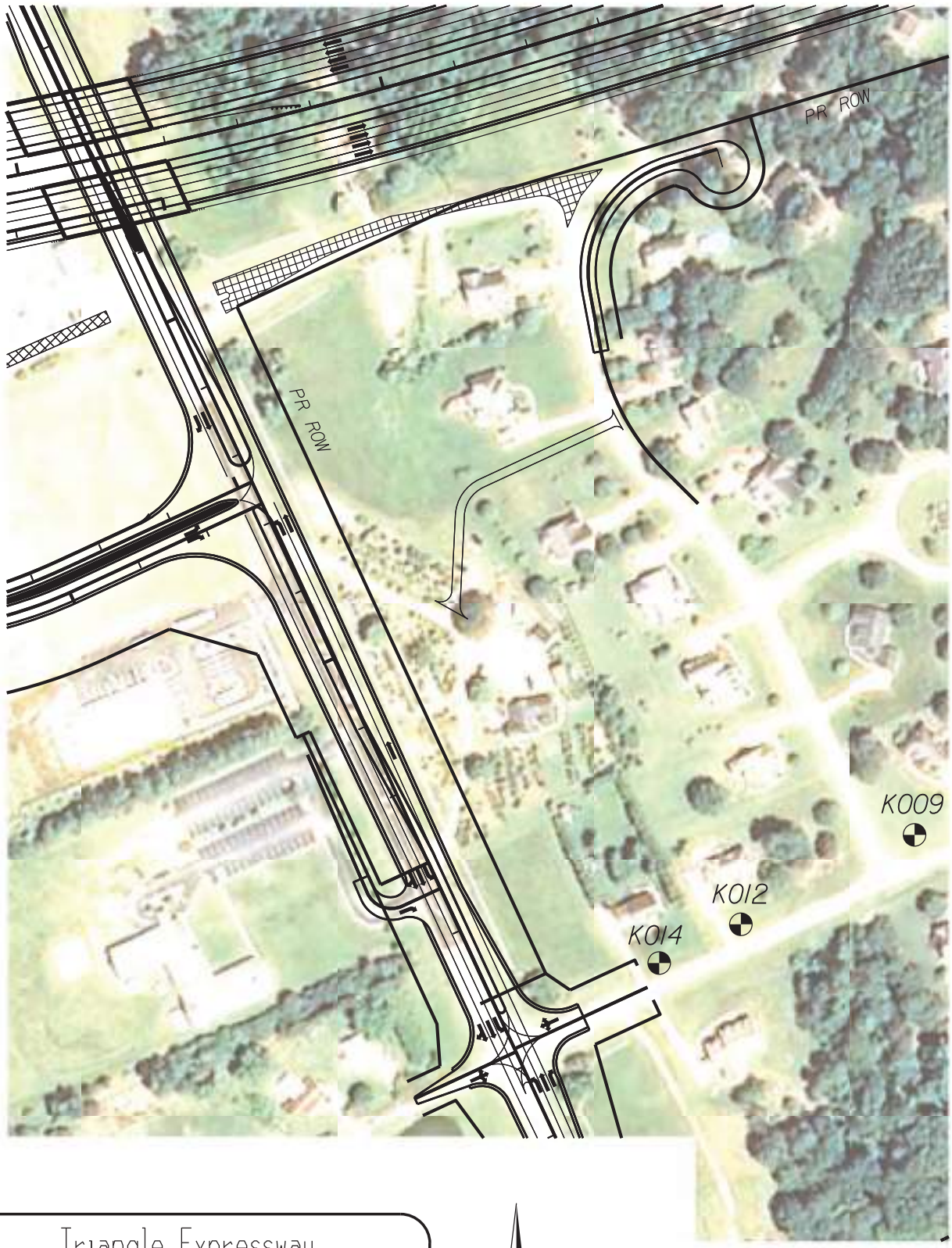
Site K – Far Meter



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'

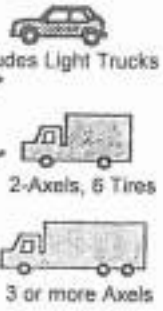
NOISE MEASUREMENT
LOCATION K

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 062 CALIBRATOR
RESPONSE: FAST SLOW BATTERY CHECK
RESULTS: Leq 12: 49.4 Lmax

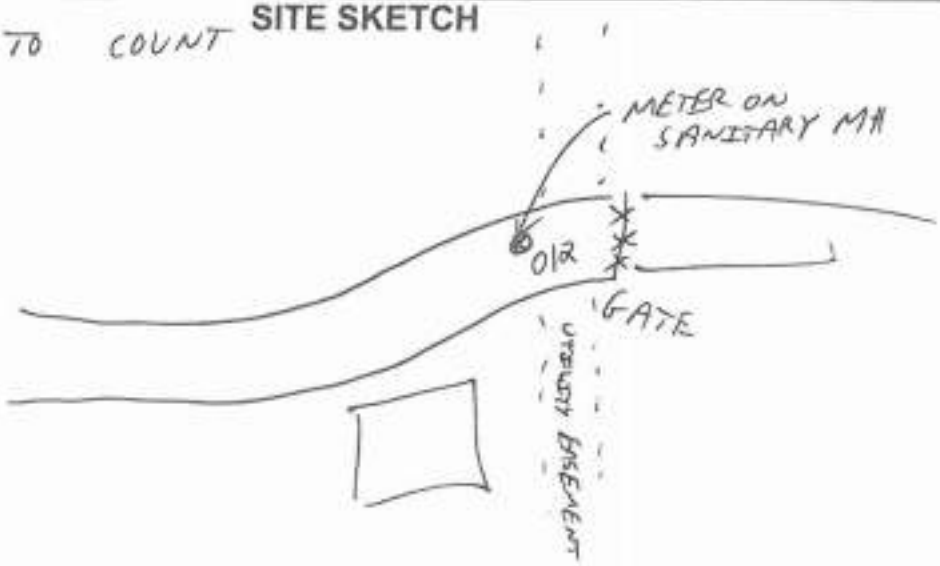
TRAFFIC DATA

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, 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'

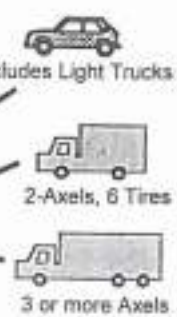
NOISE MEASUREMENT
LOCATION L

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

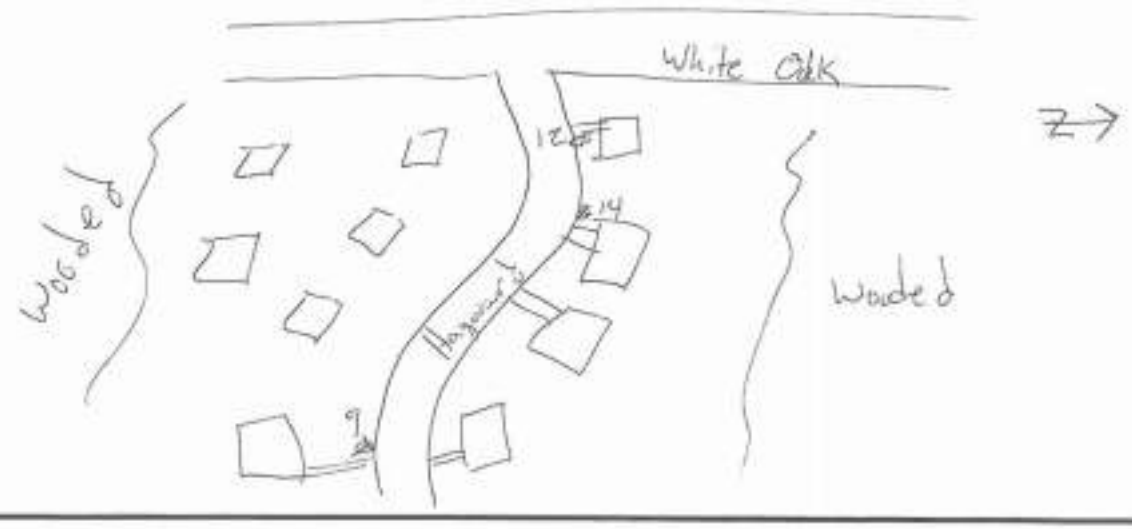
SITE NUMBER: M
PROJECT: Tri-Ex
SITE DESCRIPTION:
DATE: 9/12/13
START TIME: 3:03
EVENT NUMBER:
END TIME: 3:23
TECHNICIAN: Shannon/Salutz/Bollman
DURATION: 20
CALIBRATION: START 9:113.9 12:113.9 14:113.8 DB END _____ DB
WEATHER DATA: SKY CONDITION clear TEMP 96
WIND: START ø MPH END ø MPH DIRECTION Breeze from west
EQUIPMENT: METER _____ CALIBRATOR _____
RESPONSE: FAST _____ SLOW _____ BATTERY CHECK _____
RESULTS: Leq 9:46.0 12:52.3 14:07.2 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**	**Avg Leq=**	**38**
				Adjustment =	**4**	**Loudest Hour at Site T =**	**42**
				Adjusted Loudest Hour =	**49**	**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
SITE DESCRIPTION:
PROJECT: Tri-Ex
DATE: 9/12/13
START TIME: 1:18
END TIME: 1:38
EVENT NUMBER:
TECHNICIAN: Shannon/Saluta/
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 009
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



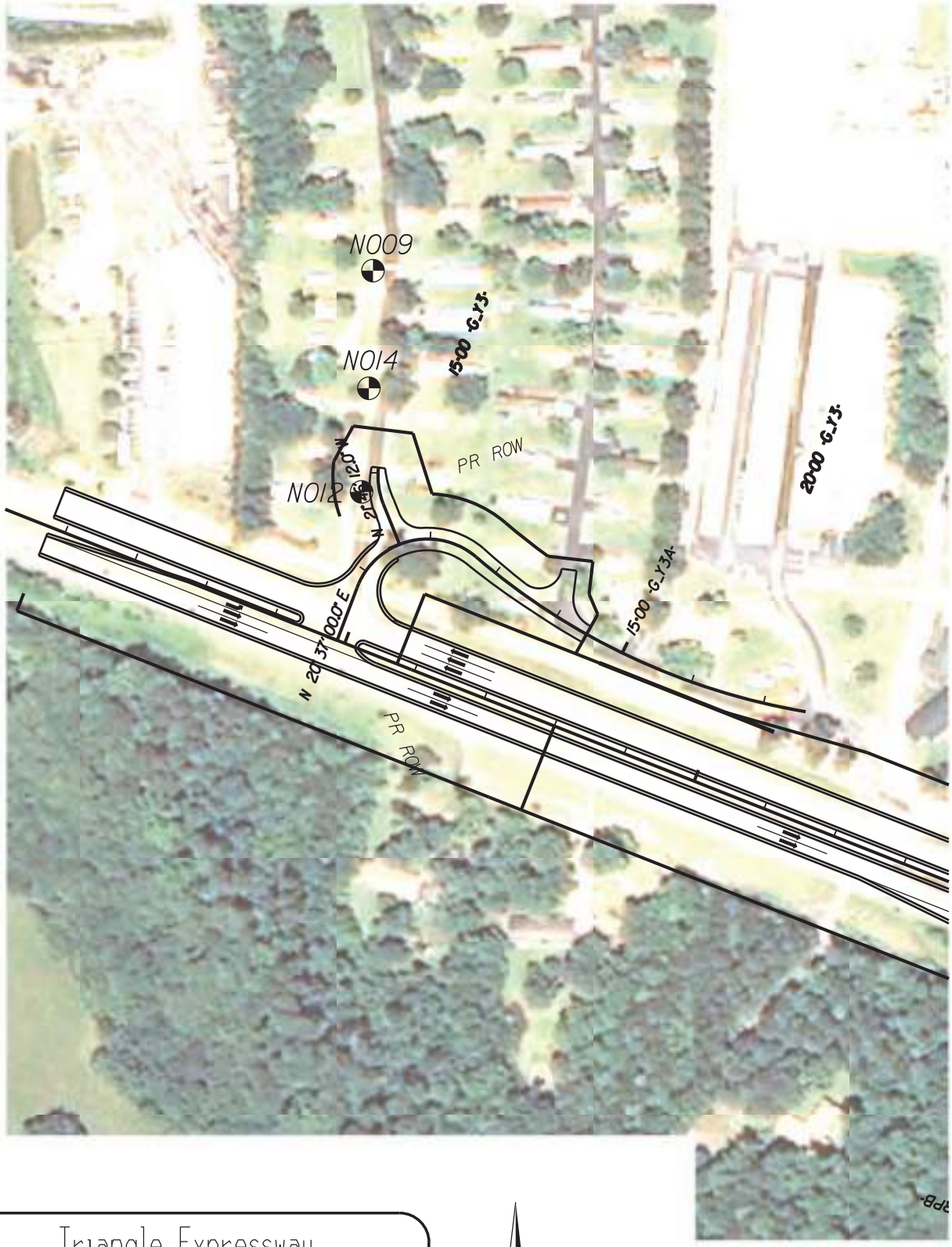
Site N – Middle Meter



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

N

0 100' 200'

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/Salute/Bollman **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 _____

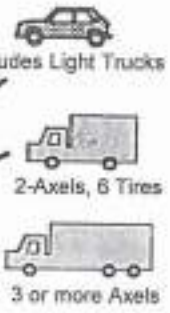
EQUIPMENT: METER _____ CALIBRATOR _____

RESPONSE: FAST _____ SLOW _____ BATTERY CHECK _____

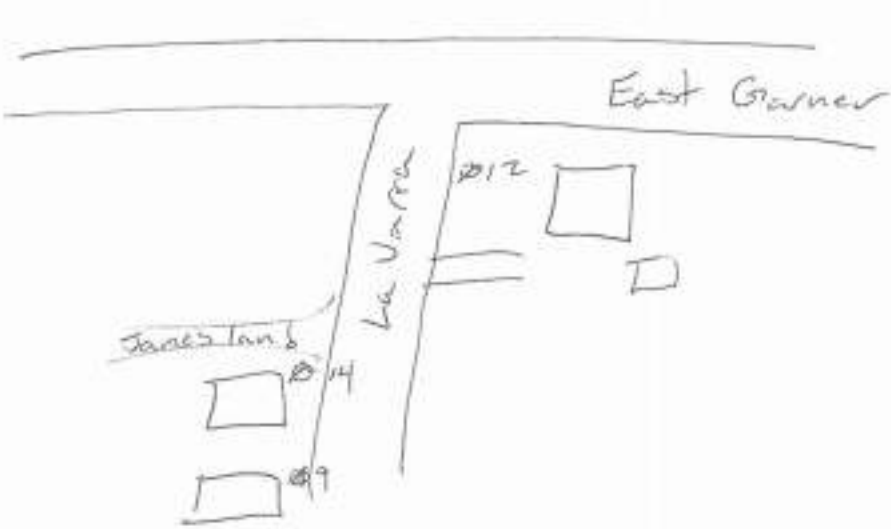
RESULTS: Leq 9:48.4 12:55.8 14:48.5 Lmax _____

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 Gurner

BACKGROUND NOISE: Dogs Barking in distance

UNUSUAL EVENTS: Garbage Truck on Gurner @ 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 O

H.W. LOCHNER, INC.

NOISE MEASUREMENT DATA SHEET

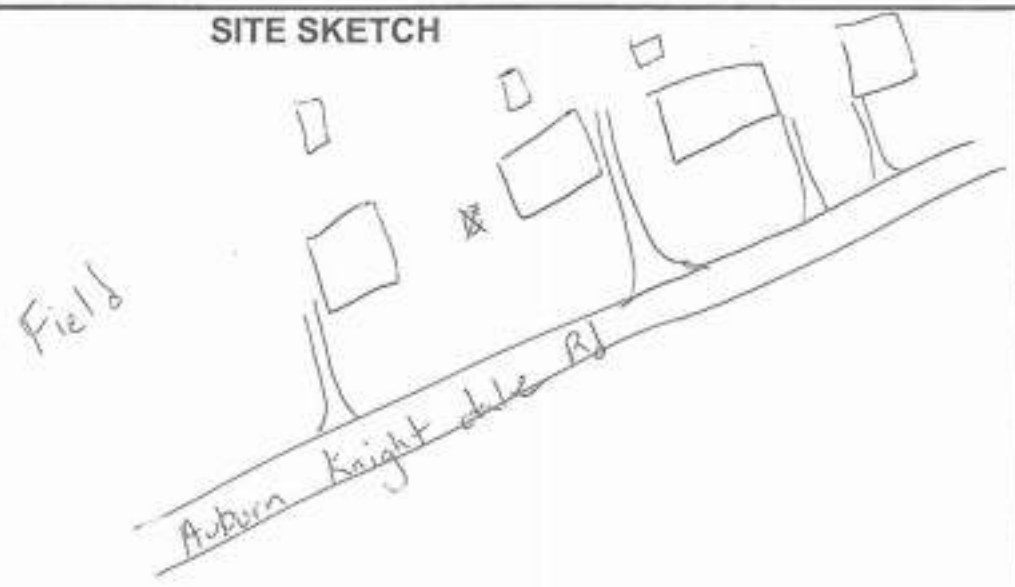
SITE NUMBER: P
PROJECT: Tri-Ex
SITE DESCRIPTION: _____
DATE: 9/12/13
START TIME: 7:02 am
EVENT NUMBER: _____
END TIME: 6:41 pm
TECHNICIAN: Shannon / Salata
DURATION: _____
CALIBRATION: START _____ DB END _____ DB
WEATHER DATA: SKY CONDITION overcast TEMP 70°-90°
WIND: START Ø MPH END Ø MPH
EQUIPMENT: 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 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

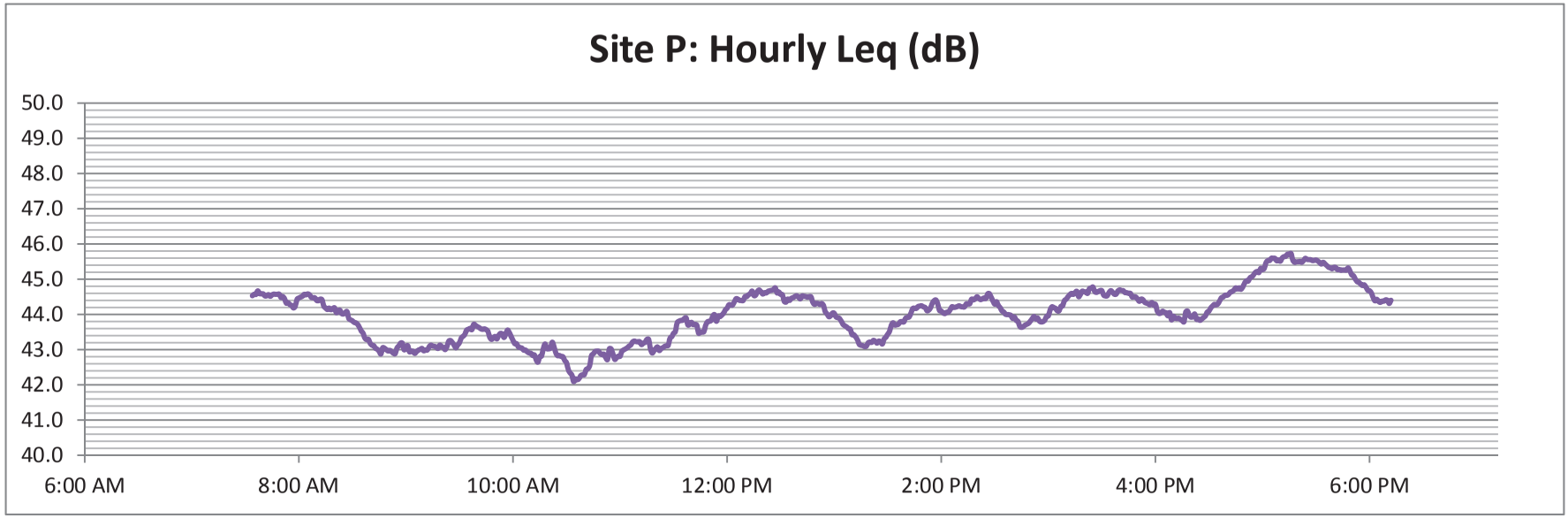
Time (sec)	Leq (dB)
4:38 PM	45.2
4:39 PM	47.7
4:40 PM	41.1
4:41 PM	44.1
4:42 PM	43.1
4:43 PM	41.4
4:44 PM	43.8
4:45 PM	43.2
4:46 PM	51.0
4:47 PM	47.2
4:48 PM	45.2
4:49 PM	40.4
4:50 PM	43.7
4:51 PM	46.4
4:52 PM	45.6
4:53 PM	44.6
4:54 PM	44.8
4:55 PM	43.8
4:56 PM	43.9
4:57 PM	46.5
4:58 PM	47.0
4:59 PM	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/Salutz/Ballman **DURATION:** 20

CALIBRATION: START 9:13.8 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 _____

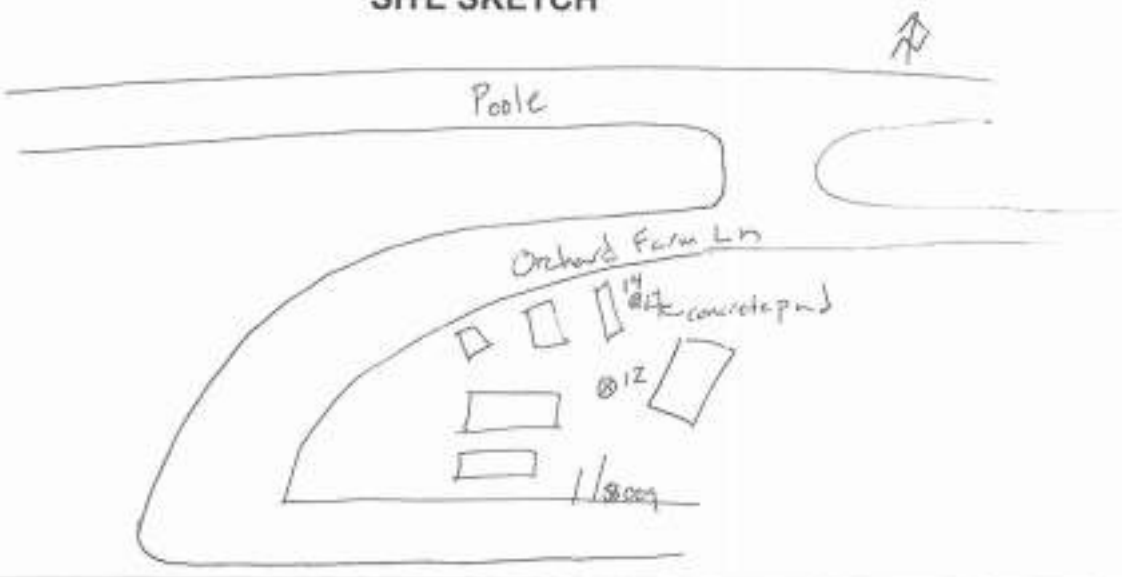
RESULTS: Leq 9:55.0 12:59.3 14:54.6 Lmax _____

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: Airplanes in distance / train horn

OTHER NOTES: traffic on Poole not audible / cars looking by, 805 @ 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'

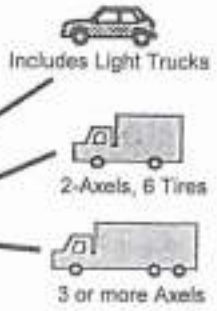
NOISE MEASUREMENT
LOCATION Q

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

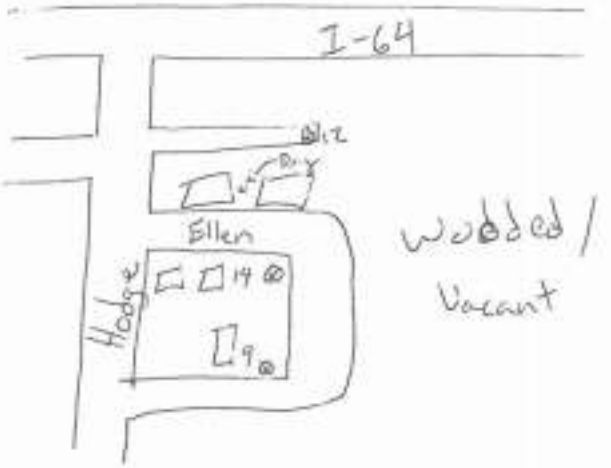
SITE NUMBER: R **PROJECT:** Tri-Ex
SITE DESCRIPTION: _____ **DATE:** 9/12/13
START TIME: 9:44 (9) 10:12 (12)
EVENT NUMBER: _____ **END TIME:** 10:04 (9) 10:32 (12)
TECHNICIAN: Shannon/Salata/Bellman **DURATION:** 20 20
CALIBRATION: START 9:113.9 12:113.9 14:113.8 DB END _____ DB
WEATHER DATA: SKY CONDITION Clear TEMP 85
WIND: START 0 MPH END 0 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



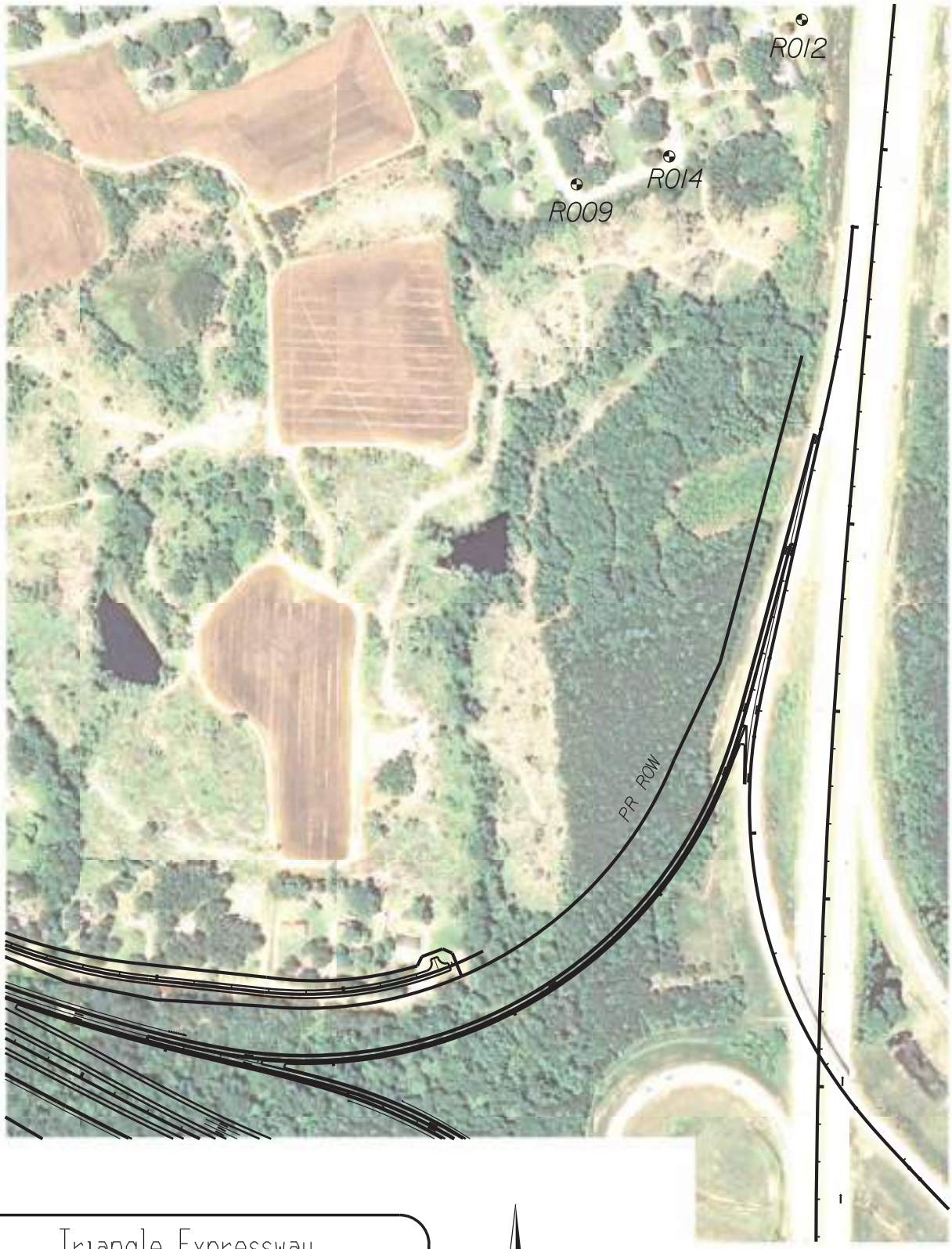
Site R – Far Meter



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'

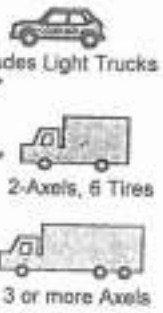
NOISE MEASUREMENT
LOCATION R

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 _____

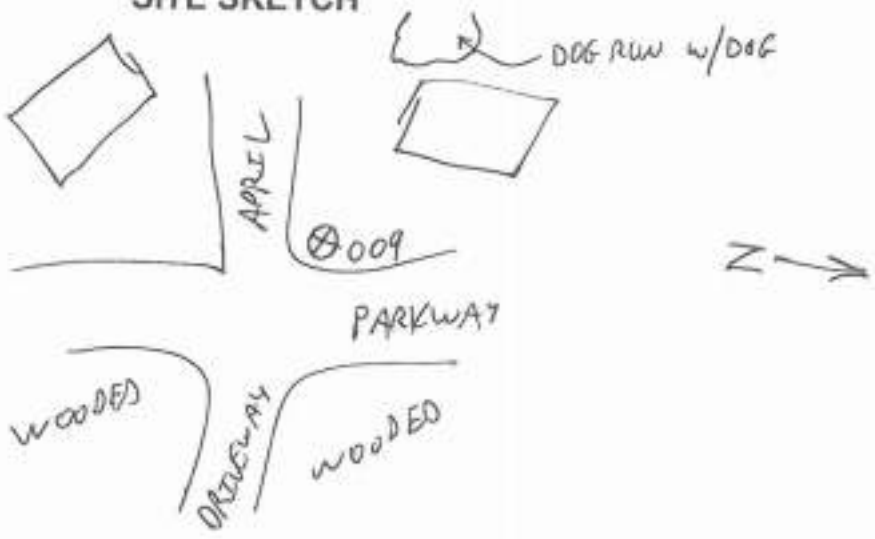
TRAFFIC DATA

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



SITE SKETCH

NO TRAFFIC TO COUNT



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: 6:32am

EVENT NUMBER: _____ END TIME: 7:01 pm

TECHNICIAN: Shannon / Schultz DURATION: _____

CALIBRATION: START _____ DB END _____ DB

WEATHER DATA: SKY CONDITION Clear TEMP 70°-90°

WIND: START 0 MPH END 0 MPH

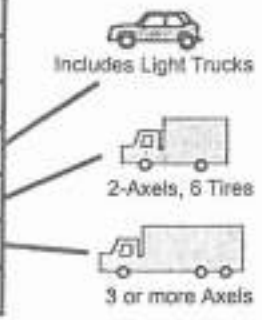
EQUIPMENT: METER LD 870 CALIBRATOR _____

RESPONSE: FAST _____ SLOW _____ BATTERY CHECK _____

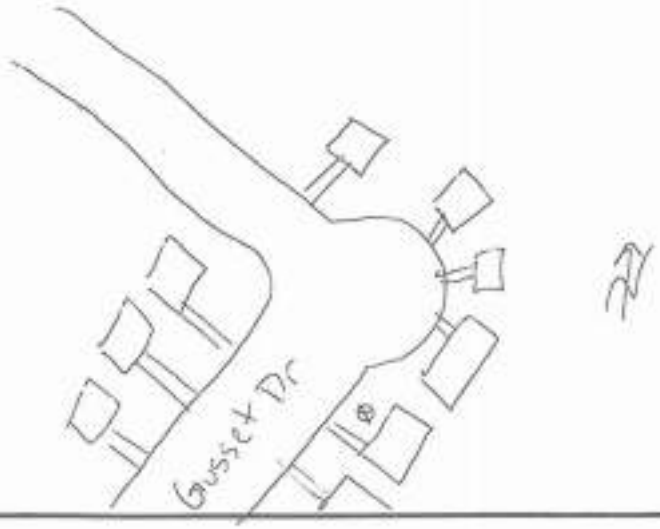
RESULTS: Leq _____ Lmax _____

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
11:49 AM	34.4	12:37 PM	35.5	1:25 PM	37.7	2:13 PM	37.1	3:01 PM	38.5
11:50 AM	35.1	12:38 PM	35.6	1:26 PM	36.7	2:14 PM	37.1	3:02 PM	37.1
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
11:53 AM	34.5	12:41 PM	35.6	1:29 PM	36.6	2:17 PM	37.1	3:05 PM	37.4
11:54 AM	34.3	12:42 PM	34.8	1:30 PM	37.6	2:18 PM	37.2	3:06 PM	36.9
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

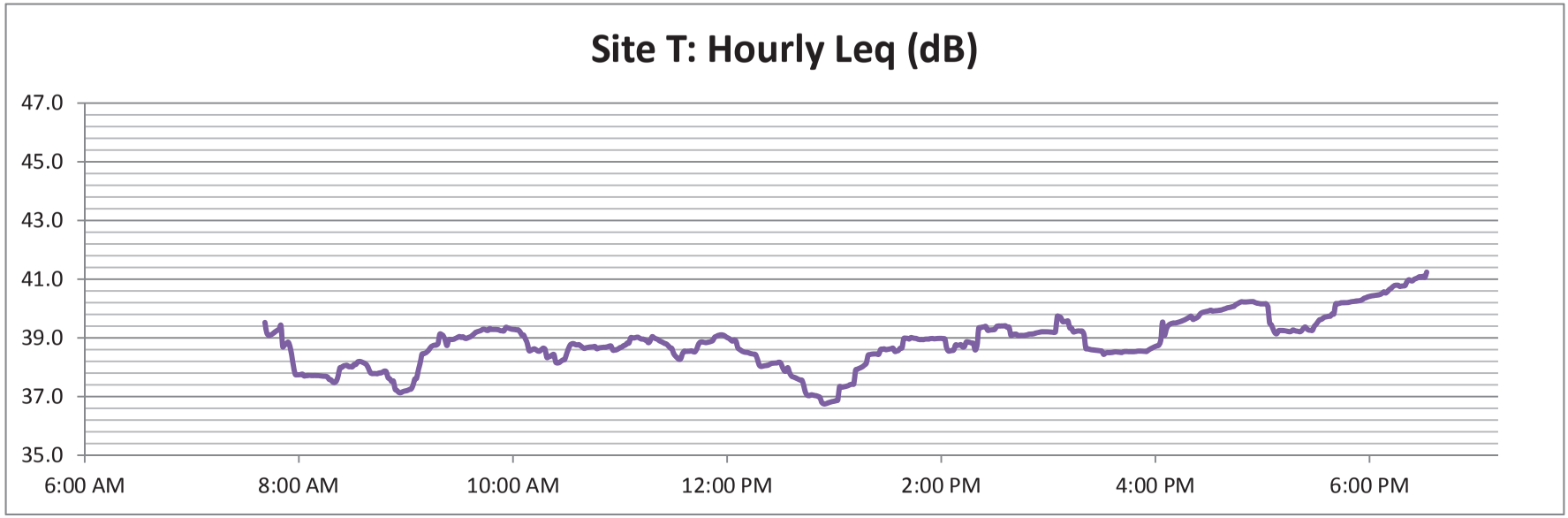
Time (sec)	Leq (dB)
4:45 PM	61.8
4:46 PM	40.1
4:47 PM	39.8
4:48 PM	40.2
4:49 PM	39.9
4:50 PM	39.5
4:51 PM	39.2
4:52 PM	39.2
4:53 PM	40.0
4:54 PM	42.2
4:55 PM	40.5
4:56 PM	38.9
4:57 PM	38.6
4:58 PM	38.3
4:59 PM	38.6
5:00 PM	39.0
5:01 PM	38.6
5:02 PM	38.8
5:03 PM	38.2
5:04 PM	38.2
5:05 PM	38.9
5:06 PM	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

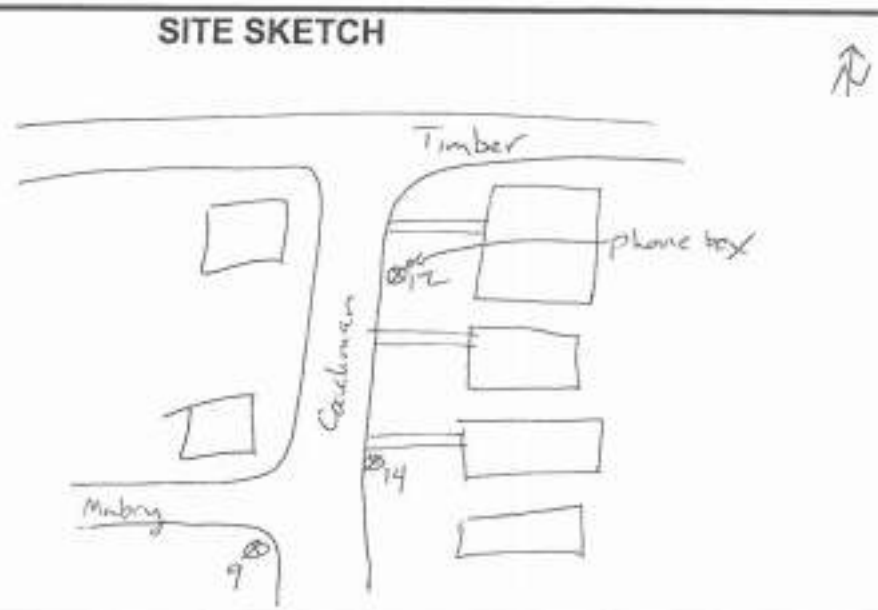
H.W. LOCHNER, INC.	NOISE MEASUREMENT DATA SHEET

SITE NUMBER: U
PROJECT: Tri-Ex
SITE DESCRIPTION:
DATE: 9/11/13
START TIME: 2:06
EVENT NUMBER:
END TIME: 2:26
TECHNICIAN: Shannon/Salute/Ballman
DURATION: 20
CALIBRATION: START 9:113.9 12:114.0 14:114.2 DB END DB
WEATHER DATA: SKY CONDITION [illegible] TEMP 80
WIND: START Ø MPH END Ø MPH DIRECTION
EQUIPMENT: METER CALIBRATOR
RESPONSE: FAST SLOW BATTERY CHECK
RESULTS: Leq 9:46.7 12:48.1 14:52.8 Lmax

TRAFFIC DATA						
ROAD	N	S	E	W		
TRAFFIC SPEED						
AUTOMOBILES	2	3	161	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'

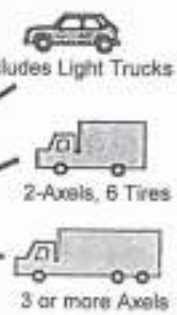
NOISE MEASUREMENT
LOCATION U

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

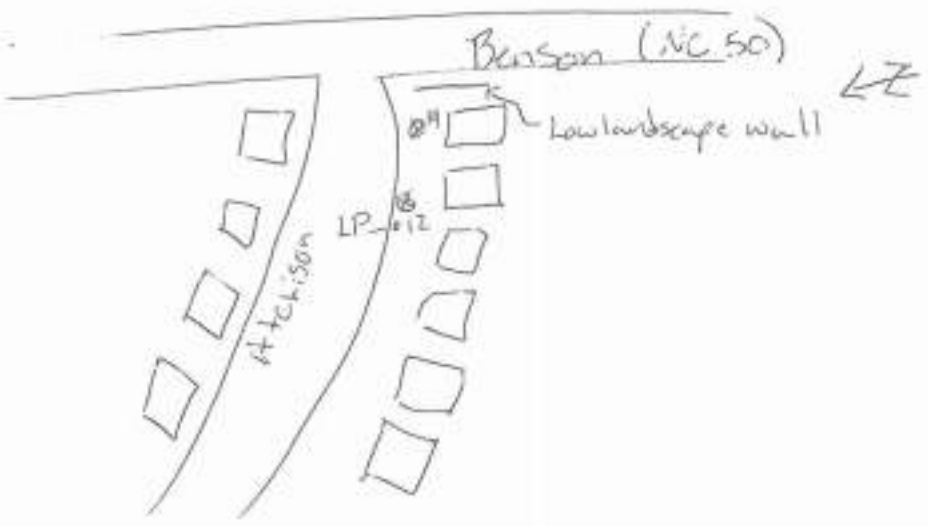
SITE NUMBER: 1/ **PROJECT:** Tri-Ex
SITE DESCRIPTION: **DATE:** 9/11/13
START TIME: 2:41
EVENT NUMBER: **END TIME:** 3:01
TECHNICIAN: Shannon/Salota/Bollman **DURATION:** 20
CALIBRATION: START 9:113.9 14:113.9 12:114.1 DB END DB
WEATHER DATA: SKY CONDITION overcast TEMP 85
WIND: START Ø MPH END Ø MPH 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 NC50 / 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



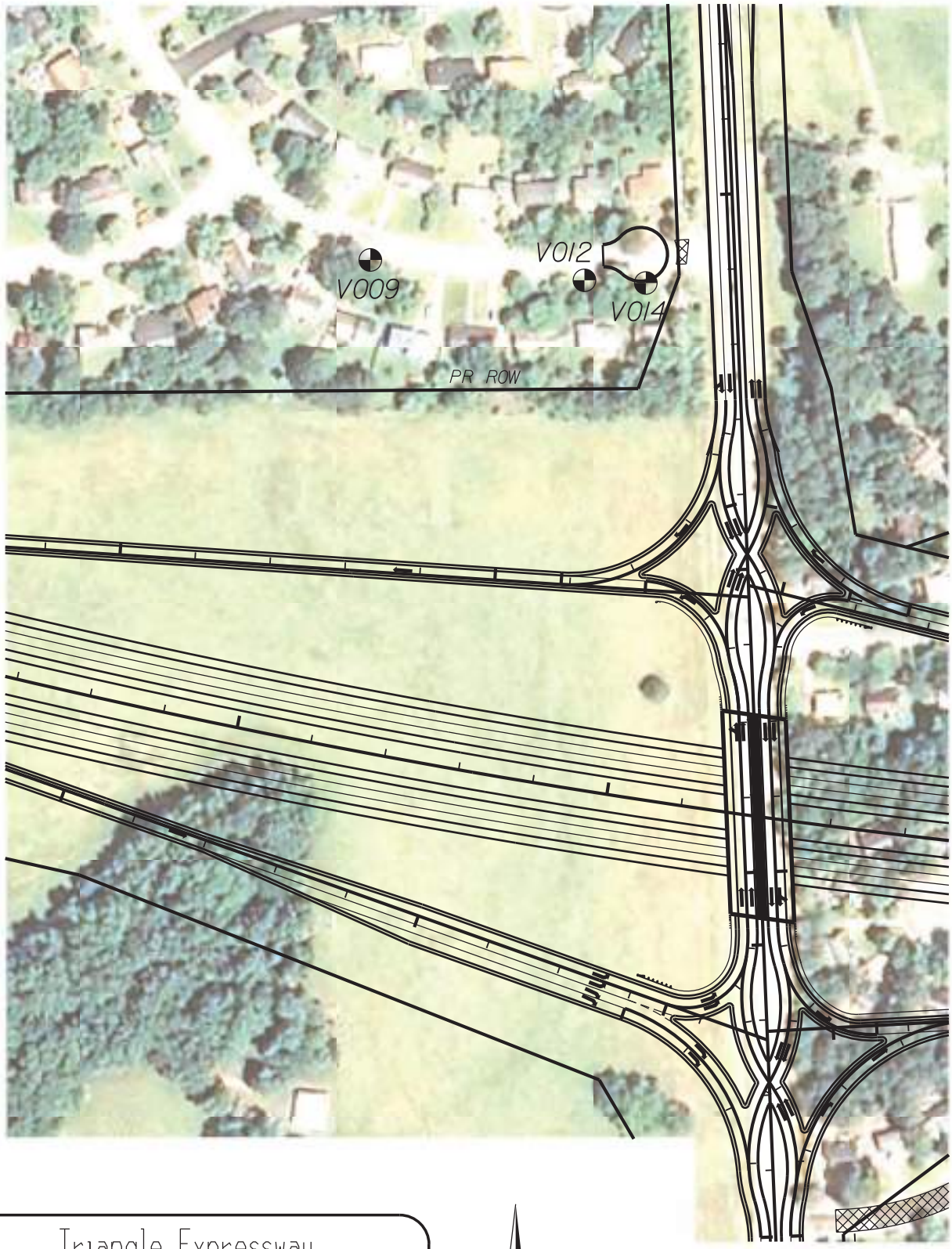
Site V – Close Meter



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 12:113.1 14:113.9 DB

WEATHER DATA: SKY CONDITION _____ TEMP 85

WIND: START slight breeze MPH END _____ MPH DIRECTION various S

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 @ 2:19 to 2:22

OTHER NOTES: I-40 not visible. traffic counted immediately after @ 1.5ft 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	39.0	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		Increase over existing		Type Impact	With Barrier Calculated LAeq1h	Noise Reduction		
				Calculated	Crit'n	Calculated	Crit'n Sub'l Inc			Calculated	Goal	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	Avg	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	Increase over existing Crit'n Sub'l Inc	With Barrier 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
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	Noise Reduction Avg	Noise Reduction 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	With Barrier 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	Noise Reduction Avg	Noise Reduction 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	39	43
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 Institue 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 Stardards 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 chancteristic 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 certificatemay 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 ard Conformance

Cetificate Number 2013-I73245

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 '/3, 1/1 Oct. Filters; SI.11-1986 Type 1C; IEC61260-am1-2001 Class 1 .

Instrument found :o be in calibration as received: YES
Date Calibrated: 25APR2013
Calibration due: 2iAPR2015

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 an traceable to the National Institute of Standards and Technology (NST)

Calbration Environmental Coiditions

Temperature: 22 °Centigrade

Relatve Humidity: 26 %

Affirmations

This Certificate attests that this instrument has been calibrated under the stated condtions with Measurement and Test Equipment (M&TE) Standards traceable to he U.S. National Institute of Standards and Technology (NIST). Al 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 publishel 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 th 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 nay 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

Prove Engineering and Manufacturing Center, 1681 West 320 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 anc Conformance

Certifcate Number 2012-154670

Instrument Model 824, Serial Number A1303, was calibrated on 03FEB2012. The instrument meets factory specifications per Frocedure 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

Caibration 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)

Calibation Environmental Condtions

Temperature: 23 ° Centigrade

Relative Humidity: 30 %

Affirmations

This Certificate attests tha 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 his certificate relate only to the item(s) calibrated or tested. A oneyear calibration is recommended however calibration interval assignment and adjustment are the responsibility of he end user. This certificate may not be reproduced, except in ful, without the written approval of the issuer.

"As received" data is the same as shipped data.
Tested with PRM902 S/N 1146

Signed:

Technician: Sean Chids

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 450

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

LOCHNER

Memorandum

To: Kiersten Bass

From: Dave Shannon/Erica Salutz

cc:

Subject: Triangle Expressway Southeast Extension
Noise Study
Supplemental Proposed Scope of Work and Field Measurement Locations

Date: February 17, 2014

Noise measurements have been performed at 23 sites 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. Due to the addition of the Purple and Blue Corridors, additional measurements are being proposed.

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.

Completed Field Measurements
Field Measurements were conducted on September 10th thru 12th, 2013. There were 23 sites, 20 short term and 3 long term as described below.

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

Site A – Sunshine Crest Court (Short-term): One location was measured since there is no existing traffic noise source and therefore no need to collect drop-off data to validate the TNM model.

Site B – Scot's Laurel subdivision (Short-term): Three locations were measured at varying distances from Kildaire Farm Road. Traffic data was recorded for use in validating the TNM Model.

Site C – Wesley Court (Short-term): Two locations were measured at varying distances from Holly Springs Road. Traffic data was recorded for use in validating the TNM Model.

Site D – Subdivision (Short-term): Three locations were measured at varying distances from West Lake Road. Traffic data was 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): Three locations were measured at varying distances from Lake Wheeler Road. Traffic data was recorded for use in validating the TNM Model.

Site G – Ten-Ten Road (Short-term): Two locations were measured at varying distances from Ten Ten Street. Traffic data was recorded for use in validating the TNM Model.

Site H – Chandler Ridge Circle, Wake Technical Community College (Short-term): Three locations were measured at varying distances from the roadway. Traffic data was recorded for use in validating the TNM Model.

Site I – Contender Drive (Short-term): One location was 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): Three locations were measured at varying distances from Jordan Road. Traffic data was recorded for use in validating the TNM Model.

Site K – Golden Grain Road (Short-term): Three locations were measured at varying distances from Benson Road. Traffic data was recorded for use in validating the TNM Model.

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

Site M – Hayward Court (Short-term): Three locations were measured at varying distances from White Oak Road. Traffic data was recorded for use in validating the TNM Model.

Site N – Walnut Drive (Short-term): Three locations were measured at varying distances from US 70 at locations where the terrain varies. Traffic data was recorded for use in validating the TNM Model.

Site O – La Varra Drive, Pine Hollow Golf Club (Short-term): Three locations were measured at varying distances from East Garner Road. Traffic data was 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): Three locations were measured at varying distances from Poole Road. Traffic data was recorded for use in validating the TNM Model.

Site R – Faison Ridge Lane and Ellen Drive (Short-term): Three locations were measured at varying distances from US 64/264. Traffic data was recorded for use in validating the TNM Model.

Site S – Parkway Drive (Short-term): One location was 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): Three locations were measured at varying distances from Timber Drive. Traffic data was recorded for use in validating the TNM Model.

Site V – Atchison Street (Short-term): Three locations were measured at varying distances from Benson Road. Traffic data was recorded for use in validating the TNM Model.

Site W – Pine Walk Circle (Short-term): Three locations were measured at varying distances from I-40. Traffic data was recorded for use in validating the TNM Model.

Supplemental Proposed Field Measurement Locations

Since the previous measurements were taken two more corridors were added to the project (Blue and Purple). The attached figures show the additional 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.

Site AA – Olive Field Drive (Short Term): At least two locations will be measured at varying distances from Pierce Olive Road, preferably at locations where the terrain varies. Traffic data will be recorded for use in validating the TNM Model.

Site BB – Draycroft Place (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. The measured data will be normalized against the diurnal curve established by Long-Term Site E to identify the loudest hour at this Site.

Site CC – Allanbrooke Lane (Short-Term): At least two locations will be measured at varying distances from Hilltop Needmore Road, preferably at locations where the terrain varies. Traffic data will be recorded for use in validating the TNM Model.

Site DD – Ken Drive (Short-Term): At least two locations will be measured at varying distances from Dwight Rowland Road, preferably at locations where the terrain varies. Traffic data will be recorded for use in validating the TNM Model.

Site EE – Hickory Haven Lane (Short-Term): At least two locations will be measured at varying distances from Old Stage Road, preferably at locations where the terrain varies. Traffic data will be recorded for use in validating the TNM Model.

Site FF – Walnut Cove Drive (Short-Term): At least two locations will be measured at varying distances from Rock Service Station Road, preferably at locations where the terrain varies. Traffic data will be recorded for use in validating the TNM Model.

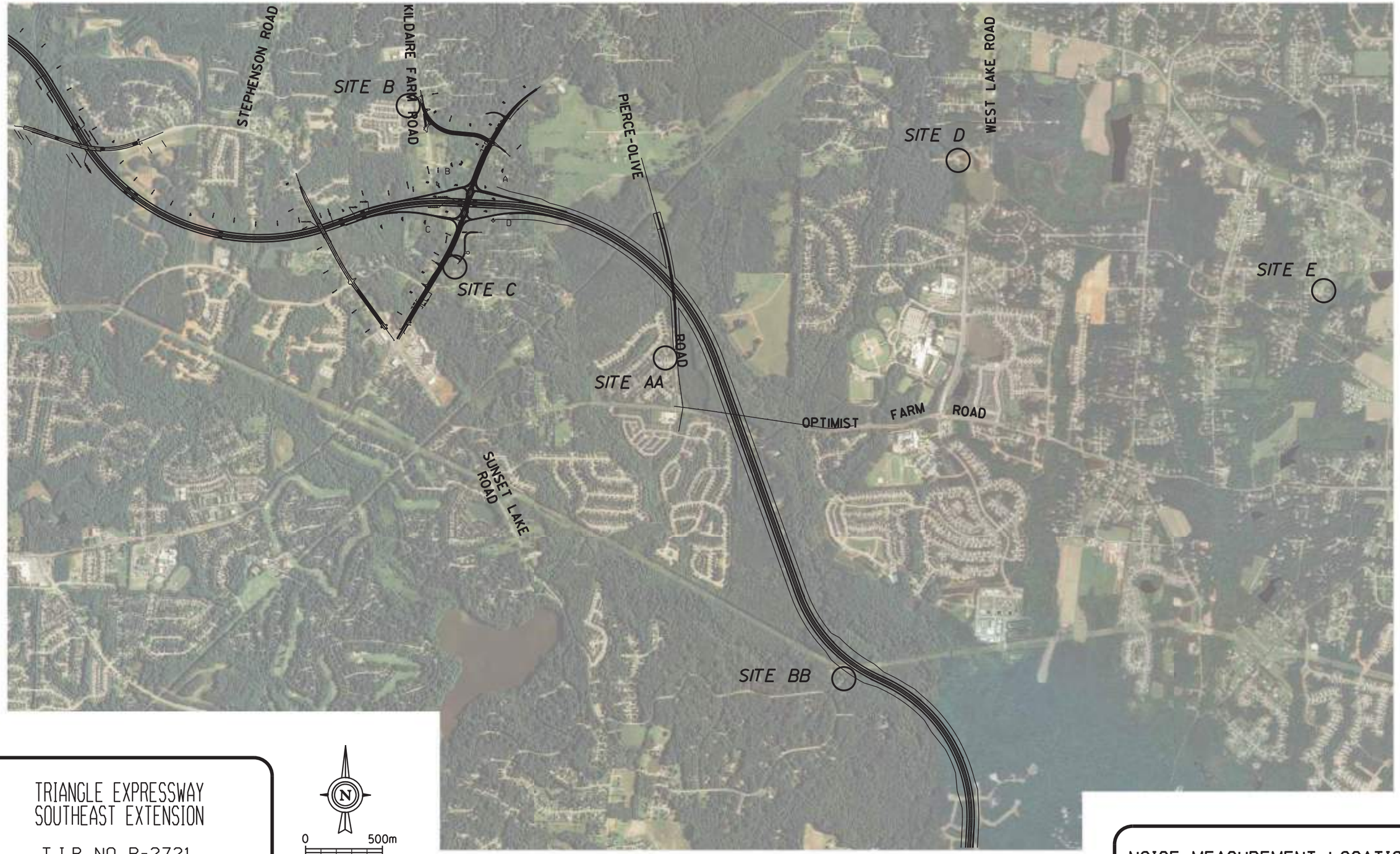
Site GG – Sauls Road (Short-Term): At least two locations will be measured at varying distances from Sauls Road, preferably at locations where the terrain varies. Traffic data will be recorded for use in validating the TNM Model.

Estimated Schedule

Short Term. – AA, BB, CC, DD, EE, FF, GG = 7 Sites

Measurements should preferably be acquired Tuesday through Thursday. It is likely that all 7 sites will be performed in one day. 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.

The overall methodology has been discussed with the Greg Smith at the Traffic Noise and Air Quality Group at NCDOT on March 5, 2013 who approved the proposed methodology as described in this memo with no further comments. He approved the locations and scope of the supplemental measurements on February 17, 2014.



TRIANGLE EXPRESSWAY
SOUTHEAST EXTENSION

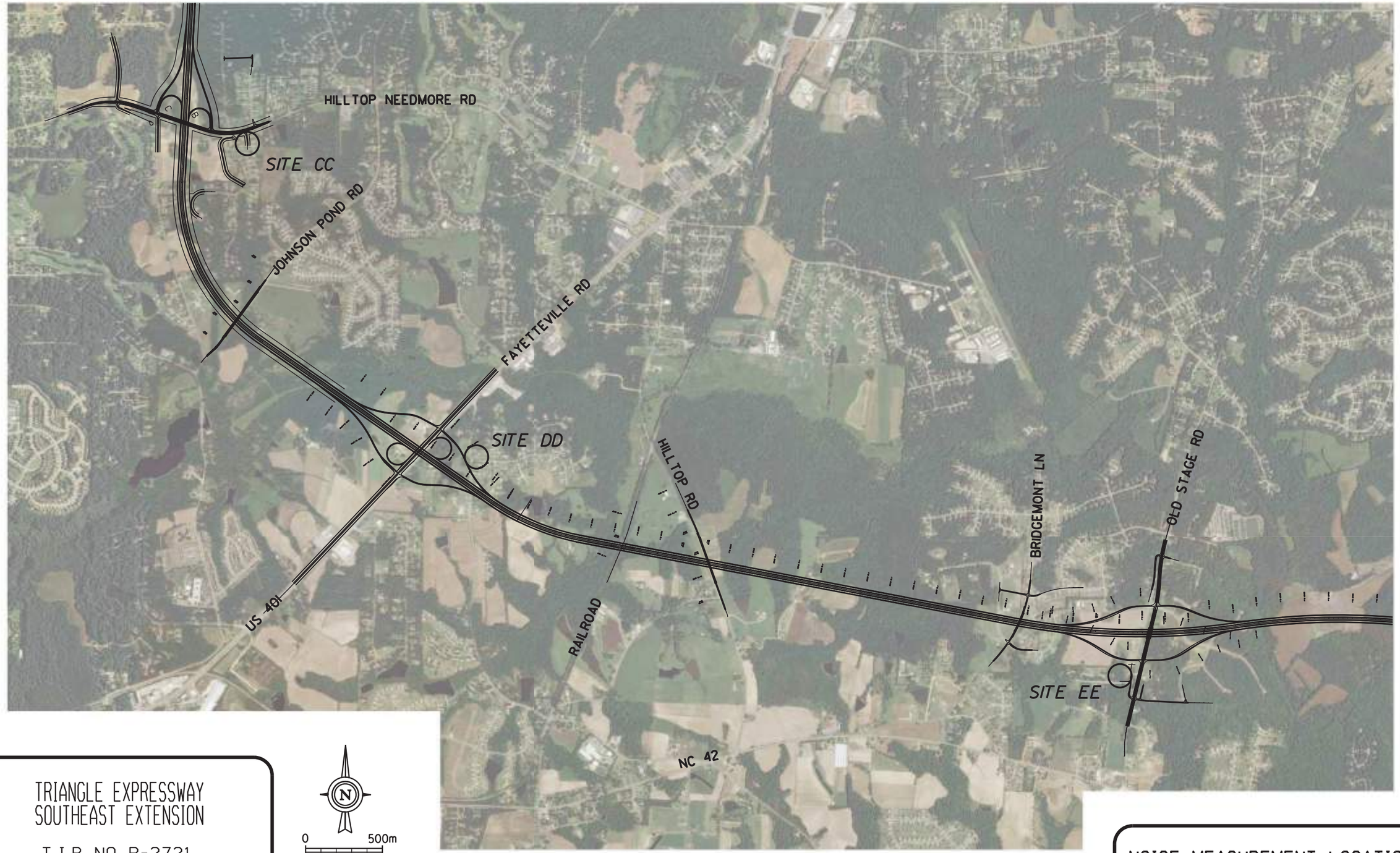
T.I.P. NO. R-2721,
R-2828, R-2829

N

0 500m

0 1000' 2000'

NOISE MEASUREMENT LOCATIONS



TRIANGLE EXPRESSWAY
SOUTHEAST EXTENSION

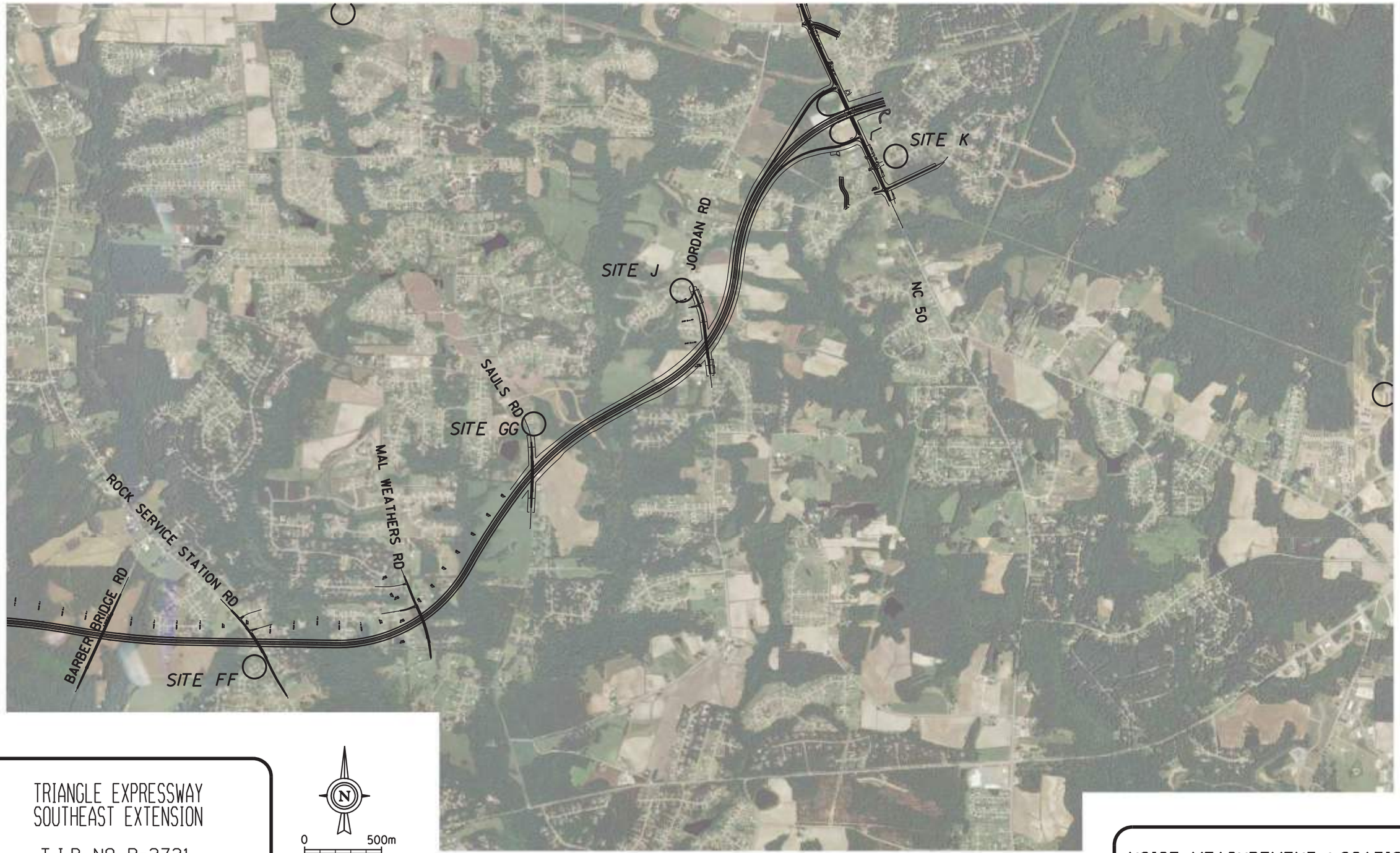
T.I.P. NO. R-2721,
R-2828, R-2829

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

3 OF 3

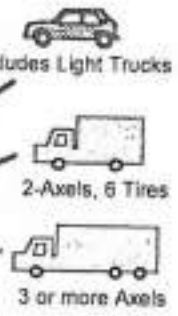
H.W. LOCHNER, INC.	NOISE MEASUREMENT DATA SHEET

SITE NUMBER: AA
SITE DESCRIPTION: _____
_____
EVENT NUMBER: 7
TECHNICIAN: Shannon/Salata/Ballman
CALIBRATION: START _____ DB END 14:113.8 9:114.3 3:114.0 DB
WEATHER DATA: SKY CONDITION Clear TEMP 80's
WIND: START Breeze MPH END _____ MPH DIRECTION _____
EQUIPMENT: METER LD 820 3,9,14 CALIBRATOR _____
RESPONSE: FAST _____ SLOW _____ BATTERY CHECK _____
RESULTS: Leq _____ Lmax _____

PROJECT: 1210 - Tri-Ex
DATE: 5/8/14
START TIME: 3:16
END TIME: 3:40
DURATION: _____

TRAFFIC DATA

ROAD	N	S	E	W		
TRAFFIC SPEED						
AUTOMOBILES	55	57	11	10		
MEDIUM TRUCKS	4	1	1	1		
HEAVY TRUCKS	0	0	0	0		



SITE SKETCH



MAJOR SOURCES: Traffic on Pierce-Olive, Breeze through trees
BACKGROUND NOISE: _____
UNUSUAL EVENTS: Kids walking from school bus
OTHER NOTES: School bus @ 3:27, Bus stopped by #14 @ 3:29 & let out large group singing into microphone @ 3:30, worker mowing grounds w/ ladder @ 3:35 talked w/ resident @ 3:38

Triangle Expressway Southeast Extension

Site AA
Short Term
5/8/14

= Eliminated due to anomalous data point

Near (Meter 009)		Middle (Meter 003)		Far (Meter 014)		Site T	
Time (s)	Leq (dB)	Time (s)	Leq (dB)	Time (s)	Leq (dB)	Time (s)	Leq (dB)
3:16 PM	53.6	3:16 PM	48.5	3:16 PM	45.3	3:16 PM	37.9
3:17 PM	55.1	3:17 PM	49.7	3:17 PM	50.4	3:17 PM	38.2
3:18 PM	66.1	3:18 PM	55.9	3:18 PM	45.8	3:18 PM	38.7
3:19 PM	57.7	3:19 PM	59.4	3:19 PM	51.1	3:19 PM	37.7
3:20 PM	54.9	3:20 PM	51.9	3:20 PM	48.6	3:20 PM	37.9
3:21 PM	54.0	3:21 PM	52.8	3:21 PM	51.4	3:21 PM	38.2
3:22 PM	54.6	3:22 PM	54.0	3:22 PM	55.6	3:22 PM	38.4
3:23 PM	50.8	3:23 PM	45.6	3:23 PM	54.0	3:23 PM	38.8
3:24 PM	57.4	3:24 PM	53.0	3:24 PM	50.3	3:24 PM	39.0
3:25 PM	56.7	3:25 PM	55.3	3:25 PM	49.7	3:25 PM	38.0
3:26 PM	66.6	3:26 PM	66.9	3:26 PM	59.2	3:26 PM	37.5
3:27 PM	56.1	3:27 PM	64.1	3:27 PM	70.6	3:27 PM	36.8
3:28 PM	55.6	3:28 PM	50.6	3:28 PM	58.2	3:28 PM	36.6
3:29 PM	70.9	3:29 PM	70.7	3:29 PM	96.9	3:29 PM	36.4
3:30 PM	58.8	3:30 PM	52.2	3:30 PM	53.0	3:30 PM	36.4
3:31 PM	55.1	3:31 PM	48.2	3:31 PM	53.4	3:31 PM	36.1
3:32 PM	55.6	3:32 PM	54.2	3:32 PM	44.2	3:32 PM	35.9
3:33 PM	54.8	3:33 PM	49.9	3:33 PM	52.0	3:33 PM	38.6
3:34 PM	54.6	3:34 PM	51.2	3:34 PM	44.6	3:34 PM	48.3
3:35 PM	53.6	3:35 PM	50.1	3:35 PM	42.7	3:35 PM	36.7
3:36 PM	56.1	3:36 PM	48.6	3:36 PM	44.1	3:36 PM	37.0
3:37 PM	57.8	3:37 PM	58.2	3:37 PM	43.9	3:37 PM	37.1
3:38 PM	59.0	3:38 PM	55.2	3:38 PM	52.6	3:38 PM	36.9
3:39 PM	55.0	3:39 PM	55.4	3:39 PM	41.8	3:39 PM	37.6
3:40 PM	52.5	3:40 PM	45.5	3:40 PM	43.6	3:40 PM	39.1
Avg Leq=	**57**	**Avg Leq=**	**55**	**Avg Leq=**	**52**	**Avg Leq=**	**39**
				Adjustment =	**3**	**Loudest Hour at Site T =**	**42**
				Adjusted Loudest Hour =	**55**	**Adjustment =**	**3**



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

N

0 100' 200'

NOISE MEASUREMENT
LOCATION AA



Site AA – Near Meter



Site AA – Near Meter



Site AA – Near Meter



Site AA – Middle Meter



Site AA – Middle Meter



Site AA – Middle Meter



Site AA – Far Meter



Site AA – Far Meter



Site AA – Far Meter

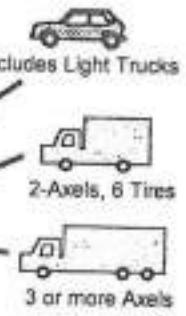
H.W. LOCHNER, INC.	NOISE MEASUREMENT DATA SHEET

SITE NUMBER: BB
SITE DESCRIPTION: _____
_____
EVENT NUMBER: 6
TECHNICIAN: Shannon / Salute / Bollman
CALIBRATION: START _____ DB END _____ DB
WEATHER DATA: SKY CONDITION Clear TEMP 80's
WIND: START 1-2mph MPH END _____ MPH DIRECTION _____
EQUIPMENT: METER LD 820 #9 CALIBRATOR _____
RESPONSE: FAST _____ SLOW _____ BATTERY CHECK _____
RESULTS: Leq _____ Lmax _____

PROJECT: 1210 - Tri-Ex
DATE: 5/8/14
START TIME: 2:19
END TIME: 2:42
DURATION: _____

TRAFFIC DATA

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



SITE SKETCH



MAJOR SOURCES: Breeze, through trees, Birds
BACKGROUND NOISE: Plane Flyover
UNUSUAL EVENTS: Question from Resident @ 2:27
OTHER NOTES: _____

Triangle Expressway Southeast Extension

Site BB = Eliminated due to anomalous data
Short Term-Ambient
5/8/14

Meter 009	
Time (s)	**Leq (dB)**
2:19 PM	47.5
2:20 PM	39.8
2:21 PM	40.0
2:22 PM	46.0
2:23 PM	47.1
2:24 PM	41.9
2:25 PM	50.9
2:26 PM	38.9
2:27 PM	38.2
2:28 PM	38.8
2:29 PM	37.6
2:30 PM	40.5
2:31 PM	43.6
2:32 PM	43.2
2:33 PM	46.0
2:34 PM	43.0
2:35 PM	44.1
2:36 PM	43.5
2:37 PM	43.0
2:38 PM	43.3
2:39 PM	47.5
2:40 PM	41.1
2:41 PM	45.2
2:42 PM	48.9

Avg Leq=	**44**
Adjustment =	**3**
Adjusted Loudest Hour =	**47**

Site P	
Time (s)	**Leq (dB)**
2:19 PM	40.9
2:20 PM	37.6
2:21 PM	40.2
2:22 PM	45.8
2:23 PM	44.6
2:24 PM	47.7
2:25 PM	44.7
2:26 PM	41.9
2:27 PM	39.7
2:28 PM	39.2
2:29 PM	42.7
2:30 PM	43.3
2:31 PM	33.9
2:32 PM	43.1
2:33 PM	43.0
2:34 PM	47.0
2:35 PM	45.5
2:36 PM	40.4
2:37 PM	41.4
2:38 PM	42.0
2:39 PM	40.7
2:40 PM	36.1
2:41 PM	39.6
2:42 PM	34.7

Avg Leq=	**43**
Loudest Hour at Site P =	**46**
Adjustment =	**3**



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

N

0 100' 200'

NOISE MEASUREMENT
LOCATION BB



Site BB – Meter



Site BB – Meter



Site BB – Meter

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

SITE NUMBER: CC
SITE DESCRIPTION: _____
_____
EVENT NUMBER: 5
TECHNICIAN: Shannon / Salute / Bollman
CALIBRATION: START All checked ± 0.1 dB(A) DB END _____ DB
WEATHER DATA: SKY CONDITION Clear TEMP 80's
WIND: START light breeze MPH END _____ MPH DIRECTION _____
EQUIPMENT: METER LD 820 #3, 9, 14 CALIBRATOR _____
RESPONSE: FAST _____ SLOW _____ BATTERY CHECK _____
RESULTS: Leq _____ Lmax _____

PROJECT: 1210 Tri-Ex
DATE: 5/8/14
START TIME: 1:42
END TIME: 2:02
DURATION: _____

TRAFFIC DATA

ROAD	N	S	E	W		
TRAFFIC SPEED						
AUTOMOBILES	4	4	53	60		
MEDIUM TRUCKS	0	0	2	3		
HEAVY TRUCKS	0	0	3	0		



SITE SKETCH



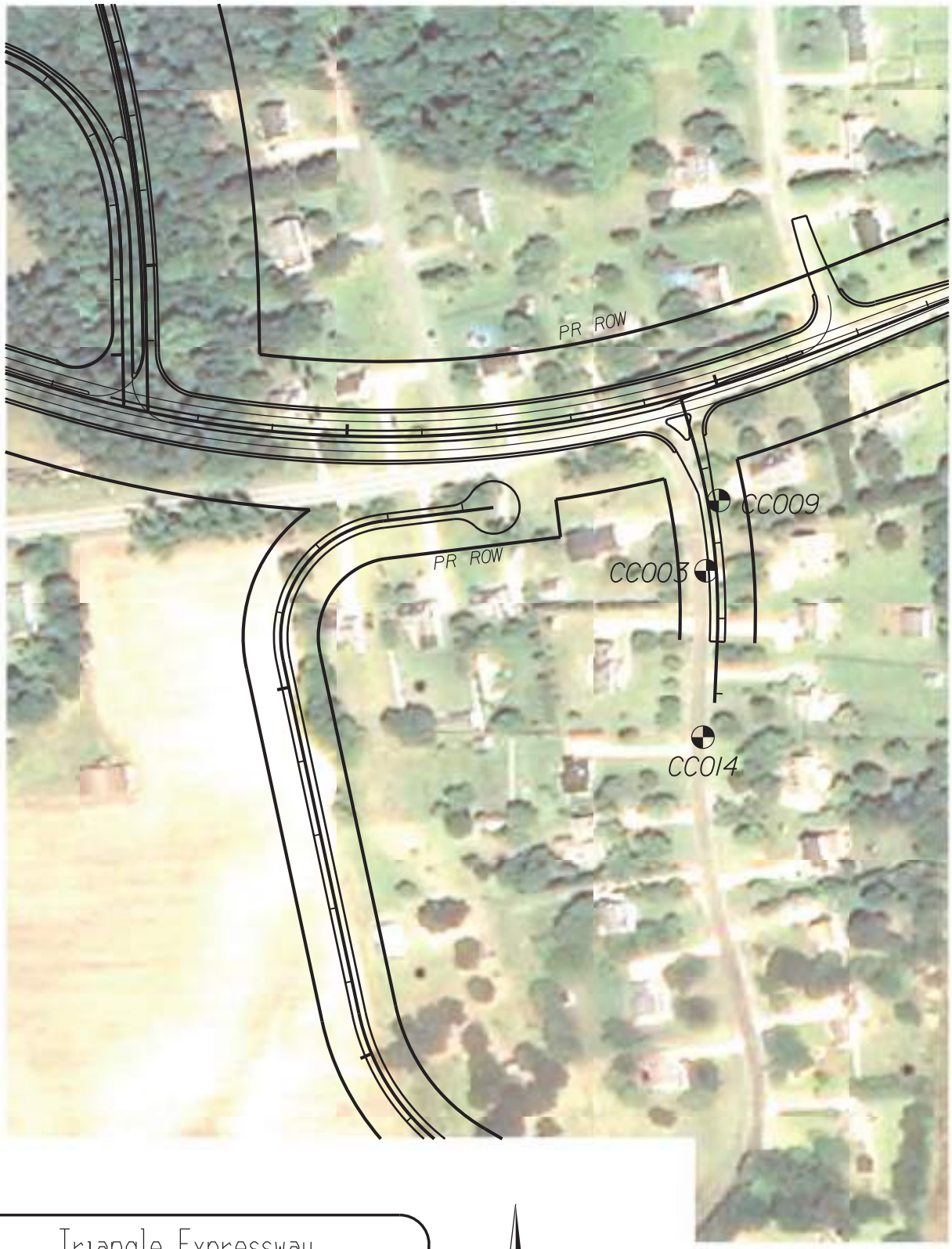
MAJOR SOURCES: Occasional breeze through trees, birds
BACKGROUND NOISE: _____
UNUSUAL EVENTS: _____
OTHER NOTES: _____

Triangle Expressway Southeast Extension

Site CC
Short Term
5/8/14

= Eliminated due to anomalous data point

Near (Meter 009)		Middle (Meter 003)		Far (Meter 014)		Site T	
Time (s)	**Leq (dB)**	**Time (s)**	**Leq (dB)**	**Time (s)**	**Leq (dB)**	**Time (s)**	**Leq (dB)**
1:42 PM	54.2	1:42 PM	47.6	1:42 PM	45.0	1:42 PM	37.5
1:43 PM	52.0	1:43 PM	48.3	1:43 PM	45.8	1:43 PM	37.3
1:44 PM	56.1	1:44 PM	53.6	1:44 PM	54.2	1:44 PM	37.0
1:45 PM	58.7	1:45 PM	55.2	1:45 PM	53.6	1:45 PM	37.4
1:46 PM	57.3	1:46 PM	49.9	1:46 PM	48.0	1:46 PM	38.4
1:47 PM	55.2	1:47 PM	52.7	1:47 PM	49.8	1:47 PM	39.2
1:48 PM	56.4	1:48 PM	55.2	1:48 PM	56.4	1:48 PM	44.5
1:49 PM	56.2	1:49 PM	51.3	1:49 PM	48.4	1:49 PM	37.8
1:50 PM	56.1	1:50 PM	54.8	1:50 PM	53.0	1:50 PM	37.6
1:51 PM	52.4	1:51 PM	47.1	1:51 PM	46.6	1:51 PM	36.7
1:52 PM	52.5	1:52 PM	46.8	1:52 PM	44.6	1:52 PM	36.6
1:53 PM	53.0	1:53 PM	52.6	1:53 PM	53.3	1:53 PM	37.2
1:54 PM	51.8	1:54 PM	48.4	1:54 PM	47.4	1:54 PM	36.7
1:55 PM	52.6	1:55 PM	47.3	1:55 PM	46.6	1:55 PM	43.1
1:56 PM	56.1	1:56 PM	49.9	1:56 PM	46.2	1:56 PM	37.2
1:57 PM	54.4	1:57 PM	55.4	1:57 PM	55.9	1:57 PM	37.2
1:58 PM	55.9	1:58 PM	50.3	1:58 PM	48.7	1:58 PM	37.4
1:59 PM	53.9	1:59 PM	49.4	1:59 PM	48.1	1:59 PM	36.7
2:00 PM	55.2	2:00 PM	54.6	2:00 PM	53.0	2:00 PM	36.5
2:01 PM	51.0	2:01 PM	47.7	2:01 PM	46.2	2:01 PM	36.8
2:02 PM	55.9	2:02 PM	48.7	2:02 PM	51.2	2:02 PM	37.2
Avg Leq=	**55**	**Avg Leq=**	**52**	**Avg Leq=**	**51**	**Avg Leq=**	**39**
				Adjustment =	**3**	**Loudest Hour at Site T =**	**42**
				Adjusted Loudest Hour =	**54**	**Adjustment =**	**3**



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

N

0 100' 200'

NOISE MEASUREMENT
LOCATION CC



Site CC – Near Meter



Site CC – Near Meter



Site CC – Middle Meter



Site CC – Middle Meter



Site CC – Far Meter



Site CC – Far Meter



Site CC – Far Meter

H.W. LOCHNER, INC.

NOISE MEASUREMENT DATA SHEET

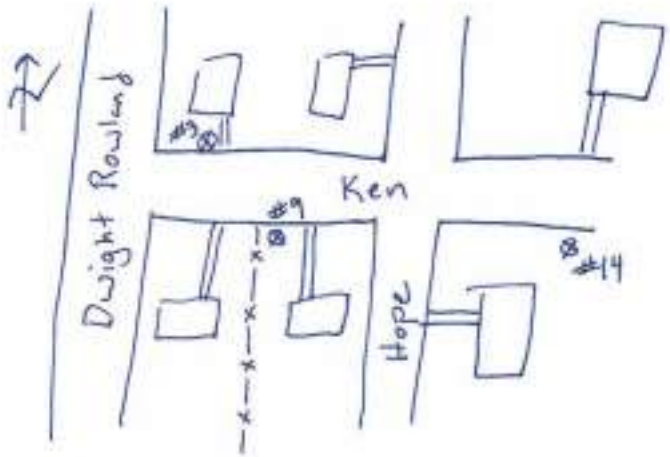
SITE NUMBER: DD
PROJECT: 1210 Tri-Ex
SITE DESCRIPTION:
DATE: 5/8/14
START TIME: 12:05
EVENT NUMBER: 4
END TIME: 12:26
TECHNICIAN: Shannon / Schutz / Bollman
DURATION:
CALIBRATION: START ____ DB END ____ DB
WEATHER DATA: SKY CONDITION Clear TEMP 80's
WIND: START ____ MPH END ____ MPH DIRECTION ____
EQUIPMENT: METER LD 826 #3, 9, 14 CALIBRATOR ____
RESPONSE: FAST ____ SLOW ____ BATTERY CHECK ____
RESULTS: Leq ____ Lmax ____

TRAFFIC DATA

ROAD	N	S	E	W		
TRAFFIC SPEED						
AUTOMOBILES	16	21	3	8		
MEDIUM TRUCKS	0	0	0	0		
HEAVY TRUCKS	0	0	0	0		



SITE SKETCH



MAJOR SOURCES: Traffic on Dwight Rowland, Breeze thru trees, Birds
BACKGROUND NOISE: Traffic on Fayetteville Rd
UNUSUAL EVENTS: Car / Truck stopped to talk @ 12:22
OTHER NOTES: ____

Triangle Expressway Southeast Extension

Site DD
Short Term
5/8/14

= Eliminated due to anomalous data point

Near (Meter 003)		Middle (Meter 009)		Far (Meter 014)		Site T	
Time (s)	Leq (dB)	Time (s)	Leq (dB)	Time (s)	Leq (dB)	Time (s)	Leq (dB)
		12:03 PM	64.8			12:03 PM	37.8
		12:04 PM	62.4	12:04 PM	51.7	12:04 PM	42.8
12:05 PM	57.1	12:05 PM	60.1	12:05 PM	50.6	12:05 PM	40.9
12:06 PM	59.0	12:06 PM	60.7	12:06 PM	54.3	12:06 PM	38.0
12:07 PM	59.7	12:07 PM	61.4	12:07 PM	60.6	12:07 PM	37.3
12:08 PM	51.9	12:08 PM	52.6	12:08 PM	56.5	12:08 PM	37.6
12:09 PM	51.3	12:09 PM	53.0	12:09 PM	49.9	12:09 PM	37.9
12:10 PM	54.7	12:10 PM	56.0	12:10 PM	60.7	12:10 PM	38.6
12:11 PM	60.6	12:11 PM	60.2	12:11 PM	56.6	12:11 PM	39.2
12:12 PM	53.8	12:12 PM	51.0	12:12 PM	51.9	12:12 PM	43.0
12:13 PM	54.9	12:13 PM	53.0	12:13 PM	51.6	12:13 PM	43.6
12:14 PM	52.1	12:14 PM	50.2	12:14 PM	48.9	12:14 PM	40.9
12:15 PM	55.3	12:15 PM	55.5	12:15 PM	54.0	12:15 PM	38.3
12:16 PM	57.0	12:16 PM	55.7	12:16 PM	49.1	12:16 PM	38.3
12:17 PM	56.6	12:17 PM	54.5	12:17 PM	49.4	12:17 PM	38.3
12:18 PM	56.8	12:18 PM	55.3	12:18 PM	52.5	12:18 PM	38.0
12:19 PM	57.4	12:19 PM	56.8	12:19 PM	54.5	12:19 PM	37.3
12:20 PM	51.7	12:20 PM	49.8	12:20 PM	49.5	12:20 PM	37.9
12:21 PM	57.7	12:21 PM	58.2	12:21 PM	60.1	12:21 PM	38.7
12:22 PM	55.9	12:22 PM	59.6	12:22 PM	57.6	12:22 PM	41.9
12:23 PM	58.3	12:23 PM	57.2	12:23 PM	61.0	12:23 PM	39.0
12:24 PM	59.6	12:24 PM	59.3	12:24 PM	51.8	12:24 PM	38.0
12:25 PM	57.6	12:25 PM	57.6	12:25 PM	52.1	12:25 PM	36.5
12:26 PM	53.3	12:26 PM	51.3	12:26 PM	54.0	12:26 PM	35.0
12:27 PM	49.6			12:27 PM	52.3	12:27 PM	34.9
Avg Leq=	**55**	**Avg Leq=**	**54**	**Avg Leq=**	**53**	**Avg Leq=**	**40**
				Adjustment =	**2**	**Loudest Hour at Site T =**	**42**
				Adjusted Loudest Hour =	**55**	**Adjustment =**	**2**



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

N

0 100' 200'

NOISE MEASUREMENT
LOCATION DD



Site DD – Near Meter



Site DD – Near Meter



Site DD – Middle Meter



Site DD – Middle Meter



Site DD – Far Meter



Site DD – Far Meter



Site DD – Far Meter

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

SITE NUMBER: EE
SITE DESCRIPTION: _____
_____
EVENT NUMBER: 3
TECHNICIAN: Shannon/Schultz/Bellman
CALIBRATION: START _____ DB END _____ DB
WEATHER DATA: SKY CONDITION _____ TEMP _____
WIND: START 1-2mph MPH END _____ MPH DIRECTION _____
EQUIPMENT: METER LD 820 #3, 9, 14 CALIBRATOR _____
RESPONSE: FAST _____ SLOW _____ BATTERY CHECK _____
RESULTS: Leq _____ Lmax _____

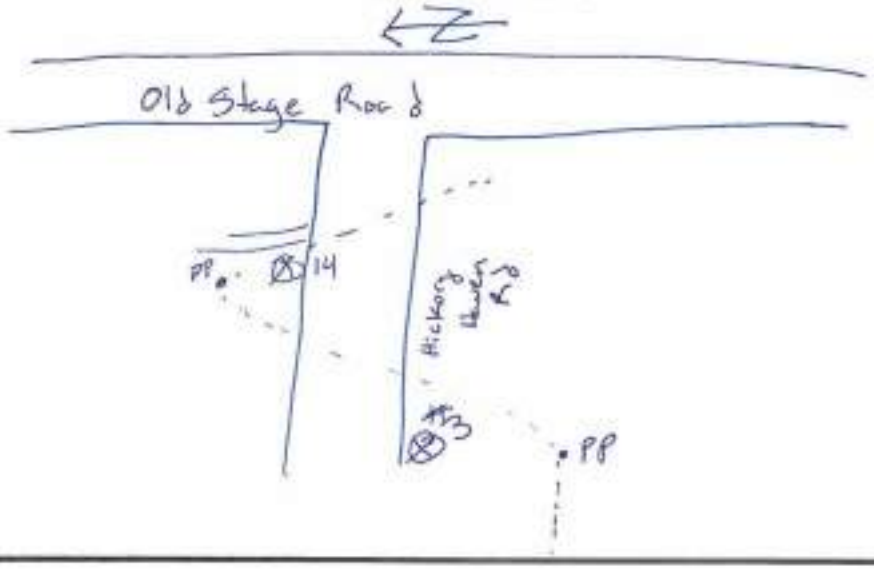
PROJECT: 1210 Tri-Ex
DATE: 5/8/14
START TIME: 11:28
END TIME: 11:48
DURATION: _____

TRAFFIC DATA

ROAD	N	S	E	W		
TRAFFIC SPEED						
AUTOMOBILES	23	17	1	1		
MEDIUM TRUCKS	1	1	0	0		
HEAVY TRUCKS	1	0	0	0		



SITE SKETCH



MAJOR SOURCES: Birds, breeze through trees
BACKGROUND NOISE: _____
UNUSUAL EVENTS: Car pulled into first driveway @ 11:38
OTHER NOTES: Car stopped by meter 3 @ 11:39

Triangle Expressway Southeast Extension

Site EE
Short Term
5/8/14

= Eliminated due to anomalous data point

Near (Meter 014)		Far (Meter 003)		Site P	
Time (s)	**Leq (dB)**	**Time (s)**	**Leq (dB)**	**Time (s)**	**Leq (dB)**
11:28 AM	56.1			11:28 AM	42.4
11:29 AM	45.7	11:29 AM	46.0	11:29 AM	39.2
11:30 AM	48.5	11:30 AM	44.0	11:30 AM	46.1
11:31 AM	52.1	11:31 AM	46.8	11:31 AM	43.0
11:32 AM	51.6	11:32 AM	49.7	11:32 AM	42.1
11:33 AM	50.9	11:33 AM	49.2	11:33 AM	41.8
11:34 AM	46.1	11:34 AM	46.1	11:34 AM	43.2
11:35 AM	55.0	11:35 AM	49.9	11:35 AM	43.5
11:36 AM	49.3	11:36 AM	47.4	11:36 AM	46.1
11:37 AM	59.8	11:37 AM	50.1	11:37 AM	51.1
11:38 AM	57.2	11:38 AM	58.3	11:38 AM	41.8
11:39 AM	60.5	11:39 AM	59.6	11:39 AM	39.8
11:40 AM	52.3	11:40 AM	46.2	11:40 AM	41.1
11:41 AM	53.0	11:41 AM	46.6	11:41 AM	39.8
11:42 AM	56.7	11:42 AM	51.1	11:42 AM	41.5
11:43 AM	49.8	11:43 AM	45.6	11:43 AM	41.8
11:44 AM	50.4	11:44 AM	45.6	11:44 AM	48.5
11:45 AM	53.3	11:45 AM	46.9	11:45 AM	42.0
11:46 AM	51.7	11:46 AM	46.8	11:46 AM	40.0
11:47 AM	50.7	11:47 AM	46.4	11:47 AM	41.3
11:48 AM	49.4	11:48 AM	46.1	11:48 AM	52.4
		11:49 AM	49.8	11:49 AM	44.5
Avg Leq=	**54**	**Avg Leq=**	**51**	**Avg Leq=**	**45**
		Adjustment =	**1**	**Loudest Hour at Site P =**	**46**
		Adjusted Loudest Hour =	**52**	**Adjustment =**	**1**



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

N

0 100' 200'

NOISE MEASUREMENT
LOCATION EE



Site EE – Near Meter



Site EE – Near Meter



Site EE – Near Meter



Site EE – Far Meter



Site EE – Far Meter



Site EE – Far Meter

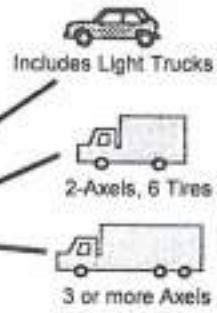
H.W. LOCHNER, INC.	NOISE MEASUREMENT DATA SHEET

SITE NUMBER: FF
SITE DESCRIPTION: _____
_____
EVENT NUMBER: _____
TECHNICIAN: Shannon / Salute / Ballman
CALIBRATION: START _____ DB END _____ DB
WEATHER DATA: SKY CONDITION Clear TEMP 20's
WIND: START Ø MPH END _____ MPH DIRECTION _____
EQUIPMENT: METER LD 820 #3, 9, 14 CALIBRATOR _____
RESPONSE: FAST _____ SLOW _____ BATTERY CHECK _____
RESULTS: Leq _____ Lmax _____

PROJECT: 1210 Tri-Ex
DATE: 5/8/14
START TIME: 10:49
END TIME: 16:10
DURATION: _____

TRAFFIC DATA

ROAD	N	S	E	W		
TRAFFIC SPEED						
AUTOMOBILES	18	9	2	0		
MEDIUM TRUCKS	5	2	1	0		
HEAVY TRUCKS	1	0	0	0		



SITE SKETCH



MAJOR SOURCES: Traffic on Rock Service, Birds
BACKGROUND NOISE: _____
UNUSUAL EVENTS: Plane in distance @ 10:51
OTHER NOTES: _____

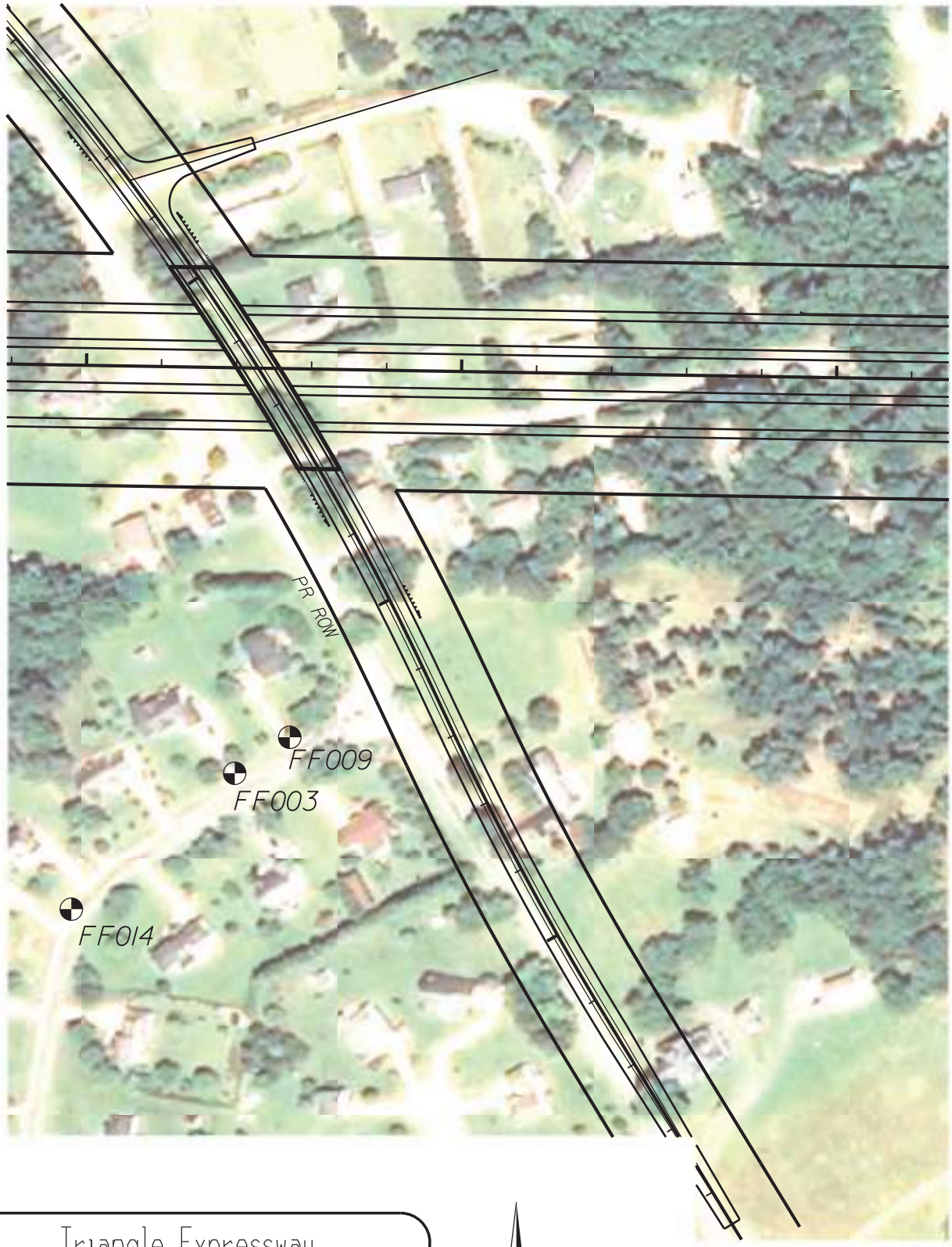
Triangle Expressway Southeast Extension

Site FF
Short Term
5/8/14

= Eliminated due to anomalous data point

Near (Meter 009)		Middle (Meter 003)		Far (Meter 014)		Site T	
Time (s)	**Leq (dB)**	**Time (s)**	**Leq (dB)**	**Time (s)**	**Leq (dB)**	**Time (s)**	**Leq (dB)**
10:49 AM	58.8	10:49 AM	52.8	10:49 AM	44.4	10:49 AM	37.7
10:50 AM	52.8	10:50 AM	47.0	10:50 AM	43.1	10:50 AM	37.5
10:51 AM	53.4	10:51 AM	49.8	10:51 AM	46.7	10:51 AM	39.3
10:52 AM	50.0	10:52 AM	48.0	10:52 AM	46.7	10:52 AM	37.9
10:53 AM	44.6	10:53 AM	44.3	10:53 AM	43.9	10:53 AM	37.9
10:54 AM	48.5	10:54 AM	46.6	10:54 AM	42.1	10:54 AM	37.9
10:55 AM	60.8	10:55 AM	57.8	10:55 AM	55.4	10:55 AM	38.0
10:56 AM	50.1	10:56 AM	47.9	10:56 AM	45.2	10:56 AM	40.0
10:57 AM	50.4	10:57 AM	47.1	10:57 AM	43.1	10:57 AM	40.4
10:58 AM	52.9	10:58 AM	51.9	10:58 AM	43.0	10:58 AM	39.0
10:59 AM	47.0	10:59 AM	46.5	10:59 AM	42.9	10:59 AM	43.6
11:00 AM	52.5	11:00 AM	47.6	11:00 AM	43.3	11:00 AM	43.8
11:01 AM	53.0	11:01 AM	56.0	11:01 AM	57.6	11:01 AM	42.9
11:02 AM	53.3	11:02 AM	49.5	11:02 AM	45.1	11:02 AM	40.1
11:03 AM	48.9	11:03 AM	47.0	11:03 AM	43.2	11:03 AM	36.1
11:04 AM	49.2	11:04 AM	46.3	11:04 AM	43.3	11:04 AM	34.6
11:05 AM	47.9	11:05 AM	42.6	11:05 AM	40.5	11:05 AM	36.0
11:06 AM	54.5	11:06 AM	49.2	11:06 AM	42.6	11:06 AM	38.6
11:07 AM	47.0	11:07 AM	40.7	11:07 AM	42.0	11:07 AM	36.7
11:08 AM	53.2	11:08 AM	45.2	11:08 AM	42.4	11:08 AM	37.5
11:09 AM	45.6	11:09 AM	51.9	11:09 AM	57.4	11:09 AM	37.0
11:10 AM	51.8	11:10 AM	45.7	11:10 AM	44.9	11:10 AM	40.0
				11:11 AM	44.8	11:11 AM	39.3
				11:12 AM	46.5	11:12 AM	40.1

Avg Leq=	**53**	**Avg Leq=**	**50**	**Avg Leq=**	**49**	**Avg Leq=**	**39**
				Adjustment =	**3**	**Loudest Hour at Site T =**	**42**
				Adjusted Loudest Hour =	**52**	**Adjustment =**	**3**



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

N

0 100' 200'

NOISE MEASUREMENT
LOCATION FF



Site FF – Near Meter



Site FF – Near Meter



Site FF – Middle Meter



Site FF – Middle Meter



Site FF – Far Meter

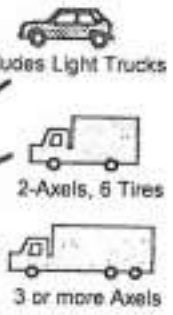

Site FF – Far Meter

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

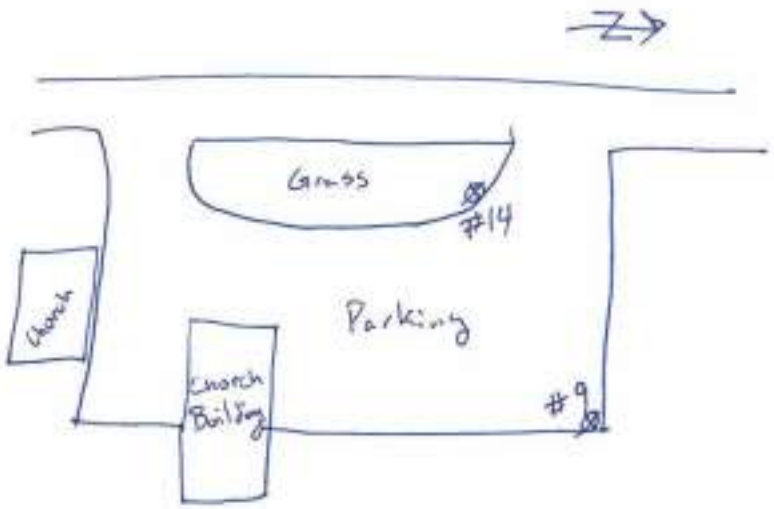
SITE NUMBER: GG
PROJECT: 1210 Tri-Ex
SITE DESCRIPTION: Weaten's Baptist Church
DATE: 5/8/14
START TIME: 10:11
EVENT NUMBER: 1
END TIME: 10:32
TECHNICIAN: Shannon / Salute / Bollman
DURATION:
CALIBRATION: START 14:113.9 3:113.9 9:114.0 DB END _____ DB
WEATHER DATA: SKY CONDITION Clear TEMP 80's
WIND: START Ø MPH END _____ MPH DIRECTION _____
EQUIPMENT: METER LD820 #9,14 CALIBRATOR _____
RESPONSE: FAST _____ SLOW _____ BATTERY CHECK _____
RESULTS: Leq _____ Lmax _____

TRAFFIC DATA

ROAD	N	S	E	W		
TRAFFIC SPEED						
AUTOMOBILES	7	9				
MEDIUM TRUCKS	0	0				
HEAVY TRUCKS	0	0				



SITE SKETCH



MAJOR SOURCES: Birds, wind through trees
BACKGROUND NOISE: Construction in distance
UNUSUAL EVENTS: _____
OTHER NOTES: _____

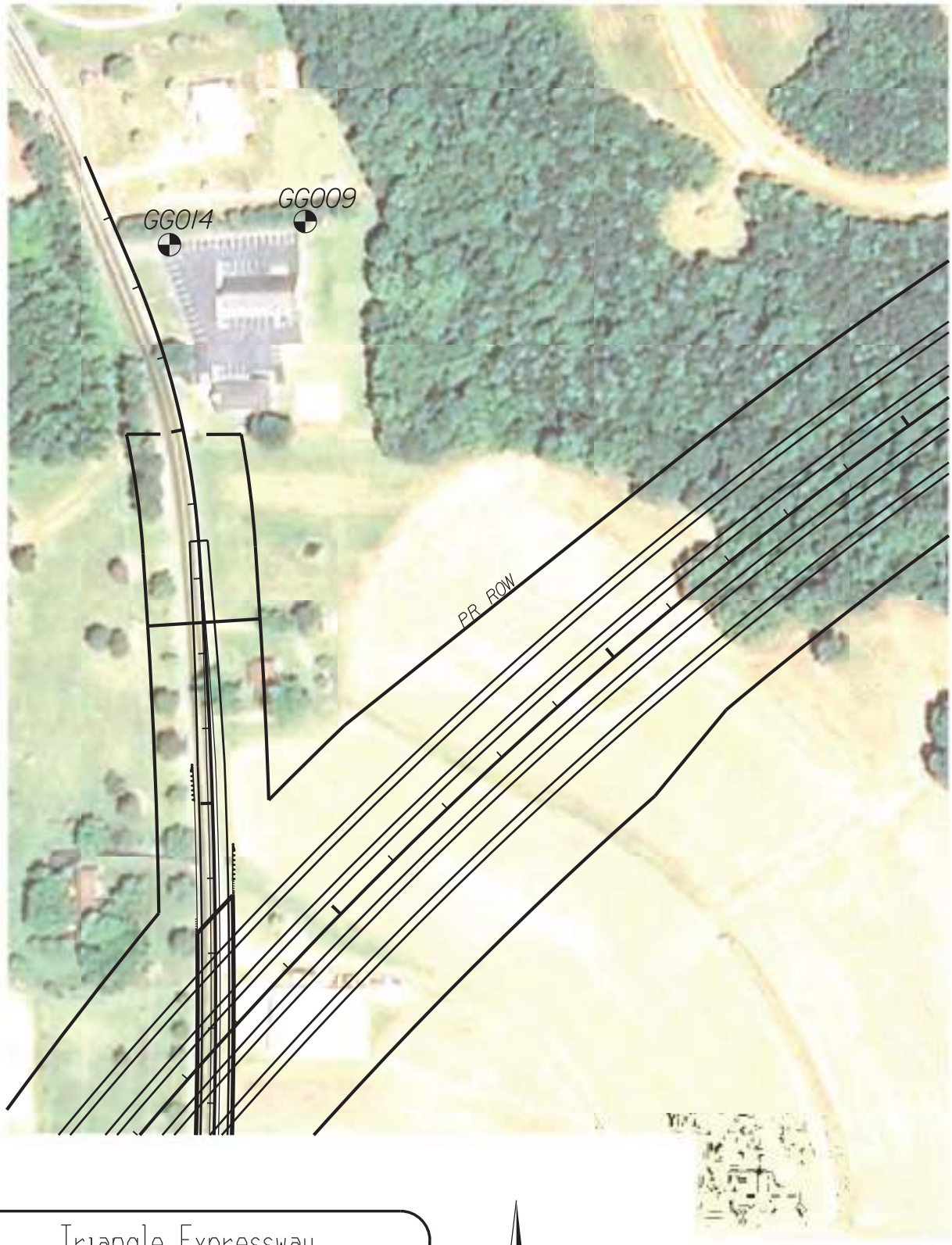
Triangle Expressway Southeast Extension

Site GG
Short Term-Ambient
5/8/14

= Eliminated due to anomalous data point

Near (Meter 014)		Far (Meter 009)		Site P	
Time (s)	**Leq (dB)**	**Time (s)**	**Leq (dB)**	**Time (s)**	**Leq (dB)**
10:11 AM	38.6	10:11 AM	40.2	10:11 AM	39.2
10:12 AM	53.4	10:12 AM	42.6	10:12 AM	36.1
10:13 AM	39.2	10:13 AM	39.2	10:13 AM	40.1
10:14 AM	39.2	10:14 AM	41.4	10:14 AM	37.8
10:15 AM	38.9	10:15 AM	41.6	10:15 AM	37.9
10:16 AM	39.9	10:16 AM	41.9	10:16 AM	37.7
10:17 AM	52.1	10:17 AM	42.5	10:17 AM	38.3
10:18 AM	43.4	10:18 AM	45.9	10:18 AM	43.6
10:19 AM	56.7	10:19 AM	46.6	10:19 AM	41.7
10:20 AM	58.3	10:20 AM	47.5	10:20 AM	36.0
10:21 AM	55.9	10:21 AM	48.0	10:21 AM	45.6
10:22 AM	48.6	10:22 AM	55.5	10:22 AM	43.6
10:23 AM	54.8	10:23 AM	47.4	10:23 AM	38.2
10:24 AM	46.3	10:24 AM	45.0	10:24 AM	44.1
10:25 AM	57.5	10:25 AM	45.9	10:25 AM	48.4
10:26 AM	56.8	10:26 AM	46.1	10:26 AM	47.9
10:27 AM	54.1	10:27 AM	43.9	10:27 AM	39.8
10:28 AM	53.4	10:28 AM	47.7	10:28 AM	37.5
10:29 AM	57.5	10:29 AM	50.3	10:29 AM	39.5
10:30 AM	48.7	10:30 AM	44.3	10:30 AM	35.0
10:31 AM	59.2	10:31 AM	46.6	10:31 AM	39.6
10:32 AM	56.1	10:32 AM	44.8	10:32 AM	39.2

Avg Leq=	**54**	**Avg Leq=**	**47**	**Avg Leq=**	**42**
		Adjustment =	**4**	**Loudest Hour at Site P =**	**46**
		Adjusted Loudest Hour =	**51**	**Adjustment =**	**4**



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

N

0 100' 200'

NOISE MEASUREMENT
LOCATION GG



Site GG – Near Meter



Site GG – Near Meter



Site GG – Far Meter



Site GG – Far Meter



Site GG – Far Meter

Triangle Expressway Southeast Extension

Adjustment of Ambient Measurements
May 2014

Monitoring Location	Area Type	Site P or Site T	Long-Term Long Term Leq dB(A)	Long-Term Loudest 20min Leq dB(A)	Long-Term Delta dB(A)	Field Measured Leq dB(A)	Adjusted Ambient Leq dB(A)
AA	Suburban	Site T	39	42	3	52	55
BB	Rural	Site P	43	46	3	44	47
CC	Suburban	Site T	39	42	3	51	54
DD	Suburban	Site T	40	42	2	53	55
EE	Rural	Site P	45	46	1	51	52
FF	Suburban	Site T	39	42	3	49	52
GG	Rural	Site P	42	46	4	47	51

Triangle Expressway Southeast Extension

TNM Predicted VS Field Measured
May 2014

Monitoring Location	Source	Start/Stop	Field Measured Leq dB(A)	TNM Predicted Leq dB(A)	Validation Delta (Pred. - Meas.)	Reason for lack of validation
AA009	Pierce-Olive	3:16-3:40	57.0	56.6	-0.4	
AA003			55.0	55.8	0.8	
AA014			52.0	53.4	1.4	
BB009	No Traffic	2:19-2:42	44.0	10.2		
CC009	Hilltop-Needmore	1:42-2:02	55.0	55.1	0.1	
CC003			52.0	51.9	-0.1	
CC014			51.0	49.0	-2.0	Breeze/Leaves, Birds
DD003	Dwight Rowland	12:05-12:26	55.0	51.9	-3.1	Breeze/Leaves, Birds
DD009			54.0	49.5	-4.5	Breeze/Leaves, Birds
DD014			53.0	49.2	-3.8	Breeze/Leaves, Birds
EE014	Old Stage	11:28-11:48	54.0	53.6	-0.4	
EE003			51.0	46.6	-4.4	Breeze/Leaves, Birds
FF009	Rock Service Station	10:49-11:10	53.0	52.7	-0.3	
FF003			50.0	51.2	1.2	
FF014			49.0	49.0	0.0	
GG014	Sauls Rd	10:11-10:32	54.0	53.3	-0.7	
GG009			47.0	39.0	-8.0	Breeze/Leaves, Birds

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	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
AA009	1	1	0.0	56.6	66	56.6	10	----	56.6	0.0	8	-8.0
AA003	3	1	0.0	55.8	66	55.8	10	----	55.8	0.0	8	-8.0
AA014	1437	1	0.0	53.4	66	53.4	10	----	53.4	0.0	8	-8.0
BB009	1438	1	0.0	10.2	66	10.2	10	----	10.2	0.0	8	-8.0

Dwelling Units	# DUs	Noise Reduction Min	Avg	Max
		dB	dB	dB
All Selected	4	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 19 May 2014
ECS TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: Tri-Ex
RUN: Existing_B
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	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
FF009	1	1	0.0	52.7	66	52.7	10	----	52.7	0.0	8	-8.0
FF003	2	1	0.0	51.2	66	51.2	10	----	51.2	0.0	8	-8.0
FF014	3	1	0.0	49.0	66	49.0	10	----	49.0	0.0	8	-8.0
GG014	4	1	0.0	53.3	66	53.3	10	----	53.3	0.0	8	-8.0
GG009	410	1	0.0	39.0	66	39.0	10	----	39.0	0.0	8	-8.0

Dwelling Units	# DUs	Noise Reduction Min	Avg	Max
		dB	dB	dB
All Selected	5	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 19 May 2014
ECS TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: 1210-TriEx
RUN: EX_E
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	With Barrier Type Impact	With Barrier Calculated LAeq1h	With Barrier Noise Reduction Calculated	With Barrier Noise Reduction Goal	With Barrier Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
CC009	1	1	0.0	55.1	66	55.1	10	----	55.1	0.0	8	-8.0
CC003	2	1	0.0	51.9	66	51.9	10	----	51.9	0.0	8	-8.0
CC014	3	1	0.0	49.0	66	49.0	10	----	49.0	0.0	8	-8.0
DD003	4	1	0.0	51.9	66	51.9	10	----	51.9	0.0	8	-8.0
DD009	5	1	0.0	49.5	66	49.5	10	----	49.5	0.0	8	-8.0
DD014	6	1	0.0	49.2	66	49.2	10	----	49.2	0.0	8	-8.0
EE014	7	1	0.0	53.6	66	53.6	10	----	53.6	0.0	8	-8.0
EE003	8	1	0.0	46.6	66	46.6	10	----	46.6	0.0	8	-8.0

Dwelling Units	# DUs	Noise Reduction Min	Noise Reduction Avg	Noise Reduction Max
		dB	dB	dB
All Selected	8	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

PCB PIEZOTRONICS
A PCB GROUP COMPANY

Certificate of Calibration and Conformance

Certificate Number 2014-'90123

Instrument Model 820, Serial Number 1152, was calibrated on 28 Apr 2014. The instrument meets factory specifications per Procedure D0001.8160, 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: 28 Apr 2014
Calibration due: 28 Apr 2016

Calibration Standards Used

MANUFACTURER	MODEL	SERIAL NUMBER	INTERVAL	CAL DUE	TRACEABILITY NO.
Larson Davis	LDSigGn/2209	0445 / 0111	12 Months	15 Nov 2014	2013-182314

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

Calibration Environmental Conditions

Temperature: 23 ° Centigrade

Relative Humidity: 27 %

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 same as shipped data.
Tested with PRM828-1519

Signed: Eric Olson

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 2014-190124

Instrument Model 820, Serial Number 1165, was calibrated on 28 Apr 2014. The instrument meets factory specifications per Procedure D0001.8160, 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: 28 Apr 2014
Calibration due: 28 Apr 2016

Calibration Standards Used

MANUFACTURER	MODEL	SERIAL NUMBER	INTERVAL	CAL. DUE	TRACEABILITY NO.
Larson Davis	LDS-gGn/2209	0445 / 0111	12 Months	15 Nov 2014	2013-182314

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

Calibration Environmental Conditions

Temperature: 23 °Centigrade

Relative Humidity: 27 %

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 same as shipped data.
Tested with PRM828-91

Signed: Eric Olson

Technician: Eric Olson

Provo Engineering and Manufacturing Center, 1681 West 820 North, Provo, Utah 84601
Toll Free: 888.258.3222 Telephone: 716.926.8213 Fax: 716.926.8215
ISO 9001-2008 Certified

PCB PIEZOTRONICS
A PCB GROUP COMPANY

Certificate of Calibration and Conformance

Certificate Number 2014-190122

Instrument Model 820, Serial Number 1352, was calibrated on 29 Apr 2014. The instrument meets factory specifications per Procedure D0001.8160, 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: 29 Apr 2014
Calibration due: 29 Apr 2016

Calibration Standards Used

MANUFACTURER	MODEL	SERIAL NUMBER	INTERVAL	CAL. DUE	TRACEABILITY NO.
Larson Davis	LDSigGn/2239	0653 / 0101	12 Months	14 Apr 2015	2014-189483

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

Calibration Environmental Conditions

Temperature: 23 °Centigrade

Relative Humidity: 24 %

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.

See "AS RECEIVED" data.

Signed: _____

Technician: Eric Olson

Provo Engineering and Manufacturing Center, 1681 West 820 North, Provo, Utah 84601
Toll Free: 888.258.3222 Telephone: 716.926.8213 Fax: 716.926.8215
ISO 9001-2008 Certified

Complete 540
Traffic Noise Analysis

Noise Monitoring Weather Data
September 2013
May 2014

Monitoring Location	Temp (°F)	Dew Point (°F)	Pressure (in)	Wind Dir.	Wind Speed (mph)	Relative Humidity	Precip. (in)
A	87.6	63.6	30.15	S	2	45%	0
B	89.6	64.1	30.16	S	4	43%	0
C	93.6	66.3	30.17	E	3	44%	0
D	84.8	72	30.16	WNW	0	65%	0
E (long term)	67.3-84.9	67-73	30.18	S	0	58-99%	0
F	82.8	70	30.2	NW	0	66%	0
G	84.3	70	30.19	WNW	0	63%	0
H	84.5	71	30.18	WNW	0	64%	0
I	80.8	73	30.16	NW	0	76%	0
J	78.7	71	30.18	NW	0	77%	0
K	83.8	68.5	29.6	NE	1	60%	0
L	81.9	68.1	29.61	SW	1	63%	0
M	90	74	29.89	S	1	60%	0
N	88	75	29.96	WSW	0	65%	0
O	78	71	30.01	SE	0	79%	0
P (long term)	67.8-65.4	66.7-73.4	29.8	NNE	0	46-97%	0
Q	83.3	72.6	29.85	N	0	70%	0
R	90.9	72.5	29.85	N	1	55%	1
S	91	73	30.23	E	0	55%	0
T (long term)	65-94	64-75	30.2	W	1	46-98%	0
U	90	74	30.2	SSE	0	59%	0
V	89	75	30.18	S	0	64%	0
W	88	74	29.94	WNW	0	63%	0
AA	59.2	58.9	300.21	SW	0	99%	0
BB	64	63.5	30.07	SSW	0	98%	0
CC	64.2	63.3	30.08	SSW	0	97%	0
DD	85.9	63.9	30.11	S	2	48%	0
EE	84.7	56.9	30.12	S	2	54%	0
FF	82	65.8	30.12	S	1	58%	0
GG	75.1	64	30.17	SW	0	69%	0

Source: Weather Underground (www.wunderground.com)

TRAFFIC NOISE ANALYSIS
VOLUME IV

For

ADMINISTRATIVE ACTION
ENVIRONMENTAL IMPACT STATEMENT

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
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:

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

NORTH CAROLINA Turnpike Authority

Prepared By:
H.W. Lochner, Inc.

LOCHNER

May, 2015

APPENDIX 2

NOT USED

APPENDIX 3

IMPACT ANALYSIS TABLE

Complete 540
Traffic Noise Analysis

Impact Analysis

Receptor	Street Address	Properties Represented	NAC Land Use Category	Noise Levels dB(A)																					
				2014 Measured Ambient	2012 TNM Predicted Existing[3]	2035																			
						Orange		Green		Mint		Red		Purple/Blue		Lilac		Teal		Brown		Tan		No Build	
						Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]
R0001A	5836 OLD SMITHFIELD RD	1	B	48	58	63	5																	60	2
R0001B	5900 OLD SMITHFIELD RD	CHURCH	D	0	40	44	4																	40	0
R0002A	3532 CRITTENDEN LN	1	B	48	59	60	1																	60	1
R0002B	3528 CRITTENDEN LN	1	B	48	57	58	1																	58	1
R0003A	2325 N MAIN ST	1	B	48	60	65	5																	67	7
R0003B	2317 N MAIN ST	1	B	48	58	63	5																	66	8
R0003C	2305 N MAIN ST	1	B	48	55	62	7																	65	10
R0004A	3516 BAKERS ALY	1	B	48	62	65	3																	64	2
R0004B	3512 BAKERS ALY	1	B	48	56	62	6																	59	3
R0005	3501 BAKERS ALY	CHURCH	D	0	40	42	2																	40	0
R0006A	5705 MOSLEY AVE	1	B	48	51	63	12																	58	7
R0006B	3625 FORAKER ST	1	B	48	51	65	14																	59	8
R0006C	5713 MOSLEY AVE	1	B	48	51	62	11																	56	5
R0006D	3617 FORAKER ST	1	B	48	52	64	12																	59	7
R0006E	3609 FORAKER ST	1	B	48	52	63	11																	59	7
R0007A	5712 MOSLEY AVE	1	B	48	50	64	14																	55	5
R0007B	5724 MOSLEY AVE	1	B	48	50	65	15																	55	5
R0008A	5611 FELDER AVE	1	B	48	58	64	6																	67	9
R0008B	5712 OLD SMITHFIELD RD	1	B	48	62	67	5																	68	6
R0009A	5603 FELDER AVE	1	B	48	56	64	8																	66	10
R0009B	5605 FELDER AVE	1	B	48	57	64	7																	66	9
R0010A	2248 E WILLIAMS ST	1	B	48	62	68	6																	72	10
R0010B	2248 E WILLIAMS ST	1	B	48	60	67	7																	71	11
R0010C	2256 E WILLIAMS ST	1	B	48	65	71	6																	75	10
R0013	5528 EDDIE CREEK DR	CHURCH	D	0	40	45	5																	40	0
R0014A	303 CABANA DR	1	B	48	51	64	13																	61	10
R0014B	305 CABANA DR	1	B	48	52	65	13																	61	9
R0015A	307 CABANA DR	1	B	48	51	65	14																	61	10
R0015B	309 CABANA DR	1	B	48	52	65	13																	61	9
R0016A	311 CABANA DR	1	B	48	51	68	17																	60	9
R0016B	313 CABANA DR	1	B	48	50	68	18																	58	8
R0017A	314 CABANA DR	1	B	48	49	68	19																	57	8
R0017B	312 CABANA DR	1	B	48		67	19																	51	3
R0018A	308 CABANA DR	1	B	48	49	65	16																	56	7
R0018B	310 CABANA DR	1	B	48	48	67	19																	55	7
R0019A	304 CABANA DR	1	B	48	49	65	16																	57	8
R0019B	302 CABANA DR	1	B	48	49	65	16																	57	8
R0020A	103 DOVES HAVEN DR	1	B	48	49	65	16																	56	7
R0020B	300 CABANA DR	1	B	48	49	64	15																	57	8
R0020C	105 DOVES HAVEN DR	1	B	48	48	65	17																	55	7
R0021A	103 SPRING DOVE LN	1	B	48	49	65	16																	56	7
R0021B	105 SPRING DOVE LN	1	B	48	49	65	16																	55	6
R0022A	109 SPRING DOVE LN	1	B	48	48	68	20																	54	6
R0022B	107 SPRING DOVE LN	1	B	48	48	65	17																	55	7
R0023A	112 SPRING DOVE LN	1	B	48		69	21																	51	3
R0023B	111 SPRING DOVE LN	1	B	48		68	20																	52	4
R0024A	110 SPRING DOVE LN	1	B	48		68	20																	49	1
R0024B	108 SPRING DOVE LN	1	B	48		67	19																	52	4
R0025A	106 SPRING DOVE LN	1	B	48		65	17																	53	5
R0025B	104 SPRING DOVE LN	1	B	48		65	17																	53	5
R0026	102 SPRING DOVE LN	1	B	48	48	64	16																	53	5
R0027A	201 DOVES HAVEN DR	1	B	48	48	64	16																	54	6
R0027B	205 DOVES HAVEN DR	1	B	48	48	64	16																	56	8
R0028A	209 DOVES HAVEN DR	1	B	48	48	64	16																	53	5
R0028B	211 DOVES HAVEN DR	1	B	48		64	16																	55	7
R0029A	203 SUNSHINE CREST CT	1	B	48		64	16																	56	8
R0029B	201 SUNSHINE CREST CT	1	B	48		63	15																	52	4
R0030A	205 SUNSHINE CREST CT	1	B	48		65	17																	52	4
R0030B	207 SUNSHINE CREST CT	1	B	48		68	20																	52	4
R0031A	208 SUNSHINE CREST CT	1	B	48		70	22																	48	0
R0031B	209 SUNSHINE CREST CT	1	B	48		69	21																	51	3
R0032A	206 SUNSHINE CREST CT	1	B	48		71	23																	48	0
R0032B	204 SUNSHINE CREST CT	1	B	48		69	21																	48	0

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Impact Analysis

Receptor	Street Address	Properties Represented	NAC Land Use Category	Noise Levels dB(A)																							
				2014	2012	2035																					
						Orange		Green		Mint		Red		Purple/Blue		Lilac		Teal		Brown		Tan		No Build	
				Measured	TNM Predicted																						
				Ambient	Existing[3]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]
R0033A	202 SUNSHINE CREST CT	1	B	48		67	19																	48	0
R0033B	200 SUNSHINE CREST CT	1	B	48		65	17																	49	1
R0034A	112 SUNSHINE CREST CT	1	B	48		62	14																	49	1
R0034B	110 SUNSHINE CREST CT	1	B	48		60	12																	50	2
R0035A	108 SUNSHINE CREST CT	1	B	48		58	10																	51	3
R0035B	104 SUNSHINE CREST CT	1	B	48		59	11																	51	3
R0036A	100 SUNSHINE CREST CT	1	B	48		58	10																	50	2
R0036B	102 SUNSHINE CREST CT	1	B	48		58	10																	50	2
R0037A	501 STONECREEK DR	1	B	48		58	10																	50	2
R0037B	503 STONECREEK DR	1	B	48		57	9																	50	2
R0038A	505 STONECREEK DR	1	B	48		59	11																	50	2
R0038B	507 STONECREEK DR	1	B	48		61	13																	49	1
R0039A	509 STONECREEK DR	1	B	48		66	18																	48	0
R0039B	511 STONECREEK DR	1	B	48		71	23																	48	0
R0040A	512 STONECREEK DR	1	B	48		72	24																	48	0
R0040B	510 STONECREEK DR	1	B	48		71	23																	48	0
R0041A	504 STONECREEK DR	1	B	48		67	19																	48	0
R0041B	508 STONECREEK DR	1	B	48		69	21																	48	0
R0041C	500 STONECREEK DR	1	B	48		64	16																	48	0
R0042A	405 THORNCREST DR	1	B	48		68	20																	48	0
R0042B	403 THORNCREST DR	1	B	48		67	19																	48	0
R0043A	407 THORNCREST DR	1	B	48		68	20																	48	0
R0043B	409 THORNCREST DR	1	B	48		69	21																	48	0
R0044A	411 THORNCREST DR	1	B	48		68	20																	48	0
R0044B	413 THORNCREST DR	1	B	48		67	19																	48	0
R0045A	501 THORNCREST DR	1	B	48		65	17																	48	0
R0045B	415 THORNCREST DR	1	B	48		65	17																	48	0
R0046A	503 THORNCREST DR	1	B	48		66	18																	48	0
R0046B	505 THORNCREST DR	1	B	48		68	20																	48	0
R0047A	509 THORNCREST DR	1	B	48		69	21																	48	0
R0047B	507 THORNCREST DR	1	B	48		69	21																	48	0
R0048A	508 THORNCREST DR	1	B	48		67	19																	48	0
R0048B	506 THORNCREST DR	1	B	48		64	16																	48	0
R0049A	101 WEEPING OAK CT	1	B	48		62	14																	48	0
R0049B	504 THORNCREST DR	1	B	48		62	14																	48	0
R0050A	103 WEEPING OAK CT	1	B	48		62	14																	48	0
R0050B	104 WEEPING OAK CT	1	B	48		57	9																	49	1
R0051A	414 THORNCREST DR	1	B	48		58	10																	48	0
R0051B	102 WEEPING OAK CT	1	B	48		56	8																	49	1
R0052A	412 THORNCREST DR	1	B	48		58	10																	48	0
R0052B	406 THORNCREST DR	1	B	48		58	10																	48	0
R0053A	412 STONECREEK DR	1	B	48		60	12																	48	0
R0053B	410 STONECREEK DR	1	B	48		59	11																	48	0
R0054A	200 REUNION PARK DR	1	B	48		62	14																	48	0
R0054B	200 REUNION PARK DR	1	B	48		64	16																	48	0
R0054C	200 REUNION PARK DR	1	B	48		62	14																	48	0
R0054D	200 REUNION PARK DR	1	B	48		64	16																	48	0
R0054E	200 REUNION PARK DR	1	B	48		62	14																	48	0
R0054F	200 REUNION PARK DR	1	B	48		64	16																	48	0
R0054G	200 REUNION PARK DR	1	B	48		62	14																	48	0
R0054H	200 REUNION PARK DR	1	B	48		64	16																	48	0
R0054I	200 REUNION PARK DR	1	B	48		55	7																	48	0
R0054J	200 REUNION PARK DR	1	B	48		57	9																	48	0
R0054K	200 REUNION PARK DR	1	B	48		56	8																	48	0
R0054L	200 REUNION PARK DR	1	B	48		57	9																	48	0
R0054M	200 REUNION PARK DR	1	B	48		57	9																	48	0
R0054N	200 REUNION PARK DR	1	B	48		59	11																	48	0
R0054O	200 REUNION PARK DR	1	B	48		60	12																	48	0
R0054P	200 REUNION PARK DR	1	B	48		62	14																	48	0
R0055A	200 REUNION PARK DR	1	B	48		62	14																	48	0
R0055B	200 REUNION PARK DR	1	B	48		64	16																	48	0
R0055C	200 REUNION PARK DR	1	B	48		65	17																	48	0
R0055D	200 REUNION PARK DR	1	B	48		61	13																	48	0

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Complete 540
Traffic Noise Analysis

Impact Analysis

Receptor	Street Address	Properties Represented	NAC Land Use Category	Noise Levels dB(A)																					
				2014 Measured Ambient	2012 TNM Predicted Existing[3]	2035																			
						Orange		Green		Mint		Red		Purple/Blue		Lilac		Teal		Brown		Tan		No Build	
						Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]
R0055E	200 REUNION PARK DR	1	B	48		63	15																	48	0
R0055F	200 REUNION PARK DR	1	B	48		64	16																	48	0
R0055G	200 REUNION PARK DR	1	B	48		60	12																	48	0
R0055H	200 REUNION PARK DR	1	B	48		62	14																	48	0
R0055I	200 REUNION PARK DR	1	B	48		64	16																	48	0
R0055J	200 REUNION PARK DR	1	B	48		60	12																	48	0
R0055K	200 REUNION PARK DR	1	B	48		62	14																	48	0
R0055L	200 REUNION PARK DR	1	B	48		64	16																	48	0
R0055M	200 REUNION PARK DR	1	B	48		57	9																	48	0
R0055N	200 REUNION PARK DR	1	B	48		58	10																	48	0
R0055O	200 REUNION PARK DR	1	B	48		59	11																	48	0
R0055P	200 REUNION PARK DR	1	B	48		57	9																	48	0
R0055Q	200 REUNION PARK DR	1	B	48		59	11																	48	0
R0055R	200 REUNION PARK DR	1	B	48		60	12																	48	0
R0055S	200 REUNION PARK DR	1	B	48		59	11																	48	0
R0055T	200 REUNION PARK DR	1	B	48		61	13																	48	0
R0055U	200 REUNION PARK DR	1	B	48		62	14																	48	0
R0055V	200 REUNION PARK DR	1	B	48		61	13																	48	0
R0055W	200 REUNION PARK DR	1	B	48		63	15																	48	0
R0055X	200 REUNION PARK DR	1	B	48		64	16																	48	0
R0056A	215 HOLLYHOCK LN	1	B	48		67	19																	48	0
R0056B	213 HOLLYHOCK LN	1	B	48		66	18																	48	0
R0056C	217 HOLLYHOCK LN	1	B	48		68	20																	48	0
R0057A	219 HOLLYHOCK LN	1	B	48		68	20																	48	0
R0057B	221 HOLLYHOCK LN	1	B	48		68	20																	48	0
R0058A	220 HOLLYHOCK LN	1	B	48		67	19																	48	0
R0058B	222 HOLLYHOCK LN	1	B	48		68	20																	48	0
R0058C	218 HOLLYHOCK LN	1	B	48		65	17																	48	0
R0059A	136 FAIRFORD DR	1	B	48	54	61	7																	55	1
R0059B	140 FAIRFORD DR	1	B	48	55	62	7																	56	1
R0059C	132 FAIRFORD DR	1	B	48	53	61	8																	54	1
R0060	4240 SUNSET LAKE RD	COMMERCIAL	E	48	60	62	2																	61	1
R0061A	5204 DUTCH ELM DR	1	B	48		66	18																	48	0
R0061B	5208 DUTCH ELM DR	1	B	48		67	19																	48	0
R0061C	5200 DUTCH ELM DR	1	B	48		62	14																	48	0
R0062A	5212 DUTCH ELM DR	1	B	48		68	20																	48	0
R0062B	5216 DUTCH ELM DR	1	B	48		67	19																	48	0
R0063A	5209 DUTCH ELM DR	1	B	48		61	13																	48	0
R0063B	5213 DUTCH ELM DR	1	B	48		61	13																	48	0
R0064A	5217 DUTCH ELM DR	1	B	48		60	12																	48	0
R0064B	5221 DUTCH ELM DR	1	B	48		58	10																	48	0
R0065A	5220 DUTCH ELM DR	1	B	48		65	17																	48	0
R0065B	5224 DUTCH ELM DR	1	B	48		63	15																	49	1
R0066A	5300 DUTCH ELM DR	1	B	48	48	64	16																	50	2
R0066B	5228 DUTCH ELM DR	1	B	48		63	15																	49	1
R0067A	5225 DUTCH ELM DR	1	B	48		57	9																	48	0
R0067B	5405 MONARCH BIRCH DR	1	B	48		57	9																	48	0
R0068A	5305 DUTCH ELM DR	1	B	48		55	7																	48	0
R0068B	5309 DUTCH ELM DR	1	B	48		56	8																	49	1
R0068C	5317 DUTCH ELM DR	1	B	48	48	56	8																	50	2
R0069A	5308 DUTCH ELM DR	1	B	48	51	64	13																	53	2
R0069B	5304 DUTCH ELM DR	1	B	48	49	65	16																	51	2
R0070A	5312 DUTCH ELM DR	1	B	48	52	63	11																	54	2
R0070B	5316 DUTCH ELM DR	1	B	48	54	63	9																	56	2
R0071A	5320 DUTCH ELM DR	1	B	48	55	62	7																	57	2
R0071B	5324 DUTCH ELM DR	1	B	48	56	62	6																	58	2
R0072A	5332 DUTCH ELM DR	1	B	48	59	64	5																	60	1
R0072B	5328 DUTCH ELM DR	1	B	48	57	63	6																	59	2
R0073A	5333 DUTCH ELM DR	1	B	48	49	56	7																	51	2
R0073B	5301 DUTCH ELM DR	1	B	48	50	56	6																	52	2
R0073C	5325 DUTCH ELM DR	1	B	48	49	56	7																	51	2
R0074A	5336 DUTCH ELM DR	1	B	48	61	64	3																	62	1
R0074B	5340 DUTCH ELM DR	1	B	48	60	63	3																	62	2

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Complete 540
Traffic Noise Analysis

Impact Analysis

Receptor	Street Address	Properties Represented	NAC Land Use Category	Noise Levels dB(A)																							
				2014 Measured Ambient	2012 TNM Predicted Existing[3]	2035																					
						Orange		Green		Mint		Red		Purple/Blue		Lilac		Teal		Brown		Tan		No Build	
						Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]
R0075	5200 LOCKLEY RD	RECREATIONAL	C	53		67	14																	53	0
R0076A	9032 TURNER DR	1	B	53		63	10																	53	0
R0076B	9017 TURNER DR	1	B	53		62	9																	53	0
R0077A	4710 EDWARDS DR	1	B	52		59	7																	52	0
R0077B	4712 EDWARDS DR	1	B	52		58	6																	52	0
R0078A	4716 EDWARDS DR	1	B	52	58	61	3																	61	3
R0078B	4720 EDWARDS DR	1	B	52	58	60	2																	61	3
R0079	4900 SUNSET LAKE RD	1	B	48	58	64	6																	61	3
R0080A	208 BELLAGIO DR	1	B	52		58	6																	52	0
R0080B	212 BELLAGIO DR	1	B	52		58	6																	54	2
R0081	101 CAPRI DR	1	B	52	52	60	8																	55	3
R0082	120 PALERMO CT	1	B	52		60	8																	52	0
R0083	109 PALERMO CT	1	B	52		65	13																	52	0
R0084	104 PALERMO CT	1	B	52		62	10																	52	0
R0085A	4002 CLYDE DR	1	B	53		66	13																	53	0
R0085B	4004 CLYDE DR	1	B	53		70	17																	53	0
R0086	4001 CLYDE DR	1	B	53		60	7																	53	0
R0087A	5004 SUNSET LAKE RD	1	B	53		62	9																	54	1
R0087B	4009 CLYDE DR	1	B	53		63	10																	53	0
R0088A	5012 SUNSET LAKE RD	1	B	53	62	64	2																	64	2
R0088B	5008 SUNSET LAKE RD	1	B	53	57	61	4																	59	2
R0088C	5000 SUNSET LAKE RD	1	B	53	55	62	7																	58	3
R0089A	5017 SUNSET LAKE RD	1	B	53	56	63	7																	59	3
R0089B	5005 SUNSET LAKE RD	1	B	53	60	65	5																	63	3
R0090A	5025 SUNSET LAKE RD	1	B	53	59	61	2																	61	2
R0090B	5021 SUNSET LAKE RD	1	B	53	59	61	2																	62	3
R0090C	5029 SUNSET LAKE RD	1	B	53	61	62	1																	63	2
R0090D	5033 SUNSET LAKE RD	1	B	53	61	63	2																	64	3
R0091A	4632 LOCKLEY RD	1	B	53	53	59	6																	56	3
R0091B	4624 LOCKLEY RD	1	B	53		57	4																	54	1
R0091C	4624 LOCKLEY RD	1	B	53		58	5																	53	0
R0092A	4633 LOCKLEY RD	1	B	53	54	58	4																	56	2
R0092B	4625 LOCKLEY RD	1	B	53		57	4																	54	1
R0093A	5109 SUNSET LAKE RD	1	B	53	61	62	1																	63	2
R0093B	5105 SUNSET LAKE RD	1	B	53	61	62	1																	63	2
R0093C	5113 SUNSET LAKE RD	1	B	53	60	61	1																	63	3
R0093D	5121 SUNSET LAKE RD	1	B	53	61	62	1																	63	2
R0094A	5114 SUNSET LAKE RD	1	B	53	55	56	1																	58	3
R0094B	5112 SUNSET LAKE RD	1	B	53	63	62	-1																	65	2
R0094C	5120 SUNSET LAKE RD	1	B	53	63	63	0																	65	2
R0094D	5128 SUNSET LAKE RD	1	B	53	65	66	1																	67	2
R0095A	105 HARVESTWOOD DR	1	B	53		55	2																	53	0
R0095B	109 HARVESTWOOD DR	1	B	53		55	2																	54	1
R0096A	117 HARVESTWOOD DR	1	B	53		52	-1																	53	0
R0096B	113 HARVESTWOOD DR	1	B	53		54	1																	54	1
R0096C	121 HARVESTWOOD DR	1	B	53		52	-1																	53	0
R0097A	5132 SUNSET LAKE RD	1	B	53	61	62	1																	64	3
R0097B	5130 SUNSET LAKE RD	1	B	53	62	62	0																	64	2
R0097C	5136 SUNSET LAKE RD	1	B	53	61	62	1																	64	3
R0098A	5129 SUNSET LAKE RD	1	B	53	61	63	2																	64	3
R0098B	5125 SUNSET LAKE RD	1	B	53	61	63	2																	64	3
R0098C	5133 SUNSET LAKE RD	1	B	53	62	63	1																	64	2
R0099	5160 SUNSET LAKE RD	COMMERCIAL	E	53	58	59	1																	61	3
R0100	5153 SUNSET LAKE RD	COMMERCIAL	E	53	64	65	1																	67	3
R0101	5217 SUNSET LAKE RD	COMMERCIAL	E	53	55	57	2																	57	2
R0102A	4505 LOCKLEY RD	1	B	53	55	58	3																	59	4
R0102B	9728 HOLLY SPRINGS RD	1	B	53	59	61	2																	63	4
R0103A	4512 LOCKLEY RD	1	B	53	53	57	4																	57	4
R0103B	0 HOLLY SPRINGS RD	1	B	53	57	60	3																	61	4
R0104	4608 LOCKLEY RD	CHURCH	C	53		56	3																	53	0
R0105A	9704 HOLLY SPRINGS RD	1	B	53	56	60	4																	60	4
R0105B	9700 HOLLY SPRINGS RD	1	B	53	58	61	3																	61	3
R0106A	9636 HOLLY SPRINGS RD	1	B	53	58	62	4																	62	4

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Complete 540
Traffic Noise Analysis

Impact Analysis

Receptor	Street Address	Properties Represented	NAC Land Use Category	Noise Levels dB(A)																					
				2014 Measured Ambient	2012 TNM Predicted Existing[3]	2035																			
						Orange		Green		Mint		Red		Purple/Blue		Lilac		Teal		Brown		Tan		No Build	
						Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]
R0106B	9632 HOLLY SPRINGS RD	1	B	53	58	62	4																	62	4
R0106C	9628 HOLLY SPRINGS RD	1	B	53	59	63	4																	63	4
R0106D	9640 HOLLY SPRINGS RD	1	B	53	57	61	4																	60	3
R0107A	9725 HOLLY SPRINGS RD	1	B	53	57	61	4																	61	4
R0107B	9717 HOLLY SPRINGS RD	1	B	53	55	59	4																	59	4
R0108	9721 HOLLY SPRINGS RD	1	B	53	54	59	5																	58	4
R0109A	9029 WESLEY CT	1	B	53	56	61	5																	60	4
R0109B	9028 WESLEY CT	1	B	53	60	64	4																	64	4
R0109C	9025 WESLEY CT	1	B	53		59	6																	56	3
R0110	5200 CATHERINE PL	1	B	53	58	63	5																	62	4
R0111	9008 WESLEY CT	1	B	53	62	66	4							65	3									65	3
R0112A	9009 WESLEY CT	1	B	53		59	6							58	5									56	3
R0112B	9005 WESLEY CT	1	B	53		56	3							56	3									55	2
R0113A	9017 WESLEY CT	1	B	53		59	6																	56	3
R0113B	9021 WESLEY CT	1	B	53		59	6																	56	3
R0113C	9013 WESLEY CT	1	B	53		59	6																	56	3
R0114A	9000 WESLEY CT	1	B	53	56	60	4							59	3									60	4
R0114B	9001 WESLEY CT	1	B	53		58	5							57	4									56	3
R0115A	104 FAIRVIEW ST	1	B	53	55	60	5							59	4									59	4
R0115B	106 FAIRVIEW ST	1	B	53		59	6							58	5									56	3
R0115C	106 FAIRVIEW ST	1	B	53		58	5							57	4									55	2
R0116	108 FAIRVIEW ST	1	B	53		58	5							57	4									53	0
R0117	109 FAIRVIEW ST	1	B	53		62	9							61	8									54	1
R0118	103 SPRING ST	1	B	53		64	11							64	11									53	0
R0119A	104 SPRING ST	1	B	53		65	12							66	13									53	0
R0119B	102 SPRING ST	1	B	53		64	11							64	11									53	0
R0121	9516 HOLLY SPRINGS RD	1	B	52	57	64	7																	61	4
R0123	9516 HOLLY SPRINGS RD	1	B	52	52	58	6																	56	4
R0124	9516 HOLLY SPRINGS RD	1	B	52	57	57	0																	60	3
R0125A	4312 KILDAIRE FARM RD	1	B	52	57	58	1																	60	3
R0125B	4316 KILDAIRE FARM RD	1	B	52	56	56	0																	59	3
R0126A	113 GRENOCH VALLEY LN	1	B	52		53	1																	52	0
R0126B	109 GRENOCH VALLEY LN	1	B	52		54	2																	52	0
R0126C	105 GRENOCH VALLEY LN	1	B	52		54	2																	52	0
R0126D	101 GRENOCH VALLEY LN	1	B	52		54	2																	52	0
R0127A	105 BUTTERBIGGINS LN	1	B	52		54	2																	52	0
R0127B	107 BUTTERBIGGINS LN	1	B	52		53	1																	52	0
R0127C	109 BUTTERBIGGINS LN	1	B	52		53	1																	52	0
R0127D	103 BUTTERBIGGINS LN	1	B	52		54	2																	52	0
R0127E	101 BUTTERBIGGINS LN	1	B	52		54	2																	52	0
R0128A	116 BUTTERBIGGINS LN	1	B	52		52	0																	52	0
R0128B	114 BUTTERBIGGINS LN	1	B	52		52	0																	52	0
R0128C	112 BUTTERBIGGINS LN	1	B	52		52	0																	52	0
R0128D	110 BUTTERBIGGINS LN	1	B	52		53	1																	52	0
R0129A	108 BUTTERBIGGINS LN	1	B	52		53	1																	52	0
R0129B	106 BUTTERBIGGINS LN	1	B	52		54	2																	52	0
R0129C	104 BUTTERBIGGINS LN	1	B	52		54	2																	53	1
R0129D	102 BUTTERBIGGINS LN	1	B	52		54	2																	53	1
R0129E	100 BUTTERBIGGINS LN	1	B	52		55	3																	54	2
R0130A	150 GRENOCH VALLEY LN	1	B	52	59	62	3																	62	3
R0130B	150 GRENOCH VALLEY LN	1	B	52	60	63	3																	63	3
R0130C	150 GRENOCH VALLEY LN	1	B	52	61	64	3																	64	3
R0130D	150 GRENOCH VALLEY LN	1	B	52	58	60	2																	61	3
R0130E	150 GRENOCH VALLEY LN	1	B	52	58	60	2																	61	3
R0130F	150 GRENOCH VALLEY LN	1	B	52	58	60	2																	61	3
R0131A	123 HAVELOCK CT	1	B	52	62	65	3																	65	3
R0131B	150 GRENOCH VALLEY LN	1	B	52	62	65	3																	67	5
R0131C	119 HAVELOCK CT	1	B	52	61	65	4																	67	6
R0131D	150 GRENOCH VALLEY LN	1	B	52	61	65	4																	64	3
R0131E	150 GRENOCH VALLEY LN	1	B	52	61	64	3																	67	6
R0131F	150 GRENOCH VALLEY LN	1	B	52	61	64	3																	67	6
R0132A	4609 AVIARY CIR	1	B	52	54	63	9																	57	3
R0132B	4605 AVIARY CIR	1	B	52		57	5																	55	3

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3Noise levels reported if the traffic noise was dominant noise

Complete 540
Traffic Noise Analysis

Impact Analysis

Receptor	Street Address	Properties Represented	NAC Land Use Category	Noise Levels dB(A)																							
				2014 Measured Ambient	2012 TNM Predicted Existing[3]	2035																					
						Orange		Green		Mint		Red		Purple/Blue		Lilac		Teal		Brown		Tan		No Build	
						Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]
R0133A	4321 HOLLY RUN RD	1	B	52		55	3																	54	2
R0133B	4324 HOLLY RUN RD	1	B	52		55	3																	52	0
R0134	4601 AVIARY CIR	1	B	52		55	3																	54	2
R0135A	4608 AVIARY CIR	1	B	52	52	56	4																	59	7
R0135B	4600 AVIARY CIR	1	B	52		55	3																	53	1
R0136A	4616 AVIARY CIR	1	B	52	62	63	1																	67	5
R0136B	4612 AVIARY CIR	1	B	52	56	59	3																	63	7
R0138A	3508 LEXHAM CT	1	B	52		68	16							65	13									52	0
R0138B	3504 LEXHAM CT	1	B	52		65	13							63	11									52	0
R0138C	3505 LEXHAM CT	1	B	52		70	18							67	15									52	0
R0139A	4101 SANCROFT DR	1	B	52		65	13							63	11									52	0
R0139B	3500 LEXHAM CT	1	B	52		61	9							58	6									52	0
R0140A	3425 ASHMILL CT	1	B	52		64	12							62	10									53	1
R0140B	3424 ASHMILL CT	1	B	52		64	12							62	10									57	5
R0141A	3420 ASHMILL CT	1	B	52	53	64	11							63	10									62	9
R0141B	3416 ASHMILL CT	1	B	52	54	64	10							64	10									59	5
R0142A	3408 ASHMILL CT	1	B	52	55	65	10							65	10									64	9
R0142B	3412 ASHMILL CT	1	B	52	54	64	10							64	10									64	10
R0143A	3404 ASHMILL CT	1	B	52	56	65	9							65	9									61	5
R0143B	4221 SANCROFT DR	1	B	52	56	65	9							64	8									65	9
R0144A	3421 ASHMILL CT	1	B	52		64	12							62	10									55	3
R0144B	3417 ASHMILL CT	1	B	52		63	11							61	9									53	1
R0144C	3413 ASHMILL CT	1	B	52		63	11							62	10									55	3
R0145	3401 ASHMILL CT	1	B	52		61	9							60	8									57	5
R0146A	4208 SANCROFT DR	1	B	52		59	7							58	6									52	0
R0146B	4204 SANCROFT DR	1	B	52		59	7							58	6									52	0
R0147A	4216 SANCROFT DR	1	B	52		59	7																	59	7
R0147B	4220 SANCROFT DR	1	B	52	52	60	8																	57	5
R0147C	4224 SANCROFT DR	1	B	52	55	62	7																	64	9
R0147D	4228 SANCROFT DR	1	B	52	61	65	4																	70	9
R0148	9412 HOLLY SPRINGS RD	1	B	52	56	61	5																	61	5
R0149A	4313 HOLLY RUN RD	1	B	52		57	5																	53	1
R0149B	4309 HOLLY RUN RD	1	B	52		58	6																	55	3
R0150A	4301 HOLLY RUN RD	1	B	52	60	65	5																	66	6
R0150B	4305 HOLLY RUN RD	1	B	52	54	59	5																	59	5
R0151A	4312 HOLLY RUN RD	1	B	52		55	3																	53	1
R0151B	4308 HOLLY RUN RD	1	B	52		56	4																	55	3
R0152A	4408 ELLINWOOD DR	1	B	52		55	3																	56	4
R0152B	4404 ELLINWOOD DR	1	B	52		54	2																	53	1
R0152C	4412 ELLINWOOD DR	1	B	52		54	2																	55	3
R0153A	4304 HOLLY RUN RD	1	B	52	54	59	5																	59	5
R0153B	4300 HOLLY RUN RD	1	B	52	62	66	4																	67	5
R0154	9409 HOLLY SPRINGS RD	1	B	52	54	60	6																	59	5
R0155	9401 HOLLY SPRINGS RD	1	B	52	58	62	4																	63	5
R0156	9329 HOLLY SPRINGS RD	1	B	52	52	56	4																	57	5
R0157A	4209 WYCKFORD PL	1	B	52		54	2																	55	3
R0157B	4205 WYCKFORD PL	1	B	52		54	2																	55	3
R0158	0 HOLLY SPRINGS RD	CHURCH	C	52	53	56	3																	58	5
R0159	8600 PIERCE OLIVE RD	1	B	53	55	66	11							64	9									59	4
R0161A	3829 SKY MEADOW DR	1	B	46		66	20																	46	0
R0161B	3830 SKY MEADOW DR	1	B	46		58	12																	46	0
R0163A	3818 SKY MEADOW DR	1	B	46		55	9																	46	0
R0163B	3818 SKY MEADOW DR	1	B	46		55	9																	46	0
R0164A	3817 SKY MEADOW DR	1	B	46		63	17																	46	0
R0164B	8612 LAWDRAKER RD	1	B	46		58	12																	46	0
R0165A	3812 SKY MEADOW DR	1	B	46		53	7																	46	0
R0165B	3808 SKY MEADOW DR	1	B	46		54	8																	46	0
R0166A	8604 LAWDRAKER RD	1	B	46		58	12																	46	0
R0166B	8600 LAWDRAKER RD	1	B	46		59	13																	46	0
R0167A	8613 LAWDRAKER RD	1	B	46		67	21																	46	0
R0167B	3729 SKY MEADOW DR	1	B	46		70	24																	46	0
R0168A	8605 LAWDRAKER RD	1	B	46		61	15																	46	0
R0168B	3732 SKY MEADOW DR	1	B	46		61	15																	46	0

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Complete 540
Traffic Noise Analysis

Impact Analysis

Receptor	Street Address	Properties Represented	NAC Land Use Category	Noise Levels dB(A)																							
				2014 Measured Ambient	2012 TNM Predicted Existing[3]	2035																					
						Orange		Green		Mint		Red		Purple/Blue		Lilac		Teal		Brown		Tan		No Build	
						Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]
R0168C	8601 LAWDRAKER RD	1	B	46		60	14																	46	0
R0169A	3725 SKY MEADOW DR	1	B	46		70	24																	46	0
R0169B	3717 SKY MEADOW DR	1	B	46		70	24																	46	0
R0170A	3724 SKY MEADOW DR	1	B	46		62	16																	46	0
R0170B	3716 SKY MEADOW DR	1	B	46		63	17																	46	0
R0171A	3712 SKY MEADOW DR	1	B	46		64	18																	46	0
R0171B	3708 SKY MEADOW DR	1	B	46		62	16																	46	0
R0172A	3704 SKY MEADOW DR	1	B	46		63	17																	46	0
R0172B	3700 SKY MEADOW DR	1	B	46		64	18																	46	0
R0173	3709 SKY MEADOW DR	1	B	46		68	22																	46	0
R0174A	3901 SUMMER BROOK DR	1	B	46		61	15																	46	0
R0174B	3905 SUMMER BROOK DR	1	B	46		60	14																	46	0
R0176A	3913 SUMMER BROOK DR	1	B	46		57	11																	46	0
R0176B	3909 SUMMER BROOK DR	1	B	46		58	12																	46	0
R0178A	3917 SUMMER BROOK DR	1	B	46		56	10																	46	0
R0178B	3728 GRANDBRIDGE DR	1	B	46		57	11																	46	0
R0179A	3724 GRANDBRIDGE DR	1	B	46		57	11																	46	0
R0179B	3720 GRANDBRIDGE DR	1	B	46		59	13																	46	0
R0180A	3716 GRANDBRIDGE DR	1	B	46		66	20																	46	0
R0180B	3712 GRANDBRIDGE DR	1	B	46		66	20																	46	0
R0182A	3708 GRANDBRIDGE DR	1	B	46		66	20																	46	0
R0182B	3704 GRANDBRIDGE DR	1	B	46		68	22																	46	0
R0182C	3700 GRANDBRIDGE DR	1	B	46		67	21																	46	0
R0184	3701 GRANDBRIDGE DR	1	B	46		63	17																	46	0
R0186A	3608 HERITAGE CREEK DR	1	B	46		65	19																	46	0
R0186B	3604 HERITAGE CREEK DR	1	B	46		66	20																	46	0
R0187A	3600 HERITAGE CREEK DR	1	B	46		71	25																	46	0
R0187B	3601 HERITAGE CREEK DR	1	B	46		70	24																	46	0
R0188A	3609 HERITAGE CREEK DR	1	B	46		65	19																	46	0
R0188B	3605 HERITAGE CREEK DR	1	B	46		65	19																	46	0
R0189A	3521 CASTELAINE CIR	1	B	46		67	21																	46	0
R0189B	3513 CASTELAINE CIR	1	B	46		67	21																	46	0
R0189C	3509 CASTELAINE CIR	1	B	46		65	19																	47	1
R0190	3404 CASTELAINE CIR	1	B	46	55	60	5																	58	3
R0191A	3105 FLORESTA DR	1	B	46	56	65	9																	59	3
R0191B	3108 FLORESTA DR	1	B	46	55	62	7																	58	3
R0192A	4008 WEST LAKE RD	1	B	46	51	65	14																	54	3
R0192B	4004 WEST LAKE RD	1	B	46	49	67	18																	52	3
R0192C	4000 WEST LAKE RD	1	B	46	55	69	14																	59	4
R0193A	3420 LANGSTON CIR	1	B	46	49	60	11																	53	4
R0193B	3412 LANGSTON CIR	1	B	46	47	58	11																	50	3
R0194	4001 WEST LAKE RD	1	B	46	51	61	10																	54	3
R0195	4000 HARRIAT DR	1	B	46	48	63	15																	51	3
R0196	4005 HARRIAT DR	1	B	46		72	26																	48	2
R0197A	4009 HARRIAT DR	1	B	46		73	27																	46	0
R0197B	4013 HARRIAT DR	1	B	46		69	23																	46	0
R0198A	5924 OXFORD GREEN DR	1	B	46		65	19																	46	0
R0198B	5928 OXFORD GREEN DR	1	B	46		62	16																	46	0
R0198C	5920 OXFORD GREEN DR	1	B	46		64	18																	46	0
R0199A	5921 OXFORD GREEN DR	1	B	46		60	14																	46	0
R0199B	5925 OXFORD GREEN DR	1	B	46		58	12																	46	0
R0199C	5917 OXFORD GREEN DR	1	B	46		59	13																	46	0
R0203	5905 OXFORD GREEN DR	1	B	46		64	18																	48	2
R0204	5909 OXFORD GREEN DR	1	B	46		60	14																	47	1
R0205	8016 BELLS LAKE RD	1	B	46	50	64	14																	53	3
R0206	8100 BELLS LAKE RD	1	B	46	54	64	10																	57	3
R0207	8101 BELLS LAKE RD	1	B	46	54	64	10																	57	3
R0208	5729 CARRIAGEHOUSE CT	1	B	46		59	13																	47	1
R0209	8111 BELLS LAKE RD	1	B	46	54	63	9																	56	2
R0210	8102 BELLS LAKE RD	1	B	46	52	62	10																	55	3
R0211A	4016 TRUELOVE DR	1	B	46	46	57	11																	49	3
R0211B	4008 TRUELOVE DR	1	B	46	49	59	10																	51	2
R0212	8200 BELLS LAKE RD	1	B	46	53	60	7																	55	2

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Complete 540
Traffic Noise Analysis

Impact Analysis

Receptor	Street Address	Properties Represented	NAC Land Use Category	Noise Levels dB(A)																							
				2014 Measured Ambient	2012 TNM Predicted Existing[3]	2035																					
						Orange		Green		Mint		Red		Purple/Blue		Lilac		Teal		Brown		Tan		No Build	
						Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]
R0213A	8207 BELLS LAKE RD	1	B	46	54	62	8																	57	3
R0213B	8201 BELLS LAKE RD	1	B	46	53	62	9																	56	3
R0214A	2926 BELLS POINTE CT	1	B	46		64	18																	47	1
R0214B	2929 BELLS POINTE CT	1	B	46	49	65	16																	52	3
R0214C	2925 BELLS POINTE CT	1	B	46	55	68	13																	58	3
R0215A	2922 BELLS POINTE CT	1	B	46		60	14																	46	0
R0215B	2918 BELLS POINTE CT	1	B	46		60	14																	46	0
R0216A	2921 BELLS POINTE CT	1	B	46	56	66	10																	58	2
R0216B	2917 BELLS POINTE CT	1	B	46	55	65	10																	58	3
R0217A	2914 BELLS POINTE CT	1	B	46		59	13																	46	0
R0217B	2912 BELLS POINTE CT	1	B	46		58	12																	47	1
R0218A	2913 BELLS POINTE CT	1	B	46	56	64	8																	58	2
R0218B	2909 BELLS POINTE CT	1	B	46	56	64	8																	58	2
R0219	2901 BELLS POINTE CT	1	B	46	57	65	8																	60	3
R0220A	2908 BELLS POINTE CT	1	B	46		57	11																	47	1
R0220B	7524 ORCHARD CREST CT	1	B	46		56	10																	47	1
R0221A	7525 ORCHARD CREST CT	1	B	46	53	61	8																	56	3
R0221B	2900 BELLS POINTE CT	1	B	46	57	64	7																	60	3
R0222A	7520 ORCHARD CREST CT	1	B	46		55	9																	47	1
R0222B	7516 ORCHARD CREST CT	1	B	46		55	9																	47	1
R0222C	7512 ORCHARD CREST CT	1	B	46		54	8																	46	0
R0223A	7517 ORCHARD CREST CT	1	B	46	54	61	7																	57	3
R0223B	7513 ORCHARD CREST CT	1	B	46	54	62	8																	57	3
R0224A	7504 ORCHARD CREST CT	1	B	46	47	55	8																	49	2
R0224B	7500 ORCHARD CREST CT	1	B	46	49	57	8																	52	3
R0225A	7501 ORCHARD CREST CT	1	B	46	55	62	7																	58	3
R0225B	7505 ORCHARD CREST CT	1	B	46	58	64	6																	61	3
R0225C	7509 ORCHARD CREST CT	1	B	46	56	63	7																	61	5
R0226A	7801 BELLS LAKE RD	1	B	46	56	62	6																	59	3
R0226B	7801 BELLS LAKE RD	1	B	46	55	61	6																	60	5
R0227A	3008 GEIGER CIR	1	B	46	48	58	10																	55	7
R0227B	3004 GEIGER CIR	1	B	46	49	57	8																	51	2
R0228	7737 BELLS LAKE RD	1	B	46	55	61	6																	57	2
R0229A	3620 HIGHLAND CREEK DR	1	B	46	46	56	10																	49	3
R0229B	3616 HIGHLAND CREEK DR	1	B	46	48	57	9																	51	3
R0230A	3608 HIGHLAND CREEK DR	1	B	46	51	59	8																	54	3
R0230B	3600 HIGHLAND CREEK DR	1	B	46	56	62	6																	59	3
R0231A	3601 HIGHLAND CREEK DR	1	B	46	57	63	6																	60	3
R0231B	3605 HIGHLAND CREEK DR	1	B	46	52	60	8																	55	3
R0232A	3613 HIGHLAND CREEK DR	1	B	46	46	55	9																	49	3
R0232B	3609 HIGHLAND CREEK DR	1	B	46	48	56	8																	51	3
R0232C	3617 HIGHLAND CREEK DR	1	B	46		54	8																	47	1
R0233	8036 RHODES RD	1	B	46		69	23																	46	0
R0234A	8036 RHODES RD	1	B	46	46	73	27																	48	2
R0234B	8036 RHODES RD	1	B	46		72	26																	46	0
R0234C	8036 RHODES RD	1	B	46	52	72	20																	54	2
R0235A	8036 RHODES RD	1	B	46		63	17																	48	2
R0235B	8036 RHODES RD	1	B	46	49	64	15																	51	2
R0235C	8036 RHODES RD	1	B	46	53	64	11																	55	2
R0236A	8036 RHODES RD	1	B	46		62	16																	47	1
R0236B	8036 RHODES RD	1	B	46	48	62	14																	50	2
R0236C	8036 RHODES RD	1	B	46	52	63	11																	54	2
R0236D	8036 RHODES RD	1	B	46	55	62	7																	57	2
R0236E	8036 RHODES RD	1	B	46	51	61	10																	53	2
R0236F	8036 RHODES RD	1	B	46	47	60	13																	50	3
R0236G	8036 RHODES RD	1	B	46		60	14																	46	0
R0237A	8036 RHODES RD	1	B	46	52	68	16																	54	2
R0237B	8036 RHODES RD	1	B	46	54	65	11																	56	2
R0237C	8036 RHODES RD	1	B	46	51	72	21																	54	3
R0238A	8036 RHODES RD	1	B	46		68	22																	47	1
R0238B	8036 RHODES RD	1	B	46		67	21																	47	1
R0238C	8036 RHODES RD	1	B	46		66	20																	47	1
R0239A	8036 RHODES RD	1	B	46		65	19																	48	2

1Noise levels highlighted in red are levels above the Noise Abatement Criteria.
2Noise level increases highlighted in red are above the substantial noise level increase criteria.
3Noise levels reported if the traffic noise was dominant noise

Impact Analysis

Receptor	Street Address	Properties Represented	NAC Land Use Category	Noise Levels dB(A)																					
				2014	2012	2035																			
						Orange		Green		Mint		Red		Purple/Blue		Lilac		Teal		Brown		Tan		No Build	
				Measured Ambient	TNM Predicted Existing[3]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]
R0239B	8036 RHODES RD	1	B	46	46	63	17																	48	2
R0239C	8036 RHODES RD	1	B	46	46	62	16																	49	3
R0240A	0 RHODES RD	1	B	46		62	16																	46	0
R0240B	0 RHODES RD	1	B	46		64	18																	46	0
R0241A	0 RHODES RD	1	B	46		67	21																	46	0
R0241B	0 RHODES RD	1	B	46		66	20																	46	0
R0242A	0 RHODES RD	1	B	46		64	18																	46	0
R0242B	0 RHODES RD	1	B	46		62	16																	46	0
R0243	8101 RHODES RD	1	B	46		70	24																	48	2
R0244A	8105 RHODES RD	1	B	46		65	19																	48	2
R0244B	8109 RHODES RD	1	B	46		63	17																	48	2
R0245A	5609 DEERBORN DR	1	B	46		69	23																	46	0
R0245B	5605 DEERBORN DR	1	B	46		67	21																	46	0
R0246A	5613 DEERBORN DR	1	B	46		71	25																	46	0
R0246B	5617 DEERBORN DR	1	B	46		72	26																	46	0
R0247A	8112 DEER MEADOW DR	1	B	46	49	63	14																	50	1
R0247B	8108 DEER MEADOW DR	1	B	46	49	64	15																	50	1
R0247C	8116 DEER MEADOW DR	1	B	46	50	61	11																	51	1
R0248	8100 DEER MEADOW DR	1	B	46	47	72	25																	48	1
R0249	8105 DEER MEADOW DR	1	B	46		74	28																	46	0
R0250A	5412 LOWER CREEK CT	1	B	46		63	17																	46	0
R0250B	5408 LOWER CREEK CT	1	B	46		63	17																	46	0
R0250C	5416 LOWER CREEK CT	1	B	46	50	63	13																	52	2
R0253A	5400 LOWER CREEK CT	1	B	46		66	20																	46	0
R0253B	5401 LOWER CREEK CT	1	B	46		63	17																	46	0
R0254	8004 DEER MEADOW DR	1	B	46		57	11																	47	1
R0255	8020 DEER MEADOW DR	1	B	46	47	61	14																	49	2
R0256A	8028 DEER MEADOW DR	1	B	46	47	70	23																	48	1
R0256B	8032 DEER MEADOW DR	1	B	46	49	74	25																	50	1
R0257A	8009 DEER MEADOW DR	1	B	46	47	58	11																	49	2
R0257B	8013 DEER MEADOW DR	1	B	46	48	59	11																	49	1
R0258	7908 PINESLOPE DR	1	B	46		58	12																	46	0
R0259	7900 PINESLOPE DR	1	B	46		56	10																	46	0
R0260A	8029 DEER MEADOW DR	1	B	46	47	61	14																	49	2
R0260B	7916 PINESLOPE DR	1	B	46		60	14																	46	0
R0261A	5416 BUCKWOOD DR	1	B	46		61	15																	46	0
R0261B	5420 BUCKWOOD DR	1	B	46	47	63	16																	49	2
R0261C	7924 PINESLOPE DR	1	B	46		60	14																	46	0
R0262A	8008 BAYBARK CIR	1	B	46		55	9																	46	0
R0262B	8004 BAYBARK CIR	1	B	46		55	9																	46	0
R0263A	8017 BAYBARK CIR	1	B	46		55	9																	46	0
R0263B	8001 BAYBARK CIR	1	B	46		54	8																	46	0
R0264A	8004 EVERARD CT	1	B	46		57	11																	46	0
R0264B	8000 EVERARD CT	1	B	46		56	10																	46	0
R0265A	8001 EVERARD CT	1	B	46		58	12																	46	0
R0265B	8020 BAYBARK CIR	1	B	46		58	12																	46	0
R0266A	8008 EVERARD CT	1	B	46		58	12																	46	0
R0266B	8005 EVERARD CT	1	B	46		58	12																	46	0
R0267A	7917 PINESLOPE DR	1	B	46		60	14																	46	0
R0267B	7925 PINESLOPE DR	1	B	46		62	16																	46	0
R0268A	5400 BUCKWOOD DR	1	B	46		60	14																	46	0
R0268B	5401 BUCKWOOD DR	1	B	46		62	16																	46	0
R0268C	5404 BUCKWOOD DR	1	B	46		60	14																	46	0
R0269	5409 BUCKWOOD DR	1	B	46		69	23																	46	0
R0270	5405 BUCKWOOD DR	1	B	46		76	30																	46	0
R0271A	3733 SUNLAKE FARMS RD	1	B	46		69	23																	46	0
R0271B	3736 SUNLAKE FARMS RD	1	B	46		66	20																	46	0
R0272	3729 SUNLAKE FARMS RD	1	B	46		71	25					70	24											46	0
R0273A	3721 SUNLAKE FARMS RD	1	B	46		67	21					66	20											46	0
R0273B	3725 SUNLAKE FARMS RD	1	B	46		68	22					67	21											46	0
R0274A	3800 DOESKIN DR	1	B	46		67	21					66	20											46	0
R0274B	3804 DOESKIN DR	1	B	46		67	21					67	21											46	0
R0274C	3808 DOESKIN DR	1	B	46		65	19					65	19											46	0

1Noise levels highlighted in red are levels above the Noise Abatement Criteria.
2Noise level increases highlighted in red are above the substantial noise level increase criteria.
3Noise levels reported if the traffic noise was dominant noise

Impact Analysis

Receptor	Street Address	Properties Represented	NAC Land Use Category	Noise Levels dB(A)																					
				2014 Measured Ambient	2012 TNM Predicted Existing[3]	2035																			
						Orange		Green		Mint		Red		Purple/Blue		Lilac		Teal		Brown		Tan		No Build	
						Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]
R0275	3904 JOHNSON POND RD	1	B	46		60	14					55	9											47	1
R0276	3900 JOHNSON POND RD	1	B	46	51	62	11					56	5											52	1
R0277	3824 JOHNSON POND RD	1	B	46	50	71	21					65	15											52	2
R0278	3901 JOHNSON POND RD	1	B	46	51	70	19					62	11											54	3
R0279	3812 JOHNSON POND RD	1	B	46	52	70	18																	53	1
R0280	3728 JOHNSON POND RD	1	B	46	48	65	17					65	17											50	2
R0281	3733 JOHNSON POND RD	1	B	46	49	61	12					73	24											51	2
R0282A	3717 JOHNSON POND RD	1	B	46	52	61	9					62	10											54	2
R0282B	3725 JOHNSON POND RD	1	B	46	50	61	11					64	14											52	2
R0283A	8712 LAKE WHEELER RD	1	B	46	53	67	14																	56	3
R0283B	8700 LAKE WHEELER RD	1	B	46	54	68	14																	57	3
R0284A	0 LAKE WHEELER RD	1	B	46	47	68	21																	50	3
R0284B	0 LAKE WHEELER RD	1	B	46	47	69	22																	50	3
R0285A	0 LAKE WHEELER RD	1	B	46	49	70	21																	52	3
R0285B	0 LAKE WHEELER RD	1	B	46	50	68	18																	52	2
R0286A	0 LAKE WHEELER RD	1	B	46	53	70	17																	55	2
R0286B	0 LAKE WHEELER RD	1	B	46	49	67	18																	51	2
R0287A	0 LAKE WHEELER RD	1	B	46	61	69	8																	63	2
R0287B	0 LAKE WHEELER RD	1	B	46	61	72	11																	64	3
R0288	8709 LAKE WHEELER RD	1	B	46	58	69	11																	61	3
R0289	8600 LAKE WHEELER RD	1	B	46	52	68	16																	54	2
R0290	8537 LAKE WHEELER RD	1	B	46		63	17																	47	1
R0291A	3904 BLUFFWIND DR	1	B	46								64	18											46	0
R0291B	3900 BLUFFWIND DR	1	B	46								66	20											46	0
R0292	3909 BLUFFWIND DR	1	B	46								68	22											46	0
R0293	3701 WESTBURY LAKE DR	1	B	54	61							67	6											63	2
R0296A	7630 TEN TEN RD	1	B	54	56							65	9											57	1
R0296B	7634 TEN TEN RD	1	B	54	56							64	8											58	2
R0297	7700 TEN TEN RD	1	B	54	59							65	6											60	1
R0298	7900 FAYETTEVILLE RD	1	B	54	57							63	6											60	3
R0307A	8704 MARIGOLD ST	1	B	54		64	10																	54	0
R0307B	8701 MARIGOLD ST	1	B	54		62	8																	54	0
R0308	3705 OAKVALE ST	1	B	54	55	61	6																	58	3
R0309A	3708 OAKVALE ST	1	B	54	54	61	7																	57	3
R0309B	8612 LOBELIA ST	1	B	54		62	8																	54	0
R0310	8612 FAYETTEVILLE RD	1	B	54	60	63	3																	63	3
R0311A	8613 LOBELIA ST	1	B	54	57	63	6																	60	3
R0311B	8609 LOBELIA ST	1	B	54	56	63	7																	59	3
R0312A	8605 LOBELIA ST	1	B	54	56	62	6																	59	3
R0312B	3705 W ALLEN ST	1	B	54	56	62	6																	59	3
R0313A	3708 W ALLEN ST	1	B	54	54	60	6																	57	3
R0313B	3712 W ALLEN ST	1	B	54		59	5																	56	2
R0314A	8524 FAYETTEVILLE RD	1	B	54	60	66	6																	63	3
R0314B	8520 FAYETTEVILLE RD	1	B	54	60	65	5																	63	3
R0315A	8516 FAYETTEVILLE RD	1	B	54	60	65	5																	63	3
R0315B	8412 FAYETTEVILLE RD	1	B	54	60	64	4																	63	3
R0316	8408 FAYETTEVILLE RD	1	B	54	60	63	3																	63	3
R0317A	8509 FAYETTEVILLE RD	1	B	54	59	62	3																	62	3
R0317B	8513 FAYETTEVILLE RD	1	B	54	59	64	5																	63	4
R0318A	3605 E ALLEN ST	1	B	54	55	59	4																	58	3
R0318B	3601 E ALLEN ST	1	B	54		58	4																	57	3
R0319A	8501 FAYETTEVILLE RD	1	B	54	58	62	4																	61	3
R0319B	8505 FAYETTEVILLE RD	1	B	54	58	61	3																	61	3
R0320A	8416 CAMELLIA ST	1	B	54	55	59	4																	58	3
R0320B	8420 CAMELLIA ST	1	B	54	55	59	4																	59	4
R0321A	8409 FAYETTEVILLE RD	1	B	54	59	63	4																	62	3
R0321B	8413 FAYETTEVILLE RD	1	B	54	59	63	4																	62	3
R0322A	8412 CAMELLIA ST	1	B	54	56	59	3																	59	3
R0322B	8408 CAMELLIA ST	1	B	54	56	60	4																	59	3
R0330A	8816 JUAQUIN LN	1	B	54		63	9																	54	0
R0330B	8812 JUAQUIN LN	1	B	54		64	10																	54	0
R0330C	8808 JUAQUIN LN	1	B	54		64	10																	54	0
R0330D	8804 JUAQUIN LN	1	B	54		64	10																	55	1

1Noise levels highlighted in red are levels above the Noise Abatement Criteria.
2Noise level increases highlighted in red are above the substantial noise level increase criteria.
3Noise levels reported if the traffic noise was dominant noise

Impact Analysis

Receptor	Street Address	Properties Represented	NAC Land Use Category	Noise Levels dB(A)																					
				2014 Measured Ambient	2012 TNM Predicted Existing[3]	2035																			
						Orange		Green		Mint		Red		Purple/Blue		Lilac		Teal		Brown		Tan		No Build	
						Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]
R0330E	8800 JUAQUIN LN	1	B	54	55	64	9																	58	3
R0331A	8801 JUAQUIN LN	1	B	54	57	64	7																	60	3
R0331B	8805 JUAQUIN LN	1	B	54		63	9																	56	2
R0331C	8809 JUAQUIN LN	1	B	54		62	8																	54	0
R0332A	8804 REIGATE LN	1	B	54		62	8																	55	1
R0332B	8808 REIGATE LN	1	B	54		61	7																	54	0
R0333A	8809 REIGATE LN	1	B	54		65	11																	56	2
R0333B	8813 REIGATE LN	1	B	54		63	9																	54	0
R0333C	8817 REIGATE LN	1	B	54		62	8																	54	0
R0333D	8821 REIGATE LN	1	B	54		61	7																	54	0
R0334A	8820 REIGATE LN	1	B	54		59	5																	54	0
R0334B	8816 REIGATE LN	1	B	54		60	6																	54	0
R0334C	8812 REIGATE LN	1	B	54		60	6																	54	0
R0335A	8824 REIGATE LN	1	B	54		59	5																	54	0
R0335B	8828 REIGATE LN	1	B	54		59	5																	54	0
R0335C	8832 REIGATE LN	1	B	54		58	4																	54	0
R0336A	8825 REIGATE LN	1	B	54		61	7																	54	0
R0336B	8829 REIGATE LN	1	B	54		59	5																	54	0
R0336C	8833 REIGATE LN	1	B	54		59	5																	54	0
R0337A	8840 REIGATE LN	1	B	54		58	4																	54	0
R0337B	8836 REIGATE LN	1	B	54		58	4																	54	0
R0337C	8837 REIGATE LN	1	B	54		59	5																	54	0
R0338A	4900 CHANDLER RIDGE CIR	1	B	54		56	2																	54	0
R0338B	4900 CHANDLER RIDGE CIR	1	B	54		58	4																	54	0
R0338C	4900 CHANDLER RIDGE CIR	1	B	54		59	5																	54	0
R0338D	4900 CHANDLER RIDGE CIR	1	B	54		57	3																	54	0
R0338E	4900 CHANDLER RIDGE CIR	1	B	54		58	4																	54	0
R0338F	4900 CHANDLER RIDGE CIR	1	B	54		59	5																	54	0
R0338G	4900 CHANDLER RIDGE CIR	1	B	54		57	3																	54	0
R0338H	4900 CHANDLER RIDGE CIR	1	B	54		58	4																	54	0
R0338I	4900 CHANDLER RIDGE CIR	1	B	54		59	5																	54	0
R0338J	4900 CHANDLER RIDGE CIR	1	B	54		56	2																	54	0
R0338K	4900 CHANDLER RIDGE CIR	1	B	54		57	3																	54	0
R0338L	4900 CHANDLER RIDGE CIR	1	B	54		59	5																	54	0
R0338M	4900 CHANDLER RIDGE CIR	1	B	54		57	3																	54	0
R0338N	4900 CHANDLER RIDGE CIR	1	B	54		59	5																	54	0
R0338O	4900 CHANDLER RIDGE CIR	1	B	54		60	6																	54	0
R0338P	4900 CHANDLER RIDGE CIR	1	B	54		58	4																	54	0
R0338Q	4900 CHANDLER RIDGE CIR	1	B	54		59	5																	54	0
R0338R	4900 CHANDLER RIDGE CIR	1	B	54		60	6																	54	0
R0338S	4900 CHANDLER RIDGE CIR	1	B	54		58	4																	54	0
R0338T	4900 CHANDLER RIDGE CIR	1	B	54		59	5																	54	0
R0338U	4900 CHANDLER RIDGE CIR	1	B	54		60	6																	54	0
R0338V	4900 CHANDLER RIDGE CIR	1	B	54		58	4																	54	0
R0338W	4900 CHANDLER RIDGE CIR	1	B	54		59	5																	54	0
R0338X	4900 CHANDLER RIDGE CIR	1	B	54		60	6																	54	0
R0339A	4900 CHANDLER RIDGE CIR	1	B	54		58	4																	55	1
R0339B	4900 CHANDLER RIDGE CIR	1	B	54		59	5																	55	1
R0339C	4900 CHANDLER RIDGE CIR	1	B	54		60	6																	55	1
R0339D	4900 CHANDLER RIDGE CIR	1	B	54		58	4																	54	0
R0339E	4900 CHANDLER RIDGE CIR	1	B	54		59	5																	54	0
R0339F	4900 CHANDLER RIDGE CIR	1	B	54		60	6																	54	0
R0339G	4900 CHANDLER RIDGE CIR	1	B	54		58	4																	54	0
R0339H	4900 CHANDLER RIDGE CIR	1	B	54		59	5																	54	0
R0339I	4900 CHANDLER RIDGE CIR	1	B	54		60	6																	54	0
R0339J	4900 CHANDLER RIDGE CIR	1	B	54		58	4																	55	1
R0339K	4900 CHANDLER RIDGE CIR	1	B	54		59	5																	55	1
R0339L	4900 CHANDLER RIDGE CIR	1	B	54		60	6																	55	1
R0339M	4900 CHANDLER RIDGE CIR	1	B	54		58	4																	55	1
R0339N	4900 CHANDLER RIDGE CIR	1	B	54		59	5																	55	1
R0339O	4900 CHANDLER RIDGE CIR	1	B	54		60	6																	55	1
R0339P	4900 CHANDLER RIDGE CIR	1	B	54		57	3																	55	1
R0339Q	4900 CHANDLER RIDGE CIR	1	B	54		58	4																	55	1

1Noise levels highlighted in red are levels above the Noise Abatement Criteria.
2Noise level increases highlighted in red are above the substantial noise level increase criteria.
3Noise levels reported if the traffic noise was dominant noise

Complete 540
Traffic Noise Analysis

Impact Analysis

Receptor	Street Address	Properties Represented	NAC Land Use Category	Noise Levels dB(A)																					
				2014 Measured Ambient	2012 TNM Predicted Existing[3]	2035																			
						Orange		Green		Mint		Red		Purple/Blue		Lilac		Teal		Brown		Tan		No Build	
						Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]
R0339R	4900 CHANDLER RIDGE CIR	1	B	54	54	60	6																	55	1
R0339S	4900 CHANDLER RIDGE CIR	1	B	54		57	3																	55	1
R0339T	4900 CHANDLER RIDGE CIR	1	B	54		59	5																	55	1
R0339U	4900 CHANDLER RIDGE CIR	1	B	54	54	60	6																	55	1
R0339V	4900 CHANDLER RIDGE CIR	1	B	54		58	4																	55	1
R0339W	4900 CHANDLER RIDGE CIR	1	B	54		59	5																	55	1
R0339X	4900 CHANDLER RIDGE CIR	1	B	54	54	60	6																	55	1
R0340A	4900 CHANDLER RIDGE CIR	1	B	54		56	2																	54	0
R0340B	4900 CHANDLER RIDGE CIR	1	B	54		57	3																	54	0
R0340C	4900 CHANDLER RIDGE CIR	1	B	54		58	4																	54	0
R0340D	4900 CHANDLER RIDGE CIR	1	B	54		56	2																	54	0
R0340E	4900 CHANDLER RIDGE CIR	1	B	54		57	3																	54	0
R0340F	4900 CHANDLER RIDGE CIR	1	B	54		58	4																	54	0
R0340G	4900 CHANDLER RIDGE CIR	1	B	54		56	2																	54	0
R0340H	4900 CHANDLER RIDGE CIR	1	B	54		57	3																	54	0
R0340I	4900 CHANDLER RIDGE CIR	1	B	54		58	4																	54	0
R0340J	4900 CHANDLER RIDGE CIR	1	B	54		56	2																	54	0
R0340K	4900 CHANDLER RIDGE CIR	1	B	54		57	3																	54	0
R0340L	4900 CHANDLER RIDGE CIR	1	B	54		58	4																	54	0
R0341A	4900 CHANDLER RIDGE CIR	1	B	54	54	59	5																	57	3
R0341B	4900 CHANDLER RIDGE CIR	1	B	54	57	61	4																	58	1
R0341C	4900 CHANDLER RIDGE CIR	1	B	54	60	64	4																	58	-2
R0341D	4900 CHANDLER RIDGE CIR	1	B	54	56	61	5																	59	3
R0341E	4900 CHANDLER RIDGE CIR	1	B	54	59	64	5																	59	0
R0341F	4900 CHANDLER RIDGE CIR	1	B	54	63	66	3																	60	-3
R0341G	4900 CHANDLER RIDGE CIR	1	B	54	57	62	5																	61	4
R0341H	4900 CHANDLER RIDGE CIR	1	B	54	59	63	4																	61	2
R0341I	4900 CHANDLER RIDGE CIR	1	B	54	61	65	4																	60	-1
R0341J	4900 CHANDLER RIDGE CIR	1	B	54	59	63	4																	62	3
R0341K	4900 CHANDLER RIDGE CIR	1	B	54	61	65	4																	62	1
R0341L	4900 CHANDLER RIDGE CIR	1	B	54	64	67	3																	62	-2
R0342	4900 CHANDLER RIDGE CIR	RECREATIONAL	C	54		57	3																	55	1
R0343A	4900 CHANDLER RIDGE CIR	1	B	54		56	2																	54	0
R0343B	4900 CHANDLER RIDGE CIR	1	B	54		57	3																	54	0
R0343C	4900 CHANDLER RIDGE CIR	1	B	54		59	5																	54	0
R0343D	4900 CHANDLER RIDGE CIR	1	B	54		56	2																	54	0
R0343E	4900 CHANDLER RIDGE CIR	1	B	54		57	3																	55	1
R0343F	4900 CHANDLER RIDGE CIR	1	B	54		59	5																	56	2
R0343G	4900 CHANDLER RIDGE CIR	1	B	54		56	2																	54	0
R0343H	4900 CHANDLER RIDGE CIR	1	B	54		58	4																	55	1
R0343I	4900 CHANDLER RIDGE CIR	1	B	54	54	59	5																	57	3
R0343J	4900 CHANDLER RIDGE CIR	1	B	54		56	2																	54	0
R0343K	4900 CHANDLER RIDGE CIR	1	B	54		57	3																	55	1
R0343L	4900 CHANDLER RIDGE CIR	1	B	54		59	5																	57	3
R0344A	4900 CHANDLER RIDGE CIR	1	B	54		55	1																	54	0
R0344B	4900 CHANDLER RIDGE CIR	1	B	54		57	3																	55	1
R0344C	4900 CHANDLER RIDGE CIR	1	B	54		58	4																	57	3
R0344D	4900 CHANDLER RIDGE CIR	1	B	54		56	2																	54	0
R0344E	4900 CHANDLER RIDGE CIR	1	B	54		58	4																	56	2
R0344F	4900 CHANDLER RIDGE CIR	1	B	54	54	59	5																	58	4
R0344G	4900 CHANDLER RIDGE CIR	1	B	54		56	2																	54	0
R0344H	4900 CHANDLER RIDGE CIR	1	B	54		57	3																	56	2
R0344I	4900 CHANDLER RIDGE CIR	1	B	54	54	59	5																	58	4
R0344J	4900 CHANDLER RIDGE CIR	1	B	54		55	1																	54	0
R0344K	4900 CHANDLER RIDGE CIR	1	B	54		57	3																	55	1
R0344L	4900 CHANDLER RIDGE CIR	1	B	54		59	5																	57	3
R0345A	4900 CHANDLER RIDGE CIR	1	B	54		58	4																	56	2
R0345B	4900 CHANDLER RIDGE CIR	1	B	54	55	60	5																	59	4
R0345C	4900 CHANDLER RIDGE CIR	1	B	54	58	63	5																	61	3
R0345D	4900 CHANDLER RIDGE CIR	1	B	54		57	3																	55	1
R0345E	4900 CHANDLER RIDGE CIR	1	B	54	54	59	5																	58	4
R0345F	4900 CHANDLER RIDGE CIR	1	B	54	56	61	5																	60	4
R0345G	4900 CHANDLER RIDGE CIR	1	B	54		57	3																	56	2

1Noise levels highlighted in red are levels above the Noise Abatement Criteria.
2Noise level increases highlighted in red are above the substantial noise level increase criteria.
3Noise levels reported if the traffic noise was dominant noise

Complete 540
Traffic Noise Analysis

Impact Analysis

Receptor	Street Address	Properties Represented	NAC Land Use Category	Noise Levels dB(A)																							
				2014 Measured Ambient	2012 TNM Predicted Existing[3]	2035																					
						Orange		Green		Mint		Red		Purple/Blue		Lilac		Teal		Brown		Tan		No Build	
						Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]
R0345H	4900 CHANDLER RIDGE CIR	1	B	54	55	60	5																	58	3
R0345I	4900 CHANDLER RIDGE CIR	1	B	54	56	62	6																	60	4
R0345J	4900 CHANDLER RIDGE CIR	1	B	54		56	2																	55	1
R0345K	4900 CHANDLER RIDGE CIR	1	B	54		58	4																	57	3
R0345L	4900 CHANDLER RIDGE CIR	1	B	54	55	60	5																	59	4
R0346A	4900 CHANDLER RIDGE CIR	1	B	54	59	63	4																	63	4
R0346B	4900 CHANDLER RIDGE CIR	1	B	54	63	67	4																	66	3
R0346C	4900 CHANDLER RIDGE CIR	1	B	54	65	69	4																	68	3
R0346D	4900 CHANDLER RIDGE CIR	1	B	54		56	2																	55	1
R0346E	4900 CHANDLER RIDGE CIR	1	B	54		58	4																	57	3
R0346F	4900 CHANDLER RIDGE CIR	1	B	54	55	59	4																	58	3
R0346G	4900 CHANDLER RIDGE CIR	1	B	54		56	2																	54	0
R0346H	4900 CHANDLER RIDGE CIR	1	B	54		58	4																	54	0
R0346I	4900 CHANDLER RIDGE CIR	1	B	54	54	60	6																	54	0
R0346J	4900 CHANDLER RIDGE CIR	1	B	54	59	63	4																	63	4
R0346K	4900 CHANDLER RIDGE CIR	1	B	54	63	67	4																	63	0
R0346L	4900 CHANDLER RIDGE CIR	1	B	54	64	69	5																	63	-1
R0347A	4900 CHANDLER RIDGE CIR	1	B	54	58	62	4																	62	4
R0347B	4900 CHANDLER RIDGE CIR	1	B	54	61	65	4																	62	1
R0347C	4900 CHANDLER RIDGE CIR	1	B	54	64	68	4																	62	-2
R0347D	4900 CHANDLER RIDGE CIR	1	B	54		56	2																	54	0
R0347E	4900 CHANDLER RIDGE CIR	1	B	54		57	3																	54	0
R0347F	4900 CHANDLER RIDGE CIR	1	B	54		58	4																	54	0
R0347G	4900 CHANDLER RIDGE CIR	1	B	54		55	1																	54	0
R0347H	4900 CHANDLER RIDGE CIR	1	B	54		57	3																	54	0
R0347I	4900 CHANDLER RIDGE CIR	1	B	54		59	5																	54	0
R0347J	4900 CHANDLER RIDGE CIR	1	B	54	58	62	4																	62	4
R0347K	4900 CHANDLER RIDGE CIR	1	B	54	62	65	3																	62	0
R0347L	4900 CHANDLER RIDGE CIR	1	B	54	63	68	5																	62	-1
R0348A	4900 CHANDLER RIDGE CIR	1	B	54		56	2																	54	0
R0348B	4900 CHANDLER RIDGE CIR	1	B	54		57	3																	54	0
R0348C	4900 CHANDLER RIDGE CIR	1	B	54	54	59	5																	54	0
R0348D	4900 CHANDLER RIDGE CIR	1	B	54		56	2																	54	0
R0348E	4900 CHANDLER RIDGE CIR	1	B	54		57	3																	54	0
R0348F	4900 CHANDLER RIDGE CIR	1	B	54	54	59	5																	54	0
R0348G	4900 CHANDLER RIDGE CIR	1	B	54		56	2																	55	1
R0348H	4900 CHANDLER RIDGE CIR	1	B	54		58	4																	57	3
R0348I	4900 CHANDLER RIDGE CIR	1	B	54	55	60	5																	58	3
R0348J	4900 CHANDLER RIDGE CIR	1	B	54		56	2																	55	1
R0348K	4900 CHANDLER RIDGE CIR	1	B	54	54	58	4																	55	1
R0348L	4900 CHANDLER RIDGE CIR	1	B	54	55	60	5																	55	0
R0349A	4900 CHANDLER RIDGE CIR	1	B	54	56	60	4																	59	3
R0349B	4900 CHANDLER RIDGE CIR	1	B	54	58	62	4																	59	1
R0349C	4900 CHANDLER RIDGE CIR	1	B	54	59	64	5																	59	0
R0349D	4900 CHANDLER RIDGE CIR	1	B	54	57	61	4																	61	4
R0349E	4900 CHANDLER RIDGE CIR	1	B	54	59	64	5																	61	2
R0349F	4900 CHANDLER RIDGE CIR	1	B	54	61	66	5																	61	0
R0349G	4900 CHANDLER RIDGE CIR	1	B	54	56	60	4																	59	3
R0349H	4900 CHANDLER RIDGE CIR	1	B	54	58	63	5																	59	1
R0349I	4900 CHANDLER RIDGE CIR	1	B	54	60	65	5																	59	-1
R0349J	4900 CHANDLER RIDGE CIR	1	B	54	55	59	4																	58	3
R0349K	4900 CHANDLER RIDGE CIR	1	B	54	57	61	4																	58	1
R0349L	4900 CHANDLER RIDGE CIR	1	B	54	59	64	5																	58	-1
R0350A	4900 CHANDLER RIDGE CIR	1	B	54	63	68	5																	67	4
R0350B	4900 CHANDLER RIDGE CIR	1	B	54	67	70	3																	67	0
R0350C	4900 CHANDLER RIDGE CIR	1	B	54	67	71	4																	67	0
R0350D	4900 CHANDLER RIDGE CIR	1	B	54	60	65	5																	64	4
R0350E	4900 CHANDLER RIDGE CIR	1	B	54	63	68	5																	64	1
R0350F	4900 CHANDLER RIDGE CIR	1	B	54	65	69	4																	64	-1
R0350G	4900 CHANDLER RIDGE CIR	1	B	54	60	64	4																	63	3
R0350H	4900 CHANDLER RIDGE CIR	1	B	54	62	67	5																	63	1
R0350I	4900 CHANDLER RIDGE CIR	1	B	54	64	68	4																	63	-1
R0350J	4900 CHANDLER RIDGE CIR	1	B	54	56	60	4																	59	3

1Noise levels highlighted in red are levels above the Noise Abatement Criteria.
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3Noise levels reported if the traffic noise was dominant noise

Impact Analysis

Receptor	Street Address	Properties Represented	NAC Land Use Category	Noise Levels dB(A)																							
				2014 Measured Ambient	2012 TNM Predicted Existing[3]	2035																					
						Orange		Green		Mint		Red		Purple/Blue		Lilac		Teal		Brown		Tan		No Build	
						Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]
R0350K	4900 CHANDLER RIDGE CIR	1	B	54	59	63	4																	59	0
R0350L	4900 CHANDLER RIDGE CIR	1	B	54	60	64	4																	59	-1
R0351	9101 FAYETTEVILLE RD	SCHOOL	C	54	54	62	8																	58	4
R0352	9101 FAYETTEVILLE RD	SCHOOL	D	0	40	48	8																	40	0
R0353	9101 FAYETTEVILLE RD	SCHOOL	C	54		63	9																	54	0
R0354	8304 OLD MCCULLERS RD	1	B	54	54	72	18																	56	2
R0356A	9013 FANNY BROWN RD	1	B	54		59	5																	54	0
R0356B	9200 FANNY BROWN RD	1	B	54	54	61	7																	56	2
R0357	9304 FANNY BROWN RD	1	B	54		64	10																	54	0
R0358A	9317 FANNY BROWN RD	1	B	54		69	15																	54	0
R0358B	9309 FANNY BROWN RD	1	B	54		65	11																	54	0
R0359	9500 FANNY BROWN RD	1	B	54		62	8																	54	0
R0360A	9520 FANNY BROWN RD	1	B	54		59	5																	54	0
R0360B	9600 FANNY BROWN RD	1	B	54		58	4																	54	0
R0361A	1421 LANERIDGE CT	1	B	54	55	61	6																	57	2
R0361B	1417 LANERIDGE CT	1	B	54		59	5																	54	0
R0362A	4516 CHESHIRE DOWNS CT	1	B	54	54	64	10																	56	2
R0362B	4512 CHESHIRE DOWNS CT	1	B	54		66	12																	54	0
R0362C	4508 CHESHIRE DOWNS CT	1	B	54	54	67	13																	56	2
R0363A	4504 CHESHIRE DOWNS CT	1	B	54	59	70	11																	61	2
R0363B	4500 CHESHIRE DOWNS CT	1	B	54	55	72	17																	57	2
R0363C	4501 CHESHIRE DOWNS CT	1	B	54		75	21																	54	0
R0364	1400 LANERIDGE CT	1	B	54		72	18																	54	0
R0365A	1348 LANERIDGE CT	1	B	54		69	15																	54	0
R0365B	1344 LANERIDGE CT	1	B	54		71	17																	54	0
R0365C	1352 LANERIDGE CT	1	B	54		66	12																	54	0
R0366A	1328 LANERIDGE CT	1	B	54		73	19																	54	0
R0366B	1332 LANERIDGE CT	1	B	54		73	19																	54	0
R0366C	1336 LANERIDGE CT	1	B	54		72	18																	54	0
R0367A	1320 LANERIDGE CT	1	B	54		66	12																	54	0
R0367B	1324 LANERIDGE CT	1	B	54		70	16																	54	0
R0367C	1316 LANERIDGE CT	1	B	54		64	10																	54	0
R0368A	1349 LANERIDGE CT	1	B	54		60	6																	54	0
R0368B	1341 LANERIDGE CT	1	B	54		60	6																	54	0
R0370A	1313 LANERIDGE CT	1	B	54		57	3																	54	0
R0370B	1317 LANERIDGE CT	1	B	54		58	4																	54	0
R0370C	1329 LANERIDGE CT	1	B	54		60	6																	54	0
R0371	1312 LANERIDGE CT	1	B	54		60	6																	54	0
R0375A	4817 TROTTER DR	1	B	54		61	7																	54	0
R0375B	4821 TROTTER DR	1	B	54		63	9																	54	0
R0376A	4905 TROTTER DR	1	B	54		66	12																	54	0
R0376B	4909 TROTTER DR	1	B	54		66	12																	54	0
R0376C	4901 TROTTER DR	1	B	54		64	10																	54	0
R0377A	4917 TROTTER DR	1	B	54		68	14																	54	0
R0377B	4921 TROTTER DR	1	B	54		68	14																	54	0
R0377C	4925 TROTTER DR	1	B	54		69	15																	54	0
R0378A	4941 TROTTER DR	1	B	54		70	16																	54	0
R0378B	4937 TROTTER DR	1	B	54		71	17																	54	0
R0378C	4945 TROTTER DR	1	B	54		69	15																	54	0
R0379A	4808 TROTTER DR	1	B	54		58	4																	54	0
R0379B	4812 TROTTER DR	1	B	54		61	7																	54	0
R0379C	1300 WYNNCREST CT	1	B	54		62	8																	54	0
R0380A	4900 TROTTER DR	1	B	54		62	8																	54	0
R0380B	4908 TROTTER DR	1	B	54		63	9																	54	0
R0381A	4912 TROTTER DR	1	B	54		65	11																	54	0
R0381B	4916 TROTTER DR	1	B	54		63	9																	54	0
R0383A	1309 WYNNCREST CT	1	B	54		60	6																	54	0
R0383B	1313 WYNNCREST CT	1	B	54		60	6																	54	0
R0387A	1221 ROLLING FARM DR	1	B	54		74	20																	54	0
R0387B	1225 ROLLING FARM DR	1	B	54		75	21																	54	0
R0388A	1220 ROLLING FARM DR	1	B	54		69	15																	54	0
R0388B	1224 ROLLING FARM DR	1	B	54		66	12																	54	0
R0389A	1216 ROLLING FARM DR	1	B	54		64	10																	54	0

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3Noise levels reported if the traffic noise was dominant noise

Complete 540
Traffic Noise Analysis

Impact Analysis

Receptor	Street Address	Properties Represented	NAC Land Use Category	Noise Levels dB(A)																					
				2014 Measured Ambient	2012 TNM Predicted Existing[3]	2035																			
						Orange		Green		Mint		Red		Purple/Blue		Lilac		Teal		Brown		Tan		No Build	
						Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]
R0389B	1212 ROLLING FARM DR	1	B	54		65	11																	54	0
R0389C	1208 ROLLING FARM DR	1	B	54		60	6																	54	0
R0390A	1217 ROLLING FARM DR	1	B	54		72	18																	54	0
R0390B	1213 ROLLING FARM DR	1	B	54		73	19																	54	0
R0391A	1209 ROLLING FARM DR	1	B	54		73	19																	54	0
R0391B	1205 ROLLING FARM DR	1	B	54		70	16																	54	0
R0392A	1201 ROLLING FARM DR	1	B	54		71	17																	54	0
R0392B	1129 ROLLING FARM DR	1	B	54		72	18																	54	0
R0393A	1121 ROLLING FARM DR	1	B	54		68	14																	54	0
R0393B	1125 ROLLING FARM DR	1	B	54		70	16																	54	0
R0393C	1117 ROLLING FARM DR	1	B	54		71	17																	54	0
R0394A	2315 PARKWAY DR	1	B	44								65	21											44	0
R0394B	2401 PARKWAY DR	1	B	44								59	15											44	0
R0394C	0 PARKWAY DR	1	B	44								59	15											44	0
R0395	2508 BROOKWOOD DR	1	B	44								65	21											44	0
R0396	2300 PARKWAY DR	1	B	44								69	25											44	0
R0397	2501 APRIL DR	1	B	44								69	25											44	0
R0398	2504 APRIL DR	1	B	44								68	24											44	0
R0399	2208 PARKWAY DR	1	B	44								60	16											44	0
R0402	2220 WOODNELL DR	1	B	44								70	26											44	0
R0403A	2213 WOODNELL DR	1	B	44								63	19											44	0
R0403B	2221 WOODNELL DR	1	B	44								68	24											44	0
R0404	1105 ROLLING FARM DR	1	B	54		67	13																	54	0
R0405	1104 ROLLING FARM DR	1	B	54		59	5																	54	0
R0406A	1029 ROLLING FARM DR	1	B	54		67	13																	54	0
R0406B	1025 ROLLING FARM DR	1	B	54		62	8																	54	0
R0406C	1033 ROLLING FARM DR	1	B	54		66	12																	54	0
R0407A	1017 ROLLING FARM DR	1	B	54		67	13																	54	0
R0407B	1021 ROLLING FARM DR	1	B	54		63	9																	54	0
R0407C	1013 ROLLING FARM DR	1	B	54		64	10																	54	0
R0408	9200 OLD STAGE RD	1	B	54		64	10																	55	1
R0409A	9104 OLD STAGE RD	1	B	54	57	63	6																	60	3
R0409B	9108 OLD STAGE RD	1	B	54		59	5																	54	0
R0411A	9029 OLD STAGE RD	1	B	54	55	65	10																	58	3
R0411B	9101 OLD STAGE RD	1	B	54		59	5																	55	1
R0412A	9105 OLD STAGE RD	1	B	54	55	64	9																	58	3
R0412B	9109 OLD STAGE RD	1	B	54	54	64	10																	57	3
R0413	9201 OLD STAGE RD	1	B	54	55	62	7																	58	3
R0414	9216 OLD STAGE RD	1	B	54	56	64	8																	59	3
R0419A	9516 OLD STAGE RD	1	B	54	55	63	8																	57	2
R0419B	2504 ROLLING MEADOWS DR	1	B	54		61	7																	54	0
R0420A	2510 ROLLING MEADOWS DR	1	B	54		59	5																	54	0
R0420B	2508 ROLLING MEADOWS DR	1	B	54		60	6																	54	0
R0420C	2506 ROLLING MEADOWS DR	1	B	54		60	6																	54	0
R0426	9605 OLD STAGE RD	1	B	54	56	63	7																	59	3
R0427	9701 OLD STAGE RD	1	B	54	55	62	7																	58	3
R0428	9713 OLD STAGE RD	CHURCH	C	54	57	63	6																	59	2
R0429	9801 OLD STAGE RD	1	B	54	56	62	6																	59	3
R0430	9708 OLD STAGE RD	1	B	54	54	59	5																	57	3
R0482	5316 HOLLAND CHURCH RD	1	B	45	49	61	12																	52	3
R0483A	5321 HOLLAND CHURCH RD	1	B	45	49	65	16									65	16							52	3
R0483B	5323 HOLLAND CHURCH RD	1	B	45	45	65	20									66	21							48	3
R0486	5101 HOLLAND CHURCH RD	1	B	45	50	61	11																	53	3
R0497A	4912 CONTENDER DR	1	B	45		70	25									67	22							45	0
R0497B	4908 CONTENDER DR	1	B	45		69	24									66	21							45	0
R0497C	4916 CONTENDER DR	1	B	45		70	25									67	22							45	0
R0498A	4924 CONTENDER DR	1	B	45		70	25									67	22							45	0
R0498B	4928 CONTENDER DR	1	B	45		70	25									67	22							45	0
R0498C	4920 CONTENDER DR	1	B	45		70	25									67	22							45	0
R0499A	4936 CONTENDER DR	1	B	45		71	26									69	24							45	0
R0499B	4932 CONTENDER DR	1	B	45		70	25									68	23							45	0
R0499C	4940 CONTENDER DR	1	B	45		71	26									69	24							45	0
R0500A	4933 CONTENDER DR	1	B	45		62	17									57	12							45	0

1Noise levels highlighted in red are levels above the Noise Abatement Criteria.
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3Noise levels reported if the traffic noise was dominant noise

Complete 540
Traffic Noise Analysis

Impact Analysis

Receptor	Street Address	Properties Represented	NAC Land Use Category	Noise Levels dB(A)																					
				2014 Measured Ambient	2012 TNM Predicted Existing[3]	2035																			
						Orange		Green		Mint		Red		Purple/Blue		Lilac		Teal		Brown		Tan		No Build	
						Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]
R0500B	8716 NEW RIVER CIR	1	B	45		62	17									58	13							45	0
R0501A	5000 CONTENDER DR	1	B	45		72	27									70	25							45	0
R0501B	5004 CONTENDER DR	1	B	45		72	27									70	25							45	0
R0502A	8713 NEW RIVER CIR	1	B	45		63	18									58	13							45	0
R0502B	5005 CONTENDER DR	1	B	45		62	17									57	12							45	0
R0503A	5012 CONTENDER DR	1	B	45		72	27									71	26							45	0
R0503B	5008 CONTENDER DR	1	B	45		73	28									71	26							45	0
R0504A	5013 CONTENDER DR	1	B	45		61	16									58	13							45	0
R0504B	5021 CONTENDER DR	1	B	45		60	15									56	11							45	0
R0505A	5016 CONTENDER DR	1	B	45		69	24									69	24							45	0
R0505B	5020 CONTENDER DR	1	B	45		67	22									67	22							45	0
R0506A	5024 CONTENDER DR	1	B	45		65	20									68	23							46	1
R0506B	5028 CONTENDER DR	1	B	45		62	17									65	20							47	2
R0507A	8929 CAROLINA MARLIN CT	1	B	45		58	13									57	12							46	1
R0507B	4804 KURE CT	1	B	45		57	12									57	12							46	1
R0508A	4812 KURE CT	1	B	45	48	59	11									59	11							51	3
R0508B	4816 KURE CT	1	B	45	55	62	7									62	7							58	3
R0509A	5032 CONTENDER DR	1	B	45	45	61	16									63	18							48	3
R0509B	5036 CONTENDER DR	1	B	45	52	62	10									63	11							55	3
R0510A	5104 AUTUMN FIELD DR	1	B	46	53	60	7									61	8							56	3
R0510B	5200 AUTUMN FIELD DR	1	B	46	50	59	9									60	10							52	2
R0511A	8909 SAULS RD	1	B	46	47	61	14									61	14							50	3
R0511B	8913 SAULS RD	1	B	46	51	62	11									64	13							54	3
R0512A	5201 AUTUMN FIELD DR	1	B	46		57	11									57	11							46	0
R0512B	5205 AUTUMN FIELD DR	1	B	46		56	10									57	11							46	0
R0513A	8928 SAULS RD	1	B	45	51	68	17									77	26							54	3
R0513B	8920 SAULS RD	1	B	45	50	63	13									68	18							53	3
R0515	9001 SAULS RD	1	B	46	49											70	21							52	3
R0516	9008 SAULS RD	1	B	45	47											65	18							50	3
R0517	9012 SAULS RD	1	B	45	46	67	21									62	16							49	3
R0518A	1405 TAVERNIER KNOLL LN	1	B	45		71	26									66	21							45	0
R0518B	1409 TAVERNIER KNOLL LN	1	B	45		67	22									63	18							45	0
R0518C	1401 TAVERNIER KNOLL LN	1	B	45		70	25									67	22							45	0
R0519A	1325 TAVERNIER KNOLL LN	1	B	45		71	26									70	25							45	0
R0519B	1329 TAVERNIER KNOLL LN	1	B	45		70	25									68	23							45	0
R0520A	1317 TAVERNIER KNOLL LN	1	B	45		71	26									72	27							45	0
R0520B	1321 TAVERNIER KNOLL LN	1	B	45		69	24									69	24							45	0
R0521A	1229 TAVERNIER KNOLL LN	1	B	45		61	16									61	16							45	0
R0521B	1233 TAVERNIER KNOLL LN	1	B	45		63	18									64	19							45	0
R0522A	1221 TAVERNIER KNOLL LN	1	B	45		59	14									58	13							45	0
R0522B	1217 TAVERNIER KNOLL LN	1	B	45		58	13									56	11							45	0
R0523A	9108 COCONUT LN	1	B	45		58	13									57	12							45	0
R0523B	9112 COCONUT LN	1	B	45		58	13									57	12							45	0
R0523C	9116 COCONUT LN	1	B	45		57	12									55	10							45	0
R0524A	9113 COCONUT LN	1	B	45		56	11									50	5							45	0
R0524B	9109 COCONUT LN	1	B	45		57	12									47	2							45	0
R0525A	1209 TAVERNIER KNOLL LN	1	B	45		58	13									51	6							45	0
R0525B	9105 COCONUT LN	1	B	45		57	12									51	6							45	0
R0526A	9105 KON TIKI CT	1	B	45		58	13									55	10							45	0
R0526B	9101 KON TIKI CT	1	B	45		60	15									59	14							45	0
R0526C	1208 TAVERNIER KNOLL LN	1	B	45		58	13									55	10							45	0
R0526D	9104 KON TIKI CT	1	B	45		61	16									61	16							45	0
R0527A	9012 DUVAL HILL ST	1	B	45		60	15									59	14							45	0
R0527B	9016 DUVAL HILL ST	1	B	45		59	14									57	12							45	0
R0528A	9024 DUVAL HILL ST	1	B	45		57	12									54	9							45	0
R0528B	9020 DUVAL HILL ST	1	B	45		58	13									56	11							45	0
R0529A	1201 TAVERNIER KNOLL LN	1	B	45		57	12									51	6							45	0
R0529B	9104 DUVAL HILL ST	1	B	45		57	12									52	7							45	0
R0532A	1120 TAVERNIER KNOLL LN	1	B	45		57	12									53	8							45	0
R0532B	1112 TAVERNIER KNOLL LN	1	B	45		56	11									52	7							45	0
R0533A	9021 DUVAL HILL ST	1	B	45		57	12									54	9							45	0
R0533B	9017 DUVAL HILL ST	1	B	45		58	13									55	10							45	0
R0534A	9013 DUVAL HILL ST	1	B	45		59	14									56	11							45	0

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Impact Analysis

Receptor	Street Address	Properties Represented	NAC Land Use Category	Noise Levels dB(A)																					
				2014 Measured Ambient	2012 TNM Predicted Existing[3]	2035																			
						Orange		Green		Mint		Red		Purple/Blue		Lilac		Teal		Brown		Tan		No Build	
						Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]
R0534B	9009 DUVAL HILL ST	1	B	45		60	15									56	11							45	0
R0534C	9005 DUVAL HILL ST	1	B	45		61	16									58	13							45	0
R0536	1020 TAVERNIER KNOLL LN	1	B	45		58	13																	45	0
R0537	1016 TAVERNIER KNOLL LN	1	B	45		60	15																	47	2
R0538	1012 TAVERNIER KNOLL LN	1	B	45	49	59	10																	52	3
R0539	1004 TAVERNIER KNOLL LN	1	B	45	57	63	6																	59	2
R0540	9114 SAULS RD	1	B	45	53	61	8																	55	2
R0541	9104 SAULS RD	CHURCH	D	0	40	45	5									44	4							40	0
R0542	9016 SAULS RD	1	B	45	47	61	14									60	13							50	3
R0543	9109 SAULS RD	SCHOOL	D	0	40	43	3									40	0							40	0
R0544A	717 COMMUNITY GARDEN RD	1	B	46		65	19																	46	0
R0544B	729 COMMUNITY GARDEN RD	1	B	46		69	23																	46	0
R0545	9137 SAULS RD	1	B	46		60	14																	48	2
R0546	9125 SAULS RD	1	B	46		73	27																	46	0
R0547	2028 PONDSEDGE TRL	1	B	46		61	15																	46	0
R0548A	9928 HUNTWYCK DR	1	B	46		59	13																	46	0
R0548B	9924 HUNTWYCK DR	1	B	46		58	12																	46	0
R0549A	9937 HUNTWYCK DR	1	B	46		58	12																	46	0
R0549B	9925 HUNTWYCK DR	1	B	46		57	11																	46	0
R0550	9941 HUNTWYCK DR	1	B	46		58	12									69	23							46	0
R0551A	9940 HUNTWYCK DR	1	B	46		62	16									67	21							46	0
R0551B	9936 HUNTWYCK DR	1	B	46		61	15									69	23							46	0
R0552	9944 HUNTWYCK DR	1	B	46		63	17									64	18							46	0
R0553	9948 HUNTWYCK DR	1	B	46		65	19									62	16							46	0
R0554A	9952 HUNTWYCK DR	1	B	46		68	22									57	11							46	0
R0554B	9957 HUNTWYCK DR	1	B	46		69	23									57	11							46	0
R0555A	9953 HUNTWYCK DR	1	B	46		66	20									59	13							46	0
R0555B	9949 HUNTWYCK DR	1	B	46		61	15									62	16							46	0
R0555C	9945 HUNTWYCK DR	1	B	46		61	15									62	16							46	0
R0556A	905 SHANNONDALE DR	1	B	46		70	24																	46	0
R0556B	909 SHANNONDALE DR	1	B	46		67	21																	46	0
R0556C	913 SHANNONDALE DR	1	B	46		64	18																	46	0
R0557A	912 SHANNONDALE DR	1	B	46		65	19																	46	0
R0557B	904 SHANNONDALE DR	1	B	46		65	19																	46	0
R0558A	920 SHANNONDALE DR	1	B	46		64	18																	46	0
R0558B	928 SHANNONDALE DR	1	B	46		63	17																	46	0
R0559A	10136 JOE LEACH RD	1	B	46		65	19																	46	0
R0559B	10132 JOE LEACH RD	1	B	46		64	18																	46	0
R0559C	10140 JOE LEACH RD	1	B	46		69	23																	46	0
R0560A	10173 JOE LEACH RD	1	B	46		64	18																	46	0
R0560B	10165 JOE LEACH RD	1	B	46		61	15																	46	0
R0562	10175 JOE LEACH RD	1	B	46		71	25																	46	0
R0563A	200 LASSITER FARM RD	1	B	46		61	15									60	14							46	0
R0563B	204 LASSITER FARM RD	1	B	46		61	15									60	14							46	0
R0564A	208 LASSITER FARM RD	1	B	46		60	14									59	13							46	0
R0564B	212 LASSITER FARM RD	1	B	46		59	13									60	14							46	0
R0564C	0 JOE LEACH RD	1	B	46		59	13									63	17							46	0
R0565A	201 LASSITER FARM RD	1	B	46		58	12									64	18							46	0
R0565B	205 LASSITER FARM RD	1	B	46		57	11									65	19							46	0
R0569A	213 HUNTERS FARM DR	1	B	46												65	19							46	0
R0569B	10004 JOE LEACH RD	1	B	46												65	19							46	0
R0572A	10005 JOE LEACH RD	1	B	46												64	18							46	0
R0572B	225 HUNTERS FARM DR	1	B	46												63	17							46	0
R0576A	10037 JOE LEACH RD	1	B	46												66	20							46	0
R0576B	10101 JOE LEACH RD	1	B	46												65	19							46	0
R0577A	10113 JOE LEACH RD	1	B	46												63	17							46	0
R0577B	10109 JOE LEACH RD	1	B	46												62	16							46	0
R0577C	10105 JOE LEACH RD	1	B	46												64	18							46	0
R0578	224 HUNTERS FARM DR	1	B	46												67	21							46	0
R0579	236 HUNTERS FARM DR	1	B	46												66	20							46	0
R0580	9000 BRITT FARM DR	1	B	46												67	21							46	0
R0582A	1017 SHANNONDALE DR	1	B	46												63	17							46	0
R0582B	1021 SHANNONDALE DR	1	B	46												64	18							46	0

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Complete 540
Traffic Noise Analysis

Impact Analysis

Receptor	Street Address	Properties Represented	NAC Land Use Category	Noise Levels dB(A)																					
				2014 Measured Ambient	2012 TNM Predicted Existing[3]	2035																			
						Orange		Green		Mint		Red		Purple/Blue		Lilac		Teal		Brown		Tan		No Build	
						Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]
R0583A	1025 SHANNONDALE DR	1	B	46												65	19							46	0
R0583B	1029 SHANNONDALE DR	1	B	46												65	19							46	0
R0584	241 HUNTERS FARM DR	1	B	46												65	19							46	0
R0586A	1001 BLUE RIVER FARM DR	1	B	46												67	21							46	0
R0586B	1005 BLUE RIVER FARM DR	1	B	46												66	20							46	0
R0587A	1009 BLUE RIVER FARM DR	1	B	46												65	19							46	0
R0587B	1013 BLUE RIVER FARM DR	1	B	46												64	18							46	0
R0587C	1017 BLUE RIVER FARM DR	1	B	46												63	17							46	0
R0588A	1000 BLUE RIVER FARM DR	1	B	46												69	23							46	0
R0588B	1008 BLUE RIVER FARM DR	1	B	46												67	21							46	0
R0592	1016 BLUE RIVER FARM DR	1	B	46												66	20							46	0
R0593A	1020 BLUE RIVER FARM DR	1	B	46												65	19							46	0
R0593B	1024 BLUE RIVER FARM DR	1	B	46												65	19							46	0
R0594A	1028 BLUE RIVER FARM DR	1	B	46												65	19							46	0
R0594B	1032 BLUE RIVER FARM DR	1	B	46												64	18							46	0
R0594C	1036 BLUE RIVER FARM DR	1	B	46												64	18							46	0
R0595A	1044 BLUE RIVER FARM DR	1	B	46												63	17							46	0
R0595B	1040 BLUE RIVER FARM DR	1	B	46												63	17							46	0
R0596A	9012 HUNTERFOX CT	1	B	46												65	19							46	0
R0596B	9008 HUNTERFOX CT	1	B	46												65	19							46	0
R0596C	9016 HUNTERFOX CT	1	B	46												65	19							46	0
R0597A	10113 AQUA LN	1	B	46												67	21							46	0
R0597B	10113 AQUA LN	1	B	46												66	20							46	0
R0601A	1101 SHANNONDALE DR	1	B	46												66	20							46	0
R0601B	1041 SHANNONDALE DR	1	B	46												65	19							46	0
R0601C	1105 SHANNONDALE DR	1	B	46												66	20							46	0
R0603A	10113 AQUA LN	1	B	46												72	26							46	0
R0603B	10113 AQUA LN	1	B	46												72	26							46	0
R0604A	1109 SHANNONDALE DR	1	B	46												65	19							46	0
R0604B	10113 AQUA LN	1	B	46												65	19							46	0
R0604C	10113 AQUA LN	1	B	46												65	19							46	0
R0606A	10113 AQUA LN	1	B	46												76	30							46	0
R0606B	10113 AQUA LN	1	B	46												66	20							46	0
R0607A	10113 AQUA LN	1	B	46												65	19							46	0
R0607B	10113 AQUA LN	1	B	46												66	20							46	0
R0608A	10113 AQUA LN	1	B	46												68	22							46	0
R0608B	10113 AQUA LN	1	B	46												67	21							46	0
R0615	1000 SAULS PARK DR	1	B	50	53											54	1							54	1
R0616	1000 SAULS PARK DR	1	B	50	62											59	-3							63	1
R0617	10916 TEN TEN RD	1	B	46	57											58	1							59	2
R0618A	10836 TEN TEN RD	1	B	46	60											62	2							62	2
R0618B	10832 TEN TEN RD	1	B	46	58											59	1							60	2
R0618C	10828 TEN TEN RD	1	B	46	57											59	2							60	3
R0619A	10816 TEN TEN RD	1	B	46	52											56	4							54	2
R0619B	10820 TEN TEN RD	1	B	46	55											57	2							57	2
R0619C	10824 TEN TEN RD	1	B	46	56											58	2							59	3
R0620	9824 JORDAN RD	1	B	46	47											57	10							49	2
R0622A	1437 GUFFY DR	1	B	46	46											65	19							48	2
R0622B	1433 GUFFY DR	1	B	46												67	21							47	1
R0622C	1441 GUFFY DR	1	B	46	48											63	15							51	3
R0623	1405 ROY AVERETTE DR	1	B	46												65	19							46	0
R0624A	1409 ROY AVERETTE DR	1	B	46												68	22							46	0
R0624B	1413 ROY AVERETTE DR	1	B	46												68	22							46	0
R0625A	1421 ROY AVERETTE DR	1	B	46												69	23							46	0
R0625B	1417 ROY AVERETTE DR	1	B	46												68	22							46	0
R0626A	1429 ROY AVERETTE DR	1	B	46	46											70	24							49	3
R0626B	1433 ROY AVERETTE DR	1	B	46	53											69	16							57	4
R0626C	1425 ROY AVERETTE DR	1	B	46												70	24							47	1
R0628	1424 ROY AVERETTE DR	1	B	46												62	16							47	1
R0629	1428 ROY AVERETTE DR	1	B	46												60	14							48	2
R0630A	10104 JORDAN RD	1	B	46	52											62	10							55	3
R0630B	10108 JORDAN RD	1	B	46	52											61	9							56	4
R0630C	1432 ROY AVERETTE DR	1	B	46	55											63	8							58	3

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3Noise levels reported if the traffic noise was dominant noise

Impact Analysis

Receptor	Street Address	Properties Represented	NAC Land Use Category	Noise Levels dB(A)																					
				2014 Measured Ambient	2012 TNM Predicted Existing[3]	2035																			
						Orange		Green		Mint		Red		Purple/Blue		Lilac		Teal		Brown		Tan		No Build	
						Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]
R0631	10105 JORDAN RD	1	B	46	51											60	9							55	4
R0637	10308 JORDAN RD	1	B	46		65	19							55	9									46	0
R0638	10320 JORDAN RD	1	B	46	50	71	21							57	7									53	3
R0639A	#N/A	1	B	46	51									60	9									55	4
R0639B	#N/A	1	B	46	52									59	7									55	3
R0639C	#N/A	1	B	46	52									59	7									56	4
R0640	#N/A	1	B	46	52									60	8									56	4
R0641A	605 CLEE CIR	1	B	46		64	18							62	16									47	1
R0641B	608 CLEE CIR	1	B	46		63	17							63	17									47	1
R0641C	#N/A	1	B	46	46									62	16									49	3
R0642A	613 CLEE CIR	1	B	46		64	18							70	24									46	0
R0642B	609 CLEE CIR	1	B	46		62	16							67	21									46	0
R0642C	612 CLEE CIR	1	B	46		60	14							68	22									46	0
R0643	10337 JORDAN RD	1	B	46		67	21																	46	0
R0644	10400 JORDAN RD	1	B	46	47	66	19																	51	4
R0645A	10416 JORDAN RD	1	B	46	48	62	14																	52	4
R0645B	10408 JORDAN RD	1	B	46	50	63	13																	54	4
R0646	10401 JORDAN RD	1	B	46	47	69	22																	51	4
R0647	10417 JORDAN RD	1	B	46	51	63	12																	55	4
R0648A	1525 UPCHURCH WOODS DR	1	B	46		55	9																	46	0
R0648B	1521 UPCHURCH WOODS DR	1	B	46		56	10																	46	0
R0649A	1519 UPCHURCH WOODS DR	1	B	46		57	11																	46	0
R0649B	1515 UPCHURCH WOODS DR	1	B	46		58	12																	49	3
R0650A	1509 UPCHURCH WOODS DR	1	B	46	52	61	9							62	10									56	4
R0650B	1513 UPCHURCH WOODS DR	1	B	46	48	58	10							58	10									51	3
R0650C	1505 UPCHURCH WOODS DR	1	B	46	53	62	9							62	9									57	4
R0651	10341 JORDAN RD	1	B	46		73	27							67	21									46	0
R0652A	5933 STANCIL FARM RD	1	B	46		66	20																	46	0
R0652B	6005 STANCIL FARM RD	1	B	46		66	20																	46	0
R0653	3401 BENSON RD	1	B	50	64											63	-1							65	1
R0656A	1037 RED BRICK RD	1	B	50	50											54	4							51	1
R0656B	1033 RED BRICK RD	1	B	50	53											56	3							53	0
R0658A	1025 RED BRICK RD	1	B	50	59											60	1							59	0
R0658B	1021 RED BRICK RD	1	B	50	60											60	0							61	1
R0659A	1017 RED BRICK RD	1	B	50	61											60	-1							61	0
R0659B	1013 RED BRICK RD	1	B	50	60											60	0							61	1
R0660A	1024 RED BRICK RD	1	B	50	51											58	7							52	1
R0660B	1016 RED BRICK RD	1	B	50	51											58	7							52	1
R0665A	1004 RED BRICK RD	1	B	50	51											61	10							52	1
R0665B	1008 RED BRICK RD	1	B	50	50											60	10							51	1
R0666	1000 RED BRICK RD	1	B	50	54											62	8							55	1
R0667A	1001 RED BRICK RD	1	B	50	60											62	2							60	0
R0667B	1009 RED BRICK RD	1	B	50	61											62	1							62	1
R0668A	1009 SPANISH MOSS LN	1	B	50	55											64	9							55	0
R0668B	1017 SPANISH MOSS LN	1	B	50	52											64	12							52	0
R0668C	1001 SPANISH MOSS LN	1	B	50	62											67	5							63	1
R0669A	1024 SPANISH MOSS LN	1	B	50												63	13							50	0
R0669B	1020 SPANISH MOSS LN	1	B	50												65	15							50	0
R0670A	1012 SPANISH MOSS LN	1	B	50	54											67	13							55	1
R0670B	1016 SPANISH MOSS LN	1	B	50	51											65	14							52	1
R0671A	1004 SPANISH MOSS LN	1	B	50	63											70	7							64	1
R0671B	1008 SPANISH MOSS LN	1	B	50	57											69	12							58	1
R0674A	1004 TURNER FARMS RD	1	B	50	54											67	13							55	1
R0674B	5525 SIMMONS DR	1	B	50	56											66	10							57	1
R0676	1016 TURNER FARMS RD	1	B	50												66	16							50	0
R0677A	5524 SIMMONS DR	1	B	50	50											66	16							50	0
R0677B	1012 TURNER FARMS RD	1	B	50												66	16							50	0
R0678A	5520 SIMMONS DR	1	B	50	50											66	16							50	0
R0678B	5512 SIMMONS DR	1	B	50												65	15							50	0
R0679A	5509 SIMMONS DR	1	B	50	54											62	8							54	0
R0679B	5513 SIMMONS DR	1	B	50	54											64	10							54	0
R0679C	5517 SIMMONS DR	1	B	50	56											65	9							56	0
R0680	3725 BENSON RD	COMMERCIAL	E	50	60											63	3							60	0

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Impact Analysis

Receptor	Street Address	Properties Represented	NAC Land Use Category	Noise Levels dB(A)																					
				2014	2012	2035																			
						Orange		Green		Mint		Red		Purple/Blue		Lilac		Teal		Brown		Tan		No Build	
				Measured Ambient	TNM Predicted Existing[3]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]
R0681A	5505 SIMMONS DR	1	B	50	53											61	8							54	1
R0681B	1105 GOLDEN GRAIN RD	1	B	50	59											62	3							60	1
R0681C	1109 GOLDEN GRAIN RD	1	B	50	56											60	4							56	0
R0682	1108 GOLDEN GRAIN RD	1	B	50	58	58	0									60	2							59	1
R0683	5501 QUAILS CALL CT	1	B	50												65	15							50	0
R0684A	5504 QUAILS CALL CT	1	B	50												66	16							50	0
R0684B	5509 QUAILS CALL CT	1	B	50												67	17							50	0
R0685A	5116 GLEN COX DR	1	B	50												66	16							50	0
R0685B	5517 ROLLING FIELD DR	1	B	50												66	16							50	0
R0686	5112 GLEN COX DR	1	B	50												67	17							50	0
R0689A	5117 GLEN COX DR	1	B	50												73	23							50	0
R0689B	5525 ROLLING FIELD DR	1	B	50												69	19							50	0
R0690A	5520 ROLLING FIELD DR	1	B	50												60	10							50	0
R0690B	5524 ROLLING FIELD DR	1	B	50												61	11							50	0
R0691A	1108 TURNER FARMS RD	1	B	50												68	18							50	0
R0691B	1112 TURNER FARMS RD	1	B	50												66	16							50	0
R0691C	1104 TURNER FARMS RD	1	B	50												68	18							50	0
R0692	5533 ROLLING FIELD DR	1	B	50												75	25							50	0
R0693A	5100 GREY DOVE LN	1	B	50												69	19							50	0
R0693B	5101 GREY DOVE LN	1	B	50												71	21							50	0
R0694	1114 TURNER FARMS RD	RECREATIONAL	C	50												63	13							50	0
R0695A	5532 ROLLING FIELD DR	1	B	50												63	13							50	0
R0695B	5528 ROLLING FIELD DR	1	B	50												63	13							50	0
R0696A	5540 ROLLING FIELD DR	1	B	50												62	12							50	0
R0696B	5536 ROLLING FIELD DR	1	B	50												61	11							50	0
R0697	5544 ROLLING FIELD DR	1	B	50												66	16							50	0
R0699A	1445 TURNER FARMS RD	1	B	50												66	16							50	0
R0699B	1441 TURNER FARMS RD	1	B	50												68	18							50	0
R0700A	1448 TURNER FARMS RD	1	B	50												65	15							50	0
R0700B	1440 TURNER FARMS RD	1	B	50												70	20							50	0
R0701	5508 DEER HUNTER CT	1	B	50												67	17							50	0
R0702A	5500 DEER HUNTER CT	1	B	50												62	12							50	0
R0702B	5504 DEER HUNTER CT	1	B	50												63	13							50	0
R0703A	5540 BRICKYARD CT	1	B	50												60	10							50	0
R0703B	5544 BRICKYARD CT	1	B	50												59	9							50	0
R0704A	5548 BRICKYARD CT	1	B	50												59	9							50	0
R0704B	5552 BRICKYARD CT	1	B	50												59	9							50	0
R0705	5604 TREESTAND CT	1	B	50												63	13							50	0
R0706A	5600 TREESTAND CT	1	B	50												60	10							50	0
R0706B	5605 TREESTAND CT	1	B	50												62	12							50	0
R0707A	5556 BRICKYARD CT	1	B	50												58	8							50	0
R0707B	1308 TURNER FARMS RD	1	B	50												58	8							50	0
R0708A	1320 TURNER FARMS RD	1	B	50												62	12							50	0
R0708B	1324 TURNER FARMS RD	1	B	50												65	15							50	0
R0709	1313 TURNER FARMS RD	1	B	50												59	9							50	0
R0710	1321 TURNER FARMS RD	1	B	50												63	13							50	0
R0712	1421 TURNER FARMS RD	1	B	50												64	14							50	0
R0713	1416 TURNER FARMS RD	1	B	50												68	18							50	0
R0714	1409 TURNER FARMS RD	1	B	50												61	11							50	0
R0715A	1404 TURNER FARMS RD	1	B	50												68	18							50	0
R0715B	1408 TURNER FARMS RD	1	B	50												69	19							50	0
R0715C	1400 TURNER FARMS RD	1	B	50												67	17							50	0
R0716A	1401 TURNER FARMS RD	1	B	50												60	10							50	0
R0716B	1369 TURNER FARMS RD	1	B	50												60	10							50	0
R0716C	1365 TURNER FARMS RD	1	B	50												60	10							50	0
R0717A	1364 TURNER FARMS RD	1	B	50												68	18							50	0
R0717B	1356 TURNER FARMS RD	1	B	50												67	17							50	0
R0718A	1361 TURNER FARMS RD	1	B	50												60	10							50	0
R0718B	1357 TURNER FARMS RD	1	B	50												61	11							50	0
R0720A	1353 TURNER FARMS RD	1	B	50												62	12							50	0
R0720B	1349 TURNER FARMS RD	1	B	50												64	14							50	0
R0722A	5308 SERATHER CT	1	B	50		62	12																	50	0
R0722B	5304 SERATHER CT	1	B	50		64	14																	50	0

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Complete 540
Traffic Noise Analysis

Impact Analysis

Receptor	Street Address	Properties Represented	NAC Land Use Category	Noise Levels dB(A)																					
				2014 Measured Ambient	2012 TNM Predicted Existing[3]	2035																			
						Orange		Green		Mint		Red		Purple/Blue		Lilac		Teal		Brown		Tan		No Build	
						Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]
R0723A	5301 SERATHER CT	1	B	50		70	20																	50	0
R0723B	5300 SERATHER CT	1	B	50		67	17																	50	0
R0724A	5305 SERATHER CT	1	B	50		68	18																	50	0
R0724B	5309 SERATHER CT	1	B	50		67	17																	50	0
R0725	3704 BENSON RD	CHURCH	C	50	55									61	6	62	7							56	1
R0726A	921 TURNER POND DR	1	B	50	60	59	-1							61	1	62	2							61	1
R0726B	917 TURNER POND DR	1	B	50	58	58	0							60	2	61	3							58	0
R0727A	3741 WAKEFIELD LN	1	B	50										58	8	57	7							50	0
R0727B	3753 WAKEFIELD LN	1	B	50										57	7	57	7							50	0
R0728A	3757 WAKEFIELD LN	1	B	50												57	7							50	0
R0728B	3761 WAKEFIELD LN	1	B	50												56	6							50	0
R0729A	3756 WAKEFIELD LN	1	B	50												58	8							50	0
R0729B	3760 WAKEFIELD LN	1	B	50												57	7							50	0
R0729C	3752 WAKEFIELD LN	1	B	50												59	9							50	0
R0730A	909 TURNER POND DR	1	B	50	53	57	4							58	5	59	6							53	0
R0730B	913 TURNER POND DR	1	B	50	54	56	2							59	5	60	6							55	1
R0731	905 TURNER POND DR	1	B	50	51	57	6									58	7							52	1
R0732	901 TURNER POND DR	1	B	50	51	57	6									57	6							51	0
R0733A	5208 DOUBLE D ACRES DR	1	B	50												54	4							50	0
R0733B	5204 DOUBLE D ACRES DR	1	B	50												55	5							50	0
R0734	1236 GRISSOM FARM RD	1	B	50	59	62	3									61	2							60	1
R0735	1216 GRISSOM FARM RD	1	B	50		59	9									54	4							50	0
R0736A	1200 GRISSOM FARM RD	1	B	50		60	10									54	4							50	0
R0736B	1208 GRISSOM FARM RD	1	B	50		60	10									54	4							50	0
R0737A	1113 GRISSOM FARM RD	1	B	50												53	3							50	0
R0737B	1201 GRISSOM FARM RD	1	B	50												54	4							50	0
R0738	1109 GRISSOM FARM RD	1	B	50												53	3							50	0
R0741A	5505 TREKWOOD DR	1	B	50		61	11																	50	0
R0741B	5501 TREKWOOD DR	1	B	50		60	10																	50	0
R0741C	5509 TREKWOOD DR	1	B	50		62	12																	50	0
R0745A	5517 TREKWOOD DR	1	B	50		64	14																	50	0
R0745B	5521 TREKWOOD DR	1	B	50		65	15																	50	0
R0745C	5513 TREKWOOD DR	1	B	50		63	13																	50	0
R0746A	5324 WOODBREK DR	1	B	50		64	14																	50	0
R0746B	5328 WOODBREK DR	1	B	50		65	15																	50	0
R0746C	5332 WOODBREK DR	1	B	50		66	16																	50	0
R0747A	5333 WOODBREK DR	1	B	50		67	17																	50	0
R0747B	5336 WOODBREK DR	1	B	50		68	18																	50	0
R0747C	5525 TREKWOOD DR	1	B	50		65	15																	50	0
R0747D	5528 TREKWOOD DR	1	B	50		61	11																	50	0
R0747E	5520 TREKWOOD DR	1	B	50		60	10																	50	0
R0748A	933 OPEN FIELD DR	1	B	50		64	14																	50	0
R0748B	929 OPEN FIELD DR	1	B	50		64	14																	50	0
R0749A	1001 OPEN FIELD DR	1	B	50		63	13																	50	0
R0749B	1005 OPEN FIELD DR	1	B	50		63	13																	50	0
R0750A	932 OPEN FIELD DR	1	B	50		59	9																	50	0
R0750B	928 OPEN FIELD DR	1	B	50		59	9																	50	0
R0750C	1004 OPEN FIELD DR	1	B	50		58	8																	50	0
R0751A	1012 OPEN FIELD DR	1	B	50		57	7																	50	0
R0751B	1020 OPEN FIELD DR	1	B	50		57	7																	50	0
R0752A	1009 OPEN FIELD DR	1	B	50	50	62	12																	50	0
R0752B	1013 OPEN FIELD DR	1	B	50	51	61	10																	52	1
R0753A	1017 OPEN FIELD DR	1	B	50	55	61	6																	55	0
R0753B	1021 OPEN FIELD DR	1	B	50	54	61	7																	55	1
R0754	1029 OPEN FIELD DR	1	B	50	54	62	8																	55	1
R0755	4012 BENSON RD	1	B	50	61	63	2																	61	0
R0756	3933 BENSON RD	1	B	50	58	65	7																	59	1
R0757A	1033 OPEN FIELD DR	1	B	50	53	61	8																	53	0
R0757B	1037 OPEN FIELD DR	1	B	50	53	58	5																	54	1
R0758A	4020 BENSON RD	1	B	50	62	67	5																	62	0
R0758B	4024 BENSON RD	1	B	50	62	67	5																	62	0
R0759A	1112 OPEN FIELD DR	1	B	50	51	55	4																	52	1
R0759B	1100 OPEN FIELD DR	1	B	50	51	57	6																	51	0

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Complete 540
Traffic Noise Analysis

Impact Analysis

Receptor	Street Address	Properties Represented	NAC Land Use Category	Noise Levels dB(A)																					
				2014	2012	2035																			
						Orange		Green		Mint		Red		Purple/Blue		Lilac		Teal		Brown		Tan		No Build	
				Measured Ambient	TNM Predicted Existing[3]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]
R0760A	1105 OPEN FIELD DR	1	B	50	63	67	4																	64	1
R0760B	1109 OPEN FIELD DR	1	B	50	59	60	1																	59	0
R0760C	1101 OPEN FIELD DR	1	B	50	59	63	4																	59	0
R0761A	1116 OPEN FIELD DR	1	B	50	51	58	7																	51	0
R0761B	1120 OPEN FIELD DR	1	B	50	50	53	3																	51	1
R0762A	6929 STEVENS OAKS DR	1	B	50	59	63	4																	60	1
R0762B	1117 OPEN FIELD DR	1	B	50	56	62	6																	57	1
R0762C	1113 OPEN FIELD DR	1	B	50	59	65	6																	60	1
R0763	6924 STEVENS OAKS DR	1	B	50		53	3																	50	0
R0764	1209 OPEN FIELD DR	1	B	50	54	59	5																	55	1
R0765A	7001 CLEVELAND SCHOOL RD	1	B	50	56	61	5																	57	1
R0765B	3530 PARRISH FARM RD	1	B	50	53	54	1																	54	1
R0803	#N/A	1	B	51	57	65	8																	60	3
R0804A	2420 NEW BETHEL CHURCH RD	1	B	49	60	67	7																	63	3
R0804B	2432 NEW BETHEL CHURCH RD	1	B	49	56	59	3																	59	3
R0804C	2428 NEW BETHEL CHURCH RD	1	B	49	62	68	6																	65	3
R0805	2425 NEW BETHEL CHURCH RD	1	B	49	64	71	7																	67	3
R0806	2520 NEW BETHEL CHURCH RD	1	B	49	64	67	3																	67	3
R0807	2509 NEW BETHEL CHURCH RD	1	B	49	67	72	5																	70	3
R0808A	4504 BARRINGTON HILLS LN	1	B	49	60	66	6																	63	3
R0808B	4512 BARRINGTON HILLS LN	1	B	49	56	61	5																	59	3
R0809A	4505 BARRINGTON HILLS LN	1	B	49	61	67	6																	65	4
R0809B	4509 BARRINGTON HILLS LN	1	B	49	59	67	8																	62	3
R0811A	7101 LITTLE SHANNON DR	1	B	49	59	62	3																	62	3
R0811B	7105 LITTLE SHANNON DR	1	B	49	57	62	5																	60	3
R0816A	7117 BREEZY BRANCH LN	1	B	49	50											54	4							53	3
R0816B	7113 BREEZY BRANCH LN	1	B	49	51											54	3							53	2
R0817A	7125 BREEZY BRANCH LN	1	B	49	49											53	4							52	3
R0817B	7121 BREEZY BRANCH LN	1	B	49	50											54	4							52	2
R0820	4616 BARRINGTON HILLS LN	1	B	49	51											55	4							53	2
R0821A	7108 FLAT CREEK CT	1	B	49	50											56	6							52	2
R0821B	7104 FLAT CREEK CT	1	B	49	51											57	6							53	2
R0823A	7112 FLAT CREEK CT	1	B	49	50											56	6							52	2
R0823B	7116 FLAT CREEK CT	1	B	49	50											55	5							52	2
R0824A	4624 BARRINGTON HILLS LN	1	B	49	51											58	7							53	2
R0824B	7109 FLAT CREEK CT	1	B	49	50											58	8							52	2
R0833A	4628 LOW GROUND CT	1	B	49	49											60	11							51	2
R0833B	4632 LOW GROUND CT	1	B	49	49											59	10							51	2
R0834A	4624 LOW GROUND CT	1	B	49	49											62	13							52	3
R0834B	4620 LOW GROUND CT	1	B	49	49											62	13							51	2
R0835A	4613 LOW GROUND CT	1	B	49												63	14							51	2
R0835B	4617 LOW GROUND CT	1	B	49												63	14							51	2
R0836A	4612 LOW GROUND CT	1	B	49												64	15							51	2
R0836B	4616 LOW GROUND CT	1	B	49	49											63	14							51	2
R0837A	4600 LOW GROUND CT	1	B	49												68	19							50	1
R0837B	4608 LOW GROUND CT	1	B	49												67	18							51	2
R0838A	4601 LOW GROUND CT	1	B	49												59	10							49	0
R0838B	4728 ALONZO RD	1	B	49												61	12							50	1
R0839A	4725 ALONZO RD	1	B	49												65	16							49	0
R0839B	4729 ALONZO RD	1	B	49												63	14							49	0
R0840A	4721 ALONZO RD	1	B	49												66	17							49	0
R0840B	4717 ALONZO RD	1	B	49												70	21							51	2
R0841A	4608 BUSHY BRANCH DR	1	B	49	49											68	19							52	3
R0841B	4604 BUSHY BRANCH DR	1	B	49	49											66	17							52	3
R0844	4600 BUSHY BRANCH DR	1	B	49	49											63	14							52	3
R0851A	4536 BUSHY BRANCH DR	1	B	49	49											59	10							52	3
R0851B	4532 BUSHY BRANCH DR	1	B	49	49											60	11							52	3
R0852A	2500 WRANGLER CT	1	B	49												68	19							49	0
R0852B	2508 WRANGLER CT	1	B	49	49											70	21							51	2
R0853A	2505 WRANGLER CT	1	B	49												63	14							49	0
R0853B	2509 WRANGLER CT	1	B	49												65	16							49	0
R0853C	2513 WRANGLER CT	1	B	49												66	17							49	0
R0854A	2520 BIG BUCK LN	1	B	49												63	14							50	1

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3Noise levels reported if the traffic noise was dominant noise

Complete 540
Traffic Noise Analysis

Impact Analysis

Receptor	Street Address	Properties Represented	NAC Land Use Category	Noise Levels dB(A)																					
				2014 Measured Ambient	2012 TNM Predicted Existing[3]	2035																			
						Orange		Green		Mint		Red		Purple/Blue		Lilac		Teal		Brown		Tan		No Build	
						Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]
R0854B	2524 BIG BUCK LN	1	B	49												65	16							49	0
R0855A	2528 BIG BUCK LN	1	B	49												66	17							49	0
R0855B	2529 BIG BUCK LN	1	B	49												64	15							49	0
R0855C	2525 BIG BUCK LN	1	B	49												63	14							49	0
R0856	4608 SELLIE DR	1	B	49	64	73	9					69	5			70	6							66	2
R0857	4517 HICKS RD	1	B	49	66	71	5					71	5			72	6							68	2
R0858A	4501 HICKS RD	1	B	49	62	70	8					68	6			68	6							65	3
R0858B	4425 HICKS RD	1	B	49	61	69	8					67	6			67	6							63	2
R0859	4302 HICKS RD	1	B	49	65	70	5					71	6			72	7							68	3
R0860A	4312 SMITH LANDING DR	1	B	49	68	74	6					75	7			75	7							71	3
R0860B	4308 SMITH LANDING DR	1	B	49	68	74	6					75	7			75	7							71	3
R0861	9433 WHITE OAK RD	CHURCH	C	49	62															65	3			63	1
R0862A	9428 CARLEY CIR	1	B	49	53															59	6			55	2
R0862B	9432 CARLEY CIR	1	B	49	57															62	5			59	2
R0863A	9420 CARLEY CIR	1	B	49	49															56	7			51	2
R0863B	9424 CARLEY CIR	1	B	49	50															57	7			52	2
R0864A	2904 HAYWARD CT	1	B	49	59			64	5							64	5			63	4			60	1
R0864B	2908 HAYWARD CT	1	B	49	56			60	4							61	5			61	5			57	1
R0865A	2912 HAYWARD CT	1	B	49	51			56	5											58	7			52	1
R0865B	2916 HAYWARD CT	1	B	49				53	4											56	7			50	1
R0866A	2905 HAYWARD CT	1	B	49	56			61	5							61	5			62	6			58	2
R0866B	2909 HAYWARD CT	1	B	49	52			57	5							58	6			60	8			53	1
R0867	2913 HAYWARD CT	1	B	49				53	4							53	4			57	8			50	1
R0868	9220 WHITE OAK RD	1	B	49	53			61	8							62	9							54	1
R0869	9305 CARLEY CIR	1	B	49																65	16			49	0
R0870	2917 ESCONDIDO FARM RD	1	B	49																53	4			49	0
R0871	2913 ESCONDIDO FARM RD	1	B	49												48	-1			55	6			49	0
R0872	2908 ESCONDIDO FARM RD	1	B	49				50	1							47	-2			57	8			49	0
R0873	2824 ESCONDIDO FARM RD	1	B	49				57	8							52	3			57	8			49	0
R0874	2800 ESCONDIDO FARM RD	1	B	49	54															58	4			55	1
R0875	8849 OLD CASCADE DR	1	B	49	51															55	4			52	1
R0876	8817 OLD CASCADE DR	1	B	49	57															60	3			59	2
R0877A	4220 SAND CASTLE DR	1	B	49	60			66	6															61	1
R0877B	4220 SAND CASTLE DR	1	B	49	54			60	6															56	2
R0878	4220 SAND CASTLE DR	1	B	49	52			60	8															53	1
R0879A	4220 SAND CASTLE DR	1	B	49	51			58	7							59	8							53	2
R0879B	4220 SAND CASTLE DR	1	B	49	50			56	6							58	8							52	2
R0880A	4220 SAND CASTLE DR	1	B	49	49			56	7							57	8							51	2
R0880B	4220 SAND CASTLE DR	1	B	49	49			57	8							58	9							51	2
R0881A	8924 OLD CASCADE DR	1	B	49				55	6							57	8							50	1
R0881B	8932 OLD CASCADE DR	1	B	49				53	4							56	7							50	1
R0888A	8952 OLD CASCADE DR	1	B	49				54	5							55	6							50	1
R0888B	8964 OLD CASCADE DR	1	B	49				55	6							55	6							50	1
R0889A	9024 OLD CASCADE DR	1	B	49				52	3							54	5							51	2
R0889B	9012 OLD CASCADE DR	1	B	49				53	4							54	5							50	1
R0890A	9020 MUSTARD SEED LN	1	B	49	49			52	3							54	5							51	2
R0890B	9024 MUSTARD SEED LN	1	B	49	49			53	4							54	5							51	2
R0890C	9016 MUSTARD SEED LN	1	B	49	49			54	5							55	6							51	2
R0891A	9008 MUSTARD SEED LN	1	B	49	49			55	6							55	6							51	2
R0891B	9012 MUSTARD SEED LN	1	B	49	49			55	6							55	6							51	2
R0892A	9004 MUSTARD SEED LN	1	B	49	49			56	7							56	7							51	2
R0892B	9000 MUSTARD SEED LN	1	B	49	49			57	8							56	7							51	2
R0893A	9017 MUSTARD SEED LN	1	B	49	51			56	5							56	5							53	2
R0893B	9025 MUSTARD SEED LN	1	B	49	50			54	4							55	5							52	2
R0894A	9009 MUSTARD SEED LN	1	B	49	51			57	6							57	6							53	2
R0894B	9013 MUSTARD SEED LN	1	B	49	50			56	6							56	6							52	2
R0894C	9001 MUSTARD SEED LN	1	B	49	51			57	6							57	6							53	2
R0895	8805 TIFFANY CREEK DR	1	B	49	57			64	7							63	6							58	1
R0896	0 WHITE OAK RD	1	B	49	55			62	7							62	7							57	2
R0897A	8833 WHITE OAK RD	1	B	49	56			63	7															57	1
R0897B	8905 WHITE OAK RD	1	B	49	57			63	6															59	2
R0898	8817 WHITE OAK RD	1	B	49	52			57	5							58	6							54	2
R0899A	8812 WHITE OAK RD	1	B	49	58			65	7							64	6							60	2

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3Noise levels reported if the traffic noise was dominant noise

Complete 540
Traffic Noise Analysis

Impact Analysis

Receptor	Street Address	Properties Represented	NAC Land Use Category	Noise Levels dB(A)																					
				2014 Measured Ambient	2012 TNM Predicted Existing[3]	2035																			
						Orange		Green		Mint		Red		Purple/Blue		Lilac		Teal		Brown		Tan		No Build	
						Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]
R0899B	8816 WHITE OAK RD	1	B	49	58			65	7							64	6							60	2
R0901	8809 WHITE OAK RD	1	B	49	57			63	6							62	5							59	2
R0905	8925 WHITE OAK RD	CHURCH	C	49	64			62	-2							61	-3							66	2
R0906A	5908 RAYNOR RD	1	B	49	56			59	3							59	3							57	1
R0906B	8925 WHITE OAK RD	1	B	49	56			56	0							56	0							57	1
R0907	5901 RAYNOR RD	1	B	49	55			59	4							59	4							56	1
R0909	5901 RAYNOR RD	1	B	49				60	11							60	11							50	1
R0910A	5804 RAYNOR RD	1	B	49	56			59	3							59	3							57	1
R0910B	5812 RAYNOR RD	1	B	49	55			59	4							58	3							56	1
R0911	5800 RAYNOR RD	1	B	49	55			58	3							58	3							56	1
R0912A	105 TWAIN DR	1	B	49	50			56	6							55	5							51	1
R0912B	0 TWAIN DR	1	B	49	49			55	6							54	5							50	1
R0916A	4219 BATTLE FIELD DR	1	B	49	69	74	5					75	6			74	5							71	2
R0916B	4215 BATTLE FIELD DR	1	B	49	70	75	5					77	7			76	6							73	3
R0916C	4211 BATTLE FIELD DR	1	B	49	70	75	5					77	7			76	6							73	3
R0917	4214 BATTLE FIELD DR	1	B	49	63	67	4					67	4			66	3							65	2
R0918A	4201 BATTLE FIELD DR	1	B	49	70	73	3					76	6			75	5							72	2
R0918B	4205 BATTLE FIELD DR	1	B	49	70	73	3					76	6			75	5							72	2
R0918C	4151 BATTLE FIELD DR	1	B	49	69	72	3					76	7			75	6							72	3
R0919A	2605 RIFLE RIDGE CT	1	B	49	62	66	4					67	5			66	4							64	2
R0919B	2609 RIFLE RIDGE CT	1	B	49	60	63	3					64	4			63	3							62	2
R0920	2608 RIFLE RIDGE CT	1	B	49	57	60	3					60	3			60	3							60	3
R0921A	2604 RIFLE RIDGE CT	1	B	49	59	63	4					63	4			63	4							62	3
R0921B	2600 RIFLE RIDGE CT	1	B	49	61	65	4					65	4			64	3							63	2
R0921C	4144 BATTLE FIELD DR	1	B	49	60	64	4					63	3			63	3							63	3
R0922A	4143 BATTLE FIELD DR	1	B	49	68	71	3					75	7			74	6							71	3
R0922B	4147 BATTLE FIELD DR	1	B	49	68	71	3					75	7			74	6							71	3
R0923A	4139 BATTLE FIELD DR	1	B	49	66	69	3					71	5			70	4							69	3
R0923B	4135 BATTLE FIELD DR	1	B	49	63	66	3					66	3			66	3							66	3
R0924A	4132 BATTLE FIELD DR	1	B	49	58	60	2					60	2			61	3							60	2
R0924B	4136 BATTLE FIELD DR	1	B	49	58	61	3					60	2			61	3							60	2
R0928	4127 BATTLE FIELD DR	1	B	49	61	63	2					62	1			64	3							63	2
R0931A	3921 LAUROB LN	1	B	49	67	70	3					72	5			72	5							70	3
R0931B	3917 LAUROB LN	1	B	49	72	74	2					79	7			77	5							74	2
R0932A	3913 LAUROB LN	1	B	49	70							74	4			76	6							73	3
R0932B	3909 LAUROB LN	1	B	49	70							72	2			75	5							72	2
R0932C	3905 LAUROB LN	1	B	49	69							70	1			74	5							72	3
R0933	8312 WHITE OAK RD	1	B	49	66							66	0			69	3							68	2
R0934A	4101 BATTLE FIELD DR	1	B	49	60							58	-2			63	3							62	2
R0934B	4105 BATTLE FIELD DR	1	B	49	59							58	-1			62	3							61	2
R0935A	7917 INDEPENDENT CT	1	B	49	55							56	1			58	3							57	2
R0935B	7913 INDEPENDENT CT	1	B	49	56							57	1			59	3							58	2
R0935C	7912 INDEPENDENT CT	1	B	49	54							54	0			57	3							57	3
R0938	8255 WHITE OAK RD	1	B	49	60							62	2			63	3							62	2
R0939A	8261 WHITE OAK RD	1	B	49	59							64	5			63	4							62	3
R0939B	8281 WHITE OAK RD	1	B	49	62							66	4			65	3							64	2
R0943A	4325 GUY RD	1	B	51	56															60	4			61	5
R0943B	4333 GUY RD	1	B	51	57															60	3			61	4
R0943C	2671 GUY RD	1	B	51	56															60	4			60	4
R0944A	WOODMERE DR	1	B	51	64															65	1	65	1	66	2
R0944B	635 WOODMERE DR	1	B	51	60															61	1	61	1	62	2
R0945A	WOODMERE DR	1	B	51	67															67	0	67	0	69	2
R0945B	WOODMERE DR	1	B	51	62															62	0	62	0	64	2
R0946A	13580 US 70 BUS HWY	1	B	51	60															61	1	61	1	62	2
R0946B	13580 US 70 BUS HWY	1	B	51	59															60	1	60	1	61	2
R0946C	13580 US 70 BUS HWY	1	B	51	61															62	1	62	1	63	2
R0947A	13580 US 70 BUS HWY	1	B	51	56															58	2	58	2	58	2
R0947B	13580 US 70 BUS HWY	1	B	51	58															59	1	59	1	60	2
R0947C	13580 US 70 BUS HWY	1	B	51	55															57	2	57	2	57	2
R0948	13580 US 70 BUS HWY	1	B	51	60															61	1	61	1	62	2
R0949A	13580 US 70 BUS HWY	1	B	51	57															59	2	60	3	59	2
R0949B	13580 US 70 BUS HWY	1	B	51	56															59	3	59	3	58	2
R0949C	13580 US 70 BUS HWY	1	B	51	58															60	2	60	2	60	2

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Complete 540
Traffic Noise Analysis

Impact Analysis

Receptor	Street Address	Properties Represented	NAC Land Use Category	Noise Levels dB(A)																					
				2014 Measured Ambient	2012 TNM Predicted Existing[3]	2035																			
						Orange		Green		Mint		Red		Purple/Blue		Lilac		Teal		Brown		Tan		No Build	
						Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]
R0950A	13580 US 70 BUS HWY	1	B	51	60															61	1	61	1	62	2
R0950B	13580 US 70 BUS HWY	1	B	51	62															62	0	63	1	64	2
R0951A	13580 US 70 BUS HWY	1	B	51	58															60	2	60	2	60	2
R0951B	13580 US 70 BUS HWY	1	B	51	56															59	3	59	3	58	2
R0951C	13580 US 70 BUS HWY	1	B	51	58															60	2	60	2	60	2
R0952	13580 US 70 BUS HWY	1	B	51	58															60	2	61	3	60	2
R0953A	13580 US 70 BUS HWY	1	B	51	62															63	1	64	2	64	2
R0953B	13580 US 70 BUS HWY	1	B	51	60															62	2	62	2	63	3
R0954A	13580 US 70 BUS HWY	1	B	51	58															61	3	61	3	60	2
R0954B	13580 US 70 BUS HWY	1	B	51	57															60	3	60	3	59	2
R0954C	13580 US 70 BUS HWY	1	B	51	59															61	2	62	3	61	2
R0955	4820 GUY RD	CHURCH	C	51	63															65	2	65	2	67	4
R0959A	3908 LA VARRA DR	1	B	51																61	10	62	11	51	0
R0959B	3909 LA VARRA DR	1	B	51	52															61	9	62	10	53	1
R0960A	3901 LA VARRA DR	1	B	51	61															68	7	69	8	61	0
R0960B	3905 LA VARRA DR	1	B	51	58															65	7	65	7	58	0
R0961A	3572 E GARNER RD	1	B	51	53															61	8	62	9	53	0
R0961B	3600 E GARNER RD	1	B	51	55															64	9	64	9	56	1
R0961C	3616 E GARNER RD	1	B	51	58															66	8	67	9	58	0
R0962A	3709 JAMES LAND DR	1	B	51	51															63	12	63	12	52	1
R0962B	3705 JAMES LAND DR	1	B	51																62	11	63	12	52	1
R0962C	3821 LA VARRA DR	1	B	51	51															65	14	65	14	52	1
R0963A	3820 LA VARRA DR	1	B	51	51															66	15	67	16	52	1
R0963B	3824 LA VARRA DR	1	B	51	57															68	11	69	12	58	1
R0965A	3817 LA VARRA DR	1	B	51																63	12	63	12	51	0
R0965B	3701 JAMES LAND DR	1	B	51																62	11	63	12	51	0
R0966	3816 LA VARRA DR	1	B	51																66	15	66	15	51	0
R0967A	3813 LA VARRA DR	1	B	51																63	12	64	13	51	0
R0967B	3809 LA VARRA DR	1	B	51																64	13	64	13	51	0
R0968A	3805 LA VARRA DR	1	B	51																63	12	64	13	51	0
R0968B	3801 LA VARRA DR	1	B	51																63	12	64	13	51	0
R0969	3804 LA VARRA DR	1	B	51																65	14	66	15	51	0
R0970A	3628 BALLOT RD	1	B	51																67	16	68	17	51	0
R0970B	3632 BALLOT RD	1	B	51																66	15	67	16	51	0
R0971A	3624 BALLOT RD	1	B	51																68	17	68	17	51	0
R0971B	3620 BALLOT RD	1	B	51																67	16	67	16	51	0
R0972A	3612 BALLOT RD	1	B	51																65	14	65	14	51	0
R0972B	3616 BALLOT RD	1	B	51																65	14	65	14	51	0
R0973A	3344 STONEY CREEK DR	1	B	51																66	15	65	14	51	0
R0973B	3604 BALLOT RD	1	B	51																66	15	65	14	51	0
R0974	3345 STONEY CREEK DR	1	B	51																69	18	68	17	51	0
R0976	6115 OLD STAGE RD	CHURCH	C	49	57							64	7											63	6
R0977	165 SOMMERVILLE PARK RD	1	B	49								68	19											53	4
R0978A	6401 OLD STAGE RD	1	B	49	53							65	12											59	6
R0983A	106 GUSSETT DR	1	B	49	52							63	11											56	4
R0983B	110 GUSSETT DR	1	B	49	50							62	12											55	5
R0983C	113 LAGER LN	1	B	49	53							65	12											58	5
R0987A	117 GUSSETT DR	1	B	49	52							63	11											56	4
R0987B	100 DEMOS CIR	1	B	49	53							67	14											57	4
R0987C	121 GUSSETT DR	1	B	49	51							61	10											55	4
R0988A	118 GUSSETT DR	1	B	49	49							60	11											53	4
R0988B	122 GUSSETT DR	1	B	49								59	10											53	4
R0988C	114 GUSSETT DR	1	B	49	49							60	11											54	5
R0989A	130 GUSSETT DR	1	B	49								58	9											49	0
R0989B	126 GUSSETT DR	1	B	49								59	10											51	2
R0989C	134 GUSSETT DR	1	B	49								56	7											49	0
R0992A	108 BROOKSHADE CIR	1	B	49	53							66	13											57	4
R0992B	104 BROOKSHADE CIR	1	B	49	51							59	8											55	4
R0993A	100 BROOKSHADE CIR	1	B	49	49							58	9											54	5
R0993B	131 GUSSETT DR	1	B	49	49							57	8											54	5
R0994A	133 GUSSETT DR	1	B	49								54	5											53	4
R0994B	135 GUSSETT DR	1	B	49								55	6											53	4
R0995A	114 ROAN DR	1	B	49	49							56	7											54	5

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3Noise levels reported if the traffic noise was dominant noise

Complete 540
Traffic Noise Analysis

Impact Analysis

Receptor	Street Address	Properties Represented	NAC Land Use Category	Noise Levels dB(A)																					
				2014 Measured Ambient	2012 TNM Predicted Existing[3]	2035																			
						Orange		Green		Mint		Red		Purple/Blue		Lilac		Teal		Brown		Tan		No Build	
						Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]
R0995B	110 ROAN DR	1	B	49	52							65	13											57	5
R0999A	115 ROAN DR	1	B	49	49							55	6											54	5
R0999B	111 ROAN DR	1	B	49	50							57	7											55	5
R0999C	119 ROAN DR	1	B	49								55	6											52	3
R1000A	109 PINERY CIR	1	B	49	50							58	8											55	5
R1000B	108 PINERY CIR	1	B	49	50							58	8											54	4
R1001A	101 PINERY CIR	1	B	49								56	7											51	2
R1001B	105 PINERY CIR	1	B	49	49							55	6											54	5
R1002A	102 PINERY CIR	1	B	49								57	8											51	2
R1002B	104 PINERY CIR	1	B	49								58	9											52	3
R1003A	130 ROAN DR	1	B	49								54	5											50	1
R1003B	126 ROAN DR	1	B	49								54	5											51	2
R1003C	134 ROAN DR	1	B	49								54	5											49	0
R1004A	127 ROAN DR	1	B	49								56	7											51	2
R1004B	123 ROAN DR	1	B	49								57	8											51	2
R1004C	131 ROAN DR	1	B	49								55	6											50	1
R1005A	154 GUSSETT DR	1	B	49								57	8											51	2
R1005B	152 GUSSETT DR	1	B	49								58	9											50	1
R1005C	148 GUSSETT DR	1	B	49								57	8											51	2
R1006A	149 GUSSETT DR	1	B	49								58	9											50	1
R1006B	153 GUSSETT DR	1	B	49								58	9											50	1
R1007A	157 GUSSETT DR	1	B	49								58	9											49	0
R1007B	161 GUSSETT DR	1	B	49								57	8											49	0
R1008A	169 GUSSETT DR	1	B	49								54	5											49	0
R1008B	165 GUSSETT DR	1	B	49								56	7											49	0
R1008C	173 GUSSETT DR	1	B	49								53	4											49	0
R1009A	245 GAFFER ST	1	B	49								57	8											49	0
R1009B	241 GAFFER ST	1	B	49								56	7											49	0
R1010A	158 GUSSETT DR	1	B	49								57	8											50	1
R1010B	156 GUSSETT DR	1	B	49								57	8											50	1
R1011A	135 ROAN DR	1	B	49								56	7											50	1
R1011B	139 ROAN DR	1	B	49								55	6											50	1
R1011C	143 ROAN DR	1	B	49								55	6											50	1
R1012A	136 ROAN DR	1	B	49								53	4											49	0
R1012B	138 ROAN DR	1	B	49								53	4											49	0
R1012C	142 ROAN DR	1	B	49								53	4											49	0
R1013A	144 ROAN DR	1	B	49								53	4											49	0
R1013B	146 ROAN DR	1	B	49								54	5											49	0
R1013C	150 ROAN DR	1	B	49								54	5											49	0
R1014A	147 ROAN DR	1	B	49								54	5											49	0
R1014B	151 ROAN DR	1	B	49								53	4											49	0
R1015A	155 ROAN DR	1	B	49								52	3											49	0
R1015B	159 ROAN DR	1	B	49								51	2											49	0
R1016A	237 GAFFER ST	1	B	49								54	5											49	0
R1016B	231 GAFFER ST	1	B	49								53	4											49	0
R1017A	244 GAFFER ST	1	B	49								52	3											49	0
R1017B	240 GAFFER ST	1	B	49								51	2											49	0
R1018A	236 GAFFER ST	1	B	49								52	3											49	0
R1018B	232 GAFFER ST	1	B	49								52	3											49	0
R1019A	228 GAFFER ST	1	B	49								52	3											49	0
R1019B	224 GAFFER ST	1	B	49								52	3											49	0
R1020A	197 GAFFER ST	1	B	49								53	4											49	0
R1020B	201 GAFFER ST	1	B	49								52	3											49	0
R1020C	205 GAFFER ST	1	B	49								52	3											49	0
R1021A	209 GAFFER ST	1	B	49								53	4											49	0
R1021B	213 GAFFER ST	1	B	49								53	4											49	0
R1022	156 ROAN DR	1	B	49								52	3											49	0
R1023A	200 GAFFER ST	1	B	49								51	2											49	0
R1023B	204 GAFFER ST	1	B	49								52	3											49	0
R1023C	196 GAFFER ST	1	B	49								52	3											49	0
R1024A	106 COSSACK CIR	1	B	49								52	3											49	0
R1024B	102 COSSACK CIR	1	B	49								53	4											49	0
R1025	101 COSSACK CIR	1	B	49								50	1											49	0

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Impact Analysis

Receptor	Street Address	Properties Represented	NAC Land Use Category	Noise Levels dB(A)																					
				2014 Measured Ambient	2012 TNM Predicted Existing[3]	2035																			
						Orange		Green		Mint		Red		Purple/Blue		Lilac		Teal		Brown		Tan		No Build	
						Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]
R1026A	160 ROAN DR	1	B	49								51	2											49	0
R1026B	164 ROAN DR	1	B	49								52	3											49	0
R1027	171 ROAN DR	1	B	49								51	2											49	0
R1028A	110 COSSACK CIR	1	B	49								51	2											49	0
R1028B	114 COSSACK CIR	1	B	49								51	2											49	0
R1029A	118 COSSACK CIR	1	B	49								51	2											49	0
R1029B	117 COSSACK CIR	1	B	49								51	2											49	0
R1030A	109 COSSACK CIR	1	B	49								51	2											49	0
R1030B	113 COSSACK CIR	1	B	49								51	2											49	0
R1031A	168 ROAN DR	1	B	49								51	2											49	0
R1031B	172 ROAN DR	1	B	49								50	1											49	0
R1032	100 LAGER LN	1	B	49	57							65	8											61	4
R1033	6827 OLD STAGE RD	1	B	49	52							58	6											56	4
R1058	721 THOMPSON RD	1	B	49								63	14											49	0
R1060A	124 BRIAR ROSE LN	1	B	49								58	9											49	0
R1060B	118 BRIAR ROSE LN	1	B	49								57	8											49	0
R1063A	112 BRIAR ROSE LN	1	B	49								57	8											49	0
R1063B	106 BRIAR ROSE LN	1	B	49								58	9											49	0
R1063C	100 BRIAR ROSE LN	1	B	49	53							62	9											49	-4
R1065A	101 BROOKWYND CT	1	B	49	52							65	13											49	-3
R1065B	107 BROOKWYND CT	1	B	49								64	15											49	0
R1065C	113 BROOKWYND CT	1	B	49								65	16											49	0
R1066A	124 BROOKWYND CT	1	B	49								62	13											49	0
R1066B	118 BROOKWYND CT	1	B	49								61	12											49	0
R1066C	130 BROOKWYND CT	1	B	49								65	16											49	0
R1067A	131 BROOKWYND CT	1	B	49								72	23											49	0
R1067B	125 BROOKWYND CT	1	B	49								75	26											49	0
R1067C	119 BROOKWYND CT	1	B	49								63	14											49	0
R1067D	136 BROOKWYND CT	1	B	49								67	18											49	0
R1069A	710 THOMPSON RD	1	B	49								69	20											49	0
R1069B	708 THOMPSON RD	1	B	49								65	16											49	0
R1071	725 THOMPSON RD	1	B	49								66	17											49	0
R1073	828 THOMPSON RD	1	B	49	52							63	11											53	1
R1074	1601 TIMBER DR	SCHOOL	C	49	55							59	4											57	2
R1117A	1604 BUCKINGHAM RD	1	B	49	59							64	5											59	0
R1117B	1608 BUCKINGHAM RD	1	B	49	62							67	5											63	1
R1127A	1503 BUCKINGHAM RD	1	B	49	56							64	8											57	1
R1127B	1601 BUCKINGHAM RD	1	B	49	57							64	7											58	1
R1127C	1501 BUCKINGHAM RD	1	B	49	56							64	8											56	0
R1130A	1409 BUCKINGHAM RD	1	B	49	56							64	8											56	0
R1130B	1407 BUCKINGHAM RD	1	B	49	56							64	8											56	0
R1131A	1403 BUCKINGHAM RD	1	B	49	56							62	6											57	1
R1131B	1405 BUCKINGHAM RD	1	B	49	57							63	6											57	0
R1133A	102 COACHMAN DR	1	B	49	60							64	4											60	0
R1133B	1401 BUCKINGHAM RD	1	B	49	57							63	6											58	1
R1142A	1401 TIMBER DR	1	B	49	63							67	4											63	0
R1142B	1704 BLANTON ST	1	B	49	59							65	6											59	0
R1142C	1802 BLANTON ST	1	B	49	57							66	9											58	1
R1143A	1701 BLANTON ST	1	B	49	64							67	3											65	1
R1143B	1311 TIMBER DR	1	B	49	61							66	5											62	1
R1143C	1309 TIMBER DR	1	B	49	63							67	4											64	1
R1144A	101 HALSTEAD CIR	1	B	49	56							67	11											56	0
R1144B	103 HALSTEAD CIR	1	B	49	54							68	14											54	0
R1144C	1703 BLANTON ST	1	B	49	59							66	7											60	1
R1145A	1803 BLANTON ST	1	B	49	52							76	24											53	1
R1145B	1801 BLANTON ST	1	B	49	50							73	23											51	1
R1146A	105 HALSTEAD CIR	1	B	49	51							70	19											51	0
R1146B	107 HALSTEAD CIR	1	B	49	50							74	24											50	0
R1148A	1305 TIMBER DR	1	B	49	62							66	4											62	0
R1148B	1307 TIMBER DR	1	B	49	62							66	4											63	1
R1148C	1303 TIMBER DR	1	B	49	62							66	4											62	0
R1148D	202 COACHMAN DR	1	B	49	60							65	5											60	0
R1148E	200 COACHMAN DR	1	B	49	61							66	5											61	0

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Complete 540
Traffic Noise Analysis

Impact Analysis

Receptor	Street Address	Properties Represented	NAC Land Use Category	Noise Levels dB(A)																					
				2014 Measured Ambient	2012 TNM Predicted Existing[3]	2035																			
						Orange		Green		Mint		Red		Purple/Blue		Lilac		Teal		Brown		Tan		No Build	
						Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]
R1149A	102 MABRY PL	1	B	49	59							66	7											60	1
R1149B	204 COACHMAN DR	1	B	49	56							67	11											56	0
R1149C	104 MABRY PL	1	B	49	60							66	6											60	0
R1149D	106 MABRY PL	1	B	49	56							67	11											56	0
R1150A	103 MABRY PL	1	B	49	51							74	23											51	0
R1150B	105 MABRY PL	1	B	49	51							72	21											51	0
R1150C	101 MABRY PL	1	B	49	52							71	19											52	0
R1153	203 COACHMAN DR	1	B	49	60							65	5											60	0
R1154A	207 COACHMAN DR	1	B	49	52							65	13											53	1
R1154B	205 COACHMAN DR	1	B	49	55							64	9											56	1
R1154C	209 COACHMAN DR	1	B	49	51							66	15											51	0
R1155	301 COACHMAN DR	1	B	49	49							69	20											49	0
R1158A	1502 WOODS CREEK DR	1	B	49	56							65	9											56	0
R1158B	1504 WOODS CREEK DR	1	B	49	54							66	12											54	0
R1159A	1508 WOODS CREEK DR	1	B	49	49							69	20											50	1
R1159B	1506 WOODS CREEK DR	1	B	49	50							67	17											51	1
R1163A	101 WHITHORNE DR	1	B	49	57							65	8											57	0
R1163B	103 WHITHORNE DR	1	B	49	56							65	9											56	0
R1163C	105 WHITHORNE DR	1	B	49	55							64	9											55	0
R1164A	1501 WOODS CREEK DR	1	B	49	53							69	16											53	0
R1164B	102 WHITHORNE DR	1	B	49	53							71	18											53	0
R1165A	1503 WOODS CREEK DR	1	B	49	51							72	21											51	0
R1165B	322 WHITHORNE DR	1	B	49	50							76	26											51	1
R1167A	106 WHITHORNE DR	1	B	49	52							73	21											53	1
R1167B	104 WHITHORNE DR	1	B	49	52							74	22											52	0
R1171A	107 WHITHORNE DR	1	B	49	55							64	9											55	0
R1171B	109 WHITHORNE DR	1	B	49	54							63	9											55	1
R1171C	111 WHITHORNE DR	1	B	49	54							63	9											55	1
R1172A	110 WHITHORNE DR	1	B	49	49							72	23											50	1
R1172B	108 WHITHORNE DR	1	B	49	52							72	20											52	0
R1172C	112 TYSER PL	1	B	49	49							71	22											50	1
R1177A	113 WHITHORNE DR	1	B	49	54							63	9											55	1
R1177B	201 WHITHORNE DR	1	B	49	54							63	9											55	1
R1178A	103 TYSER PL	1	B	49	52							72	20											53	1
R1178B	202 WHITHORNE DR	1	B	49	52							68	16											53	1
R1182A	204 WHITHORNE DR	1	B	49	52							72	20											53	1
R1182B	206 WHITHORNE DR	1	B	49	51							73	22											52	1
R1184A	207 WHITHORNE DR	1	B	49	53							63	10											53	0
R1184B	209 WHITHORNE DR	1	B	49	52							64	12											53	1
R1184C	205 WHITHORNE DR	1	B	49	54							63	9											54	0
R1185A	213 WHITHORNE DR	1	B	49	52							67	15											53	1
R1185B	215 WHITHORNE DR	1	B	49	51							71	20											53	2
R1185C	211 WHITHORNE DR	1	B	49	51							64	13											52	1
R1188A	104 STOWE PL	1	B	49	51							62	11											52	1
R1188B	106 STOWE PL	1	B	49	50							63	13											52	2
R1189A	105 STOWE PL	1	B	49	56							62	6											57	1
R1189B	107 STOWE PL	1	B	49	55							62	7											56	1
R1190A	905 TIMBER DR	1	B	49	61							64	3											62	1
R1190B	103 STOWE PL	1	B	49	60							63	3											60	0
R1191A	901 TIMBER DR	1	B	49	63							65	2											63	0
R1191B	903 TIMBER DR	1	B	49	61							64	3											62	1
R1193A	110 ZINNIA LN	1	B	49	52							62	10											54	2
R1193B	106 ZINNIA LN	1	B	49	54							63	9											56	2
R1193C	102 ZINNIA LN	1	B	49	59							65	6											62	3
R1198A	310 OLD SCARBOROUGH LN	1	B	49	50							58	8											52	2
R1198B	306 OLD SCARBOROUGH LN	1	B	49	52							60	8											54	2
R1200A	307 OLD SCARBOROUGH LN	1	B	49								60	11											50	1
R1200B	636 KIMLOCH DR	1	B	49								62	13											50	1
R1201A	224 EASY WIND LN	1	B	52								68	16											52	0
R1201B	230 EASY WIND LN	1	B	52								66	14											52	0
R1201C	218 EASY WIND LN	1	B	52								70	18											52	0
R1202A	206 EASY WIND LN	1	B	52								75	23											52	0
R1202B	212 EASY WIND LN	1	B	52								72	20											52	0

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Impact Analysis

Receptor	Street Address	Properties Represented	NAC Land Use Category	Noise Levels dB(A)																					
				2014 Measured Ambient	2012 TNM Predicted Existing[3]	2035																			
						Orange		Green		Mint		Red		Purple/Blue		Lilac		Teal		Brown		Tan		No Build	
						Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]
R1203	201 EASY WIND LN	COMMERCIAL	C	52								70	18											52	0
R1204A	205 EASY WIND LN	1	B	52								66	14											52	0
R1204B	211 EASY WIND LN	1	B	52								64	12											52	0
R1205A	231 EASY WIND LN	1	B	52								63	11											52	0
R1205B	217 EASY WIND LN	1	B	52								64	12											52	0
R1206	257 SHADY HOLLOW LN	1	B	52								65	13											52	0
R1207A	514 EASY WIND LN	1	B	52								66	14											52	0
R1207B	520 EASY WIND LN	1	B	52								64	12											52	0
R1208A	496 EASY WIND LN	1	B	52								72	20											52	0
R1208B	490 EASY WIND LN	1	B	52								74	22											52	0
R1209A	484 EASY WIND LN	1	B	52								76	24											52	0
R1209B	478 EASY WIND LN	1	B	52								77	25											52	0
R1209C	472 EASY WIND LN	1	B	52								77	25											52	0
R1210A	505 EASY WIND LN	1	B	52								64	12											52	0
R1210B	485 EASY WIND LN	1	B	52								65	13											52	0
R1210C	465 EASY WIND LN	1	B	52								64	12											52	0
R1211A	427 EASY WIND LN	1	B	52								63	11											52	0
R1211B	445 EASY WIND LN	1	B	52								64	12											52	0
R1212A	436 EASY WIND LN	1	B	52								64	12											52	0
R1212B	430 EASY WIND LN	1	B	52								62	10											52	0
R1213A	442 EASY WIND LN	1	B	52								63	11											52	0
R1213B	448 EASY WIND LN	1	B	52								66	14											52	0
R1214A	460 EASY WIND LN	1	B	52								69	17											52	0
R1214B	454 EASY WIND LN	1	B	52								67	15											52	0
R1214C	466 EASY WIND LN	1	B	52								73	21											52	0
R1218A	105 MUNNSEE CT	1	B	52								75	23											52	0
R1218B	103 MUNNSEE CT	1	B	52								73	21											52	0
R1218C	106 MUNNSEE CT	1	B	52								68	16											52	0
R1219	200 SHOALS LN	1	B	52								71	19											52	0
R1220A	102 MUNNSEE CT	1	B	52								65	13											52	0
R1220B	100 MUNNSEE CT	1	B	52								67	15											52	0
R1220C	104 MUNNSEE CT	1	B	52								66	14											52	0
R1222A	201 SHOALS LN	1	B	52								66	14											52	0
R1222B	203 SHOALS LN	1	B	52								68	16											52	0
R1223A	109 SHOALS LN	1	B	52								65	13											52	0
R1223B	107 SHOALS LN	1	B	52								64	12											52	0
R1225	216 HASSELL ST	1	B	52								68	16											52	0
R1226A	212 HASSELL ST	1	B	52								66	14											52	0
R1226B	214 HASSELL ST	1	B	52								66	14											52	0
R1227A	210 HASSELL ST	1	B	52								64	12											52	0
R1227B	208 HASSELL ST	1	B	52								63	11											52	0
R1229A	105 BELCROSS CT	1	B	52								65	13											52	0
R1229B	107 BELCROSS CT	1	B	52								65	13											52	0
R1229C	103 BELCROSS CT	1	B	52								67	15											52	0
R1229D	101 BELCROSS CT	1	B	52								67	15											52	0
R1229E	203 HASSELL ST	1	B	52								64	12											52	0
R1230A	505 NOVEMBER ST	1	B	52								64	12											52	0
R1230B	503 NOVEMBER ST	1	B	52								64	12											52	0
R1230C	507 NOVEMBER ST	1	B	52								63	11											52	0
R1231A	102 CHOYCE CT	1	B	52								64	12											52	0
R1231B	104 CHOYCE CT	1	B	52								66	14											52	0
R1233A	406 NOVEMBER ST	1	B	52								61	9											52	0
R1233B	502 NOVEMBER ST	1	B	52								60	8											52	0
R1234A	101 CHOYCE CT	1	B	52								72	20											52	0
R1234B	103 CHOYCE CT	1	B	52								74	22											52	0
R1234C	401 NOVEMBER ST	1	B	52								74	22											52	0
R1235A	402 NOVEMBER ST	1	B	52								62	10											52	0
R1235B	404 NOVEMBER ST	1	B	52								61	9											52	0
R1236A	303 NOVEMBER ST	1	B	52								72	20											52	0
R1236B	301 NOVEMBER ST	1	B	52								71	19											52	0
R1236C	305 NOVEMBER ST	1	B	52								73	21											52	0
R1237A	304 NOVEMBER ST	1	B	52								64	12											52	0
R1237B	302 NOVEMBER ST	1	B	52								64	12											52	0

1Noise levels highlighted in red are levels above the Noise Abatement Criteria.
2Noise level increases highlighted in red are above the substantial noise level increase criteria.
3Noise levels reported if the traffic noise was dominant noise

Complete 540
Traffic Noise Analysis

Impact Analysis

Receptor	Street Address	Properties Represented	NAC Land Use Category	Noise Levels dB(A)																					
				2014 Measured Ambient	2012 TNM Predicted Existing[3]	2035																			
						Orange		Green		Mint		Red		Purple/Blue		Lilac		Teal		Brown		Tan		No Build	
						Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]
R1238A	203 NOVEMBER ST	1	B	52								68	16											52	0
R1238B	205 NOVEMBER ST	1	B	52								69	17											52	0
R1239A	204 NOVEMBER ST	1	B	52								63	11											52	0
R1239B	202 NOVEMBER ST	1	B	52								62	10											52	0
R1239C	206 NOVEMBER ST	1	B	52								63	11											52	0
R1240A	113 NOVEMBER ST	1	B	52								67	15											52	0
R1240B	201 NOVEMBER ST	1	B	52								67	15											52	0
R1240C	111 NOVEMBER ST	1	B	52								66	14											52	0
R1241A	107 NOVEMBER ST	1	B	52								65	13											52	0
R1241B	109 NOVEMBER ST	1	B	52								66	14											52	0
R1241C	105 NOVEMBER ST	1	B	52								65	13											52	0
R1242A	108 NOVEMBER ST	1	B	52								61	9											52	0
R1242B	106 NOVEMBER ST	1	B	52								60	8											52	0
R1243A	104 NOVEMBER ST	1	B	52								60	8											52	0
R1243B	102 NOVEMBER ST	1	B	52								60	8											52	0
R1244A	103 NOVEMBER ST	1	B	52								63	11											52	0
R1244B	115 ATCHISON ST	1	B	52								62	10											52	0
R1244C	113 ATCHISON ST	1	B	52								63	11											52	0
R1245A	109 ATCHISON ST	1	B	52								63	11											52	0
R1245B	107 ATCHISON ST	1	B	52	53							63	10											54	1
R1245C	111 ATCHISON ST	1	B	52								63	11											52	0
R1246A	103 ATCHISON ST	1	B	52	59							66	7											60	1
R1246B	105 ATCHISON ST	1	B	52	56							64	8											57	1
R1247A	110 ATCHISON ST	1	B	52	52							61	9											53	1
R1247B	112 ATCHISON ST	1	B	52								60	8											52	0
R1247C	108 ATCHISON ST	1	B	52	53							61	8											55	2
R1248A	104 ATCHISON ST	1	B	52	60							66	6											62	2
R1248B	102 ATCHISON ST	1	B	52	64							70	6											66	2
R1248C	106 ATCHISON ST	1	B	52	56							63	7											57	1
R1249A	106 BURNHAM CT	1	B	52	53							61	8											55	2
R1249B	108 BURNHAM CT	1	B	52	55							62	7											57	2
R1249C	104 BURNHAM CT	1	B	52								60	8											52	0
R1250A	112 BURNHAM CT	1	B	52	65							70	5											66	1
R1250B	110 BURNHAM CT	1	B	52	60							65	5											61	1
R1250C	114 BURNHAM CT	1	B	52	65							70	5											67	2
R1251A	109 BURNHAM CT	1	B	52	52							59	7											53	1
R1251B	111 BURNHAM CT	1	B	52	54							60	6											55	1
R1251C	107 BURNHAM CT	1	B	52								58	6											52	0
R1252A	115 BURNHAM CT	1	B	52	64							69	5											65	1
R1252B	113 BURNHAM CT	1	B	52	57							62	5											58	1
R1253A	204 BAYBERRY LN	1	B	52	53							60	7											54	1
R1253B	202 BAYBERRY LN	1	B	52								58	6											52	0
R1253C	206 BAYBERRY LN	1	B	52	55							61	6											56	1
R1254A	210 BAYBERRY LN	1	B	52	64							69	5											65	1
R1254B	208 BAYBERRY LN	1	B	52	58							63	5											59	1
R1256A	205 BAYBERRY LN	1	B	52	55							60	5											56	1
R1256B	203 BAYBERRY LN	1	B	52	53							59	6											55	2
R1256C	207 BAYBERRY LN	1	B	52	59							63	4											61	2
R1257A	104 NIVENS CT	1	B	52								57	5											53	1
R1257B	102 NIVENS CT	1	B	52								57	5											52	0
R1257C	106 NIVENS CT	1	B	52								57	5											52	0
R1258	1600 BENSON RD	CHILD CARE	C	52	60							64	4											61	1
R1259	1009 NEW RAND RD	1	B	52	61							64	3											62	1
R1262	1623 BENSON RD	1	B	52	58							64	6											59	1
R1263A	105 CREEKLINE CT	1	B	52	57							61	4											58	1
R1263B	104 CREEKLINE CT	1	B	52	54							64	10											55	1
R1263C	103 CREEKLINE CT	1	B	52	59							60	1											60	1
R1264A	201 BROOK ROCK LN	1	B	52								63	11											52	0
R1264B	203 BROOK ROCK LN	1	B	52								62	10											52	0
R1264C	107 BROOK ROCK LN	1	B	52								64	12											52	0
R1265	102 CREEKLINE CT	1	B	52								64	12											53	1
R1266A	103 BROOK ROCK LN	1	B	52								64	12											52	0
R1266B	105 BROOK ROCK LN	1	B	52								64	12											52	0

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2Noise level increases highlighted in red are above the substantial noise level increase criteria.
3Noise levels reported if the traffic noise was dominant noise

Impact Analysis

Receptor	Street Address	Properties Represented	NAC Land Use Category	Noise Levels dB(A)																					
				2014 Measured Ambient	2012 TNM Predicted Existing[3]	2035																			
						Orange		Green		Mint		Red		Purple/Blue		Lilac		Teal		Brown		Tan		No Build	
						Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]
R1269A	102 BROOK ROCK LN	1	B	52								62	10											52	0
R1269B	104 BROOK ROCK LN	1	B	52								61	9											52	0
R1269C	106 BROOK ROCK LN	1	B	52								61	9											52	0
R1270A	104 FARNHAM CT	1	B	52								64	12											52	0
R1270B	102 FARNHAM CT	1	B	52								62	10											52	0
R1271A	108 BROOK ROCK LN	1	B	52								60	8											52	0
R1271B	102 ARTESIAN DR	1	B	52								60	8											52	0
R1272A	100 FARNHAM CT	1	B	52								62	10											52	0
R1272B	104 ARTESIAN DR	1	B	52								61	9											52	0
R1273A	101 ARTESIAN DR	1	B	52								59	7											52	0
R1273B	103 ARTESIAN DR	1	B	52								59	7											52	0
R1273C	105 ARTESIAN DR	1	B	52								58	6											52	0
R1274A	107 ARTESIAN DR	1	B	52								58	6											52	0
R1274B	101 OAK HOLLOW CT	1	B	52								58	6											52	0
R1275A	104 OAK HOLLOW CT	1	B	52								59	7											52	0
R1275B	102 OAK HOLLOW CT	1	B	52								60	8											52	0
R1275C	103 OAK HOLLOW CT	1	B	52								58	6											52	0
R1277A	105 FARNHAM CT	1	B	52								69	17											52	0
R1277B	103 FARNHAM CT	1	B	52								71	19											52	0
R1278A	202 ARTESIAN DR	1	B	52								68	16											52	0
R1278B	101 FARNHAM CT	1	B	52								64	12											52	0
R1279A	203 ARTESIAN DR	1	B	52								62	10											52	0
R1279B	100 OAK HOLLOW CT	1	B	52								61	9											52	0
R1280A	205 ARTESIAN DR	1	B	52								63	11											52	0
R1280B	207 ARTESIAN DR	1	B	52								65	13											52	0
R1282	204 ARTESIAN DR	1	B	52								71	19											52	0
R1283A	211 ARTESIAN DR	1	B	52								69	17											52	0
R1283B	209 ARTESIAN DR	1	B	52								67	15											52	0
R1307A	101 FOXBURY DR	1	B	52	62							66	4											63	1
R1307B	105 FOXBURY DR	1	B	52	59							63	4											60	1
R1308A	109 FOXBURY DR	1	B	52	55							62	7											56	1
R1308B	113 FOXBURY DR	1	B	52	52							61	9											54	2
R1309A	117 FOXBURY DR	1	B	52								60	8											52	0
R1309B	201 FOXBURY DR	1	B	52								59	7											52	0
R1310A	205 FOXBURY DR	1	B	52								59	7											52	0
R1310B	209 FOXBURY DR	1	B	52								60	8											52	0
R1311A	301 FOXBURY DR	1	B	52								60	8											52	0
R1311B	305 FOXBURY DR	1	B	52								61	9											52	0
R1311C	309 FOXBURY DR	1	B	52								61	9											52	0
R1312A	317 FOXBURY DR	1	B	52								62	10											52	0
R1312B	313 FOXBURY DR	1	B	52								62	10											52	0
R1312C	321 FOXBURY DR	1	B	52								63	11											52	0
R1313A	325 FOXBURY DR	1	B	52								63	11											52	0
R1313B	329 FOXBURY DR	1	B	52								63	11											52	0
R1315A	1867 BENSON RD	1	B	52	58							63	5											59	1
R1315B	1875 BENSON RD	1	B	52	60							64	4											61	1
R1316A	114 FOXBURY DR	1	B	52	52							59	7											53	1
R1316B	104 ROCK FISH LN	1	B	52								59	7											53	1
R1317A	105 ROCK FISH LN	1	B	52								57	5											52	0
R1317B	101 ROCK FISH LN	1	B	52								58	6											52	0
R1318A	100 SKIPPING ROCK LN	1	B	52								58	6											52	0
R1318B	104 SKIPPING ROCK LN	1	B	52								57	5											52	0
R1319A	300 FOXBURY DR	1	B	52								58	6											52	0
R1319B	304 FOXBURY DR	1	B	52								58	6											52	0
R1320A	312 FOXBURY DR	1	B	52								59	7											52	0
R1320B	316 FOXBURY DR	1	B	52								59	7											52	0
R1321A	320 FOXBURY DR	1	B	52								58	6											52	0
R1321B	324 FOXBURY DR	1	B	52								59	7											52	0
R1322A	108 ROCK FISH LN	1	B	52								58	6											53	1
R1322B	112 ROCK FISH LN	1	B	52								57	5											53	1
R1322C	116 ROCK FISH LN	1	B	52								56	4											52	0
R1323	113 ROCK FISH LN	1	B	52								57	5											52	0
R1324A	108 SKIPPING ROCK LN	1	B	52								56	4											52	0

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3Noise levels reported if the traffic noise was dominant noise

Impact Analysis

Receptor	Street Address	Properties Represented	NAC Land Use Category	Noise Levels dB(A)																					
				2014 Measured Ambient	2012 TNM Predicted Existing[3]	2035																			
						Orange		Green		Mint		Red		Purple/Blue		Lilac		Teal		Brown		Tan		No Build	
						Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]
R1324B	129 ROCK FISH LN	1	B	52								56	4											52	0
R1325A	113 SKIPPING ROCK LN	1	B	52								57	5											52	0
R1325B	109 SKIPPING ROCK LN	1	B	52								57	5											52	0
R1326A	105 CROOKED BRANCH CT	1	B	52								58	6											52	0
R1326B	109 CROOKED BRANCH CT	1	B	52								58	6											52	0
R1327A	112 CROOKED BRANCH CT	1	B	52								57	5											52	0
R1327B	108 CROOKED BRANCH CT	1	B	52								56	4											52	0
R1327C	113 CROOKED BRANCH CT	1	B	52								58	6											52	0
R1330A	124 ROCK FISH LN	1	B	52								54	2											52	0
R1330B	128 ROCK FISH LN	1	B	52								54	2											52	0
R1331A	132 ROCK FISH LN	1	B	52								54	2											52	0
R1331B	120 SKIPPING ROCK LN	1	B	52								54	2											52	0
R1332A	121 SKIPPING ROCK LN	1	B	52								56	4											52	0
R1332B	129 SKIPPING ROCK LN	1	B	52								56	4											52	0
R1332C	125 SKIPPING ROCK LN	1	B	52								57	5											52	0
R1335A	124 SKIPPING ROCK LN	1	B	52								55	3											52	0
R1335B	128 SKIPPING ROCK LN	1	B	52								55	3											52	0
R1349	1901 BENSON RD	1	B	52	60							65	5											61	1
R1373	7770 BRYAN RD	1	B	52								64	12											52	0
R1375	7750 BRYAN RD	1	B	52								65	13											52	0
R1376	104 FOX WALK PATH	1	B	52								59	7											52	0
R1377	7612 WHITE OAK RD	1	B	57	57							62	5											59	2
R1378	7696 WHITE OAK RD	1	B	57	58							74	16											60	2
R1379	7760 WHITE OAK RD	1	B	57								63	6											57	0
R1380A	100 RICHARDSON LN	1	B	57	58							61	3											59	1
R1380B	100 RICHARDSON LN	1	B	57								60	3											57	0
R1380C	100 RICHARDSON LN	1	B	57								62	5											57	0
R1380D	100 RICHARDSON LN	1	B	57	58							62	4											59	1
R1381A	7623 WHITE OAK RD	1	B	57								66	9											57	0
R1381B	7611 WHITE OAK RD	1	B	57								64	7											57	0
R1381C	200 EVA CIR	1	B	57								63	6											57	0
R1381D	101 EVA CIR	1	B	57								66	9											57	0
R1381E	101 EVA CIR	1	B	57								66	9											57	0
R1381F	101 EVA CIR	1	B	57								66	9											57	0
R1381G	101 EVA CIR	1	B	57								63	6											57	0
R1381H	101 EVA CIR	1	B	57								63	6											57	0
R1382A	100 RICHARDSON LN	1	B	57								60	3											57	0
R1382B	100 RICHARDSON LN	1	B	57								62	5											57	0
R1383A	100 RICHARDSON LN	1	B	57								60	3											57	0
R1383B	100 RICHARDSON LN	1	B	57								62	5											57	0
R1384A	100 RICHARDSON LN	1	B	57								60	3											57	0
R1384B	100 RICHARDSON LN	1	B	57								62	5											57	0
R1385	7777 WHITE OAK RD	1	B	57								67	10											57	0
R1387A	1605 TIMBER DR E	1	B	57	59							66	7											61	2
R1387B	1605 TIMBER DR E	1	B	57	60							67	7											61	1
R1387C	1605 TIMBER DR E	1	B	57	62							68	6											61	-1
R1387D	1605 TIMBER DR E	1	B	57	58							66	8											61	3
R1387E	1605 TIMBER DR E	1	B	57	60							67	7											61	1
R1387F	1605 TIMBER DR E	1	B	57	61							68	7											61	0
R1387G	1605 TIMBER DR E	1	B	57	58							65	7											60	2
R1387H	1605 TIMBER DR E	1	B	57	60							67	7											60	0
R1387I	1605 TIMBER DR E	1	B	57	61							68	7											60	-1
R1387J	1605 TIMBER DR E	1	B	57	58							65	7											60	2
R1387K	1605 TIMBER DR E	1	B	57	59							67	8											60	1
R1387L	1605 TIMBER DR E	1	B	57	61							67	6											60	-1
R1387M	1605 TIMBER DR E	1	B	57								58	1											57	0
R1387N	1605 TIMBER DR E	1	B	57								59	2											57	0
R1387O	1605 TIMBER DR E	1	B	57								60	3											57	0
R1387P	1605 TIMBER DR E	1	B	57								55	-2											57	0
R1387Q	1605 TIMBER DR E	1	B	57								57	0											57	0
R1387R	1605 TIMBER DR E	1	B	57								58	1											57	0
R1387S	1605 TIMBER DR E	1	B	57								58	1											57	0
R1387T	1605 TIMBER DR E	1	B	57								59	2											57	0

1Noise levels highlighted in red are levels above the Noise Abatement Criteria.
2Noise level increases highlighted in red are above the substantial noise level increase criteria.
3Noise levels reported if the traffic noise was dominant noise

Complete 540
Traffic Noise Analysis

Impact Analysis

Receptor	Street Address	Properties Represented	NAC Land Use Category	Noise Levels dB(A)																					
				2014 Measured Ambient	2012 TNM Predicted Existing[3]	2035																			
						Orange		Green		Mint		Red		Purple/Blue		Lilac		Teal		Brown		Tan		No Build	
						Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]
R1387U	1605 TIMBER DR E	1	B	57								60	3											57	0
R1387V	1605 TIMBER DR E	1	B	57								62	5											57	0
R1387W	1605 TIMBER DR E	1	B	57								63	6											57	0
R1387X	1605 TIMBER DR E	1	B	57								65	8											57	0
R1388A	1605 TIMBER DR E	1	B	57	62							69	7											64	2
R1388B	1605 TIMBER DR E	1	B	57	64							71	7											64	0
R1388C	1605 TIMBER DR E	1	B	57	65							71	6											64	-1
R1388D	1605 TIMBER DR E	1	B	57	62							69	7											64	2
R1388E	1605 TIMBER DR E	1	B	57	63							70	7											64	1
R1388F	1605 TIMBER DR E	1	B	57	64							71	7											64	0
R1388G	1605 TIMBER DR E	1	B	57	61							69	8											63	2
R1388H	1605 TIMBER DR E	1	B	57	63							70	7											63	0
R1388I	1605 TIMBER DR E	1	B	57	64							70	6											63	-1
R1388J	1600 TUMBLING STONE WAY	1	B	57	61							68	7											63	2
R1388K	1600 TUMBLING STONE WAY	1	B	57	63							69	6											63	0
R1388L	1600 TUMBLING STONE WAY	1	B	57	64							70	6											63	-1
R1388M	1600 TUMBLING STONE WAY	1	B	57								65	8											58	1
R1388N	1600 TUMBLING STONE WAY	1	B	57	58							66	8											59	1
R1388O	1600 TUMBLING STONE WAY	1	B	57	60							67	7											59	-1
R1388P	1605 TIMBER DR E	1	B	57								59	2											57	0
R1388Q	1605 TIMBER DR E	1	B	57								60	3											57	0
R1388R	1605 TIMBER DR E	1	B	57								62	5											57	0
R1388S	1605 TIMBER DR E	1	B	57								56	-1											57	0
R1388T	1605 TIMBER DR E	1	B	57								57	0											57	0
R1388U	1605 TIMBER DR E	1	B	57								59	2											57	0
R1388V	1605 TIMBER DR E	1	B	57	58							65	7											61	3
R1388W	1605 TIMBER DR E	1	B	57	60							66	6											60	0
R1388X	1605 TIMBER DR E	1	B	57	60							66	6											60	0
R1389A	1605 TIMBER DR E	1	B	57	67							75	8											69	2
R1389B	1605 TIMBER DR E	1	B	57	69							75	6											69	0
R1389C	1605 TIMBER DR E	1	B	57	70							76	6											69	-1
R1389D	1605 TIMBER DR E	1	B	57	62							68	6											64	2
R1389E	1605 TIMBER DR E	1	B	57	62							69	7											64	2
R1389F	1605 TIMBER DR E	1	B	57	63							69	6											64	1
R1389G	1605 TIMBER DR E	1	B	57								63	6											58	1
R1389H	1605 TIMBER DR E	1	B	57	57							64	7											58	1
R1389I	1605 TIMBER DR E	1	B	57	59							65	6											59	0
R1389J	1605 TIMBER DR E	1	B	57	66							75	9											69	3
R1389K	1605 TIMBER DR E	1	B	57	69							75	6											69	0
R1389L	1605 TIMBER DR E	1	B	57	70							76	6											69	-1
R1389M	1600 TUMBLING STONE WAY	1	B	57	66							75	9											69	3
R1389N	1600 TUMBLING STONE WAY	1	B	57	69							75	6											69	0
R1389O	1600 TUMBLING STONE WAY	1	B	57	69							76	7											68	-1
R1389P	1600 TUMBLING STONE WAY	1	B	57	66							75	9											69	3
R1389Q	1600 TUMBLING STONE WAY	1	B	57	69							75	6											68	-1
R1389R	1600 TUMBLING STONE WAY	1	B	57	70							76	6											68	-2
R1389S	1600 TUMBLING STONE WAY	1	B	57	59							68	9											62	3
R1389T	1600 TUMBLING STONE WAY	1	B	57	62							69	7											62	0
R1389U	1600 TUMBLING STONE WAY	1	B	57	63							69	6											62	-1
R1389V	1600 TUMBLING STONE WAY	1	B	57								64	7											58	1
R1389W	1600 TUMBLING STONE WAY	1	B	57	58							65	7											59	1
R1389X	1600 TUMBLING STONE WAY	1	B	57	59							66	7											59	0
R1390A	1605 TIMBER DR E	1	B	57	61							68	7											64	3
R1390B	1605 TIMBER DR E	1	B	57	63							69	6											64	1
R1390C	1605 TIMBER DR E	1	B	57	64							70	6											64	0
R1390D	1605 TIMBER DR E	1	B	57	61							67	6											63	2
R1390E	1605 TIMBER DR E	1	B	57	62							69	7											63	1
R1390F	1605 TIMBER DR E	1	B	57	64							70	6											63	-1
R1390G	1605 TIMBER DR E	1	B	57	60							66	6											62	2
R1390H	1605 TIMBER DR E	1	B	57	62							68	6											62	0
R1390I	1605 TIMBER DR E	1	B	57	63							69	6											62	-1
R1390J	1605 TIMBER DR E	1	B	57	59							65	6											61	2
R1390K	1605 TIMBER DR E	1	B	57	61							67	6											61	0

1Noise levels highlighted in red are levels above the Noise Abatement Criteria.
2Noise level increases highlighted in red are above the substantial noise level increase criteria.
3Noise levels reported if the traffic noise was dominant noise

Complete 540
Traffic Noise Analysis

Impact Analysis

Receptor	Street Address	Properties Represented	NAC Land Use Category	Noise Levels dB(A)																					
				2014 Measured Ambient	2012 TNM Predicted Existing[3]	2035																			
						Orange		Green		Mint		Red		Purple/Blue		Lilac		Teal		Brown		Tan		No Build	
						Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]
R1390L	1605 TIMBER DR E	1	B	57	62							68	6											61	-1
R1390M	1605 TIMBER DR E	1	B	57								61	4											57	0
R1390N	1605 TIMBER DR E	1	B	57								62	5											57	0
R1390O	1605 TIMBER DR E	1	B	57	57							64	7											57	0
R1390P	1605 TIMBER DR E	1	B	57								62	5											58	1
R1390Q	1605 TIMBER DR E	1	B	57	57							64	7											58	1
R1390R	1605 TIMBER DR E	1	B	57	59							65	6											58	-1
R1390S	1605 TIMBER DR E	1	B	57	58							65	7											61	3
R1390T	1605 TIMBER DR E	1	B	57	60							66	6											60	0
R1390U	1605 TIMBER DR E	1	B	57	61							67	6											60	-1
R1390V	1605 TIMBER DR E	1	B	57	60							66	6											62	2
R1390W	1605 TIMBER DR E	1	B	57	62							68	6											62	0
R1390X	1605 TIMBER DR E	1	B	57	63							69	6											62	-1
R1391A	1605 TIMBER DR E	1	B	57	60							66	6											62	2
R1391B	1605 TIMBER DR E	1	B	57	62							68	6											62	0
R1391C	1605 TIMBER DR E	1	B	57	63							69	6											62	-1
R1391D	1605 TIMBER DR E	1	B	57	60							66	6											62	2
R1391E	1605 TIMBER DR E	1	B	57	62							68	6											62	0
R1391F	1605 TIMBER DR E	1	B	57	63							69	6											62	-1
R1391G	1605 TIMBER DR E	1	B	57	60							66	6											62	2
R1391H	1605 TIMBER DR E	1	B	57	61							68	7											62	1
R1391I	1605 TIMBER DR E	1	B	57	63							69	6											62	-1
R1391J	1605 TIMBER DR E	1	B	57	59							66	7											62	3
R1391K	1605 TIMBER DR E	1	B	57	61							67	6											62	1
R1391L	1605 TIMBER DR E	1	B	57	63							69	6											61	-2
R1391M	1605 TIMBER DR E	1	B	57								54	-3											57	0
R1391N	1605 TIMBER DR E	1	B	57								55	-2											57	0
R1391O	1605 TIMBER DR E	1	B	57								56	-1											57	0
R1391P	1605 TIMBER DR E	1	B	57								54	-3											57	0
R1391Q	1605 TIMBER DR E	1	B	57								55	-2											57	0
R1391R	1605 TIMBER DR E	1	B	57								56	-1											57	0
R1391S	1605 TIMBER DR E	1	B	57								55	-2											57	0
R1391T	1605 TIMBER DR E	1	B	57								56	-1											57	0
R1391U	1605 TIMBER DR E	1	B	57								58	1											57	0
R1391V	1605 TIMBER DR E	1	B	57								61	4											57	0
R1391W	1605 TIMBER DR E	1	B	57	57							64	7											58	1
R1391X	1605 TIMBER DR E	1	B	57	59							65	6											58	-1
R1392A	300 ABBERLY CREST BLVD	1	B	57								60	3											57	0
R1392B	300 ABBERLY CREST BLVD	1	B	57								62	5											57	0
R1392C	300 ABBERLY CREST BLVD	1	B	57	58							63	5											57	-1
R1392D	300 ABBERLY CREST BLVD	1	B	57								62	5											58	1
R1392E	300 ABBERLY CREST BLVD	1	B	57	58							63	5											58	0
R1392F	300 ABBERLY CREST BLVD	1	B	57	59							64	5											58	-1
R1392G	300 ABBERLY CREST BLVD	1	B	57	57							63	6											59	2
R1392H	300 ABBERLY CREST BLVD	1	B	57	59							65	6											59	0
R1392I	300 ABBERLY CREST BLVD	1	B	57	60							66	6											59	-1
R1392J	300 ABBERLY CREST BLVD	1	B	57	57							64	7											59	2
R1392K	300 ABBERLY CREST BLVD	1	B	57	59							65	6											59	0
R1392L	300 ABBERLY CREST BLVD	1	B	57	60							66	6											60	0
R1392M	300 ABBERLY CREST BLVD	1	B	57								62	5											57	0
R1392N	300 ABBERLY CREST BLVD	1	B	57								64	7											57	0
R1392O	300 ABBERLY CREST BLVD	1	B	57	58							65	7											57	-1
R1392P	300 ABBERLY CREST BLVD	1	B	57								63	6											58	1
R1392Q	300 ABBERLY CREST BLVD	1	B	57	57							65	8											58	1
R1392R	300 ABBERLY CREST BLVD	1	B	57	59							66	7											58	-1
R1392S	300 ABBERLY CREST BLVD	1	B	57								64	7											59	2
R1392T	300 ABBERLY CREST BLVD	1	B	57	58							65	7											59	1
R1392U	300 ABBERLY CREST BLVD	1	B	57	60							66	6											59	-1
R1392V	300 ABBERLY CREST BLVD	1	B	57	57							65	8											60	3
R1392W	300 ABBERLY CREST BLVD	1	B	57	59							66	7											60	1
R1392X	300 ABBERLY CREST BLVD	1	B	57	61							67	6											60	-1
R1393A	300 ABBERLY CREST BLVD	1	B	57	65							71	6											67	2
R1393B	300 ABBERLY CREST BLVD	1	B	57	68							74	6											67	-1

1Noise levels highlighted in red are levels above the Noise Abatement Criteria.
2Noise level increases highlighted in red are above the substantial noise level increase criteria.
3Noise levels reported if the traffic noise was dominant noise

Impact Analysis

Receptor	Street Address	Properties Represented	NAC Land Use Category	Noise Levels dB(A)																					
				2014 Measured Ambient	2012 TNM Predicted Existing[3]	2035																			
						Orange		Green		Mint		Red		Purple/Blue		Lilac		Teal		Brown		Tan		No Build	
						Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]
R1393C	300 ABBERLY CREST BLVD	1	B	57	70							75	5											67	-3
R1393D	300 ABBERLY CREST BLVD	1	B	57	63							69	6											66	3
R1393E	300 ABBERLY CREST BLVD	1	B	57	66							72	6											66	0
R1393F	300 ABBERLY CREST BLVD	1	B	57	68							73	5											66	-2
R1393G	300 ABBERLY CREST BLVD	1	B	57	62							69	7											65	3
R1393H	300 ABBERLY CREST BLVD	1	B	57	65							71	6											65	0
R1393I	300 ABBERLY CREST BLVD	1	B	57	67							72	5											65	-2
R1393J	300 ABBERLY CREST BLVD	1	B	57	66							72	6											69	3
R1393K	300 ABBERLY CREST BLVD	1	B	57	70							76	6											69	-1
R1393L	300 ABBERLY CREST BLVD	1	B	57	71							77	6											68	-3
R1393M	300 ABBERLY CREST BLVD	1	B	57								58	1											57	0
R1393N	300 ABBERLY CREST BLVD	1	B	57								61	4											57	0
R1393O	300 ABBERLY CREST BLVD	1	B	57	58							63	5											57	-1
R1393P	300 ABBERLY CREST BLVD	1	B	57								57	0											57	0
R1393Q	300 ABBERLY CREST BLVD	1	B	57								61	4											57	0
R1393R	300 ABBERLY CREST BLVD	1	B	57	58							64	6											57	-1
R1393S	300 ABBERLY CREST BLVD	1	B	57								60	3											59	2
R1393T	300 ABBERLY CREST BLVD	1	B	57	59							64	5											58	-1
R1393U	300 ABBERLY CREST BLVD	1	B	57	61							67	6											58	-3
R1393V	300 ABBERLY CREST BLVD	1	B	57	61							65	4											63	2
R1393W	300 ABBERLY CREST BLVD	1	B	57	64							70	6											63	-1
R1393X	300 ABBERLY CREST BLVD	1	B	57	66							72	6											63	-3
R1394A	300 ABBERLY CREST BLVD	1	B	57	67							73	6											69	2
R1394B	300 ABBERLY CREST BLVD	1	B	57	70							76	6											69	-1
R1394C	300 ABBERLY CREST BLVD	1	B	57	71							76	5											69	-2
R1394D	300 ABBERLY CREST BLVD	1	B	57	65							72	7											68	3
R1394E	300 ABBERLY CREST BLVD	1	B	57	68							75	7											68	0
R1394F	300 ABBERLY CREST BLVD	1	B	57	69							75	6											68	-1
R1394G	300 ABBERLY CREST BLVD	1	B	57	64							70	6											67	3
R1394H	300 ABBERLY CREST BLVD	1	B	57	67							73	6											66	-1
R1394I	300 ABBERLY CREST BLVD	1	B	57	69							74	5											66	-3
R1394J	300 ABBERLY CREST BLVD	1	B	57	63							69	6											65	2
R1394K	300 ABBERLY CREST BLVD	1	B	57	66							72	6											65	-1
R1394L	300 ABBERLY CREST BLVD	1	B	57	67							73	6											65	-2
R1394M	300 ABBERLY CREST BLVD	1	B	57								58	1											57	0
R1394N	300 ABBERLY CREST BLVD	1	B	57								61	4											57	0
R1394O	300 ABBERLY CREST BLVD	1	B	57	57							62	5											57	0
R1394P	300 ABBERLY CREST BLVD	1	B	57								59	2											57	0
R1394Q	300 ABBERLY CREST BLVD	1	B	57								62	5											57	0
R1394R	300 ABBERLY CREST BLVD	1	B	57	58							63	5											57	-1
R1394S	300 ABBERLY CREST BLVD	1	B	57								60	3											58	1
R1394T	300 ABBERLY CREST BLVD	1	B	57	58							64	6											58	0
R1394U	300 ABBERLY CREST BLVD	1	B	57	61							66	5											58	-3
R1394V	300 ABBERLY CREST BLVD	1	B	57	60							64	4											62	2
R1394W	300 ABBERLY CREST BLVD	1	B	57	63							69	6											62	-1
R1394X	300 ABBERLY CREST BLVD	1	B	57	66							71	5											62	-4
R1395A	300 ABBERLY CREST BLVD	1	B	57	59							64	5											61	2
R1395B	300 ABBERLY CREST BLVD	1	B	57	61							67	6											61	0
R1395C	300 ABBERLY CREST BLVD	1	B	57	63							69	6											61	-2
R1395D	300 ABBERLY CREST BLVD	1	B	57	59							65	6											62	3
R1395E	300 ABBERLY CREST BLVD	1	B	57	62							68	6											62	0
R1395F	300 ABBERLY CREST BLVD	1	B	57	63							69	6											62	-1
R1395G	300 ABBERLY CREST BLVD	1	B	57								57	0											57	0
R1395H	300 ABBERLY CREST BLVD	1	B	57								60	3											57	0
R1395I	300 ABBERLY CREST BLVD	1	B	57	58							63	5											57	-1
R1395J	300 ABBERLY CREST BLVD	1	B	57								55	-2											57	0
R1395K	300 ABBERLY CREST BLVD	1	B	57								57	0											57	0
R1395L	300 ABBERLY CREST BLVD	1	B	57								59	2											57	0
R1396A	300 ABBERLY CREST BLVD	1	B	57	67							73	6											69	2
R1396B	300 ABBERLY CREST BLVD	1	B	57	69							76	7											69	0
R1396C	300 ABBERLY CREST BLVD	1	B	57	71							76	5											69	-2
R1396D	300 ABBERLY CREST BLVD	1	B	57	66							73	7											69	3
R1396E	300 ABBERLY CREST BLVD	1	B	57	69							75	6											69	0

1Noise levels highlighted in red are levels above the Noise Abatement Criteria.
2Noise level increases highlighted in red are above the substantial noise level increase criteria.
3Noise levels reported if the traffic noise was dominant noise

Complete 540
Traffic Noise Analysis

Impact Analysis

Receptor	Street Address	Properties Represented	NAC Land Use Category	Noise Levels dB(A)																					
				2014 Measured Ambient	2012 TNM Predicted Existing[3]	2035																			
						Orange		Green		Mint		Red		Purple/Blue		Lilac		Teal		Brown		Tan		No Build	
						Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]
R1396F	300 ABBERLY CREST BLVD	1	B	57	70							76	6											69	-1
R1396G	300 ABBERLY CREST BLVD	1	B	57	67							73	6											69	2
R1396H	300 ABBERLY CREST BLVD	1	B	57	69							75	6											69	0
R1396I	300 ABBERLY CREST BLVD	1	B	57	70							76	6											69	-1
R1396J	300 ABBERLY CREST BLVD	1	B	57	66							73	7											69	3
R1396K	300 ABBERLY CREST BLVD	1	B	57	69							75	6											69	0
R1396L	300 ABBERLY CREST BLVD	1	B	57	70							76	6											69	-1
R1396M	300 ABBERLY CREST BLVD	1	B	57	61							68	7											64	3
R1396N	300 ABBERLY CREST BLVD	1	B	57	64							70	6											64	0
R1396O	300 ABBERLY CREST BLVD	1	B	57	65							71	6											64	-1
R1396P	300 ABBERLY CREST BLVD	1	B	57	60							66	6											62	2
R1396Q	300 ABBERLY CREST BLVD	1	B	57	61							67	6											62	1
R1396R	300 ABBERLY CREST BLVD	1	B	57	62							68	6											62	0
R1396S	300 ABBERLY CREST BLVD	1	B	57	60							66	6											63	3
R1396T	300 ABBERLY CREST BLVD	1	B	57	62							67	5											63	1
R1396U	300 ABBERLY CREST BLVD	1	B	57	63							68	5											63	0
R1396V	300 ABBERLY CREST BLVD	1	B	57	63							69	6											66	3
R1396W	300 ABBERLY CREST BLVD	1	B	57	65							71	6											65	0
R1396X	300 ABBERLY CREST BLVD	1	B	57	65							71	6											65	0
R1397A	300 ABBERLY CREST BLVD	1	B	57	64							70	6											67	3
R1397B	300 ABBERLY CREST BLVD	1	B	57	66							72	6											67	1
R1397C	300 ABBERLY CREST BLVD	1	B	57	67							73	6											66	-1
R1397D	300 ABBERLY CREST BLVD	1	B	57	64							70	6											67	3
R1397E	300 ABBERLY CREST BLVD	1	B	57	67							73	6											67	0
R1397F	300 ABBERLY CREST BLVD	1	B	57	68							74	6											67	-1
R1397G	300 ABBERLY CREST BLVD	1	B	57	65							70	5											67	2
R1397H	300 ABBERLY CREST BLVD	1	B	57	67							73	6											67	0
R1397I	300 ABBERLY CREST BLVD	1	B	57	68							74	6											67	-1
R1397J	300 ABBERLY CREST BLVD	1	B	57	66							72	6											68	2
R1397K	300 ABBERLY CREST BLVD	1	B	57	68							74	6											68	0
R1397L	300 ABBERLY CREST BLVD	1	B	57	69							75	6											68	-1
R1397M	300 ABBERLY CREST BLVD	1	B	57								61	4											59	2
R1397N	300 ABBERLY CREST BLVD	1	B	57	60							66	6											60	0
R1397O	300 ABBERLY CREST BLVD	1	B	57	63							69	6											60	-3
R1397P	300 ABBERLY CREST BLVD	1	B	57								56	-1											57	0
R1397Q	300 ABBERLY CREST BLVD	1	B	57								58	1											57	0
R1397R	300 ABBERLY CREST BLVD	1	B	57	57							62	5											57	0
R1397S	300 ABBERLY CREST BLVD	1	B	57								55	-2											57	0
R1397T	300 ABBERLY CREST BLVD	1	B	57								56	-1											57	0
R1397U	300 ABBERLY CREST BLVD	1	B	57								59	2											57	0
R1397V	300 ABBERLY CREST BLVD	1	B	57								58	1											58	1
R1397W	300 ABBERLY CREST BLVD	1	B	57	57							60	3											58	1
R1397X	300 ABBERLY CREST BLVD	1	B	57	58							61	3											58	0
R1398	5120 RAYNOR RD	CHURCH	C	57								63	6											57	0
R1399A	5001 RAYNOR RD	1	B	57	57							65	8											58	1
R1399B	5101 RAYNOR RD	1	B	57	57							66	9											58	1
R1402A	2028 US 70 HWY E	1	B	57	60			61	1									61	1					62	2
R1402B	2032 US 70 HWY E	1	B	57	60			62	2									62	2					62	2
R1403	2100 US 70 HWY E	1	B	57	58			62	4									62	4					60	2
R1407A	139 WALNUT DR	1	B	57	63			65	2									65	2					66	3
R1407B	0 US 70 HWY E	1	B	57	64			66	2									66	2					66	2
R1407C	139 WALNUT DR	1	B	57	62			64	2									64	2					65	3
R1408A	0 US 70 HWY E	1	B	57	60			62	2									62	2					62	2
R1408B	0 US 70 HWY E	1	B	57	62			63	1									64	2					64	2
R1409A	0 US 70 HWY E	1	B	57	57			60	3									60	3					59	2
R1409B	0 US 70 HWY E	1	B	57	58			61	3									61	3					60	2
R1409C	0 US 70 HWY E	1	B	57	57			61	4									61	4					59	2
R1410	0 US 70 HWY E	1	B	57	61			62	1									63	2					63	2
R1411A	0 US 70 HWY E	1	B	57	58			61	3									61	3					60	2
R1411B	0 US 70 HWY E	1	B	57	57			60	3									60	3					59	2
R1411C	0 US 70 HWY E	1	B	57				60	3									60	3					59	2
R1411D	0 US 70 HWY E	1	B	57	59			61	2									61	2					61	2
R1412	0 US 70 HWY E	1	B	57	59			61	2									61	2					61	2

1Noise levels highlighted in red are levels above the Noise Abatement Criteria.
2Noise level increases highlighted in red are above the substantial noise level increase criteria.
3Noise levels reported if the traffic noise was dominant noise

Complete 540
Traffic Noise Analysis

Impact Analysis

Receptor	Street Address	Properties Represented	NAC Land Use Category	Noise Levels dB(A)																					
				2014 Measured Ambient	2012 TNM Predicted Existing[3]	2035																			
						Orange		Green		Mint		Red		Purple/Blue		Lilac		Teal		Brown		Tan		No Build	
						Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]
R1413A	0 US 70 HWY E	1	B	57	57			60	3									60	3					59	2
R1413B	0 US 70 HWY E	1	B	57				60	3									60	3					59	2
R1413C	0 US 70 HWY E	1	B	57	58			60	2									60	2					60	2
R1414A	0 US 70 HWY E	1	B	57	63			65	2									65	2					66	3
R1414B	0 US 70 HWY E	1	B	57	66			68	2									68	2					68	2
R1414C	0 US 70 HWY E	1	B	57	61			63	2									63	2					63	2
R1415A	0 US 70 HWY E	1	B	57	58			60	2									60	2					61	3
R1415B	0 US 70 HWY E	1	B	57	57			60	3									60	3					60	3
R1415C	0 US 70 HWY E	1	B	57	59			61	2									61	2					62	3
R1416	0 US 70 HWY E	1	B	57	57			59	2									59	2					59	2
R1417A	0 US 70 HWY E	1	B	57								63	6											57	0
R1417B	0 US 70 HWY E	1	B	57								63	6											57	0
R1417C	0 US 70 HWY E	1	B	57								63	6											57	0
R1417D	0 US 70 HWY E	1	B	57								64	7											57	0
R1418A	0 US 70 HWY E	1	B	57								63	6											57	0
R1418B	0 US 70 HWY E	1	B	57								62	5											57	0
R1418C	0 US 70 HWY E	1	B	57								63	6											57	0
R1418D	0 US 70 HWY E	1	B	57								63	6											57	0
R1418E	0 US 70 HWY E	1	B	57								63	6											57	0
R1422	2432 E GARNER RD	1	B	57	61							69	8											61	0
R1423	2425 E GARNER RD	SCHOOL	D	0	40							47	7											40	0
R1424	2208 E GARNER RD	1	B	57								65	8											57	0
R1427	2213 E GARNER RD	1	B	57								63	6											57	0
R1428	2220 PILE RD	1	B	57								64	7											57	0
R1429A	2317 E GARNER RD	1	B	57								67	10											57	0
R1429B	2305 E GARNER RD	1	B	57								67	10											57	0
R1430	2700 E GARNER RD	1	B	57				61	4									65	8					57	0
R1431A	2637 E GARNER RD	1	B	57	57			63	6									66	9					57	0
R1431B	2701 E GARNER RD	1	B	57				63	6									65	8					57	0
R1434	2809 E GARNER RD	1	B	57	58							64	6					65	7					59	1
R1435A	2832 E GARNER RD	1	B	57								63	6					65	8					57	0
R1435B	2828 E GARNER RD	1	B	57								60	3					62	5					57	0
R1437A	2905 E GARNER RD	1	B	57								60	3					60	3					57	0
R1437B	2901 E GARNER RD	1	B	57								61	4					61	4					57	0
R1437C	2909 E GARNER RD	1	B	57								60	3					60	3					57	0
R1438A	7600 ROCK QUARRY RD	1	B	57								58	1					59	2					57	0
R1438B	7604 ROCK QUARRY RD	1	B	57								58	1					59	2					57	0
R1438C	7612 ROCK QUARRY RD	1	B	57								57	0					59	2					57	0
R1439A	7609 ROCK QUARRY RD	1	B	57								56	-1					58	1					57	0
R1439B	7605 ROCK QUARRY RD	1	B	57								51	-6					54	-3					57	0
R1440	7509 ROCK QUARRY RD	1	B	57								56	-1					62	5					57	0
R1441A	4620 DUSTY RD	1	B	57								65	8											57	0
R1441B	4609 DUSTY RD	1	B	57								67	10											57	0
R1442A	4634 DUSTY RD	1	B	57								67	10											57	0
R1442B	4633 DUSTY RD	1	B	57								69	12											57	0
R1442C	4630 DUSTY RD	1	B	57								65	8											57	0
R1443	4644 DUSTY RD	1	B	57								70	13											57	0
R1444	2509 E GARNER RD	1	B	57								64	7											57	0
R1445	4309 AUBURN KNIGHTDALE RD	CHURCH	D	0	40							45	5											40	0
R1448A	6905 ROCK QUARRY RD	1	B	57				55	-2	55	-2	54	-3											57	0
R1448B	6833 ROCK QUARRY RD	1	B	57				58	1	57	0	57	0											57	0
R1449	7117 ROCK QUARRY RD	1	B	57				59	2	59	2	59	2											57	0
R1451A	7429 OLD BAUCOM RD	1	B	51						56	5	54	3											53	2
R1451B	2736 BRANCH RD	1	B	51						56	5	55	4											54	3
R1451C	2728 BRANCH RD	1	B	51						53	2	52	1											51	0
R1452	7509 OLD BAUCOM RD	1	B	51						56	5	55	4									58	7	54	3
R1453	2945 YOUNG FARM DR	1	B	51																		71	20	51	0
R1454A	7628 OLD BAUCOM RD	1	B	51														59	8			63	12	51	0
R1454B	7620 OLD BAUCOM RD	1	B	51														58	7			61	10	52	1
R1455A	7629 OLD BAUCOM RD	1	B	51																		64	13	54	3
R1455B	7621 OLD BAUCOM RD	1	B	51																		63	12	51	0
R1459	7820 OLD BAUCOM RD	1	B	51														61	10			55	4	51	0
R1460	3021 HICKORY TREE PL	1	B	51																67	16			51	0

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3Noise levels reported if the traffic noise was dominant noise

Impact Analysis

Receptor	Street Address	Properties Represented	NAC Land Use Category	Noise Levels dB(A)																					
				2014 Measured Ambient	2012 TNM Predicted Existing[3]	2035																			
						Orange		Green		Mint		Red		Purple/Blue		Lilac		Teal		Brown		Tan		No Build	
						Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]
R1461	7920 OLD BAUCOM RD	1	B	51														60	9	58	7			51	0
R1462	8004 OLD BAUCOM RD	1	B	51														60	9	57	6			52	1
R1463	8100 OLD BAUCOM RD	1	B	51														53	2	54	3			51	0
R1464A	7018 FARMDALE RD	1	B	51																		70	19	51	0
R1464B	7016 FARMDALE RD	1	B	51																		70	19	51	0
R1468A	7021 FARMDALE RD	1	B	51																		67	16	51	0
R1468B	7023 FARMDALE RD	1	B	51																		72	21	51	0
R1469	2440 BRANCH RD	1	B	51						73	22													51	0
R1470	2441 BRANCH RD	1	B	51						64	13													51	0
R1473	3601 GRIFFICE MILL RD	1	B	51																		67	16	51	0
R1474	4704 PRESERVE RD	1	B	51																		71	20	51	0
R1476A	3509 GRIFFICE MILL RD	1	B	51																		66	15	51	0
R1476B	4701 PRESERVE RD	1	B	51																		66	15	51	0
R1476C	3505 GRIFFICE MILL RD	1	B	51																		65	14	51	0
R1477	3433 GRIFFICE MILL RD	1	B	51						57	6											67	16	51	0
R1478A	3432 GRIFFICE MILL RD	1	B	51						60	9											64	13	51	0
R1478B	3428 GRIFFICE MILL RD	1	B	51						60	9											65	14	51	0
R1478C	3436 GRIFFICE MILL RD	1	B	51						60	9											63	12	51	0
R1479A	3421 GRIFFICE MILL RD	1	B	51						57	6											73	22	51	0
R1479B	3417 GRIFFICE MILL RD	1	B	51						58	7											73	22	51	0
R1479C	3425 GRIFFICE MILL RD	1	B	51						57	6											71	20	51	0
R1480A	3420 GRIFFICE MILL RD	1	B	51						61	10											67	16	51	0
R1480B	3424 GRIFFICE MILL RD	1	B	51						60	9											65	14	51	0
R1481	3409 GRIFFICE MILL RD	1	B	51						58	7											75	24	51	0
R1482A	2813 AUBURN KNIGHTDALE RD	1	B	56				65	9	62	6											65	9	56	0
R1482B	2821 AUBURN KNIGHTDALE RD	1	B	56				61	5	59	3											61	5	56	0
R1482C	2805 AUBURN KNIGHTDALE RD	1	B	56				69	13	64	8											70	14	57	1
R1484	2828 AUBURN KNIGHTDALE RD	1	B	56				64	8	64	8													56	0
R1485	2732 AUBURN KNIGHTDALE RD	1	B	56																59	3			56	0
R1486	2724 AUBURN KNIGHTDALE RD	1	B	56																61	5			56	0
R1487	2716 AUBURN KNIGHTDALE RD	1	B	56																63	7	64	8	56	0
R1489	2512 AUBURN KNIGHTDALE RD	1	B	56																60	4			56	0
R1490A	7341 SCENIC WOODS DR	1	B	56				65	9															56	0
R1490B	7353 SCENIC WOODS DR	1	B	56				68	12															56	0
R1491	7357 SCENIC WOODS DR	1	B	56				76	20															56	0
R1492A	2805 HODGE RD	1	B	56				67	11															56	0
R1492B	2805 HODGE RD	1	B	56				66	10															56	0
R1493A	2805 HODGE RD	1	B	56				70	14															56	0
R1493B	2805 HODGE RD	1	B	56				69	13															56	0
R1495A	2805 HODGE RD	1	B	56				72	16															56	0
R1495B	2805 HODGE RD	1	B	56				73	17															56	0
R1496A	2805 HODGE RD	1	B	56				68	12															56	0
R1496B	2805 HODGE RD	1	B	56				69	13															56	0
R1497A	2805 HODGE RD	1	B	56				71	15															56	0
R1497B	2805 HODGE RD	1	B	56				73	17															56	0
R1499A	2805 HODGE RD	1	B	56				67	11															56	0
R1499B	2805 HODGE RD	1	B	56				67	11															56	0
R1499C	2805 HODGE RD	1	B	56				68	12															56	0
R1499D	2805 HODGE RD	1	B	56				68	12															56	0
R1500A	7600 POOLE RD	1	B	56				65	9															56	0
R1500B	7600 POOLE RD	1	B	56				65	9															56	0
R1500C	7600 POOLE RD	1	B	56				65	9															56	0
R1501A	7600 POOLE RD	1	B	56				65	9															58	2
R1501B	7600 POOLE RD	1	B	56	57			66	9															60	3
R1502A	7600 POOLE RD	1	B	56				63	7															56	0
R1502B	7600 POOLE RD	1	B	56				63	7															56	0
R1502C	7600 POOLE RD	1	B	56				64	8															56	0
R1503A	7600 POOLE RD	1	B	56				63	7															56	0
R1503B	7600 POOLE RD	1	B	56				63	7															56	0
R1503C	7600 POOLE RD	1	B	56				64	8															56	0
R1504A	7600 POOLE RD	1	B	56				63	7															56	0
R1504B	7600 POOLE RD	1	B	56				63	7															56	0
R1505A	7600 POOLE RD	1	B	56				62	6															56	0

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Complete 540
Traffic Noise Analysis

Impact Analysis

Receptor	Street Address	Properties Represented	NAC Land Use Category	Noise Levels dB(A)																							
				2014 Measured Ambient	2012 TNM Predicted Existing[3]	2035																					
						Orange		Green		Mint		Red		Purple/Blue		Lilac		Teal		Brown		Tan		No Build	
						Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]
R1505B	7600 POOLE RD	1	B	56				62	6															56	0
R1506A	7600 POOLE RD	1	B	56				63	7															56	0
R1506B	7600 POOLE RD	1	B	56				63	7															56	0
R1507A	7600 POOLE RD	1	B	56				62	6															56	0
R1507B	7600 POOLE RD	1	B	56				62	6															56	0
R1508A	7600 POOLE RD	1	B	56				61	5															56	0
R1508B	7600 POOLE RD	1	B	56				60	4															56	0
R1508C	7600 POOLE RD	1	B	56				61	5															56	0
R1509A	7600 POOLE RD	1	B	56				59	3															56	0
R1509B	7600 POOLE RD	1	B	56				60	4															56	0
R1510A	7600 POOLE RD	1	B	56				62	6															56	0
R1510B	7600 POOLE RD	1	B	56				61	5															56	0
R1515A	7409 POOLE RD	1	B	56				70	14															57	1
R1515B	7404 POOLE RD	1	B	56				74	18															57	1
R1516A	7331 POOLE RD	1	B	56	60			69	9															63	3
R1516B	7331 POOLE RD	1	B	56	59			69	10															62	3
R1517	7331 POOLE RD	1	B	56	61			65	4															64	3
R1518	7317 POOLE RD	1	B	56	60			65	5															63	3
R1519A	2521 HODGE RD	1	B	56				57	1															56	0
R1519B	2529 HODGE RD	1	B	56				59	3															57	1
R1520A	7331 POOLE RD	1	B	56				66	10															56	0
R1520B	7331 POOLE RD	1	B	56				66	10															56	0
R1520C	7331 POOLE RD	1	B	56				67	11															56	0
R1521A	7331 POOLE RD	1	B	56				65	9															56	0
R1521B	7331 POOLE RD	1	B	56				64	8															56	0
R1521C	7331 POOLE RD	1	B	56				64	8															56	0
R1522A	7331 POOLE RD	1	B	56				61	5															56	0
R1522B	7331 POOLE RD	1	B	56				61	5															56	0
R1522C	7331 POOLE RD	1	B	56				61	5															56	0
R1523A	7331 POOLE RD	1	B	56				62	6															56	0
R1523B	7331 POOLE RD	1	B	56				62	6															56	0
R1524A	7331 POOLE RD	1	B	56				62	6															56	0
R1524B	7331 POOLE RD	1	B	56				63	7															56	0
R1525A	7331 POOLE RD	1	B	56				63	7															56	0
R1525B	7331 POOLE RD	1	B	56				63	7															56	0
R1525C	7331 POOLE RD	1	B	56				63	7															56	0
R1526	7331 POOLE RD	1	B	56				68	12															56	0
R1527	7331 POOLE RD	1	B	56				70	14															56	0
R1528A	7331 POOLE RD	1	B	56				67	11															56	0
R1528B	7331 POOLE RD	1	B	56				71	15															56	0
R1528C	7331 POOLE RD	1	B	56				64	8															56	0
R1529A	0 HODGE RD	1	B	56				74	18															56	0
R1529B	0 HODGE RD	1	B	56				76	20															56	0
R1529C	0 HODGE RD	1	B	56				77	21															56	0
R1530A	0 HODGE RD	1	B	56				72	16															56	0
R1530B	0 HODGE RD	1	B	56				73	17															56	0
R1531A	0 HODGE RD	1	B	56				70	14															56	0
R1531B	0 HODGE RD	1	B	56				70	14															56	0
R1533A	0 HODGE RD	1	B	56				75	19															56	0
R1533B	0 HODGE RD	1	B	56				75	19															56	0
R1533C	0 HODGE RD	1	B	56				75	19															56	0
R1534A	0 HODGE RD	1	B	56				72	16															56	0
R1534B	0 HODGE RD	1	B	56				72	16															56	0
R1534C	0 HODGE RD	1	B	56				72	16															56	0
R1535A	0 HODGE RD	1	B	56				69	13															56	0
R1535B	0 HODGE RD	1	B	56				69	13															56	0
R1535C	0 HODGE RD	1	B	56				69	13															56	0
R1539A	0 HODGE RD	1	B	56				77	21															56	0
R1539B	0 HODGE RD	1	B	56				77	21															56	0
R1539C	0 HODGE RD	1	B	56				74	18															56	0
R1540A	0 HODGE RD	1	B	56				72	16															56	0
R1540B	0 HODGE RD	1	B	56				73	17															56	0
R1540C	0 HODGE RD	1	B	56				72	16															56	0

1Noise levels highlighted in red are levels above the Noise Abatement Criteria.
2Noise level increases highlighted in red are above the substantial noise level increase criteria.
3Noise levels reported if the traffic noise was dominant noise

Complete 540
Traffic Noise Analysis

Impact Analysis

Receptor	Street Address	Properties Represented	NAC Land Use Category	Noise Levels dB(A)																					
				2014 Measured Ambient	2012 TNM Predicted Existing[3]	2035																			
						Orange		Green		Mint		Red		Purple/Blue		Lilac		Teal		Brown		Tan		No Build	
						Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]
R1541A	0 HODGE RD	1	B	56				70	14															56	0
R1541B	0 HODGE RD	1	B	56				69	13															56	0
R1541C	0 HODGE RD	1	B	56				68	12															56	0
R1541D	0 HODGE RD	1	B	56				68	12															56	0
R1542A	3612 KEMP DR	1	B	56				66	10															56	0
R1542B	3616 KEMP DR	1	B	56				68	12															56	0
R1543A	3624 KEMP DR	1	B	56				72	16															56	0
R1543B	3620 KEMP DR	1	B	56				70	14															56	0
R1546	3613 KEMP DR	1	B	56				67	11															56	0
R1547A	3621 KEMP DR	1	B	56				70	14															56	0
R1547B	3625 KEMP DR	1	B	56				73	17															56	0
R1548A	3707 KEMP DR	1	B	56				66	10															56	0
R1548B	3701 KEMP DR	1	B	56				69	13															56	0
R1548C	3709 KEMP DR	1	B	56				68	12															56	0
R1549A	3717 KEMP DR	1	B	56				65	9															56	0
R1549B	3721 KEMP DR	1	B	56				64	8															56	0
R1549C	3713 KEMP DR	1	B	56				66	10															56	0
R1550A	3729 KEMP DR	1	B	56				61	5															56	0
R1550B	3725 KEMP DR	1	B	56				62	6															56	0
R1550C	3733 KEMP DR	1	B	56	56			60	4															57	1
R1551	4300 CLIFTON RD	1	B	57	63			63	0															65	2
R1552A	4100 CLIFTON RD	1	B	57	62			64	2															63	1
R1552B	4100 CLIFTON RD	1	B	57	64			66	2															65	1
R1553A	4100 CLIFTON RD	1	B	57	58			61	3															60	2
R1553B	4100 CLIFTON RD	1	B	57	60			62	2															61	1
R1554	4100 CLIFTON RD	1	B	57	60			63	3															61	1
R1556A	4716 OLD FAISON RD	1	B	57	60			66	6															61	1
R1556B	0 OLD FAISON RD	1	B	57	60			66	6															62	2
R1556C	4708 OLD FAISON RD	1	B	57	57			63	6															59	2
R1557A	4005 DREAM VALLEY DR	1	B	57	61			68	7															63	2
R1557B	4809 OLD FAISON RD	1	B	57	63			70	7															65	2
R1557C	4801 OLD FAISON RD	1	B	57	64			72	8															66	2
R1558A	105 GOWER DR	1	B	57	57			63	6															59	2
R1558B	103 GOWER DR	1	B	57	58			64	6															60	2
R1558C	101 GOWER DR	1	B	57	59			65	6															61	2
R1559A	102 GOWER DR	1	B	57	64			71	7															65	1
R1559B	104 GOWER DR	1	B	57	63			70	7															64	1
R1559C	100 GOWER DR	1	B	57	64			72	8															66	2
R1560A	205 GOWER CIR	1	B	57	59			64	5															60	1
R1560B	201 GOWER CIR	1	B	57	58			64	6															59	1
R1561A	202 GOWER CIR	1	B	57	66			73	7															66	0
R1561B	200 GOWER CIR	1	B	57	64			71	7															65	1
R1562A	206 GOWER CIR	1	B	57	64			69	5															65	1
R1562B	204 GOWER CIR	1	B	57	65			71	6															66	1
R1562C	208 GOWER CIR	1	B	57	62			67	5															63	1
R1566A	148 EASY WIND LN	1	B	52								74	22											52	0
R1566B	142 EASY WIND LN	1	B	52								73	21											52	0
R1567A	136 EASY WIND LN	1	B	52								71	19											52	0
R1567B	130 EASY WIND LN	1	B	52								69	17											52	0
R1568A	124 EASY WIND LN	1	B	52								67	15											52	0
R1568B	118 EASY WIND LN	1	B	52								66	14											52	0
R1568C	112 EASY WIND LN	1	B	52								66	14											52	0
R1569A	100 EASY WIND LN	1	B	52								65	13											52	0
R1569B	106 EASY WIND LN	1	B	52								65	13											52	0
R1570A	131 SHADY HOLLOW LN	1	B	52								64	12											52	0
R1570B	135 SHADY HOLLOW LN	1	B	52								65	13											52	0
R1571A	201 SHADY HOLLOW LN	1	B	52								67	15											52	0
R1571B	203 SHADY HOLLOW LN	1	B	52								68	16											52	0
R1572A	202 SHADY HOLLOW LN	1	B	52								71	19											52	0
R1572B	200 SHADY HOLLOW LN	1	B	52								69	17											52	0
R1572C	208 SHADY HOLLOW LN	1	B	52								72	20											52	0
R1573A	129 EASY WIND LN	1	B	52								72	20											52	0
R1573B	135 EASY WIND LN	1	B	52								74	22											52	0

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3Noise levels reported if the traffic noise was dominant noise

Complete 540
Traffic Noise Analysis

Impact Analysis

Receptor	Street Address	Properties Represented	NAC Land Use Category	Noise Levels dB(A)																					
				2014 Measured Ambient	2012 TNM Predicted Existing[3]	2035																			
						Orange		Green		Mint		Red		Purple/Blue		Lilac		Teal		Brown		Tan		No Build	
						Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]
R1573C	141 EASY WIND LN	1	B	52								75	23											52	0
R1574A	210 SHADY HOLLOW LN	1	B	52								74	22											52	0
R1574B	214 SHADY HOLLOW LN	1	B	52								75	23											52	0
R1575A	205 SHADY HOLLOW LN	1	B	52								70	18											52	0
R1575B	207 SHADY HOLLOW LN	1	B	52								72	20											52	0
R1576A	209 SHADY HOLLOW LN	1	B	52								76	24											52	0
R1576B	209 SHADY HOLLOW LN	1	B	52								74	22											52	0
R1588	225 SHADY HOLLOW LN	1	B	52								76	24											52	0
R1589	232 SHADY HOLLOW LN	1	B	52								75	23											52	0
R1590A	240 SHADY HOLLOW LN	1	B	52								68	16											52	0
R1590B	236 SHADY HOLLOW LN	1	B	52								72	20											52	0
R1591A	233 SHADY HOLLOW LN	1	B	52								71	19											52	0
R1591B	231 SHADY HOLLOW LN	1	B	52								73	21											52	0
R1592A	243 SHADY HOLLOW LN	1	B	52								67	15											52	0
R1592B	237 SHADY HOLLOW LN	1	B	52								69	17											52	0
R1593A	250 SHADY HOLLOW LN	1	B	52								64	12											52	0
R1593B	244 SHADY HOLLOW LN	1	B	52								65	13											52	0
R1594	252 SHADY HOLLOW LN	1	B	52								62	10											52	0
R1595	251 SHADY HOLLOW LN	1	B	52								66	14											52	0
R1596A	502 EASY WIND LN	1	B	52								70	18											52	0
R1596B	508 EASY WIND LN	1	B	52								68	16											52	0
R1597	9516 HOLLY SPRINGS RD	1	B	52		59	7																	55	3
R1598	5828 OLD SMITHFIELD RD	1	B	48	56	62	6																	57	1
R1599A	5711 OLD SMITHFIELD RD	1	B	48	53	59	6																	60	7
R1599B	5705 OLD SMITHFIELD RD	1	B	48	54	60	6																	62	8
R1600A	5709 OLD SMITHFIELD RD	1	B	48	59	64	5																	64	5
R1600B	5717 OLD SMITHFIELD RD	1	B	48	60	65	5																	64	4
R1600C	5721 OLD SMITHFIELD RD	1	B	48	58	63	5																	61	3
R1601A	5725 OLD SMITHFIELD RD	1	B	48	58	63	5																	61	3
R1601B	5729 OLD SMITHFIELD RD	1	B	48	58	63	5																	61	3
R1601C	5801 OLD SMITHFIELD RD	1	B	48	58	63	5																	61	3
R1601D	5809 OLD SMITHFIELD RD	1	B	48	58	63	5																	61	3
R1602	3500 BAKERS ALY	1	B	48	53	62	9																	58	5
R1603A	3509 FORAKER ST	1	B	48	57	62	5																	62	5
R1603B	3501 FORAKER ST	1	B	48	64	67	3																	66	2
R1603C	3517 FORAKER ST	1	B	48	54	62	8																	61	7
R1605	2124 E WILLIAMS ST	1	B	48	56	67	11																	67	11
R1606A	5533 EDDIE CREEK DR	1	B	48	48	64	16																	56	8
R1606B	5537 EDDIE CREEK DR	1	B	48		64	16																	56	8
R1607A	5152 SUNSET LAKE RD	1	B	53	59	59	0																	62	3
R1607B	9204 EISENHOWER DR	1	B	53	53	54	1																	56	3
R1609A	8813 JUAQUIN LN	1	B	54		61	7																	54	0
R1609B	8817 JUAQUIN LN	1	B	54		61	7																	54	0
R1610A	4900 CHANDLER RIDGE CIR	1	B	54		55	1																	54	0
R1610B	4900 CHANDLER RIDGE CIR	1	B	54		57	3																	54	0
R1610C	4900 CHANDLER RIDGE CIR	1	B	54		58	4																	54	0
R1610D	4900 CHANDLER RIDGE CIR	1	B	54		56	2																	54	0
R1610E	4900 CHANDLER RIDGE CIR	1	B	54		57	3																	54	0
R1610F	4900 CHANDLER RIDGE CIR	1	B	54		58	4																	54	0
R1610G	4900 CHANDLER RIDGE CIR	1	B	54		55	1																	54	0
R1610H	4900 CHANDLER RIDGE CIR	1	B	54		57	3																	54	0
R1610I	4900 CHANDLER RIDGE CIR	1	B	54		58	4																	54	0
R1610J	4900 CHANDLER RIDGE CIR	1	B	54		56	2																	54	0
R1610K	4900 CHANDLER RIDGE CIR	1	B	54		57	3																	54	0
R1610L	4900 CHANDLER RIDGE CIR	1	B	54		58	4																	54	0
R1611	1429 GUFFY DR	1	B	46												63	17							47	1
R1612A	3725 WAKEFIELD LN	1	B	50										58	8	59	9							50	0
R1612B	3733 WAKEFIELD LN	1	B	50										58	8	58	8							50	0
R1612C	3717 WAKEFIELD LN	1	B	50										59	9	60	10							50	0
R1613	6808 CALI CT	1	B	50		68	18																	50	0
R1614	913 OPEN FIELD DR	1	B	50		62	12																	50	0
R1616	803 THOMPSON RD	1	B	49								69	20											49	0
R1618	7702 ROCK QUARRY RD	1	B	57								54	-3					58	1					57	0

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Impact Analysis

Receptor	Street Address	Properties Represented	NAC Land Use Category	Noise Levels dB(A)																					
				2014 Measured Ambient	2012 TNM Predicted Existing[3]	2035																			
						Orange		Green		Mint		Red		Purple/Blue		Lilac		Teal		Brown		Tan		No Build	
						Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]
R1619	7620 ROCK QUARRY RD	1	B	57								58	1					60	3					57	0
R1620	2749 E GARNER RD	1	B	57				70	13									69	12					57	0
R1621	4609 DUSTY RD	1	B	57								68	11											57	0
R1622	4121 AUBURN KNIGHTDALE RD	1	B	57								71	14											57	0
R1623	2717 BRANCH RD	1	B	51						52	1	51	0											51	0
R1624	8021 DEER MEADOW DR	1	B	46	48	60	12																	49	1
R1625A	2846 AUBURN KNIGHTDALE RD	1	B	56				57	1	57	1											58	2	56	0
R1625B	2848 AUBURN KNIGHTDALE RD	1	B	56				58	2	57	1											58	2	56	0
R1626	0 E WILLIAMS ST	1	B	48	52	68	16																	62	10
R1627A	2213 E WILLIAMS ST	1	B	48	51	67	16																	63	12
R1627B	2213 E WILLIAMS ST	1	B	48	52	67	15																	62	10
R1628A	100 N CARROLL ST	1	B	53		59	6							59	6									53	0
R1628B	98 S CARROLL ST	1	B	53		61	8							60	7									53	0
R1628C	102 N CARROLL ST	1	B	53		64	11							63	10									53	0
R1630	1301 TAVERNIER KNOLL LN	1	B	45		65	20									67	22							45	0
R1631	10900 TEN TEN RD	1	B	46	61											63	2							64	3
R1632	10400 JORDAN RD	1	B	46	49	74	25																	52	3
R1635	2916 ESCONDIDO FARM RD	1	B	49				50	1							48	-1			59	10			49	0
R1636	8909 OLD CASCADE DR	1	B	49				62	13							64	15			53	4			50	1
R1637	8316 WHITE OAK RD	1	B	49	71							72	1			76	5							73	2
R1638	2300 GUY RD	1	B	51	59															63	4			63	4
R1639	6415 OLD STAGE RD	1	B	49	50							65	15											56	6
R1640	106 TEAK CIR	1	B	49	52							61	9											56	4
R1641	110 TEAK CIR	1	B	49	55							67	12											60	5
R1642	6825 OLD STAGE RD	1	B	49	56							61	5											60	4
R1644	715 THOMPSON RD	1	B	49								60	11											49	0
R1645	1500 WOODS CREEK DR	1	B	49	58							64	6											58	0
R1646	203 WHITHORNE DR	1	B	49	54							63	9											54	0
R1647	209 BAYBERRY LN	1	B	52	65							70	5											66	1
R1648	2728 E GARNER RD	1	B	57				64	7									66	9					57	0
R1649A	8609 MARIGOLD ST	1	B	54		64	10																	54	0
R1649B	8612 MARIGOLD ST	1	B	54		63	9																	54	0
R1650	7950 FAYETTEVILLE RD	1	B	54	59							63	4											62	3
R1651	7620 TEN TEN RD	1	B	54	57							68	11											59	2
R1652	8216 LAKE WHEELER RD	1	B	54	61							69	8											64	3
R1653A	1309 TAVERNIER KNOLL LN	1	B	45		69	24									71	26							45	0
R1653B	1313 TAVERNIER KNOLL LN	1	B	45		69	24									71	26							45	0
R1653C	1305 TAVERNIER KNOLL LN	1	B	45		67	22									69	24							45	0
R1654	2110 VANDORA SPRINGS RD	1	B	44	47							61	14											52	5
R1655	1407 HALL BLVD	1	B	44	50							63	13											55	5
R1656	2108 VANDORA SPRINGS RD	1	B	44	56							61	5											60	4
R1657A	2104 VANDORA SPRINGS RD	1	B	44	55							61	6											60	5
R1657B	2106 VANDORA SPRINGS RD	1	B	44	55							61	6											60	5
R1658	2102 VANDORA SPRINGS RD	1	B	44	55							60	5											60	5
R1659	1401 HALL BLVD	1	B	44	58							60	2											62	4
R1660	1912 VANDORA SPRINGS RD	1	B	44	59							62	3											64	5
R1661	1501 HALL BLVD	1	B	44	44							58	14											48	4
R1662	1422 HALL BLVD	1	B	44	48							60	12											52	4
R1663	1500 HALL BLVD	1	B	44	45							56	11											49	4
R1664A	1906 VANDORA SPRINGS RD	1	B	44	51							61	10											56	5
R1664B	1490 MACDONALD AVE	1	B	44	49							61	12											54	5
R1665A	1501 MACDONALD AVE	1	B	44	46							56	10											51	5
R1665B	1505 MACDONALD AVE	1	B	44	45							55	10											49	4
R1666A	1502 MACDONALD AVE	1	B	44	46							55	9											51	5
R1666B	1500 MACDONALD AVE	1	B	44	48							56	8											52	4
R1667A	1904 VANDORA SPRINGS RD	1	B	44	52							59	7											57	5
R1667B	1900 VANDORA SPRINGS RD	1	B	44	54							60	6											58	4
R1668A	1495 MIRIAM AVE	1	B	44	49							57	8											54	5
R1668B	1501 MIRIAM AVE	1	B	44	48							56	8											52	4
R1669	1810 VANDORA SPRINGS RD	1	B	44	56							62	6											60	4
R1670	1500 MIRIAM AVE	1	B	44	52							59	7											56	4
R1671A	1504 MIRIAM AVE	1	B	44	48							55	7											52	4
R1671B	1502 MIRIAM AVE	1	B	44	50							57	7											54	4

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Complete 540
Traffic Noise Analysis

Impact Analysis

Receptor	Street Address	Properties Represented	NAC Land Use Category	Noise Levels dB(A)																					
				2014 Measured Ambient	2012 TNM Predicted Existing[3]	2035																			
						Orange		Green		Mint		Red		Purple/Blue		Lilac		Teal		Brown		Tan		No Build	
						Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]
R1672	1809 VANDORA SPRINGS RD	1	B	44	57							64	7											62	5
R1673A	100 TIFFANY CIR	1	B	44	59							65	6											64	5
R1673B	1902 RYERSON DR	1	B	44	60							65	5											64	4
R1674A	1904 RYERSON DR	1	B	44	61							65	4											66	5
R1674B	1906 RYERSON DR	1	B	44	62							62	0											67	5
R1675A	2000 RYERSON DR	1	B	44	59							60	1											64	5
R1675B	1908 RYERSON DR	1	B	44	60							60	0											64	4
R1675C	2002 RYERSON DR	1	B	44	58							60	2											63	5
R1676A	2004 RYERSON DR	1	B	44	58							60	2											63	5
R1676B	2006 RYERSON DR	1	B	44	59							61	2											64	5
R1677A	600 TIFFANY CIR	1	B	44	58							62	4											63	5
R1677B	2008 RYERSON DR	1	B	44	59							61	2											64	5
R1678A	601 TIFFANY CIR	1	B	44	55							67	12											60	5
R1678B	603 TIFFANY CIR	1	B	44	60							66	6											65	5
R1679A	503 TIFFANY CIR	1	B	44	51							69	18											56	5
R1679B	501 TIFFANY CIR	1	B	44	49							70	21											54	5
R1680A	2011 RYERSON DR	1	B	44	49							65	16											54	5
R1680B	500 TIFFANY CIR	1	B	44	48							65	17											52	4
R1681A	2009 RYERSON DR	1	B	44	49							63	14											54	5
R1681B	2007 RYERSON DR	1	B	44	49							62	13											53	4
R1682A	2005 RYERSON DR	1	B	44	49							61	12											54	5
R1682B	2003 RYERSON DR	1	B	44	49							60	11											53	4
R1682C	100 LYME CT	1	B	44	49							60	11											53	4
R1683A	101 LYME CT	1	B	44	50							59	9											55	5
R1683B	1905 RYERSON DR	1	B	44	50							58	8											55	5
R1684A	1903 RYERSON DR	1	B	44	50							58	8											55	5
R1684B	200 TIFFANY CIR	1	B	44	50							58	8											54	4
R1685	203 TIFFANY CIR	1	B	44	49							59	10											54	5
R1686	202 TIFFANY CIR	1	B	44	48							58	10											52	4
R1687	103 LYME CT	1	B	44	48							59	11											53	5
R1688	102 LYME CT	1	B	44	48							60	12											52	4
R1689A	105 TAFTON CT	1	B	44	47							62	15											51	4
R1689B	103 TAFTON CT	1	B	44	47							63	16											52	5
R1690A	404 TIFFANY CIR	1	B	44	46							66	20											51	5
R1690B	402 TIFFANY CIR	1	B	44	45							66	21											50	5
R1691A	312 TIFFANY CIR	1	B	44	44							67	23											48	4
R1691B	102 TAFTON CT	1	B	44	44							65	21											48	4
R1692A	310 TIFFANY CIR	1	B	44								66	22											47	3
R1692B	308 TIFFANY CIR	1	B	44								66	22											47	3
R1693A	306 TIFFANY CIR	1	B	44								66	22											46	2
R1693B	304 TIFFANY CIR	1	B	44								65	21											46	2
R1694A	303 TIFFANY CIR	1	B	44								65	21											45	1
R1694B	305 TIFFANY CIR	1	B	44								67	23											45	1
R1695A	403 TIFFANY CIR	1	B	44	45							74	29											49	4
R1695B	401 TIFFANY CIR	1	B	44	44							76	32											49	5
R1696A	317 TIFFANY CIR	1	B	44								76	32											47	3
R1696B	313 TIFFANY CIR	1	B	44								72	28											47	3
R1697	307 TIFFANY CIR	1	B	44								69	25											45	1
R1698A	104 TAFTON CT	1	B	44	44							63	19											48	4
R1698B	106 TAFTON CT	1	B	44	46							62	16											50	4
R1699A	103 OLMSTEAD CT	1	B	44								64	20											47	3
R1699B	302 TIFFANY CIR	1	B	44								63	19											47	3
R1700A	301 TIFFANY CIR	1	B	44								63	19											46	2
R1700B	215 TIFFANY CIR	1	B	44								63	19											46	2
R1701A	301 CABANA DR	1	B	48	51	64	13																	61	10
R1701B	211 CABANA DR	1	B	48	52	64	12																	61	9
R1702A	207 CABANA DR	1	B	48	52	63	11																	62	10
R1702B	209 CABANA DR	1	B	48	52	63	11																	61	9
R1703A	208 CABANA DR	1	B	48	50	63	13																	58	8
R1703B	210 CABANA DR	1	B	48	50	63	13																	58	8
R1704A	106 DOVES HAVEN DR	1	B	48	50	63	13																	57	7
R1704B	104 DOVES HAVEN DR	1	B	48	50	63	13																	57	7
R1704C	200 DOVES HAVEN DR	1	B	48	50	62	12																	56	6

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2Noise level increases highlighted in red are above the substantial noise level increase criteria.
3Noise levels reported if the traffic noise was dominant noise

Complete 540
Traffic Noise Analysis

Impact Analysis

Receptor	Street Address	Properties Represented	NAC Land Use Category	Noise Levels dB(A)																							
				2014 Measured Ambient	2012 TNM Predicted Existing[3]	2035																					
						Orange		Green		Mint		Red		Purple/Blue		Lilac		Teal		Brown		Tan		No Build	
						Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]
R1704D	202 DOVES HAVEN DR	1	B	48	50	62	12																	56	6
R1704E	204 DOVES HAVEN DR	1	B	48	50	61	11																	55	5
R1704F	206 DOVES HAVEN DR	1	B	48	49	61	12																	55	6
R1704G	208 DOVES HAVEN DR	1	B	48	48	61	13																	54	6
R1704H	210 DOVES HAVEN DR	1	B	48		61	13																	53	5
R1704I	212 DOVES HAVEN DR	1	B	48		61	13																	53	5
R1704J	111 SUNSHINE CREST CT	1	B	48		62	14																	52	4
R1705	200 REUNION PARK DR	RECREATIONAL	C	48		59	11																	48	0
R1705A	200 REUNION PARK DR	1	B	48		58	10																	48	0
R1705B	200 REUNION PARK DR	1	B	48		59	11																	48	0
R1705C	200 REUNION PARK DR	1	B	48		61	13																	48	0
R1705D	200 REUNION PARK DR	1	B	48		59	11																	49	1
R1705E	200 REUNION PARK DR	1	B	48		61	13																	50	2
R1705F	200 REUNION PARK DR	1	B	48		63	15																	48	0
R1705G	200 REUNION PARK DR	1	B	48		56	8																	49	1
R1705H	200 REUNION PARK DR	1	B	48		58	10																	50	2
R1705I	200 REUNION PARK DR	1	B	48		60	12																	48	0
R1705J	200 REUNION PARK DR	1	B	48		58	10																	49	1
R1705K	200 REUNION PARK DR	1	B	48		60	12																	50	2
R1705L	200 REUNION PARK DR	1	B	48		62	14																	48	0
R1705M	200 REUNION PARK DR	1	B	48		54	6																	49	1
R1705N	200 REUNION PARK DR	1	B	48		56	8																	50	2
R1705O	200 REUNION PARK DR	1	B	48		58	10																	48	0
R1705P	200 REUNION PARK DR	1	B	48		58	10																	49	1
R1705Q	200 REUNION PARK DR	1	B	48		60	12																	50	2
R1705R	200 REUNION PARK DR	1	B	48		61	13																	48	0
R1705S	200 REUNION PARK DR	1	B	48		52	4																	49	1
R1705T	200 REUNION PARK DR	1	B	48		54	6																	50	2
R1705U	200 REUNION PARK DR	1	B	48		56	8																	48	0
R1705V	200 REUNION PARK DR	1	B	48		57	9																	49	1
R1705W	200 REUNION PARK DR	1	B	48		59	11																	50	2
R1705X	200 REUNION PARK DR	1	B	48		60	12																	48	0
R1706A	200 REUNION PARK DR	1	B	48		54	6																	48	0
R1706B	200 REUNION PARK DR	1	B	48		56	8																	48	0
R1706C	200 REUNION PARK DR	1	B	48		58	10																	49	1
R1706D	200 REUNION PARK DR	1	B	48		56	8																	48	0
R1706E	200 REUNION PARK DR	1	B	48		57	9																	48	0
R1706F	200 REUNION PARK DR	1	B	48		59	11																	49	1
R1706G	200 REUNION PARK DR	1	B	48		54	6																	48	0
R1706H	200 REUNION PARK DR	1	B	48		55	7																	48	0
R1706I	200 REUNION PARK DR	1	B	48		57	9																	49	1
R1706J	200 REUNION PARK DR	1	B	48		55	7																	48	0
R1706K	200 REUNION PARK DR	1	B	48		56	8																	48	0
R1706L	200 REUNION PARK DR	1	B	48		57	9																	49	1
R1706M	200 REUNION PARK DR	1	B	48		46	-2																	48	0
R1706N	200 REUNION PARK DR	1	B	48		46	-2																	48	0
R1706O	200 REUNION PARK DR	1	B	48		48	0																	49	1
R1706P	200 REUNION PARK DR	1	B	48		45	-3																	48	0
R1706Q	200 REUNION PARK DR	1	B	48		46	-2																	48	0
R1706R	200 REUNION PARK DR	1	B	48		48	0																	49	1
R1706S	200 REUNION PARK DR	1	B	48		47	-1																	48	0
R1706T	200 REUNION PARK DR	1	B	48		48	0																	48	0
R1706U	200 REUNION PARK DR	1	B	48		49	1																	49	1
R1706V	200 REUNION PARK DR	1	B	48		53	5																	48	0
R1706W	200 REUNION PARK DR	1	B	48		55	7																	48	0
R1706X	200 REUNION PARK DR	1	B	48		57	9																	49	1
R1707A	200 REUNION PARK DR	1	B	48		60	12																	48	0
R1707B	200 REUNION PARK DR	1	B	48		62	14																	48	0
R1707C	200 REUNION PARK DR	1	B	48		63	15																	49	1
R1707D	200 REUNION PARK DR	1	B	48		59	11																	48	0
R1707E	200 REUNION PARK DR	1	B	48		61	13																	48	0
R1707F	200 REUNION PARK DR	1	B	48		63	15																	49	1
R1707G	200 REUNION PARK DR	1	B	48		59	11																	48	0

1Noise levels highlighted in red are levels above the Noise Abatement Criteria.
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3Noise levels reported if the traffic noise was dominant noise

Complete 540
Traffic Noise Analysis

Impact Analysis

Receptor	Street Address	Properties Represented	NAC Land Use Category	Noise Levels dB(A)																							
				2014 Measured Ambient	2012 TNM Predicted Existing[3]	2035																					
						Orange		Green		Mint		Red		Purple/Blue		Lilac		Teal		Brown		Tan		No Build	
						Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]
R1707H	200 REUNION PARK DR	1	B	48		60	12																	48	0
R1707I	200 REUNION PARK DR	1	B	48		62	14																	49	1
R1707J	200 REUNION PARK DR	1	B	48		59	11																	48	0
R1707K	200 REUNION PARK DR	1	B	48		60	12																	48	0
R1707L	200 REUNION PARK DR	1	B	48		63	15																	49	1
R1707M	200 REUNION PARK DR	1	B	48		50	2																	48	0
R1707N	200 REUNION PARK DR	1	B	48		51	3																	48	0
R1707O	200 REUNION PARK DR	1	B	48		52	4																	49	1
R1707P	200 REUNION PARK DR	1	B	48		49	1																	48	0
R1707Q	200 REUNION PARK DR	1	B	48		51	3																	48	0
R1707R	200 REUNION PARK DR	1	B	48		53	5																	49	1
R1707S	200 REUNION PARK DR	1	B	48		51	3																	48	0
R1707T	200 REUNION PARK DR	1	B	48		52	4																	48	0
R1707U	200 REUNION PARK DR	1	B	48		54	6																	49	1
R1707V	200 REUNION PARK DR	1	B	48		55	7																	48	0
R1707W	200 REUNION PARK DR	1	B	48		57	9																	48	0
R1707X	200 REUNION PARK DR	1	B	48		59	11																	49	1
R1708A	200 REUNION PARK DR	1	B	48		59	11																	48	0
R1708B	200 REUNION PARK DR	1	B	48		61	13																	48	0
R1708C	200 REUNION PARK DR	1	B	48		63	15																	48	0
R1708D	200 REUNION PARK DR	1	B	48		58	10																	48	0
R1708E	200 REUNION PARK DR	1	B	48		60	12																	48	0
R1708F	200 REUNION PARK DR	1	B	48		61	13																	48	0
R1708G	200 REUNION PARK DR	1	B	48		59	11																	48	0
R1708H	200 REUNION PARK DR	1	B	48		62	14																	48	0
R1708I	200 REUNION PARK DR	1	B	48		64	16																	49	1
R1708J	200 REUNION PARK DR	1	B	48		57	9																	48	0
R1708K	200 REUNION PARK DR	1	B	48		60	12																	48	0
R1708L	200 REUNION PARK DR	1	B	48		62	14																	49	1
R1708M	200 REUNION PARK DR	1	B	48		57	9																	48	0
R1708N	200 REUNION PARK DR	1	B	48		59	11																	48	0
R1708O	200 REUNION PARK DR	1	B	48		60	12																	48	0
R1708P	200 REUNION PARK DR	1	B	48		56	8																	48	0
R1708Q	200 REUNION PARK DR	1	B	48		59	11																	48	0
R1708R	200 REUNION PARK DR	1	B	48		60	12																	48	0
R1708S	200 REUNION PARK DR	1	B	48		56	8																	48	0
R1708T	200 REUNION PARK DR	1	B	48		58	10																	48	0
R1708U	200 REUNION PARK DR	1	B	48		59	11																	48	0
R1708V	200 REUNION PARK DR	1	B	48		56	8																	48	0
R1708W	200 REUNION PARK DR	1	B	48		58	10																	48	0
R1708X	200 REUNION PARK DR	1	B	48		59	11																	48	0
R1709A	215 GALLENT HEDGE TRL	1	B	48		59	11																	48	0
R1709B	213 GALLENT HEDGE TRL	1	B	48		59	11																	48	0
R1709C	211 GALLENT HEDGE TRL	1	B	48		59	11																	48	0
R1709D	209 GALLENT HEDGE TRL	1	B	48		58	10																	48	0
R1709E	207 GALLENT HEDGE TRL	1	B	48		58	10																	48	0
R1709F	205 GALLENT HEDGE TRL	1	B	48		58	10																	48	0
R1709G	203 GALLENT HEDGE TRL	1	B	48		57	9																	48	0
R1709H	201 GALLENT HEDGE TRL	1	B	48		57	9																	48	0
R1710A	915 STRAYWHITE AVE	1	B	48		62	14																	48	0
R1710B	913 STRAYWHITE AVE	1	B	48		62	14																	48	0
R1710C	911 STRAYWHITE AVE	1	B	48		63	15																	48	0
R1710D	909 STRAYWHITE AVE	1	B	48		62	14																	48	0
R1710E	907 STRAYWHITE AVE	1	B	48		62	14																	48	0
R1710F	905 STRAYWHITE AVE	1	B	48		61	13																	48	0
R1710G	901 STRAYWHITE AVE	1	B	48		61	13																	48	0
R1710H	903 STRAYWHITE AVE	1	B	48		61	13																	48	0
R1711A	209 HOLLYHOCK LN	1	B	48		63	15																	48	0
R1711B	211 HOLLYHOCK LN	1	B	48		65	17																	48	0
R1712A	212 HOLLYHOCK LN	1	B	48		61	13																	49	1
R1712B	210 HOLLYHOCK LN	1	B	48		61	13																	50	2
R1713A	216 HOLLYHOCK LN	1	B	48		62	14																	48	0
R1713B	214 HOLLYHOCK LN	1	B	48		61	13																	49	1

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Complete 540
Traffic Noise Analysis

Impact Analysis

Receptor	Street Address	Properties Represented	NAC Land Use Category	Noise Levels dB(A)																					
				2014	2012	2035																			
						Orange		Green		Mint		Red		Purple/Blue		Lilac		Teal		Brown		Tan		No Build	
				Measured Ambient	TNM Predicted Existing[3]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]
R1714A	203 LINDELL DR	1	B	48		62	14																	49	1
R1714B	205 LINDELL DR	1	B	48		63	15																	49	1
R1715A	207 LINDELL DR	1	B	48		64	16																	49	1
R1715B	208 LINDELL DR	1	B	48		63	15																	50	2
R1716A	4112 SANCROFT DR	1	B	52		60	8							59	7									52	0
R1716B	4108 SANCROFT DR	1	B	52		62	10							60	8									52	0
R1717A	4104 SANCROFT DR	1	B	52		62	10							60	8									52	0
R1717B	4100 SANCROFT DR	1	B	52		62	10							61	9									52	0
R1718A	100 SPRING ST	1	B	53		62	9							62	9									53	0
R1718B	203 OAKLAND DR	1	B	53		62	9							62	9									53	0
R1719A	207 OAKLAND DR	1	B	53		62	9							62	9									53	0
R1719B	205 OAKLAND DR	1	B	53		61	8							62	9									53	0
R1720	3721 GRANDBRIDGE DR	1	B	46		53	7																	46	0
R1721A	3713 GRANDBRIDGE DR	1	B	46		56	10																	46	0
R1721B	3717 GRANDBRIDGE DR	1	B	46		54	8																	46	0
R1722A	3709 GRANDBRIDGE DR	1	B	46		56	10																	46	0
R1722B	3705 GRANDBRIDGE DR	1	B	46		59	13																	46	0
R1723A	3612 HERITAGE CREEK DR	1	B	46		63	17																	46	0
R1723B	3616 HERITAGE CREEK DR	1	B	46		63	17																	46	0
R1724A	3613 HERITAGE CREEK DR	1	B	46		63	17																	46	0
R1724B	3617 HERITAGE CREEK DR	1	B	46		62	16																	46	0
R1725A	4012 WEST LAKE RD	1	B	46	54	63	9																	57	3
R1725B	4016 WEST LAKE RD	1	B	46	58	63	5																	61	3
R1726	4012 HARRIAT DR	1	B	46		63	17																	46	0
R1727	4017 HARRIAT DR	1	B	46		65	19																	46	0
R1728	4021 HARRIAT DR	1	B	46		63	17																	46	0
R1729	6016 OXFORD GREEN DR	1	B	46		62	16																	46	0
R1730	6008 OXFORD GREEN DR	1	B	46		61	15																	46	0
R1731	6000 OXFORD GREEN DR	1	B	46		60	14																	46	0
R1732	8105 BUCKSKIN LN	1	B	46		59	13																	46	0
R1733	5608 DEERBORN DR	1	B	46		61	15																	46	0
R1734	5604 DEERBORN DR	1	B	46		61	15																	46	0
R1735	8104 BUCKSKIN LN	1	B	46		58	12																	46	0
R1736A	8113 RHODES RD	1	B	46	49	62	13																	51	2
R1736B	8117 RHODES RD	1	B	46	48	61	13																	51	3
R1737A	8100 RHODES RD	1	B	46	47	63	16																	49	2
R1737B	8104 RHODES RD	1	B	46	48	62	14																	51	3
R1738A	8036 RHODES RD	1	B	46	51	58	7																	54	3
R1738B	8036 RHODES RD	1	B	46	49	59	10																	51	2
R1739A	8036 RHODES RD	1	B	46	51	61	10																	54	3
R1739B	8036 RHODES RD	1	B	46	49	59	10																	51	2
R1740	0 RHODES RD	1	B	46		60	14																	46	0
R1741A	0 RHODES RD	1	B	46		59	13																	46	0
R1741B	0 RHODES RD	1	B	46	46	58	12																	48	2
R1741C	0 RHODES RD	1	B	46	53	58	5																	56	3
R1742A	0 RHODES RD	1	B	46		61	15																	46	0
R1742B	0 RHODES RD	1	B	46		59	13																	46	0
R1743A	5417 LOWER CREEK CT	1	B	46	50	60	10																	52	2
R1743B	5413 LOWER CREEK CT	1	B	46		59	13																	46	0
R1744A	5405 LOWER CREEK CT	1	B	46		61	15																	46	0
R1744B	5409 LOWER CREEK CT	1	B	46		59	13																	46	0
R1745A	3801 DOESKIN DR	1	B	46		62	16					62	16											46	0
R1745B	3809 DOESKIN DR	1	B	46		61	15					60	14											46	0
R1745C	3820 DOESKIN DR	1	B	46		61	15					60	14											46	0
R1745D	3821 DOESKIN DR	1	B	46		59	13					58	12											46	0
R1745E	#N/A	1	B	46		57	11					56	10											46	0
R1745F	#N/A	1	B	46		57	11					56	10											46	0
R1745G	#N/A	1	B	46		55	9					54	8											46	0
R1745H	#N/A	1	B	46		57	11					56	10											46	0
R1745I	#N/A	1	B	46		59	13					58	12											46	0
R1746A	3732 SUNLAKE FARMS RD	1	B	46		62	16																	46	0
R1746B	3728 SUNLAKE FARMS RD	1	B	46		61	15																	46	0
R1747	3724 SUNLAKE FARMS RD	1	B	46		63	17					62	16											46	0

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3Noise levels reported if the traffic noise was dominant noise

Impact Analysis

Receptor	Street Address	Properties Represented	NAC Land Use Category	Noise Levels dB(A)																					
				2014	2012	2035																			
						Orange		Green		Mint		Red		Purple/Blue		Lilac		Teal		Brown		Tan		No Build	
				Measured Ambient	TNM Predicted Existing[3]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]
R1748	3717 SUNLAKE FARMS RD	1	B	46		63	17					63	17											46	0
R1749	8536 LAKE WHEELER RD	1	B	46	57	63	6																	59	2
R1750A	3912 BLUFFWIND DR	1	B	46								63	17											46	0
R1750B	3908 BLUFFWIND DR	1	B	46								64	18											46	0
R1751	3917 BLUFFWIND DR	1	B	46								64	18											46	0
R1752A	3709 WESTBURY LAKE DR	1	B	54								63	9											54	0
R1752B	3705 WESTBURY LAKE DR	1	B	54								64	10											54	0
R1753A	8720 LAKE WHEELER RD	1	B	46	54	66	12																	57	3
R1753B	8732 LAKE WHEELER RD	1	B	46	55	65	10																	57	2
R1754	8729 LAKE WHEELER RD	1	B	46	56	66	10																	58	2
R1755A	4920 TROTTER DR	1	B	54		64	10																	54	0
R1755B	4928 TROTTER DR	1	B	54		63	9																	54	0
R1756A	4936 TROTTER DR	1	B	54		66	12																	54	0
R1756B	4940 TROTTER DR	1	B	54		66	12																	54	0
R1757A	4944 TROTTER DR	1	B	54		65	11																	54	0
R1757B	4952 TROTTER DR	1	B	54		64	10																	54	0
R1758A	4953 TROTTER DR	1	B	54		66	12																	54	0
R1758B	4949 TROTTER DR	1	B	54		68	14																	54	0
R1758C	4957 TROTTER DR	1	B	54		64	10																	54	0
R1759	4800 WHITE POST DR	1	B	54		58	4																	54	0
R1760A	4808 WHITE POST DR	1	B	54		60	6																	54	0
R1760B	4804 WHITE POST DR	1	B	54		59	5																	54	0
R1761	4809 WHITE POST DR	1	B	54		60	6																	54	0
R1762A	4805 WHITE POST DR	1	B	54		58	4																	54	0
R1762B	4801 WHITE POST DR	1	B	54		58	4																	54	0
R1763	1128 ROLLING FARM DR	1	B	54		59	5																	54	0
R1764A	4801 CONTENDER DR	1	B	45		63	18									61	16							45	0
R1764B	4805 CONTENDER DR	1	B	45		61	16									60	15							45	0
R1765	4809 CONTENDER DR	1	B	45		60	15									59	14							45	0
R1766	8925 OREGON INLET CT	1	B	45		59	14									57	12							45	0
R1767A	8712 NEW RIVER CIR	1	B	45		60	15									57	12							45	0
R1767B	8708 NEW RIVER CIR	1	B	45		58	13									56	11							45	0
R1768	8709 NEW RIVER CIR	1	B	45		59	14									57	12							45	0
R1769	8928 CAROLINA MARLIN CT	1	B	45		58	13									56	11							45	0
R1770A	1013 DEER OAKS CT	1	B	46												53	7							46	0
R1770B	1017 DEER OAKS CT	1	B	46												58	12							46	0
R1771A	1012 DEER OAKS CT	1	B	46												63	17							46	0
R1771B	1008 DEER OAKS CT	1	B	46												63	17							46	0
R1771C	5209 AUTUMN FIELD DR	1	B	46												64	18							46	0
R1772A	1005 DEER OAKS CT	1	B	46												55	9							46	0
R1772B	1009 DEER OAKS CT	1	B	46												55	9							46	0
R1773A	1004 QUAIL OAKS CIR	1	B	46												58	12							46	0
R1773B	1012 QUAIL OAKS CIR	1	B	46												57	11							46	0
R1774A	5105 AUTUMN FIELD DR	1	B	46												57	11							48	2
R1774B	1005 QUAIL OAKS CIR	1	B	46												56	10							46	0
R1774C	1009 QUAIL OAKS CIR	1	B	46												56	10							46	0
R1775A	208 BOWLING FARM CT	1	B	46												64	18							46	0
R1775B	212 BOWLING FARM CT	1	B	46												63	17							46	0
R1776	216 BOWLING FARM CT	1	B	46												63	17							46	0
R1777A	9940 JOE LEACH RD	1	B	46												62	16							46	0
R1777B	9940 JOE LEACH RD	1	B	46												63	17							46	0
R1778A	10001 JOE LEACH RD	1	B	46												62	16							46	0
R1778B	9941 JOE LEACH RD	1	B	46												61	15							46	0
R1779	237 HUNTERS FARM DR	1	B	46												62	16							46	0
R1780A	921 SHANNONDALE DR	1	B	46		62	16									59	13							46	0
R1780B	925 SHANNONDALE DR	1	B	46		61	15									60	14							46	0
R1780C	929 SHANNONDALE DR	1	B	46		60	14									60	14							46	0
R1781A	1005 SHANNONDALE DR	1	B	46		57	11									61	15							46	0
R1781B	1013 SHANNONDALE DR	1	B	46		56	10									62	16							46	0
R1781C	10121 JOE LEACH RD	1	B	46		58	12									61	15							46	0
R1782A	10133 JOE LEACH RD	1	B	46		60	14									58	12							46	0
R1782B	1000 SHANNONDALE DR	1	B	46		59	13									59	13							46	0
R1783A	1010 SHANNONDALE DR	1	B	46		59	13									58	12							46	0

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Complete 540
Traffic Noise Analysis

Impact Analysis

Receptor	Street Address	Properties Represented	NAC Land Use Category	Noise Levels dB(A)																					
				2014	2012	2035																			
						Orange		Green		Mint		Red		Purple/Blue		Lilac		Teal		Brown		Tan		No Build	
				Measured Ambient	TNM Predicted Existing[3]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]
R1783B	1012 SHANNONDALE DR	1	B	46		58	12									59	13							46	0
R1783C	1004 SHANNONDALE DR	1	B	46		58	12									59	13							46	0
R1784A	1020 SHANNONDALE DR	1	B	46												61	15							46	0
R1784B	1016 SHANNONDALE DR	1	B	46												60	14							46	0
R1785A	1032 SHANNONDALE DR	1	B	46												62	16							46	0
R1785B	1028 SHANNONDALE DR	1	B	46												62	16							46	0
R1785C	1040 SHANNONDALE DR	1	B	46												62	16							46	0
R1786A	1104 SHANNONDALE DR	1	B	46												61	15							46	0
R1786B	1100 SHANNONDALE DR	1	B	46												61	15							46	0
R1787A	1108 SHANNONDALE DR	1	B	46												61	15							46	0
R1787B	10113 AQUA LN	1	B	46												61	15							46	0
R1788A	10113 AQUA LN	1	B	46												61	15							46	0
R1788B	10113 AQUA LN	1	B	46												62	16							46	0
R1789A	10113 AQUA LN	1	B	46												63	17							46	0
R1789B	10113 AQUA LN	1	B	46												64	18							46	0
R1790A	1021 BLUE RIVER FARM DR	1	B	46												63	17							46	0
R1790B	1025 BLUE RIVER FARM DR	1	B	46												63	17							46	0
R1790C	1029 BLUE RIVER FARM DR	1	B	46												62	16							46	0
R1791A	1033 BLUE RIVER FARM DR	1	B	46												62	16							46	0
R1791B	1041 BLUE RIVER FARM DR	1	B	46												61	15							46	0
R1792A	9009 HUNTERFOX CT	1	B	46												62	16							46	0
R1792B	1048 BLUE RIVER FARM DR	1	B	46												61	15							46	0
R1793A	9013 HUNTERFOX CT	1	B	46												63	17							46	0
R1793B	9017 HUNTERFOX CT	1	B	46												64	18							46	0
R1794A	1401 ROY AVERETTE DR	1	B	46												63	17							46	0
R1794B	1400 ROY AVERETTE DR	1	B	46												61	15							46	0
R1795A	1404 ROY AVERETTE DR	1	B	46												61	15							46	0
R1795B	1408 ROY AVERETTE DR	1	B	46												61	15							46	0
R1796A	1412 ROY AVERETTE DR	1	B	46												62	16							46	0
R1796B	1416 ROY AVERETTE DR	1	B	46												62	16							46	0
R1797	1420 ROY AVERETTE DR	1	B	46												62	16							46	0
R1798	900 OPEN FIELD DR	1	B	50		58	8																	50	0
R1799	6801 PAYTON VIEW DR	1	B	50		59	9																	50	0
R1800	6821 PAYTON VIEW DR	1	B	50		58	8																	50	0
R1801	5312 SERATHER CT	1	B	50		62	12																	50	0
R1802A	5313 SERATHER CT	1	B	50		65	15																	50	0
R1802B	5317 SERATHER CT	1	B	50		63	13																	50	0
R1803	5508 SIMMONS DR	1	B	50												61	11							50	0
R1804	1116 OLD MEMORIAL CIR	1	B	50												62	12							50	0
R1805	5500 QUAILS CALL CT	1	B	50												64	14							50	0
R1806A	5512 ROLLING FIELD DR	1	B	50												63	13							50	0
R1806B	5516 ROLLING FIELD DR	1	B	50												62	12							50	0
R1807	5508 ROLLING FIELD DR	1	B	50												62	12							50	0
R1808A	132 GRANTWOOD DR	1	B	55										63	8									55	0
R1808B	136 GRANTWOOD DR	1	B	55										63	8									55	0
R1809A	128 GRANTWOOD DR	1	B	55										62	7									55	0
R1809B	124 GRANTWOOD DR	1	B	55										62	7									55	0
R1809C	120 GRANTWOOD DR	1	B	55										62	7									55	0
R1810A	117 GRANTWOOD DR	1	B	55										64	9									55	0
R1810B	121 GRANTWOOD DR	1	B	55										65	10									55	0
R1810C	113 GRANTWOOD DR	1	B	55										64	9									55	0
R1811A	5108 HUNTLEY GROVE CT	1	B	54										60	6									54	0
R1811B	3404 PETTICOAT LN	1	B	54										60	6									54	0
R1812A	5105 HUNTLEY GROVE CT	1	B	54										65	11									54	0
R1812B	5109 HUNTLEY GROVE CT	1	B	54										66	12									54	0
R1813A	3309 PETTICOAT LN	1	B	54										64	10									54	0
R1813B	3401 PETTICOAT LN	1	B	54										62	8									54	0
R1813C	3301 PETTICOAT LN	1	B	54										66	12									54	0
R1814	4700 BENTCREEK DR	1	B	54										64	10									54	0
R1815A	4701 BENTCREEK DR	1	B	54										62	8									54	0
R1815B	4705 BENTCREEK DR	1	B	54										62	8									54	0
R1816A	4709 BENTCREEK DR	1	B	54										62	8									54	0
R1816B	4713 BENTCREEK DR	1	B	54										62	8									54	0

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Impact Analysis

Receptor	Street Address	Properties Represented	NAC Land Use Category	Noise Levels dB(A)																					
				2014	2012	2035																			
						Orange		Green		Mint		Red		Purple/Blue		Lilac		Teal		Brown		Tan		No Build	
				Measured Ambient	TNM Predicted Existing[3]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]
R1817A	4721 BENTCREEK DR	1	B	54										61	7									54	0
R1817B	4717 BENTCREEK DR	1	B	54										61	7									54	0
R1818A	4801 BENTCREEK DR	1	B	54										62	8									54	0
R1818B	4805 BENTCREEK DR	1	B	54										62	8									54	0
R1819	4809 BENTCREEK DR	1	B	54										60	6									54	0
R1820	5700 MULLIGAN WAY	1	B	54										62	8									54	0
R1821A	5701 MULLIGAN WAY	1	B	54										64	10									54	0
R1821B	5705 MULLIGAN WAY	1	B	54										62	8									54	0
R1822A	5704 WYSTERIA DR	1	B	54										62	8									54	0
R1822B	5700 WYSTERIA DR	1	B	54										62	8									54	0
R1823	1112 TYLER FARMS DR	1	B	52										60	8									52	0
R1824A	2409 PARKWAY DR	1	B	44								59	15											44	0
R1824B	2413 PARKWAY DR	1	B	44								59	15											44	0
R1825	2424 PARKWAY DR	1	B	44								58	14											44	0
R1826A	2201 WOODNELL DR	1	B	44								62	18											44	0
R1826B	7004 CEDRIC DR	1	B	44								61	17											44	0
R1827A	2204 WOODNELL DR	1	B	44								63	19											44	0
R1828	1605 BUCKINGHAM RD	1	B	49	64							67	3											64	0
R1829A	1312 TIMBER DR	1	B	49	61							67	6											62	1
R1829B	1402 TIMBER DR	1	B	49	57							67	10											57	0
R1830A	1308 TIMBER DR	1	B	49	54							67	13											55	1
R1830B	1310 TIMBER DR	1	B	49	60							67	7											61	1
R1831A	1304 TIMBER DR	1	B	49	60							67	7											61	1
R1831B	1306 TIMBER DR	1	B	49	60							67	7											60	0
R1832A	1302 TIMBER DR	1	B	49	63							66	3											63	0
R1832B	1300 TIMBER DR	1	B	49	64							67	3											65	1
R1833A	1605 TIMBER DR E	1	B	57								62	5											57	0
R1833B	1605 TIMBER DR E	1	B	57								63	6											57	0
R1833C	1605 TIMBER DR E	1	B	57	57							64	7											57	0
R1833D	1605 TIMBER DR E	1	B	57								63	6											57	0
R1833E	1605 TIMBER DR E	1	B	57	57							65	8											57	0
R1833F	1605 TIMBER DR E	1	B	57	58							65	7											57	-1
R1833G	1605 TIMBER DR E	1	B	57								63	6											57	0
R1833H	1605 TIMBER DR E	1	B	57								64	7											57	0
R1833I	1605 TIMBER DR E	1	B	57	57							65	8											57	0
R1833J	1605 TIMBER DR E	1	B	57								62	5											57	0
R1833K	1605 TIMBER DR E	1	B	57								63	6											57	0
R1833L	1605 TIMBER DR E	1	B	57								64	7											57	0
R1833M	1605 TIMBER DR E	1	B	57								63	6											57	0
R1833N	1605 TIMBER DR E	1	B	57								64	7											57	0
R1833O	1605 TIMBER DR E	1	B	57	57							65	8											57	0
R1833P	1605 TIMBER DR E	1	B	57								63	6											57	0
R1833Q	1605 TIMBER DR E	1	B	57								65	8											57	0
R1833R	1605 TIMBER DR E	1	B	57	57							65	8											57	0
R1833S	1605 TIMBER DR E	1	B	57								63	6											57	0
R1833T	1605 TIMBER DR E	1	B	57								65	8											57	0
R1833U	1605 TIMBER DR E	1	B	57	57							65	8											57	0
R1833V	1605 TIMBER DR E	1	B	57								63	6											57	0
R1833W	1605 TIMBER DR E	1	B	57								64	7											57	0
R1833X	1605 TIMBER DR E	1	B	57	57							65	8											57	0
R1834A	1605 TIMBER DR E	1	B	57								57	0											57	0
R1834B	1605 TIMBER DR E	1	B	57								59	2											57	0
R1834C	1605 TIMBER DR E	1	B	57								60	3											57	0
R1834D	1605 TIMBER DR E	1	B	57								57	0											57	0
R1834E	1605 TIMBER DR E	1	B	57								59	2											57	0
R1834F	1605 TIMBER DR E	1	B	57								60	3											57	0
R1834G	1605 TIMBER DR E	1	B	57								59	2											57	0
R1834H	1605 TIMBER DR E	1	B	57								60	3											57	0
R1834I	1605 TIMBER DR E	1	B	57								61	4											57	0
R1834J	1605 TIMBER DR E	1	B	57								61	4											58	1
R1834K	1605 TIMBER DR E	1	B	57	57							63	6											58	1
R1834L	1605 TIMBER DR E	1	B	57	58							64	6											57	-1
R1834M	1605 TIMBER DR E	1	B	57	57							64	7											60	3

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Complete 540
Traffic Noise Analysis

Impact Analysis

Receptor	Street Address	Properties Represented	NAC Land Use Category	Noise Levels dB(A)																					
				2014 Measured Ambient	2012 TNM Predicted Existing[3]	2035																			
						Orange		Green		Mint		Red		Purple/Blue		Lilac		Teal		Brown		Tan		No Build	
						Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]
R1834N	1605 TIMBER DR E	1	B	57	59							65	6											60	1
R1834O	1605 TIMBER DR E	1	B	57	60							67	7											60	0
R1834P	1605 TIMBER DR E	1	B	57	57							63	6											59	2
R1834Q	1605 TIMBER DR E	1	B	57	58							65	7											59	1
R1834R	1605 TIMBER DR E	1	B	57	59							66	7											59	0
R1834S	1605 TIMBER DR E	1	B	57								63	6											58	1
R1834T	1605 TIMBER DR E	1	B	57	58							65	7											58	0
R1834U	1605 TIMBER DR E	1	B	57	59							66	7											58	-1
R1834V	1605 TIMBER DR E	1	B	57								63	6											58	1
R1834W	1605 TIMBER DR E	1	B	57	57							65	8											58	1
R1834X	1605 TIMBER DR E	1	B	57	58							66	8											58	0
R1835A	1605 TIMBER DR E	1	B	57								57	0											57	0
R1835B	1605 TIMBER DR E	1	B	57								59	2											57	0
R1835C	1605 TIMBER DR E	1	B	57								61	4											57	0
R1835D	1605 TIMBER DR E	1	B	57								56	-1											57	0
R1835E	1605 TIMBER DR E	1	B	57								58	1											57	0
R1835F	1605 TIMBER DR E	1	B	57								59	2											57	0
R1835G	1605 TIMBER DR E	1	B	57								56	-1											57	0
R1835H	1605 TIMBER DR E	1	B	57								58	1											57	0
R1835I	1605 TIMBER DR E	1	B	57								59	2											57	0
R1835J	1605 TIMBER DR E	1	B	57								58	1											57	0
R1835K	1605 TIMBER DR E	1	B	57								59	2											57	0
R1835L	1605 TIMBER DR E	1	B	57								60	3											57	0
R1835M	1605 TIMBER DR E	1	B	57								57	0											57	0
R1835N	1605 TIMBER DR E	1	B	57								59	2											57	0
R1835O	1605 TIMBER DR E	1	B	57								60	3											57	0
R1835P	1605 TIMBER DR E	1	B	57								57	0											57	0
R1835Q	1605 TIMBER DR E	1	B	57								58	1											57	0
R1835R	1605 TIMBER DR E	1	B	57								60	3											57	0
R1835S	1605 TIMBER DR E	1	B	57								58	1											57	0
R1835T	1605 TIMBER DR E	1	B	57								59	2											57	0
R1835U	1605 TIMBER DR E	1	B	57								60	3											57	0
R1835V	1605 TIMBER DR E	1	B	57								59	2											57	0
R1835W	1605 TIMBER DR E	1	B	57								60	3											57	0
R1835X	1605 TIMBER DR E	1	B	57								62	5											57	0
R1836A	300 ABBERLY CREST BLVD	1	B	57								60	3											57	0
R1836B	300 ABBERLY CREST BLVD	1	B	57								62	5											57	0
R1836C	300 ABBERLY CREST BLVD	1	B	57								63	6											57	0
R1836D	300 ABBERLY CREST BLVD	1	B	57								59	2											57	0
R1836E	300 ABBERLY CREST BLVD	1	B	57								60	3											57	0
R1836F	300 ABBERLY CREST BLVD	1	B	57								62	5											57	0
R1836G	300 ABBERLY CREST BLVD	1	B	57								58	1											57	0
R1836H	300 ABBERLY CREST BLVD	1	B	57								60	3											57	0
R1836I	300 ABBERLY CREST BLVD	1	B	57								61	4											57	0
R1836J	300 ABBERLY CREST BLVD	1	B	57								58	1											57	0
R1836K	300 ABBERLY CREST BLVD	1	B	57								60	3											57	0
R1836L	300 ABBERLY CREST BLVD	1	B	57								61	4											57	0
R1836M	300 ABBERLY CREST BLVD	1	B	57								59	2											57	0
R1836N	300 ABBERLY CREST BLVD	1	B	57								60	3											57	0
R1836O	300 ABBERLY CREST BLVD	1	B	57								61	4											57	0
R1836P	300 ABBERLY CREST BLVD	1	B	57								59	2											57	0
R1836Q	300 ABBERLY CREST BLVD	1	B	57								60	3											57	0
R1836R	300 ABBERLY CREST BLVD	1	B	57								61	4											57	0
R1836S	300 ABBERLY CREST BLVD	1	B	57								60	3											57	0
R1836T	300 ABBERLY CREST BLVD	1	B	57								61	4											57	0
R1836U	300 ABBERLY CREST BLVD	1	B	57								62	5											57	0
R1836V	300 ABBERLY CREST BLVD	1	B	57								60	3											57	0
R1836W	300 ABBERLY CREST BLVD	1	B	57								62	5											57	0
R1836X	300 ABBERLY CREST BLVD	1	B	57	57							63	6											57	0
R1837A	300 ABBERLY CREST BLVD	1	B	57								61	4											58	1
R1837B	300 ABBERLY CREST BLVD	1	B	57	57							63	6											58	1
R1837C	300 ABBERLY CREST BLVD	1	B	57	59							65	6											58	-1
R1837D	300 ABBERLY CREST BLVD	1	B	57	57							62	5											59	2

1Noise levels highlighted in red are levels above the Noise Abatement Criteria.
2Noise level increases highlighted in red are above the substantial noise level increase criteria.
3Noise levels reported if the traffic noise was dominant noise

Complete 540
Traffic Noise Analysis

Impact Analysis

Receptor	Street Address	Properties Represented	NAC Land Use Category	Noise Levels dB(A)																					
				2014 Measured Ambient	2012 TNM Predicted Existing[3]	2035																			
						Orange		Green		Mint		Red		Purple/Blue		Lilac		Teal		Brown		Tan		No Build	
						Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]
R1837E	300 ABBERLY CREST BLVD	1	B	57	59							64	5											59	0
R1837F	300 ABBERLY CREST BLVD	1	B	57	60							66	6											59	-1
R1837G	300 ABBERLY CREST BLVD	1	B	57	58							63	5											60	2
R1837H	300 ABBERLY CREST BLVD	1	B	57	60							66	6											60	0
R1837I	300 ABBERLY CREST BLVD	1	B	57	62							67	5											60	-2
R1837J	300 ABBERLY CREST BLVD	1	B	57	59							64	5											61	2
R1837K	300 ABBERLY CREST BLVD	1	B	57	61							67	6											61	0
R1837L	300 ABBERLY CREST BLVD	1	B	57	63							69	6											61	-2
R1837M	300 ABBERLY CREST BLVD	1	B	57								58	1											57	0
R1837N	300 ABBERLY CREST BLVD	1	B	57								61	4											57	0
R1837O	300 ABBERLY CREST BLVD	1	B	57	58							62	4											57	-1
R1837P	300 ABBERLY CREST BLVD	1	B	57								57	0											57	0
R1837Q	300 ABBERLY CREST BLVD	1	B	57								59	2											57	0
R1837R	300 ABBERLY CREST BLVD	1	B	57	57							61	4											57	0
R1837S	300 ABBERLY CREST BLVD	1	B	57								56	-1											57	0
R1837T	300 ABBERLY CREST BLVD	1	B	57								59	2											57	0
R1837U	300 ABBERLY CREST BLVD	1	B	57								61	4											57	0
R1837V	300 ABBERLY CREST BLVD	1	B	57								56	-1											57	0
R1837W	300 ABBERLY CREST BLVD	1	B	57								58	1											57	0
R1837X	300 ABBERLY CREST BLVD	1	B	57								60	3											57	0
R1839A	300 ABBERLY CREST BLVD	1	B	57								54	-3											57	0
R1839B	300 ABBERLY CREST BLVD	1	B	57								55	-2											57	0
R1839C	300 ABBERLY CREST BLVD	1	B	57								57	0											57	0
R1839D	300 ABBERLY CREST BLVD	1	B	57								54	-3											57	0
R1839E	300 ABBERLY CREST BLVD	1	B	57								56	-1											57	0
R1839F	300 ABBERLY CREST BLVD	1	B	57								59	2											57	0
R1839G	300 ABBERLY CREST BLVD	1	B	57								55	-2											57	0
R1839H	300 ABBERLY CREST BLVD	1	B	57								58	1											57	0
R1839I	300 ABBERLY CREST BLVD	1	B	57								61	4											57	0
R1839J	300 ABBERLY CREST BLVD	1	B	57								57	0											57	0
R1839K	300 ABBERLY CREST BLVD	1	B	57								59	2											57	0
R1839L	300 ABBERLY CREST BLVD	1	B	57								62	5											57	0
R1839M	300 ABBERLY CREST BLVD	1	B	57	58							61	3											60	2
R1839N	300 ABBERLY CREST BLVD	1	B	57	59							64	5											60	1
R1839O	300 ABBERLY CREST BLVD	1	B	57	61							65	4											60	-1
R1839P	300 ABBERLY CREST BLVD	1	B	57	58							62	4											60	2
R1839Q	300 ABBERLY CREST BLVD	1	B	57	60							64	4											60	0
R1839R	300 ABBERLY CREST BLVD	1	B	57	61							66	5											60	-1
R1839S	300 ABBERLY CREST BLVD	1	B	57	57							62	5											59	2
R1839T	300 ABBERLY CREST BLVD	1	B	57	59							64	5											59	0
R1839U	300 ABBERLY CREST BLVD	1	B	57	60							66	6											59	-1
R1839V	300 ABBERLY CREST BLVD	1	B	57								61	4											59	2
R1839W	300 ABBERLY CREST BLVD	1	B	57	58							64	6											59	1
R1839X	300 ABBERLY CREST BLVD	1	B	57	59							65	6											59	0
R1840	300 ABBERLY CREST BLVD	RECREATIONAL	C	57								57	0											57	0
R1841A	300 ABBERLY CREST BLVD	1	B	57	59							63	4											61	2
R1841B	300 ABBERLY CREST BLVD	1	B	57	61							65	4											61	0
R1841C	300 ABBERLY CREST BLVD	1	B	57	62							67	5											61	-1
R1841D	300 ABBERLY CREST BLVD	1	B	57	60							64	4											62	2
R1841E	300 ABBERLY CREST BLVD	1	B	57	61							66	5											62	1
R1841F	300 ABBERLY CREST BLVD	1	B	57	63							68	5											62	-1
R1841G	300 ABBERLY CREST BLVD	1	B	57	60							64	4											63	3
R1841H	300 ABBERLY CREST BLVD	1	B	57	62							67	5											63	1
R1841I	300 ABBERLY CREST BLVD	1	B	57	63							69	6											63	0
R1841J	300 ABBERLY CREST BLVD	1	B	57	61							65	4											63	2
R1841K	300 ABBERLY CREST BLVD	1	B	57	63							68	5											63	0
R1841L	300 ABBERLY CREST BLVD	1	B	57	64							70	6											63	-1
R1841M	300 ABBERLY CREST BLVD	1	B	57	59							64	5											61	2
R1841N	300 ABBERLY CREST BLVD	1	B	57	61							67	6											61	0
R1841O	300 ABBERLY CREST BLVD	1	B	57	62							68	6											61	-1
R1841P	300 ABBERLY CREST BLVD	1	B	57								62	5											59	2
R1841Q	300 ABBERLY CREST BLVD	1	B	57	58							64	6											59	1
R1841R	300 ABBERLY CREST BLVD	1	B	57	60							65	5											59	-1

1Noise levels highlighted in red are levels above the Noise Abatement Criteria.
2Noise level increases highlighted in red are above the substantial noise level increase criteria.
3Noise levels reported if the traffic noise was dominant noise

Complete 540
Traffic Noise Analysis

Impact Analysis

Receptor	Street Address	Properties Represented	NAC Land Use Category	Noise Levels dB(A)																					
				2014 Measured Ambient	2012 TNM Predicted Existing[3]	2035																			
						Orange		Green		Mint		Red		Purple/Blue		Lilac		Teal		Brown		Tan		No Build	
						Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]
R1841S	300 ABBERLY CREST BLVD	1	B	57								60	3											57	0
R1841T	300 ABBERLY CREST BLVD	1	B	57								62	5											57	0
R1841U	300 ABBERLY CREST BLVD	1	B	57	58							64	6											57	-1
R1841V	300 ABBERLY CREST BLVD	1	B	57								58	1											57	0
R1841W	300 ABBERLY CREST BLVD	1	B	57								60	3											57	0
R1841X	300 ABBERLY CREST BLVD	1	B	57								62	5											57	0
R1842	4425 HICKS RD	1	B	49	59	64	5					64	5			65	6							61	2
R1843A	4302 HICKS RD	1	B	49	62	67	5					68	6			68	6							64	2
R1843B	4302 HICKS RD	1	B	49	61	66	5					67	6			67	6							63	2
R1844A	4302 HICKS RD	1	B	49	60	65	5					66	6			66	6							62	2
R1844B	4302 HICKS RD	1	B	49	59	63	4					64	5			65	6							61	2
R1845A	4524 BUSHY BRANCH DR	1	B	49												62	13							51	2
R1845B	4528 BUSHY BRANCH DR	1	B	49	49											62	13							51	2
R1846A	4520 BUSHY BRANCH DR	1	B	49												61	12							51	2
R1846B	4516 BUSHY BRANCH DR	1	B	49												62	13							51	2
R1847A	4517 BUSHY BRANCH DR	1	B	49												62	13							50	1
R1847B	4513 BUSHY BRANCH DR	1	B	49												62	13							50	1
R1847C	4521 BUSHY BRANCH DR	1	B	49												63	14							50	1
R1848	2512 E GARNER RD	1	B	57								63	6											57	0
R1849A	3513 DEER TRACE LN	1	B	51																59	8	58	7	51	0
R1849B	3517 DEER TRACE LN	1	B	51																58	7	58	7	51	0
R1850A	3501 DEER TRACE LN	1	B	51																60	9	59	8	51	0
R1850B	3509 DEER TRACE LN	1	B	51																60	9	59	8	51	0
R1851A	3437 DEER TRACE LN	1	B	51																62	11	61	10	51	0
R1851B	3441 DEER TRACE LN	1	B	51																62	11	61	10	51	0
R1851C	3337 STONEY CREEK DR	1	B	51																59	8	59	8	51	0
R1851D	3333 STONEY CREEK DR	1	B	51																58	7	58	7	51	0
R1851E	3432 DEER TRACE LN	1	B	51																59	8	58	7	51	0
R1851F	3435 DEER TRACE LN	1	B	51																62	11	62	11	51	0
R1851G	3429 DEER TRACE LN	1	B	51																61	10	61	10	51	0
R1851H	3425 DEER TRACE LN	1	B	51																61	10	61	10	51	0
R1852A	2805 HODGE RD	1	B	56				66	10															56	0
R1852B	2805 HODGE RD	1	B	56				64	8															56	0
R1853A	2805 HODGE RD	1	B	56				66	10															56	0
R1853B	2805 HODGE RD	1	B	56				67	11															56	0
R1854A	2805 HODGE RD	1	B	56				65	9															56	0
R1854B	2805 HODGE RD	1	B	56				66	10															56	0
R1855A	7600 POOLE RD	1	B	56				64	8															56	0
R1855B	7600 POOLE RD	1	B	56				64	8															56	0
R1855C	7600 POOLE RD	1	B	56				65	9															56	0
R1856A	7600 POOLE RD	1	B	56				63	7															56	0
R1856B	7600 POOLE RD	1	B	56				64	8															56	0
R1856C	7600 POOLE RD	1	B	56				63	7															56	0
R1857A	0 HODGE RD	1	B	56				68	12															56	0
R1857B	0 HODGE RD	1	B	56				68	12															56	0
R1857C	0 HODGE RD	1	B	56				68	12															56	0
R1858A	0 HODGE RD	1	B	56				68	12															56	0
R1858B	0 HODGE RD	1	B	56				68	12															56	0
R1858C	0 HODGE RD	1	B	56				67	11															56	0
R1859A	0 HODGE RD	1	B	56				66	10															56	0
R1859B	0 HODGE RD	1	B	56				67	11															56	0
R1859C	0 HODGE RD	1	B	56				68	12															56	0
R1859D	0 HODGE RD	1	B	56				67	11															56	0
R1860A	3604 KEMP DR	1	B	56				64	8															56	0
R1860B	3600 KEMP DR	1	B	56				63	7															56	0
R1860C	3608 KEMP DR	1	B	56				65	9															56	0
R1861	3609 KEMP DR	1	B	56				64	8															56	0
R1862	210 GOWER CIR	1	B	57	60			65	5															61	1
R1863A	103 SHOALS LN	1	B	52								63	11											52	0
R1863B	105 SHOALS LN	1	B	52								64	12											52	0
R1863C	101 SHOALS LN	1	B	52								63	11											52	0
R1864A	901 ATCHISON ST	1	B	52								64	12											52	0
R1864B	102 SHOALS LN	1	B	52								64	12											52	0

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Complete 540
Traffic Noise Analysis

Impact Analysis

Receptor	Street Address	Properties Represented	NAC Land Use Category	Noise Levels dB(A)																					
				2014 Measured Ambient	2012 TNM Predicted Existing[3]	2035																			
						Orange		Green		Mint		Red		Purple/Blue		Lilac		Teal		Brown		Tan		No Build	
						Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]
R1865A	1003 ATCHISON ST	1	B	52								64	12											52	0
R1865B	1001 ATCHISON ST	1	B	52								64	12											52	0
R1865C	903 ATCHISON ST	1	B	52								64	12											52	0
R1866	236 EASY WIND LN	1	B	52								64	12											52	0
R1867	3609 GRIFFICE MILL RD	1	B	51																		63	12	51	0
R1868A	3608 GRIFFICE MILL RD	1	B	51																		61	10	51	0
R1868B	3604 GRIFFICE MILL RD	1	B	51																		61	10	51	0
R1869A	3512 GRIFFICE MILL RD	1	B	51						59	8											61	10	51	0
R1869B	3508 GRIFFICE MILL RD	1	B	51						59	8											61	10	51	0
R1870A	3504 GRIFFICE MILL RD	1	B	51						59	8											61	10	51	0
R1870B	3500 GRIFFICE MILL RD	1	B	51						60	9											61	10	51	0
R1871A	2805 HODGE RD	1	B	56				63	7															56	0
R1871B	2805 HODGE RD	1	B	56				61	5															56	0
R1872A	2805 HODGE RD	1	B	56				63	7															56	0
R1872B	2805 HODGE RD	1	B	56				62	6															56	0
R1873A	2805 HODGE RD	1	B	56				64	8															56	0
R1873B	2805 HODGE RD	1	B	56				62	6															56	0
R1874A	2805 HODGE RD	1	B	56				63	7															56	0
R1874B	2805 HODGE RD	1	B	56				62	6															56	0
R1875A	0 HODGE RD	1	B	56				61	5															56	0
R1875B	0 HODGE RD	1	B	56				62	6															56	0
R1876A	0 HODGE RD	1	B	56				62	6															56	0
R1876B	0 HODGE RD	1	B	56				63	7															56	0
R1877A	0 HODGE RD	1	B	56				64	8															56	0
R1877B	0 HODGE RD	1	B	56				65	9															56	0
R1877C	0 HODGE RD	1	B	56				65	9															56	0
R1878A	0 HODGE RD	1	B	56				65	9															56	0
R1878B	0 HODGE RD	1	B	56				66	10															56	0
R1878C	0 HODGE RD	1	B	56				66	10															56	0
R1879A	0 HODGE RD	1	B	56				67	11															56	0
R1879B	0 HODGE RD	1	B	56				66	10															56	0
R1879C	0 HODGE RD	1	B	56				65	9															56	0
R1879D	0 HODGE RD	1	B	56				66	10															56	0
R1880A	0 HODGE RD	1	B	56				65	9															56	0
R1880B	0 HODGE RD	1	B	56				65	9															56	0
R1881A	207 GOWER CIR	1	B	56	58			63	5															59	1
R1881B	209 GOWER CIR	1	B	56	57			62	5															58	1
R1882A	212 GOWER CIR	1	B	56	58			63	5															59	1
R1882B	211 GOWER CIR	1	B	56	57			62	5															58	1
R1883A	7331 POOLE RD	1	B	56				62	6															56	0
R1883B	7331 POOLE RD	1	B	56				62	6															56	0
R1883C	7331 POOLE RD	1	B	56				64	8															56	0
R1884A	1020 QUAIL OAKS CIR	1	B	46												57	11							46	0
R1884B	1100 QUAIL OAKS CIR	1	B	46												57	11							46	0
R1885A	1108 QUAIL OAKS CIR	1	B	46												57	11							46	0
R1885B	1104 QUAIL OAKS CIR	1	B	46												57	11							46	0
R1886A	9916 HUNTWYCK DR	1	B	46		56	10									69	23							46	0
R1886B	9920 HUNTWYCK DR	1	B	46		57	11									72	26							46	0
R1887A	9908 HUNTWYCK DR	1	B	46												61	15							46	0
R1887B	9904 HUNTWYCK DR	1	B	46												60	14							46	0
R1888	104 JONESBORO CT	1	B	46												58	12							46	0
R1889	9909 HUNTWYCK DR	1	B	46												62	16							46	0
R1890	9905 HUNTWYCK DR	1	B	46												61	15							46	0
R1891A	9904 JOE LEACH RD	1	B	46												60	14							46	0
R1891B	9900 JOE LEACH RD	1	B	46												59	13							46	0
R1891C	9916 JOE LEACH RD	1	B	46												60	14							46	0
R1892A	200 BOWLING FARM CT	1	B	46												65	19							46	0
R1892B	204 BOWLING FARM CT	1	B	46												65	19							46	0
R1892C	201 BOWLING FARM CT	1	B	46												63	17							46	0
R1893A	209 BOWLING FARM CT	1	B	46												61	15							46	0
R1893B	205 BOWLING FARM CT	1	B	46												62	16							46	0
R1894	9932 JOE LEACH RD	1	B	46												60	14							46	0
R1895	9936 JOE LEACH RD	1	B	46												61	15							46	0

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3Noise levels reported if the traffic noise was dominant noise

Impact Analysis

Receptor	Street Address	Properties Represented	NAC Land Use Category	Noise Levels dB(A)																					
				2014 Measured Ambient	2012 TNM Predicted Existing[3]	2035																			
						Orange		Green		Mint		Red		Purple/Blue		Lilac		Teal		Brown		Tan		No Build	
						Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]
R1896A	9933 JOE LEACH RD	1	B	46												59	13							46	0
R1896B	9925 JOE LEACH RD	1	B	46												58	12							46	0
R1897	228 BOWLING FARM CT	1	B	46												60	14							46	0
R1898	232 BOWLING FARM CT	1	B	46												59	13							46	0
R1899A	9013 BRITT RIDGE CT	1	B	46												60	14							46	0
R1899B	9009 BRITT RIDGE CT	1	B	46												61	15							46	0
R1899C	9017 BRITT RIDGE CT	1	B	46												59	13							46	0
R1900A	9008 BRITT RIDGE CT	1	B	46												60	14							46	0
R1900B	9012 BRITT RIDGE CT	1	B	46												59	13							46	0
R1901A	1049 BLUE RIVER FARM DR	1	B	46												60	14							46	0
R1901B	1053 BLUE RIVER FARM DR	1	B	46												59	13							46	0
R1901C	1052 BLUE RIVER FARM DR	1	B	46												59	13							46	0
R1902A	1605 TIMBER DR E	1	B	57								62	5											57	0
R1902B	1605 TIMBER DR E	1	B	57								63	6											57	0
R1902C	1605 TIMBER DR E	1	B	57	57							64	7											57	0
R1902D	1605 TIMBER DR E	1	B	57								62	5											57	0
R1902E	1605 TIMBER DR E	1	B	57								63	6											57	0
R1902F	1605 TIMBER DR E	1	B	57	57							64	7											57	0
R1902G	1605 TIMBER DR E	1	B	57								62	5											57	0
R1902H	1605 TIMBER DR E	1	B	57								63	6											57	0
R1902I	1605 TIMBER DR E	1	B	57								64	7											57	0
R1902J	1605 TIMBER DR E	1	B	57								62	5											57	0
R1902K	1605 TIMBER DR E	1	B	57								63	6											57	0
R1902L	1605 TIMBER DR E	1	B	57								64	7											57	0
R1902M	1605 TIMBER DR E	1	B	57								62	5											57	0
R1902N	1605 TIMBER DR E	1	B	57								63	6											57	0
R1902O	1605 TIMBER DR E	1	B	57								64	7											57	0
R1902P	1605 TIMBER DR E	1	B	57								62	5											57	0
R1902Q	1605 TIMBER DR E	1	B	57								63	6											57	0
R1902R	1605 TIMBER DR E	1	B	57								64	7											57	0
R1902S	1605 TIMBER DR E	1	B	57								62	5											57	0
R1902T	1605 TIMBER DR E	1	B	57								63	6											57	0
R1902U	1605 TIMBER DR E	1	B	57								64	7											57	0
R1902V	1605 TIMBER DR E	1	B	57								61	4											57	0
R1902W	1605 TIMBER DR E	1	B	57								63	6											57	0
R1902X	1605 TIMBER DR E	1	B	57								64	7											57	0
R1903A	1605 TIMBER DR E	1	B	57								60	3											57	0
R1903B	1605 TIMBER DR E	1	B	57								62	5											57	0
R1903C	1605 TIMBER DR E	1	B	57								62	5											57	0
R1903D	1605 TIMBER DR E	1	B	57								60	3											57	0
R1903E	1605 TIMBER DR E	1	B	57								61	4											57	0
R1903F	1605 TIMBER DR E	1	B	57								62	5											57	0
R1903G	1605 TIMBER DR E	1	B	57								60	3											57	0
R1903H	1605 TIMBER DR E	1	B	57								61	4											57	0
R1903I	1605 TIMBER DR E	1	B	57								62	5											57	0
R1903J	1605 TIMBER DR E	1	B	57								60	3											57	0
R1903K	1605 TIMBER DR E	1	B	57								61	4											57	0
R1903L	1605 TIMBER DR E	1	B	57								62	5											57	0
R1903M	1605 TIMBER DR E	1	B	57								62	5											57	0
R1903N	1605 TIMBER DR E	1	B	57								63	6											57	0
R1903O	1605 TIMBER DR E	1	B	57	57							64	7											57	0
R1903P	1605 TIMBER DR E	1	B	57								61	4											57	0
R1903Q	1605 TIMBER DR E	1	B	57								62	5											57	0
R1903R	1605 TIMBER DR E	1	B	57								63	6											57	0
R1903S	1605 TIMBER DR E	1	B	57								60	3											57	0
R1903T	1605 TIMBER DR E	1	B	57								61	4											57	0
R1903U	1605 TIMBER DR E	1	B	57								63	6											57	0
R1903V	1605 TIMBER DR E	1	B	57								60	3											57	0
R1903W	1605 TIMBER DR E	1	B	57								61	4											57	0
R1903X	1605 TIMBER DR E	1	B	57								62	5											57	0
R1904	1605 TIMBER DR E	RECREATIONAL	C	57								60	3											57	0
R1905A	1605 TIMBER DR E	1	B	57								62	5											57	0
R1905B	1605 TIMBER DR E	1	B	57								63	6											57	0

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3Noise levels reported if the traffic noise was dominant noise

Impact Analysis

Receptor	Street Address	Properties Represented	NAC Land Use Category	Noise Levels dB(A)																					
				2014 Measured Ambient	2012 TNM Predicted Existing[3]	2035																			
						Orange		Green		Mint		Red		Purple/Blue		Lilac		Teal		Brown		Tan		No Build	
						Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]
R1905C	1605 TIMBER DR E	1	B	57	58							64	6											57	-1
R1905D	1605 TIMBER DR E	1	B	57								61	4											57	0
R1905E	1605 TIMBER DR E	1	B	57								62	5											57	0
R1905F	1605 TIMBER DR E	1	B	57	57							63	6											57	0
R1905G	1605 TIMBER DR E	1	B	57								60	3											57	0
R1905H	1605 TIMBER DR E	1	B	57								62	5											57	0
R1905I	1605 TIMBER DR E	1	B	57								63	6											57	0
R1905J	1605 TIMBER DR E	1	B	57								60	3											57	0
R1905K	1605 TIMBER DR E	1	B	57								61	4											57	0
R1905L	1605 TIMBER DR E	1	B	57								62	5											57	0
R1905M	1605 TIMBER DR E	1	B	57								60	3											57	0
R1905N	1605 TIMBER DR E	1	B	57								61	4											57	0
R1905O	1605 TIMBER DR E	1	B	57								62	5											57	0
R1905P	1605 TIMBER DR E	1	B	57								60	3											57	0
R1905Q	1605 TIMBER DR E	1	B	57								61	4											57	0
R1905R	1605 TIMBER DR E	1	B	57								62	5											57	0
R1905S	1605 TIMBER DR E	1	B	57								60	3											57	0
R1905T	1605 TIMBER DR E	1	B	57								62	5											57	0
R1905U	1605 TIMBER DR E	1	B	57								63	6											57	0
R1905V	1605 TIMBER DR E	1	B	57								61	4											57	0
R1905W	1605 TIMBER DR E	1	B	57								62	5											57	0
R1905X	1605 TIMBER DR E	1	B	57	57							64	7											57	0
R1906A	1605 TIMBER DR E	1	B	57								58	1											57	0
R1906B	1605 TIMBER DR E	1	B	57								60	3											57	0
R1906C	1605 TIMBER DR E	1	B	57								60	3											57	0
R1906D	1605 TIMBER DR E	1	B	57								58	1											57	0
R1906E	1605 TIMBER DR E	1	B	57								59	2											57	0
R1906F	1605 TIMBER DR E	1	B	57								60	3											57	0
R1906G	1605 TIMBER DR E	1	B	57								57	0											57	0
R1906H	1605 TIMBER DR E	1	B	57								59	2											57	0
R1906I	1605 TIMBER DR E	1	B	57								59	2											57	0
R1906J	1605 TIMBER DR E	1	B	57								57	0											57	0
R1906K	1605 TIMBER DR E	1	B	57								58	1											57	0
R1906L	1605 TIMBER DR E	1	B	57								59	2											57	0
R1906M	1605 TIMBER DR E	1	B	57								57	0											57	0
R1906N	1605 TIMBER DR E	1	B	57								58	1											57	0
R1906O	1605 TIMBER DR E	1	B	57								59	2											57	0
R1906P	1605 TIMBER DR E	1	B	57								57	0											57	0
R1906Q	1605 TIMBER DR E	1	B	57								58	1											57	0
R1906R	1605 TIMBER DR E	1	B	57								59	2											57	0
R1906S	1605 TIMBER DR E	1	B	57								58	1											57	0
R1906T	1605 TIMBER DR E	1	B	57								59	2											57	0
R1906U	1605 TIMBER DR E	1	B	57								60	3											57	0
R1906V	1605 TIMBER DR E	1	B	57								58	1											57	0
R1906W	1605 TIMBER DR E	1	B	57								59	2											57	0
R1906X	1605 TIMBER DR E	1	B	57								60	3											57	0
R1907A	1605 TIMBER DR E	1	B	57								58	1											57	0
R1907B	1605 TIMBER DR E	1	B	57								59	2											57	0
R1907C	1605 TIMBER DR E	1	B	57								60	3											57	0
R1907D	1605 TIMBER DR E	1	B	57								58	1											57	0
R1907E	1605 TIMBER DR E	1	B	57								60	3											57	0
R1907F	1605 TIMBER DR E	1	B	57								61	4											57	0
R1907G	1605 TIMBER DR E	1	B	57								58	1											57	0
R1907H	1605 TIMBER DR E	1	B	57								60	3											57	0
R1907I	1605 TIMBER DR E	1	B	57								61	4											57	0
R1907J	1605 TIMBER DR E	1	B	57								58	1											57	0
R1907K	1605 TIMBER DR E	1	B	57								59	2											57	0
R1907L	1605 TIMBER DR E	1	B	57								61	4											57	0
R1907M	1605 TIMBER DR E	1	B	57								57	0											57	0
R1907N	1605 TIMBER DR E	1	B	57								59	2											57	0
R1907O	1605 TIMBER DR E	1	B	57								60	3											57	0
R1907P	1605 TIMBER DR E	1	B	57								58	1											57	0
R1907Q	1605 TIMBER DR E	1	B	57								59	2											57	0

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3Noise levels reported if the traffic noise was dominant noise

Impact Analysis

Receptor	Street Address	Properties Represented	NAC Land Use Category	Noise Levels dB(A)																					
				2014 Measured Ambient	2012 TNM Predicted Existing[3]	2035																			
						Orange		Green		Mint		Red		Purple/Blue		Lilac		Teal		Brown		Tan		No Build	
						Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]
R1907R	1605 TIMBER DR E	1	B	57								60	3											57	0
R1907S	1605 TIMBER DR E	1	B	57								58	1											57	0
R1907T	1605 TIMBER DR E	1	B	57								59	2											57	0
R1907U	1605 TIMBER DR E	1	B	57								60	3											57	0
R1907V	1605 TIMBER DR E	1	B	57								57	0											57	0
R1907W	1605 TIMBER DR E	1	B	57								59	2											57	0
R1907X	1605 TIMBER DR E	1	B	57								60	3											57	0
R1908A	300 ABBERLY CREST BLVD	1	B	57								58	1											57	0
R1908B	300 ABBERLY CREST BLVD	1	B	57								60	3											57	0
R1908C	300 ABBERLY CREST BLVD	1	B	57								61	4											57	0
R1908D	300 ABBERLY CREST BLVD	1	B	57								58	1											57	0
R1908E	300 ABBERLY CREST BLVD	1	B	57								60	3											57	0
R1908F	300 ABBERLY CREST BLVD	1	B	57								61	4											57	0
R1908G	300 ABBERLY CREST BLVD	1	B	57								58	1											57	0
R1908H	300 ABBERLY CREST BLVD	1	B	57								60	3											57	0
R1908I	300 ABBERLY CREST BLVD	1	B	57								61	4											57	0
R1908J	300 ABBERLY CREST BLVD	1	B	57								58	1											57	0
R1908K	300 ABBERLY CREST BLVD	1	B	57								59	2											57	0
R1908L	300 ABBERLY CREST BLVD	1	B	57								60	3											57	0
R1908M	300 ABBERLY CREST BLVD	1	B	57								58	1											57	0
R1908N	300 ABBERLY CREST BLVD	1	B	57								59	2											57	0
R1908O	300 ABBERLY CREST BLVD	1	B	57								60	3											57	0
R1908P	300 ABBERLY CREST BLVD	1	B	57								58	1											57	0
R1908Q	300 ABBERLY CREST BLVD	1	B	57								60	3											57	0
R1908R	300 ABBERLY CREST BLVD	1	B	57								61	4											57	0
R1908S	300 ABBERLY CREST BLVD	1	B	57								59	2											57	0
R1908T	300 ABBERLY CREST BLVD	1	B	57								60	3											57	0
R1908U	300 ABBERLY CREST BLVD	1	B	57								61	4											57	0
R1908V	300 ABBERLY CREST BLVD	1	B	57								59	2											57	0
R1908W	300 ABBERLY CREST BLVD	1	B	57								60	3											57	0
R1908X	300 ABBERLY CREST BLVD	1	B	57								61	4											57	0
R1909A	300 ABBERLY CREST BLVD	1	B	57								58	1											57	0
R1909B	300 ABBERLY CREST BLVD	1	B	57								60	3											57	0
R1909C	300 ABBERLY CREST BLVD	1	B	57								61	4											57	0
R1909D	300 ABBERLY CREST BLVD	1	B	57								58	1											57	0
R1909E	300 ABBERLY CREST BLVD	1	B	57								59	2											57	0
R1909F	300 ABBERLY CREST BLVD	1	B	57								61	4											57	0
R1909G	300 ABBERLY CREST BLVD	1	B	57								58	1											57	0
R1909H	300 ABBERLY CREST BLVD	1	B	57								59	2											57	0
R1909I	300 ABBERLY CREST BLVD	1	B	57								60	3											57	0
R1909J	300 ABBERLY CREST BLVD	1	B	57								57	0											57	0
R1909K	300 ABBERLY CREST BLVD	1	B	57								59	2											57	0
R1909L	300 ABBERLY CREST BLVD	1	B	57								60	3											57	0
R1909M	300 ABBERLY CREST BLVD	1	B	57								58	1											57	0
R1909N	300 ABBERLY CREST BLVD	1	B	57								60	3											57	0
R1909O	300 ABBERLY CREST BLVD	1	B	57	57							61	4											57	0
R1909P	300 ABBERLY CREST BLVD	1	B	57								59	2											58	1
R1909Q	300 ABBERLY CREST BLVD	1	B	57								60	3											58	1
R1909R	300 ABBERLY CREST BLVD	1	B	57	57							62	5											57	0
R1909S	300 ABBERLY CREST BLVD	1	B	57								59	2											58	1
R1909T	300 ABBERLY CREST BLVD	1	B	57								60	3											58	1
R1909U	300 ABBERLY CREST BLVD	1	B	57	57							62	5											58	1
R1909V	300 ABBERLY CREST BLVD	1	B	57								59	2											57	0
R1909W	300 ABBERLY CREST BLVD	1	B	57								60	3											57	0
R1909X	300 ABBERLY CREST BLVD	1	B	57	57							62	5											57	0
R1910A	300 ABBERLY CREST BLVD	1	B	57								59	2											58	1
R1910B	300 ABBERLY CREST BLVD	1	B	57	57							60	3											58	1
R1910C	300 ABBERLY CREST BLVD	1	B	57	58							62	4											58	0
R1910D	300 ABBERLY CREST BLVD	1	B	57								59	2											58	1
R1910E	300 ABBERLY CREST BLVD	1	B	57	57							61	4											58	1
R1910F	300 ABBERLY CREST BLVD	1	B	57	58							62	4											58	0
R1910G	300 ABBERLY CREST BLVD	1	B	57								60	3											58	1
R1910H	300 ABBERLY CREST BLVD	1	B	57	57							61	4											58	1

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Impact Analysis

Receptor	Street Address	Properties Represented	NAC Land Use Category	Noise Levels dB(A)																					
				2014 Measured Ambient	2012 TNM Predicted Existing[3]	2035																			
						Orange		Green		Mint		Red		Purple/Blue		Lilac		Teal		Brown		Tan		No Build	
						Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]
R1910I	300 ABBERLY CREST BLVD	1	B	57	58							63	5											58	0
R1910J	300 ABBERLY CREST BLVD	1	B	57								60	3											59	2
R1910K	300 ABBERLY CREST BLVD	1	B	57	57							61	4											59	2
R1910L	300 ABBERLY CREST BLVD	1	B	57	59							63	4											59	0
R1910M	300 ABBERLY CREST BLVD	1	B	57	57							60	3											59	2
R1910N	300 ABBERLY CREST BLVD	1	B	57	58							62	4											59	1
R1910O	300 ABBERLY CREST BLVD	1	B	57	59							64	5											59	0
R1910P	300 ABBERLY CREST BLVD	1	B	57								60	3											59	2
R1910Q	300 ABBERLY CREST BLVD	1	B	57	58							62	4											59	1
R1910R	300 ABBERLY CREST BLVD	1	B	57	59							63	4											59	0
R1910S	300 ABBERLY CREST BLVD	1	B	57								60	3											59	2
R1910T	300 ABBERLY CREST BLVD	1	B	57	58							61	3											59	1
R1910U	300 ABBERLY CREST BLVD	1	B	57	59							63	4											58	-1
R1910V	300 ABBERLY CREST BLVD	1	B	57								59	2											58	1
R1910W	300 ABBERLY CREST BLVD	1	B	57	57							61	4											58	1
R1910X	300 ABBERLY CREST BLVD	1	B	57	58							62	4											58	0
R1911A	104 OLMSTEAD CT	1	B	44	44							62	18											48	4
R1911B	102 OLMSTEAD CT	1	B	44	44							61	17											48	4
R1911C	104 LYME CT	1	B	44	46							61	15											50	4
R1911D	107 LYME CT	1	B	44	46							60	14											50	4
R1912A	212 TIFFANY CIR	1	B	44	44							61	17											48	4
R1912B	210 TIFFANY CIR	1	B	44	44							61	17											48	4
R1912C	206 TIFFANY CIR	1	B	44	45							59	14											49	4
R1912D	204 TIFFANY CIR	1	B	44	46							58	12											51	5
R1913A	211 TIFFANY CIR	1	B	44	44							60	16											48	4
R1913B	213 TIFFANY CIR	1	B	44								61	17											47	3
R1913C	209 TIFFANY CIR	1	B	44	45							61	16											49	4
R1913D	207 TIFFANY CIR	1	B	44	46							60	14											50	4
R1914A	0 HODGE RD	1	B	56				64	8															56	0
R1914B	0 HODGE RD	1	B	56				64	8															56	0
R1914C	0 HODGE RD	1	B	56				65	9															56	0
R1915A	0 HODGE RD	1	B	56				63	7															56	0
R1915B	0 HODGE RD	1	B	56				64	8															56	0
R1916	6600 TEN TEN RD	1	B	46		60	14					59	13											47	1
R1917	6608 TEN TEN RD	1	B	46	47	59	12					59	12											49	2
R1918A	205 HOLLYHOCK LN	1	B	48		60	12																	49	1
R1918B	207 HOLLYHOCK LN	1	B	48		62	14																	49	1
R1918C	203 HOLLYHOCK LN	1	B	48		59	11																	49	1
R1919A	206 HOLLYHOCK LN	1	B	48		59	11																	50	2
R1919B	208 HOLLYHOCK LN	1	B	48		60	12																	50	2
R1919C	204 HOLLYHOCK LN	1	B	48		59	11																	51	3
R1920A	109 LINDELL DR	1	B	48		61	13																	50	2
R1920B	201 LINDELL DR	1	B	48		61	13																	50	2
R1920C	107 LINDELL DR	1	B	48		61	13																	50	2
R1921A	200 LINDELL DR	1	B	48	49	60	11																	52	3
R1921B	202 LINDELL DR	1	B	48	49	60	11																	52	3
R1922A	206 LINDELL DR	1	B	48	48	61	13																	51	3
R1922B	204 LINDELL DR	1	B	48	49	60	11																	51	2
R1923	3620 HERITAGE CREEK DR	1	B	46		61	15																	46	0
R1924A	3812 WESLEY RIDGE DR	1	B	46		60	14																	46	0
R1924B	3814 WESLEY RIDGE DR	1	B	46		59	13																	46	0
R1925A	3625 HERITAGE CREEK DR	1	B	46		60	14																	46	0
R1925B	3804 WESLEY RIDGE DR	1	B	46		61	15																	46	0
R1925C	3800 WESLEY RIDGE DR	1	B	46		61	15																	46	0
R1925D	3801 WESLEY RIDGE DR	1	B	46		59	13																	46	0
R1926	4029 HARRIAT DR	1	B	46		61	15																	46	0
R1926A	4033 HARRIAT DR	1	B	46		59	13																	46	0
R1927	4025 HARRIAT DR	1	B	46		60	14																	46	0
R1928	8704 NEW RIVER CIR	1	B	45		57	12									55	10							45	0
R1929	8705 NEW RIVER CIR	1	B	45		57	12									56	11							45	0
R1930	3908 YATESWOOD CT	1	B	46								60	14											46	0
R1931A	3901 YATESWOOD CT	1	B	46								61	15											46	0
R1931B	3905 YATESWOOD CT	1	B	46								60	14											46	0

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2Noise level increases highlighted in red are above the substantial noise level increase criteria.
3Noise levels reported if the traffic noise was dominant noise

Complete 540
Traffic Noise Analysis

Impact Analysis

Receptor	Street Address	Properties Represented	NAC Land Use Category	Noise Levels dB(A)																					
				2014 Measured Ambient	2012 TNM Predicted Existing[3]	2035																			
						Orange		Green		Mint		Red		Purple/Blue		Lilac		Teal		Brown		Tan		No Build	
						Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]
R1931C	3928 BLUFFWIND DR	1	B	46								59	13											47	1
R1932A	3925 BLUFFWIND DR	1	B	46								61	15											47	1
R1932B	3929 BLUFFWIND DR	1	B	46								59	13											48	2
R2000A	504 ARBORHILL LN	1	B	55										59	4									55	0
R2000B	500 ARBORHILL LN	1	B	55										57	2									55	0
R2001A	505 ARBORHILL LN	1	B	55	56									65	9									60	4
R2001B	501 ARBORHILL LN	1	B	55	57									65	8									61	4
R2001C	509 ARBORHILL LN	1	B	55	56									66	10									60	4
R2002A	413 ARBORHILL LN	1	B	55	57									64	7									61	4
R2002B	409 ARBORHILL LN	1	B	55	56									63	7									61	5
R2002C	417 ARBORHILL LN	1	B	55	56									64	8									60	4
R2003A	408 ARBORHILL LN	1	B	55										54	-1									55	0
R2003B	412 ARBORHILL LN	1	B	55										56	1									55	0
R2004A	404 ARBORHILL LN	1	B	55										53	-2									55	0
R2004B	400 ARBORHILL LN	1	B	55										52	-3									55	0
R2005A	405 ARBORHILL LN	1	B	55	57									62	5									61	4
R2005B	100 CALDERON PL	1	B	55										59	4									58	3
R2006A	304 ARBORHILL LN	1	B	55										52	-3									55	0
R2006B	308 ARBORHILL LN	1	B	55										52	-3									55	0
R2007A	104 CALDERON PL	1	B	55	57									63	6									61	4
R2007B	108 CALDERON PL	1	B	55	57									64	7									61	4
R2007C	105 CALDERON PL	1	B	55										62	7									58	3
R2008A	305 ARBORHILL LN	1	B	55										58	3									55	0
R2008B	101 CALDERON PL	1	B	55										57	2									55	0
R2008C	301 ARBORHILL LN	1	B	55										58	3									55	0
R2009A	104 OLIVE FIELD DR	1	B	55										59	4									55	0
R2009B	108 OLIVE FIELD DR	1	B	55										60	5									55	0
R2010A	204 OLIVE FIELD DR	1	B	55										62	7									57	2
R2010B	200 OLIVE FIELD DR	1	B	55										60	5									55	0
R2010C	206 OLIVE FIELD DR	1	B	55	58									64	6									62	4
R2011A	104 MEADOWCREST PL	1	B	55										52	-3									55	0
R2011B	100 MEADOWCREST PL	1	B	55										54	-1									55	0
R2012A	209 OLIVE FIELD DR	1	B	55										60	5									55	0
R2012B	213 OLIVE FIELD DR	1	B	55	57									63	6									60	3
R2012C	205 OLIVE FIELD DR	1	B	55										58	3									55	0
R2013A	105 MEADOWCREST PL	1	B	55										55	0									55	0
R2013B	101 MEADOWCREST PL	1	B	55										56	1									55	0
R2014A	208 CROSS OAKS PL	1	B	55										55	0									55	0
R2014B	212 CROSS OAKS PL	1	B	55										59	4									55	0
R2015A	213 CROSS OAKS PL	1	B	55	61									66	5									65	4
R2015B	216 CROSS OAKS PL	1	B	55	57									64	7									61	4
R2016A	113 MEADOWCREST PL	1	B	55										53	-2									55	0
R2016B	109 MEADOWCREST PL	1	B	55										54	-1									55	0
R2017A	200 CROSS OAKS PL	1	B	55										51	-4									55	0
R2017B	204 CROSS OAKS PL	1	B	55										52	-3									55	0
R2018A	209 CROSS OAKS PL	1	B	55	57									64	7									61	4
R2018B	205 CROSS OAKS PL	1	B	55										62	7									56	1
R2019A	116 CROSS OAKS PL	1	B	55										52	-3									55	0
R2019B	120 CROSS OAKS PL	1	B	55										52	-3									55	0
R2020A	105 BRYCE MEADOW DR	1	B	55										61	6									55	0
R2020B	101 BRYCE MEADOW DR	1	B	55										59	4									55	0
R2020C	109 BRYCE MEADOW DR	1	B	55										63	8									57	2
R2021A	104 BRYCE MEADOW DR	1	B	55										55	0									55	0
R2021B	100 BRYCE MEADOW DR	1	B	55										52	-3									55	0
R2021C	108 BRYCE MEADOW DR	1	B	55										57	2									56	1
R2022A	117 BRYCE MEADOW DR	1	B	55	61									65	4									64	3
R2022B	113 BRYCE MEADOW DR	1	B	55	59									64	5									63	4
R2023A	109 CROSS OAKS PL	1	B	55	56									58	2									58	2
R2023B	113 CROSS OAKS PL	1	B	55										56	1									55	0
R2024A	112 BRYCE MEADOW DR	1	B	55	57									60	3									59	2
R2024B	116 BRYCE MEADOW DR	1	B	55	61									63	2									63	2
R2025A	121 BRYCE MEADOW DR	1	B	55	61									65	4									64	3
R2025B	120 BRYCE MEADOW DR	1	B	55	60									64	4									63	3

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Complete 540
Traffic Noise Analysis

Impact Analysis

Receptor	Street Address	Properties Represented	NAC Land Use Category	Noise Levels dB(A)																					
				2014 Measured Ambient	2012 TNM Predicted Existing[3]	2035																			
						Orange		Green		Mint		Red		Purple/Blue		Lilac		Teal		Brown		Tan		No Build	
						Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]
R2026	100 MARSH LANDING DR	RECREATIONAL	C	55	59									63	4									62	3
R2027A	404 SKYGROVE DR	1	B	55										58	3									55	0
R2027B	400 SKYGROVE DR	1	B	55										59	4									55	0
R2027C	408 SKYGROVE DR	1	B	55										58	3									55	0
R2028A	109 MARSH LANDING DR	1	B	55										58	3									55	0
R2028B	105 MARSH LANDING DR	1	B	55										59	4									55	0
R2029A	132 EDGEPINE DR	1	B	55										56	1									55	0
R2029B	136 EDGEPINE DR	1	B	55										55	0									55	0
R2029C	128 EDGEPINE DR	1	B	55										59	4									55	0
R2030A	120 EDGEPINE DR	1	B	55										60	5									57	2
R2030B	124 EDGEPINE DR	1	B	55										59	4									55	0
R2030C	116 EDGEPINE DR	1	B	55	58									63	5									61	3
R2031A	108 EDGEPINE DR	1	B	55	60									64	4									63	3
R2031B	104 EDGEPINE DR	1	B	55	60									65	5									63	3
R2031C	112 EDGEPINE DR	1	B	55	60									63	3									62	2
R2032A	125 EDGEPINE DR	1	B	55										58	3									55	0
R2032B	129 EDGEPINE DR	1	B	55										60	5									55	0
R2033A	121 EDGEPINE DR	1	B	55										57	2									55	0
R2033B	117 EDGEPINE DR	1	B	55										57	2									55	0
R2034A	109 EDGEPINE DR	1	B	55										56	1									55	0
R2034B	113 EDGEPINE DR	1	B	55										56	1									55	0
R2034C	105 EDGEPINE DR	1	B	55										58	3									55	0
R2035A	100 SUNSET OAKS DR	1	B	55										59	4									55	0
R2035B	104 SUNSET OAKS DR	1	B	55										53	-2									55	0
R2036A	108 SUNSET OAKS DR	1	B	55										57	2									55	0
R2036B	112 SUNSET OAKS DR	1	B	55										54	-1									55	0
R2037A	101 SUNSET OAKS DR	1	B	55	58									67	9									61	3
R2037B	105 SUNSET OAKS DR	1	B	55	56									66	10									58	2
R2038A	117 SUNSET OAKS DR	1	B	55										63	8									55	0
R2038B	121 SUNSET OAKS DR	1	B	55										63	8									55	0
R2038C	113 SUNSET OAKS DR	1	B	55										64	9									55	0
R2039A	249 GRANTWOOD DR	1	B	55	58									68	10									61	3
R2039B	245 GRANTWOOD DR	1	B	55	59									69	10									61	2
R2040	241 GRANTWOOD DR	1	B	55	58									69	11									60	2
R2041A	228 GRANTWOOD DR	1	B	55										63	8									55	0
R2041B	224 GRANTWOOD DR	1	B	55										60	5									55	0
R2042A	220 GRANTWOOD DR	1	B	55										63	8									55	0
R2042B	216 GRANTWOOD DR	1	B	55										60	5									55	0
R2043A	221 GRANTWOOD DR	1	B	55										70	15									55	0
R2043B	225 GRANTWOOD DR	1	B	55										70	15									55	0
R2044A	212 GRANTWOOD DR	1	B	55										60	5									55	0
R2044B	208 GRANTWOOD DR	1	B	55										59	4									55	0
R2045A	217 GRANTWOOD DR	1	B	55										69	14									55	0
R2045B	213 GRANTWOOD DR	1	B	55										69	14									55	0
R2046A	200 GRANTWOOD DR	1	B	55										62	7									55	0
R2046B	204 GRANTWOOD DR	1	B	55										61	6									55	0
R2047A	205 GRANTWOOD DR	1	B	55										69	14									55	0
R2047B	209 GRANTWOOD DR	1	B	55										69	14									55	0
R2048A	141 GRANTWOOD DR	1	B	55										68	13									55	0
R2048B	201 GRANTWOOD DR	1	B	55										69	14									55	0
R2049A	133 GRANTWOOD DR	1	B	55										68	13									55	0
R2049B	137 GRANTWOOD DR	1	B	55										68	13									55	0
R2050A	125 GRANTWOOD DR	1	B	55										66	11									55	0
R2050B	129 GRANTWOOD DR	1	B	55										66	11									55	0
R2051	112 TALICUD TRL	1	B	47										72	25									47	0
R2052	116 TALICUD TRL	1	B	47										70	23									47	0
R2053	121 TALICUD TRL	1	B	47										68	21									47	0
R2054	117 TALICUD TRL	1	B	47										69	22									47	0
R2055	109 TALICUD TRL	1	B	47										67	20									47	0
R2056	105 TALICUD TRL	1	B	47	50									63	13									52	2
R2057	4204 LAMM DR	1	B	47	58									69	11									60	2
R2058A	0 SERENE FOREST DR	1	B	55										56	1									55	0
R2058B	5413 SERENE FOREST DR	1	B	55										56	1									55	0

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Complete 540
Traffic Noise Analysis

Impact Analysis

Receptor	Street Address	Properties Represented	NAC Land Use Category	Noise Levels dB(A)																					
				2014	2012	2035																			
						Orange		Green		Mint		Red		Purple/Blue		Lilac		Teal		Brown		Tan		No Build	
				Measured Ambient	TNM Predicted Existing[3]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]
R2058C	5405 SERENE FOREST DR	1	B	55										55	0									55	0
R2059A	5420 SERENE FOREST DR	1	B	55	62									62	0									65	3
R2059B	5416 SERENE FOREST DR	1	B	55	56									57	1									59	3
R2059C	5424 SERENE FOREST DR	1	B	55	61									61	0									64	3
R2060A	5412 SERENE FOREST DR	1	B	55										55	0									55	0
R2060B	5408 SERENE FOREST DR	1	B	55										54	-1									55	0
R2061A	8648 GLADE HILL DR	1	B	55										57	2									55	0
R2061B	8644 GLADE HILL DR	1	B	55										56	1									55	0
R2062A	8640 GLADE HILL DR	1	B	55										56	1									55	0
R2062B	8636 GLADE HILL DR	1	B	55										55	0									55	0
R2063A	8632 GLADE HILL DR	1	B	55										55	0									55	0
R2063B	4008 HOMEPORT CIR	1	B	55										55	0									55	0
R2064A	4004 HOMEPORT CIR	1	B	55										56	1									55	0
R2064B	4000 HOMEPORT CIR	1	B	55	59									59	0									61	2
R2065A	4005 HOMEPORT CIR	1	B	55	61									60	-1									63	2
R2065B	4009 HOMEPORT CIR	1	B	55	57									56	-1									59	2
R2065C	4001 HOMEPORT CIR	1	B	55	62									62	0									65	3
R2066A	8608 GLADE HILL DR	1	B	55	63									57	-6									65	2
R2066B	8612 GLADE HILL DR	1	B	55	60									57	-3									62	2
R2067A	8609 GLADE HILL DR	1	B	55										50	-5									55	0
R2067B	8613 GLADE HILL DR	1	B	55										49	-6									55	0
R2068A	8617 GLADE HILL DR	1	B	55										49	-6									55	0
R2068B	8621 GLADE HILL DR	1	B	55										50	-5									55	0
R2069A	8625 GLADE HILL DR	1	B	55										51	-4									55	0
R2069B	8629 GLADE HILL DR	1	B	55										51	-4									55	0
R2070	125 TALICUD TRL	1	B	47										68	21									47	0
R2071	129 TALICUD TRL	1	B	47										69	22									47	0
R2072	140 TALICUD TRL	1	B	47										70	23									47	0
R2073	4805 DRAYCROFT PL	1	B	47										69	22									47	0
R2074	4816 DRAYCROFT PL	1	B	47										63	16									47	0
R2075	0 WILTREE DR	1	B	47										64	17									47	0
R2076	0 WILTREE DR	1	B	47										64	17									47	0
R2077	3121 LEBRUN PATH	1	B	47										64	17									47	0
R2078	5112 SHIRLAND RD	1	B	47										67	20									47	0
R2079	5105 SHIRLAND RD	1	B	47										75	28									47	0
R2080	5216 SHIRLAND RD	1	B	47										68	21									47	0
R2081A	4708 BENTCREEK DR	1	B	54										68	14									54	0
R2081B	4704 BENTCREEK DR	1	B	54										66	12									54	0
R2082A	4712 BENTCREEK DR	1	B	54										67	13									54	0
R2082B	4716 BENTCREEK DR	1	B	54										66	12									54	0
R2083	4720 BENTCREEK DR	1	B	54										65	11									54	0
R2084	4800 BENTCREEK DR	1	B	54										65	11									54	0
R2085	4804 BENTCREEK DR	1	B	54										65	11									54	0
R2086A	4808 BENTCREEK DR	1	B	54										65	11									54	0
R2086B	4812 BENTCREEK DR	1	B	54										64	10									54	0
R2087	4812 BENTCREEK DR	1	B	54										59	5									54	0
R2088A	4816 BENTCREEK DR	1	B	54										62	8									54	0
R2088B	4820 BENTCREEK DR	1	B	54										61	7									54	0
R2089A	4813 BENTCREEK DR	1	B	54										57	3									54	0
R2089B	4817 BENTCREEK DR	1	B	54										57	3									54	0
R2090	4836 FRANKIE RD	1	B	54										57	3									54	0
R2091A	4833 FRANKIE RD	1	B	54										54	0									54	0
R2091B	4837 FRANKIE RD	1	B	54										52	-2									54	0
R2092	4821 BENTCREEK DR	1	B	54										54	0									54	0
R2093	4840 FRANKIE RD	1	B	54										57	3									54	0
R2095	4844 FRANKIE RD	1	B	54										59	5									55	1
R2096A	4841 FRANKIE RD	1	B	54										56	2									54	0
R2096B	4845 FRANKIE RD	1	B	54	55									60	5									57	2
R2097	5100 HILLTOP NEEDMORE RD	1	B	54										58	4									55	1
R2098	5229 HILLTOP NEEDMORE RD	1	B	54	56									66	10									58	2
R2099A	5209 HILLTOP NEEDMORE RD	1	B	54										58	4									54	0
R2099B	5205 HILLTOP NEEDMORE RD	1	B	54										57	3									54	0
R2100	5201 HILLTOP NEEDMORE RD	1	B	54										56	2									54	0

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Complete 540
Traffic Noise Analysis

Impact Analysis

Receptor	Street Address	Properties Represented	NAC Land Use Category	Noise Levels dB(A)																					
				2014 Measured Ambient	2012 TNM Predicted Existing[3]	2035																			
						Orange		Green		Mint		Red		Purple/Blue		Lilac		Teal		Brown		Tan		No Build	
						Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]
R2101	4908 ALLANBROOKE LN	1	B	54										56	2									54	0
R2102	4900 ALLANBROOKE LN	1	B	54										58	4									54	0
R2103A	4901 ALLANBROOKE LN	1	B	54										58	4									54	0
R2103B	4905 ALLANBROOKE LN	1	B	54										53	-1									54	0
R2104	5117 HILLTOP NEEDMORE RD	1	B	54	55									60	5									57	2
R2105	5109 HILLTOP NEEDMORE RD	1	B	54										53	-1									54	0
R2106A	4909 ALLANBROOKE LN	1	B	54										53	-1									54	0
R2106B	4913 ALLANBROOKE LN	1	B	54										54	0									54	0
R2107A	4920 ALLANBROOKE LN	1	B	54										56	2									54	0
R2107B	4916 ALLANBROOKE LN	1	B	54										56	2									54	0
R2108A	4917 ALLANBROOKE LN	1	B	54										52	-2									54	0
R2108B	4921 ALLANBROOKE LN	1	B	54										52	-2									54	0
R2109A	4928 ALLANBROOKE LN	1	B	54										56	2									54	0
R2109B	4924 ALLANBROOKE LN	1	B	54										56	2									54	0
R2109C	4932 ALLANBROOKE LN	1	B	54										57	3									54	0
R2110A	4925 ALLANBROOKE LN	1	B	54										53	-1									54	0
R2110B	4929 ALLANBROOKE LN	1	B	54										53	-1									54	0
R2111	4933 ALLANBROOKE LN	1	B	54										54	0									54	0
R2112	5220 RIVINGTON RD	1	B	54										68	14									54	0
R2113	5216 RIVINGTON RD	1	B	54										64	10									54	0
R2114A	5212 RIVINGTON RD	1	B	54										60	6									54	0
R2114B	5208 RIVINGTON RD	1	B	54										60	6									54	0
R2115A	5204 RIVINGTON RD	1	B	54										59	5									54	0
R2115B	4944 ALLANBROOKE LN	1	B	54										59	5									54	0
R2116	5321 HILLTOP NEEDMORE RD	1	B	54										57	3									55	1
R2117A	5309 HILLTOP NEEDMORE RD	1	B	54										58	4									54	0
R2117B	5305 HILLTOP NEEDMORE RD	1	B	54										59	5									54	0
R2118	6508 OLD MILLS RD	1	B	54										59	5									54	0
R2119A	6520 OLD MILLS RD	1	B	54										59	5									54	0
R2119B	6512 OLD MILLS RD	1	B	54										58	4									54	0
R2120A	6524 OLD MILLS RD	1	B	54										57	3									54	0
R2120B	6528 OLD MILLS RD	1	B	54										58	4									54	0
R2121	5308 RIVINGTON RD	1	B	54										67	13									54	0
R2122	5309 RIVINGTON RD	1	B	54										67	13									54	0
R2123	5305 RIVINGTON RD	1	B	54										73	19									54	0
R2124	6641 OLD MILLS RD	1	B	54										72	18									54	0
R2125	5017 NORTHRIDING CT	1	B	54										66	12									54	0
R2126	5017 NORTHRIDING CT	1	B	54										65	11									54	0
R2127A	5024 NORTHRIDING CT	1	B	54										60	6									54	0
R2127B	5025 NORTHRIDING CT	1	B	54										57	3									54	0
R2127C	5020 NORTHRIDING CT	1	B	54										66	12									54	0
R2128	6717 OLD MILLS RD	1	B	54										71	17									54	0
R2129A	5036 ALLANBROOKE LN	1	B	54										69	15									54	0
R2129B	5032 ALLANBROOKE LN	1	B	54										68	14									54	0
R2129C	5040 ALLANBROOKE LN	1	B	54										71	17									54	0
R2130	6737 OLD MILLS RD	1	B	54										67	13									54	0
R2131A	5048 ALLANBROOKE LN	1	B	54										71	17									54	0
R2131B	5052 ALLANBROOKE LN	1	B	54										70	16									54	0
R2132	5056 ALLANBROOKE LN	1	B	54										66	12									54	0
R2133	5053 ALLANBROOKE LN	1	B	54										65	11									54	0
R2134	5049 ALLANBROOKE LN	1	B	54										63	9									54	0
R2135	5045 ALLANBROOKE LN	1	B	54										60	6									54	0
R2136	5932 JOHNSON POND RD	1	B	54										59	5									54	0
R2137	5701 ACCIPITER CT	1	B	54										62	8									54	0
R2138	5704 ACCIPITER CT	1	B	54										72	18									54	0
R2139	5712 BUTEO CT	1	B	54										66	12									54	0
R2140A	5717 BUTEO CT	1	B	54										66	12									54	0
R2140B	5713 BUTEO CT	1	B	54										72	18									54	0
R2141	6021 JOHNSON POND RD	1	B	54										66	12									54	0
R2142	2105 N MAIN ST	1	B	55	55									56	1									58	3
R2143A	2028 N MAIN ST	1	B	55										55	0									56	1
R2143B	2032 N MAIN ST	1	B	55										53	-2									55	0
R2144	2136 N MAIN ST	MEDICAL	C	55	59									60	1									62	3

1Noise levels highlighted in red are levels above the Noise Abatement Criteria.
2Noise level increases highlighted in red are above the substantial noise level increase criteria.
3Noise levels reported if the traffic noise was dominant noise

Impact Analysis

Receptor	Street Address	Properties Represented	NAC Land Use Category	Noise Levels dB(A)																					
				2014 Measured Ambient	2012 TNM Predicted Existing[3]	2035																			
						Orange		Green		Mint		Red		Purple/Blue		Lilac		Teal		Brown		Tan		No Build	
						Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]
R2145	2217 N MAIN ST	COMMERCIAL	F	55	62									63	1									65	3
R2146	2214 N MAIN ST	COMMERCIAL	F	55	61									63	2									64	3
R2147	2204 N MAIN ST	CHILD CARE	C	55	56									58	2									59	3
R2148	201 MEADOW DR	CHURCH	C	55	57									61	4									60	3
R2149	6126 DWIGHT ROWLAND RD	1	B	55										62	7									55	0
R2150	6116 DWIGHT ROWLAND RD	1	B	55										72	17									55	0
R2151	6120 DWIGHT ROWLAND RD	1	B	55										70	15									57	2
R2152	6124 DWIGHT ROWLAND RD	CHURCH	D	0	40									46	6									40	0
R2153	6125 DWIGHT ROWLAND RD	1	B	55										67	12									55	0
R2154	6201 DWIGHT ROWLAND RD	1	B	55										64	9									55	0
R2155A	6117 HOPE LN	1	B	55										66	11									55	0
R2155B	6113 HOPE LN	1	B	55										62	7									55	0
R2156A	6104 HOPE LN	1	B	55										65	10									55	0
R2156B	6108 HOPE LN	1	B	55										67	12									55	0
R2157A	6109 HOPE LN	1	B	55										59	4									55	0
R2157B	6105 HOPE LN	1	B	55										58	3									55	0
R2158	6100 HOPE LN	1	B	55										63	8									55	0
R2159	1600 KEN DR	1	B	55										67	12									57	2
R2160	6045 DWIGHT ROWLAND RD	1	B	55										63	8									56	1
R2161	6020 HOPE LN	1	B	55										62	7									55	0
R2162	6032 DWIGHT ROWLAND RD	1	B	55	57									64	7									61	4
R2163	6025 DWIGHT ROWLAND RD	1	B	55	59									66	7									65	6
R2164	6009 DWIGHT ROWLAND RD	1	B	55	58									64	6									63	5
R2165	2900 N MAIN ST	COMMERCIAL	F	55	59									62	3									62	3
R2166	1812 KEN DR	1	B	55										67	12									55	0
R2167	5906 HILLTOP RD	AGRICULTURAL	F	55										60	5									55	0
R2168	6010 HILLTOP RD	1	B	55	57									63	6									58	1
R2169	6615 KENNEBEC RD	1	B	55										57	2									55	0
R2170	6612 KENNEBEC RD	1	B	55										62	7									55	0
R2171	6339 DANPATCH LN	1	B	52										60	8									52	0
R2172	6343 DANPATCH LN	1	B	52										64	12									52	0
R2173	6300 DANPATCH LN	1	B	52										60	8									52	0
R2174	6412 BRIDGEMONT LN	1	B	52										51	-1									52	0
R2175	6416 BRIDGEMONT LN	1	B	52										52	0									52	0
R2176A	1720 TALL CANE CIR	1	B	52										49	-3									52	0
R2176B	6413 BRIDGEMONT LN	1	B	52										48	-4									52	0
R2177	1704 TALL CANE CIR	1	B	52										49	-3									52	0
R2178A	1725 TALL CANE CIR	1	B	52										54	2									52	0
R2178B	1721 TALL CANE CIR	1	B	52										52	0									52	0
R2179A	1717 TALL CANE CIR	1	B	52										51	-1									52	0
R2179B	1713 TALL CANE CIR	1	B	52										51	-1									52	0
R2180A	1709 TALL CANE CIR	1	B	52										51	-1									52	0
R2180B	1705 TALL CANE CIR	1	B	52										50	-2									52	0
R2181	6513 BRIDGEMONT LN	1	B	52										61	9									54	2
R2182A	3225 NORMAN BLALOCK RD	1	B	52										54	2									52	0
R2182B	3221 NORMAN BLALOCK RD	1	B	52										55	3									52	0
R2183A	3229 NORMAN BLALOCK RD	1	B	52										52	0									52	0
R2183B	3233 NORMAN BLALOCK RD	1	B	52										51	-1									52	0
R2184A	3237 NORMAN BLALOCK RD	1	B	52										51	-1									52	0
R2184B	3241 NORMAN BLALOCK RD	1	B	52										52	0									52	0
R2185	3319 NORMAN BLALOCK RD	AGRICULTURAL	F	52										56	4									52	0
R2186	3232 NORMAN BLALOCK RD	1	B	52										71	19									52	0
R2187	3240 NORMAN BLALOCK RD	1	B	52										69	17									52	0
R2188	11480 OLD STAGE RD	1	B	52										69	17									52	0
R2189	5900 QUAIL MARSH DR	1	B	52										51	-1									52	0
R2190A	3204 NORMAN BLALOCK RD	1	B	52										63	11									52	0
R2190B	3200 NORMAN BLALOCK RD	1	B	52										57	5									52	0
R2191A	6128 HEATH HAWKINS CT	1	B	52										59	7									52	0
R2191B	6132 HEATH HAWKINS CT	1	B	52										59	7									52	0
R2192A	6124 HEATH HAWKINS CT	1	B	52										59	7									52	0
R2192B	6116 HEATH HAWKINS CT	1	B	52										64	12									52	0
R2193	6113 HEATH HAWKINS CT	1	B	52										67	15									52	0
R2194A	6117 HEATH HAWKINS CT	1	B	52										62	10									52	0

1Noise levels highlighted in red are levels above the Noise Abatement Criteria.
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3Noise levels reported if the traffic noise was dominant noise

Impact Analysis

Receptor	Street Address	Properties Represented	NAC Land Use Category	Noise Levels dB(A)																					
				2014	2012	2035																			
						Orange		Green		Mint		Red		Purple/Blue		Lilac		Teal		Brown		Tan		No Build	
				Measured Ambient	TNM Predicted Existing[3]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]
R2194B	6121 HEATH HAWKINS CT	1	B	52										57	5									52	0
R2195	6125 HEATH HAWKINS CT	1	B	52										54	2									52	0
R2196A	6129 HEATH HAWKINS CT	1	B	52										54	2									52	0
R2196B	6133 HEATH HAWKINS CT	1	B	52										53	1									52	0
R2197A	6137 HEATH HAWKINS CT	1	B	52										51	-1									52	0
R2197B	6141 HEATH HAWKINS CT	1	B	52										48	-4									52	0
R2198A	11332 OLD STAGE RD	1	B	52	54									58	4									57	3
R2198B	11336 OLD STAGE RD	1	B	52	53									59	6									56	3
R2199A	11324 OLD STAGE RD	1	B	52	53									56	3									57	4
R2199B	11328 OLD STAGE RD	1	B	52	53									56	3									56	3
R2200A	11320 OLD STAGE RD	1	B	52	53									56	3									56	3
R2200B	11316 OLD STAGE RD	1	B	52	53									55	2									56	3
R2201	11300 OLD STAGE RD	1	B	52										49	-3									54	2
R2202A	11281 OLD STAGE RD	1	B	52	55									58	3									58	3
R2202B	611 KAREN DR	1	B	52										54	2									53	1
R2203A	601 KAREN DR	1	B	52										53	1									52	0
R2203B	600 KAREN DR	1	B	52										54	2									52	0
R2203C	602 KAREN DR	1	B	52										53	1									52	0
R2204A	11600 OLD STAGE RD	1	B	52										57	5									52	0
R2204B	11600 OLD STAGE RD	1	B	52										58	6									52	0
R2205A	11600 OLD STAGE RD	1	B	52										61	9									52	0
R2205B	11600 OLD STAGE RD	1	B	52										60	8									52	0
R2205C	11600 OLD STAGE RD	1	B	52										61	9									52	0
R2205D	11600 OLD STAGE RD	1	B	52										61	9									52	0
R2206	11600 OLD STAGE RD	1	B	52	57									61	4									60	3
R2207	3220 TARHEEL BLUE LN	1	B	52										54	2									52	0
R2208A	1132 FARMERS BRANCH RD	1	B	52										52	0									52	0
R2208B	1136 FARMERS BRANCH RD	1	B	52										51	-1									52	0
R2209A	1120 FARMERS BRANCH RD	1	B	52										58	6									52	0
R2209B	1124 FARMERS BRANCH RD	1	B	52										56	4									52	0
R2210	1121 FARMERS BRANCH RD	1	B	52										54	2									52	0
R2211	1101 FARMERS BRANCH RD	1	B	52										55	3									52	0
R2212A	1100 FARMERS BRANCH RD	1	B	52										60	8									52	0
R2212B	1100 FARMERS BRANCH RD	1	B	52										63	11									52	0
R2213	6604 BLALOCK FOREST DR	1	B	52										61	9									52	0
R2214A	6709 PINE BROOK LN	1	B	52										56	4									52	0
R2214B	6705 PINE BROOK LN	1	B	52										58	6									53	1
R2215	6713 PINE BROOK LN	1	B	52										56	4									52	0
R2216A	1124 TYLER FARMS DR	1	B	52										65	13									52	0
R2216B	1128 TYLER FARMS DR	1	B	52										67	15									52	0
R2216C	1120 TYLER FARMS DR	1	B	52										63	11									52	0
R2217	1121 TYLER FARMS DR	1	B	52										60	8									52	0
R2218A	6520 CABLEWOOD DR	1	B	52										59	7									52	0
R2218B	6524 CABLEWOOD DR	1	B	52										60	8									52	0
R2219	6512 CABLEWOOD DR	1	B	52										57	5									52	0
R2220A	6525 CABLEWOOD DR	1	B	52										71	19									52	0
R2220B	6521 CABLEWOOD DR	1	B	52										72	20									52	0
R2220C	6529 CABLEWOOD DR	1	B	52										70	18									52	0
R2221A	6513 CABLEWOOD DR	1	B	52										73	21									52	0
R2221B	6509 CABLEWOOD DR	1	B	52										72	20									52	0
R2222A	6505 CABLEWOOD DR	1	B	52										72	20									52	0
R2222B	6501 CABLEWOOD DR	1	B	52										66	14									52	0
R2223A	6425 CABLEWOOD DR	1	B	52										64	12									52	0
R2223B	6421 CABLEWOOD DR	1	B	52										60	8									52	0
R2224	6532 ROCK SERVICE STATION RD	1	B	52	52									62	10									55	3
R2225A	6517 ROCK SERVICE STATION RD	1	B	52	52									56	4									54	2
R2225B	6509 ROCK SERVICE STATION RD	1	B	52										54	2									54	2
R2226A	12720 LITTLE CREEK DR	1	B	52										51	-1									52	0
R2226B	12716 LITTLE CREEK DR	1	B	52										51	-1									52	0
R2226C	12712 LITTLE CREEK DR	1	B	52										52	0									52	0
R2226D	12708 LITTLE CREEK DR	1	B	52										53	1									52	0
R2227A	1005 HADLEY MEADOWS DR	1	B	52										53	1									52	0
R2227B	1001 HADLEY MEADOWS DR	1	B	52	54									57	3									57	3

1Noise levels highlighted in red are levels above the Noise Abatement Criteria.
2Noise level increases highlighted in red are above the substantial noise level increase criteria.
3Noise levels reported if the traffic noise was dominant noise

Complete 540
Traffic Noise Analysis

Impact Analysis

Receptor	Street Address	Properties Represented	NAC Land Use Category	Noise Levels dB(A)																					
				2014 Measured Ambient	2012 TNM Predicted Existing[3]	2035																			
						Orange		Green		Mint		Red		Purple/Blue		Lilac		Teal		Brown		Tan		No Build	
						Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]
R2227C	1009 HADLEY MEADOWS DR	1	B	52										51	-1									52	0
R2228A	1013 HADLEY MEADOWS DR	1	B	52										50	-2									52	0
R2228B	1017 HADLEY MEADOWS DR	1	B	52										52	0									52	0
R2229A	1008 HADLEY MEADOWS DR	1	B	52										61	9									52	0
R2229B	1012 HADLEY MEADOWS DR	1	B	52										60	8									52	0
R2229C	1000 HADLEY MEADOWS DR	1	B	52	56									64	8									59	3
R2230A	1020 HADLEY MEADOWS DR	1	B	52										59	7									52	0
R2230B	1016 HADLEY MEADOWS DR	1	B	52										59	7									52	0
R2231	204 BENAR DR	1	B	52										70	18									52	0
R2232	212 BENAR DR	1	B	52										68	16									52	0
R2233	216 BENAR DR	1	B	52										64	12									52	0
R2234	6600 WALNUT COVE DR	1	B	52	52									62	10									54	2
R2235A	6604 WALNUT COVE DR	1	B	52										61	9									52	0
R2235B	6608 WALNUT COVE DR	1	B	52										60	8									52	0
R2236A	6605 WALNUT COVE DR	1	B	52										52	0									52	0
R2236B	6609 WALNUT COVE DR	1	B	52										47	-5									52	0
R2237	6601 WALNUT COVE DR	1	B	52										56	4									53	1
R2238A	1021 TRANSOM CT	1	B	52										51	-1									52	0
R2238B	1025 TRANSOM CT	1	B	52										52	0									52	0
R2239A	1024 TRANSOM CT	1	B	52	56									59	3									58	2
R2239B	1020 TRANSOM CT	1	B	52	58									60	2									60	2
R2240A	1013 TRANSOM CT	1	B	52										50	-2									52	0
R2240B	1017 TRANSOM CT	1	B	52										50	-2									52	0
R2240C	1009 TRANSOM CT	1	B	52										49	-3									52	0
R2241A	1012 TRANSOM CT	1	B	52	56									60	4									59	3
R2241B	1008 TRANSOM CT	1	B	52	56									59	3									59	3
R2242	1145 SOUTHERN MEADOWS DR	1	B	52										64	12									52	0
R2243A	6504 SOUTHERN TIMES DR	1	B	52										65	13									52	0
R2243B	1141 SOUTHERN MEADOWS DR	1	B	52										62	10									52	0
R2244	6508 SOUTHERN TIMES DR	1	B	52										67	15									52	0
R2245	6505 SOUTHERN TIMES DR	1	B	52										63	11									52	0
R2246A	1129 SOUTHERN MEADOWS DR	1	B	52										64	12									52	0
R2246B	1125 SOUTHERN MEADOWS DR	1	B	52										64	12									52	0
R2247	1117 SOUTHERN MEADOWS DR	1	B	52										63	11									52	0
R2248A	1109 SOUTHERN MEADOWS DR	1	B	52										67	15									52	0
R2248B	1113 SOUTHERN MEADOWS DR	1	B	52										66	14									52	0
R2249	6300 SOUTHERN CHARM LN	1	B	52										66	14									52	0
R2250A	1104 SOUTHERN MEADOWS DR	1	B	52										57	5									52	0
R2250B	1108 SOUTHERN MEADOWS DR	1	B	52										56	4									52	0
R2250C	1100 SOUTHERN MEADOWS DR	1	B	52										57	5									52	0
R2251	6301 SOUTHERN CHARM LN	1	B	52										70	18									52	0
R2252A	1013 TAOS TRL	1	B	52										55	3									52	0
R2252B	1017 TAOS TRL	1	B	52										55	3									52	0
R2253A	6317 CAYUSE LN	1	B	52										52	0									52	0
R2253B	1012 TAOS TRL	1	B	52										53	1									52	0
R2254A	1000 TAOS TRL	1	B	52										55	3									52	0
R2254B	1008 TAOS TRL	1	B	52										55	3									52	0
R2255A	1005 TAOS TRL	1	B	52										55	3									52	0
R2255B	1001 TAOS TRL	1	B	52	54									59	5									56	2
R2255C	1009 TAOS TRL	1	B	52										55	3									52	0
R2256A	6417 MAL WEATHERS RD	1	B	52										69	17									52	0
R2256B	6409 MAL WEATHERS RD	1	B	52										64	12									52	0
R2257	6321 SOUTHERN CHARM LN	1	B	52										63	11									52	0
R2258	6325 SOUTHERN CHARM LN	1	B	52										60	8									52	0
R2259	6524 MAL WEATHERS RD	1	B	52										60	8									52	0
R2260	6525 MAL WEATHERS RD	1	B	52										56	4									52	0
R2261	6517 MAL WEATHERS RD	1	B	52										54	2									52	0
R2262	6509 MAL WEATHERS RD	1	B	52										55	3									52	0
R2263	6437 MAL WEATHERS RD	1	B	52										72	20									52	0
R2264	9833 SAULS RD	1	B	51										62	11									53	2
R2265	9833 SAULS RD	1	B	51										62	11									51	0
R2266	1204 JOGGING CT	1	B	51										63	12									51	0
R2267A	1208 JOGGING CT	1	B	51										62	11									51	0

1Noise levels highlighted in red are levels above the Noise Abatement Criteria.
2Noise level increases highlighted in red are above the substantial noise level increase criteria.
3Noise levels reported if the traffic noise was dominant noise

Complete 540
Traffic Noise Analysis

Impact Analysis

Receptor	Street Address	Properties Represented	NAC Land Use Category	Noise Levels dB(A)																					
				2014 Measured Ambient	2012 TNM Predicted Existing[3]	2035																			
						Orange		Green		Mint		Red		Purple/Blue		Lilac		Teal		Brown		Tan		No Build	
						Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]
R2267B	1212 JOGGING CT	1	B	51										60	9									51	0
R2268	1209 JOGGING CT	1	B	51										70	19									51	0
R2269A	1213 JOGGING CT	1	B	51										64	13									51	0
R2269B	1219 JOGGING CT	1	B	51										62	11									51	0
R2270	1221 JOGGING CT	1	B	51										60	9									51	0
R2271	1218 JOGGING CT	1	B	51										57	6									51	0
R2272A	10604 HUNT FARMS LN	1	B	51										59	8									51	0
R2272B	10608 HUNT FARMS LN	1	B	51										57	6									51	0
R2273A	10601 HUNT FARMS LN	1	B	51										60	9									51	0
R2273B	10600 HUNT FARMS LN	1	B	51										61	10									51	0
R2274	10549 JORDAN RD	1	B	51										64	13									51	0
R2275A	1412 UPCHURCH WOODS DR	1	B	46										55	9									46	0
R2275B	1416 UPCHURCH WOODS DR	1	B	46										54	8									46	0
R2276A	1404 UPCHURCH WOODS DR	1	B	46										58	12									46	0
R2276B	1408 UPCHURCH WOODS DR	1	B	46										56	10									46	0
R2277A	1401 UPCHURCH WOODS DR	1	B	46	53									64	11									57	4
R2277B	1409 UPCHURCH WOODS DR	1	B	46	53									62	9									56	3
R2277C	1400 UPCHURCH WOODS DR	1	B	46										61	15									48	2
R2278A	1417 UPCHURCH WOODS DR	1	B	46	51									63	12									54	3
R2278B	1413 UPCHURCH WOODS DR	1	B	46	50									61	11									54	4
R2278C	1421 UPCHURCH WOODS DR	1	B	46	51									62	11									54	3
R2279	6024 STANCIL FARM RD	1	B	46		56	10							62	16									46	0
R2280	6005 STANCIL FARM RD	1	B	46		58	12							60	14									46	0
R2281	6005 STANCIL FARM RD	1	B	46		62	16							62	16									46	0
R2282A	5216 WOODTRENT DR	1	B	46										69	23									46	0
R2282B	5220 WOODTRENT DR	1	B	46										66	20									46	0
R2283	5213 WOODTRENT DR	1	B	46										62	16									46	0
R2284A	5204 WOODTRENT DR	1	B	46										70	24									46	0
R2284B	5208 WOODTRENT DR	1	B	46										70	24									46	0
R2285A	1016 GRISSOM FARM RD	1	B	46										60	14									46	0
R2285B	1020 GRISSOM FARM RD	1	B	46										58	12									46	0
R2286A	1021 GRISSOM FARM RD	1	B	46										66	20									46	0
R2286B	5201 WOODTRENT DR	1	B	46										69	23									46	0
R2287A	132 BUXTONWOOD PL	1	B	53		71	18																	53	0
R2287B	132 BUXTONWOOD PL	1	B	53		68	15																	53	0
R2288A	4709 LOCKLEY RD	1	B	53	58	60	2																	61	3
R2288B	4713 LOCKLEY RD	1	B	53	54	58	4																	57	3
R2289A	6017 OXFORD GREEN DR	1	B	46		58	12																	46	0
R2289B	6021 OXFORD GREEN DR	1	B	46		58	12																	46	0
R2290A	6009 OXFORD GREEN DR	1	B	46		57	11																	46	0
R2290B	6013 OXFORD GREEN DR	1	B	46		57	11																	46	0
R2291A	4309 SMITH LANDING DR	1	B	49	61	63	2					65	4			64	3							64	3
R2291B	4305 SMITH LANDING DR	1	B	49		62	13					64	15			63	14							49	0
R2292	4816 SWORDFISH DR	1	B	45		57	12									58	13							45	0
R2293	4824 SWORDFISH DR	1	B	45		58	13									59	14							45	0
R2294A	8916 OREGON INLET CT	1	B	45		57	12									55	10							45	0
R2294B	8908 OREGON INLET CT	1	B	45		56	11									55	10							45	0
R2295A	225 LANE OF SIR KAY	1	B	57				58	1									57	0					57	0
R2295B	227 LANE OF SIR KAY	1	B	57				58	1									57	0					57	0
R2296	217 LANE OF SIR KAY	1	B	57				57	0									57	0					57	0
R2297	215 LANE OF SIR KAY	1	B	57				57	0									57	0					57	0
R2298	213 LANE OF SIR KAY	1	B	57				57	0									57	0					57	0
R2299	211 LANE OF SIR KAY	1	B	57				57	0									57	0					57	0
R2300A	4833 OLD FAISON RD	1	B	57	57			62	5															58	1
R2300B	4813 OLD FAISON RD	1	B	57	58			62	4															59	1
R2301A	4808 OLD FAISON RD	1	B	57				62	5															58	1
R2301B	4806 OLD FAISON RD	1	B	57	57			63	6															59	2
R2302	4630 OLD FAISON RD	1	B	57				62	5															57	0
R2303A	4713 SMARTY JONES DR	1	B	57	62			67	5															63	1
R2303B	4711 SMARTY JONES DR	1	B	57	61			66	5															62	1
R2303C	4715 SMARTY JONES DR	1	B	57	63			69	6															65	2
R2304A	4719 SMARTY JONES DR	1	B	57	65			70	5															67	2
R2304B	4717 SMARTY JONES DR	1	B	57	64			70	6															66	2

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3Noise levels reported if the traffic noise was dominant noise

Impact Analysis

Receptor	Street Address	Properties Represented	NAC Land Use Category	Noise Levels dB(A)																					
				2014 Measured Ambient	2012 TNM Predicted Existing[3]	2035																			
						Orange		Green		Mint		Red		Purple/Blue		Lilac		Teal		Brown		Tan		No Build	
						Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]
R2304C	4721 SMARTY JONES DR	1	B	57	66			71	5															67	1
R2305A	4725 SMARTY JONES DR	1	B	57	67			72	5															68	1
R2305B	4727 SMARTY JONES DR	1	B	57	67			72	5															68	1
R2305C	4723 SMARTY JONES DR	1	B	57	66			71	5															68	2
R2306A	4731 SMARTY JONES DR	1	B	57	66			72	6															68	2
R2306B	4733 SMARTY JONES DR	1	B	57	66			71	5															68	2
R2306C	4729 SMARTY JONES DR	1	B	57	66			72	6															68	2
R2307A	4737 SMARTY JONES DR	1	B	57	66			71	5															67	1
R2307B	4735 SMARTY JONES DR	1	B	57	66			71	5															68	2
R2307C	4739 SMARTY JONES DR	1	B	57	65			71	6															67	2
R2308A	4741 SMARTY JONES DR	1	B	57	66			71	5															67	1
R2308B	4801 SMARTY JONES DR	1	B	57	65			71	6															67	2
R2309A	4803 SMARTY JONES DR	1	B	57	66			72	6															68	2
R2309B	4805 SMARTY JONES DR	1	B	57	66			72	6															68	2
R2310A	4809 SMARTY JONES DR	1	B	57	66			72	6															68	2
R2310B	4807 SMARTY JONES DR	1	B	57	66			72	6															68	2
R2310C	4811 SMARTY JONES DR	1	B	57	66			72	6															68	2
R2311A	9320 CARLEY CIR	1	B	49																61	12			49	0
R2311B	9324 CARLEY CIR	1	B	49																60	11			49	0
R2311C	9316 CARLEY CIR	1	B	49																62	13			49	0
R2312A	9309 CARLEY CIR	1	B	49																62	13			49	0
R2312B	9313 CARLEY CIR	1	B	49	60															60	0			63	3
R2313	6940 FAYETTEVILLE RD	1	B	44	63							66	3											66	3
R2314	7575 BRYAN RD	AGRICULTURAL	C	52								59	7											52	0
R2315	8025 COUNTRY CLUB DR	RECREATIONAL	C	49	55	65	10					66	11			66	11							57	2
R2316	8100 WHITE OAK RD	1	B	49								57	8			59	10							49	0
R2317	4009 OPTIMIST FARM RD	GOVERNMENTAL	C	47	56									58	2									58	2
R2318	6783 KENNEBEC RD	1	B	55										61	6									55	0
R2319	6741 ROCK SERVICE STATION RD	1	B	52	54									60	6									56	2
R2320	3316 BENSON RD	COMMERCIAL	C	50	65											63	-2							66	1
R2321	4800 AUBURN KNIGHTDALE RD	1	B	57								61	4											57	0
R2322	7709 OLD BAUCOM RD	1	B	51														55	4					51	0
R2323A	8036 RHODES RD	1	B	46		73	27																	46	0
R2323B	8036 RHODES RD	1	B	46		73	27																	47	1
R2323C	8036 RHODES RD	1	B	46	47	73	26																	50	3
R2323D	8036 RHODES RD	1	B	46	52	73	21																	54	2
R2324A	4709 SMARTY JONES DR	1	B	57	60			65	5															61	1
R2324B	4707 SMARTY JONES DR	1	B	57	59			65	6															61	2
R2325A	4703 SMARTY JONES DR	1	B	57	58			64	6															59	1
R2325B	4705 SMARTY JONES DR	1	B	57	59			64	5															60	1
R2325C	4701 SMARTY JONES DR	1	B	57	57			63	6															59	2
R2326A	1608 KINGMAN DR	1	B	57	58			63	5															60	2
R2326B	1610 KINGMAN DR	1	B	57	58			64	6															60	2
R2326C	1606 KINGMAN DR	1	B	57	58			63	5															60	2
R2327A	4712 SMARTY JONES DR	1	B	57	60			65	5															61	1
R2327B	4716 SMARTY JONES DR	1	B	57	60			65	5															62	2
R2327C	4708 SMARTY JONES DR	1	B	57	59			64	5															60	1
R2328A	4724 SMARTY JONES DR	1	B	57	60			66	6															62	2
R2328B	4720 SMARTY JONES DR	1	B	57	60			65	5															62	2
R2328C	4726 SMARTY JONES DR	1	B	57	61			66	5															62	1
R2329A	4730 SMARTY JONES DR	1	B	57	60			65	5															62	2
R2329B	4728 SMARTY JONES DR	1	B	57	60			65	5															62	2
R2329C	4732 SMARTY JONES DR	1	B	57	60			65	5															62	2
R2330A	4738 SMARTY JONES DR	1	B	57	60			65	5															61	1
R2330B	4736 SMARTY JONES DR	1	B	57	60			65	5															62	2
R2330C	4740 SMARTY JONES DR	1	B	57	59			65	6															61	2
R2331A	4804 SMARTY JONES DR	1	B	57	59			64	5															61	2
R2331B	4802 SMARTY JONES DR	1	B	57	59			64	5															61	2
R2331C	4806 SMARTY JONES DR	1	B	57	59			65	6															61	2
R2332A	1206 KINGMAN DR	1	B	57	59			65	6															61	2
R2332B	1208 KINGMAN DR	1	B	57	58			64	6															60	2
R2333A	1204 KINGMAN DR	1	B	57	60			66	6															62	2
R2333B	1202 KINGMAN DR	1	B	57	61			67	6															63	2

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3Noise levels reported if the traffic noise was dominant noise

Impact Analysis

Receptor	Street Address	Properties Represented	NAC Land Use Category	Noise Levels dB(A)																					
				2014 Measured Ambient	2012 TNM Predicted Existing[3]	2035																			
						Orange		Green		Mint		Red		Purple/Blue		Lilac		Teal		Brown		Tan		No Build	
						Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]
R2334A	1134 KINGMAN DR	1	B	57	65			72	7															67	2
R2334B	1132 KINGMAN DR	1	B	57	65			72	7															68	3
R2334C	1136 KINGMAN DR	1	B	57	64			71	7															66	2
R2335A	1135 KINGMAN DR	1	B	57	60			65	5															62	2
R2335B	1137 KINGMAN DR	1	B	57	59			65	6															61	2
R2336A	1203 KINGMAN DR	1	B	57	59			65	6															61	2
R2336B	1207 KINGMAN DR	1	B	57	58			64	6															60	2
R2337A	4507 ARCARO DR	1	B	57	59			64	5															60	1
R2337B	4505 ARCARO DR	1	B	57	59			64	5															60	1
R2338A	4506 ARCARO DR	1	B	57	58			63	5															59	1
R2338B	4508 ARCARO DR	1	B	57	58			64	6															60	2
R2339A	4605 FONSO DR	1	B	57	58			64	6															60	2
R2339B	4603 FONSO DR	1	B	57	57			63	6															59	2
R2339C	4601 FONSO DR	1	B	57	57			62	5															59	2
R2340A	4602 FONSO DR	1	B	57	57			63	6															59	2
R2340B	4604 FONSO DR	1	B	57	58			63	5															59	1
R2341A	4510 JOE COTTON DR	1	B	57	58			64	6															60	2
R2341B	4508 JOE COTTON DR	1	B	57	58			64	6															60	2
R2342A	120 BUXTONWOOD PL	1	B	53		64	11																	53	0
R2342B	124 BUXTONWOOD PL	1	B	53		66	13																	53	0
R2343A	108 BUXTONWOOD PL	1	B	53		62	9																	53	0
R2343B	112 BUXTONWOOD PL	1	B	53		62	9																	53	0
R2343C	100 BUXTONWOOD PL	1	B	53		61	8																	53	0
R2344	105 FULLCREST WAY	1	B	53		59	6																	53	0
R2345	121 FULLCREST WAY	1	B	53		59	6																	53	0
R2346A	105 MAYFIELD DR	1	B	53		63	10																	53	0
R2346B	103 MAYFIELD DR	1	B	53		63	10																	53	0
R2346C	101 MAYFIELD DR	1	B	53		62	9																	53	0
R2346D	111 MAYFIELD DR	1	B	53		66	13																	53	0
R2346E	109 MAYFIELD DR	1	B	53		65	12																	53	0
R2346F	107 MAYFIELD DR	1	B	53		64	11																	53	0
R2347A	117 MAYFIELD DR	1	B	53		69	16																	53	0
R2347B	115 MAYFIELD DR	1	B	53		69	16																	53	0
R2347C	115 MAYFIELD DR	1	B	53		69	16																	53	0
R2347D	119 MAYFIELD DR	1	B	53		70	17																	53	0
R2348A	121 MAYFIELD DR	1	B	53		70	17																	53	0
R2348B	125 MAYFIELD DR	1	B	53		70	17																	53	0
R2348C	125 MAYFIELD DR	1	B	53		70	17																	53	0
R2348D	127 MAYFIELD DR	1	B	53		69	16																	53	0
R2348E	129 MAYFIELD DR	1	B	53		69	16																	53	0
R2348F	131 MAYFIELD DR	1	B	53		70	17																	53	0
R2349A	209 MAYFIELD DR	1	B	53		70	17																	53	0
R2349B	207 MAYFIELD DR	1	B	53		70	17																	53	0
R2349C	205 MAYFIELD DR	1	B	53		70	17																	53	0
R2349D	203 MAYFIELD DR	1	B	53		70	17																	53	0
R2349E	201 MAYFIELD DR	1	B	53		70	17																	53	0
R2350A	221 MAYFIELD DR	1	B	53		69	16																	53	0
R2350B	219 MAYFIELD DR	1	B	53		69	16																	53	0
R2350C	217 MAYFIELD DR	1	B	53		69	16																	53	0
R2350D	215 MAYFIELD DR	1	B	53		70	17																	53	0
R2350E	213 MAYFIELD DR	1	B	53		70	17																	53	0
R2350F	211 MAYFIELD DR	1	B	53		70	17																	53	0
R2351A	223 MAYFIELD DR	1	B	53		69	16																	53	0
R2351B	225 MAYFIELD DR	1	B	53		69	16																	53	0
R2351C	227 MAYFIELD DR	1	B	53		69	16																	53	0
R2351D	229 MAYFIELD DR	1	B	53		69	16																	53	0
R2352A	224 MAYFIELD DR	1	B	53		62	9																	53	0
R2352B	222 MAYFIELD DR	1	B	53		61	8																	53	0
R2352C	220 MAYFIELD DR	1	B	53		61	8																	53	0
R2352D	218 MAYFIELD DR	1	B	53		61	8																	53	0
R2353A	216 MAYFIELD DR	1	B	53		62	9																	53	0
R2353B	214 MAYFIELD DR	1	B	53		62	9																	53	0
R2353C	212 MAYFIELD DR	1	B	53		62	9																	53	0

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Complete 540
Traffic Noise Analysis

Impact Analysis

Receptor	Street Address	Properties Represented	NAC Land Use Category	Noise Levels dB(A)																					
				2014 Measured Ambient	2012 TNM Predicted Existing[3]	2035																			
						Orange		Green		Mint		Red		Purple/Blue		Lilac		Teal		Brown		Tan		No Build	
						Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]	Build[1]	Increase[2]
R2353D	210 MAYFIELD DR	1	B	53		62	9																	53	0
R2353E	208 MAYFIELD DR	1	B	53		62	9																	53	0
R2354A	200 MAYFIELD DR	1	B	53		61	8																	53	0
R2354B	202 MAYFIELD DR	1	B	53		61	8																	53	0
R2354C	204 MAYFIELD DR	1	B	53		61	8																	53	0
R2354D	206 MAYFIELD DR	1	B	53		62	9																	53	0
R2355A	0 LOCKLEY RD	1	B	53		63	10																	53	0
R2355B	0 LOCKLEY RD	1	B	53		62	9																	53	0
R2355C	0 LOCKLEY RD	1	B	53		62	9																	53	0
R2355D	0 LOCKLEY RD	1	B	53		61	8																	53	0
R2356A	0 LOCKLEY RD	1	B	53		62	9																	53	0
R2356B	106 MAYFIELD DR	1	B	53		61	8																	53	0
R2356C	104 MAYFIELD DR	1	B	53		60	7																	53	0
R2356D	102 MAYFIELD DR	1	B	53		60	7																	53	0
R2356E	100 MAYFIELD DR	1	B	53		59	6																	53	0

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APPENDIX 4

NOISE BARRIER RESULTS

Complete 540
Traffic Noise Analysis

3/31/2015

Orange Corridor

Noise Wall 1

Receptor	First Row	Residences Represented	NAC Land Use Category[1]	Noise Levels[2] Existing dB(A)	Build dB(A)	Increase	Impacted Receptors	Short Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	Intermediate Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	Recommended[4] Tall Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors
R0013	Yes	CHURCH	D	40	45	5		38	7	1	38	7	1	38	7	1
R1605	Yes	1	B	56	67	11	1	64	3		64	3		64	3	
R1606A	Yes	1	B	48	64	16	1	57	7	1	57	7	1	57	7	1
R1606B	Yes	1	B	48	64	16	1	58	6	1	57	7	1	57	7	1
R0054A	Yes	1	B	48	62	14		56	6	1	55	7	1	55	7	1
R0054B	Yes	1	B	48	64	16	1	57	7	1	57	7	1	56	8	1
R0054C	Yes	1	B	48	62	14		56	6	1	56	6	1	55	7	1
R0054D	Yes	1	B	48	64	16	1	58	6	1	57	7	1	56	8	1
R0054E	Yes	1	B	48	62	14		56	6	1	56	6	1	55	7	1
R0054F	Yes	1	B	48	64	16	1	58	6	1	57	7	1	57	7	1
R0054G	Yes	1	B	48	62	14		56	6	1	56	6	1	56	6	1
R0054H	Yes	1	B	48	64	16	1	58	6	1	57	7	1	57	7	1
R0054I	Yes	1	B	48	55	7		51	4		51	4		50	5	1
R0054J	Yes	1	B	48	57	9		52	5	1	52	5	1	51	6	1
R0054K	Yes	1	B	48	56	8		50	6	1	50	6	1	50	6	1
R0054L	Yes	1	B	48	57	9		52	5	1	51	6	1	51	6	1
R0054M	Yes	1	B	48	57	9		51	6	1	51	6	1	51	6	1
R0054N	Yes	1	B	48	59	11		53	6	1	52	7	1	52	7	1
R0054O	Yes	1	B	48	60	12		54	6	1	53	7	1	53	7	1
R0054P	Yes	1	B	48	62	14		55	7	1	55	7	1	54	8	1
R0055A	Yes	1	B	48	62	14		56	6	1	56	6	1	55	7	1
R0055B	Yes	1	B	48	64	16	1	58	6	1	57	7	1	56	8	1
R0055C	Yes	1	B	48	65	17	1	58	7	1	58	7	1	57	8	1
R0055D	Yes	1	B	48	61	13		55	6	1	54	7	1	54	7	1
R0055E	Yes	1	B	48	63	15	1	57	6	1	56	7	1	55	8	1
R0055F	Yes	1	B	48	64	16	1	58	6	1	57	7	1	56	8	1
R0055G	Yes	1	B	48	60	12		55	5	1	54	6	1	54	6	1
R0055H	Yes	1	B	48	62	14		56	6	1	56	6	1	55	7	1
R0055I	Yes	1	B	48	64	16	1	57	7	1	56	8	1	56	8	1
R0055J	Yes	1	B	48	60	12		54	6	1	54	6	1	54	6	1
R0055K	Yes	1	B	48	62	14		56	6	1	55	7	1	55	7	1
R0055L	Yes	1	B	48	64	16	1	57	7	1	57	7	1	56	8	1
R0055M	Yes	1	B	48	57	9		51	6	1	50	7	1	49	8	1
R0055N	Yes	1	B	48	58	10		52	6	1	51	7	1	50	8	1
R0055O	Yes	1	B	48	59	11		53	6	1	52	7	1	51	8	1
R0055P	Yes	1	B	48	57	9		51	6	1	50	7	1	50	7	1
R0055Q	Yes	1	B	48	59	11		53	6	1	52	7	1	51	8	1
R0055R	Yes	1	B	48	60	12		54	6	1	52	8	1	52	8	1
R0055S	Yes	1	B	48	59	11		52	7	1	52	7	1	51	8	1
R0055T	Yes	1	B	48	61	13		54	7	1	53	8	1	52	9	1
R0055U	Yes	1	B	48	62	14		55	7	1	54	8	1	53	9	1
R0055V	Yes	1	B	48	61	13		55	6	1	54	7	1	54	7	1
R0055W	Yes	1	B	48	63	15	1	56	7	1	56	7	1	55	8	1
R0055X	Yes	1	B	48	64	16	1	57	7	1	56	8	1	56	8	1
R1705		RECREATIONAL	C	48	59	11										
R1705-1		NODAL ARRAY	C	48	59	11		53	6	1	53	6	1	52	7	1
R1705-2		NODAL ARRAY	C	48	58	10		53	5	1	52	6	1	52	6	1
R1705-3		NODAL ARRAY	C	48	59	11		53	6	1	53	6	1	52	7	1
R1705-4		NODAL ARRAY	C	48	59	11		53	6	1	53	6	1	52	7	1
R1705-5		NODAL ARRAY	C	48	59	11		53	6	1	52	7	1	52	7	1
R1705A		1	B	48	58	10		52	6	1	51	7	1	50	8	1
R1705B		1	B	48	59	11		54	5	1	53	6	1	52	7	1
R1705C		1	B	48	61	13		55	6	1	54	7	1	53	8	1
R1705D		1	B	48	59	11		53	6	1	53	6	1	53	6	1
R1705E		1	B	48	61	13		55	6	1	55	6	1	54	7	1
R1705F		1	B	48	63	15	1	57	6	1	56	7	1	55	8	1
R1705G		1	B	48	56	8		49	7	1	49	7	1	48	8	1
R1705H		1	B	48	58	10		51	7	1	50	8	1	50	8	1
R1705I		1	B	48	60	12		52	8	1	51	9	1	50	10	1
R1705J		1	B	48	58	10		53	5	1	52	6	1	52	6	1
R1705K		1	B	48	60	12		55	5	1	54	6	1	54	6	1
R1705L		1	B	48	62	14		56	6	1	55	7	1	55	7	1
R1705M		1	B	48	54	6		48	6	1	47	7	1	46	8	1
R1705N		1	B	48	56	8		49	7	1	49	7	1	48	8	1
R1705O		1	B	48	58	10		51	7	1	50	8	1	49	9	1
R1705P		1	B	48	58	10		52	6	1	52	6	1	51	7	1
R1705Q		1	B	48	60	12		54	6	1	54	6	1	53	7	1
R1705R		1	B	48	61	13		55	6	1	55	6	1	54	7	1
R1705S		1	B	48	52	4		47	5	1	46	6	1	46	6	1
R1705T		1	B	48	54	6		49	5	1	48	6	1	47	7	1
R1705U		1	B	48	56	8		50	6	1	49	7	1	48	8	1

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Orange Corridor

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Receptor	First Row	Residences Represented	NAC Land Use Category[1]	Noise Levels[2] Existing dB(A)	Build dB(A)	Increase	Impacted Receptors	Short Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	Intermediate Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	Recommended[4] Tall Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors
R1705V		1	B	48	57	9		52	5	1	51	6	1	51	6	1
R1705W		1	B	48	59	11		54	5	1	53	6	1	53	6	1
R1705X		1	B	48	60	12		55	5	1	54	6	1	54	6	1
R1706A		1	B	48	54	6		51	3		50	4		50	4	
R1706B		1	B	48	56	8		52	4		51	5	1	51	5	1
R1706C		1	B	48	58	10		53	5	1	52	6	1	52	6	1
R1706D		1	B	48	56	8		52	4		51	5	1	50	6	1
R1706E		1	B	48	57	9		53	4		52	5	1	52	5	1
R1706F		1	B	48	59	11		54	5	1	53	6	1	53	6	1
R1706G		1	B	48	54	6		51	3		51	3		50	4	
R1706H		1	B	48	55	7		52	3		52	3		51	4	
R1706I		1	B	48	57	9		53	4		53	4		52	5	1
R1706J		1	B	48	55	7		51	4		50	5	1	50	5	1
R1706K		1	B	48	56	8		52	4		51	5	1	51	5	1
R1706L		1	B	48	57	9		53	4		53	4		52	5	1
R1706M		1	B	48	46	-2		44	2		44	2		43	3	
R1706N		1	B	48	46	-2		44	2		44	2		43	3	
R1706O		1	B	48	48	0		46	2		45	3		44	4	
R1706P		1	B	48	46	-2		43	3		42	4		42	4	
R1706Q		1	B	48	46	-2		44	2		43	3		42	4	
R1706R		1	B	48	48	0		46	2		45	3		44	4	
R1706S		1	B	48	47	-1		44	3		43	4		42	5	1
R1706T		1	B	48	48	0		45	3		44	4		43	5	1
R1706U		1	B	48	49	1		47	2		46	3		45	4	
R1706V		1	B	48	53	5		48	5	1	48	5	1	47	6	1
R1706W		1	B	48	55	7		50	5	1	50	5	1	49	6	1
R1706X		1	B	48	57	9		52	5	1	51	6	1	50	7	1
R1707A		1	B	48	60	12		54	6	1	54	6	1	53	7	1
R1707B		1	B	48	62	14		56	6	1	55	7	1	55	7	1
R1707C		1	B	48	63	15	1	57	6	1	56	7	1	56	7	1
R1707D		1	B	48	59	11		54	5	1	53	6	1	53	6	1
R1707E		1	B	48	61	13		55	6	1	55	6	1	54	7	1
R1707F		1	B	48	63	15	1	57	6	1	56	7	1	55	8	1
R1707G		1	B	48	59	11		53	6	1	53	6	1	52	7	1
R1707H		1	B	48	60	12		55	5	1	54	6	1	54	6	1
R1707I		1	B	48	62	14		56	6	1	56	6	1	55	7	1
R1707J		1	B	48	59	11		53	6	1	52	7	1	52	7	1
R1707K		1	B	48	60	12		55	5	1	54	6	1	54	6	1
R1707L		1	B	48	63	15	1	57	6	1	56	7	1	55	8	1
R1707M		1	B	48	50	2		48	2		47	3		47	3	
R1707N		1	B	48	51	3		49	2		48	3		48	3	
R1707O		1	B	48	52	4		50	2		49	3		49	3	
R1707P		1	B	48	49	1		47	2		46	3		46	3	
R1707Q		1	B	48	51	3		48	3		47	4		47	4	
R1707R		1	B	48	53	5		50	3		49	4		49	4	
R1707S		1	B	48	51	3		48	3		48	3		47	4	
R1707T		1	B	48	52	4		49	3		49	3		48	4	
R1707U		1	B	48	54	6		51	3		51	3		50	4	
R1707V		1	B	48	55	7		51	4		51	4		50	5	1
R1707W		1	B	48	57	9		53	4		52	5	1	52	5	1
R1707X		1	B	48	59	11		54	5	1	54	5	1	53	6	1
R1708A		1	B	48	59	11		54	5	1	53	6	1	53	6	1
R1708B		1	B	48	61	13		56	5	1	55	6	1	55	6	1
R1708C		1	B	48	63	15	1	57	6	1	57	6	1	56	7	1
R1708D		1	B	48	58	10		53	5	1	52	6	1	52	6	1
R1708E		1	B	48	60	12		55	5	1	54	6	1	54	6	1
R1708F		1	B	48	61	13		57	4		56	5	1	56	5	1
R1708G		1	B	48	59	11		54	5	1	54	5	1	53	6	1
R1708H		1	B	48	62	14		56	6	1	56	6	1	55	7	1
R1708I		1	B	48	64	16	1	58	6	1	57	7	1	57	7	1
R1708J		1	B	48	57	9		52	5	1	51	6	1	50	7	1
R1708K		1	B	48	60	12		54	6	1	53	7	1	52	8	1
R1708L		1	B	48	62	14		55	7	1	54	8	1	53	9	1
R1708M		1	B	48	57	9		52	5	1	51	6	1	50	7	1
R1708N		1	B	48	59	11		53	6	1	52	7	1	51	8	1
R1708O		1	B	48	60	12		53	7	1	52	8	1	52	8	1
R1708P		1	B	48	56	8		52	4		52	4		51	5	1
R1708Q		1	B	48	59	11		54	5	1	54	5	1	53	6	1
R1708R		1	B	48	60	12		56	4		56	4		55	5	1
R1708S		1	B	48	56	8		52	4		51	5	1	51	5	1
R1708T		1	B	48	58	10		54	4		53	5	1	53	5	1

Complete 540 3/31/2015
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Orange Corridor

Noise Wall 1

								Short Wall			Intermediate Wall			Recommended[4] Tall Wall		
			NAC	Noise Levels[2]												
Receptor	First Row	Residences Represented	Land Use Category[1]	Existing dB(A)	Build dB(A)	Increase	Impacted Receptors	W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors
R1708U		1	B	48	59	11		56	3		55	4		55	4	
R1708V		1	B	48	56	8		51	5	1	50	6	1	50	6	1
R1708W		1	B	48	58	10		52	6	1	51	7	1	51	7	1
R1708X		1	B	48	59	11		53	6	1	52	7	1	51	8	1
R1709A		1	B	48	59	11		54	5	1	53	6	1	53	6	1
R1709B		1	B	48	59	11		53	6	1	53	6	1	52	7	1
R1709C		1	B	48	59	11		53	6	1	52	7	1	52	7	1
R1709D		1	B	48	58	10		52	6	1	52	6	1	51	7	1
R1709E		1	B	48	58	10		52	6	1	51	7	1	51	7	1
R1709F		1	B	48	58	10		52	6	1	51	7	1	51	7	1
R1709G		1	B	48	57	9		52	5	1	51	6	1	51	6	1
R1709H		1	B	48	57	9		52	5	1	51	6	1	51	6	1
R1710A		1	B	48	62	14		57	5	1	56	6	1	56	6	1
R1710B		1	B	48	62	14		57	5	1	57	5	1	56	6	1
R1710C		1	B	48	63	15	1	57	6	1	57	6	1	57	6	1
R1710D		1	B	48	62	14		58	4		57	5	1	57	5	1
R1710E		1	B	48	62	14		57	5	1	57	5	1	57	5	1
R1710F		1	B	48	61	13		58	3		57	4		57	4	
R1710G		1	B	48	61	13		58	3		57	4		57	4	
R1710H		1	B	48	61	13		57	4		57	4		57	4	

Length (ft)=	3600	3600	3600
Average Height =	12	14	16
Area of Noise Wall (sft)=	43199	50400	57601
Impacted Receptors=	22	22	22
Number of Benefited Receptors=	119	129	137
Area of Noise Wall per Benefit Receptor (sft)=	363	391	420
Average Increase in dB(A) of all Impacted Receptors=	15	15	15
Maximum Allowable Base Quantity of Noise Wall per Benefited Receptor (sft)=	3041	3041	3041
Feasible (5 dB(A) Reduction)=	Yes	Yes	Yes
Reasonable (Wall Area per Benefit) =	Yes	Yes	Yes
Reasonable (7 dB(A) Reduction) =	Yes	Yes	Yes
Breaks Line of Sight to Impacted Properties? =	Yes	Yes	Yes

(1) Category B denotes a residential property.

(2) Noise levels highlighted in red are levels above the Noise Abatment Criteria.

(3) Values highlighted in green are a 5 dB(A) or greater reduction in noise levels.

(4) A 16ft barrier is recommended because all criteria for feasible and reasonable have been met, and the most properties are benefited.

Recommended 16 ft Wall

NCDOT SOUND BARRIER
FEASIBILITY and REASONABLENESS
WORKSHEET

PROJECT - Complete 540 TIP # - R-2721, R-2828, R-2829

LOCATION - Barrier 1 COUNTY(IES) - Wake and Johnston

IMPACTS - 22 # BENEFITS - 137 NAC: A (B) (C) (D) E F G (CIRCLE ALL THAT APPLY)

A. FEASIBILITY:

1	Can a 5-dB(A) reduction in traffic noise levels be achieved for at least one impacted receptor?	X YES	NO
2	Does topography negatively affect the proposed abatement measure?	YES	X NO
3	Does the abatement measure negatively affect property access, drainage, safety and maintenance requirements?	YES	X NO
4	Is there control of access in the vicinity of the proposed abatement measure?	YES	X NO

B. REASONABLENESS:

1	Can a 7-dB(A) reduction in traffic noise levels be achieved for at least one impacted front row receptor?	X YES	NO
2	Is the design criteria per benefited receptor of 420 (sq.ft.) / cu.yd (CIRCLE ONE) less than the maximum allowable design criteria per benefited receptor of 3041 (sq.ft.) / cu.yd.? (CIRCLE ONE)	X YES	NO

C. NOISE ABATEMENT DECISION:

1	Is the noise mitigation feasible?	X YES	NO
2	Is the noise mitigation reasonable?	X YES	NO
3	Is the noise mitigation likely?	X YES	NO
4	Have the owners' and residents' viewpoints been solicited?	YES	X NO
5	Is the noise mitigation recommended for construction?	YES	NO

D. OPTIONAL REASONABLENESS CONSIDERATION:

1	Was optional averaging noise abatement allowance within a common noise environment used for consideration of barrier reasonableness?	YES	X NO
2	If the answer to D.1 is YES, the design criteria per benefited receptor for each individual barrier within the common noise environment before averaging are:		

Bar No. _____ _____ sq.ft./cu.yd (CIRCLE ONE) Bar No. _____ _____ sq.ft./cu.yd (CIRCLE ONE)

Bar No. _____ _____ sq.ft./cu.yd Bar No. _____ _____ sq.ft./cu.yd

3	If the answer to D.1 is YES, is the design criteria per benefited receptor for each individual barrier less than or equal to twice the maximum allowable design criteria per benefited receptor of _____ sq.ft./cu.yd (CIRCLE ONE)	YES	NO

Form Completed By: E SALUTZ Date: _____

In Consultation With: _____ Date: _____

Complete 540
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3/25/2015

Orange Corridor

Noise Wall 2

Receptor	First Row	Residences Represented	NAC Land Use Category[1]	Noise Levels[2] Existing dB(A)	Build dB(A)	Increase	Impacted Receptors	Short Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	Intermediate Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	Recommended[4] Tall Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors
R0001A	Yes	1	B	58	63	5		62	1		62	1		62	1	
R0001B	Yes	CHURCH	D	40	44	4		44	0		44	0		43	1	
R0006A		1	B	51	63	12		60	3		59	4		59	4	
R0006B		1	B	51	65	14	1	61	4		61	4		60	5	1
R0006C		1	B	51	62	11		59	3		59	3		58	4	
R0006D		1	B	52	64	12		60	4		60	4		59	5	1
R0006E		1	B	52	63	11		60	3		59	4		59	4	
R0007A	Yes	1	B	50	64	14		59	5	1	58	6	1	57	7	1
R0007B	Yes	1	B	50	65	15	1	59	6	1	59	6	1	58	7	1
R0014A		1	B	51	64	13		60	4		60	4		59	5	1
R0014B		1	B	52	65	13	1	61	4		60	5	1	59	6	1
R0015A		1	B	51	65	14	1	61	4		60	5	1	60	5	1
R0015B		1	B	52	65	13	1	61	4		60	5	1	60	5	1
R0016A	Yes	1	B	51	68	17	1	62	6	1	61	7	1	61	7	1
R0016B	Yes	1	B	50	68	18	1	61	7	1	61	7	1	60	8	1
R0017A	Yes	1	B	49	68	19	1	61	7	1	61	7	1	60	8	1
R0017B	Yes	1	B	48	67	19	1	60	7	1	59	8	1	58	9	1
R0018A		1	B	49	65	16	1	60	5	1	59	6	1	58	7	1
R0018B		1	B	48	67	19	1	60	7	1	59	8	1	58	9	1
R0019A		1	B	49	65	16	1	60	5	1	59	6	1	58	7	1
R0019B		1	B	49	65	16	1	60	5	1	59	6	1	58	7	1
R0020A		1	B	49	65	16	1	60	5	1	59	6	1	58	7	1
R0020B		1	B	49	64	15	1	60	4		59	5	1	58	6	1
R0020C		1	B	48	65	17	1	60	5	1	59	6	1	58	7	1
R0021A		1	B	49	65	16	1	60	5	1	59	6	1	58	7	1
R0021B		1	B	49	65	16	1	59	6	1	59	6	1	58	7	1
R0022A	Yes	1	B	48	68	20	1	60	8	1	60	8	1	58	10	1
R0022B	Yes	1	B	48	65	17	1	59	6	1	58	7	1	58	7	1
R0023A	Yes	1	B	48	69	21	1	60	9	1	59	10	1	58	11	1
R0023B	Yes	1	B	48	68	20	1	60	8	1	60	8	1	58	10	1
R0024A	Yes	1	B	48	68	20	1	60	8	1	59	9	1	58	10	1
R0024B	Yes	1	B	48	67	19	1	59	8	1	58	9	1	57	10	1
R0025A		1	B	48	65	17	1	59	6	1	58	7	1	57	8	1
R0025B		1	B	48	65	17	1	59	6	1	58	7	1	57	8	1
R0026		1	B	48	64	16	1	59	5	1	58	6	1	57	7	1
R0027A		1	B	48	64	16	1	59	5	1	58	6	1	57	7	1
R0027B		1	B	48	65	17	1	59	6	1	58	7	1	58	7	1
R0028A		1	B	48	64	16	1	59	5	1	58	6	1	57	7	1
R0028B		1	B	48	64	16	1	59	5	1	58	6	1	57	7	1
R0029A		1	B	48	64	16	1	59	5	1	58	6	1	57	7	1
R0029B		1	B	48	63	15	1	59	4		58	5	1	57	6	1
R0030A		1	B	48	65	17	1	59	6	1	58	7	1	57	8	1
R0030B		1	B	48	68	20	1	61	7	1	59	9	1	58	10	1
R0031A	Yes	1	B	48	70	22	1	63	7	1	62	8	1	60	10	1
R0031B	Yes	1	B	48	69	21	1	63	6	1	61	8	1	60	9	1
R0032A	Yes	1	B	48	71	23	1	63	8	1	62	9	1	60	11	1
R0032B	Yes	1	B	48	69	21	1	64	5	1	61	8	1	59	10	1
R0033A		1	B	48	67	19	1	63	4		59	8	1	57	10	1
R0033B		1	B	48	65	17	1	62	3		59	6	1	57	8	1
R0034A		1	B	48	62	14		60	2		57	5	1	55	7	1
R0034B		1	B	48	60	12		57	3		55	5	1	54	6	1
R0035A		1	B	48	58	10		56	2		55	3		54	4	
R0035B		1	B	48	59	11		57	2		55	4		54	5	1
R0036A		1	B	48	58	10		56	2		55	3		54	4	
R0036B		1	B	48	58	10		55	3		55	3		54	4	
R0037A		1	B	48	58	10		56	2		55	3		54	4	
R0037B		1	B	48	57	9		55	2		54	3		53	4	
R0038A		1	B	48	59	11		57	2		55	4		54	5	1
R0038B		1	B	48	61	13		58	3		56	5	1	54	7	1
R0039A	Yes	1	B	48	66	18	1	61	5	1	59	7	1	56	10	1
R0039B	Yes	1	B	48	71	23	1	64	7	1	62	9	1	60	11	1
R0040A	Yes	1	B	48	72	24	1	64	8	1	63	9	1	61	11	1
R0040B	Yes	1	B	48	71	23	1	64	7	1	62	9	1	60	11	1
R0041A		1	B	48	67	19	1	62	5	1	59	8	1	57	10	1
R0041B		1	B	48	69	21	1	63	6	1	61	8	1	58	11	1
R0041C		1	B	48	64	16	1	60	4		58	6	1	56	8	1
R0042A	Yes	1	B	48	68	20	1	62	6	1	60	8	1	58	10	1

Complete 540
Traffic Noise Analysis

3/25/2015

Orange Corridor

Noise Wall 2

														Recommended[4]		
			NAC	Noise Levels[2]				Short Wall			Intermediate Wall			Tall Wall		
Receptor	First Row	Residences Represented	Land Use Category[1]	Existing dB(A)	Build dB(A)	Increase	Impacted Receptors	W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors
R0042B	Yes	1	B	48	67	19	1	61	6	1	60	7	1	58	9	1
R0043A	Yes	1	B	48	68	20	1	63	5	1	61	7	1	59	9	1
R0043B	Yes	1	B	48	69	21	1	63	6	1	62	7	1	60	9	1
R0044A	Yes	1	B	48	68	20	1	63	5	1	61	7	1	59	9	1
R0044B	Yes	1	B	48	67	19	1	62	5	1	60	7	1	58	9	1
R0045A	Yes	1	B	48	65	17	1	59	6	1	58	7	1	57	8	1
R0045B	Yes	1	B	48	65	17	1	60	5	1	60	5	1	58	7	1
R0046A	Yes	1	B	48	66	18	1	61	5	1	60	6	1	59	7	1
R0046B	Yes	1	B	48	68	20	1	61	7	1	60	8	1	59	9	1
R0047A	Yes	1	B	48	69	21	1	61	8	1	60	9	1	59	10	1
R0047B	Yes	1	B	48	69	21	1	61	8	1	61	8	1	59	10	1
R0048A		1	B	48	67	19	1	60	7	1	59	8	1	58	9	1
R0048B		1	B	48	64	16	1	58	6	1	57	7	1	55	9	1
R0049A		1	B	48	62	14		57	5	1	55	7	1	53	9	1
R0049B		1	B	48	62	14		57	5	1	56	6	1	54	8	1
R0050A		1	B	48	62	14		58	4		56	6	1	54	8	1
R0050B		1	B	48	57	9		55	2		53	4		52	5	1
R0051A		1	B	48	58	10		55	3		54	4		52	6	1
R0051B		1	B	48	56	8		53	3		53	3		51	5	1
R0052A		1	B	48	59	11		56	3		54	5	1	52	7	1
R0052B		1	B	48	58	10		55	3		54	4		52	6	1
R0053A		1	B	48	60	12		57	3		55	5	1	53	7	1
R0053B		1	B	48	59	11		56	3		54	5	1	53	6	1
R0056A		1	B	48	67	19	1	62	5	1	59	8	1	57	10	1
R0056B		1	B	48	66	18	1	62	4		58	8	1	56	10	1
R0056C		1	B	48	68	20	1	62	6	1	60	8	1	58	10	1
R0057A	Yes	1	B	48	68	20	1	62	6	1	61	7	1	60	8	1
R0057B	Yes	1	B	48	68	20	1	63	5	1	62	6	1	61	7	1
R0058A	Yes	1	B	48	67	19	1	63	4		62	5	1	61	6	1
R0058B	Yes	1	B	48	68	20	1	63	5	1	62	6	1	61	7	1
R0058C	Yes	1	B	48	65	17	1	62	3		60	5	1	59	6	1
R1598	Yes	1	B	56	62	6		61	1		61	1		60	2	
R1626	Yes	1	B	52	68	16	1	63	5	1	63	5	1	62	6	1
R1627A	Yes	1	B	51	67	16	1	63	4		62	5	1	62	5	1
R1627B	Yes	1	B	52	67	15	1	62	5	1	61	6	1	61	6	1
R1701A		1	B	51	64	13		60	4		60	4		60	4	
R1701B		1	B	52	64	12		60	4		60	4		59	5	1
R1702A		1	B	52	63	11		61	2		60	3		60	3	
R1702B		1	B	52	63	11		61	2		60	3		59	4	
R1703A		1	B	50	63	13		60	3		59	4		58	5	1
R1703B		1	B	50	63	13		60	3		59	4		58	5	1
R1704A		1	B	50	63	13		60	3		58	5	1	57	6	1
R1704B		1	B	50	63	13		60	3		59	4		58	5	1
R1704C		1	B	50	62	12		60	2		58	4		57	5	1
R1704D		1	B	50	62	12		59	3		58	4		57	5	1
R1704E		1	B	50	61	11		59	2		57	4		56	5	1
R1704F		1	B	49	61	12		58	3		57	4		56	5	1
R1704G		1	B	48	61	13		58	3		57	4		56	5	1
R1704H		1	B	48	61	13		57	4		56	5	1	55	6	1
R1704I		1	B	48	61	13		58	3		56	5	1	55	6	1
R1704J		1	B	48	62	14		59	3		57	5	1	56	6	1
R1711A		1	B	48	63	15	1	60	3		56	7	1	54	9	1
R1711B		1	B	48	65	17	1	61	4		58	7	1	56	9	1
R1712A		1	B	48	61	13		59	2		58	3		56	5	1
R1712B		1	B	48	61	13		59	2		57	4		56	5	1
R1713A		1	B	48	62	14		60	2		59	3		58	4	
R1713B		1	B	48	61	13		59	2		58	3		57	4	
R1714A		1	B	48	62	14		60	2		58	4		57	5	1
R1714B		1	B	48	63	15	1	60	3		58	5	1	57	6	1
R1715A		1	B	48	64	16	1	61	3		59	5	1	58	6	1
R1715B		1	B	48	63	15	1	60	3		59	4		58	5	1
R1918A		1	B	48	60	12		57	3		55	5	1	54	6	1
R1918B		1	B	48	62	14		58	4		56	6	1	54	8	1
R1918C		1	B	48	59	11		57	2		55	4		54	5	1
R1919A		1	B	48	59	11		57	2		56	3		55	4	
R1919B		1	B	48	60	12		58	2		57	3		55	5	1

Complete 540
Traffic Noise Analysis

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Orange Corridor

Noise Wall 2

Receptor	First Row	Residences Represented	NAC Land Use Category[1]	Noise Levels[2] Existing dB(A)	Build dB(A)	Increase	Impacted Receptors	Short Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	Intermediate Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	Recommended[4] Tall Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors
R1919C		1	B	48	59	11		57	2		56	3		55	4	
R1920A		1	B	48	61	13		59	2		59	2		56	5	1
R1920B		1	B	48	61	13		59	2		58	3		56	5	1
R1920C		1	B	48	61	13		59	2		59	2		56	5	1
R1921A		1	B	49	60	11		59	1		59	1		57	3	
R1921B		1	B	49	60	11		59	1		58	2		57	3	
R1922A		1	B	48	61	13		59	2		58	3		58	3	
R1922B		1	B	49	60	11		59	1		58	2		57	3	

Length (ft)=	5200	5200	5200
Average Height =	10	12	16
Area of Noise Wall (sft)=	52000	62400	83201
Impacted Receptors=	78	78	78
Number of Benefited Receptors=	63	92	119
Area of Noise Wall per Benefit Receptor (sft)=	825	678	699
Average Increase in dB(A) of all Impacted Receptors=	18	18	18
Maximum Allowable Base Quantity of Noise Wall per Benefited Receptor (sft)=	3129	3129	3129
Feasible (5 dB(A) Reduction)=	Yes	Yes	Yes
Reasonable (Wall Area per Benefit) =	Yes	Yes	Yes
Reasonable (7 dB(A) Reduction) =	Yes	Yes	Yes
Breaks Line of Sight to Impacted Properties? =	No	Yes	Yes

Recommended 16 ft Barrier

(1) Category B denotes a residential property.
(2) Noise levels highlighted in red are levels above the Noise Abatment Criteria.
(3) Values highlighted in green are a 5 dB(A) or greater reduction in noise levels.
(4) A 16ft barrier is recommended because all criteria for feasible and reasonable have been met, and the most properties are benefited.

NCDOT SOUND BARRIER
FEASIBILITY and REASONABLENESS
WORKSHEET

PROJECT - Complete 540 TIP # - R-2721, R-2828, R-2829

LOCATION - Barrier 2 COUNTY(IES) - Wake and Johnston

IMPACTS - 78 # BENEFITS - 119 NAC: A (B) C (D) E F G (CIRCLE ALL THAT APPLY)

A. FEASIBILITY:

1	Can a 5-dB(A) reduction in traffic noise levels be achieved for at least one impacted receptor?	X YES	NO
2	Does topography negatively affect the proposed abatement measure?	YES	X NO
3	Does the abatement measure negatively affect property access, drainage, safety and maintenance requirements?	YES	X NO
4	Is there control of access in the vicinity of the proposed abatement measure?	YES	X NO

B. REASONABLENESS:

1	Can a 7-dB(A) reduction in traffic noise levels be achieved for at least one impacted front row receptor?	X YES	NO
2	Is the design criteria per benefited receptor of 699 (sq.ft.) / cu.yd (CIRCLE ONE) less than the maximum allowable design criteria per benefited receptor of 3129 (sq.ft.) / cu.yd.? (CIRCLE ONE)	X YES	NO

C. NOISE ABATEMENT DECISION:

1	Is the noise mitigation feasible?	X YES	NO
2	Is the noise mitigation reasonable?	X YES	NO
3	Is the noise mitigation likely?	X YES	NO
4	Have the owners' and residents' viewpoints been solicited?	YES	X NO
5	Is the noise mitigation recommended for construction?	YES	NO

D. OPTIONAL REASONABLENESS CONSIDERATION:

1	Was optional averaging noise abatement allowance within a common noise environment used for consideration of barrier reasonableness?	YES	X NO
2	If the answer to D.1 is YES, the design criteria per benefited receptor for each individual barrier within the common noise environment before averaging are:		

Bar No. _____ _____ sq.ft./cu.yd (CIRCLE ONE) Bar No. _____ _____ sq.ft./cu.yd (CIRCLE ONE)

Bar No. _____ _____ sq.ft./cu.yd Bar No. _____ _____ sq.ft./cu.yd

3	If the answer to D.1 is YES, is the design criteria per benefited receptor for each individual barrier less than or equal to twice the maximum allowable design criteria per benefited receptor of _____ sq.ft./cu.yd (CIRCLE ONE)	YES	NO

Form Completed By: E SALUTZ Date: _____

In Consultation With: _____ Date: _____

Complete 540 3/11/2015
Traffic Noise Analysis

Orange Corridor

Noise Wall 3

Receptor	First Row	Residences Represented	NAC Land Use Category[1]	Noise Levels[2] Existing dB(A)	Build dB(A)	Increase	Impacted Receptors	Short Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	Intermediate Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	Recommended[4] Tall Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors
R0061A	Yes	1	B	48	66	18	1	63	3		62	4		60	6	1
R0061B	Yes	1	B	48	67	19	1	64	3		63	4		62	5	1
R0061C	Yes	1	B	48	62	14		61	1		60	2		59	3	
R0062A	Yes	1	B	48	68	20	1	64	4		63	5	1	63	5	1
R0062B	Yes	1	B	48	67	19	1	63	4		63	4		62	5	1
R0063A		1	B	48	61	13		61	0		61	0		61	0	
R0063B		1	B	48	61	13		61	0		61	0		61	0	
R0064A		1	B	48	60	12		60	0		60	0		60	0	
R0064B		1	B	48	59	11		58	1		58	1		58	1	
R0065A	Yes	1	B	48	65	17	1	62	3		62	3		61	4	
R0065B	Yes	1	B	48	63	15	1	61	2		61	2		60	3	
R0066A	Yes	1	B	48	64	16	1	60	4		59	5	1	59	5	1
R0066B	Yes	1	B	48	63	15	1	60	3		60	3		59	4	
R0067A		1	B	48	57	9		57	0		57	0		57	0	
R0067B		1	B	48	57	9		56	1		56	1		56	1	
R0068A		1	B	48	55	7		54	1		54	1		54	1	
R0068B		1	B	48	56	8		55	1		55	1		55	1	
R0068C		1	B	48	56	8		55	1		55	1		54	2	
R0069A	Yes	1	B	51	64	13		58	6	1	58	6	1	58	6	1
R0069B	Yes	1	B	49	65	16	1	59	6	1	58	7	1	58	7	1
R0070A	Yes	1	B	52	63	11		58	5	1	57	6	1	57	6	1
R0070B	Yes	1	B	54	63	9		58	5	1	57	6	1	57	6	1
R0071A	Yes	1	B	55	62	7		57	5	1	56	6	1	56	6	1
R0071B	Yes	1	B	56	62	6		57	5	1	56	6	1	55	7	1
R0072A	Yes	1	B	59	64	5		58	6	1	57	7	1	56	8	1
R0072B	Yes	1	B	57	63	6		58	5	1	57	6	1	56	7	1
R0073A		1	B	49	57	8		55	2		55	2		55	2	
R0073B		1	B	50	57	7		55	2		55	2		55	2	
R0073C		1	B	49	56	7		55	1		55	1		54	2	
R0074A		1	B	61	64	3		62	2		61	3		61	3	
R0074B		1	B	60	63	3		62	1		62	1		62	1	

Length (ft)=	2600	2600	2600
Average Height =	10	12	14
Area of Noise Wall (sft)=	26000	31200	36401
Impacted Receptors=	9	9	9
Number of Benefited Receptors=	8	10	13
Area of Noise Wall per Benefit Receptor (sft)=	3250	3120	2800
Average Increase in dB(A) of all Impacted Receptors=	17	17	17
Maximum Allowable Base Quantity of Noise Wall per Benefited Receptor (sft)=	3103	3103	3103
Feasible (5 dB(A) Reduction)=	Yes	Yes	Yes
Reasonable (Wall Area per Benefit) =	No	No	Yes
Reasonable (7 dB(A) Reduction) =	No	Yes	Yes
Breaks Line of Sight to Impacted Properties? =	No	No	No

Recommended 14 ft Barrier

(1) Category B denotes a residential property.
(2) Noise levels highlighted in red are levels above the Noise Abatment Criteria.
(3) Values highlighted in green are a 5 dB(A) or greater reduction in noise levels.
(4) A 14ft barrier is recommended because all criteria for feasible and reasonable have been met, the barrier breaks the line of sight, and the most properties are benefited.

NCDOT SOUND BARRIER
FEASIBILITY and REASONABLENESS
WORKSHEET

PROJECT - Complete 540 TIP # - R-2721, R-2828, R-2829

LOCATION - Barrier 3 COUNTY(IES) - Wake and Johnston

IMPACTS - 9 # BENEFITS - 13 NAC: A (B) C D E F G (CIRCLE ALL THAT APPLY)

A. FEASIBILITY:

1	Can a 5-dB(A) reduction in traffic noise levels be achieved for at least one impacted receptor?	X YES	NO
2	Does topography negatively affect the proposed abatement measure?	YES	X NO
3	Does the abatement measure negatively affect property access, drainage, safety and maintenance requirements?	YES	X NO
4	Is there control of access in the vicinity of the proposed abatement measure?	YES	X NO

B. REASONABLENESS:

1	Can a 7-dB(A) reduction in traffic noise levels be achieved for at least one impacted front row receptor?	X YES	NO
2	Is the design criteria per benefited receptor of 2800 (sq.ft.) / cu.yd (CIRCLE ONE) less than the maximum allowable design criteria per benefited receptor of 3103 (sq.ft.) / cu.yd.? (CIRCLE ONE)	X YES	NO

C. NOISE ABATEMENT DECISION:

1	Is the noise mitigation feasible?	X YES	NO
2	Is the noise mitigation reasonable?	X YES	NO
3	Is the noise mitigation likely?	X YES	NO
4	Have the owners' and residents' viewpoints been solicited?	YES	X NO
5	Is the noise mitigation recommended for construction?	YES	NO

D. OPTIONAL REASONABLENESS CONSIDERATION:

1	Was optional averaging noise abatement allowance within a common noise environment used for consideration of barrier reasonableness?	YES	X NO
2	If the answer to D.1 is YES, the design criteria per benefited receptor for each individual barrier within the common noise environment before averaging are:		

Bar No. _____ _____ sq.ft./cu.yd (CIRCLE ONE) Bar No. _____ _____ sq.ft./cu.yd (CIRCLE ONE)

Bar No. _____ _____ sq.ft./cu.yd Bar No. _____ _____ sq.ft./cu.yd

3	If the answer to D.1 is YES, is the design criteria per benefited receptor for each individual barrier less than or equal to twice the maximum allowable design criteria per benefited receptor of _____ sq.ft./cu.yd (CIRCLE ONE)	YES	NO

Form Completed By: E SALUTZ Date: _____

In Consultation With: _____ Date: _____

Complete 540
Traffic Noise Analysis

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Orange Corridor

Noise Wall 4

Receptor	First Row	Residences Represented	NAC Land Use Category[1]	Noise Levels[2] Existing dB(A)	Build dB(A)	Increase	Impacted Receptors	Short Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	Intermediate Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	Tall Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors
R0111	Yes	1	B	62	66	4	1	57	9	1	56	10	1	56	10	1
R0112A		1	B	53	59	6		55	4		55	4		55	4	
R0112B		1	B	53	56	3		54	2		54	2		53	3	
R0114A	Yes	1	B	56	60	4		55	5	1	55	5	1	55	5	1
R0114B	Yes	1	B	53	58	5		55	3		54	4		54	4	
R0115A	Yes	1	B	55	60	5		56	4		56	4		56	4	
R0115B	Yes	1	B	53	59	6		56	3		56	3		55	4	
R0115C	Yes	1	B	53	58	5		55	3		55	3		55	3	
R0116		1	B	53	58	5		55	3		55	3		55	3	
R0117	Yes	1	B	53	62	9		59	3		58	4		58	4	
R0118	Yes	1	B	53	64	11		59	5	1	58	6	1	58	6	1
R0119A	Yes	1	B	53	65	12	1	59	6	1	59	6	1	58	7	1
R0119B	Yes	1	B	53	64	11		58	6	1	57	7	1	57	7	1
R1628A	Yes	1	B	53	59	6		56	3		56	3		56	3	
R1628B	Yes	1	B	53	61	8		57	4		57	4		57	4	
R1628C	Yes	1	B	53	64	11		60	4		60	4		59	5	1
R1718A		1	B	53	62	9		57	5	1	56	6	1	56	6	1
R1718B		1	B	53	62	9		57	5	1	56	6	1	56	6	1
R1719A		1	B	53	62	9		58	4		58	4		58	4	
R1719B		1	B	53	61	8		57	4		57	4		56	5	1

Length (ft)=	2589	2589	2589
Average Height =	14	16	18
Area of Noise Wall (sft)=	36252	41432	46612
Impacted Receptors=	2	2	2
Number of Benefited Receptors=	7	7	9
Area of Noise Wall per Benefit Receptor (sft)=	5179	5919	5179
Average Increase in dB(A) of all Impacted Receptors=	8	8	8
Maximum Allowable Base Quantity of Noise Wall per Benefited Receptor (sft)=	2780	2780	2780
Feasible (5 dB(A) Reduction)=	Yes	Yes	Yes
Reasonable (Wall Area per Benefit) =	No	No	No
Reasonable (7 dB(A) Reduction) =	Yes	Yes	Yes
Breaks Line of Sight to Impacted Properties? =	Yes	Yes	Yes

(1) Category B denotes a residential property.
(2) Noise levels highlighted in red are levels above the Noise Abatment Criteria.
(3) Values highlighted in green are a 5 dB(A) or greater reduction in noise levels.

Note: Boxed results indicate barrier discussed in report text.

NCDOT SOUND BARRIER
FEASIBILITY and REASONABLENESS
WORKSHEET

PROJECT - Complete 540 TIP # - R-2721, R-2828, R-2829

LOCATION - Barrier 4 COUNTY(IES) - Wake and Johnston

IMPACTS - 2 # BENEFITS - 7 NAC: A (B) C D E F G (CIRCLE ALL THAT APPLY)

A. FEASIBILITY:

1	Can a 5-dB(A) reduction in traffic noise levels be achieved for at least one impacted receptor?	X YES	NO
2	Does topography negatively affect the proposed abatement measure?	YES	X NO
3	Does the abatement measure negatively affect property access, drainage, safety and maintenance requirements?	YES	X NO
4	Is there control of access in the vicinity of the proposed abatement measure?	YES	X NO

B. REASONABLENESS:

1	Can a 7-dB(A) reduction in traffic noise levels be achieved for at least one impacted front row receptor?	X YES	NO
2	Is the design criteria per benefited receptor of 5919 (CIRCLE ONE) (sq.ft.) cu.yd less than the maximum allowable design criteria per benefited receptor of 2780 (CIRCLE ONE) (sq.ft.) cu.yd.?	YES	X NO

C. NOISE ABATEMENT DECISION:

1	Is the noise mitigation feasible?	X YES	NO
2	Is the noise mitigation reasonable?	YES	X NO
3	Is the noise mitigation likely?	YES	X NO
4	Have the owners' and residents' viewpoints been solicited?	YES	X NO
5	Is the noise mitigation recommended for construction?	YES	NO

D. OPTIONAL REASONABLENESS CONSIDERATION:

1	Was optional averaging noise abatement allowance within a common noise environment used for consideration of barrier reasonableness?	YES	X NO

2 If the answer to D.1 is YES, the design criteria per benefited receptor for each individual barrier within the common noise environment before averaging are:

Bar No.		sq.ft./cu.yd (CIRCLE ONE)	Bar No.		sq.ft./cu.yd (CIRCLE ONE)
Bar No.		sq.ft./cu.yd	Bar No.		sq.ft./cu.yd

3	If the answer to D.1 is YES, is the design criteria per benefited receptor for each individual barrier less than or equal to twice the maximum allowable design criteria per benefited receptor of	sq.ft./cu.yd (CIRCLE ONE)	YES	NO

Form Completed By: E SALUTZ Date:

In Consultation With: Date:

Complete 540 3/17/2015
Traffic Noise Analysis

Orange Corridor

Noise Wall 5

Receptor	First Row	Residences Represented	NAC Land Use Category[1]	Noise Levels[2] Existing dB(A)	Build dB(A)	Increase	Impacted Receptors	Short Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	Intermediate Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	Tall Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors
R0138A	Yes	1	B	52	68	16	1	61	7	1	60	8	1	60	8	1
R0138B	Yes	1	B	52	65	13	1	59	6	1	58	7	1	58	7	1
R0138C		1	B	52	70	18	1	62	8	1	61	9	1	61	9	1
R0139A		1	B	52	65	13	1	60	5	1	59	6	1	59	6	1
R0139B		1	B	52	61	9		56	5	1	56	5	1	56	5	1
R1716A		1	B	52	60	8		57	3		56	4		56	4	
R1716B		1	B	52	62	10		58	4		58	4		57	5	1
R1717A		1	B	52	62	10		59	3		58	4		58	4	
R1717B		1	B	52	62	10		60	2		59	3		58	4	

Length (ft)=	1400	1400	1400
Average Height =	12	14	16
Area of Noise Wall (sft)=	16801	19602	22401
Impacted Receptors=	4	4	4
Number of Benefited Receptors=	5	5	6
Area of Noise Wall per Benefit Receptor (sft)=	3360	3920	3734
Average Increase in dB(A) of all Impacted Receptors=	15	15	15
Maximum Allowable Base Quantity of Noise Wall per Benefited Receptor (sft)=	3025	3025	3025
Feasible (5 dB(A) Reduction)=	Yes	Yes	Yes
Reasonable (Wall Area per Benefit) =	No	No	No
Reasonable (7 dB(A) Reduction) =	Yes	Yes	Yes
Breaks Line of Sight to Impacted Properties? =	Yes	Yes	Yes

(1) Category B denotes a residential property.
(2) Noise levels highlighted in red are levels above the Noise Abatment Criteria.
(3) Values highlighted in green are a 5 dB(A) or greater reduction in noise levels.

Note: Boxed results indicate barrier discussed in report text.

NCDOT SOUND BARRIER
FEASIBILITY and REASONABLENESS
WORKSHEET

PROJECT - Complete 540 TIP # - R-2721, R-2828, R-2829

LOCATION - Barrier 5 COUNTY(IES) - Wake and Johnston

IMPACTS - 4 # BENEFITS - 6 NAC: A (B) C D E F G (CIRCLE ALL THAT APPLY)

A. FEASIBILITY:

1	Can a 5-dB(A) reduction in traffic noise levels be achieved for at least one impacted receptor?	X YES	NO
2	Does topography negatively affect the proposed abatement measure?	YES	X NO
3	Does the abatement measure negatively affect property access, drainage, safety and maintenance requirements?	YES	X NO
4	Is there control of access in the vicinity of the proposed abatement measure?	YES	X NO

B. REASONABLENESS:

1	Can a 7-dB(A) reduction in traffic noise levels be achieved for at least one impacted front row receptor?	X YES	NO
2	Is the design criteria per benefited receptor of 3734 (CIRCLE ONE) (sq.ft.) cu.yd less than the maximum allowable design criteria per benefited receptor of 3025 (CIRCLE ONE) (sq.ft.) cu.yd.?	YES	X NO

C. NOISE ABATEMENT DECISION:

1	Is the noise mitigation feasible?	X YES	NO
2	Is the noise mitigation reasonable?	YES	X NO
3	Is the noise mitigation likely?	YES	X NO
4	Have the owners' and residents' viewpoints been solicited?	YES	X NO
5	Is the noise mitigation recommended for construction?	YES	NO

D. OPTIONAL REASONABLENESS CONSIDERATION:

1	Was optional averaging noise abatement allowance within a common noise environment used for consideration of barrier reasonableness?	YES	X NO

2 If the answer to D.1 is YES, the design criteria per benefited receptor for each individual barrier within the common noise environment before averaging are:

Bar No.		sq.ft./cu.yd (CIRCLE ONE)	Bar No.		sq.ft./cu.yd (CIRCLE ONE)
Bar No.		sq.ft./cu.yd	Bar No.		sq.ft./cu.yd

3	If the answer to D.1 is YES, is the design criteria per benefited receptor for each individual barrier less than or equal to twice the maximum allowable design criteria per benefited receptor of	sq.ft./cu.yd (CIRCLE ONE)	YES	NO

Form Completed By: E SALUTZ Date:

In Consultation With: Date:

Complete 540
Traffic Noise Analysis

3/17/2015

Orange Corridor

Noise Wall 6

Receptor	First Row	Residences Represented	NAC Land Use Category[1]	Noise Levels[2] Existing dB(A)	Build dB(A)	Increase	Impacted Receptors	Short Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	Intermediate Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	Recommended[4] Tall Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors
R0161A	Yes	1	B	46	66	20	1	58	8	1	58	8	1	57	9	1
R0161B	Yes	1	B	46	61	15	1	52	9	1	52	9	1	52	9	1
R0163A		1	B	46	55	9		52	3		52	3		52	3	
R0163B		1	B	46	57	11		52	5	1	51	6	1	51	6	1
R0164A	Yes	1	B	46	67	21	1	59	8	1	58	9	1	57	10	1
R0164B	Yes	1	B	46	58	12		54	4		54	4		53	5	1
R0165A		1	B	46	53	7		51	2		51	2		51	2	
R0165B		1	B	46	54	8		52	2		52	2		52	2	
R0166A		1	B	46	58	12		57	1		56	2		55	3	
R0166B		1	B	46	59	13		57	2		57	2		56	3	
R0167A	Yes	1	B	46	67	21	1	60	7	1	60	7	1	58	9	1
R0167B	Yes	1	B	46	70	24	1	64	6	1	63	7	1	61	9	1
R0168A		1	B	46	61	15	1	58	3		57	4		56	5	1
R0168B		1	B	46	61	15	1	58	3		57	4		57	4	
R0168C		1	B	46	60	14		57	3		56	4		55	5	1
R0169A	Yes	1	B	46	70	24	1	64	6	1	63	7	1	61	9	1
R0169B	Yes	1	B	46	70	24	1	61	9	1	61	9	1	59	11	1
R0170A		1	B	46	62	16	1	57	5	1	57	5	1	56	6	1
R0170B		1	B	46	63	17	1	58	5	1	58	5	1	57	6	1
R0171A		1	B	46	64	18	1	59	5	1	58	6	1	57	7	1
R0171B		1	B	46	62	16	1	58	4		58	4		57	5	1
R0172A		1	B	46	63	17	1	59	4		58	5	1	58	5	1
R0172B		1	B	46	64	18	1	60	4		60	4		60	4	
R0173	Yes	1	B	46	68	22	1	60	8	1	59	9	1	59	9	1

Length (ft)=	2000	2000	2000
Average Height =	14	16	20
Area of Noise Wall (sft)=	27998	31998	40000
Impacted Receptors=	16	16	16
Number of Benefited Receptors=	12	13	17
Area of Noise Wall per Benefit Receptor (sft)=	2333	2461	2353
Average Increase in dB(A) of all Impacted Receptors=	19	19	19
Maximum Allowable Base Quantity of Noise Wall per Benefited Receptor (sft)=	3163	3163	3163
Feasible (5 dB(A) Reduction)=	Yes	Yes	Yes
Reasonable (Wall Area per Benefit) =	Yes	Yes	Yes
Reasonable (7 dB(A) Reduction) =	Yes	Yes	Yes
Breaks Line of Sight to Impacted Properties? =	No	Yes	Yes

Recommended 20 ft Barrier

(1) Category B denotes a residential property.
(2) Noise levels highlighted in red are levels above the Noise Abatment Criteria.
(3) Values highlighted in green are a 5 dB(A) or greater reduction in noise levels.
(4) An 20ft barrier is recommended because all criteria for feasible and reasonable have been met, and the most properties are benefited.

NCDOT SOUND BARRIER
FEASIBILITY and REASONABLENESS
WORKSHEET

PROJECT - Complete 540 TIP # - R-2721, R-2828, R-2829

LOCATION - Barrier 6 COUNTY(IES) - Wake and Johnston

IMPACTS - 16 # BENEFITS - 17 NAC: A (B) C D E F G (CIRCLE ALL THAT APPLY)

A. FEASIBILITY:

1	Can a 5-dB(A) reduction in traffic noise levels be achieved for at least one impacted receptor?	X YES	NO
2	Does topography negatively affect the proposed abatement measure?	YES	X NO
3	Does the abatement measure negatively affect property access, drainage, safety and maintenance requirements?	YES	X NO
4	Is there control of access in the vicinity of the proposed abatement measure?	YES	X NO

B. REASONABLENESS:

1	Can a 7-dB(A) reduction in traffic noise levels be achieved for at least one impacted front row receptor?	X YES	NO
2	Is the design criteria per benefited receptor of 2353 (CIRCLE ONE) (sq.ft.) cu.yd less than the maximum allowable design criteria per benefited receptor of 3163 (CIRCLE ONE) (sq.ft.) cu.yd.?	X YES	NO

C. NOISE ABATEMENT DECISION:

1	Is the noise mitigation feasible?	X YES	NO
2	Is the noise mitigation reasonable?	X YES	NO
3	Is the noise mitigation likely?	X YES	NO
4	Have the owners' and residents' viewpoints been solicited?	YES	X NO
5	Is the noise mitigation recommended for construction?	YES	NO

D. OPTIONAL REASONABLENESS CONSIDERATION:

1	Was optional averaging noise abatement allowance within a common noise environment used for consideration of barrier reasonableness?	YES	X NO

2 If the answer to D.1 is YES, the design criteria per benefited receptor for each individual barrier within the common noise environment before averaging are:

Bar No.		sq.ft./cu.yd (CIRCLE ONE)	Bar No.		sq.ft./cu.yd (CIRCLE ONE)
Bar No.		sq.ft./cu.yd	Bar No.		sq.ft./cu.yd

3	If the answer to D.1 is YES, is the design criteria per benefited receptor for each individual barrier less than or equal to twice the maximum allowable design criteria per benefited receptor of	sq.ft./cu.yd (CIRCLE ONE)	YES	NO

Form Completed By: E SALUTZ Date:

In Consultation With: Date:

Complete 540
Traffic Noise Analysis

3/26/2015

Orange Corridor

Noise Wall 7

				Noise Levels[2]				Short Wall			Intermediate Wall			Recommended[4] Tall Wall		
Receptor	First Row	Residences Represented	NAC Land Use Category[1]	Existing dB(A)	Build dB(A)	Increase	Impacted Receptors	W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors
R0174A	Yes	1	B	46	61	15	1	60	1		60	1		60	1	
R0174B	Yes	1	B	46	60	14		59	1		59	1		58	2	
R0176A	Yes	1	B	46	57	11		56	1		56	1		55	2	
R0176B	Yes	1	B	46	58	12		57	1		57	1		57	1	
R0178A	Yes	1	B	46	56	10		55	1		55	1		54	2	
R0178B	Yes	1	B	46	57	11		55	2		55	2		54	3	
R0179A	Yes	1	B	46	57	11		56	1		55	2		54	3	
R0179B	Yes	1	B	46	59	13		57	2		56	3		55	4	
R0180A	Yes	1	B	46	66	20	1	63	3		60	6	1	58	8	1
R0180B	Yes	1	B	46	66	20	1	63	3		60	6	1	58	8	1
R0182A	Yes	1	B	46	66	20	1	61	5	1	60	6	1	58	8	1
R0182B	Yes	1	B	46	68	22	1	65	3		62	6	1	60	8	1
R0182C	Yes	1	B	46	67	21	1	62	5	1	61	6	1	59	8	1
R0184		1	B	46	63	17	1	57	6	1	56	7	1	55	8	1
R0186A	Yes	1	B	46	65	19	1	58	7	1	57	8	1	55	10	1
R0186B	Yes	1	B	46	66	20	1	59	7	1	58	8	1	56	10	1
R0187A	Yes	1	B	46	71	25	1	63	8	1	62	9	1	60	11	1
R0187B	Yes	1	B	46	70	24	1	63	7	1	62	8	1	60	10	1
R0188A		1	B	46	65	19	1	60	5	1	59	6	1	57	8	1
R0188B		1	B	46	65	19	1	60	5	1	59	6	1	58	7	1
R1720		1	B	46	53	7		51	2		51	2		50	3	
R1721A		1	B	46	56	10		53	3		53	3		52	4	
R1721B		1	B	46	54	8		53	1		52	2		51	3	
R1722A		1	B	46	56	10		54	2		52	4		52	4	
R1722B		1	B	46	59	13		54	5	1	53	6	1	52	7	1
R1723A		1	B	46	63	17	1	57	6	1	56	7	1	55	8	1
R1723B		1	B	46	63	17	1	58	5	1	57	6	1	55	8	1
R1724A		1	B	46	63	17	1	59	4		58	5	1	57	6	1
R1724B		1	B	46	62	16	1	58	4		57	5	1	56	6	1
R1923		1	B	46	61	15	1	57	4		55	6	1	54	7	1
R1924A		1	B	46	60	14		57	3		55	5	1	54	6	1
R1924B		1	B	46	59	13		56	3		54	5	1	53	6	1
R1925A		1	B	46	60	14		57	3		56	4		55	5	1
R1925B		1	B	46	61	15	1	58	3		57	4		56	5	1
R1925C		1	B	46	61	15	1	59	2		57	4		56	5	1
R1925D		1	B	46	60	14		57	3		55	5	1	54	6	1

Length (ft)=	2600	2600	2600
Average Height =	10	12	16
Area of Noise Wall (sft)=	25997	31197	41598
Impacted Receptors=	20	20	20
Number of Benefited Receptors=	12	21	24
Area of Noise Wall per Benefit Receptor (sft)=	2166	1486	1733
Average Increase in dB(A) of all Impacted Receptors=	19	19	19
Maximum Allowable Base Quantity of Noise Wall per Benefited Receptor (sft)=	3153	3153	3153
Feasible (5 dB(A) Reduction)=	Yes	Yes	Yes
Reasonable (Wall Area per Benefit) =	Yes	Yes	Yes
Reasonable (7 dB(A) Reduction) =	Yes	Yes	Yes
Breaks Line of Sight to Impacted Properties? =	No	No	Yes

(1) Category B denotes a residential property.
(2) Noise levels highlighted in red are levels above the Noise Abatment Criteria.
(3) Values highlighted in green are a 5 dB(A) or greater reduction in noise levels.
(4) A 16ft barrier is recommended because all criteria for feasible and reasonable have been met, and the most properties are benefited.

Recommended 16 ft Barrier

NCDOT SOUND BARRIER
FEASIBILITY and REASONABLENESS
WORKSHEET

PROJECT - Complete 540 TIP # - R-2721, R-2828, R-2829

LOCATION - Barrier 7 COUNTY(IES) - Wake and Johnston

IMPACTS - 20 # BENEFITS - 24 NAC: A (B) C D E F G (CIRCLE ALL THAT APPLY)

A. FEASIBILITY:

1	Can a 5-dB(A) reduction in traffic noise levels be achieved for at least one impacted receptor?	X YES	NO
2	Does topography negatively affect the proposed abatement measure?	YES	X NO
3	Does the abatement measure negatively affect property access, drainage, safety and maintenance requirements?	YES	X NO
4	Is there control of access in the vicinity of the proposed abatement measure?	YES	X NO

B. REASONABLENESS:

1	Can a 7-dB(A) reduction in traffic noise levels be achieved for at least one impacted front row receptor?	X YES	NO
2	Is the design criteria per benefited receptor of 1733 (CIRCLE ONE) (sq.ft.) cu.yd less than the maximum allowable design criteria per benefited receptor of 3153 (CIRCLE ONE) (sq.ft.) cu.yd.?	X YES	NO

C. NOISE ABATEMENT DECISION:

1	Is the noise mitigation feasible?	X YES	NO
2	Is the noise mitigation reasonable?	X YES	NO
3	Is the noise mitigation likely?	X YES	NO
4	Have the owners' and residents' viewpoints been solicited?	YES	X NO
5	Is the noise mitigation recommended for construction?	YES	NO

D. OPTIONAL REASONABLENESS CONSIDERATION:

1	Was optional averaging noise abatement allowance within a common noise environment used for consideration of barrier reasonableness?	YES	X NO
2	If the answer to D.1 is YES, the design criteria per benefited receptor for each individual barrier within the common noise environment before averaging are:		

Bar No. _____ _____ (CIRCLE ONE) sq.ft./cu.yd Bar No. _____ _____ (CIRCLE ONE) sq.ft./cu.yd

Bar No. _____ _____ sq.ft./cu.yd Bar No. _____ _____ sq.ft./cu.yd

3	If the answer to D.1 is YES, is the design criteria per benefited receptor for each individual barrier less than or equal to twice the maximum allowable design criteria per benefited receptor of _____ (CIRCLE ONE) sq.ft./cu.yd	YES	NO

Form Completed By: E SALUTZ Date: _____

In Consultation With: _____ Date: _____

Complete 540
Traffic Noise Analysis

3/20/2015

Orange Corridor

Noise Wall 8

Receptor	First Row	Residences Represented	NAC Land Use Category[1]	Noise Levels[2] Existing dB(A)	Build dB(A)	Increase	Impacted Receptors	Short Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	Intermediate Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	Tall Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors
R0193A	Yes	1	B	49	60	11		56	4		55	5	1	55	5	1
R0193B	Yes	1	B	47	58	11		55	3		55	3		54	4	
R0194	Yes	1	B	51	61	10		58	3		58	3		57	4	
R0195	Yes	1	B	48	63	15	1	61	2		59	4		58	5	1
R0196	Yes	1	B	46	72	26	1	67	5	1	64	8	1	62	10	1
R0197A	Yes	1	B	46	73	27	1	64	9	1	62	11	1	61	12	1
R0197B	Yes	1	B	46	69	23	1	61	8	1	60	9	1	59	10	1
R1726		1	B	46	63	17	1	61	2		58	5	1	57	6	1
R1727		1	B	46	65	19	1	60	5	1	59	6	1	58	7	1
R1728		1	B	46	63	17	1	58	5	1	57	6	1	57	6	1
R1729		1	B	46	62	16	1	57	5	1	56	6	1	56	6	1
R1730		1	B	46	61	15	1	57	4		57	4		57	4	
R1731		1	B	46	60	14		58	2		57	3		57	3	
R1926		1	B	46	61	15	1	58	3		56	5	1	56	5	1
R1926A		1	B	46	59	13		57	2		55	4		54	5	1
R1927		1	B	46	60	14		56	4		55	5	1	55	5	1
R2289A		1	B	46	58	12		55	3		55	3		55	3	
R2289B		1	B	46	58	12		55	3		54	4		54	4	
R2290A		1	B	46	57	11		54	3		54	3		53	4	
R2290B		1	B	46	57	11		54	3		54	3		54	3	

Length (ft)=	2536	2536	2536
Average Height =	12	14	16
Area of Noise Wall (sft)=	30433	35505	40575
Impacted Receptors=	10	10	10
Number of Benefited Receptors=	6	10	12
Area of Noise Wall per Benefit Receptor (sft)=	5072	3551	3381
Average Increase in dB(A) of all Impacted Receptors=	19	19	19
Maximum Allowable Base Quantity of Noise Wall per Benefited Receptor (sft)=	3165	3165	3165
Feasible (5 dB(A) Reduction)=	Yes	Yes	Yes
Reasonable (Wall Area per Benefit) =	No	No	No
Reasonable (7 dB(A) Reduction) =	Yes	Yes	Yes
Breaks Line of Sight to Impacted Properties? =	No	Yes	Yes

(1) Category B denotes a residential property.
(2) Noise levels highlighted in red are levels above the Noise Abatment Criteria.
(3) Values highlighted in green are a 5 dB(A) or greater reduction in noise levels.

Note: Boxed results indicate barrier discussed in report text.

NCDOT SOUND BARRIER
FEASIBILITY and REASONABLENESS
WORKSHEET

PROJECT - Complete 540 TIP # - R-2721, R-2828, R-2829

LOCATION - Barrier 8 COUNTY(IES) - Wake and Johnston

IMPACTS - 10 # BENEFITS - 12 NAC: A (B) C D E F G (CIRCLE ALL THAT APPLY)

A. FEASIBILITY:

1	Can a 5-dB(A) reduction in traffic noise levels be achieved for at least one impacted receptor?	X YES	NO
2	Does topography negatively affect the proposed abatement measure?	YES	X NO
3	Does the abatement measure negatively affect property access, drainage, safety and maintenance requirements?	YES	X NO
4	Is there control of access in the vicinity of the proposed abatement measure?	YES	X NO

B. REASONABLENESS:

1	Can a 7-dB(A) reduction in traffic noise levels be achieved for at least one impacted front row receptor?	X YES	NO
2	Is the design criteria per benefited receptor of 3381 (CIRCLE ONE) (sq.ft.) cu.yd less than the maximum allowable design criteria per benefited receptor of 3165 (CIRCLE ONE) (sq.ft.) cu.yd.?	YES	X NO

C. NOISE ABATEMENT DECISION:

1	Is the noise mitigation feasible?	X YES	NO
2	Is the noise mitigation reasonable?	YES	X NO
3	Is the noise mitigation likely?	YES	X NO
4	Have the owners' and residents' viewpoints been solicited?	YES	X NO
5	Is the noise mitigation recommended for construction?	YES	NO

D. OPTIONAL REASONABLENESS CONSIDERATION:

1	Was optional averaging noise abatement allowance within a common noise environment used for consideration of barrier reasonableness?	YES	X NO

2 If the answer to D.1 is YES, the design criteria per benefited receptor for each individual barrier within the common noise environment before averaging are:

Bar No. _____ _____ (CIRCLE ONE) sq.ft./cu.yd Bar No. _____ _____ (CIRCLE ONE) sq.ft./cu.yd

Bar No. _____ _____ sq.ft./cu.yd Bar No. _____ _____ sq.ft./cu.yd

3 If the answer to D.1 is YES, is the design criteria per benefited receptor for each individual barrier less than or equal to twice the maximum allowable design criteria per benefited receptor of _____ (CIRCLE ONE) sq.ft./cu.yd _____ YES NO

Form Completed By: E SALUTZ Date: _____

In Consultation With: _____ Date: _____

Complete 540 3/17/2015
Traffic Noise Analysis

Orange Corridor

Noise Wall 9

Receptor	First Row	Residences Represented	NAC Land Use Category[1]	Noise Levels[2] Existing dB(A)	Build dB(A)	Increase	Impacted Receptors	Short Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	Intermediate Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	Tall Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors
R0198A	Yes	1	B	46	65	19	1	63	2		63	2		63	2	
R0198B	Yes	1	B	46	62	16	1	62	0		61	1		61	1	
R0198C	Yes	1	B	46	64	18	1	63	1		63	1		62	2	
R0199A		1	B	46	60	14		60	0		59	1		59	1	
R0199B		1	B	46	58	12		58	0		58	0		58	0	
R0199C		1	B	46	59	13		59	0		59	0		58	1	
R0203	Yes	1	B	46	64	18	1	58	6	1	57	7	1	57	7	1
R0204	Yes	1	B	46	60	14		57	3		57	3		57	3	
R0205	Yes	1	B	50	64	14		60	4		60	4		60	4	
R0206	Yes	1	B	54	64	10		63	1		63	1		63	1	

Length (ft)=	1400	1400	1400
Average Height =	18	20	22
Area of Noise Wall (sft)=	25202	28002	30802
Impacted Receptors=	4	4	4
Number of Benefited Receptors=	1	1	1
Area of Noise Wall per Benefit Receptor (sft)=	25202	28002	30802
Average Increase in dB(A) of all Impacted Receptors=	18	18	18
Maximum Allowable Base Quantity of Noise Wall per Benefited Receptor (sft)=	3121	3121	3121
Feasible (5 dB(A) Reduction)=	Yes	Yes	Yes
Reasonable (Wall Area per Benefit) =	No	No	No
Reasonable (7 dB(A) Reduction) =	No	Yes	Yes
Breaks Line of Sight to Impacted Properties? =	No	No	No

(1) Category B denotes a residential property.
(2) Noise levels highlighted in red are levels above the Noise Abatment Criteria.
(3) Values highlighted in green are a 5 dB(A) or greater reduction in noise levels.

Note: Boxed results indicate barrier discussed in report text.

NCDOT SOUND BARRIER
FEASIBILITY and REASONABLENESS
WORKSHEET

PROJECT - Complete 540 TIP # - R-2721, R-2828, R-2829

LOCATION - Barrier 9 COUNTY(IES) - Wake and Johnston

IMPACTS - 4 # BENEFITS - 1 NAC: A (B) C D E F G (CIRCLE ALL THAT APPLY)

A. FEASIBILITY:

1	Can a 5-dB(A) reduction in traffic noise levels be achieved for at least one impacted receptor?	X YES	NO
2	Does topography negatively affect the proposed abatement measure?	YES	X NO
3	Does the abatement measure negatively affect property access, drainage, safety and maintenance requirements?	YES	X NO
4	Is there control of access in the vicinity of the proposed abatement measure?	YES	X NO

B. REASONABLENESS:

1	Can a 7-dB(A) reduction in traffic noise levels be achieved for at least one impacted front row receptor?	X YES	NO
2	Is the design criteria per benefited receptor of 28002 (CIRCLE ONE) (sq.ft.) / cu.yd less than the maximum allowable design criteria per benefited receptor of 3121 (CIRCLE ONE) (sq.ft.) / cu.yd.?	YES	X NO

C. NOISE ABATEMENT DECISION:

1	Is the noise mitigation feasible?	X YES	NO
2	Is the noise mitigation reasonable?	YES	X NO
3	Is the noise mitigation likely?	YES	X NO
4	Have the owners' and residents' viewpoints been solicited?	YES	X NO
5	Is the noise mitigation recommended for construction?	YES	NO

D. OPTIONAL REASONABLENESS CONSIDERATION:

1	Was optional averaging noise abatement allowance within a common noise environment used for consideration of barrier reasonableness?	YES	X NO

2 If the answer to D.1 is YES, the design criteria per benefited receptor for each individual barrier within the common noise environment before averaging are:

Bar No. _____ _____ (CIRCLE ONE) sq.ft./cu.yd Bar No. _____ _____ (CIRCLE ONE) sq.ft./cu.yd

Bar No. _____ _____ sq.ft./cu.yd Bar No. _____ _____ sq.ft./cu.yd

3 If the answer to D.1 is YES, is the design criteria per benefited receptor for each individual barrier less than or equal to twice the maximum allowable design criteria per benefited receptor of _____ (CIRCLE ONE) sq.ft./cu.yd _____ YES NO

Form Completed By: E SALUTZ Date: _____

In Consultation With: _____ Date: _____

Complete 540 3/17/2015
Traffic Noise Analysis

Orange Corridor

Noise Wall 10

Receptor	First Row	Residences Represented	NAC Land Use Category[1]	Noise Levels[2] Existing dB(A)	Build dB(A)	Increase	Impacted Receptors	Short Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	Intermediate Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	Tall Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors
R0214A	Yes	1	B	46	64	18	1	62	2		62	2		61	3	
R0214B	Yes	1	B	49	65	16	1	62	3		62	3		61	4	
R0214C	Yes	1	B	55	68	13	1	62	6	1	61	7	1	60	8	1
R0215A		1	B	46	60	14		59	1		59	1		58	2	
R0215B		1	B	46	60	14		58	2		58	2		57	3	
R0216A	Yes	1	B	56	66	10	1	60	6	1	59	7	1	59	7	1
R0216B	Yes	1	B	55	65	10	1	58	7	1	58	7	1	57	8	1
R0217A		1	B	46	59	13		57	2		57	2		57	2	
R0217B		1	B	46	58	12		56	2		56	2		56	2	
R0218A	Yes	1	B	56	64	8		58	6	1	57	7	1	56	8	1
R0218B	Yes	1	B	56	64	8		57	7	1	57	7	1	56	8	1
R0219	Yes	1	B	57	65	8		58	7	1	58	7	1	57	8	1
R0220A		1	B	46	57	11		55	2		55	2		55	2	
R0220B		1	B	46	56	10		54	2		54	2		54	2	
R0221A	Yes	1	B	53	61	8		60	1		60	1		59	2	
R0221B	Yes	1	B	57	64	7		63	1		63	1		63	1	
R0222A		1	B	46	55	9		54	1		54	1		54	1	
R0222B		1	B	46	55	9		54	1		54	1		54	1	
R0222C		1	B	46	54	8		53	1		53	1		53	1	
R0223A	Yes	1	B	54	61	7		61	0		61	0		61	0	
R0223B	Yes	1	B	54	62	8		62	0		62	0		62	0	
R0224A		1	B	47	55	8		55	0		55	0		55	0	
R0224B		1	B	49	57	8		57	0		57	0		57	0	
R0225A	Yes	1	B	55	62	7		62	0		62	0		62	0	
R0225B	Yes	1	B	58	64	6		64	0		64	0		64	0	
R0225C	Yes	1	B	56	63	7		63	0		63	0		63	0	

Length (ft)=	1707	1707	1707
Average Height =	12	14	16
Area of Noise Wall (sft)=	20489	23905	27319
Impacted Receptors=	5	5	5
Number of Benefited Receptors=	6	6	6
Area of Noise Wall per Benefit Receptor (sft)=	3415	3984	4553
Average Increase in dB(A) of all Impacted Receptors=	13	13	13
Maximum Allowable Base Quantity of Noise Wall per Benefited Receptor (sft)=	2969	2969	2969
Feasible (5 dB(A) Reduction)=	Yes	Yes	Yes
Reasonable (Wall Area per Benefit) =	No	No	No
Reasonable (7 dB(A) Reduction) =	Yes	Yes	Yes
Breaks Line of Sight to Impacted Properties? =	No	No	Yes

(1) Category B denotes a residential property.
(2) Noise levels highlighted in red are levels above the Noise Abatment Criteria.
(3) Values highlighted in green are a 5 dB(A) or greater reduction in noise levels.

Note: Boxed results indicate barrier discussed in report text.

NCDOT SOUND BARRIER
FEASIBILITY and REASONABLENESS
WORKSHEET

PROJECT - Complete 540 TIP # - R-2721, R-2828, R-2829

LOCATION - Barrier 10 COUNTY(IES) - Wake and Johnston

IMPACTS - 5 # BENEFITS - 6 NAC: A (B) C D E F G (CIRCLE ALL THAT APPLY)

A. FEASIBILITY:

1	Can a 5-dB(A) reduction in traffic noise levels be achieved for at least one impacted receptor?	X YES	NO
2	Does topography negatively affect the proposed abatement measure?	YES	X NO
3	Does the abatement measure negatively affect property access, drainage, safety and maintenance requirements?	YES	X NO
4	Is there control of access in the vicinity of the proposed abatement measure?	YES	X NO

B. REASONABLENESS:

1	Can a 7-dB(A) reduction in traffic noise levels be achieved for at least one impacted front row receptor?	X YES	NO
2	Is the design criteria per benefited receptor of 3415 (CIRCLE ONE) (sq.ft.) / cu.yd less than the maximum allowable design criteria per benefited receptor of 2969 (CIRCLE ONE) (sq.ft.) / cu.yd.?	YES	X NO

C. NOISE ABATEMENT DECISION:

1	Is the noise mitigation feasible?	X YES	NO
2	Is the noise mitigation reasonable?	YES	X NO
3	Is the noise mitigation likely?	YES	X NO
4	Have the owners' and residents' viewpoints been solicited?	YES	X NO
5	Is the noise mitigation recommended for construction?	YES	NO

D. OPTIONAL REASONABLENESS CONSIDERATION:

1	Was optional averaging noise abatement allowance within a common noise environment used for consideration of barrier reasonableness?	YES	X NO

2 If the answer to D.1 is YES, the design criteria per benefited receptor for each individual barrier within the common noise environment before averaging are:

Bar No. _____ _____ (CIRCLE ONE) sq.ft./cu.yd Bar No. _____ _____ (CIRCLE ONE) sq.ft./cu.yd

Bar No. _____ _____ sq.ft./cu.yd Bar No. _____ _____ sq.ft./cu.yd

3 If the answer to D.1 is YES, is the design criteria per benefited receptor for each individual barrier less than or equal to twice the maximum allowable design criteria per benefited receptor of _____ (CIRCLE ONE) sq.ft./cu.yd _____ YES NO

Form Completed By: E SALUTZ Date: _____

In Consultation With: _____ Date: _____

Complete 540
Traffic Noise Analysis

3/24/2015

Orange Corridor

Noise Wall 11

								Short Wall			Intermediate Wall			Recommended[4] Tall Wall		
			NAC	Noise Levels[2]												
Receptor	First Row	Residences Represented	Land Use Category[1]	Existing dB(A)	Build dB(A)	Increase	Impacted Receptors	W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors
R0233	Yes	1	B	46	69	23	1	61	8	1	60	9	1	58	11	1
R0234A	Yes	1	B	46	73	27	1	61	12	1	60	13	1	57	16	1
R0234B	Yes	1	B	46	72	26	1	61	11	1	60	12	1	57	15	1
R0234C	Yes	1	B	52	72	20	1	61	11	1	61	11	1	58	14	1
R0235A		1	B	46	63	17	1	61	2		61	2		59	4	
R0235B		1	B	49	64	15	1	61	3		61	3		59	5	1
R0235C		1	B	53	64	11		61	3		61	3		59	5	1
R0236A		1	B	46	62	16	1	60	2		60	2		59	3	
R0236B		1	B	48	62	14		60	2		60	2		59	3	
R0236C		1	B	52	63	11		61	2		60	3		59	4	
R0236D		1	B	55	62	7		60	2		60	2		58	4	
R0236E		1	B	51	61	10		59	2		59	2		57	4	
R0236F		1	B	47	60	13		58	2		58	2		57	3	
R0236G		1	B	46	60	14		58	2		58	2		57	3	
R0237A	Yes	1	B	52	68	16	1	61	7	1	61	7	1	58	10	1
R0237B	Yes	1	B	54	65	11	1	61	4		61	4		59	6	1
R0237C	Yes	1	B	51	72	21	1	63	9	1	62	10	1	59	13	1
R0238A	Yes	1	B	46	68	22	1	62	6	1	61	7	1	59	9	1
R0238B	Yes	1	B	46	67	21	1	61	6	1	61	6	1	59	8	1
R0238C	Yes	1	B	46	66	20	1	62	4		61	5	1	58	8	1
R0239A		1	B	46	65	19	1	61	4		60	5	1	58	7	1
R0239B		1	B	46	63	17	1	60	3		60	3		58	5	1
R0239C		1	B	46	62	16	1	59	3		59	3		58	4	
R0240A		1	B	46	62	16	1	59	3		59	3		57	5	1
R0240B		1	B	46	64	18	1	61	3		60	4		58	6	1
R0241A	Yes	1	B	46	67	21	1	60	7	1	60	7	1	58	9	1
R0241B	Yes	1	B	46	66	20	1	62	4		61	5	1	58	8	1
R0242A	Yes	1	B	46	64	18	1	60	4		59	5	1	57	7	1
R0242B	Yes	1	B	46	62	16	1	59	3		58	4		56	6	1
R0254	Yes	1	B	46	57	11		53	4		53	4		52	5	1
R0255	Yes	1	B	47	61	14		56	5	1	55	6	1	54	7	1
R0256A	Yes	1	B	47	70	23	1	62	8	1	61	9	1	58	12	1
R0256B	Yes	1	B	49	74	25	1	64	10	1	62	12	1	59	15	1
R1738A		1	B	51	62	11		56	6	1	56	6	1	55	7	1
R1738B		1	B	49	59	10		57	2		56	3		55	4	
R1739A		1	B	51	63	12		58	5	1	58	5	1	57	6	1
R1739B		1	B	49	64	15	1	57	7	1	57	7	1	56	8	1
R1740		1	B	46	60	14		57	3		57	3		56	4	
R1741A		1	B	46	61	15	1	56	5	1	56	5	1	54	7	1
R1741B		1	B	46	61	15	1	55	6	1	55	6	1	54	7	1
R1741C		1	B	53	58	5		56	2		56	2		54	4	
R1742A		1	B	46	65	19	1	58	7	1	57	8	1	56	9	1
R1742B		1	B	46	59	13		56	3		55	4		54	5	1

Length (ft)=	2901	2901	2901
Average Height =	14	16	24
Area of Noise Wall (sft)=	40617	46422	69629
Impacted Receptors=	28	28	28
Number of Benefited Receptors=	18	22	31
Area of Noise Wall per Benefit Receptor (sft)=	2257	2110	2246
Average Increase in dB(A) of all Impacted Receptors=	19	19	19
Maximum Allowable Base Quantity of Noise Wall per Benefited Receptor (sft)=	3160	3160	3160
Feasible (5 dB(A) Reduction)=	Yes	Yes	Yes
Reasonable (Wall Area per Benefit) =	Yes	Yes	Yes
Reasonable (7 dB(A) Reduction) =	Yes	Yes	Yes
Breaks Line of Sight to Impacted Properties? =	Yes	Yes	Yes

Recommended 24 ft Barrier

(1) Category B denotes a residential property.
(2) Noise levels highlighted in red are levels above the Noise Abatment Criteria.
(3) Values highlighted in green are a 5 dB(A) or greater reduction in noise levels.
(4) A 24ft barrier is recommended because all criteria for feasible and reasonable have been met, and the most properties are benefited.

NCDOT SOUND BARRIER
FEASIBILITY and REASONABLENESS
WORKSHEET

PROJECT - Complete 540 TIP # - R-2721, R-2828, R-2829

LOCATION - Barrier 11 COUNTY(IES) - Wake and Johnston

IMPACTS - 28 # BENEFITS - 31 NAC: A (B) C D E F G (CIRCLE ALL THAT APPLY)

A. FEASIBILITY:

1	Can a 5-dB(A) reduction in traffic noise levels be achieved for at least one impacted receptor?	X YES	NO
2	Does topography negatively affect the proposed abatement measure?	YES	X NO
3	Does the abatement measure negatively affect property access, drainage, safety and maintenance requirements?	YES	X NO
4	Is there control of access in the vicinity of the proposed abatement measure?	YES	X NO

B. REASONABLENESS:

1	Can a 7-dB(A) reduction in traffic noise levels be achieved for at least one impacted front row receptor?	X YES	NO
2	Is the design criteria per benefited receptor of 2246 (CIRCLE ONE) (sq.ft.) cu.yd less than the maximum allowable design criteria per benefited receptor of 3160 (CIRCLE ONE) (sq.ft.) cu.yd.?	X YES	NO

C. NOISE ABATEMENT DECISION:

1	Is the noise mitigation feasible?	X YES	NO
2	Is the noise mitigation reasonable?	X YES	NO
3	Is the noise mitigation likely?	X YES	NO
4	Have the owners' and residents' viewpoints been solicited?	YES	X NO
5	Is the noise mitigation recommended for construction?	YES	NO

D. OPTIONAL REASONABLENESS CONSIDERATION:

1	Was optional averaging noise abatement allowance within a common noise environment used for consideration of barrier reasonableness?	YES	X NO

2 If the answer to D.1 is YES, the design criteria per benefited receptor for each individual barrier within the common noise environment before averaging are:

Bar No. _____ _____ (CIRCLE ONE) sq.ft./cu.yd Bar No. _____ _____ (CIRCLE ONE) sq.ft./cu.yd

Bar No. _____ _____ sq.ft./cu.yd Bar No. _____ _____ sq.ft./cu.yd

3	If the answer to D.1 is YES, is the design criteria per benefited receptor for each individual barrier less than or equal to twice the maximum allowable design criteria per benefited receptor of _____ (CIRCLE ONE) sq.ft./cu.yd	YES	NO

Form Completed By: E SALUTZ Date: _____

In Consultation With: _____ Date: _____

Complete 540
Traffic Noise Analysis

4/3/2015

Orange Corridor

Noise Wall 12

				Noise Levels[2]				Short Wall			Intermediate Wall			Tall Wall		
Receptor	First Row	Residences Represented	NAC Land Use Category[1]	Existing dB(A)	Build dB(A)	Increase	Impacted Receptors	W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors
R0243	Yes	1	B	46	70	24	1	63	7	1	63	7	1	62	8	1
R0244A		1	B	46	65	19	1	62	3		62	3		61	4	
R0244B		1	B	46	63	17	1	61	2		60	3		60	3	
R0245A	Yes	1	B	46	69	23	1	67	2		66	3		65	4	
R0245B	Yes	1	B	46	67	21	1	65	2		64	3		63	4	
R0246A	Yes	1	B	46	71	25	1	68	3		67	4		66	5	1
R0246B	Yes	1	B	46	72	26	1	68	4		66	6	1	65	7	1
R0247A	Yes	1	B	49	63	14		61	2		61	2		61	2	
R0247B	Yes	1	B	49	64	15	1	61	3		61	3		60	4	
R0247C	Yes	1	B	50	61	11		60	1		60	1		59	2	
R0248	Yes	1	B	47	72	25	1	65	7	1	64	8	1	63	9	1
R1732		1	B	46	59	13		58	1		58	1		57	2	
R1733		1	B	46	61	15	1	61	0		61	0		60	1	
R1734		1	B	46	61	15	1	60	1		60	1		59	2	
R1735		1	B	46	58	12		58	0		57	1		57	1	
R1736A		1	B	49	62	13		59	3		59	3		59	3	
R1736B		1	B	48	61	13		58	3		58	3		58	3	
R1737A		1	B	47	63	16	1	59	4		59	4		59	4	
R1737B		1	B	48	62	14		59	3		59	3		59	3	
R2323A	Yes	1	B	46	73	27	1	64	9	1	64	9	1	64	9	1
R2323B	Yes	1	B	46	73	27	1	63	10	1	63	10	1	63	10	1
R2323C	Yes	1	B	47	73	26	1	62	11	1	62	11	1	62	11	1
R2323D	Yes	1	B	52	73	21	1	62	11	1	61	12	1	61	12	1

Length (ft)=	2145	2145	2145
Average Height =	16	18	20
Area of Noise Wall (sft)=	34320	38609	42899
Impacted Receptors=	16	16	16
Number of Benefited Receptors=	6	7	8
Area of Noise Wall per Benefit Receptor (sft)=	5720	5516	5362
Average Increase in dB(A) of all Impacted Receptors=	21	21	21
Maximum Allowable Base Quantity of Noise Wall per Benefited Receptor (sft)=	3248	3248	3248
Feasible (5 dB(A) Reduction)=	Yes	Yes	Yes
Reasonable (Wall Area per Benefit) =	No	No	No
Reasonable (7 dB(A) Reduction) =	Yes	Yes	Yes
Breaks Line of Sight to Impacted Properties? =	No	No	No

(1) Category B denotes a residential property.
(2) Noise levels highlighted in red are levels above the Noise Abatment Criteria.
(3) Values highlighted in green are a 5 dB(A) or greater reduction in noise levels.

Note: Boxed results indicate barrier discussed in report text.

NCDOT SOUND BARRIER
FEASIBILITY and REASONABLENESS
WORKSHEET

PROJECT - Complete 540 TIP # - R-2721, R-2828, R-2829

LOCATION - Barrier 12 COUNTY(IES) - Wake and Johnston

IMPACTS - 16 # BENEFITS - 8 NAC: A (B) C D E F G (CIRCLE ALL THAT APPLY)

A. FEASIBILITY:

1	Can a 5-dB(A) reduction in traffic noise levels be achieved for at least one impacted receptor?	X YES	NO
2	Does topography negatively affect the proposed abatement measure?	YES	X NO
3	Does the abatement measure negatively affect property access, drainage, safety and maintenance requirements?	YES	X NO
4	Is there control of access in the vicinity of the proposed abatement measure?	YES	X NO

B. REASONABLENESS:

1	Can a 7-dB(A) reduction in traffic noise levels be achieved for at least one impacted front row receptor?	X YES	NO
2	Is the design criteria per benefited receptor of 5362 (sq.ft./cu.yd) (CIRCLE ONE) less than the maximum allowable design criteria per benefited receptor of 3248 (sq.ft./ cu.yd.?) (CIRCLE ONE)	YES	X NO

C. NOISE ABATEMENT DECISION:

1	Is the noise mitigation feasible?	X YES	NO
2	Is the noise mitigation reasonable?	YES	X NO
3	Is the noise mitigation likely?	YES	X NO
4	Have the owners' and residents' viewpoints been solicited?	YES	X NO
5	Is the noise mitigation recommended for construction?	YES	NO

D. OPTIONAL REASONABLENESS CONSIDERATION:

1	Was optional averaging noise abatement allowance within a common noise environment used for consideration of barrier reasonableness?	X YES	NO

2 If the answer to D.1 is YES, the design criteria per benefited receptor for each individual barrier within the common noise environment before averaging are:

Bar No.	11	2,246	(sq.ft./cu.yd) (CIRCLE ONE)	Bar No.		(sq.ft./cu.yd) (CIRCLE ONE)
Bar No.	12	5,362	(sq.ft./cu.yd)	Bar No.		sq.ft./cu.yd

3	If the answer to D.1 is YES, is the design criteria per benefited receptor for each individual barrier less than or equal to twice the maximum allowable design criteria per benefited receptor of 2,500 (sq.ft./cu.yd) (CIRCLE ONE)	YES	X NO

Form Completed By: E SALUTZ Date:

In Consultation With: Date:

Complete 540
Traffic Noise Analysis

4/2/2015

Orange Corridor

Noise Wall 13

Receptor	First Row	Residences Represented	NAC Land Use Category[1]	Noise Levels[2] Existing dB(A)	Build dB(A)	Increase	Impacted Receptors	Short Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	Intermediate Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	Tall Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors
R0257A	Yes	1	B	47	58	11		58	0		58	0		58	0	
R0257B	Yes	1	B	48	59	11		59	0		59	0		59	0	
R0258		1	B	46	58	12		58	0		58	0		58	0	
R0259		1	B	46	56	10		57	-1		56	0		56	0	
R0260A	Yes	1	B	47	61	14		61	0		61	0		61	0	
R0260B	Yes	1	B	46	60	14		60	0		60	0		59	1	
R0261A	Yes	1	B	46	61	15	1	61	0		61	0		59	2	
R0261B	Yes	1	B	47	63	16	1	63	0		62	1		61	2	
R0261C	Yes	1	B	46	60	14		61	-1		60	0		59	1	
R0262A		1	B	46	55	9		55	0		55	0		55	0	
R0262B		1	B	46	55	9		55	0		55	0		54	1	
R0263A		1	B	46	55	9		54	1		54	1		53	2	
R0263B		1	B	46	54	8		54	0		53	1		53	1	
R1624	Yes	1	B	48	60	12		60	0		60	0		60	0	
R0264A		1	B	46	57	11		57	0		57	0		56	1	
R0264B		1	B	46	56	10		56	0		56	0		55	1	
R0265A		1	B	46	58	12		58	0		57	1		56	2	
R0265B		1	B	46	58	12		57	1		56	2		55	3	
R0266A		1	B	46	58	12		58	0		58	0		57	1	
R0266B		1	B	46	58	12		58	0		58	0		56	2	
R0267A		1	B	46	60	14		60	0		60	0		58	2	
R0267B		1	B	46	62	16	1	62	0		61	1		59	3	
R0268A		1	B	46	60	14		59	1		58	2		56	4	
R0268B		1	B	46	62	16	1	59	3		58	4		57	5	1
R0268C		1	B	46	60	14		59	1		58	2		57	3	
R0269	Yes	1	B	46	69	23	1	64	5	1	63	6	1	61	8	1
R0270	Yes	1	B	46	76	30	1	68	8	1	67	9	1	64	12	1
R0271A	Yes	1	B	46	69	23	1	66	3		63	6	1	61	8	1
R0271B	Yes	1	B	46	66	20	1	64	2		62	4		60	6	1
R0272	Yes	1	B	46	71	25	1	66	5	1	64	7	1	62	9	1
R0273A	Yes	1	B	46	67	21	1	62	5	1	61	6	1	59	8	1
R0273B	Yes	1	B	46	68	22	1	63	5	1	62	6	1	60	8	1
R0279	Yes	1	B	52	70	18	1	67	3		66	4		62	8	1
R0280	Yes	1	B	48	65	17	1	62	3		62	3		60	5	1
R1746A		1	B	46	62	16	1	60	2		58	4		57	5	1
R1746B		1	B	46	61	15	1	60	1		58	3		57	4	
R1747		1	B	46	63	17	1	61	2		59	4		58	5	1
R1748		1	B	46	63	17	1	59	4		58	5	1	57	6	1
R1916		1	B	46	60	14		58	2		56	4		55	5	1
R1917		1	B	47	59	12		56	3		55	4		54	5	1

Length (ft)=	3317	3317	3317
Average Height =	14	16	20
Area of Noise Wall (sft)=	46431	53066	66333
Impacted Receptors=	17	17	17
Number of Benefited Receptors=	5	7	15
Area of Noise Wall per Benefit Receptor (sft)=	9286	7581	4422
Average Increase in dB(A) of all Impacted Receptors=	19	19	19
Maximum Allowable Base Quantity of Noise Wall per Benefited Receptor (sft)=	3173	3173	3173
Feasible (5 dB(A) Reduction)=	Yes	Yes	Yes
Reasonable (Wall Area per Benefit) =	No	No	No
Reasonable (7 dB(A) Reduction) =	Yes	Yes	Yes
Breaks Line of Sight to Impacted Properties? =	No	No	Yes

(1) Category B denotes a residential property.
(2) Noise levels highlighted in red are levels above the Noise Abatment Criteria.
(3) Values highlighted in green are a 5 dB(A) or greater reduction in noise levels.

Note: Boxed results indicate barrier discussed in report text.

NCDOT SOUND BARRIER
FEASIBILITY and REASONABLENESS
WORKSHEET

PROJECT - Complete 540 TIP # - R-2721, R-2828, R-2829

LOCATION - Barrier 13 COUNTY(IES) - Wake and Johnston

IMPACTS - 17 # BENEFITS - 15 NAC: A (B) C D E F G (CIRCLE ALL THAT APPLY)

A. FEASIBILITY:

1	Can a 5-dB(A) reduction in traffic noise levels be achieved for at least one impacted receptor?	X YES	NO
2	Does topography negatively affect the proposed abatement measure?	YES	X NO
3	Does the abatement measure negatively affect property access, drainage, safety and maintenance requirements?	YES	X NO
4	Is there control of access in the vicinity of the proposed abatement measure?	YES	X NO

B. REASONABLENESS:

1	Can a 7-dB(A) reduction in traffic noise levels be achieved for at least one impacted front row receptor?	X YES	NO
2	Is the design criteria per benefited receptor of 4422 (sq.ft.) / cu.yd (CIRCLE ONE) less than the maximum allowable design criteria per benefited receptor of 3173 (sq.ft.) / cu.yd.? (CIRCLE ONE)	YES	X NO

C. NOISE ABATEMENT DECISION:

1	Is the noise mitigation feasible?	X YES	NO
2	Is the noise mitigation reasonable?	YES	X NO
3	Is the noise mitigation likely?	YES	X NO
4	Have the owners' and residents' viewpoints been solicited?	YES	X NO
5	Is the noise mitigation recommended for construction?	YES	NO

D. OPTIONAL REASONABLENESS CONSIDERATION:

1	Was optional averaging noise abatement allowance within a common noise environment used for consideration of barrier reasonableness?	YES	X NO

2 If the answer to D.1 is YES, the design criteria per benefited receptor for each individual barrier within the common noise environment before averaging are:

Bar No. _____ _____ sq.ft./cu.yd (CIRCLE ONE) Bar No. _____ _____ sq.ft./cu.yd (CIRCLE ONE)

Bar No. _____ _____ sq.ft./cu.yd Bar No. _____ _____ sq.ft./cu.yd

3 If the answer to D.1 is YES, is the design criteria per benefited receptor for each individual barrier less than or equal to twice the maximum allowable design criteria per benefited receptor of _____ sq.ft./cu.yd (CIRCLE ONE) YES NO

Form Completed By: E SALUTZ Date: _____

In Consultation With: _____ Date: _____

Complete 540
Traffic Noise Analysis

3/31/2015

Orange Corridor

Noise Wall 14

				Noise Levels[2]				Short Wall			Intermediate Wall			Tall Wall		
Receptor	First Row	Residences Represented	NAC Land Use Category[1]	Existing dB(A)	Build dB(A)	Increase	Impacted Receptors	W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors
R0249	Yes	1	B	46	74	28	1	71	3		68	6	1	64	10	1
R0250A	Yes	1	B	46	63	17	1	60	3		60	3		59	4	
R0250B	Yes	1	B	46	63	17	1	60	3		59	4		59	4	
R0250C	Yes	1	B	50	63	13		62	1		61	2		61	2	
R0253A	Yes	1	B	46	66	20	1	60	6	1	59	7	1	58	8	1
R0253B	Yes	1	B	46	63	17	1	58	5	1	57	6	1	56	7	1
R0274A	Yes	1	B	46	67	21	1	61	6	1	60	7	1	59	8	1
R0274B	Yes	1	B	46	67	21	1	60	7	1	59	8	1	58	9	1
R0274C	Yes	1	B	46	65	19	1	58	7	1	57	8	1	56	9	1
R0275	Yes	1	B	46	60	14		59	1		59	1		59	1	
R0276	Yes	1	B	51	62	11		61	1		61	1		61	1	
R0277	Yes	1	B	50	71	21	1	68	3		66	5	1	63	8	1
R1743A		1	B	50	60	10		59	1		59	1		58	2	
R1743B		1	B	46	59	13		57	2		57	2		56	3	
R1744A		1	B	46	61	15	1	56	5	1	55	6	1	55	6	1
R1744B		1	B	46	59	13		56	3		55	4		55	4	
R1745A		1	B	46	62	16	1	58	4		57	5	1	56	6	1
R1745B		1	B	46	61	15	1	56	5	1	55	6	1	54	7	1
R1745C		1	B	46	63	17	1	55	8	1	54	9	1	53	10	1
R1745D		1	B	46	62	16	1	55	7	1	54	8	1	54	8	1
R1745E		1	B	46	57	11		54	3		54	3		53	4	
R1745F		1	B	46	57	11		54	3		54	3		53	4	
R1745G		1	B	46	55	9		52	3		52	3		52	3	
R1745H		1	B	46	57	11		53	4		52	5	1	52	5	1
R1745I		1	B	46	59	13		54	5	1	53	6	1	53	6	1

Length (ft)=	2800	2800	2800
Average Height =	14	16	20
Area of Noise Wall (sft)=	39200	44801	56000
Impacted Receptors=	14	14	14
Number of Benefited Receptors=	10	14	14
Area of Noise Wall per Benefit Receptor (sft)=	3920	3200	4000
Average Increase in dB(A) of all Impacted Receptors=	19	19	19
Maximum Allowable Base Quantity of Noise Wall per Benefited Receptor (sft)=	3150	3150	3150
Feasible (5 dB(A) Reduction)=	Yes	Yes	Yes
Reasonable (Wall Area per Benefit) =	No	No	No
Reasonable (7 dB(A) Reduction) =	Yes	Yes	Yes
Breaks Line of Sight to Impacted Properties? =	No	No	Yes

(1) Category B denotes a residential property.
(2) Noise levels highlighted in red are levels above the Noise Abatment Criteria.
(3) Values highlighted in green are a 5 dB(A) or greater reduction in noise levels.

Note: Boxed results indicate barrier discussed in report text.

NCDOT SOUND BARRIER
FEASIBILITY and REASONABLENESS
WORKSHEET

PROJECT - Complete 540 TIP # - R-2721, R-2828, R-2829

LOCATION - Barrier 14 COUNTY(IES) - Wake and Johnston

IMPACTS - 14 # BENEFITS - 14 NAC: A (B) C D E F G (CIRCLE ALL THAT APPLY)

A. FEASIBILITY:

1	Can a 5-dB(A) reduction in traffic noise levels be achieved for at least one impacted receptor?	X YES	NO
2	Does topography negatively affect the proposed abatement measure?	YES	X NO
3	Does the abatement measure negatively affect property access, drainage, safety and maintenance requirements?	YES	X NO
4	Is there control of access in the vicinity of the proposed abatement measure?	YES	X NO

B. REASONABLENESS:

1	Can a 7-dB(A) reduction in traffic noise levels be achieved for at least one impacted front row receptor?	X YES	NO
2	Is the design criteria per benefited receptor of 4000 (CIRCLE ONE) (sq.ft.) / cu.yd less than the maximum allowable design criteria per benefited receptor of 3146 (CIRCLE ONE) (sq.ft.) / cu.yd.?	YES	X NO

C. NOISE ABATEMENT DECISION:

1	Is the noise mitigation feasible?	X YES	NO
2	Is the noise mitigation reasonable?	YES	X NO
3	Is the noise mitigation likely?	YES	X NO
4	Have the owners' and residents' viewpoints been solicited?	YES	X NO
5	Is the noise mitigation recommended for construction?	YES	NO

D. OPTIONAL REASONABLENESS CONSIDERATION:

1	Was optional averaging noise abatement allowance within a common noise environment used for consideration of barrier reasonableness?	YES	X NO

2 If the answer to D.1 is YES, the design criteria per benefited receptor for each individual barrier within the common noise environment before averaging are:

Bar No. _____ _____ (CIRCLE ONE) sq.ft./cu.yd Bar No. _____ _____ (CIRCLE ONE) sq.ft./cu.yd

Bar No. _____ _____ sq.ft./cu.yd Bar No. _____ _____ sq.ft./cu.yd

3	If the answer to D.1 is YES, is the design criteria per benefited receptor for each individual barrier less than or equal to twice the maximum allowable design criteria per benefited receptor of _____ (CIRCLE ONE) sq.ft./cu.yd	YES	NO

Form Completed By: E SALUTZ Date: _____

In Consultation With: _____ Date: _____

Complete 540
Traffic Noise Analysis

3/17/2015

Orange Corridor

Noise Wall 15

Receptor	First Row	Residences Represented	NAC Land Use Category[1]	Noise Levels[2] Existing dB(A)	Build dB(A)	Increase	Impacted Receptors	Short Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	Intermediate Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	Tall Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors
R0289	Yes	1	B	52	68	16	1	62	6	1	61	7	1	61	7	1
R0290	Yes	1	B	46	63	17	1	59	4		58	5	1	58	5	1
R1749		1	B	57	63	6		59	4		59	4		59	4	

Length (ft)=	2201	2201	2201
Average Height =	12	14	16
Area of Noise Wall (sft)=	26407	30807	35208
Impacted Receptors=	2	2	2
Number of Benefited Receptors=	1	2	2
Area of Noise Wall per Benefit Receptor (sft)=	26407	15404	17604
Average Increase in dB(A) of all Impacted Receptors=	17	17	17
Maximum Allowable Base Quantity of Noise Wall per Benefited Receptor (sft)=	3078	3078	3078
Feasible (5 dB(A) Reduction)=	Yes	Yes	Yes
Reasonable (Wall Area per Benefit) =	No	No	No
Reasonable (7 dB(A) Reduction) =	No	Yes	Yes
Breaks Line of Sight to Impacted Properties? =	Yes	Yes	Yes

(1) Category B denotes a residential property.
(2) Noise levels highlighted in red are levels above the Noise Abatment Criteria.
(3) Values highlighted in green are a 5 dB(A) or greater reduction in noise levels.

Note: Boxed results indicate barrier discussed in report text.

NCDOT SOUND BARRIER
FEASIBILITY and REASONABLENESS
WORKSHEET

PROJECT - Complete 540 TIP # - R-2721, R-2828, R-2829

LOCATION - Barrier 15 COUNTY(IES) - Wake and Johnston

IMPACTS - 2 # BENEFITS - 2 NAC: A (B) C D E F G (CIRCLE ALL THAT APPLY)

A. FEASIBILITY:

1	Can a 5-dB(A) reduction in traffic noise levels be achieved for at least one impacted receptor?	X YES	NO
2	Does topography negatively affect the proposed abatement measure?	YES	X NO
3	Does the abatement measure negatively affect property access, drainage, safety and maintenance requirements?	YES	X NO
4	Is there control of access in the vicinity of the proposed abatement measure?	YES	X NO

B. REASONABLENESS:

1	Can a 7-dB(A) reduction in traffic noise levels be achieved for at least one impacted front row receptor?	X YES	NO
2	Is the design criteria per benefited receptor of 15404 (CIRCLE ONE) (sq.ft.) / cu.yd less than the maximum allowable design criteria per benefited receptor of 3078 (CIRCLE ONE) (sq.ft.) / cu.yd.?	YES	X NO

C. NOISE ABATEMENT DECISION:

1	Is the noise mitigation feasible?	X YES	NO
2	Is the noise mitigation reasonable?	YES	X NO
3	Is the noise mitigation likely?	YES	X NO
4	Have the owners' and residents' viewpoints been solicited?	YES	X NO
5	Is the noise mitigation recommended for construction?	YES	NO

D. OPTIONAL REASONABLENESS CONSIDERATION:

1	Was optional averaging noise abatement allowance within a common noise environment used for consideration of barrier reasonableness?	YES	X NO

2 If the answer to D.1 is YES, the design criteria per benefited receptor for each individual barrier within the common noise environment before averaging are:

Bar No. _____ _____ (CIRCLE ONE) sq.ft./cu.yd Bar No. _____ _____ (CIRCLE ONE) sq.ft./cu.yd

Bar No. _____ _____ sq.ft./cu.yd Bar No. _____ _____ sq.ft./cu.yd

3	If the answer to D.1 is YES, is the design criteria per benefited receptor for each individual barrier less than or equal to twice the maximum allowable design criteria per benefited receptor of _____ (CIRCLE ONE) sq.ft./cu.yd	YES	NO

Form Completed By: E SALUTZ Date: _____

In Consultation With: _____ Date: _____

Complete 540
Traffic Noise Analysis

3/17/2015

Orange Corridor

Noise Wall 16

														Recommended[4]		
			NAC	Noise Levels[2]				Short Wall			Intermediate Wall			Tall Wall		
Receptor	First Row	Residences Represented	Land Use Category[1]	Existing dB(A)	Build dB(A)	Increase	Impacted Receptors	W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors
R0283A	Yes	1	B	53	67	14	1	64	3		62	5	1	61	6	1
R0283B	Yes	1	B	54	68	14	1	64	4		62	6	1	62	6	1
R0284A		1	B	47	68	21	1	65	3		63	5	1	62	6	1
R0284B		1	B	47	69	22	1	65	4		64	5	1	63	6	1
R0285A		1	B	49	70	21	1	65	5	1	64	6	1	64	6	1
R0285B		1	B	50	68	18	1	65	3		64	4		63	5	1
R0286A	Yes	1	B	53	70	17	1	66	4		65	5	1	64	6	1
R0286B	Yes	1	B	49	67	18	1	61	6	1	61	6	1	60	7	1
R0287A	Yes	1	B	61	69	8	1	64	5	1	63	6	1	63	6	1
R0287B	Yes	1	B	61	72	11	1	68	4		67	5	1	67	5	1
R0288	Yes	1	B	58	69	11	1	63	6	1	62	7	1	61	8	1
R1753A		1	B	54	66	12	1	63	3		62	4		60	6	1
R1753B		1	B	55	65	10	1	62	3		62	3		60	5	1
R1754		1	B	56	66	10	1	64	2		61	5	1	60	6	1

Length (ft)=	1800	1800	1800
Average Height =	8	10	12
Area of Noise Wall (sft)=	14401	18001	21600
Impacted Receptors=	14	14	14
Number of Benefited Receptors=	4	11	14
Area of Noise Wall per Benefit Receptor (sft)=	3600	1636	1543
Average Increase in dB(A) of all Impacted Receptors=	15	15	15
Maximum Allowable Base Quantity of Noise Wall per Benefited Receptor (sft)=	3018	3018	3018
Feasible (5 dB(A) Reduction)=	Yes	Yes	Yes
Reasonable (Wall Area per Benefit) =	No	Yes	Yes
Reasonable (7 dB(A) Reduction) =	No	Yes	Yes
Breaks Line of Sight to Impacted Properties? =	No	Yes	Yes

Recommended 12 ft barrier

(1) Category B denotes a residential property.
(2) Noise levels highlighted in red are levels above the Noise Abatment Criteria.
(3) Values highlighted in green are a 5 dB(A) or greater reduction in noise levels.
(4) A 12ft barrier is recommended\ because all criteria for feasible and reasonable have been met, and the most properties are benefited.

NCDOT SOUND BARRIER
FEASIBILITY and REASONABLENESS
WORKSHEET

PROJECT - Complete 540 TIP # - R-2721, R-2828, R-2829

LOCATION - Barrier 16 COUNTY(IES) - Wake and Johnston

IMPACTS - 14 # BENEFITS - 14 NAC: A (B) C D E F G (CIRCLE ALL THAT APPLY)

A. FEASIBILITY:

1	Can a 5-dB(A) reduction in traffic noise levels be achieved for at least one impacted receptor?	X YES	NO
2	Does topography negatively affect the proposed abatement measure?	YES	X NO
3	Does the abatement measure negatively affect property access, drainage, safety and maintenance requirements?	YES	X NO
4	Is there control of access in the vicinity of the proposed abatement measure?	YES	X NO

B. REASONABLENESS:

1	Can a 7-dB(A) reduction in traffic noise levels be achieved for at least one impacted front row receptor?	X YES	NO
2	Is the design criteria per benefited receptor of 1543 (sq.ft.) cu.yd (CIRCLE ONE) less than the maximum allowable design criteria per benefited receptor of 3018 (sq.ft.) cu.yd.? (CIRCLE ONE)	X YES	NO

C. NOISE ABATEMENT DECISION:

1	Is the noise mitigation feasible?	X YES	NO
2	Is the noise mitigation reasonable?	X YES	NO
3	Is the noise mitigation likely?	X YES	NO
4	Have the owners' and residents' viewpoints been solicited?	YES	X NO
5	Is the noise mitigation recommended for construction?	YES	NO

D. OPTIONAL REASONABLENESS CONSIDERATION:

1	Was optional averaging noise abatement allowance within a common noise environment used for consideration of barrier reasonableness?	YES	X NO
2	If the answer to D.1 is YES, the design criteria per benefited receptor for each individual barrier within the common noise environment before averaging are:		

Bar No. _____ _____ sq.ft./cu.yd (CIRCLE ONE) Bar No. _____ _____ sq.ft./cu.yd (CIRCLE ONE)

Bar No. _____ _____ sq.ft./cu.yd Bar No. _____ _____ sq.ft./cu.yd

3	If the answer to D.1 is YES, is the design criteria per benefited receptor for each individual barrier less than or equal to twice the maximum allowable design criteria per benefited receptor of _____ sq.ft./cu.yd (CIRCLE ONE)	_____ YES	NO

Form Completed By: E SALUTZ Date: _____

In Consultation With: _____ Date: _____

Complete 540
Traffic Noise Analysis

3/31/2015

Orange Corridor

Noise Wall 17

				Noise Levels[2]				Short Wall			Intermediate Wall			Recommended[4] Tall Wall		
Receptor	First Row	Residences Represented	NAC Land Use Category[1]	Existing dB(A)	Build dB(A)	Increase	Impacted Receptors	W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors
R0341A	Yes	1	B	54	59	5		55	4		55	4		55	4	
R0341B	Yes	1	B	57	61	4		58	3		57	4		57	4	
R0341C	Yes	1	B	60	64	4		59	5	1	59	5	1	59	5	1
R0341D	Yes	1	B	56	61	5		55	6	1	55	6	1	55	6	1
R0341E	Yes	1	B	59	64	5		57	7	1	57	7	1	57	7	1
R0341F	Yes	1	B	63	66	3	1	58	8	1	58	8	1	57	9	1
R0341G	Yes	1	B	57	62	5		57	5	1	56	6	1	56	6	1
R0341H	Yes	1	B	59	63	4		58	5	1	58	5	1	57	6	1
R0341I	Yes	1	B	61	65	4		59	6	1	59	6	1	58	7	1
R0341J	Yes	1	B	59	63	4		57	6	1	56	7	1	56	7	1
R0341K	Yes	1	B	61	65	4		58	7	1	58	7	1	58	7	1
R0341L	Yes	1	B	64	67	3	1	59	8	1	58	9	1	58	9	1
R0342		RECREATIONAL	C	54	57	3										
R0342-1		NODAL ARRAY	C	54	57	3		55	2		55	2		55	2	
R0342-2		NODAL ARRAY	C	54	57	3		55	2		55	2		54	3	
R0342-3		NODAL ARRAY	C	54	56	2		55	1		55	1		54	2	
R0342-4		NODAL ARRAY	C	54	57	3		55	2		54	3		54	3	
R0342-5		NODAL ARRAY	C	54	57	3		54	3		54	3		54	3	
R0342-6		NODAL ARRAY	C	54	56	2		54	2		54	2		54	2	
R0343A		1	B	54	56	2		54	2		54	2		53	3	
R0343B		1	B	54	57	3		55	2		55	2		55	2	
R0343C		1	B	54	59	5		56	3		56	3		56	3	
R0343D		1	B	54	56	2		54	2		54	2		54	2	
R0343E		1	B	54	57	3		55	2		55	2		55	2	
R0343F		1	B	54	59	5		56	3		56	3		56	3	
R0343G		1	B	54	56	2		55	1		55	1		55	1	
R0343H		1	B	54	58	4		56	2		56	2		56	2	
R0343I		1	B	54	59	5		57	2		57	2		57	2	
R0343J		1	B	54	56	2		55	1		54	2		54	2	
R0343K		1	B	54	57	3		56	1		55	2		55	2	
R0343L		1	B	54	59	5		56	3		56	3		56	3	
R0344A		1	B	54	55	1		54	1		53	2		53	2	
R0344B		1	B	54	57	3		55	2		55	2		55	2	
R0344C		1	B	54	58	4		56	2		56	2		56	2	
R0344D		1	B	54	56	2		54	2		54	2		53	3	
R0344E		1	B	54	58	4		55	3		55	3		55	3	
R0344F		1	B	54	59	5		56	3		56	3		56	3	
R0344G		1	B	54	56	2		53	3		53	3		53	3	
R0344H		1	B	54	57	3		55	2		54	3		54	3	
R0344I		1	B	54	59	5		56	3		55	4		55	4	
R0344J		1	B	54	55	1		54	1		53	2		53	2	
R0344K		1	B	54	57	3		55	2		55	2		55	2	
R0344L		1	B	54	59	5		56	3		56	3		55	4	
R0345A	Yes	1	B	54	58	4		55	3		55	3		55	3	
R0345B	Yes	1	B	55	60	5		57	3		56	4		56	4	
R0345C	Yes	1	B	58	63	5		59	4		58	5	1	58	5	1
R0345D	Yes	1	B	54	57	3		55	2		55	2		54	3	
R0345E	Yes	1	B	54	59	5		56	3		56	3		56	3	
R0345F	Yes	1	B	56	61	5		58	3		58	3		57	4	
R0345G	Yes	1	B	54	57	3		54	3		54	3		54	3	
R0345H	Yes	1	B	55	60	5		56	4		55	5	1	55	5	1
R0345I	Yes	1	B	56	62	6		57	5	1	57	5	1	57	5	1
R0345J	Yes	1	B	54	56	2		53	3		53	3		53	3	
R0345K	Yes	1	B	54	58	4		54	4		54	4		54	4	
R0345L	Yes	1	B	55	60	5		56	4		56	4		55	5	1
R0346A	Yes	1	B	59	63	4		59	4		59	4		59	4	
R0346B	Yes	1	B	63	67	4	1	62	5	1	62	5	1	62	5	1
R0346C	Yes	1	B	65	69	4	1	63	6	1	63	6	1	63	6	1
R0346D	Yes	1	B	54	56	2		53	3		53	3		53	3	
R0346E	Yes	1	B	54	58	4		55	3		54	4		54	4	
R0346F	Yes	1	B	55	59	4		56	3		55	4		55	4	
R0346G	Yes	1	B	54	56	2		53	3		53	3		53	3	
R0346H	Yes	1	B	54	58	4		54	4		54	4		54	4	
R0346I	Yes	1	B	54	60	6		56	4		55	5	1	55	5	1
R0346J	Yes	1	B	59	63	4		59	4		59	4		59	4	
R0346K	Yes	1	B	63	67	4	1	63	4		63	4		63	4	
R0346L	Yes	1	B	64	69	5	1	64	5	1	63	6	1	63	6	1
R0347A	Yes	1	B	58	62	4		57	5	1	57	5	1	57	5	1
R0347B	Yes	1	B	61	65	4		59	6	1	59	6	1	59	6	1
R0347C	Yes	1	B	64	68	4	1	60	8	1	60	8	1	60	8	1
R0347D	Yes	1	B	54	56	2		54	2		54	2		54	2	
R0347E	Yes	1	B	54	57	3		55	2		55	2		55	2	
R0347F	Yes	1	B	54	58	4		56	2		56	2		56	2	
R0347G	Yes	1	B	54	55	1		53	2		53	2		53	2	
R0347H	Yes	1	B	54	57	3		55	2		55	2		55	2	
R0347I	Yes	1	B	54	59	5		57	2		57	2		57	2	
R0347J	Yes	1	B	58	62	4		57	5	1	57	5	1	57	5	1
R0347K	Yes	1	B	62	65	3		59	6	1	59	6	1	59	6	1

Complete 540
Traffic Noise Analysis

3/31/2015

Orange Corridor

Noise Wall 17

Receptor	First Row	Residences Represented	NAC Land Use Category[1]	Noise Levels[2] Existing dB(A)	Build dB(A)	Increase	Impacted Receptors	Short Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	Intermediate Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	Recommended[4] Tall Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors
R0347L	Yes	1	B	63	68	5	1	61	7	1	61	7	1	60	8	1
R0348A		1	B	54	56	2		53	3		53	3		53	3	
R0348B		1	B	54	57	3		55	2		54	3		54	3	
R0348C		1	B	54	59	5		56	3		55	4		55	4	
R0348D		1	B	54	56	2		53	3		53	3		53	3	
R0348E		1	B	54	57	3		54	3		54	3		54	3	
R0348F		1	B	54	59	5		55	4		55	4		55	4	
R0348G		1	B	54	56	2		53	3		53	3		53	3	
R0348H		1	B	54	58	4		55	3		54	4		54	4	
R0348I		1	B	55	60	5		56	4		55	5	1	55	5	1
R0348J		1	B	54	56	2		54	2		53	3		53	3	
R0348K		1	B	54	58	4		55	3		55	3		54	4	
R0348L		1	B	55	60	5		56	4		56	4		55	5	1
R0349A		1	B	56	60	4		55	5	1	55	5	1	55	5	1
R0349B		1	B	58	62	4		57	5	1	56	6	1	56	6	1
R0349C		1	B	59	64	5		58	6	1	58	6	1	58	6	1
R0349D		1	B	57	61	4		56	5	1	56	5	1	55	6	1
R0349E		1	B	59	64	5		57	7	1	57	7	1	57	7	1
R0349F		1	B	61	66	5	1	59	7	1	59	7	1	58	8	1
R0349G		1	B	56	60	4		56	4		56	4		55	5	1
R0349H		1	B	58	63	5		57	6	1	57	6	1	57	6	1
R0349I		1	B	60	65	5		59	6	1	59	6	1	59	6	1
R0349J		1	B	55	59	4		55	4		55	4		55	4	
R0349K		1	B	57	61	4		57	4		56	5	1	56	5	1
R0349L		1	B	59	64	5		58	6	1	58	6	1	58	6	1
R0350A	Yes	1	B	63	68	5	1	58	10	1	58	10	1	57	11	1
R0350B	Yes	1	B	67	70	3	1	59	11	1	59	11	1	58	12	1
R0350C	Yes	1	B	67	71	4	1	61	10	1	60	11	1	59	12	1
R0350D	Yes	1	B	60	65	5		55	10	1	54	11	1	54	11	1
R0350E	Yes	1	B	63	68	5	1	56	12	1	56	12	1	55	13	1
R0350F	Yes	1	B	65	69	4	1	58	11	1	57	12	1	56	13	1
R0350G	Yes	1	B	60	64	4		58	6	1	57	7	1	57	7	1
R0350H	Yes	1	B	62	67	5	1	59	8	1	59	8	1	59	8	1
R0350I	Yes	1	B	64	68	4	1	61	7	1	61	7	1	61	7	1
R0350J	Yes	1	B	56	60	4		56	4		56	4		56	4	
R0350K	Yes	1	B	59	63	4		58	5	1	58	5	1	58	5	1
R0350L	Yes	1	B	60	64	4		60	4		60	4		60	4	

Length (ft)=	1324	1324	1324
Average Height =	16	18	20
Area of Noise Wall (sft)=	21191	23840	26489
Impacted Receptors=	16	16	16
Number of Benefited Receptors=	39	44	47
Area of Noise Wall per Benefit Receptor (sft)=	543	542	564
Average Increase in dB(A) of all Impacted Receptors=	4	4	4
Maximum Allowable Base Quantity of Noise Wall per Benefited Receptor (sft)=	2647	2647	2647
Feasible (5 dB(A) Reduction)=	Yes	Yes	Yes
Reasonable (Wall Area per Benefit) =	Yes	Yes	Yes
Reasonable (7 dB(A) Reduction) =	Yes	Yes	Yes
Breaks Line of Sight to Impacted Properties? =	No	Yes	Yes

(1) Category B denotes a residential property.
(2) Noise levels highlighted in red are levels above the Noise Abatment Criteria.
(3) Values highlighted in green are a 5 dB(A) or greater reduction in noise levels.
(4) A 20ft barrier is recommended because all criteria for feasible and reasonable have been met, and the most properties are benefited.

Recommended 20 ft barrier

NCDOT SOUND BARRIER
FEASIBILITY and REASONABLENESS
WORKSHEET

PROJECT - Complete 540 TIP # - R-2721, R-2828, R-2829

LOCATION - Barrier 17 COUNTY(IES) - Wake and Johnston

IMPACTS - 16 # BENEFITS - 47 NAC: A (B) (C) D E F G (CIRCLE ALL THAT APPLY)

A. FEASIBILITY:

1	Can a 5-dB(A) reduction in traffic noise levels be achieved for at least one impacted receptor?	X YES	NO
2	Does topography negatively affect the proposed abatement measure?	YES	X NO
3	Does the abatement measure negatively affect property access, drainage, safety and maintenance requirements?	YES	X NO
4	Is there control of access in the vicinity of the proposed abatement measure?	YES	X NO

B. REASONABLENESS:

1	Can a 7-dB(A) reduction in traffic noise levels be achieved for at least one impacted front row receptor?	X YES	NO
2	Is the design criteria per benefited receptor of 564 (CIRCLE ONE) (sq.ft.) cu.yd less than the maximum allowable design criteria per benefited receptor of 2647 (CIRCLE ONE) (sq.ft.) cu.yd.?	X YES	NO

C. NOISE ABATEMENT DECISION:

1	Is the noise mitigation feasible?	X YES	NO
2	Is the noise mitigation reasonable?	X YES	NO
3	Is the noise mitigation likely?	X YES	NO
4	Have the owners' and residents' viewpoints been solicited?	YES	X NO
5	Is the noise mitigation recommended for construction?	YES	NO

D. OPTIONAL REASONABLENESS CONSIDERATION:

1	Was optional averaging noise abatement allowance within a common noise environment used for consideration of barrier reasonableness?	YES	X NO

2 If the answer to D.1 is YES, the design criteria per benefited receptor for each individual barrier within the common noise environment before averaging are:

Bar No. _____ _____ (CIRCLE ONE) sq.ft./cu.yd Bar No. _____ _____ (CIRCLE ONE) sq.ft./cu.yd

Bar No. _____ _____ sq.ft./cu.yd Bar No. _____ _____ sq.ft./cu.yd

3	If the answer to D.1 is YES, is the design criteria per benefited receptor for each individual barrier less than or equal to twice the maximum allowable design criteria per benefited receptor of _____ (CIRCLE ONE) sq.ft./cu.yd	YES	NO

Form Completed By: E SALUTZ Date: _____

In Consultation With: _____ Date: _____

Complete 540
Traffic Noise Analysis

3/30/2015

Orange Corridor

Noise Wall 19

Receptor	First Row	Residences Represented	NAC Land Use Category[1]	Noise Levels[2] Existing dB(A)	Build dB(A)	Increase	Impacted Receptors	Short Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	Intermediate Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	Recommended[4] Tall Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors
R0361A	Yes	1	B	55	61	6		59	2		59	2		59	2	
R0361B	Yes	1	B	54	59	5		55	4		55	4		54	5	1
R0362A	Yes	1	B	54	64	10		58	6	1	58	6	1	57	7	1
R0362B	Yes	1	B	54	66	12	1	59	7	1	59	7	1	58	8	1
R0362C	Yes	1	B	54	67	13	1	62	5	1	61	6	1	61	6	1
R0363A	Yes	1	B	59	70	11	1	64	6	1	64	6	1	63	7	1
R0363B	Yes	1	B	55	72	17	1	68	4		68	4		67	5	1
R0363C	Yes	1	B	54	75	21	1	73	2		72	3		70	5	1
R0364	Yes	1	B	54	72	18	1	61	11	1	60	12	1	60	12	1
R0365A	Yes	1	B	54	69	15	1	60	9	1	59	10	1	59	10	1
R0365B	Yes	1	B	54	71	17	1	60	11	1	60	11	1	60	11	1
R0365C	Yes	1	B	54	66	12	1	58	8	1	57	9	1	57	9	1
R0366A	Yes	1	B	54	73	19	1	62	11	1	62	11	1	61	12	1
R0366B	Yes	1	B	54	73	19	1	61	12	1	61	12	1	61	12	1
R0366C	Yes	1	B	54	72	18	1	61	11	1	60	12	1	60	12	1
R0367A	Yes	1	B	54	66	12	1	59	7	1	59	7	1	59	7	1
R0367B	Yes	1	B	54	70	16	1	62	8	1	61	9	1	61	9	1
R0367C	Yes	1	B	54	64	10		58	6	1	58	6	1	57	7	1
R0368A		1	B	54	60	6		53	7	1	53	7	1	53	7	1
R0368B		1	B	54	60	6		54	6	1	54	6	1	53	7	1
R0370A		1	B	54	57	3		51	6	1	51	6	1	50	7	1
R0370B		1	B	54	58	4		51	7	1	51	7	1	51	7	1
R0370C		1	B	54	60	6		52	8	1	52	8	1	52	8	1
R0371		1	B	54	60	6		55	5	1	55	5	1	54	6	1
R0375A	Yes	1	B	54	61	7		59	2		56	5	1	55	6	1
R0375B	Yes	1	B	54	63	9		60	3		57	6	1	56	7	1
R0376A		1	B	54	66	12	1	62	4		59	7	1	58	8	1
R0376B		1	B	54	66	12	1	62	4		60	6	1	58	8	1
R0376C		1	B	54	64	10		61	3		58	6	1	57	7	1
R0377A	Yes	1	B	54	68	14	1	62	6	1	61	7	1	59	9	1
R0377B	Yes	1	B	54	68	14	1	62	6	1	61	7	1	59	9	1
R0377C	Yes	1	B	54	69	15	1	61	8	1	61	8	1	60	9	1
R0378A	Yes	1	B	54	70	16	1	62	8	1	62	8	1	61	9	1
R0378B	Yes	1	B	54	71	17	1	62	9	1	61	10	1	61	10	1
R0378C	Yes	1	B	54	69	15	1	62	7	1	61	8	1	61	8	1
R0379A	Yes	1	B	54	58	4		54	4		52	6	1	51	7	1
R0379B	Yes	1	B	54	61	7		56	5	1	54	7	1	53	8	1
R0379C	Yes	1	B	54	62	8		57	5	1	55	7	1	54	8	1
R0380A	Yes	1	B	54	62	8		60	2		59	3		56	6	1
R0380B	Yes	1	B	54	63	9		58	5	1	57	6	1	55	8	1
R0381A		1	B	54	65	11	1	59	6	1	58	7	1	56	9	1
R0381B		1	B	54	63	9		60	3		59	4		57	6	1
R0383A		1	B	54	60	6		56	4		55	5	1	53	7	1
R0383B		1	B	54	60	6		55	5	1	55	5	1	53	7	1
R1755A		1	B	54	64	10		60	4		60	4		59	5	1
R1755B		1	B	54	63	9		59	4		59	4		58	5	1
R1756A		1	B	54	66	12	1	61	5	1	61	5	1	60	6	1
R1756B		1	B	54	66	12	1	61	5	1	60	6	1	60	6	1
R1757A		1	B	54	65	11	1	60	5	1	60	5	1	59	6	1
R1757B		1	B	54	64	10		59	5	1	59	5	1	59	5	1
R1758A		1	B	54	66	12	1	59	7	1	59	7	1	59	7	1
R1758B		1	B	54	68	14	1	61	7	1	60	8	1	60	8	1
R1758C		1	B	54	64	10		59	5	1	58	6	1	58	6	1

Length (ft)=	5638	5638	5638
Average Height =	10	12	14
Area of Noise Wall (sft)=	56383	67662	78942
Impacted Receptors=	28	28	28
Number of Benefited Receptors=	38	45	52
Area of Noise Wall per Benefit Receptor (sft)=	1484	1504	1518
Average Increase in dB(A) of all Impacted Receptors=	15	15	15
Maximum Allowable Base Quantity of Noise Wall per Benefited Receptor (sft)=	3009	3009	3009
Feasible (5 dB(A) Reduction)=	Yes	Yes	Yes
Reasonable (Wall Area per Benefit) =	Yes	Yes	Yes
Reasonable (7 dB(A) Reduction) =	Yes	Yes	Yes
Breaks Line of Sight to Impacted Properties? =	No	No	No

(1) Category B denotes a residential property.
(2) Noise levels highlighted in red are levels above the Noise Abatment Criteria.
(3) Values highlighted in green are a 5 dB(A) or greater reduction in noise levels.
(4) A 10ft barrier is recommended because all criteria for feasible and reasonable have been met, and the most properties are benefited.

Recommended 14 ft barrier

NCDOT SOUND BARRIER
FEASIBILITY and REASONABLENESS
WORKSHEET

PROJECT - Complete 540 TIP # - R-2721, R-2828, R-2829

LOCATION - Barrier 19 COUNTY(IES) - Wake and Johnston

IMPACTS - 28 # BENEFITS - 52 NAC: A (B) C D E F G (CIRCLE ALL THAT APPLY)

A. FEASIBILITY:

1	Can a 5-dB(A) reduction in traffic noise levels be achieved for at least one impacted receptor?	X YES	NO
2	Does topography negatively affect the proposed abatement measure?	YES	X NO
3	Does the abatement measure negatively affect property access, drainage, safety and maintenance requirements?	YES	X NO
4	Is there control of access in the vicinity of the proposed abatement measure?	YES	X NO

B. REASONABLENESS:

1	Can a 7-dB(A) reduction in traffic noise levels be achieved for at least one impacted front row receptor?	X YES	NO
2	Is the design criteria per benefited receptor of 1518 (sq.ft.) / cu.yd (CIRCLE ONE) less than the maximum allowable design criteria per benefited receptor of 3009 (sq.ft.) / cu.yd.? (CIRCLE ONE)	X YES	NO

C. NOISE ABATEMENT DECISION:

1	Is the noise mitigation feasible?	X YES	NO
2	Is the noise mitigation reasonable?	X YES	NO
3	Is the noise mitigation likely?	X YES	NO
4	Have the owners' and residents' viewpoints been solicited?	YES	X NO
5	Is the noise mitigation recommended for construction?	YES	NO

D. OPTIONAL REASONABLENESS CONSIDERATION:

1	Was optional averaging noise abatement allowance within a common noise environment used for consideration of barrier reasonableness?	YES	X NO

2 If the answer to D.1 is YES, the design criteria per benefited receptor for each individual barrier within the common noise environment before averaging are:

Bar No. _____ _____ sq.ft./cu.yd (CIRCLE ONE) Bar No. _____ _____ sq.ft./cu.yd (CIRCLE ONE)

Bar No. _____ _____ sq.ft./cu.yd Bar No. _____ _____ sq.ft./cu.yd

3	If the answer to D.1 is YES, is the design criteria per benefited receptor for each individual barrier less than or equal to twice the maximum allowable design criteria per benefited receptor of _____ sq.ft./cu.yd (CIRCLE ONE)	YES	NO

Form Completed By: E SALUTZ Date: _____

In Consultation With: _____ Date: _____

Complete 540
Traffic Noise Analysis

3/17/2015

Orange Corridor

Noise Wall 20

											Recommended[4]						
			NAC	Noise Levels[2]				Short Wall			Intermediate Wall			Tall Wall			
Receptor	First Row	Residences Represented	Land Use Category[1]	Existing dB(A)	Build dB(A)	Increase	Impacted Receptors	W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors
R0387A	Yes	1	B	54	74	20	1	62	12	1	62	12	1	61	13	1
R0387B	Yes	1	B	54	75	21	1	66	9	1	65	10	1	65	10	1
R0388A		1	B	54	69	15	1	59	10	1	59	10	1	59	10	1
R0388B		1	B	54	66	12	1	62	4		61	5	1	60	6	1
R0389A		1	B	54	64	10		57	7	1	56	8	1	56	8	1
R0389B		1	B	54	65	11	1	55	10	1	55	10	1	55	10	1
R0389C		1	B	54	60	6		54	6	1	54	6	1	54	6	1
R0390A	Yes	1	B	54	72	18	1	60	12	1	59	13	1	59	13	1
R0390B	Yes	1	B	54	73	19	1	60	13	1	60	13	1	59	14	1
R0391A	Yes	1	B	54	73	19	1	60	13	1	60	13	1	59	14	1
R0391B	Yes	1	B	54	70	16	1	58	12	1	58	12	1	58	12	1
R0392A	Yes	1	B	54	71	17	1	58	13	1	57	14	1	57	14	1
R0392B	Yes	1	B	54	72	18	1	58	14	1	57	15	1	57	15	1
R0393A	Yes	1	B	54	68	14	1	57	11	1	57	11	1	56	12	1
R0393B	Yes	1	B	54	70	16	1	57	13	1	57	13	1	57	13	1
R0393C	Yes	1	B	54	71	17	1	56	15	1	56	15	1	56	15	1
R0404	Yes	1	B	54	67	13	1	56	11	1	56	11	1	56	11	1
R0405		1	B	54	59	5		51	8	1	51	8	1	51	8	1
R0406A	Yes	1	B	54	67	13	1	55	12	1	54	13	1	54	13	1
R0406B	Yes	1	B	54	62	8		54	8	1	54	8	1	54	8	1
R0406C	Yes	1	B	54	66	12	1	54	12	1	54	12	1	54	12	1
R0407A	Yes	1	B	54	67	13	1	56	11	1	56	11	1	56	11	1
R0407B	Yes	1	B	54	63	9		55	8	1	55	8	1	55	8	1
R0407C	Yes	1	B	54	64	10		57	7	1	57	7	1	57	7	1
R0408	Yes	1	B	54	64	10		59	5	1	59	5	1	59	5	1
R0409A	Yes	1	B	57	63	6		63	0		63	0		63	0	
R0409B	Yes	1	B	54	59	5		57	2		57	2		57	2	
R0414	Yes	1	B	56	64	8		62	2		62	2		62	2	
R1759		1	B	54	58	4		53	5	1	53	5	1	52	6	1
R1760A		1	B	54	60	6		54	6	1	54	6	1	54	6	1
R1760B		1	B	54	59	5		53	6	1	53	6	1	53	6	1
R1761		1	B	54	60	6		53	7	1	53	7	1	53	7	1
R1762A		1	B	54	58	4		52	6	1	52	6	1	52	6	1
R1762B		1	B	54	58	4		51	7	1	51	7	1	51	7	1
R1763		1	B	54	59	5		52	7	1	52	7	1	52	7	1

Length (ft)=	3600	3600	3600
Average Height =	10	12	14
Area of Noise Wall (sft)=	36002	43201	50401
Impacted Receptors=	18	18	18
Number of Benefited Receptors=	31	32	32
Area of Noise Wall per Benefit Receptor (sft)=	1161	1350	1575
Average Increase in dB(A) of all Impacted Receptors=	16	16	16
Maximum Allowable Base Quantity of Noise Wall per Benefited Receptor (sft)=	3052	3052	3052
Feasible (5 dB(A) Reduction)=	Yes	Yes	Yes
Reasonable (Wall Area per Benefit) =	Yes	Yes	Yes
Reasonable (7 dB(A) Reduction) =	Yes	Yes	Yes
Breaks Line of Sight to Impacted Properties? =	No	Yes	Yes

(1) Category B denotes a residential property.

Recommended 12 ft barrier

(2) Noise levels highlighted in red are levels above the Noise Abatment Criteria.

(3) Values highlighted in green are a 5 dB(A) or greater reduction in noise levels.

(4) A 12ft barrier is recommended because all criteria for feasible and reasonable have been met, the barrier breaks the line of sight and the most properties are benefited.

NCDOT SOUND BARRIER
FEASIBILITY and REASONABLENESS
WORKSHEET

PROJECT - Complete 540 TIP # - R-2721, R-2828, R-2829

LOCATION - Barrier 20 COUNTY(IES) - Wake and Johnston

IMPACTS - 18 # BENEFITS - 32 NAC: A (B) C D E F G (CIRCLE ALL THAT APPLY)

A. FEASIBILITY:

1	Can a 5-dB(A) reduction in traffic noise levels be achieved for at least one impacted receptor?	X YES	NO
2	Does topography negatively affect the proposed abatement measure?	YES	X NO
3	Does the abatement measure negatively affect property access, drainage, safety and maintenance requirements?	YES	X NO
4	Is there control of access in the vicinity of the proposed abatement measure?	YES	X NO

B. REASONABLENESS:

1	Can a 7-dB(A) reduction in traffic noise levels be achieved for at least one impacted front row receptor?	X YES	NO
2	Is the design criteria per benefited receptor of 1350 (sq.ft.) / cu.yd (CIRCLE ONE) less than the maximum allowable design criteria per benefited receptor of 3052 (sq.ft.) / cu.yd.? (CIRCLE ONE)	X YES	NO

C. NOISE ABATEMENT DECISION:

1	Is the noise mitigation feasible?	X YES	NO
2	Is the noise mitigation reasonable?	X YES	NO
3	Is the noise mitigation likely?	X YES	NO
4	Have the owners' and residents' viewpoints been solicited?	YES	X NO
5	Is the noise mitigation recommended for construction?	YES	NO

D. OPTIONAL REASONABLENESS CONSIDERATION:

1	Was optional averaging noise abatement allowance within a common noise environment used for consideration of barrier reasonableness?	YES	X NO
2	If the answer to D.1 is YES, the design criteria per benefited receptor for each individual barrier within the common noise environment before averaging are:		

Bar No. _____ _____ sq.ft./cu.yd (CIRCLE ONE) Bar No. _____ _____ sq.ft./cu.yd (CIRCLE ONE)

Bar No. _____ _____ sq.ft./cu.yd Bar No. _____ _____ sq.ft./cu.yd

3	If the answer to D.1 is YES, is the design criteria per benefited receptor for each individual barrier less than or equal to twice the maximum allowable design criteria per benefited receptor of _____ sq.ft./cu.yd (CIRCLE ONE)	YES	NO

Form Completed By: E SALUTZ Date: _____

In Consultation With: _____ Date: _____

Complete 540
Traffic Noise Analysis

3/17/2015

Orange Corridor

Noise Wall 21

																Recommended[4]		
			NAC	Noise Levels[2]				Short Wall			Intermediate Wall			Tall Wall				
Receptor	First Row	Residences Represented	Land Use Category[1]	Existing dB(A)	Build dB(A)	Increase	Impacted Receptors	W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors
R0497A	Yes	1	B	45	70	25	1	59	11	1	59	11	1	58	12	1
R0497B	Yes	1	B	45	69	24	1	59	10	1	59	10	1	58	11	1
R0497C	Yes	1	B	45	70	25	1	60	10	1	59	11	1	58	12	1
R0498A	Yes	1	B	45	70	25	1	60	10	1	59	11	1	59	11	1
R0498B	Yes	1	B	45	70	25	1	60	10	1	60	10	1	59	11	1
R0498C	Yes	1	B	45	70	25	1	60	10	1	59	11	1	58	12	1
R0499A	Yes	1	B	45	71	26	1	61	10	1	60	11	1	59	12	1
R0499B	Yes	1	B	45	70	25	1	61	9	1	60	10	1	59	11	1
R0499C	Yes	1	B	45	71	26	1	61	10	1	60	11	1	59	12	1
R0500A		1	B	45	62	17	1	56	6	1	55	7	1	55	7	1
R0500B		1	B	45	62	17	1	56	6	1	56	6	1	55	7	1
R0501A	Yes	1	B	45	72	27	1	61	11	1	61	11	1	60	12	1
R0501B	Yes	1	B	45	72	27	1	62	10	1	61	11	1	60	12	1
R0502A		1	B	45	63	18	1	57	6	1	57	6	1	56	7	1
R0502B		1	B	45	62	17	1	57	5	1	57	5	1	56	6	1
R0503A	Yes	1	B	45	72	27	1	62	10	1	61	11	1	60	12	1
R0503B	Yes	1	B	45	73	28	1	62	11	1	61	12	1	60	13	1
R0504A		1	B	45	61	16	1	56	5	1	55	6	1	55	6	1
R0504B		1	B	45	60	15	1	55	5	1	55	5	1	54	6	1
R0505A	Yes	1	B	45	69	24	1	61	8	1	60	9	1	59	10	1
R0505B	Yes	1	B	45	67	22	1	60	7	1	60	7	1	59	8	1
R0506A	Yes	1	B	45	65	20	1	59	6	1	59	6	1	58	7	1
R0506B	Yes	1	B	45	62	17	1	58	4		57	5	1	57	5	1
R0507A		1	B	45	58	13		55	3		54	4		54	4	
R0507B		1	B	45	57	12		54	3		54	3		54	3	
R0508A		1	B	48	59	11		57	2		57	2		57	2	
R0508B		1	B	55	62	7		61	1		61	1		61	1	
R0509A		1	B	45	61	16	1	57	4		57	4		57	4	
R0509B		1	B	52	62	10		60	2		60	2		60	2	
R0513A	Yes	1	B	51	68	17	1	62	6	1	62	6	1	62	6	1
R0513B	Yes	1	B	50	63	13		59	4		59	4		59	4	
R1764A		1	B	45	63	18	1	57	6	1	57	6	1	57	6	1
R1764B		1	B	45	61	16	1	56	5	1	56	5	1	56	5	1
R1765		1	B	45	60	15	1	55	5	1	55	5	1	55	5	1
R1766		1	B	45	59	14		54	5	1	53	6	1	53	6	1
R1767A		1	B	45	60	15	1	55	5	1	55	5	1	54	6	1
R1767B		1	B	45	58	13		54	4		54	4		53	5	1
R1768		1	B	45	59	14		55	4		55	4		54	5	1
R1769		1	B	45	58	13		54	4		54	4		53	5	1
R1928		1	B	45	57	12		53	4		53	4		53	4	
R1929		1	B	45	57	12		54	3		53	4		53	4	
R2294A		1	B	45	57	12		53	4		52	5	1	52	5	1
R2294B		1	B	45	56	11		52	4		52	4		52	4	

Length (ft)=	3041	3041	3041
Average Height =	20	22	24
Area of Noise Wall (sft)=	60821	66903	72988
Impacted Receptors=	29	29	29
Number of Benefited Receptors=	28	30	33
Area of Noise Wall per Benefit Receptor (sft)=	2172	2230	2212
Average Increase in dB(A) of all Impacted Receptors=	21	21	21
Maximum Allowable Base Quantity of Noise Wall per Benefited Receptor (sft)=	3242	3242	3242
Feasible (5 dB(A) Reduction)=	Yes	Yes	Yes
Reasonable (Wall Area per Benefit) =	Yes	Yes	Yes
Reasonable (7 dB(A) Reduction) =	Yes	Yes	Yes
Breaks Line of Sight to Impacted Properties? =	Yes	Yes	Yes

(1) Category B denotes a residential property.

(2) Noise levels highlighted in red are levels above the Noise Abatment Criteria.

(3) Values highlighted in green are a 5 dB(A) or greater reduction in noise levels.

(4) A 24ft barrier is recommended because all criteria for feasible and reasonable have been met, and the most properties are benefited.

Recommended 24 ft barrier

NCDOT SOUND BARRIER
FEASIBILITY and REASONABLENESS
WORKSHEET

PROJECT - Complete 540 TIP # - R-2721, R-2828, R-2829

LOCATION - Barrier 21 COUNTY(IES) - Wake and Johnston

IMPACTS - 29 # BENEFITS - 33 NAC: A (B) C D E F G (CIRCLE ALL THAT APPLY)

A. FEASIBILITY:

1	Can a 5-dB(A) reduction in traffic noise levels be achieved for at least one impacted receptor?	X YES	NO
2	Does topography negatively affect the proposed abatement measure?	YES	X NO
3	Does the abatement measure negatively affect property access, drainage, safety and maintenance requirements?	YES	X NO
4	Is there control of access in the vicinity of the proposed abatement measure?	YES	X NO

B. REASONABLENESS:

1	Can a 7-dB(A) reduction in traffic noise levels be achieved for at least one impacted front row receptor?	X YES	NO
2	Is the design criteria per benefited receptor of 2212 (sq.ft.) / cu.yd (CIRCLE ONE) less than the maximum allowable design criteria per benefited receptor of 3242 (sq.ft.) / cu.yd.? (CIRCLE ONE)	X YES	NO

C. NOISE ABATEMENT DECISION:

1	Is the noise mitigation feasible?	X YES	NO
2	Is the noise mitigation reasonable?	X YES	NO
3	Is the noise mitigation likely?	X YES	NO
4	Have the owners' and residents' viewpoints been solicited?	YES	X NO
5	Is the noise mitigation recommended for construction?	YES	NO

D. OPTIONAL REASONABLENESS CONSIDERATION:

1	Was optional averaging noise abatement allowance within a common noise environment used for consideration of barrier reasonableness?	YES	X NO
2	If the answer to D.1 is YES, the design criteria per benefited receptor for each individual barrier within the common noise environment before averaging are:		

Bar No. _____ _____ sq.ft./cu.yd (CIRCLE ONE) Bar No. _____ _____ sq.ft./cu.yd (CIRCLE ONE)

Bar No. _____ _____ sq.ft./cu.yd Bar No. _____ _____ sq.ft./cu.yd

3	If the answer to D.1 is YES, is the design criteria per benefited receptor for each individual barrier less than or equal to twice the maximum allowable design criteria per benefited receptor of _____ sq.ft./cu.yd (CIRCLE ONE)	YES	NO

Form Completed By: E SALUTZ Date: _____

In Consultation With: _____ Date: _____

Complete 540
Traffic Noise Analysis

3/17/2015

Orange Corridor

Noise Wall 22

Receptor	First Row	Residences Represented	NAC Land Use Category[1]	Noise Levels[2] Existing dB(A)	Build dB(A)	Increase	Benefit Increases	Impacted Receptors	Short Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	Intermediate Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	Recommended[4] Tall Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors
R0517	Yes	1	B	46	67	21	21	1	61	6	1	60	7	1	59	8	1
R0518A	Yes	1	B	45	71	26	26	1	63	8	1	62	9	1	61	10	1
R0518B	Yes	1	B	45	67	22	22	1	61	6	1	60	7	1	59	8	1
R0518C	Yes	1	B	45	70	25	25	1	62	8	1	62	8	1	60	10	1
R0519A	Yes	1	B	45	71	26	26	1	63	8	1	62	9	1	61	10	1
R0519B	Yes	1	B	45	70	25	25	1	62	8	1	62	8	1	60	10	1
R0520A	Yes	1	B	45	71	26	26	1	65	6	1	64	7	1	62	9	1
R0520B	Yes	1	B	45	69	24	24	1	63	6	1	62	7	1	60	9	1
R0521A	Yes	1	B	45	61	16	16	1	58	3		56	5	1	55	6	1
R0521B	Yes	1	B	45	63	18	18	1	61	2		58	5	1	57	6	1
R0522A	Yes	1	B	45	59	14			57	2		55	4		55	4	
R0522B	Yes	1	B	45	58	13			56	2		55	3		54	4	
R0523A	Yes	1	B	45	58	13			56	2		55	3		54	4	
R0523B	Yes	1	B	45	58	13			55	3		54	4		54	4	
R0523C	Yes	1	B	45	57	12			54	3		53	4		53	4	
R0524A	Yes	1	B	45	56	11			53	3		52	4		52	4	
R0524B	Yes	1	B	45	57	12			54	3		53	4		52	5	1
R0525A	Yes	1	B	45	58	13			54	4		53	5	1	53	5	1
R0525B	Yes	1	B	45	57	12			54	3		53	4		53	4	
R0526A	Yes	1	B	45	58	13			56	2		55	3		54	4	
R0526B	Yes	1	B	45	60	15	15	1	57	3		56	4		55	5	1
R0526C	Yes	1	B	45	58	13			55	3		54	4		54	4	
R0526D	Yes	1	B	45	61	16	16	1	58	3		57	4		56	5	1
R0527A	Yes	1	B	45	60	15	15	1	56	4		56	4		55	5	1
R0527B	Yes	1	B	45	59	14			56	3		55	4		55	4	
R0528A	Yes	1	B	45	57	12			55	2		54	3		53	4	
R0528B	Yes	1	B	45	58	13			55	3		54	4		54	4	
R0529A	Yes	1	B	45	57	12			54	3		53	4		53	4	
R0529B	Yes	1	B	45	57	12			53	4		53	4		52	5	1
R0532A	Yes	1	B	45	57	12			54	3		53	4		53	4	
R0532B	Yes	1	B	45	56	11			53	3		52	4		52	4	
R0533A	Yes	1	B	45	57	12			54	3		54	3		53	4	
R0533B	Yes	1	B	45	58	13			54	4		54	4		54	4	
R0534A	Yes	1	B	45	59	14			55	4		55	4		54	5	1
R0534B	Yes	1	B	45	60	15	15	1	55	5	1	55	5	1	55	5	1
R0534C	Yes	1	B	45	61	16	16	1	56	5	1	56	5	1	55	6	1
R1630	Yes	1	B	45	65	20	20	1	63	2		60	5	1	59	6	1
R1653A	Yes	1	B	45	69	24	24	1	65	4		62	7	1	60	9	1
R1653B	Yes	1	B	45	69	24	24	1	65	4		63	6	1	61	8	1
R1653C	Yes	1	B	45	67	22	22	1	64	3		61	6	1	60	7	1

Length (ft)=	2440	2440	2440
Average Height =	10	12	16
Area of Noise Wall (sft)=	24400	29279	39039
Impacted Receptors=	19	19	19
Number of Benefited Receptors=	10	17	23
Area of Noise Wall per Benefit Receptor (sft)=	2440	1722	1697
Average Increase in dB(A) of all Impacted Receptors=	21	21	21
Maximum Allowable Base Quantity of Noise Wall per Benefited Receptor (sft)=	3229	3229	3229
Feasible (5 dB(A) Reduction)=	Yes	Yes	Yes
Reasonable (Wall Area per Benefit) =	Yes	Yes	Yes
Reasonable (7 dB(A) Reduction) =	Yes	Yes	Yes
Breaks Line of Sight to Impacted Properties? =	No	Yes	Yes

(1) Category B denotes a residential property.
(2) Noise levels highlighted in red are levels above the Noise Abatment Criteria.
(3) Values highlighted in green are a 5 dB(A) or greater reduction in noise levels.
(4) A 14ft barrier is recommended because all criteria for feasible and reasonable have been met, and the most properties are benefited.

Recommended 14 ft barrier

NCDOT SOUND BARRIER
FEASIBILITY and REASONABLENESS
WORKSHEET

PROJECT - Complete 540 TIP # - R-2721, R-2828, R-2829

LOCATION - Barrier 22 COUNTY(IES) - Wake and Johnston

IMPACTS - 19 # BENEFITS - 23 NAC: A (B) C D E F G (CIRCLE ALL THAT APPLY)

A. FEASIBILITY:

1	Can a 5-dB(A) reduction in traffic noise levels be achieved for at least one impacted receptor?	X YES	NO
2	Does topography negatively affect the proposed abatement measure?	YES	X NO
3	Does the abatement measure negatively affect property access, drainage, safety and maintenance requirements?	YES	X NO
4	Is there control of access in the vicinity of the proposed abatement measure?	YES	X NO

B. REASONABLENESS:

1	Can a 7-dB(A) reduction in traffic noise levels be achieved for at least one impacted front row receptor?	X YES	NO
2	Is the design criteria per benefited receptor of 1697 (CIRCLE ONE) (sq.ft.) cu.yd less than the maximum allowable design criteria per benefited receptor of 3229 (CIRCLE ONE) (sq.ft.) cu.yd.?	X YES	NO

C. NOISE ABATEMENT DECISION:

1	Is the noise mitigation feasible?	X YES	NO
2	Is the noise mitigation reasonable?	X YES	NO
3	Is the noise mitigation likely?	X YES	NO
4	Have the owners' and residents' viewpoints been solicited?	YES	X NO
5	Is the noise mitigation recommended for construction?	YES	NO

D. OPTIONAL REASONABLENESS CONSIDERATION:

1	Was optional averaging noise abatement allowance within a common noise environment used for consideration of barrier reasonableness?	YES	X NO

2 If the answer to D.1 is YES, the design criteria per benefited receptor for each individual barrier within the common noise environment before averaging are:

Bar No.		(CIRCLE ONE) sq.ft./cu.yd	Bar No.		(CIRCLE ONE) sq.ft./cu.yd
Bar No.		sq.ft./cu.yd	Bar No.		sq.ft./cu.yd

3 If the answer to D.1 is YES, is the design criteria per benefited receptor for each individual barrier less than or equal to twice the maximum allowable design criteria per benefited receptor of (CIRCLE ONE) sq.ft./cu.yd YES NO

Form Completed By: E SALUTZ Date:

In Consultation With: Date:

Complete 540
Traffic Noise Analysis

3/17/2015

Orange Corridor

Noise Wall 23

Receptor	First Row	Residences Represented	NAC Land Use Category[1]	Noise Levels[2] Existing dB(A)	Build dB(A)	Increase	Impacted Receptors	Short Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	Intermediate Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	Tall Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors
R0543	Yes	SCHOOL	D	40	43	3		43	0		42	1		42	1	
R0544A	Yes	1	B	46	65	19	1	63	2		60	5	1	60	5	1
R0544B	Yes	1	B	46	69	23	1	62	7	1	61	8	1	61	8	1
R0545	Yes	1	B	46	60	14		59	1		58	2		57	3	
R0546	Yes	1	B	46	73	27	1	68	5	1	66	7	1	65	8	1

Length (ft)=	1400	1400	1400
Average Height =	10	12	14
Area of Noise Wall (sft)=	13999	16798	19599
Impacted Receptors=	3	3	3
Number of Benefited Receptors=	2	3	3
Area of Noise Wall per Benefit Receptor (sft)=	7000	5599	6533
Average Increase in dB(A) of all Impacted Receptors=	23	23	23
Maximum Allowable Base Quantity of Noise Wall per Benefited Receptor (sft)=	3305	3305	3305
Feasible (5 dB(A) Reduction)=	Yes	Yes	Yes
Reasonable (Wall Area per Benefit) =	No	No	No
Reasonable (7 dB(A) Reduction) =	Yes	Yes	Yes
Breaks Line of Sight to Impacted Properties? =	No	Yes	Yes

(1) Category B denotes a residential property.
(2) Noise levels highlighted in red are levels above the Noise Abatment Criteria.
(3) Values highlighted in green are a 5 dB(A) or greater reduction in noise levels.

Note: Boxed results indicate barrier discussed in report text.

NCDOT SOUND BARRIER
FEASIBILITY and REASONABLENESS
WORKSHEET

PROJECT - Complete 540 TIP # - R-2721, R-2828, R-2829

LOCATION - Barrier 23 COUNTY(IES) - Wake and Johnston

IMPACTS - 3 # BENEFITS - 3 NAC: A (B) C (D) E F G (CIRCLE ALL THAT APPLY)

A. FEASIBILITY:

1	Can a 5-dB(A) reduction in traffic noise levels be achieved for at least one impacted receptor?	X YES	NO
2	Does topography negatively affect the proposed abatement measure?	YES	X NO
3	Does the abatement measure negatively affect property access, drainage, safety and maintenance requirements?	YES	X NO
4	Is there control of access in the vicinity of the proposed abatement measure?	YES	X NO

B. REASONABLENESS:

1	Can a 7-dB(A) reduction in traffic noise levels be achieved for at least one impacted front row receptor?	X YES	NO
2	Is the design criteria per benefited receptor of 6533 (sq.ft.) cu.yd (CIRCLE ONE) less than the maximum allowable design criteria per benefited receptor of 3305 (sq.ft.) cu.yd.? (CIRCLE ONE)	X YES	NO

C. NOISE ABATEMENT DECISION:

1	Is the noise mitigation feasible?	X YES	NO
2	Is the noise mitigation reasonable?	YES	X NO
3	Is the noise mitigation likely?	YES	X NO
4	Have the owners' and residents' viewpoints been solicited?	YES	X NO
5	Is the noise mitigation recommended for construction?	YES	NO

D. OPTIONAL REASONABLENESS CONSIDERATION:

1	Was optional averaging noise abatement allowance within a common noise environment used for consideration of barrier reasonableness?	X YES	NO

2 If the answer to D.1 is YES, the design criteria per benefited receptor for each individual barrier within the common noise environment before averaging are:

Bar No. 23	6,533 (sq.ft.) cu.yd (CIRCLE ONE)		Bar No.		(CIRCLE ONE) sq.ft./cu.yd
Bar No. 24	2,053 (sq.ft.) cu.yd (CIRCLE ONE)		Bar No.		sq.ft./cu.yd

3	If the answer to D.1 is YES, is the design criteria per benefited receptor for each individual barrier less than or equal to twice the maximum allowable design criteria per benefited receptor of 2,500 (sq.ft.) cu.yd (CIRCLE ONE)	YES	X NO

Form Completed By: E SALUTZ Date:

In Consultation With: Date:

Complete 540
Traffic Noise Analysis

3/17/2015

Orange Corridor

Noise Wall 24

				Noise Levels[2]				Short Wall			Intermediate Wall			Recommended[4] Tall Wall		
Receptor	First Row	Residences Represented	NAC Land Use Category[1]	Existing dB(A)	Build dB(A)	Increase	Impacted Receptors	W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors
R0547	Yes	1	B	46	61	15	1	57	4		57	4		56	5	1
R0548A	Yes	1	B	46	59	13		55	4		54	5	1	54	5	1
R0548B	Yes	1	B	46	58	12		55	3		54	4		53	5	1
R0549A	Yes	1	B	46	58	12		53	5	1	53	5	1	52	6	1
R0549B	Yes	1	B	46	57	11		53	4		52	5	1	51	6	1
R0550	Yes	1	B	46	58	12		54	4		53	5	1	53	5	1
R0551A	Yes	1	B	46	62	16	1	58	4		57	5	1	56	6	1
R0551B	Yes	1	B	46	61	15	1	57	4		56	5	1	55	6	1
R0552	Yes	1	B	46	63	17	1	58	5	1	57	6	1	55	8	1
R0553	Yes	1	B	46	65	19	1	60	5	1	58	7	1	56	9	1
R0554A	Yes	1	B	46	68	22	1	61	7	1	60	8	1	58	10	1
R0554B	Yes	1	B	46	69	23	1	62	7	1	60	9	1	58	11	1
R0555A	Yes	1	B	46	66	20	1	61	5	1	59	7	1	57	9	1
R0555B	Yes	1	B	46	61	15	1	56	5	1	54	7	1	53	8	1
R0555C	Yes	1	B	46	61	15	1	56	5	1	55	6	1	54	7	1
R0556A	Yes	1	B	46	70	24	1	62	8	1	60	10	1	58	12	1
R0556B	Yes	1	B	46	67	21	1	61	6	1	59	8	1	57	10	1
R0556C	Yes	1	B	46	64	18	1	60	4		58	6	1	56	8	1
R0557A	Yes	1	B	46	65	19	1	62	3		59	6	1	56	9	1
R0557B	Yes	1	B	46	65	19	1	59	6	1	57	8	1	55	10	1
R0558A		1	B	46	64	18	1	61	3		59	5	1	57	7	1
R0558B		1	B	46	63	17	1	60	3		58	5	1	57	6	1
R0559A	Yes	1	B	46	65	19	1	61	4		59	6	1	57	8	1
R0559B	Yes	1	B	46	64	18	1	60	4		59	5	1	57	7	1
R0559C	Yes	1	B	46	69	23	1	62	7	1	60	9	1	58	11	1
R0560A	Yes	1	B	46	64	18	1	56	8	1	55	9	1	54	10	1
R0560B	Yes	1	B	46	61	15	1	58	3		57	4		56	5	1
R0562	Yes	1	B	46	71	25	1	58	13	1	57	14	1	56	15	1
R0563A	Yes	1	B	46	61	15	1	57	4		56	5	1	54	7	1
R0563B	Yes	1	B	46	61	15	1	59	2		55	6	1	54	7	1
R0564A	Yes	1	B	46	60	14		58	2		55	5	1	54	6	1
R0564B	Yes	1	B	46	59	13		57	2		54	5	1	53	6	1
R0564C	Yes	1	B	46	59	13		56	3		54	5	1	53	6	1
R0565A	Yes	1	B	46	58	12		54	4		53	5	1	52	6	1
R0565B	Yes	1	B	46	57	11		55	2		53	4		53	4	
R1780A		1	B	46	62	16	1	60	2		57	5	1	55	7	1
R1780B		1	B	46	61	15	1	59	2		56	5	1	55	6	1
R1780C		1	B	46	60	14		58	2		56	4		54	6	1
R1781A		1	B	46	57	11		54	3		53	4		52	5	1
R1781B		1	B	46	56	10		53	3		52	4		52	4	
R1781C		1	B	46	58	12		55	3		54	4		53	5	1
R1782A		1	B	46	60	14		57	3		56	4		55	5	1
R1782B		1	B	46	59	13		56	3		55	4		54	5	1
R1783A		1	B	46	59	13		54	5	1	54	5	1	53	6	1
R1783B		1	B	46	58	12		54	4		53	5	1	53	5	1
R1783C		1	B	46	58	12		55	3		54	4		53	5	1
R1886A		1	B	46	56	10		53	3		52	4		52	4	
R1886B		1	B	46	57	11		54	3		53	4		52	5	1

Length (ft)=	4200	4200	4200
Average Height =	12	16	22
Area of Noise Wall (sft)=	50400	67205	92405
Impacted Receptors=	27	27	27
Number of Benefited Receptors=	15	35	45
Area of Noise Wall per Benefit Receptor (sft)=	3360	1920	2053
Average Increase in dB(A) of all Impacted Receptors=	18	18	18
Maximum Allowable Base Quantity of Noise Wall per Benefited Receptor (sft)=	3138	3138	3138
Feasible (5 dB(A) Reduction)=	Yes	Yes	Yes
Reasonable (Wall Area per Benefit) =	No	Yes	Yes
Reasonable (7 dB(A) Reduction) =	Yes	Yes	Yes
Breaks Line of Sight to Impacted Properties? =	Yes	Yes	Yes

(1) Category B denotes a residential property.
(2) Noise levels highlighted in red are levels above the Noise Abatment Criteria.
(3) Values highlighted in green are a 5 dB(A) or greater reduction in noise levels.
(4) A 22ft barrier is recommended because all criteria for feasible and reasonable have been met, and the most properties are benefited.

Recommended 22ft wall

NCDOT SOUND BARRIER
FEASIBILITY and REASONABLENESS
WORKSHEET

PROJECT - Complete 540 TIP # - R-2721, R-2828, R-2829

LOCATION - Barrier 24 COUNTY(IES) - Wake and Johnston

IMPACTS - 27 # BENEFITS - 45 NAC: A (B) C D E F G (CIRCLE ALL THAT APPLY)

A. FEASIBILITY:

1	Can a 5-dB(A) reduction in traffic noise levels be achieved for at least one impacted receptor?	X YES	NO
2	Does topography negatively affect the proposed abatement measure?	YES	X NO
3	Does the abatement measure negatively affect property access, drainage, safety and maintenance requirements?	YES	X NO
4	Is there control of access in the vicinity of the proposed abatement measure?	YES	X NO

B. REASONABLENESS:

1	Can a 7-dB(A) reduction in traffic noise levels be achieved for at least one impacted front row receptor?	X YES	NO
2	Is the design criteria per benefited receptor of 2053 (sq.ft.) / cu.yd (CIRCLE ONE) less than the maximum allowable design criteria per benefited receptor of 3138 (sq.ft.) / cu.yd.? (CIRCLE ONE)	X YES	NO

C. NOISE ABATEMENT DECISION:

1	Is the noise mitigation feasible?	X YES	NO
2	Is the noise mitigation reasonable?	X YES	NO
3	Is the noise mitigation likely?	X YES	NO
4	Have the owners' and residents' viewpoints been solicited?	YES	X NO
5	Is the noise mitigation recommended for construction?	YES	NO

D. OPTIONAL REASONABLENESS CONSIDERATION:

1	Was optional averaging noise abatement allowance within a common noise environment used for consideration of barrier reasonableness?	YES	X NO
2	If the answer to D.1 is YES, the design criteria per benefited receptor for each individual barrier within the common noise environment before averaging are:		

Bar No. _____ _____ sq.ft./cu.yd (CIRCLE ONE) Bar No. _____ _____ sq.ft./cu.yd (CIRCLE ONE)

Bar No. _____ _____ sq.ft./cu.yd Bar No. _____ _____ sq.ft./cu.yd

3	If the answer to D.1 is YES, is the design criteria per benefited receptor for each individual barrier less than or equal to twice the maximum allowable design criteria per benefited receptor of _____ sq.ft./cu.yd (CIRCLE ONE)	YES	NO

Form Completed By: E SALUTZ Date: _____

In Consultation With: _____ Date: _____

Complete 540
Traffic Noise Analysis

3/17/2015

Orange Corridor

Noise Wall 25

											Recommended[4]						
			NAC	Noise Levels[2]				Short Wall			Intermediate Wall			Tall Wall			
Receptor	First Row	Residences Represented	Land Use Category[1]	Existing dB(A)	Build dB(A)	Increase	Impacted Receptors	W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors
R0637	Yes	1	B	46	65	19	1	59	6	1	59	6	1	59	6	1
R0638	Yes	1	B	50	71	21	1	63	8	1	62	9	1	62	9	1

Length (ft)=	600	600	600
Average Height =	8	10	12
Area of Noise Wall (sft)=	4801	6001	7201
Impacted Receptors=	2	2	2
Number of Benefited Receptors=	2	2	2
Area of Noise Wall per Benefit Receptor (sft)=	2401	3001	3601
Average Increase in dB(A) of all Impacted Receptors=	20	20	20
Maximum Allowable Base Quantity of Noise Wall per Benefited Receptor (sft)=	3200	3200	3200
Feasible (5 dB(A) Reduction)=	Yes	Yes	Yes
Reasonable (Wall Area per Benefit) =	Yes	Yes	No
Reasonable (7 dB(A) Reduction) =	Yes	Yes	Yes
Breaks Line of Sight to Impacted Properties? =	No	Yes	Yes

Recommended 10 ft barrier

(1) Category B denotes a residential property.
(2) Noise levels highlighted in red are levels above the Noise Abatment Criteria.
(3) Values highlighted in green are a 5 dB(A) or greater reduction in noise levels.
(4) A 10ft barrier is recommended because all criteria for feasible and reasonable have been met, the barrier breaks the line of sight, and the most properties are benefited.

NCDOT SOUND BARRIER
FEASIBILITY and REASONABLENESS
WORKSHEET

PROJECT - Complete 540 TIP # - R-2721, R-2828, R-2829

LOCATION - Barrier 25 COUNTY(IES) - Wake and Johnston

IMPACTS - 2 # BENEFITS - 2 NAC: A (B) C D E F G (CIRCLE ALL THAT APPLY)

A. FEASIBILITY:

1	Can a 5-dB(A) reduction in traffic noise levels be achieved for at least one impacted receptor?	X YES	NO
2	Does topography negatively affect the proposed abatement measure?	YES	X NO
3	Does the abatement measure negatively affect property access, drainage, safety and maintenance requirements?	YES	X NO
4	Is there control of access in the vicinity of the proposed abatement measure?	YES	X NO

B. REASONABLENESS:

1	Can a 7-dB(A) reduction in traffic noise levels be achieved for at least one impacted front row receptor?	X YES	NO
2	Is the design criteria per benefited receptor of 3001 (sq.ft.) / cu.yd (CIRCLE ONE) less than the maximum allowable design criteria per benefited receptor of 3200 (sq.ft.) / cu.yd.? (CIRCLE ONE)	X YES	NO

C. NOISE ABATEMENT DECISION:

1	Is the noise mitigation feasible?	X YES	NO
2	Is the noise mitigation reasonable?	X YES	NO
3	Is the noise mitigation likely?	X YES	NO
4	Have the owners' and residents' viewpoints been solicited?	YES	X NO
5	Is the noise mitigation recommended for construction?	YES	NO

D. OPTIONAL REASONABLENESS CONSIDERATION:

1	Was optional averaging noise abatement allowance within a common noise environment used for consideration of barrier reasonableness?	YES	X NO
2	If the answer to D.1 is YES, the design criteria per benefited receptor for each individual barrier within the common noise environment before averaging are:		
	Bar No. _____ _____ sq.ft./cu.yd (CIRCLE ONE)	Bar No. _____ _____ sq.ft./cu.yd (CIRCLE ONE)	
	Bar No. _____ _____ sq.ft./cu.yd	Bar No. _____ _____ sq.ft./cu.yd	
3	If the answer to D.1 is YES, is the design criteria per benefited receptor for each individual barrier less than or equal to twice the maximum allowable design criteria per benefited receptor of _____ sq.ft./cu.yd (CIRCLE ONE)	YES	NO

Form Completed By: E SALUTZ Date: _____

In Consultation With: _____ Date: _____

Complete 540
Traffic Noise Analysis

3/18/2015

Orange Corridor

Noise Wall 26

Receptor	First Row	Residences Represented	NAC Land Use Category[1]	Noise Levels[2] Existing dB(A)	Build dB(A)	Increase	Impacted Receptors	Recommended[4] Short Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	Intermediate Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	Tall Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors
R1632	Yes	1	B	49	74	25	1	64	10	1	63	11	1	62	12	1
R0644	Yes	1	B	47	66	19	1	58	8	1	58	8	1	58	8	1
R0645A	Yes	1	B	48	62	14		60	2		60	2		60	2	
R0645B	Yes	1	B	50	63	13		61	2		61	2		61	2	

Length (ft)=	677	677	677
Average Height =	8	10	12
Area of Noise Wall (sft)=	5416	6769	8122
Impacted Receptors=	2	2	2
Number of Benefited Receptors=	2	2	2
Area of Noise Wall per Benefit Receptor (sft)=	2708	3385	4061
Average Increase in dB(A) of all Impacted Receptors=	22	22	22
Maximum Allowable Base Quantity of Noise Wall per Benefited Receptor (sft)=	3270	3270	3270
Feasible (5 dB(A) Reduction)=	Yes	Yes	Yes
Reasonable (Wall Area per Benefit) =	Yes	No	No
Reasonable (7 dB(A) Reduction) =	Yes	Yes	Yes
Breaks Line of Sight to Impacted Properties? =	No	No	Yes

(1) Category B denotes a residential property.

Recommended 8 ft barrier

(2) Noise levels highlighted in red are levels above the Noise Abatment Criteria.

(3) Values highlighted in green are a 5 dB(A) or greater reduction in noise levels.

(4) A 8ft barrier is recommended because all criteria for feasible and reasonable have been met, the barrier breaks the line of sight, and the most properties are benefited.

NCDOT SOUND BARRIER
FEASIBILITY and REASONABLENESS
WORKSHEET

PROJECT - Complete 540 TIP # - R-2721, R-2828, R-2829

LOCATION - Barrier 26 COUNTY(IES) - Wake and Johnston

IMPACTS - 2 # BENEFITS - 2 NAC: A (B) C D E F G (CIRCLE ALL THAT APPLY)

A. FEASIBILITY:

1	Can a 5-dB(A) reduction in traffic noise levels be achieved for at least one impacted receptor?	X YES	NO
2	Does topography negatively affect the proposed abatement measure?	YES	X NO
3	Does the abatement measure negatively affect property access, drainage, safety and maintenance requirements?	YES	X NO
4	Is there control of access in the vicinity of the proposed abatement measure?	YES	X NO

B. REASONABLENESS:

1	Can a 7-dB(A) reduction in traffic noise levels be achieved for at least one impacted front row receptor?	X YES	NO
2	Is the design criteria per benefited receptor of 2708 (CIRCLE ONE) (sq.ft.) cu.yd less than the maximum allowable design criteria per benefited receptor of 3270 (CIRCLE ONE) (sq.ft.) cu.yd.?	X YES	NO

C. NOISE ABATEMENT DECISION:

1	Is the noise mitigation feasible?	X YES	NO
2	Is the noise mitigation reasonable?	X YES	NO
3	Is the noise mitigation likely?	X YES	NO
4	Have the owners' and residents' viewpoints been solicited?	YES	X NO
5	Is the noise mitigation recommended for construction?	YES	NO

D. OPTIONAL REASONABLENESS CONSIDERATION:

1	Was optional averaging noise abatement allowance within a common noise environment used for consideration of barrier reasonableness?	YES	X NO
2	If the answer to D.1 is YES, the design criteria per benefited receptor for each individual barrier within the common noise environment before averaging are:		

Bar No. _____ _____ (CIRCLE ONE) sq.ft./cu.yd Bar No. _____ _____ (CIRCLE ONE) sq.ft./cu.yd

Bar No. _____ _____ sq.ft./cu.yd Bar No. _____ _____ sq.ft./cu.yd

3	If the answer to D.1 is YES, is the design criteria per benefited receptor for each individual barrier less than or equal to twice the maximum allowable design criteria per benefited receptor of _____ (CIRCLE ONE) sq.ft./cu.yd	YES	NO

Form Completed By: E SALUTZ Date: _____

In Consultation With: _____ Date: _____

Complete 540 3/17/2015
Traffic Noise Analysis

Orange Corridor

Noise Wall 27

Receptor	First Row	Residences Represented	NAC Land Use Category[1]	Noise Levels[2] Existing dB(A)	Build dB(A)	Increase	Impacted Receptors	Short Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	Intermediate Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	Recommended[4] Tall Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors
R0641A	Yes	1	B	46	64	18	1	57	7	1	57	7	1	56	8	1
R0641B	Yes	1	B	46	63	17	1	56	7	1	56	7	1	56	7	1
R0642A	Yes	1	B	46	64	18	1	54	10	1	54	10	1	54	10	1
R0642B	Yes	1	B	46	62	16	1	55	7	1	55	7	1	55	7	1
R0642C	Yes	1	B	46	60	14		56	4		56	4		55	5	1
R0643	Yes	1	B	46	67	21	1	59	8	1	58	9	1	58	9	1
R0651	Yes	1	B	46	73	27	1	64	9	1	63	10	1	62	11	1

Length (ft)=	1756	1756	1756
Average Height =	8	10	12
Area of Noise Wall (sft)=	14045	17557	21069
Impacted Receptors=	6	6	6
Number of Benefited Receptors=	6	6	7
Area of Noise Wall per Benefit Receptor (sft)=	2341	2926	3010
Average Increase in dB(A) of all Impacted Receptors=	20	20	20
Maximum Allowable Base Quantity of Noise Wall per Benefited Receptor (sft)=	3183	3183	3183
Feasible (5 dB(A) Reduction)=	Yes	Yes	Yes
Reasonable (Wall Area per Benefit) =	Yes	Yes	Yes
Reasonable (7 dB(A) Reduction) =	Yes	Yes	Yes
Breaks Line of Sight to Impacted Properties? =	No	No	Yes

Recommended 12 ft barrier

(1) Category B denotes a residential property.
(2) Noise levels highlighted in red are levels above the Noise Abatment Criteria.
(3) Values highlighted in green are a 5 dB(A) or greater reduction in noise levels.
(4) A 12ft barrier is recommended because all criteria for feasible and reasonable have been met, the barrier breaks the line of sight, and the most properties are benefited.

NCDOT SOUND BARRIER
FEASIBILITY and REASONABLENESS
WORKSHEET

PROJECT - Complete 540 TIP # - R-2721, R-2828, R-2829

LOCATION - Barrier 27 COUNTY(IES) - Wake and Johnston

IMPACTS - 6 # BENEFITS - 7 NAC: A (B) C D E F G (CIRCLE ALL THAT APPLY)

A. FEASIBILITY:

1	Can a 5-dB(A) reduction in traffic noise levels be achieved for at least one impacted receptor?	X YES	NO
2	Does topography negatively affect the proposed abatement measure?	YES	X NO
3	Does the abatement measure negatively affect property access, drainage, safety and maintenance requirements?	YES	X NO
4	Is there control of access in the vicinity of the proposed abatement measure?	YES	X NO

B. REASONABLENESS:

1	Can a 7-dB(A) reduction in traffic noise levels be achieved for at least one impacted front row receptor?	X YES	NO
2	Is the design criteria per benefited receptor of 3010 (sq.ft.) / cu.yd (CIRCLE ONE) less than the maximum allowable design criteria per benefited receptor of 3183 (sq.ft.) / cu.yd.? (CIRCLE ONE)	X YES	NO

C. NOISE ABATEMENT DECISION:

1	Is the noise mitigation feasible?	X YES	NO
2	Is the noise mitigation reasonable?	X YES	NO
3	Is the noise mitigation likely?	X YES	NO
4	Have the owners' and residents' viewpoints been solicited?	YES	X NO
5	Is the noise mitigation recommended for construction?	YES	NO

D. OPTIONAL REASONABLENESS CONSIDERATION:

1	Was optional averaging noise abatement allowance within a common noise environment used for consideration of barrier reasonableness?	YES	X NO
2	If the answer to D.1 is YES, the design criteria per benefited receptor for each individual barrier within the common noise environment before averaging are:		

Bar No. _____ _____ sq.ft./cu.yd (CIRCLE ONE) Bar No. _____ _____ sq.ft./cu.yd (CIRCLE ONE)

Bar No. _____ _____ sq.ft./cu.yd Bar No. _____ _____ sq.ft./cu.yd

3	If the answer to D.1 is YES, is the design criteria per benefited receptor for each individual barrier less than or equal to twice the maximum allowable design criteria per benefited receptor of _____ sq.ft./cu.yd (CIRCLE ONE)	YES	NO

Form Completed By: E SALUTZ Date: _____

In Consultation With: _____ Date: _____

Triangle Expressway Southeast Extension 3/17/2015
Noise Analysis
I-540
Orange Corridor

Noise Wall 27b

Receptor	First Row	Properties Represented	NAC Land Use Category[1]	Noise Levels[2] Existing dB(A)	Build dB(A)	Increase	Impacted Properties	Short Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Properties	Intermediate Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Properties	Tall Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Properties
R0735	Yes	1	B	50	59	9		59	0		59	0		59	0	
R0736A	Yes	1	B	50	60	10		60	0		60	0		60	0	
R0736B	Yes	1	B	50	60	10		60	0		60	0		60	0	
R0741A	Yes	1	B	50	61	11		61	0		61	0		60	1	
R0741B	Yes	1	B	50	60	10		60	0		60	0		60	0	
R0741C	Yes	1	B	50	62	12		62	0		62	0		61	1	
R0745A	Yes	1	B	50	64	14		62	2		61	3		59	5	1
R0745B	Yes	1	B	50	65	15	1	61	4		60	5	1	59	6	1
R0745C	Yes	1	B	50	63	13		63	0		62	1		62	1	
R0746A	Yes	1	B	50	64	14		57	7	1	57	7	1	56	8	1
R0746B	Yes	1	B	50	65	15	1	58	7	1	58	7	1	57	8	1
R0746C	Yes	1	B	50	66	16	1	60	6	1	59	7	1	58	8	1
R0747A	Yes	1	B	50	67	17	1	61	6	1	60	7	1	60	7	1
R0747B	Yes	1	B	50	68	18	1	61	7	1	61	7	1	60	8	1
R0747C	Yes	1	B	50	65	15	1	61	4		60	5	1	59	6	1
R0747D	Yes	1	B	50	61	11		59	2		57	4		56	5	1
R0747E	Yes	1	B	50	60	10		59	1		58	2		57	3	

Length (ft)=	1800	1800	1800
Average Height =	12	14	16
Area of Noise Wall (sft)=	21602	25202	28803
Impacted Receptors=	6	6	6
Number of Benefited Receptors=	5	7	9
Area of Noise Wall per Benefit Receptor (sft)=	4320	3600	3200
Average Increase in dB(A) of all Impacted Receptors=	16	16	16
Maximum Allowable Base Quantity of Noise Wall per Benefited Receptor (sft)=	3060	3060	3060
Feasible (5 dB(A) Reduction)=	Yes	Yes	Yes
Reasonable (Wall Area per Benefit) =	No	No	No
Reasonable (7 dB(A) Reduction) =	Yes	Yes	Yes
Breaks Line of Sight to Impacted Properties? =	No	Yes	Yes

(1) Category B denotes a residential property.
(2) Noise levels highlighted in red are levels above the Noise Abatment Criteria.
(3) Values highlighted in green are a 5 dB(A) or greater reduction in noise levels.

NCDOT SOUND BARRIER
FEASIBILITY and REASONABLENESS
WORKSHEET

PROJECT - Complete 540 TIP # - R-2721, R-2828, R-2829

LOCATION - Barrier 27b COUNTY(IES) - Wake and Johnston

IMPACTS - 6 # BENEFITS - 9 NAC: A (B) C D E F G (CIRCLE ALL THAT APPLY)

A. FEASIBILITY:

1	Can a 5-dB(A) reduction in traffic noise levels be achieved for at least one impacted receptor?	X YES	NO
2	Does topography negatively affect the proposed abatement measure?	YES	X NO
3	Does the abatement measure negatively affect property access, drainage, safety and maintenance requirements?	YES	X NO
4	Is there control of access in the vicinity of the proposed abatement measure?	YES	X NO

B. REASONABLENESS:

1	Can a 7-dB(A) reduction in traffic noise levels be achieved for at least one impacted front row receptor?	X YES	NO
2	Is the design criteria per benefited receptor of 3200 (CIRCLE ONE) (sq.ft.) / cu.yd less than the maximum allowable design criteria per benefited receptor of 3060 (CIRCLE ONE) (sq.ft.) / cu.yd.?	YES	X NO

C. NOISE ABATEMENT DECISION:

1	Is the noise mitigation feasible?	X YES	NO
2	Is the noise mitigation reasonable?	YES	X NO
3	Is the noise mitigation likely?	YES	X NO
4	Have the owners' and residents' viewpoints been solicited?	YES	X NO
5	Is the noise mitigation recommended for construction?	YES	NO

D. OPTIONAL REASONABLENESS CONSIDERATION:

1	Was optional averaging noise abatement allowance within a common noise environment used for consideration of barrier reasonableness?	YES	X NO

2 If the answer to D.1 is YES, the design criteria per benefited receptor for each individual barrier within the common noise environment before averaging are:

Bar No.		sq.ft./cu.yd (CIRCLE ONE)	Bar No.		sq.ft./cu.yd (CIRCLE ONE)
Bar No.		sq.ft./cu.yd	Bar No.		sq.ft./cu.yd

3 If the answer to D.1 is YES, is the design criteria per benefited receptor for each individual barrier less than or equal to twice the maximum allowable design criteria per benefited receptor of ____ (CIRCLE ONE) sq.ft./cu.yd ____ YES ____ NO

Form Completed By: E SALUTZ Date: ____

In Consultation With: ____ Date: ____

Complete 540
Traffic Noise Analysis

3/17/2015

Orange Corridor

Noise Wall 28

Receptor	First Row	Residences Represented	NAC Land Use Category[1]	Noise Levels[2] Existing dB(A)	Build dB(A)	Increase	Impacted Receptors	Short Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	Intermediate Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	Tall Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors
R0646	Yes	1	B	47	69	22	1	60	9	1	59	10	1	58	11	1
R0647	Yes	1	B	51	63	12		60	3		60	3		60	3	
R0652A	Yes	1	B	46	66	20	1	64	2		61	5	1	60	6	1
R0652B	Yes	1	B	46	66	20	1	65	1		62	4		61	5	1
R2281	Yes	1	B	46	62	16	1	61	1		60	2		59	3	

	Short Wall	Intermediate Wall	Tall Wall
Length (ft)=	2044	2044	2044
Average Height =	8	14	16
Area of Noise Wall (sft)=	16353	28616	32703
Impacted Receptors=	4	4	4
Number of Benefited Receptors=	1	2	3
Area of Noise Wall per Benefit Receptor (sft)=	16353	14308	10901
Average Increase in dB(A) of all Impacted Receptors=	20	20	20
Maximum Allowable Base Quantity of Noise Wall per Benefited Receptor (sft)=	3183	3183	3183
Feasible (5 dB(A) Reduction)=	Yes	Yes	Yes
Reasonable (Wall Area per Benefit) =	No	No	No
Reasonable (7 dB(A) Reduction) =	Yes	Yes	Yes
Breaks Line of Sight to Impacted Properties? =	No	Yes	Yes

(1) Category B denotes a residential property.
(2) Noise levels highlighted in red are levels above the Noise Abatment Criteria.
(3) Values highlighted in green are a 5 dB(A) or greater reduction in noise levels.

Note: Boxed results indicate barrier discussed in report text.

NCDOT SOUND BARRIER
FEASIBILITY and REASONABLENESS
WORKSHEET

PROJECT - Complete 540 TIP # - R-2721, R-2828, R-2829

LOCATION - Barrier 28 COUNTY(IES) - Wake and Johnston

IMPACTS - 4 # BENEFITS - 3 NAC: A (B) C D E F G (CIRCLE ALL THAT APPLY)

A. FEASIBILITY:

1	Can a 5-dB(A) reduction in traffic noise levels be achieved for at least one impacted receptor?	X YES	NO
2	Does topography negatively affect the proposed abatement measure?	YES	X NO
3	Does the abatement measure negatively affect property access, drainage, safety and maintenance requirements?	YES	X NO
4	Is there control of access in the vicinity of the proposed abatement measure?	YES	X NO

B. REASONABLENESS:

1	Can a 7-dB(A) reduction in traffic noise levels be achieved for at least one impacted front row receptor?	X YES	NO
2	Is the design criteria per benefited receptor of 10901 (CIRCLE ONE) (sq.ft.) / cu.yd less than the maximum allowable design criteria per benefited receptor of 3183 (CIRCLE ONE) (sq.ft.) / cu.yd.?	YES	X NO

C. NOISE ABATEMENT DECISION:

1	Is the noise mitigation feasible?	X YES	NO
2	Is the noise mitigation reasonable?	YES	X NO
3	Is the noise mitigation likely?	YES	X NO
4	Have the owners' and residents' viewpoints been solicited?	YES	X NO
5	Is the noise mitigation recommended for construction?	YES	NO

D. OPTIONAL REASONABLENESS CONSIDERATION:

1	Was optional averaging noise abatement allowance within a common noise environment used for consideration of barrier reasonableness?	YES	X NO
2	If the answer to D.1 is YES, the design criteria per benefited receptor for each individual barrier within the common noise environment before averaging are:		

Bar No. _____ _____ (CIRCLE ONE) sq.ft./cu.yd Bar No. _____ _____ (CIRCLE ONE) sq.ft./cu.yd

Bar No. _____ _____ sq.ft./cu.yd Bar No. _____ _____ sq.ft./cu.yd

3	If the answer to D.1 is YES, is the design criteria per benefited receptor for each individual barrier less than or equal to twice the maximum allowable design criteria per benefited receptor of _____ (CIRCLE ONE) sq.ft./cu.yd	YES	NO

Form Completed By: E SALUTZ Date: _____

In Consultation With: _____ Date: _____

Complete 540 3/17/2015
Traffic Noise Analysis

Orange Corridor

Noise Wall 30

Receptor	First Row	Residences Represented	NAC Land Use Category[1]	Noise Levels[2] Existing dB(A)	Build dB(A)	Increase	Impacted Receptors	Short Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	Intermediate Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	Tall Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors
R0722A	Yes	1	B	50	62	12		58	4		58	4		57	5	1
R0722B	Yes	1	B	50	64	14		60	4		59	5	1	58	6	1
R0723A	Yes	1	B	50	70	20	1	65	5	1	64	6	1	62	8	1
R0723B	Yes	1	B	50	67	17	1	62	5	1	61	6	1	60	7	1
R0724A	Yes	1	B	50	68	18	1	60	8	1	60	8	1	59	9	1
R0724B	Yes	1	B	50	67	17	1	60	7	1	59	8	1	59	8	1
R1801		1	B	50	62	12		60	2		59	3		59	3	
R1802A		1	B	50	65	15	1	60	5	1	60	5	1	59	6	1
R1802B		1	B	50	63	13		59	4		58	5	1	58	5	1

Length (ft)=	1627	1627	1627
Average Height =	14	16	18
Area of Noise Wall (sft)=	22777	26031	29284
Impacted Receptors=	5	5	5
Number of Benefited Receptors=	5	7	8
Area of Noise Wall per Benefit Receptor (sft)=	4555	3719	3661
Average Increase in dB(A) of all Impacted Receptors=	17	17	17
Maximum Allowable Base Quantity of Noise Wall per Benefited Receptor (sft)=	3109	3109	3109
Feasible (5 dB(A) Reduction)=	Yes	Yes	Yes
Reasonable (Wall Area per Benefit) =	No	No	No
Reasonable (7 dB(A) Reduction) =	Yes	Yes	Yes
Breaks Line of Sight to Impacted Properties? =	No	No	Yes

(1) Category B denotes a residential property.
(2) Noise levels highlighted in red are levels above the Noise Abatment Criteria.
(3) Values highlighted in green are a 5 dB(A) or greater reduction in noise levels.

Note: Boxed results indicate barrier discussed in report text.

NCDOT SOUND BARRIER
FEASIBILITY and REASONABLENESS
WORKSHEET

PROJECT - Complete 540 TIP # - R-2721, R-2828, R-2829

LOCATION - Barrier 30 COUNTY(IES) - Wake and Johnston

IMPACTS - 5 # BENEFITS - 8 NAC: A (B) C D E F G (CIRCLE ALL THAT APPLY)

A. FEASIBILITY:

1	Can a 5-dB(A) reduction in traffic noise levels be achieved for at least one impacted receptor?	X YES	NO
2	Does topography negatively affect the proposed abatement measure?	YES	X NO
3	Does the abatement measure negatively affect property access, drainage, safety and maintenance requirements?	YES	X NO
4	Is there control of access in the vicinity of the proposed abatement measure?	YES	X NO

B. REASONABLENESS:

1	Can a 7-dB(A) reduction in traffic noise levels be achieved for at least one impacted front row receptor?	X YES	NO
2	Is the design criteria per benefited receptor of 3661 (sq.ft.) / cu.yd (CIRCLE ONE) less than the maximum allowable design criteria per benefited receptor of 3109 (sq.ft.) / cu.yd.? (CIRCLE ONE)	YES	X NO

C. NOISE ABATEMENT DECISION:

1	Is the noise mitigation feasible?	X YES	NO
2	Is the noise mitigation reasonable?	YES	X NO
3	Is the noise mitigation likely?	YES	X NO
4	Have the owners' and residents' viewpoints been solicited?	YES	X NO
5	Is the noise mitigation recommended for construction?	YES	NO

D. OPTIONAL REASONABLENESS CONSIDERATION:

1	Was optional averaging noise abatement allowance within a common noise environment used for consideration of barrier reasonableness?	YES	X NO

2 If the answer to D.1 is YES, the design criteria per benefited receptor for each individual barrier within the common noise environment before averaging are: (CIRCLE ONE)

Bar No. _____ _____ sq.ft./cu.yd Bar No. _____ _____ sq.ft./cu.yd

Bar No. _____ _____ sq.ft./cu.yd Bar No. _____ _____ sq.ft./cu.yd

3 If the answer to D.1 is YES, is the design criteria per benefited receptor for each individual barrier less than or equal to twice the maximum allowable design criteria per benefited receptor of _____ sq.ft./cu.yd (CIRCLE ONE) YES NO

Form Completed By: E SALUTZ Date: _____

In Consultation With: _____ Date: _____

Complete 540 3/17/2015
Traffic Noise Analysis

Orange Corridor

Noise Wall 31

Receptor	First Row	Residences Represented	NAC Land Use Category[1]	Noise Levels[2] Existing dB(A)	Build dB(A)	Increase	Impacted Receptors	Short Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	Intermediate Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	Tall Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors
R0806	Yes	1	B	64	67	3	1	62	5	1	61	6	1	61	6	1
R0807	Yes	1	B	67	72	5	1	63	9	1	62	10	1	62	10	1
R0808A	Yes	1	B	60	66	6	1	60	6	1	60	6	1	59	7	1
R0808B	Yes	1	B	56	61	5		58	3		58	3		58	3	
R0809A	Yes	1	B	61	67	6	1	62	5	1	62	5	1	61	6	1
R0809B	Yes	1	B	59	67	8	1	59	8	1	60	7	1	60	7	1
R0811A	Yes	1	B	59	62	3		59	3		58	4		58	4	
R0811B	Yes	1	B	57	62	5		58	4		58	4		58	4	

Length (ft)=	1424	1424	1424
Average Height =	12	14	16
Area of Noise Wall (sft)=	17088	19934	22780
Impacted Receptors=	5	5	5
Number of Benefited Receptors=	5	5	5
Area of Noise Wall per Benefit Receptor (sft)=	3418	3987	4556
Average Increase in dB(A) of all Impacted Receptors=	6	6	6
Maximum Allowable Base Quantity of Noise Wall per Benefited Receptor (sft)=	2696	2696	2696
Feasible (5 dB(A) Reduction)=	Yes	Yes	Yes
Reasonable (Wall Area per Benefit) =	No	No	No
Reasonable (7 dB(A) Reduction) =	Yes	Yes	Yes
Breaks Line of Sight to Impacted Properties? =	No	Yes	Yes

(1) Category B denotes a residential property.
(2) Noise levels highlighted in red are levels above the Noise Abatment Criteria.
(3) Values highlighted in green are a 5 dB(A) or greater reduction in noise levels.

Note: Boxed results indicate barrier discussed in report text.

NCDOT SOUND BARRIER
FEASIBILITY and REASONABLENESS
WORKSHEET

PROJECT - Complete 540 TIP # - R-2721, R-2828, R-2829

LOCATION - Barrier 31 COUNTY(IES) - Wake and Johnston

IMPACTS - 5 # BENEFITS - 5 NAC: A (B) C D E F G (CIRCLE ALL THAT APPLY)

A. FEASIBILITY:

1	Can a 5-dB(A) reduction in traffic noise levels be achieved for at least one impacted receptor?	X YES	NO
2	Does topography negatively affect the proposed abatement measure?	YES	X NO
3	Does the abatement measure negatively affect property access, drainage, safety and maintenance requirements?	YES	X NO
4	Is there control of access in the vicinity of the proposed abatement measure?	YES	X NO

B. REASONABLENESS:

1	Can a 7-dB(A) reduction in traffic noise levels be achieved for at least one impacted front row receptor?	X YES	NO
2	Is the design criteria per benefited receptor of 3987 (sq.ft.)/cu.yd (CIRCLE ONE) less than the maximum allowable design criteria per benefited receptor of 2696 (sq.ft.)/ cu.yd.? (CIRCLE ONE)	YES	X NO

C. NOISE ABATEMENT DECISION:

1	Is the noise mitigation feasible?	X YES	NO
2	Is the noise mitigation reasonable?	YES	X NO
3	Is the noise mitigation likely?	YES	X NO
4	Have the owners' and residents' viewpoints been solicited?	YES	X NO
5	Is the noise mitigation recommended for construction?	YES	NO

D. OPTIONAL REASONABLENESS CONSIDERATION:

1	Was optional averaging noise abatement allowance within a common noise environment used for consideration of barrier reasonableness?	YES	X NO

2 If the answer to D.1 is YES, the design criteria per benefited receptor for each individual barrier within the common noise environment before averaging are:

Bar No. _____ _____ sq.ft./cu.yd (CIRCLE ONE) Bar No. _____ _____ sq.ft./cu.yd (CIRCLE ONE)

Bar No. _____ _____ sq.ft./cu.yd Bar No. _____ _____ sq.ft./cu.yd

3 If the answer to D.1 is YES, is the design criteria per benefited receptor for each individual barrier less than or equal to twice the maximum allowable design criteria per benefited receptor of _____ sq.ft./cu.yd (CIRCLE ONE) _____ YES NO

Form Completed By: E SALUTZ Date: _____

In Consultation With: _____ Date: _____

Complete 540
Traffic Noise Analysis

3/17/2015

Orange Corridor

Noise Wall 32

Receptor	First Row	Residences Represented	NAC Land Use Category[1]	Noise Levels[2] Existing dB(A)	Build dB(A)	Increase	Impacted Receptors	Short Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	Intermediate Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	Tall Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors
R0856	Yes	1	B	64	73	9	1	64	9	1	63	10	1	62	11	1
R0857	Yes	1	B	66	71	5	1	65	6	1	64	7	1	63	8	1
R0858A	Yes	1	B	62	70	8	1	65	5	1	63	7	1	62	8	1
R0858B	Yes	1	B	61	69	8	1	63	6	1	61	8	1	61	8	1
R0859	Yes	1	B	65	70	5	1	65	5	1	64	6	1	63	7	1
R0860A	Yes	1	B	68	74	6	1	66	8	1	65	9	1	64	10	1
R0860B	Yes	1	B	68	74	6	1	66	8	1	65	9	1	64	10	1
R1842		1	B	59	64	5		60	4		59	5	1	59	5	1
R1843A		1	B	62	67	5	1	64	3		62	5	1	61	6	1
R1843B		1	B	61	66	5	1	63	3		61	5	1	60	6	1
R1844A		1	B	60	65	5		62	3		60	5	1	60	5	1
R1844B		1	B	59	63	4		61	2		59	4		59	4	
R2291A		1	B	61	63	2		61	2		60	3		60	3	
R2291B		1	B	61	62	1		61	1		61	1		61	1	

Length (ft)=	2200	2200	2200
Average Height =	16	18	20
Area of Noise Wall (sft)=	35198	39598	44000
Impacted Receptors=	9	9	9
Number of Benefited Receptors=	7	11	11
Area of Noise Wall per Benefit Receptor (sft)=	5028	3600	4000
Average Increase in dB(A) of all Impacted Receptors=	6	6	6
Maximum Allowable Base Quantity of Noise Wall per Benefited Receptor (sft)=	2722	2722	2722
Feasible (5 dB(A) Reduction)=	Yes	Yes	Yes
Reasonable (Wall Area per Benefit) =	No	No	No
Reasonable (7 dB(A) Reduction) =	Yes	Yes	Yes
Breaks Line of Sight to Impacted Properties? =	No	Yes	Yes

(1) Category B denotes a residential property.
(2) Noise levels highlighted in red are levels above the Noise Abatment Criteria.
(3) Values highlighted in green are a 5 dB(A) or greater reduction in noise levels.

Note: Boxed results indicate barrier discussed in report text.

NCDOT SOUND BARRIER
FEASIBILITY and REASONABLENESS
WORKSHEET

PROJECT - Complete 540 TIP # - R-2721, R-2828, R-2829

LOCATION - Barrier 32 COUNTY(IES) - Wake and Johnston

IMPACTS - 9 # BENEFITS - 11 NAC: A (B) C D E F G (CIRCLE ALL THAT APPLY)

A. FEASIBILITY:

1	Can a 5-dB(A) reduction in traffic noise levels be achieved for at least one impacted receptor?	X YES	NO
2	Does topography negatively affect the proposed abatement measure?	YES	X NO
3	Does the abatement measure negatively affect property access, drainage, safety and maintenance requirements?	YES	X NO
4	Is there control of access in the vicinity of the proposed abatement measure?	YES	X NO

B. REASONABLENESS:

1	Can a 7-dB(A) reduction in traffic noise levels be achieved for at least one impacted front row receptor?	X YES	NO
2	Is the design criteria per benefited receptor of 4000 (CIRCLE ONE) (sq.ft.)/cu.yd less than the maximum allowable design criteria per benefited receptor of 2722 (CIRCLE ONE) (sq.ft.)/ cu.yd.?	YES	X NO

C. NOISE ABATEMENT DECISION:

1	Is the noise mitigation feasible?	X YES	NO
2	Is the noise mitigation reasonable?	YES	X NO
3	Is the noise mitigation likely?	YES	X NO
4	Have the owners' and residents' viewpoints been solicited?	YES	X NO
5	Is the noise mitigation recommended for construction?	YES	NO

D. OPTIONAL REASONABLENESS CONSIDERATION:

1	Was optional averaging noise abatement allowance within a common noise environment used for consideration of barrier reasonableness?	YES	X NO

2 If the answer to D.1 is YES, the design criteria per benefited receptor for each individual barrier within the common noise environment before averaging are:

Bar No. _____ _____ (CIRCLE ONE) sq.ft./cu.yd Bar No. _____ _____ (CIRCLE ONE) sq.ft./cu.yd

Bar No. _____ _____ sq.ft./cu.yd Bar No. _____ _____ sq.ft./cu.yd

3 If the answer to D.1 is YES, is the design criteria per benefited receptor for each individual barrier less than or equal to twice the maximum allowable design criteria per benefited receptor of _____ (CIRCLE ONE) sq.ft./cu.yd _____ YES NO

Form Completed By: E SALUTZ Date: _____

In Consultation With: _____ Date: _____

Complete 540
Traffic Noise Analysis

4/2/2015

Orange Corridor

Noise Wall 33

															Recommended[4]		
			NAC	Noise Levels[2]				Short Wall			Intermediate Wall				Tall Wall		
Receptor	First Row	Residences Represented	Land Use Category[1]	Existing dB(A)	Build dB(A)	Increase	Impacted Receptors	W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors
R0916A	Yes	1	B	69	74	5	1	69	5	1	66	8	1	64	10	1
R0916B	Yes	1	B	70	75	5	1	69	6	1	66	9	1	64	11	1
R0916C	Yes	1	B	70	75	5	1	68	7	1	66	9	1	65	10	1
R0917		1	B	63	67	4	1	63	4		61	6	1	60	7	1
R0918A	Yes	1	B	70	73	3	1	68	5	1	66	7	1	64	9	1
R0918B	Yes	1	B	70	73	3	1	68	5	1	66	7	1	64	9	1
R0918C	Yes	1	B	69	72	3	1	67	5	1	65	7	1	64	8	1
R0919A		1	B	62	66	4	1	62	4		61	5	1	60	6	1
R0919B		1	B	60	63	3		60	3		59	4		58	5	1
R0920		1	B	57	60	3		58	2		57	3		56	4	
R0921A		1	B	59	63	4		60	3		59	4		58	5	1
R0921B		1	B	61	65	4		62	3		61	4		60	5	1
R0921C		1	B	60	64	4		60	4		60	4		59	5	1
R0922A	Yes	1	B	68	71	3	1	69	2		66	5	1	64	7	1
R0922B	Yes	1	B	68	71	3	1	66	5	1	65	6	1	63	8	1
R0923A		1	B	66	69	3	1	66	3		64	5	1	62	7	1
R0923B		1	B	63	66	3	1	62	4		61	5	1	60	6	1
R0924A		1	B	58	60	2		58	2		57	3		56	4	
R0924B		1	B	58	61	3		58	3		57	4		57	4	
R0928		1	B	61	63	2		59	4		58	5	1	57	6	1
R0931A	Yes	1	B	67	70	3	1	66	4		64	6	1	63	7	1
R0931B	Yes	1	B	72	74	2	1	67	7	1	66	8	1	64	10	1
R2315	Yes	RECREATIONAL	C	55	65	10										
R2315-1	Yes	NODAL ARRAY	C	55	62	7		60	2		60	2		59	3	
R2315-2	Yes	NODAL ARRAY	C	55	61	6		60	1		60	1		59	2	
R2315-3	Yes	NODAL ARRAY	C	55	61	6		60	1		60	1		60	1	
R2315-4	Yes	NODAL ARRAY	C	55	61	6		60	1		60	1		60	1	
R2315-5	Yes	NODAL ARRAY	C	55	65	10	1	64	1		64	1		63	2	
R2315-6	Yes	NODAL ARRAY	C	55	66	11	1	65	1		65	1		64	2	

Length (ft)=	2400	2400	2400
Average Height =	10	12	16
Area of Noise Wall (sft)=	24002	28800	38400
Impacted Receptors=	16	16	16
Number of Benefited Receptors=	8	15	19
Area of Noise Wall per Benefit Receptor (sft)=	3000	1920	2021
Average Increase in dB(A) of all Impacted Receptors=	4	4	4
Maximum Allowable Base Quantity of Noise Wall per Benefited Receptor (sft)=	2653	2653	2653
Feasible (5 dB(A) Reduction)=	Yes	Yes	Yes
Reasonable (Wall Area per Benefit) =	No	Yes	Yes
Reasonable (7 dB(A) Reduction) =	Yes	Yes	Yes
Breaks Line of Sight to Impacted Properties? =	No	Yes	Yes

Recommended 16ft Wall

(1) Category B denotes a residential property.
(2) Noise levels highlighted in red are levels above the Noise Abatment Criteria.
(3) Values highlighted in green are a 5 dB(A) or greater reduction in noise levels.
(4) A 16ft barrier is recommended because all criteria for feasible and reasonable have been met, and the most properties are benefited.

NCDOT SOUND BARRIER
FEASIBILITY and REASONABLENESS
WORKSHEET

PROJECT - Complete 540 TIP # - R-2721, R-2828, R-2829

LOCATION - Barrier 33 COUNTY(IES) - Wake and Johnston

IMPACTS - 16 # BENEFITS - 19 NAC: A (B) (C) D E F G (CIRCLE ALL THAT APPLY)

A. FEASIBILITY:

1	Can a 5-dB(A) reduction in traffic noise levels be achieved for at least one impacted receptor?	X YES	NO
2	Does topography negatively affect the proposed abatement measure?	YES	X NO
3	Does the abatement measure negatively affect property access, drainage, safety and maintenance requirements?	YES	X NO
4	Is there control of access in the vicinity of the proposed abatement measure?	YES	X NO

B. REASONABLENESS:

1	Can a 7-dB(A) reduction in traffic noise levels be achieved for at least one impacted front row receptor?	X YES	NO
2	Is the design criteria per benefited receptor of 2021 (CIRCLE ONE) (sq.ft.) cu.yd less than the maximum allowable design criteria per benefited receptor of 2653 (CIRCLE ONE) (sq.ft.) cu.yd.?	X YES	NO

C. NOISE ABATEMENT DECISION:

1	Is the noise mitigation feasible?	X YES	NO
2	Is the noise mitigation reasonable?	X YES	NO
3	Is the noise mitigation likely?	X YES	NO
4	Have the owners' and residents' viewpoints been solicited?	YES	X NO
5	Is the noise mitigation recommended for construction?	YES	NO

D. OPTIONAL REASONABLENESS CONSIDERATION:

1	Was optional averaging noise abatement allowance within a common noise environment used for consideration of barrier reasonableness?	YES	X NO
2	If the answer to D.1 is YES, the design criteria per benefited receptor for each individual barrier within the common noise environment before averaging are:		

Bar No. _____ _____ (CIRCLE ONE) sq.ft./cu.yd Bar No. _____ _____ (CIRCLE ONE) sq.ft./cu.yd

Bar No. _____ _____ sq.ft./cu.yd Bar No. _____ _____ sq.ft./cu.yd

3	If the answer to D.1 is YES, is the design criteria per benefited receptor for each individual barrier less than or equal to twice the maximum allowable design criteria per benefited receptor of _____ (CIRCLE ONE) sq.ft./cu.yd	YES	NO

Form Completed By: E SALUTZ Date: _____

In Consultation With: _____ Date: _____

Complete 540
Traffic Noise Analysis

3/31/2015

Red Corridor

Noise Wall 34

Receptor	First Row	Residences Represented	NAC Land Use Category[1]	Noise Levels[2] Existing dB(A)	Build dB(A)	Increase	Impacted Receptors	Short Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	Intermediate Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	Recommended[4] Tall Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors
R0257A	Yes	1	B	47	58	11		58	0		57	1		57	1	
R0257B	Yes	1	B	48	59	11		58	1		58	1		58	1	
R0258		1	B	46	58	12		57	1		57	1		57	1	
R1624	Yes	1	B	48	60	12		59	1		59	1		59	1	
R0259		1	B	46	56	10		55	1		55	1		55	1	
R0260A	Yes	1	B	47	61	14		60	1		60	1		60	1	
R0260B	Yes	1	B	46	60	14		58	2		57	3		57	3	
R0261A	Yes	1	B	46	61	15	1	59	2		59	2		58	3	
R0261B	Yes	1	B	47	63	16	1	61	2		61	2		61	2	
R0261C	Yes	1	B	46	60	14		58	2		58	2		56	4	
R0262A		1	B	46	55	9		54	1		54	1		54	1	
R0262B		1	B	46	55	9		54	1		54	1		53	2	
R0263A		1	B	46	55	9		53	2		53	2		52	3	
R0263B		1	B	46	54	8		52	2		52	2		52	2	
R0264A		1	B	46	57	11		56	1		55	2		55	2	
R0264B		1	B	46	56	10		55	1		54	2		54	2	
R0265A		1	B	46	58	12		56	2		55	3		54	4	
R0265B		1	B	46	58	12		55	3		55	3		54	4	
R0266A		1	B	46	58	12		57	1		56	2		55	3	
R0266B		1	B	46	58	12		56	2		56	2		55	3	
R0267A		1	B	46	60	14		58	2		57	3		56	4	
R0267B		1	B	46	62	16	1	59	3		58	4		56	6	1
R0268A		1	B	46	60	14		57	3		56	4		55	5	1
R0268B		1	B	46	62	16	1	58	4		57	5	1	56	6	1
R0268C		1	B	46	60	14		57	3		57	3		55	5	1
R0269	Yes	1	B	46	69	23	1	62	7	1	61	8	1	58	11	1
R0270	Yes	1	B	46	76	30	1	61	15	1	60	16	1	56	20	1
R0271A	Yes	1	B	46	69	23	1	63	6	1	62	7	1	59	10	1
R0271B	Yes	1	B	46	66	20	1	61	5	1	61	5	1	58	8	1
R0272	Yes	1	B	46	70	24	1	65	5	1	63	7	1	60	10	1
R0273A	Yes	1	B	46	66	20	1	62	4		62	4		59	7	1
R0273B	Yes	1	B	46	67	21	1	64	3		62	5	1	59	8	1
R1746A		1	B	46	62	16	1	58	4		58	4		56	6	1
R1746B		1	B	46	61	15	1	59	2		58	3		56	5	1
R1747		1	B	46	62	16	1	61	1		60	2		57	5	1
R1748		1	B	46	63	17	1	60	3		59	4		58	5	1
R1916		1	B	46	59	13		58	1		57	2		56	3	
R1917		1	B	47	59	12		56	3		56	3		55	4	

Length (ft)=	1947	1947	1947
Average Height =	12	14	24
Area of Noise Wall (sft)=	23367	27261	46733
Impacted Receptors=	15	15	15
Number of Benefited Receptors=	5	7	15
Area of Noise Wall per Benefit Receptor (sft)=	4673	3894	3116
Average Increase in dB(A) of all Impacted Receptors=	19	19	19
Maximum Allowable Base Quantity of Noise Wall per Benefited Receptor (sft)=	3172	3172	3172
Feasible (5 dB(A) Reduction)=	Yes	Yes	Yes
Reasonable (Wall Area per Benefit) =	No	No	Yes
Reasonable (7 dB(A) Reduction) =	Yes	Yes	Yes
Breaks Line of Sight to Impacted Properties? =	Yes	Yes	Yes

Recommended 24ft wall

(1) Category B denotes a residential property.
(2) Noise levels highlighted in red are levels above the Noise Abatment Criteria.
(3) Values highlighted in green are a 5 dB(A) or greater reduction in noise levels.
(4) A 24ft barrier is recommended because all criteria for feasible and reasonable have been met, and the most properties are benefited.

NCDOT SOUND BARRIER
FEASIBILITY and REASONABLENESS
WORKSHEET

PROJECT - Complete 540 TIP # - R-2721, R-2828, R-2829

LOCATION - Barrier 34 COUNTY(IES) - Wake and Johnston

IMPACTS - 15 # BENEFITS - 15 NAC: A (B) C D E F G (CIRCLE ALL THAT APPLY)

A. FEASIBILITY:

1	Can a 5-dB(A) reduction in traffic noise levels be achieved for at least one impacted receptor?	X YES	NO
2	Does topography negatively affect the proposed abatement measure?	YES	X NO
3	Does the abatement measure negatively affect property access, drainage, safety and maintenance requirements?	YES	X NO
4	Is there control of access in the vicinity of the proposed abatement measure?	YES	X NO

B. REASONABLENESS:

1	Can a 7-dB(A) reduction in traffic noise levels be achieved for at least one impacted front row receptor?	X YES	NO
2	Is the design criteria per benefited receptor of 3116 (sq.ft.) / cu.yd (CIRCLE ONE) less than the maximum allowable design criteria per benefited receptor of 3172 (sq.ft.) / cu.yd.? (CIRCLE ONE)	X YES	NO

C. NOISE ABATEMENT DECISION:

1	Is the noise mitigation feasible?	X YES	NO
2	Is the noise mitigation reasonable?	X YES	NO
3	Is the noise mitigation likely?	X YES	NO
4	Have the owners' and residents' viewpoints been solicited?	YES	X NO
5	Is the noise mitigation recommended for construction?	YES	NO

D. OPTIONAL REASONABLENESS CONSIDERATION:

1	Was optional averaging noise abatement allowance within a common noise environment used for consideration of barrier reasonableness?	YES	X NO
2	If the answer to D.1 is YES, the design criteria per benefited receptor for each individual barrier within the common noise environment before averaging are:		

Bar No. _____ _____ sq.ft./cu.yd (CIRCLE ONE) Bar No. _____ _____ sq.ft./cu.yd (CIRCLE ONE)

Bar No. _____ _____ sq.ft./cu.yd Bar No. _____ _____ sq.ft./cu.yd

3	If the answer to D.1 is YES, is the design criteria per benefited receptor for each individual barrier less than or equal to twice the maximum allowable design criteria per benefited receptor of _____ sq.ft./cu.yd (CIRCLE ONE)	YES	NO

Form Completed By: E SALUTZ Date: _____

In Consultation With: _____ Date: _____

Complete 540
Traffic Noise Analysis

3/18/2015

Red Corridor

Noise Wall 35

Receptor	First Row	Residences Represented	NAC Land Use Category[1]	Noise Levels[2] Existing dB(A)	Build dB(A)	Increase	Impacted Receptors	Short Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	Intermediate Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	Tall Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors
R0249	Yes	1	B	46	74	28	1	63	11	1	62	12	1	61	13	1
R0250A	Yes	1	B	46	63	17	1	60	3		59	4		59	4	
R0250B	Yes	1	B	46	63	17	1	59	4		59	4		58	5	1
R0250C	Yes	1	B	50	63	13		61	2		61	2		61	2	
R0253A	Yes	1	B	46	66	20	1	59	7	1	59	7	1	58	8	1
R0253B	Yes	1	B	46	63	17	1	57	6	1	57	6	1	56	7	1
R0274A	Yes	1	B	46	66	20	1	60	6	1	59	7	1	59	7	1
R0274B	Yes	1	B	46	67	21	1	59	8	1	58	9	1	58	9	1
R0274C	Yes	1	B	46	65	19	1	57	8	1	57	8	1	56	9	1
R0275	Yes	1	B	46	55	9		54	1		54	1		54	1	
R0276	Yes	1	B	51	56	5		56	0		56	0		56	0	
R0277	Yes	1	B	50	65	15	1	58	7	1	57	8	1	57	8	1
R1743A		1	B	50	60	10		60	0		60	0		59	1	
R1743B		1	B	46	59	13		58	1		58	1		58	1	
R1744A		1	B	46	61	15	1	55	6	1	55	6	1	55	6	1
R1744B		1	B	46	59	13		55	4		55	4		55	4	
R1745A		1	B	46	62	16	1	57	5	1	56	6	1	55	7	1
R1745B		1	B	46	60	14		56	4		55	5	1	55	5	1
R1745C		1	B	46	60	14		54	6	1	54	6	1	53	7	1
R1745D		1	B	46	58	12		55	3		54	4		54	4	

Length (ft)=	3067	3067	3067
Average Height =	14	16	18
Area of Noise Wall (sft)=	42949	49084	55220
Impacted Receptors=	11	11	11
Number of Benefited Receptors=	10	11	12
Area of Noise Wall per Benefit Receptor (sft)=	4295	4462	4602
Average Increase in dB(A) of all Impacted Receptors=	19	19	19
Maximum Allowable Base Quantity of Noise Wall per Benefited Receptor (sft)=	3152	3152	3152
Feasible (5 dB(A) Reduction)=	Yes	Yes	Yes
Reasonable (Wall Area per Benefit) =	No	No	No
Reasonable (7 dB(A) Reduction) =	Yes	Yes	Yes
Breaks Line of Sight to Impacted Properties? =	No	Yes	Yes

(1) Category B denotes a residential property.
(2) Noise levels highlighted in red are levels above the Noise Abatment Criteria.
(3) Values highlighted in green are a 5 dB(A) or greater reduction in noise levels.

Note: Boxed results indicate barrier discussed in report text.

NCDOT SOUND BARRIER
FEASIBILITY and REASONABLENESS
WORKSHEET

PROJECT - Complete 540 TIP # - R-2721, R-2828, R-2829

LOCATION - Barrier 35 COUNTY(IES) - Wake and Johnston 35

IMPACTS - 11 # BENEFITS - 12 NAC: A (B) C D E F G (CIRCLE ALL THAT APPLY)

A. FEASIBILITY:

1	Can a 5-dB(A) reduction in traffic noise levels be achieved for at least one impacted receptor?	X YES	NO
2	Does topography negatively affect the proposed abatement measure?	YES	X NO
3	Does the abatement measure negatively affect property access, drainage, safety and maintenance requirements?	YES	X NO
4	Is there control of access in the vicinity of the proposed abatement measure?	YES	X NO

B. REASONABLENESS:

1	Can a 7-dB(A) reduction in traffic noise levels be achieved for at least one impacted front row receptor?	X YES	NO
2	Is the design criteria per benefited receptor of 4602 (CIRCLE ONE) (sq.ft./cu.yd) less than the maximum allowable design criteria per benefited receptor of 3152 (CIRCLE ONE) (sq.ft./ cu.yd.)?	YES	X NO

C. NOISE ABATEMENT DECISION:

1	Is the noise mitigation feasible?	X YES	NO
2	Is the noise mitigation reasonable?	YES	X NO
3	Is the noise mitigation likely?	YES	X NO
4	Have the owners' and residents' viewpoints been solicited?	YES	X NO
5	Is the noise mitigation recommended for construction?	YES	NO

D. OPTIONAL REASONABLENESS CONSIDERATION:

1	Was optional averaging noise abatement allowance within a common noise environment used for consideration of barrier reasonableness?	X YES	NO

2 If the answer to D.1 is YES, the design criteria per benefited receptor for each individual barrier within the common noise environment before averaging are:

		(CIRCLE ONE)			(CIRCLE ONE)
Bar No. 34	3,116	sq.ft./cu.yd	Bar No.		sq.ft./cu.yd
Bar No. 35	4,602	sq.ft./cu.yd	Bar No.		sq.ft./cu.yd

3 If the answer to D.1 is YES, is the design criteria per benefited receptor for each individual barrier less than or equal to twice the maximum allowable design criteria per benefited receptor of 2,500 (CIRCLE ONE) sq.ft./cu.yd X YES NO

Form Completed By: E SALUTZ Date:

In Consultation With: Date:

Complete 540
Traffic Noise Analysis

3/25/2015

Red Corridor

Noise Wall 36

Receptor	First Row	Residences Represented	NAC Land Use Category[1]	Noise Levels[2] Existing dB(A)	Build dB(A)	Increase	Impacted Receptors	Short Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	Intermediate Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	Tall Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors
R0291A	Yes	1	B	46	64	18	1	62	2		60	4		59	5	1
R0291B	Yes	1	B	46	66	20	1	64	2		61	5	1	60	6	1
R0292	Yes	1	B	46	68	22	1	62	6	1	61	7	1	60	8	1
R1750A		1	B	46	63	17	1	61	2		58	5	1	58	5	1
R1750B		1	B	46	64	18	1	61	3		59	5	1	58	6	1
R1751		1	B	46	64	18	1	60	4		59	5	1	58	6	1
R1930		1	B	46	60	14		59	1		57	3		56	4	
R1931A		1	B	46	61	15	1	59	2		57	4		56	5	1
R1931B		1	B	46	60	14		58	2		56	4		56	4	
R1931C		1	B	46	59	13		58	1		56	3		55	4	
R1932A		1	B	46	61	15	1	59	2		57	4		56	5	1
R1932B		1	B	46	59	13		58	1		56	3		55	4	
R1652	Yes	1	B	61	69	8	1	66	3		65	4		65	4	
R0293	Yes	1	B	61	67	6	1	64	3		64	3		64	3	
R1752A		1	B	54	63	9		60	3		58	5	1	58	5	1
R1752B		1	B	54	64	10		61	3		60	4		60	4	
R1651	Yes	1	B	57	68	11	1	61	7	1	61	7	1	60	8	1
R0296A	Yes	1	B	56	65	9		61	4		61	4		61	4	
R0296B	Yes	1	B	56	64	8		61	3		61	3		61	3	
R0297	Yes	1	B	59	65	6		62	3		62	3		62	3	

Length (ft)=	4600	4600	4600
Average Height =	10	12	14
Area of Noise Wall (sft)=	45995	55195	64396
Impacted Receptors=	11	11	11
Number of Benefited Receptors=	2	7	10
Area of Noise Wall per Benefit Receptor (sft)=	22998	7885	6440
Average Increase in dB(A) of all Impacted Receptors=	15	15	15
Maximum Allowable Base Quantity of Noise Wall per Benefited Receptor (sft)=	3035	3035	3035
Feasible (5 dB(A) Reduction)=	Yes	Yes	Yes
Reasonable (Wall Area per Benefit) =	No	No	No
Reasonable (7 dB(A) Reduction) =	Yes	Yes	Yes
Breaks Line of Sight to Impacted Properties? =	No	Yes	Yes

(1) Category B denotes a residential property.
(2) Noise levels highlighted in red are levels above the Noise Abatment Criteria.
(3) Values highlighted in green are a 5 dB(A) or greater reduction in noise levels.

Note: Boxed results indicate barrier discussed in report text.

NCDOT SOUND BARRIER
FEASIBILITY and REASONABLENESS
WORKSHEET

PROJECT - Complete 540 TIP # - R-2721, R-2828, R-2829

LOCATION - Barrier 36 COUNTY(IES) - Wake and Johnston

IMPACTS - 11 # BENEFITS - 10 NAC: A (B) C D E F G (CIRCLE ALL THAT APPLY)

A. FEASIBILITY:

1	Can a 5-dB(A) reduction in traffic noise levels be achieved for at least one impacted receptor?	X YES	NO
2	Does topography negatively affect the proposed abatement measure?	YES	X NO
3	Does the abatement measure negatively affect property access, drainage, safety and maintenance requirements?	YES	X NO
4	Is there control of access in the vicinity of the proposed abatement measure?	YES	X NO

B. REASONABLENESS:

1	Can a 7-dB(A) reduction in traffic noise levels be achieved for at least one impacted front row receptor?	X YES	NO
2	Is the design criteria per benefited receptor of 6440 (CIRCLE ONE) (sq.ft.)/cu.yd less than the maximum allowable design criteria per benefited receptor of 3035 (CIRCLE ONE) (sq.ft.)/ cu.yd.?	YES	X NO

C. NOISE ABATEMENT DECISION:

1	Is the noise mitigation feasible?	X YES	NO
2	Is the noise mitigation reasonable?	YES	X NO
3	Is the noise mitigation likely?	YES	X NO
4	Have the owners' and residents' viewpoints been solicited?	YES	X NO
5	Is the noise mitigation recommended for construction?	YES	NO

D. OPTIONAL REASONABLENESS CONSIDERATION:

1	Was optional averaging noise abatement allowance within a common noise environment used for consideration of barrier reasonableness?	YES	X NO

2 If the answer to D.1 is YES, the design criteria per benefited receptor for each individual barrier within the common noise environment before averaging are:

Bar No. _____ _____ (CIRCLE ONE) sq.ft./cu.yd Bar No. _____ _____ (CIRCLE ONE) sq.ft./cu.yd

Bar No. _____ _____ sq.ft./cu.yd Bar No. _____ _____ sq.ft./cu.yd

3	If the answer to D.1 is YES, is the design criteria per benefited receptor for each individual barrier less than or equal to twice the maximum allowable design criteria per benefited receptor of _____ (CIRCLE ONE) sq.ft./cu.yd	YES	NO

Form Completed By: E SALUTZ Date: _____

In Consultation With: _____ Date: _____

Complete 540 3/13/2015
Traffic Noise Analysis

Red Corridor

Noise Wall 37

				Noise Levels[2]				Short Wall			Intermediate Wall			Tall Wall		
Receptor	First Row	Residences Represented	NAC Land Use Category[1]	Existing dB(A)	Build dB(A)	Increase	Impacted Receptors	W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors
R0395	Yes	1	B	44	65	21	1	63	2		61	4		59	6	1
R0396	Yes	1	B	44	69	25	1	65	4		64	5	1	62	7	1
R0397	Yes	1	B	44	69	25	1	64	5	1	61	8	1	60	9	1
R0398	Yes	1	B	44	68	24	1	61	7	1	60	8	1	59	9	1
R0399	Yes	1	B	44	60	16	1	56	4		56	4		55	5	1
R1825		1	B	44	58	14		56	2		56	2		56	2	

Length (ft)=	1678	1678	1678
Average Height =	12	14	16
Area of Noise Wall (sft)=	20130	23485	26841
Impacted Receptors=	5	5	5
Number of Benefited Receptors=	2	3	5
Area of Noise Wall per Benefit Receptor (sft)=	10065	7828	5368
Average Increase in dB(A) of all Impacted Receptors=	22	22	22
Maximum Allowable Base Quantity of Noise Wall per Benefited Receptor (sft)=	3277	3277	3277
Feasible (5 dB(A) Reduction)=	Yes	Yes	Yes
Reasonable (Wall Area per Benefit) =	No	No	No
Reasonable (7 dB(A) Reduction) =	Yes	Yes	Yes
Breaks Line of Sight to Impacted Properties? =	No	No	No

(1) Category B denotes a residential property.
(2) Noise levels highlighted in red are levels above the Noise Abatment Criteria.
(3) Values highlighted in green are a 5 dB(A) or greater reduction in noise levels.

Note: Boxed results indicate barrier discussed in report text.

NCDOT SOUND BARRIER
FEASIBILITY and REASONABLENESS
WORKSHEET

PROJECT - Complete 540 TIP # - R-2721, R-2828, R-2829

LOCATION - Barrier 37 COUNTY(IES) - Wake and Johnston

IMPACTS - 5 # BENEFITS - 5 NAC: A (B) C D E F G (CIRCLE ALL THAT APPLY)

A. FEASIBILITY:

1	Can a 5-dB(A) reduction in traffic noise levels be achieved for at least one impacted receptor?	X YES	NO
2	Does topography negatively affect the proposed abatement measure?	YES	X NO
3	Does the abatement measure negatively affect property access, drainage, safety and maintenance requirements?	YES	X NO
4	Is there control of access in the vicinity of the proposed abatement measure?	YES	X NO

B. REASONABLENESS:

1	Can a 7-dB(A) reduction in traffic noise levels be achieved for at least one impacted front row receptor?	X YES	NO
2	Is the design criteria per benefited receptor of 5368 (CIRCLE ONE) (sq.ft.)/cu.yd less than the maximum allowable design criteria per benefited receptor of 3277 (CIRCLE ONE) (sq.ft.)/ cu.yd.?	YES	X NO

C. NOISE ABATEMENT DECISION:

1	Is the noise mitigation feasible?	X YES	NO
2	Is the noise mitigation reasonable?	YES	X NO
3	Is the noise mitigation likely?	YES	X NO
4	Have the owners' and residents' viewpoints been solicited?	YES	X NO
5	Is the noise mitigation recommended for construction?	YES	NO

D. OPTIONAL REASONABLENESS CONSIDERATION:

1	Was optional averaging noise abatement allowance within a common noise environment used for consideration of barrier reasonableness?	YES	X NO

2 If the answer to D.1 is YES, the design criteria per benefited receptor for each individual barrier within the common noise environment before averaging are:

Bar No.		sq.ft./cu.yd (CIRCLE ONE)	Bar No.		sq.ft./cu.yd (CIRCLE ONE)
Bar No.		sq.ft./cu.yd	Bar No.		sq.ft./cu.yd

3	If the answer to D.1 is YES, is the design criteria per benefited receptor for each individual barrier less than or equal to twice the maximum allowable design criteria per benefited receptor of	sq.ft./cu.yd (CIRCLE ONE)	YES	NO

Form Completed By: E SALUTZ Date:

In Consultation With: Date:

Complete 540
Traffic Noise Analysis

3/13/2015

Red Corridor

Noise Wall 38

Receptor	First Row	Residences Represented	NAC Land Use Category[1]	Noise Levels[2] Existing dB(A)	Build dB(A)	Increase	Impacted Receptors	Short Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	Intermediate Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	Tall Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors
R0977		1	B	49	68	19	1	67	1		67	1		67	1	
R0978A	Yes	1	B	53	65	12	1	60	5	1	59	6	1	59	6	1
R1639		1	B	50	65	15	1	61	4		60	5	1	60	5	1

Length (ft)=	1106	1106	1106
Average Height =	20	22	24
Area of Noise Wall (sft)=	22122	24335	26547
Impacted Receptors=	3	3	3
Number of Benefited Receptors=	1	2	2
Area of Noise Wall per Benefit Receptor (sft)=	22122	12168	13274
Average Increase in dB(A) of all Impacted Receptors=	15	15	15
Maximum Allowable Base Quantity of Noise Wall per Benefited Receptor (sft)=	3037	3037	3037
Feasible (5 dB(A) Reduction)=	Yes	Yes	Yes
Reasonable (Wall Area per Benefit) =	No	No	No
Reasonable (7 dB(A) Reduction) =	No	No	No
Breaks Line of Sight to Impacted Properties? =	Yes	Yes	Yes

(1) Category B denotes a residential property.
(2) Noise levels highlighted in red are levels above the Noise Abatment Criteria.
(3) Values highlighted in green are a 5 dB(A) or greater reduction in noise levels.

Note: Boxed results indicate barrier discussed in report text.

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Red Corridor

Noise Wall 39

Receptor	First Row	Residences Represented	NAC Land Use Category[1]	Noise Levels[2] Existing dB(A)	Build dB(A)	Increase	Impacted Receptors	Short Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	Intermediate Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	Tall Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors
R1640		1	B	52	61	9		58	3		58	3		56	5	1
R1641		1	B	55	67	12	1	60	7	1	60	7	1	58	9	1
R1642	Yes	1	B	56	61	5		59	2		59	2		58	3	
R0983A	Yes	1	B	52	63	11		60	3		59	4		57	6	1
R0983B	Yes	1	B	50	62	12		59	3		58	4		56	6	1
R0983C	Yes	1	B	53	65	12	1	62	3		61	4		58	7	1
R0987A	Yes	1	B	52	63	11		59	4		58	5	1	56	7	1
R0987B	Yes	1	B	53	67	14	1	59	8	1	58	9	1	56	11	1
R0987C	Yes	1	B	51	61	10		58	3		57	4		56	5	1
R0988A	Yes	1	B	49	60	11		57	3		57	3		55	5	1
R0988B	Yes	1	B	49	59	10		57	2		57	2		55	4	
R0988C	Yes	1	B	49	60	11		58	2		57	3		56	4	
R0989A	Yes	1	B	49	58	9		56	2		56	2		55	3	
R0989B	Yes	1	B	49	59	10		57	2		56	3		55	4	
R0989C	Yes	1	B	49	56	7		54	2		54	2		53	3	
R0992A	Yes	1	B	53	66	13	1	59	7	1	59	7	1	57	9	1
R0992B	Yes	1	B	51	59	8		57	2		57	2		56	3	
R0993A		1	B	49	58	9		56	2		56	2		55	3	
R0993B		1	B	49	57	8		56	1		55	2		55	2	
R0994A		1	B	49	54	5		54	0		54	0		53	1	
R0994B		1	B	49	55	6		55	0		54	1		54	1	
R0995A	Yes	1	B	49	56	7		55	1		55	1		54	2	
R0995B	Yes	1	B	52	65	13	1	59	6	1	58	7	1	57	8	1
R0999A		1	B	49	55	6		55	0		55	0		54	1	
R0999B		1	B	50	57	7		56	1		56	1		55	2	
R0999C		1	B	49	55	6		54	1		54	1		54	1	
R1000A		1	B	50	58	8		56	2		56	2		55	3	
R1000B		1	B	50	58	8		56	2		56	2		55	3	
R1001A		1	B	49	56	7		55	1		55	1		54	2	
R1001B		1	B	49	55	6		55	0		55	0		54	1	
R1002A		1	B	49	57	8		56	1		56	1		56	1	
R1002B		1	B	49	58	9		57	1		57	1		56	2	
R1003A	Yes	1	B	49	54	5		52	2		52	2		51	3	
R1003B	Yes	1	B	49	54	5		52	2		52	2		51	3	
R1003C	Yes	1	B	49	54	5		52	2		52	2		51	3	
R1004A	Yes	1	B	49	56	7		55	1		55	1		55	1	
R1004B	Yes	1	B	49	57	8		55	2		55	2		55	2	
R1004C	Yes	1	B	49	55	6		54	1		54	1		53	2	
R1005A	Yes	1	B	49	57	8		57	0		57	0		56	1	
R1005B	Yes	1	B	49	58	9		57	1		57	1		57	1	
R1005C	Yes	1	B	49	57	8		56	1		56	1		56	1	
R1006A	Yes	1	B	49	58	9		57	1		57	1		57	1	
R1006A	Yes	1	B	49	58	9		57	1		57	1		57	1	
R1006B	Yes	1	B	49	58	9		57	1		57	1		56	2	
R1007A	Yes	1	B	49	58	9		57	1		57	1		56	2	
R1007B	Yes	1	B	49	57	8		57	0		57	0		56	1	
R1008A	Yes	1	B	49	54	5		55	-1		55	-1		55	-1	
R1008B	Yes	1	B	49	56	7		57	-1		57	-1		57	-1	
R1008C	Yes	1	B	49	53	4		53	0		53	0		53	0	
R1009A		1	B	49	57	8		57	0		57	0		57	0	
R1009B		1	B	49	56	7		57	-1		57	-1		56	0	
R1010A		1	B	49	57	8		57	0		57	0		57	0	
R1010B		1	B	49	57	8		56	1		56	1		56	1	
R1011A		1	B	49	56	7		55	1		55	1		55	1	
R1011B		1	B	49	55	6		55	0		55	0		54	1	
R1011C		1	B	49	55	6		55	0		55	0		55	0	
R1012A		1	B	49	53	4		52	1		51	2		51	2	
R1012B		1	B	49	53	4		52	1		52	1		51	2	
R1012C		1	B	49	53	4		52	1		51	2		51	2	
R1013A		1	B	49	53	4		52	1		52	1		51	2	
R1013B		1	B	49	54	5		53	1		52	2		52	2	
R1013C		1	B	49	54	5		53	1		53	1		52	2	
R1014A		1	B	49	54	5		54	0		54	0		54	0	
R1014B		1	B	49	53	4		53	0		53	0		52	1	
R1015A		1	B	49	52	3		52	0		52	0		52	0	
R1015B		1	B	49	51	2		51	0		51	0		51	0	
R1016A		1	B	49	54	5		55	-1		55	-1		55	-1	
R1016B		1	B	49	53	4		53	0		53	0		53	0	
R1017A		1	B	49	52	3		52	0		52	0		52	0	
R1017B		1	B	49	51	2		51	0		51	0		51	0	
R1018A		1	B	49	52	3		52	0		52	0		52	0	
R1018B		1	B	49	52	3		52	0		52	0		52	0	
R1019A		1	B	49	52	3		52	0		52	0		51	1	
R1019B		1	B	49	52	3		51	1		51	1		51	1	

Complete 540
Traffic Noise Analysis

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Red Corridor

Noise Wall 39

Receptor	First Row	Residences Represented	NAC Land Use Category[1]	Noise Levels[2] Existing dB(A)	Build dB(A)	Increase	Impacted Receptors	Short Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	Intermediate Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	Tall Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors
R1020A		1	B	49	53	4		52	1		52	1		51	2	
R1020B		1	B	49	52	3		51	1		50	2		50	2	
R1020C		1	B	49	52	3		51	1		50	2		50	2	
R1021A		1	B	49	53	4		52	1		52	1		51	2	
R1021B		1	B	49	53	4		53	0		52	1		52	1	
R1022		1	B	49	52	3		51	1		51	1		50	2	
R1023A		1	B	49	51	2		51	0		51	0		51	0	
R1023B		1	B	49	52	3		51	1		51	1		51	1	
R1023C		1	B	49	52	3		51	1		51	1		51	1	
R1024A		1	B	49	52	3		51	1		51	1		51	1	
R1024B		1	B	49	53	4		52	1		52	1		51	2	
R1025		1	B	49	50	1		50	0		50	0		50	0	
R1026A		1	B	49	51	2		52	-1		51	0		51	0	
R1026B		1	B	49	52	3		51	1		51	1		51	1	
R1027		1	B	49	51	2		51	0		51	0		50	1	
R1028A		1	B	49	51	2		51	0		51	0		51	0	
R1028B		1	B	49	51	2		51	0		51	0		50	1	
R1029A		1	B	49	51	2		51	0		51	0		51	0	
R1029B		1	B	49	51	2		51	0		51	0		51	0	
R1030A		1	B	49	51	2		50	1		50	1		50	1	
R1030B		1	B	49	51	2		51	0		51	0		51	0	
R1031A		1	B	49	51	2		52	-1		52	-1		52	-1	
R1031B		1	B	49	50	1		51	-1		51	-1		50	0	
R1032	Yes	1	B	57	65	8		64	1		63	2		59	6	1
R1033	Yes	1	B	52	58	6		58	0		58	0		57	1	

Length (ft)=	2815	2815	2815
Average Height =	12	14	20
Area of Noise Wall (sft)=	33791	39422	56319
Impacted Receptors=	5	5	5
Number of Benefited Receptors=	4	5	12
Area of Noise Wall per Benefit Receptor (sft)=	8448	7884	4693
Average Increase in dB(A) of all Impacted Receptors=	13	13	13
Maximum Allowable Base Quantity of Noise Wall per Benefited Receptor (sft)=	2948	2948	2948
Feasible (5 dB(A) Reduction)=	Yes	Yes	Yes
Reasonable (Wall Area per Benefit) =	No	No	No
Reasonable (7 dB(A) Reduction) =	Yes	Yes	Yes
Breaks Line of Sight to Impacted Properties? =	No	Yes	Yes

(1) Category B denotes a residential property.
(2) Noise levels highlighted in red are levels above the Noise Abatment Criteria.
(3) Values highlighted in green are a 5 dB(A) or greater reduction in noise levels.

Note: Boxed results indicate barrier discussed in report text.

NCDOT SOUND BARRIER
FEASIBILITY and REASONABLENESS
WORKSHEET

PROJECT - Complete 540 TIP # - R-2721, R-2828, R-2829

LOCATION - Barrier 39 COUNTY(IES) - Wake and Johnston

IMPACTS - 5 # BENEFITS - 12 NAC: A (B) C D E F G (CIRCLE ALL THAT APPLY)

A. FEASIBILITY:

1	Can a 5-dB(A) reduction in traffic noise levels be achieved for at least one impacted receptor?	X YES	NO
2	Does topography negatively affect the proposed abatement measure?	YES	X NO
3	Does the abatement measure negatively affect property access, drainage, safety and maintenance requirements?	YES	X NO
4	Is there control of access in the vicinity of the proposed abatement measure?	YES	X NO

B. REASONABLENESS:

1	Can a 7-dB(A) reduction in traffic noise levels be achieved for at least one impacted front row receptor?	YES	X NO
2	Is the design criteria per benefited receptor of 4693 (CIRCLE ONE) (sq.ft.) cu.yd less than the maximum allowable design criteria per benefited receptor of 2948 (CIRCLE ONE) (sq.ft.) cu.yd.?	YES	X NO

C. NOISE ABATEMENT DECISION:

1	Is the noise mitigation feasible?	X YES	NO
2	Is the noise mitigation reasonable?	YES	X NO
3	Is the noise mitigation likely?	YES	X NO
4	Have the owners' and residents' viewpoints been solicited?	YES	X NO
5	Is the noise mitigation recommended for construction?	YES	NO

D. OPTIONAL REASONABLENESS CONSIDERATION:

1	Was optional averaging noise abatement allowance within a common noise environment used for consideration of barrier reasonableness?	YES	X NO

2 If the answer to D.1 is YES, the design criteria per benefited receptor for each individual barrier within the common noise environment before averaging are:

Bar No. _____ _____ (CIRCLE ONE) sq.ft./cu.yd Bar No. _____ _____ (CIRCLE ONE) sq.ft./cu.yd

Bar No. _____ _____ sq.ft./cu.yd Bar No. _____ _____ sq.ft./cu.yd

3	If the answer to D.1 is YES, is the design criteria per benefited receptor for each individual barrier less than or equal to twice the maximum allowable design criteria per benefited receptor of _____ (CIRCLE ONE) sq.ft./cu.yd	YES	NO

Form Completed By: E SALUTZ Date: _____

In Consultation With: _____ Date: _____

NCDOT SOUND BARRIER
FEASIBILITY and REASONABLENESS
WORKSHEET

PROJECT - Complete 540 TIP # - R-2721, R-2828, R-2829

LOCATION - Barrier 38 COUNTY(IES) - Wake and Johnston

IMPACTS - 3 # BENEFITS - 2 NAC: A (B) C D E F G (CIRCLE ALL THAT APPLY)

A. FEASIBILITY:

1	Can a 5-dB(A) reduction in traffic noise levels be achieved for at least one impacted receptor?	X YES	NO
2	Does topography negatively affect the proposed abatement measure?	YES	X NO
3	Does the abatement measure negatively affect property access, drainage, safety and maintenance requirements?	YES	X NO
4	Is there control of access in the vicinity of the proposed abatement measure?	YES	X NO

B. REASONABLENESS:

1	Can a 7-dB(A) reduction in traffic noise levels be achieved for at least one impacted front row receptor?	YES	X NO
2	Is the design criteria per benefited receptor of 12168 (CIRCLE ONE) (sq.ft.) cu.yd less than the maximum allowable design criteria per benefited receptor of 3037 (CIRCLE ONE) (sq.ft.) cu.yd.?	YES	X NO

C. NOISE ABATEMENT DECISION:

1	Is the noise mitigation feasible?	X YES	NO
2	Is the noise mitigation reasonable?	YES	X NO
3	Is the noise mitigation likely?	YES	X NO
4	Have the owners' and residents' viewpoints been solicited?	YES	X NO
5	Is the noise mitigation recommended for construction?	YES	NO

D. OPTIONAL REASONABLENESS CONSIDERATION:

1	Was optional averaging noise abatement allowance within a common noise environment used for consideration of barrier reasonableness?	YES	X NO

2 If the answer to D.1 is YES, the design criteria per benefited receptor for each individual barrier within the common noise environment before averaging are:

Bar No. _____ _____ (CIRCLE ONE) sq.ft./cu.yd Bar No. _____ _____ (CIRCLE ONE) sq.ft./cu.yd

Bar No. _____ _____ sq.ft./cu.yd Bar No. _____ _____ sq.ft./cu.yd

3 If the answer to D.1 is YES, is the design criteria per benefited receptor for each individual barrier less than or equal to twice the maximum allowable design criteria per benefited receptor of _____ (CIRCLE ONE) sq.ft./cu.yd _____ YES _____ NO

Form Completed By: E SALUTZ Date: _____

In Consultation With: _____ Date: _____

Complete 540
Traffic Noise Analysis

3/13/2015

Red Corridor

Noise Wall 40

Receptor	First Row	Residences Represented	NAC Land Use Category[1]	Noise Levels[2] Existing dB(A)	Build dB(A)	Increase	Impacted Receptors	Short Wall W/Wall[2] dB(A)	Short Wall Reduction[3]	Short Wall Benefited Receptors	Intermediate Wall W/Wall[2] dB(A)	Intermediate Wall Reduction[3]	Intermediate Wall Benefited Receptors	Recommended[4] Tall Wall W/Wall[2] dB(A)	Recommended[4] Tall Wall Reduction[3]	Recommended[4] Tall Wall Benefited Receptors
R1616	Yes	1	B	49	69	20	1	65	4		63	6	1	62	7	1
R1654		1	B	47	61	14		60	1		60	1		60	1	
R1655		1	B	50	63	13		63	0		62	1		62	1	
R1656		1	B	56	61	5		59	2		58	3		58	3	
R1657A		1	B	55	61	6		59	2		59	2		58	3	
R1657B		1	B	55	61	6		59	2		58	3		58	3	
R1658		1	B	55	60	5		59	1		59	1		59	1	
R1659		1	B	58	60	2		59	1		59	1		59	1	
R1660		1	B	59	62	3		61	1		61	1		61	1	
R1672		1	B	57	64	7		62	2		62	2		62	2	
R1673A		1	B	59	65	6		64	1		64	1		64	1	
R1673B		1	B	60	65	5		65	0		65	0		65	0	
R1674A		1	B	61	65	4		64	1		64	1		64	1	
R1674B		1	B	62	62	0		61	1		61	1		61	1	
R1675A		1	B	59	60	1		58	2		57	3		57	3	
R1675B		1	B	60	60	0		59	1		59	1		58	2	
R1675C		1	B	58	60	2		57	3		57	3		57	3	
R1676A		1	B	58	60	2		57	3		57	3		56	4	
R1676B		1	B	59	61	2		57	4		57	4		56	5	1
R1677A		1	B	58	62	4		58	4		58	4		57	5	1
R1677B		1	B	59	61	2		58	3		57	4		57	4	
R1678A	Yes	1	B	55	67	12	1	59	8	1	58	9	1	57	10	1
R1678B	Yes	1	B	60	66	6	1	58	8	1	57	9	1	56	10	1
R1679A	Yes	1	B	51	69	18	1	60	9	1	59	10	1	58	11	1
R1679B	Yes	1	B	49	70	21	1	61	9	1	60	10	1	59	11	1
R1680A		1	B	49	65	16	1	61	4		60	5	1	59	6	1
R1680B		1	B	48	65	17	1	61	4		60	5	1	59	6	1
R1681A		1	B	49	63	14		59	4		59	4		58	5	1
R1681B		1	B	49	62	13		59	3		58	4		58	4	
R1682A		1	B	49	61	12		58	3		57	4		57	4	
R1682B		1	B	49	60	11		58	2		57	3		56	4	
R1682C		1	B	49	60	11		57	3		56	4		55	5	1
R1683A		1	B	50	59	9		56	3		56	3		55	4	
R1683B		1	B	50	58	8		56	2		56	2		55	3	
R1684A		1	B	50	58	8		56	2		56	2		56	2	
R1684B		1	B	50	58	8		56	2		56	2		55	3	
R1685		1	B	49	59	10		55	4		55	4		55	4	
R1686		1	B	48	58	10		54	4		54	4		54	4	
R1687		1	B	48	59	11		56	3		55	4		54	5	1
R1688		1	B	48	60	12		57	3		57	3		55	5	1
R1689A		1	B	47	62	15	1	60	2		59	3		57	5	1
R1689B		1	B	47	63	16	1	60	3		60	3		58	5	1
R1690A		1	B	46	66	20	1	62	4		61	5	1	60	6	1
R1690B		1	B	45	66	21	1	63	3		62	4		60	6	1
R1691A		1	B	44	67	23	1	64	3		61	6	1	60	7	1
R1691B		1	B	44	65	21	1	63	2		61	4		60	5	1
R1692A		1	B	44	66	22	1	62	4		60	6	1	60	6	1
R1692B		1	B	44	66	22	1	62	4		61	5	1	60	6	1
R1693A		1	B	44	66	22	1	61	5	1	60	6	1	59	7	1
R1693B		1	B	44	65	21	1	61	4		60	5	1	59	6	1
R1694A		1	B	44	65	21	1	58	7	1	57	8	1	57	8	1
R1694B		1	B	44	67	23	1	60	7	1	59	8	1	59	8	1
R1695A	Yes	1	B	45	74	29	1	64	10	1	63	11	1	62	12	1
R1695B	Yes	1	B	44	76	32	1	64	12	1	63	13	1	62	14	1
R1696A	Yes	1	B	44	76	32	1	65	11	1	64	12	1	63	13	1
R1696B	Yes	1	B	44	72	28	1	63	9	1	63	9	1	62	10	1
R1697	Yes	1	B	44	69	25	1	61	8	1	61	8	1	60	9	1
R1698A		1	B	44	63	19	1	61	2		60	3		58	5	1
R1698B		1	B	46	62	16	1	60	2		59	3		57	5	1
R1699A		1	B	44	64	20	1	62	2		59	5	1	58	6	1
R1699B		1	B	44	63	19	1	59	4		58	5	1	57	6	1
R1700A		1	B	44	63	19	1	57	6	1	56	7	1	56	7	1
R1700B		1	B	44	63	19	1	56	7	1	55	8	1	55	8	1
R1911A		1	B	44	62	18	1	60	2		58	4		57	5	1
R1911B		1	B	44	61	17	1	58	3		56	5	1	55	6	1
R1911C		1	B	46	61	15	1	58	3		57	4		56	5	1
R1911D		1	B	46	60	14		57	3		55	5	1	55	5	1
R1912A		1	B	44	61	17	1	57	4		56	5	1	55	6	1
R1912B		1	B	44	61	17	1	56	5	1	55	6	1	55	6	1
R1912C		1	B	45	59	14		56	3		54	5	1	54	5	1
R1912D		1	B	46	58	12		54	4		54	4		53	5	1
R1913A		1	B	44	60	16	1	54	6	1	53	7	1	53	7	1
R1913B		1	B	44	61	17	1	54	7	1	54	7	1	54	7	1
R1913C		1	B	45	61	16	1	54	7	1	53	8	1	53	8	1
R1913D		1	B	46	60	14		53	7	1	53	7	1	53	7	1

Length (ft)=	3387	3387	3387
Average Height =	12	14	16
Area of Noise Wall (sft)=	40644	47419	54192
Impacted Receptors=	38	38	38
Number of Benefited Receptors=	19	33	48
Area of Noise Wall per Benefit Receptor (sft)=	2139	1437	1129
Average Increase in dB(A) of all Impacted Receptors=	20	20	20
Maximum Allowable Base Quantity of Noise Wall per Benefited Receptor (sft)=	3189	3189	3189
Feasible (5 dB(A) Reduction)=	Yes	Yes	Yes
Reasonable (Wall Area per Benefit) =	Yes	Yes	Yes
Reasonable (7 dB(A) Reduction) =	Yes	Yes	Yes
Breaks Line of Sight to Impacted Properties? =	No	No	Yes

Recommended 16ft wall

(1) Category B denotes a residential property.
(2) Noise levels highlighted in red are levels above the Noise Abatment Criteria.
(3) Values highlighted in green are a 5 dB(A) or greater reduction in noise levels.
(4) A 16ft barrier is recommended because all criteria for feasible and reasonable have been met, the barrier breaks the line of sight, and the most properties are benefited.

NCDOT SOUND BARRIER
FEASIBILITY and REASONABLENESS
WORKSHEET

PROJECT - Complete 540 TIP # - R-2721, R-2828, R-2829

LOCATION - Barrier 40 COUNTY(IES) - Wake and Johnston

IMPACTS - 38 # BENEFITS - 48 NAC: A (B) C D E F G (CIRCLE ALL THAT APPLY)

A. FEASIBILITY:

1	Can a 5-dB(A) reduction in traffic noise levels be achieved for at least one impacted receptor?	X YES	NO
2	Does topography negatively affect the proposed abatement measure?	YES	X NO
3	Does the abatement measure negatively affect property access, drainage, safety and maintenance requirements?	YES	X NO
4	Is there control of access in the vicinity of the proposed abatement measure?	YES	X NO

B. REASONABLENESS:

1	Can a 7-dB(A) reduction in traffic noise levels be achieved for at least one impacted front row receptor?	X YES	NO
2	Is the design criteria per benefited receptor of 1129 (CIRCLE ONE) (sq.ft.) cu.yd less than the maximum allowable design criteria per benefited receptor of 3189 (CIRCLE ONE) (sq.ft.) cu.yd.?	X YES	NO

C. NOISE ABATEMENT DECISION:

1	Is the noise mitigation feasible?	X YES	NO
2	Is the noise mitigation reasonable?	X YES	NO
3	Is the noise mitigation likely?	X YES	NO
4	Have the owners' and residents' viewpoints been solicited?	YES	X NO
5	Is the noise mitigation recommended for construction?	YES	NO

D. OPTIONAL REASONABLENESS CONSIDERATION:

1	Was optional averaging noise abatement allowance within a common noise environment used for consideration of barrier reasonableness?	YES	X NO
2	If the answer to D.1 is YES, the design criteria per benefited receptor for each individual barrier within the common noise environment before averaging are:		

Bar No. _____ _____ (CIRCLE ONE) sq.ft./cu.yd Bar No. _____ _____ (CIRCLE ONE) sq.ft./cu.yd

Bar No. _____ _____ sq.ft./cu.yd Bar No. _____ _____ sq.ft./cu.yd

3	If the answer to D.1 is YES, is the design criteria per benefited receptor for each individual barrier less than or equal to twice the maximum allowable design criteria per benefited receptor of _____ (CIRCLE ONE) sq.ft./cu.yd	YES	NO

Form Completed By: E SALUTZ Date: _____

In Consultation With: _____ Date: _____

Complete 540
Traffic Noise Analysis

3/25/2015

Red Corridor

Noise Wall 41

Receptor	First Row	Residences Represented	NAC Land Use Category[1]	Noise Levels[2] Existing dB(A)	Build dB(A)	Increase	Impacted Receptors	Short Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	Intermediate Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	Tall Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors
R1065A	Yes	1	B	52	65	13	1	63	2		62	3		62	3	
R1065B	Yes	1	B	49	64	15	1	61	3		60	4		60	4	
R1065C	Yes	1	B	49	65	16	1	61	4		60	5	1	59	6	1
R1066A		1	B	49	62	13		58	4		57	5	1	57	5	1
R1066B		1	B	49	61	12		57	4		57	4		56	5	1
R1066C		1	B	49	65	16	1	59	6	1	58	7	1	58	7	1
R1067A	Yes	1	B	49	72	23	1	64	8	1	62	10	1	61	11	1
R1067B	Yes	1	B	49	75	26	1	60	15	1	59	16	1	59	16	1
R1067C	Yes	1	B	49	63	14		60	3		60	3		59	4	
R1067D	Yes	1	B	49	67	18	1	61	6	1	60	7	1	60	7	1
R1069A	Yes	1	B	49	69	20	1	65	4		62	7	1	61	8	1
R1069B	Yes	1	B	49	65	16	1	63	2		62	3		62	3	

Length (ft)=	1600	1600	1600
Average Height =	16	20	22
Area of Noise Wall (sft)=	25603	32003	35203
Impacted Receptors=	9	9	9
Number of Benefited Receptors=	4	7	8
Area of Noise Wall per Benefit Receptor (sft)=	6401	4572	4400
Average Increase in dB(A) of all Impacted Receptors=	18	18	18
Maximum Allowable Base Quantity of Noise Wall per Benefited Receptor (sft)=	3134	3134	3134
Feasible (5 dB(A) Reduction)=	Yes	Yes	Yes
Reasonable (Wall Area per Benefit) =	No	No	No
Reasonable (7 dB(A) Reduction) =	Yes	Yes	Yes
Breaks Line of Sight to Impacted Properties? =	No	Yes	Yes

(1) Category B denotes a residential property.
(2) Noise levels highlighted in red are levels above the Noise Abatment Criteria.
(3) Values highlighted in green are a 5 dB(A) or greater reduction in noise levels.

Note: Boxed results indicate barrier discussed in report text.

NCDOT SOUND BARRIER
FEASIBILITY and REASONABLENESS
WORKSHEET

PROJECT - Complete 540 TIP # - R-2721, R-2828, R-2829

LOCATION - Barrier 41 COUNTY(IES) - Wake and Johnston

IMPACTS - 9 # BENEFITS - 8 NAC: A (B) C D E F G (CIRCLE ALL THAT APPLY)

A. FEASIBILITY:

1	Can a 5-dB(A) reduction in traffic noise levels be achieved for at least one impacted receptor?	X YES	NO
2	Does topography negatively affect the proposed abatement measure?	YES	X NO
3	Does the abatement measure negatively affect property access, drainage, safety and maintenance requirements?	YES	X NO
4	Is there control of access in the vicinity of the proposed abatement measure?	YES	X NO

B. REASONABLENESS:

1	Can a 7-dB(A) reduction in traffic noise levels be achieved for at least one impacted front row receptor?	X YES	NO
2	Is the design criteria per benefited receptor of 4400 (CIRCLE ONE) (sq.ft.)/cu.yd less than the maximum allowable design criteria per benefited receptor of 3134 (CIRCLE ONE) (sq.ft.)/ cu.yd.?	YES	X NO

C. NOISE ABATEMENT DECISION:

1	Is the noise mitigation feasible?	X YES	NO
2	Is the noise mitigation reasonable?	YES	X NO
3	Is the noise mitigation likely?	YES	X NO
4	Have the owners' and residents' viewpoints been solicited?	YES	X NO
5	Is the noise mitigation recommended for construction?	YES	NO

D. OPTIONAL REASONABLENESS CONSIDERATION:

1	Was optional averaging noise abatement allowance within a common noise environment used for consideration of barrier reasonableness?	YES	X NO

2 If the answer to D.1 is YES, the design criteria per benefited receptor for each individual barrier within the common noise environment before averaging are:

Bar No. _____ _____ (CIRCLE ONE) sq.ft./cu.yd Bar No. _____ _____ (CIRCLE ONE) sq.ft./cu.yd

Bar No. _____ _____ sq.ft./cu.yd Bar No. _____ _____ sq.ft./cu.yd

3	If the answer to D.1 is YES, is the design criteria per benefited receptor for each individual barrier less than or equal to twice the maximum allowable design criteria per benefited receptor of _____ (CIRCLE ONE) sq.ft./cu.yd	YES	NO

Form Completed By: E SALUTZ Date: _____

In Consultation With: _____ Date: _____

Complete 540
Traffic Noise Analysis

3/13/2015

Red Corridor

Noise Wall 42

														Recommended[4]		
				Noise Levels[2]				Short Wall			Intermediate Wall			Tall Wall		
Receptor	First Row	Residences Represented	NAC Land Use Category[1]	Existing dB(A)	Build dB(A)	Increase	Impacted Receptors	W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors
R1142A	Yes	1	B	63	67	4	1	65	2		65	2		65	2	
R1142B	Yes	1	B	59	65	6		62	3		62	3		62	3	
R1142C	Yes	1	B	57	66	9	1	63	3		63	3		62	4	
R1143A	Yes	1	B	64	67	3	1	67	0		66	1		66	1	
R1143B	Yes	1	B	61	66	5	1	65	1		64	2		63	3	
R1143C	Yes	1	B	63	67	4	1	66	1		65	2		65	2	
R1144A		1	B	56	67	11	1	64	3		62	5	1	60	7	1
R1144B		1	B	54	68	14	1	64	4		63	5	1	60	8	1
R1144C		1	B	59	66	7	1	64	2		63	3		62	4	
R1145A	Yes	1	B	52	76	24	1	65	11	1	64	12	1	62	14	1
R1145B	Yes	1	B	50	73	23	1	64	9	1	63	10	1	60	13	1
R1146A		1	B	51	70	19	1	63	7	1	62	8	1	58	12	1
R1146B	Yes	1	B	50	74	24	1	63	11	1	62	12	1	59	15	1
R1148A	Yes	1	B	62	66	4	1	65	1		64	2		63	3	
R1148B	Yes	1	B	62	66	4	1	65	1		65	1		64	2	
R1148C	Yes	1	B	62	66	4	1	64	2		64	2		64	2	
R1148D	Yes	1	B	60	65	5		63	2		62	3		61	4	
R1148E	Yes	1	B	61	66	5	1	64	2		64	2		64	2	
R1149A		1	B	59	66	7	1	64	2		62	4		61	5	1
R1149B		1	B	56	67	11	1	63	4		62	5	1	60	7	1
R1149C		1	B	60	66	6	1	64	2		63	3		62	4	
R1149D		1	B	56	67	11	1	64	3		62	5	1	60	7	1
R1150A	Yes	1	B	51	74	23	1	64	10	1	63	11	1	60	14	1
R1150B	Yes	1	B	51	72	21	1	64	8	1	63	9	1	60	12	1
R1150C	Yes	1	B	52	71	19	1	64	7	1	62	9	1	59	12	1
R1153	Yes	1	B	60	65	5		63	2		63	2		62	3	
R1154A		1	B	52	65	13	1	59	6	1	58	7	1	57	8	1
R1154B		1	B	55	64	9		59	5	1	59	5	1	58	6	1
R1154C		1	B	51	66	15	1	60	6	1	59	7	1	57	9	1
R1155	Yes	1	B	49	69	20	1	62	7	1	61	8	1	58	11	1
R1645	Yes	1	B	58	64	6		60	4		60	4		60	4	
R1158A		1	B	56	65	9		59	6	1	59	6	1	58	7	1
R1158B		1	B	54	66	12	1	60	6	1	59	7	1	58	8	1
R1159A		1	B	49	69	20	1	61	8	1	60	9	1	58	11	1
R1159B	Yes	1	B	50	67	17	1	60	7	1	59	8	1	57	10	1
R1163A	Yes	1	B	57	65	8		60	5	1	60	5	1	60	5	1
R1163B	Yes	1	B	56	65	9		59	6	1	59	6	1	59	6	1
R1163C	Yes	1	B	55	64	9		59	5	1	59	5	1	58	6	1
R1164A	Yes	1	B	53	69	16	1	62	7	1	61	8	1	59	10	1
R1164B	Yes	1	B	53	71	18	1	62	9	1	61	10	1	59	12	1
R1165A	Yes	1	B	51	72	21	1	64	8	1	62	10	1	59	13	1
R1165B	Yes	1	B	50	76	26	1	64	12	1	63	13	1	59	17	1
R1167A	Yes	1	B	52	73	21	1	62	11	1	62	11	1	59	14	1
R1167B	Yes	1	B	52	74	22	1	63	11	1	62	12	1	60	14	1
R1171A	Yes	1	B	55	64	9		59	5	1	59	5	1	58	6	1
R1171B	Yes	1	B	54	63	9		59	4		59	4		58	5	1
R1171C	Yes	1	B	54	63	9		59	4		58	5	1	58	5	1
R1172A	Yes	1	B	49	72	23	1	61	11	1	60	12	1	58	14	1
R1172B	Yes	1	B	52	72	20	1	62	10	1	61	11	1	59	13	1
R1172C	Yes	1	B	49	71	22	1	60	11	1	60	11	1	58	13	1
R1177A	Yes	1	B	54	63	9		59	4		59	4		58	5	1
R1177B	Yes	1	B	54	63	9		58	5	1	58	5	1	58	5	1
R1178A	Yes	1	B	52	72	20	1	60	12	1	60	12	1	58	14	1
R1178B	Yes	1	B	52	68	16	1	57	11	1	56	12	1	55	13	1
R1646		1	B	54	63	9		58	5	1	58	5	1	57	6	1
R1182A	Yes	1	B	52	72	20	1	60	12	1	60	12	1	58	14	1
R1182B	Yes	1	B	51	73	22	1	61	12	1	60	13	1	58	15	1
R1184A	Yes	1	B	53	63	10		57	6	1	57	6	1	56	7	1
R1184B	Yes	1	B	52	64	12		56	8	1	56	8	1	56	8	1
R1184C	Yes	1	B	54	63	9		58	5	1	57	6	1	57	6	1
R1185A	Yes	1	B	52	67	15	1	57	10	1	57	10	1	56	11	1
R1185B	Yes	1	B	51	71	20	1	57	14	1	57	14	1	55	16	1
R1185C	Yes	1	B	51	64	13		56	8	1	56	8	1	56	8	1
R1188A	Yes	1	B	51	62	11		57	5	1	57	5	1	56	6	1
R1188B	Yes	1	B	50	63	13		57	6	1	56	7	1	56	7	1
R1189A	Yes	1	B	56	62	6		58	4		58	4		57	5	1
R1189B	Yes	1	B	55	62	7		57	5	1	57	5	1	57	5	1
R1190A	Yes	1	B	61	64	3		63	1		63	1		63	1	
R1190B	Yes	1	B	60	63	3		61	2		61	2		61	2	
R1191A	Yes	1	B	63	65	2		64	1		64	1		64	1	
R1191B	Yes	1	B	61	64	3		63	1		62	2		62	2	
R1117A		1	B	59	64	5		64	0		64	0		63	1	
R1117B		1	B	62	67	5	1	66	1		66	1		66	1	
R1127A		1	B	56	64	8		63	1		63	1		63	1	

Complete 540
Traffic Noise Analysis

3/13/2015

Red Corridor

Noise Wall 42

Receptor	First Row	Residences Represented	NAC Land Use Category[1]	Noise Levels[2] Existing dB(A)	Build dB(A)	Increase	Impacted Receptors	Short Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	Intermediate Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	Recommended[4] Tall Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors
R1127B		1	B	57	64	7		63	1		63	1		63	1	
R1127C		1	B	56	64	8		63	1		63	1		63	1	
R1130A		1	B	56	64	8		63	1		63	1		62	2	
R1130B		1	B	56	64	8		62	2		62	2		62	2	
R1131A		1	B	56	62	6		61	1		61	1		61	1	
R1131B		1	B	57	63	6		62	1		61	2		61	2	
R1133A		1	B	60	64	4		63	1		63	1		63	1	
R1133B		1	B	57	63	6		62	1		61	2		61	2	
R1828		1	B	64	67	3	1	67	0		67	0		67	0	
R1829A		1	B	61	67	6	1	67	0		67	0		66	1	
R1829B		1	B	57	67	10	1	66	1		66	1		66	1	
R1830A		1	B	54	67	13	1	66	1		66	1		66	1	
R1830B		1	B	60	67	7	1	67	0		67	0		66	1	
R1831A		1	B	60	67	7	1	66	1		66	1		66	1	
R1831B		1	B	60	67	7	1	66	1		66	1		66	1	
R1832A		1	B	63	66	3	1	65	1		65	1		65	1	
R1832B		1	B	64	67	3	1	66	1		66	1		66	1	

Length (ft)=	4019	4019	4019
Average Height =	12	14	24
Area of Noise Wall (sft)=	48228	56264	96458
Impacted Receptors=	54	54	54
Number of Benefited Receptors=	43	48	52
Area of Noise Wall per Benefit Receptor (sft)=	1122	1172	1855
Average Increase in dB(A) of all Impacted Receptors=	13	13	13
Maximum Allowable Base Quantity of Noise Wall per Benefited Receptor (sft)=	2970	2970	2970
Feasible (5 dB(A) Reduction)=	Yes	Yes	Yes
Reasonable (Wall Area per Benefit) =	Yes	Yes	Yes
Reasonable (7 dB(A) Reduction) =	Yes	Yes	Yes
Breaks Line of Sight to Impacted Properties? =	No	Yes	Yes

(1) Category B denotes a residential property.
(2) Noise levels highlighted in red are levels above the Noise Abatment Criteria.
(3) Values highlighted in green are a 5 dB(A) or greater reduction in noise levels.
(4) A 24ft barrier is recommended because all criteria for feasible and reasonable have been met, and the most properties are benefited.

Recommended 24ft Wall

NCDOT SOUND BARRIER
FEASIBILITY and REASONABLENESS
WORKSHEET

PROJECT - Complete 540 TIP # - R-2721, R-2828, R-2829

LOCATION - Barrier 42 COUNTY(IES) - Wake and Johnston

IMPACTS - 54 # BENEFITS - 52 NAC: A (B) C D E F G (CIRCLE ALL THAT APPLY)

A. FEASIBILITY:

1	Can a 5-dB(A) reduction in traffic noise levels be achieved for at least one impacted receptor?	X YES	NO
2	Does topography negatively affect the proposed abatement measure?	YES	X NO
3	Does the abatement measure negatively affect property access, drainage, safety and maintenance requirements?	YES	X NO
4	Is there control of access in the vicinity of the proposed abatement measure?	YES	X NO

B. REASONABLENESS:

1	Can a 7-dB(A) reduction in traffic noise levels be achieved for at least one impacted front row receptor?	X YES	NO
2	Is the design criteria per benefited receptor of 1855 (sq.ft.) / cu.yd (CIRCLE ONE) less than the maximum allowable design criteria per benefited receptor of 2970 (sq.ft.) / cu.yd.? (CIRCLE ONE)	X YES	NO

C. NOISE ABATEMENT DECISION:

1	Is the noise mitigation feasible?	X YES	NO
2	Is the noise mitigation reasonable?	X YES	NO
3	Is the noise mitigation likely?	X YES	NO
4	Have the owners' and residents' viewpoints been solicited?	YES	X NO
5	Is the noise mitigation recommended for construction?	YES	NO

D. OPTIONAL REASONABLENESS CONSIDERATION:

1	Was optional averaging noise abatement allowance within a common noise environment used for consideration of barrier reasonableness?	YES	X NO
2	If the answer to D.1 is YES, the design criteria per benefited receptor for each individual barrier within the common noise environment before averaging are:		

Bar No. _____ _____ sq.ft./cu.yd (CIRCLE ONE) Bar No. _____ _____ sq.ft./cu.yd (CIRCLE ONE)

Bar No. _____ _____ sq.ft./cu.yd Bar No. _____ _____ sq.ft./cu.yd

3	If the answer to D.1 is YES, is the design criteria per benefited receptor for each individual barrier less than or equal to twice the maximum allowable design criteria per benefited receptor of _____ sq.ft./cu.yd (CIRCLE ONE)	YES	NO

Form Completed By: E SALUTZ Date: _____

In Consultation With: _____ Date: _____

Complete 540
Traffic Noise Analysis

3/25/2015

Red Corridor

Noise Wall 43

														Recommended[4]		
			NAC	Noise Levels[2]				Short Wall			Intermediate Wall			Tall Wall		
Receptor	First Row	Residences Represented	Land Use Category[1]	Existing dB(A)	Build dB(A)	Increase	Impacted Receptors	W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors
R1218A		1	B	52	75	23	1	65	10	1	62	13	1	62	13	1
R1218B	Yes	1	B	52	73	21	1	63	10	1	62	11	1	61	12	1
R1218C	Yes	1	B	52	68	16	1	65	3		61	7	1	60	8	1
R1219	Yes	1	B	52	71	19	1	63	8	1	60	11	1	60	11	1
R1220A		1	B	52	65	13	1	60	5	1	58	7	1	58	7	1
R1220B		1	B	52	67	15	1	59	8	1	58	9	1	57	10	1
R1220C		1	B	52	66	14	1	60	6	1	58	8	1	58	8	1
R1222A	Yes	1	B	52	66	14	1	59	7	1	57	9	1	57	9	1
R1222B	Yes	1	B	52	68	16	1	60	8	1	58	10	1	58	10	1
R1223A		1	B	52	65	13	1	58	7	1	57	8	1	57	8	1
R1223B		1	B	52	64	12		57	7	1	56	8	1	56	8	1
R1225	Yes	1	B	52	68	16	1	61	7	1	60	8	1	59	9	1
R1226A		1	B	52	66	14	1	59	7	1	57	9	1	57	9	1
R1226B		1	B	52	66	14	1	59	7	1	58	8	1	57	9	1
R1227A		1	B	52	64	12		57	7	1	56	8	1	55	9	1
R1227B		1	B	52	63	11		56	7	1	55	8	1	55	8	1
R1229A	Yes	1	B	52	65	13	1	60	5	1	58	7	1	58	7	1
R1229B	Yes	1	B	52	65	13	1	59	6	1	57	8	1	57	8	1
R1229C	Yes	1	B	52	67	15	1	61	6	1	59	8	1	58	9	1
R1229D	Yes	1	B	52	67	15	1	60	7	1	59	8	1	58	9	1
R1229E	Yes	1	B	52	64	12		59	5	1	57	7	1	57	7	1
R1230A		1	B	52	64	12		61	3		58	6	1	58	6	1
R1230B		1	B	52	64	12		60	4		58	6	1	57	7	1
R1230C		1	B	52	63	11		58	5	1	57	6	1	56	7	1
R1231A	Yes	1	B	52	64	12		60	4		59	5	1	58	6	1
R1231B	Yes	1	B	52	66	14	1	61	5	1	59	7	1	59	7	1
R1233A		1	B	52	61	9		58	3		57	4		57	4	
R1233B		1	B	52	60	8		58	2		56	4		55	5	1
R1234A		1	B	52	72	20	1	64	8	1	62	10	1	61	11	1
R1234B	Yes	1	B	52	74	22	1	63	11	1	61	13	1	60	14	1
R1234C	Yes	1	B	52	74	22	1	64	10	1	61	13	1	61	13	1
R1235A		1	B	52	62	10		60	2		59	3		58	4	
R1235B		1	B	52	61	9		60	1		59	2		58	3	
R1236A	Yes	1	B	52	72	20	1	61	11	1	59	13	1	59	13	1
R1236B	Yes	1	B	52	71	19	1	63	8	1	60	11	1	59	12	1
R1236C	Yes	1	B	52	73	21	1	62	11	1	60	13	1	59	14	1
R1237A		1	B	52	64	12		62	2		61	3		59	5	1
R1237B		1	B	52	64	12		63	1		61	3		59	5	1
R1238A	Yes	1	B	52	68	16	1	60	8	1	58	10	1	58	10	1
R1238B	Yes	1	B	52	69	17	1	63	6	1	60	9	1	60	9	1
R1239A		1	B	52	63	11		62	1		59	4		58	5	1
R1239B		1	B	52	62	10		59	3		57	5	1	57	5	1
R1239C		1	B	52	63	11		62	1		60	3		59	4	
R1240A	Yes	1	B	52	67	15	1	58	9	1	57	10	1	56	11	1
R1240B	Yes	1	B	52	67	15	1	59	8	1	58	9	1	57	10	1
R1240C	Yes	1	B	52	66	14	1	59	7	1	57	9	1	57	9	1
R1241A	Yes	1	B	52	65	13	1	59	6	1	57	8	1	57	8	1
R1241B	Yes	1	B	52	66	14	1	59	7	1	57	9	1	57	9	1
R1241C	Yes	1	B	52	65	13	1	59	6	1	57	8	1	57	8	1
R1242A		1	B	52	61	9		57	4		56	5	1	56	5	1
R1242B		1	B	52	60	8		56	4		55	5	1	55	5	1
R1243A		1	B	52	60	8		56	4		55	5	1	55	5	1
R1243B		1	B	52	60	8		56	4		55	5	1	55	5	1
R1244A	Yes	1	B	52	63	11		58	5	1	57	6	1	56	7	1
R1244B	Yes	1	B	52	62	10		57	5	1	56	6	1	56	6	1
R1244C	Yes	1	B	52	63	11		58	5	1	56	7	1	56	7	1
R1245A	Yes	1	B	52	63	11		57	6	1	56	7	1	56	7	1
R1245B	Yes	1	B	53	63	10		57	6	1	56	7	1	56	7	1
R1245C	Yes	1	B	52	63	11		57	6	1	56	7	1	56	7	1
R1246A	Yes	1	B	59	66	7	1	59	7	1	57	9	1	56	10	1
R1246B	Yes	1	B	56	64	8		58	6	1	57	7	1	56	8	1
R1247A		1	B	52	61	9		57	4		56	5	1	56	5	1
R1247B		1	B	52	60	8		57	3		56	4		56	4	
R1247C		1	B	53	61	8		57	4		56	5	1	56	5	1
R1248A		1	B	60	66	6	1	58	8	1	57	9	1	56	10	1
R1248B		1	B	64	70	6	1	59	11	1	58	12	1	57	13	1
R1248C	Yes	1	B	56	63	7		58	5	1	57	6	1	56	7	1
R1249A		1	B	53	61	8		56	5	1	55	6	1	55	6	1
R1249B		1	B	55	62	7		57	5	1	56	6	1	55	7	1
R1249C		1	B	52	60	8		56	4		55	5	1	55	5	1
R1250A	Yes	1	B	65	70	5	1	59	11	1	57	13	1	57	13	1
R1250B	Yes	1	B	60	65	5		58	7	1	57	8	1	56	9	1
R1250C	Yes	1	B	65	70	5	1	59	11	1	57	13	1	56	14	1
R1251A		1	B	52	59	7		55	4		54	5	1	54	5	1

Complete 540
Traffic Noise Analysis

3/25/2015

Red Corridor

Noise Wall 43

				Noise Levels[2]				Short Wall			Intermediate Wall			Recommended[4] Tall Wall		
Receptor	First Row	Residences Represented	NAC Land Use Category[1]	Existing dB(A)	Build dB(A)	Increase	Impacted Receptors	W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors
R1251B		1	B	54	60	6		56	4		55	5	1	55	5	1
R1251C		1	B	52	58	6		54	4		54	4		54	4	
R1252A		1	B	64	69	5	1	59	10	1	58	11	1	57	12	1
R1252B	Yes	1	B	57	62	5		57	5	1	56	6	1	56	6	1
R1253A		1	B	53	60	7		56	4		56	4		56	4	
R1253B		1	B	52	58	6		55	3		54	4		54	4	
R1253C		1	B	55	61	6		57	4		57	4		57	4	
R1254A	Yes	1	B	64	69	5	1	63	6	1	62	7	1	62	7	1
R1254B	Yes	1	B	58	63	5		58	5	1	58	5	1	58	5	1
R1566A	Yes	1	B	52	74	22	1	63	11	1	62	12	1	61	13	1
R1566B	Yes	1	B	52	73	21	1	62	11	1	61	12	1	60	13	1
R1567A		1	B	52	71	19	1	62	9	1	60	11	1	60	11	1
R1567B		1	B	52	69	17	1	62	7	1	60	9	1	60	9	1
R1568A		1	B	52	67	15	1	61	6	1	60	7	1	59	8	1
R1568B		1	B	52	66	14	1	61	5	1	59	7	1	59	7	1
R1568C		1	B	52	66	14	1	60	6	1	59	7	1	58	8	1
R1569A		1	B	52	65	13	1	60	5	1	58	7	1	57	8	1
R1569B		1	B	52	65	13	1	60	5	1	59	6	1	57	8	1
R1570A		1	B	52	64	12		61	3		58	6	1	57	7	1
R1570B		1	B	52	65	13	1	62	3		59	6	1	58	7	1
R1571A		1	B	52	67	15	1	63	4		60	7	1	59	8	1
R1571B		1	B	52	68	16	1	65	3		61	7	1	60	8	1
R1572A		1	B	52	71	19	1	66	5	1	63	8	1	62	9	1
R1572B		1	B	52	69	17	1	64	5	1	62	7	1	61	8	1
R1572C		1	B	52	72	20	1	66	6	1	64	8	1	63	9	1
R1573A	Yes	1	B	52	72	20	1	65	7	1	63	9	1	62	10	1
R1573B	Yes	1	B	52	74	22	1	65	9	1	63	11	1	62	12	1
R1573C	Yes	1	B	52	75	23	1	63	12	1	61	14	1	60	15	1
R1574A	Yes	1	B	52	74	22	1	66	8	1	63	11	1	63	11	1
R1574B	Yes	1	B	52	75	23	1	64	11	1	62	13	1	61	14	1
R1575A		1	B	52	70	18	1	66	4		62	8	1	61	9	1
R1575B		1	B	52	72	20	1	67	5	1	64	8	1	62	10	1
R1576A	Yes	1	B	52	76	24	1	70	6	1	66	10	1	64	12	1
R1576B	Yes	1	B	52	74	22	1	69	5	1	65	9	1	64	10	1
R1863A		1	B	52	63	11		56	7	1	55	8	1	54	9	1
R1863B		1	B	52	64	12		56	8	1	55	9	1	55	9	1
R1863C		1	B	52	63	11		55	8	1	54	9	1	54	9	1
R1864A		1	B	52	64	12		59	5	1	57	7	1	57	7	1
R1864B		1	B	52	64	12		59	5	1	57	7	1	57	7	1
R1865A		1	B	52	64	12		59	5	1	58	6	1	57	7	1
R1865B		1	B	52	64	12		59	5	1	57	7	1	57	7	1
R1865C		1	B	52	64	12		59	5	1	58	6	1	57	7	1

Length (ft)=	4957	4957	4957
Average Height =	12	16	18
Area of Noise Wall (sft)=	59495	79323	89239
Impacted Receptors=	63	63	63
Number of Benefited Receptors=	84	103	107
Area of Noise Wall per Benefit Receptor (sft)=	708	770	834
Average Increase in dB(A) of all Impacted Receptors=	16	16	16
Maximum Allowable Base Quantity of Noise Wall per Benefited Receptor (sft)=	3056	3056	3056
Feasible (5 dB(A) Reduction)=	Yes	Yes	Yes
Reasonable (Wall Area per Benefit) =	Yes	Yes	Yes
Reasonable (7 dB(A) Reduction) =	Yes	Yes	Yes
Breaks Line of Sight to Impacted Properties? =	No	Yes	Yes

(1) Category B denotes a residential property.

Recommended 18ft Wall

(2) Noise levels highlighted in red are levels above the Noise Abatment Criteria.

(3) Values highlighted in green are a 5 dB(A) or greater reduction in noise levels.

(4) A 18ft barrier is recommended because all criteria for feasible and reasonable have been met, all receptors are no longer impacted and the most properties are benefited.

NCDOT SOUND BARRIER
FEASIBILITY and REASONABLENESS
WORKSHEET

PROJECT - Complete 540 TIP # - R-2721, R-2828, R-2829

LOCATION - Barrier 43 COUNTY(IES) - Wake and Johnston

IMPACTS - 63 # BENEFITS - 107 NAC: A (B) C D E F G (CIRCLE ALL THAT APPLY)

A. FEASIBILITY:

1	Can a 5-dB(A) reduction in traffic noise levels be achieved for at least one impacted receptor?	X YES	NO
2	Does topography negatively affect the proposed abatement measure?	YES	X NO
3	Does the abatement measure negatively affect property access, drainage, safety and maintenance requirements?	YES	X NO
4	Is there control of access in the vicinity of the proposed abatement measure?	YES	X NO

B. REASONABLENESS:

1	Can a 7-dB(A) reduction in traffic noise levels be achieved for at least one impacted front row receptor?	X YES	NO
2	Is the design criteria per benefited receptor of 834 (sq.ft.) / cu.yd (CIRCLE ONE) less than the maximum allowable design criteria per benefited receptor of 3056 (sq.ft.) / cu.yd.? (CIRCLE ONE)	X YES	NO

C. NOISE ABATEMENT DECISION:

1	Is the noise mitigation feasible?	X YES	NO
2	Is the noise mitigation reasonable?	X YES	NO
3	Is the noise mitigation likely?	X YES	NO
4	Have the owners' and residents' viewpoints been solicited?	YES	X NO
5	Is the noise mitigation recommended for construction?	YES	NO

D. OPTIONAL REASONABLENESS CONSIDERATION:

1	Was optional averaging noise abatement allowance within a common noise environment used for consideration of barrier reasonableness?	YES	X NO
2	If the answer to D.1 is YES, the design criteria per benefited receptor for each individual barrier within the common noise environment before averaging are:		

Bar No. _____ _____ sq.ft./cu.yd (CIRCLE ONE) Bar No. _____ _____ sq.ft./cu.yd (CIRCLE ONE)

Bar No. _____ _____ sq.ft./cu.yd Bar No. _____ _____ sq.ft./cu.yd

3	If the answer to D.1 is YES, is the design criteria per benefited receptor for each individual barrier less than or equal to twice the maximum allowable design criteria per benefited receptor of _____ sq.ft./cu.yd (CIRCLE ONE)	YES	NO

Form Completed By: E SALUTZ Date: _____

In Consultation With: _____ Date: _____

Complete 540
Traffic Noise Analysis

3/13/2015

Red Corridor

Noise Wall 44

Receptor	First Row	Residences Represented	NAC Land Use Category[1]	Noise Levels[2] Existing dB(A)	Build dB(A)	Increase	Impacted Receptors	Short Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	Intermediate Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	Recommended[4] Tall Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors
R1198A	Yes	1	B	50	58	8		56	2		56	2		56	2	
R1198B	Yes	1	B	52	60	8		57	3		57	3		57	3	
R1200A	Yes	1	B	49	60	11		55	5	1	54	6	1	54	6	1
R1200B	Yes	1	B	49	62	13		55	7	1	55	7	1	55	7	1
R1866		1	B	52	64	12		55	9	1	55	9	1	55	9	1
R1201A		1	B	52	68	16	1	58	10	1	57	11	1	57	11	1
R1201B		1	B	52	66	14	1	56	10	1	56	10	1	55	11	1
R1201C		1	B	52	70	18	1	58	12	1	57	13	1	57	13	1
R1202A		1	B	52	75	23	1	61	14	1	59	16	1	58	17	1
R1202B	Yes	1	B	52	72	20	1	59	13	1	58	14	1	57	15	1
R1203	Yes	COMMERCIAL	C	52	70	18	1	64	6	1	63	7	1	62	8	1
R1204A		1	B	52	66	14	1	61	5	1	61	5	1	59	7	1
R1204B		1	B	52	64	12		58	6	1	58	6	1	57	7	1
R1205A		1	B	52	63	11		56	7	1	56	7	1	56	7	1
R1205B		1	B	52	64	12		57	7	1	57	7	1	57	7	1
R1588	Yes	1	B	52	76	24	1	68	8	1	63	13	1	62	14	1
R1589	Yes	1	B	52	75	23	1	65	10	1	63	12	1	62	13	1
R1590A		1	B	52	68	16	1	64	4		62	6	1	61	7	1
R1590B		1	B	52	72	20	1	65	7	1	64	8	1	63	9	1
R1591A		1	B	52	71	19	1	68	3		65	6	1	62	9	1
R1591B		1	B	52	73	21	1	70	3		65	8	1	63	10	1
R1592A		1	B	52	67	15	1	65	2		63	4		61	6	1
R1592B		1	B	52	69	17	1	67	2		64	5	1	62	7	1
R1593A		1	B	52	64	12		59	5	1	59	5	1	59	5	1
R1593B		1	B	52	65	13	1	62	3		61	4		60	5	1
R1594		1	B	52	62	10		57	5	1	57	5	1	56	6	1
R1595		1	B	52	66	14	1	63	3		61	5	1	59	7	1
R1206		1	B	52	65	13	1	62	3		60	5	1	58	7	1
R1207A		1	B	52	66	14	1	63	3		61	5	1	59	7	1
R1207B		1	B	52	64	12		61	3		59	5	1	58	6	1
R1596A		1	B	52	70	18	1	68	2		65	5	1	62	8	1
R1596B		1	B	52	68	16	1	66	2		63	5	1	61	7	1
R1208A	Yes	1	B	52	72	20	1	68	4		63	9	1	61	11	1
R1208B	Yes	1	B	52	74	22	1	68	6	1	64	10	1	62	12	1
R1209A	Yes	1	B	52	76	24	1	70	6	1	64	12	1	63	13	1
R1209B	Yes	1	B	52	77	25	1	72	5	1	65	12	1	63	14	1
R1209C	Yes	1	B	52	77	25	1	71	6	1	65	12	1	63	14	1
R1210A		1	B	52	64	12		63	1		60	4		58	6	1
R1210B		1	B	52	65	13	1	64	1		60	5	1	59	6	1
R1210C		1	B	52	64	12		63	1		60	4		58	6	1
R1211A		1	B	52	63	11		61	2		58	5	1	57	6	1
R1211B		1	B	52	64	12		62	2		59	5	1	57	7	1
R1212A		1	B	52	64	12		60	4		56	8	1	56	8	1
R1212B		1	B	52	62	10		58	4		55	7	1	55	7	1
R1213A		1	B	52	63	11		61	2		57	6	1	56	7	1
R1213B		1	B	52	66	14	1	63	3		59	7	1	58	8	1
R1214A	Yes	1	B	52	69	17	1	66	3		61	8	1	59	10	1
R1214B	Yes	1	B	52	67	15	1	64	3		59	8	1	58	9	1
R1214C	Yes	1	B	52	73	21	1	68	5	1	63	10	1	62	11	1

Length (ft)=	2908	2908	2908
Average Height =	10	16	20
Area of Noise Wall (sft)=	29073	46519	58149
Impacted Receptors=	31	31	31
Number of Benefited Receptors=	23	43	47
Area of Noise Wall per Benefit Receptor (sft)=	1264	1082	1237
Average Increase in dB(A) of all Impacted Receptors=	18	18	18
Maximum Allowable Base Quantity of Noise Wall per Benefited Receptor (sft)=	3135	3135	3135
Feasible (5 dB(A) Reduction)=	Yes	Yes	Yes
Reasonable (Wall Area per Benefit) =	Yes	Yes	Yes
Reasonable (7 dB(A) Reduction) =	Yes	Yes	Yes
Breaks Line of Sight to Impacted Properties? =	No	No	Yes

(1) Category B denotes a residential property.

(2) Noise levels highlighted in red are levels above the Noise Abatment Criteria.

(3) Values highlighted in green are a 5 dB(A) or greater reduction in noise levels.

(4) A 20ft barrier is recommended because all criteria for feasible and reasonable have been met, and the most properties are benefited.

Recommended 20ft Wall

NCDOT SOUND BARRIER
FEASIBILITY and REASONABLENESS
WORKSHEET

PROJECT - Complete 540 TIP # - R-2721, R-2828, R-2829

LOCATION - Barrier 44 COUNTY(IES) - Wake and Johnston

IMPACTS - 31 # BENEFITS - 47 NAC: A (B) (C) D E F G (CIRCLE ALL THAT APPLY)

A. FEASIBILITY:

1	Can a 5-dB(A) reduction in traffic noise levels be achieved for at least one impacted receptor?	X YES	NO
2	Does topography negatively affect the proposed abatement measure?	YES	X NO
3	Does the abatement measure negatively affect property access, drainage, safety and maintenance requirements?	YES	X NO
4	Is there control of access in the vicinity of the proposed abatement measure?	YES	X NO

B. REASONABLENESS:

1	Can a 7-dB(A) reduction in traffic noise levels be achieved for at least one impacted front row receptor?	X YES	NO
2	Is the design criteria per benefited receptor of 1237 (CIRCLE ONE) (sq.ft.) cu.yd less than the maximum allowable design criteria per benefited receptor of 3135 (CIRCLE ONE) (sq.ft.) cu.yd.?	X YES	NO

C. NOISE ABATEMENT DECISION:

1	Is the noise mitigation feasible?	X YES	NO
2	Is the noise mitigation reasonable?	X YES	NO
3	Is the noise mitigation likely?	X YES	NO
4	Have the owners' and residents' viewpoints been solicited?	YES	X NO
5	Is the noise mitigation recommended for construction?	YES	NO

D. OPTIONAL REASONABLENESS CONSIDERATION:

1	Was optional averaging noise abatement allowance within a common noise environment used for consideration of barrier reasonableness?	YES	X NO
2	If the answer to D.1 is YES, the design criteria per benefited receptor for each individual barrier within the common noise environment before averaging are:		

Bar No. _____ _____ (CIRCLE ONE) sq.ft./cu.yd Bar No. _____ _____ (CIRCLE ONE) sq.ft./cu.yd

Bar No. _____ _____ sq.ft./cu.yd Bar No. _____ _____ sq.ft./cu.yd

3	If the answer to D.1 is YES, is the design criteria per benefited receptor for each individual barrier less than or equal to twice the maximum allowable design criteria per benefited receptor of _____ (CIRCLE ONE) sq.ft./cu.yd	YES	NO

Form Completed By: E SALUTZ Date: _____

In Consultation With: _____ Date: _____

Complete 540
Traffic Noise Analysis

4/2/2015

Red Corridor

Noise Wall 45

																Recommended[4]		
				Noise Levels[2]				Short Wall			Intermediate Wall			Tall Wall				
Receptor	First Row	Residences Represented	NAC Land Use Category[1]	Existing dB(A)	Build dB(A)	Increase	Impacted Receptors	W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors
R1262	Yes	1	B	58	64	6		63	1		63	1		63	1	
R1263A	Yes	1	B	57	61	4		59	2		59	2		58	3	
R1263B	Yes	1	B	54	64	10		61	3		60	4		60	4	
R1263C	Yes	1	B	59	60	1		57	3		57	3		56	4	
R1264A		1	B	52	63	11		61	2		60	3		59	4	
R1264B		1	B	52	62	10		60	2		60	2		59	3	
R1264C		1	B	52	64	12		61	3		60	4		59	5	1
R1265		1	B	52	64	12		61	3		60	4		59	5	1
R1266A		1	B	52	64	12		60	4		60	4		58	6	1
R1266B		1	B	52	64	12		60	4		59	5	1	58	6	1
R1269A	Yes	1	B	52	62	10		57	5	1	57	5	1	56	6	1
R1269B	Yes	1	B	52	61	9		57	4		57	4		56	5	1
R1269C	Yes	1	B	52	61	9		57	4		57	4		56	5	1
R1270A		1	B	52	64	12		59	5	1	59	5	1	57	7	1
R1270B		1	B	52	62	10		59	3		58	4		57	5	1
R1271A		1	B	52	60	8		57	3		56	4		55	5	1
R1271B		1	B	52	60	8		57	3		57	3		56	4	
R1272A		1	B	52	62	10		59	3		58	4		57	5	1
R1272B		1	B	52	61	9		58	3		57	4		56	5	1
R1273A		1	B	52	59	7		58	1		57	2		56	3	
R1273B		1	B	52	59	7		58	1		57	2		56	3	
R1273C		1	B	52	58	6		55	3		55	3		54	4	
R1274A		1	B	52	58	6		55	3		54	4		54	4	
R1274B		1	B	52	58	6		55	3		55	3		54	4	
R1275A		1	B	52	59	7		55	4		55	4		55	4	
R1275B		1	B	52	60	8		55	5	1	55	5	1	54	6	1
R1275C		1	B	52	58	6		55	3		55	3		54	4	
R1277A	Yes	1	B	52	69	17	1	63	6	1	62	7	1	60	9	1
R1277B	Yes	1	B	52	71	19	1	66	5	1	64	7	1	61	10	1
R1278A	Yes	1	B	52	68	16	1	64	4		62	6	1	60	8	1
R1278B	Yes	1	B	52	64	12		60	4		59	5	1	58	6	1
R1279A		1	B	52	62	10		57	5	1	57	5	1	56	6	1
R1279B		1	B	52	61	9		56	5	1	56	5	1	55	6	1
R1280A	Yes	1	B	52	63	11		58	5	1	58	5	1	57	6	1
R1280B	Yes	1	B	52	65	13	1	59	6	1	59	6	1	58	7	1
R1282	Yes	1	B	52	71	19	1	65	6	1	63	8	1	61	10	1
R1283A	Yes	1	B	52	69	17	1	62	7	1	61	8	1	60	9	1
R1283B	Yes	1	B	52	67	15	1	61	6	1	61	6	1	59	8	1

Length (ft)=	2003	2003	2003
Average Height =	14	16	22
Area of Noise Wall (sft)=	28036	32042	44057
Impacted Receptors=	7	7	7
Number of Benefited Receptors=	12	15	24
Area of Noise Wall per Benefit Receptor (sft)=	2336	2136	1836
Average Increase in dB(A) of all Impacted Receptors=	17	17	17
Maximum Allowable Base Quantity of Noise Wall per Benefited Receptor (sft)=	3080	3080	3080
Feasible (5 dB(A) Reduction)=	Yes	Yes	Yes
Reasonable (Wall Area per Benefit) =	Yes	Yes	Yes
Reasonable (7 dB(A) Reduction) =	Yes	Yes	Yes
Breaks Line of Sight to Impacted Properties? =	No	Yes	Yes

(1) Category B denotes a residential property.
(2) Noise levels highlighted in red are levels above the Noise Abatment Criteria.
(3) Values highlighted in green are a 5 dB(A) or greater reduction in noise levels.
(4) A 22ft barrier is recommended because all criteria for feasible and reasonable have been met, and the most properties are benefited.

Recommended 22ft

NCDOT SOUND BARRIER
FEASIBILITY and REASONABLENESS
WORKSHEET

PROJECT - Complete 540 TIP # - R-2721, R-2828, R-2829

LOCATION - Barrier 45 COUNTY(IES) - Wake and Johnston

IMPACTS - 7 # BENEFITS - 24 NAC: A (B) C D E F G (CIRCLE ALL THAT APPLY)

A. FEASIBILITY:

1	Can a 5-dB(A) reduction in traffic noise levels be achieved for at least one impacted receptor?	X YES	NO
2	Does topography negatively affect the proposed abatement measure?	YES	X NO
3	Does the abatement measure negatively affect property access, drainage, safety and maintenance requirements?	YES	X NO
4	Is there control of access in the vicinity of the proposed abatement measure?	YES	X NO

B. REASONABLENESS:

1	Can a 7-dB(A) reduction in traffic noise levels be achieved for at least one impacted front row receptor?	X YES	NO
2	Is the design criteria per benefited receptor of 1836 (sq.ft.) cu.yd (CIRCLE ONE) less than the maximum allowable design criteria per benefited receptor of 3080 (sq.ft.) cu.yd.? (CIRCLE ONE)	X YES	NO

C. NOISE ABATEMENT DECISION:

1	Is the noise mitigation feasible?	X YES	NO
2	Is the noise mitigation reasonable?	X YES	NO
3	Is the noise mitigation likely?	X YES	NO
4	Have the owners' and residents' viewpoints been solicited?	YES	X NO
5	Is the noise mitigation recommended for construction?	YES	NO

D. OPTIONAL REASONABLENESS CONSIDERATION:

1	Was optional averaging noise abatement allowance within a common noise environment used for consideration of barrier reasonableness?	YES	X NO
2	If the answer to D.1 is YES, the design criteria per benefited receptor for each individual barrier within the common noise environment before averaging are:		

Bar No. _____ _____ sq.ft./cu.yd (CIRCLE ONE) Bar No. _____ _____ sq.ft./cu.yd (CIRCLE ONE)

Bar No. _____ _____ sq.ft./cu.yd Bar No. _____ _____ sq.ft./cu.yd

3	If the answer to D.1 is YES, is the design criteria per benefited receptor for each individual barrier less than or equal to twice the maximum allowable design criteria per benefited receptor of _____ sq.ft./cu.yd (CIRCLE ONE)	YES	NO

Form Completed By: E SALUTZ Date: _____

In Consultation With: _____ Date: _____

Complete 540 4/2/2015
Traffic Noise Analysis

Red Corridor

Noise Wall 46

Receptor	First Row	Residences Represented	NAC Land Use Category[1]	Noise Levels[2] Existing dB(A)	Build dB(A)	Increase	Impacted Receptors	Short Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	Intermediate Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	Tall Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors
R1380A	Yes	1	B	58	61	3		60	1		60	1		60	1	
R1380B	Yes	1	B	57	60	3		59	1		59	1		59	1	
R1380C	Yes	1	B	57	62	5		60	2		59	3		59	3	
R1380D	Yes	1	B	58	62	4		61	1		61	1		61	1	
R1381A	Yes	1	B	57	66	9	1	61	5	1	60	6	1	59	7	1
R1381B	Yes	1	B	57	64	7		61	3		61	3		60	4	
R1381C	Yes	1	B	57	63	6		60	3		59	4		59	4	
R1381D	Yes	1	B	57	66	9	1	61	5	1	61	5	1	61	5	1
R1381E	Yes	1	B	57	66	9	1	62	4		61	5	1	61	5	1
R1381F	Yes	1	B	57	66	9	1	62	4		62	4		62	4	
R1381G	Yes	1	B	57	63	6		60	3		60	3		60	3	
R1381H	Yes	1	B	57	63	6		60	3		60	3		60	3	
R1382A		1	B	57	60	3		59	1		58	2		58	2	
R1382B		1	B	57	62	5		60	2		59	3		59	3	
R1383A		1	B	57	60	3		58	2		58	2		58	2	
R1383B		1	B	57	62	5		59	3		59	3		59	3	
R1384A		1	B	57	60	3		58	2		58	2		58	2	
R1384B		1	B	57	62	5		59	3		59	3		59	3	

Length (ft)=	1000	1000	1000
Average Height =	16	18	22
Area of Noise Wall (sft)=	16002	18002	22002
Impacted Receptors=	4	4	4
Number of Benefited Receptors=	2	3	3
Area of Noise Wall per Benefit Receptor (sft)=	8001	6001	7334
Average Increase in dB(A) of all Impacted Receptors=	9	9	9
Maximum Allowable Base Quantity of Noise Wall per Benefited Receptor (sft)=	2815	2815	2815
Feasible (5 dB(A) Reduction)=	Yes	Yes	Yes
Reasonable (Wall Area per Benefit) =	No	No	No
Reasonable (7 dB(A) Reduction) =	No	No	Yes
Breaks Line of Sight to Impacted Properties? =	Yes	Yes	Yes

(1) Category B denotes a residential property.
(2) Noise levels highlighted in red are levels above the Noise Abatment Criteria.
(3) Values highlighted in green are a 5 dB(A) or greater reduction in noise levels.

Note: Boxed results indicate barrier discussed in report text.

NCDOT SOUND BARRIER
FEASIBILITY and REASONABLENESS
WORKSHEET

PROJECT - Complete 540 TIP # - R-2721, R-2828, R-2829

LOCATION - Barrier 46 COUNTY(IES) - Wake and Johnston

IMPACTS - 4 # BENEFITS - 3 NAC: A (B) C D E F G (CIRCLE ALL THAT APPLY)

A. FEASIBILITY:

1	Can a 5-dB(A) reduction in traffic noise levels be achieved for at least one impacted receptor?	X YES	NO
2	Does topography negatively affect the proposed abatement measure?	YES	X NO
3	Does the abatement measure negatively affect property access, drainage, safety and maintenance requirements?	YES	X NO
4	Is there control of access in the vicinity of the proposed abatement measure?	YES	X NO

B. REASONABLENESS:

1	Can a 7-dB(A) reduction in traffic noise levels be achieved for at least one impacted front row receptor?	YES	X NO
2	Is the design criteria per benefited receptor of 7334 (CIRCLE ONE) (sq.ft.) cu.yd less than the maximum allowable design criteria per benefited receptor of 2815 (CIRCLE ONE) (sq.ft.) cu.yd.?	YES	X NO

C. NOISE ABATEMENT DECISION:

1	Is the noise mitigation feasible?	X YES	NO
2	Is the noise mitigation reasonable?	YES	X NO
3	Is the noise mitigation likely?	YES	X NO
4	Have the owners' and residents' viewpoints been solicited?	YES	X NO
5	Is the noise mitigation recommended for construction?	YES	NO

D. OPTIONAL REASONABLENESS CONSIDERATION:

1	Was optional averaging noise abatement allowance within a common noise environment used for consideration of barrier reasonableness?	YES	X NO

2 If the answer to D.1 is YES, the design criteria per benefited receptor for each individual barrier within the common noise environment before averaging are:

Bar No. _____ _____ (CIRCLE ONE) sq.ft./cu.yd Bar No. _____ _____ (CIRCLE ONE) sq.ft./cu.yd

Bar No. _____ _____ sq.ft./cu.yd Bar No. _____ _____ sq.ft./cu.yd

3 If the answer to D.1 is YES, is the design criteria per benefited receptor for each individual barrier less than or equal to twice the maximum allowable design criteria per benefited receptor of _____ (CIRCLE ONE) sq.ft./cu.yd _____ YES NO

Form Completed By: E SALUTZ Date: _____

In Consultation With: _____ Date: _____

Complete 540
Traffic Noise Analysis

4/1/2015

Red Corridor

Noise Wall 47

				Noise Levels[2]				Short Wall			Intermediate Wall			Recommended[4] Tall Wall		
Receptor	First Row	Residences Represented	NAC Land Use Category[1]	Existing dB(A)	Build dB(A)	Increase	Impacted Receptors	W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors
R1387A		1	B	59	66	7	1	62	4		61	5	1	60	6	1
R1387B		1	B	60	67	7	1	64	3		63	4		60	7	1
R1387C		1	B	62	68	6	1	65	3		64	4		61	7	1
R1387D		1	B	58	66	8	1	63	3		61	5	1	60	6	1
R1387E		1	B	60	67	7	1	65	2		63	4		61	6	1
R1387F		1	B	61	68	7	1	66	2		64	4		61	7	1
R1387G		1	B	58	65	7		63	2		62	3		60	5	1
R1387H		1	B	60	67	7	1	65	2		64	3		61	6	1
R1387I		1	B	61	68	7	1	66	2		65	3		62	6	1
R1387J		1	B	58	65	7		63	2		63	2		61	4	
R1387K		1	B	59	67	8	1	65	2		64	3		62	5	1
R1387L		1	B	61	67	6	1	66	1		65	2		63	4	
R1387M		1	B	57	58	1		56	2		55	3		55	3	
R1387N		1	B	57	59	2		57	2		57	2		56	3	
R1387O		1	B	57	60	3		58	2		57	3		57	3	
R1387P		1	B	57	55	-2		55	0		55	0		55	0	
R1387Q		1	B	57	57	0		57	0		57	0		56	1	
R1387R		1	B	57	58	1		58	0		58	0		58	0	
R1387S		1	B	57	58	1		57	1		57	1		57	1	
R1387T		1	B	57	59	2		59	0		59	0		59	0	
R1387U		1	B	57	60	3		60	0		60	0		60	0	
R1387V		1	B	57	62	5		61	1		61	1		61	1	
R1387W		1	B	57	63	6		63	0		63	0		62	1	
R1387X		1	B	57	65	8		64	1		64	1		63	2	
R1388A		1	B	62	69	7	1	65	4		63	6	1	60	9	1
R1388B		1	B	64	71	7	1	68	3		65	6	1	60	11	1
R1388C		1	B	65	71	6	1	69	2		67	4		61	10	1
R1388D		1	B	62	69	7	1	66	3		64	5	1	60	9	1
R1388E		1	B	63	70	7	1	68	2		66	4		61	9	1
R1388F		1	B	64	71	7	1	69	2		67	4		62	9	1
R1388G		1	B	61	69	8	1	66	3		64	5	1	60	9	1
R1388H		1	B	63	70	7	1	68	2		66	4		61	9	1
R1388I		1	B	64	70	6	1	69	1		68	2		62	8	1
R1388J		1	B	61	68	7	1	66	2		63	5	1	61	7	1
R1388K		1	B	63	69	6	1	68	1		66	3		62	7	1
R1388L		1	B	64	70	6	1	69	1		68	2		63	7	1
R1388M		1	B	57	65	8		63	2		62	3		61	4	
R1388N		1	B	58	66	8	1	65	1		64	2		62	4	
R1388O		1	B	60	67	7	1	67	0		66	1		63	4	
R1388P		1	B	57	59	2		59	0		59	0		59	0	
R1388Q		1	B	57	60	3		60	0		60	0		60	0	
R1388R		1	B	57	62	5		62	0		62	0		61	1	
R1388S		1	B	57	56	-1		56	0		56	0		55	1	
R1388T		1	B	57	57	0		57	0		57	0		57	0	
R1388U		1	B	57	59	2		58	1		58	1		58	1	
R1388V		1	B	58	65	7		62	3		60	5	1	57	8	1
R1388W		1	B	60	66	6	1	63	3		62	4		58	8	1
R1388X		1	B	60	66	6	1	64	2		62	4		58	8	1
R1389A	Yes	1	B	67	75	8	1	69	6	1	66	9	1	61	14	1
R1389B	Yes	1	B	69	75	6	1	73	2		69	6	1	62	13	1
R1389C	Yes	1	B	70	76	6	1	75	1		73	3		63	13	1
R1389D	Yes	1	B	62	68	6	1	65	3		63	5	1	59	9	1
R1389E	Yes	1	B	62	69	7	1	67	2		65	4		60	9	1
R1389F	Yes	1	B	63	69	6	1	68	1		66	3		61	8	1
R1389G	Yes	1	B	57	63	6		61	2		60	3		57	6	1
R1389H	Yes	1	B	57	64	7		62	2		61	3		59	5	1
R1389I	Yes	1	B	59	65	6		63	2		63	2		60	5	1
R1389J	Yes	1	B	66	75	9	1	68	7	1	65	10	1	61	14	1
R1389K	Yes	1	B	69	75	6	1	72	3		68	7	1	62	13	1
R1389L	Yes	1	B	70	76	6	1	75	1		72	4		63	13	1
R1389M	Yes	1	B	66	75	9	1	67	8	1	64	11	1	60	15	1
R1389N	Yes	1	B	69	75	6	1	72	3		68	7	1	61	14	1
R1389O	Yes	1	B	69	76	7	1	75	1		72	4		63	13	1
R1389P	Yes	1	B	66	75	9	1	68	7	1	64	11	1	60	15	1
R1389Q	Yes	1	B	69	75	6	1	73	2		68	7	1	61	14	1
R1389R	Yes	1	B	70	76	6	1	75	1		73	3		63	13	1
R1389S	Yes	1	B	59	68	9	1	65	3		61	7	1	58	10	1
R1389T	Yes	1	B	62	69	7	1	68	1		65	4		59	10	1
R1389U	Yes	1	B	63	69	6	1	69	0		68	1		61	8	1
R1389V	Yes	1	B	57	64	7		63	1		60	4		58	6	1
R1389W	Yes	1	B	58	65	7		64	1		64	1		59	6	1
R1389X	Yes	1	B	59	66	7	1	65	1		65	1		61	5	1
R1390A	Yes	1	B	61	68	7	1	63	5	1	60	8	1	58	10	1
R1390B	Yes	1	B	63	69	6	1	65	4		62	7	1	59	10	1
R1390C	Yes	1	B	64	70	6	1	66	4		63	7	1	60	10	1
R1390D	Yes	1	B	61	67	6	1	62	5	1	60	7	1	58	9	1
R1390E	Yes	1	B	62	69	7	1	64	5	1	62	7	1	59	10	1
R1390F	Yes	1	B	64	70	6	1	65	5	1	63	7	1	60	10	1

Complete 540
Traffic Noise Analysis

4/1/2015

Red Corridor

Noise Wall 47

								Short Wall			Intermediate Wall			Recommended[4] Tall Wall		
			NAC	Noise Levels[2]												
Receptor	First Row	Residences Represented	Land Use Category[1]	Existing dB(A)	Build dB(A)	Increase	Impacted Receptors	W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors
R1390G	Yes	1	B	60	66	6	1	62	4		60	6	1	58	8	1
R1390H	Yes	1	B	62	68	6	1	64	4		62	6	1	59	9	1
R1390I	Yes	1	B	63	69	6	1	65	4		63	6	1	59	10	1
R1390J	Yes	1	B	59	65	6		61	4		59	6	1	57	8	1
R1390K	Yes	1	B	61	67	6	1	63	4		61	6	1	58	9	1
R1390L	Yes	1	B	62	68	6	1	64	4		62	6	1	59	9	1
R1390M	Yes	1	B	57	61	4		58	3		57	4		56	5	1
R1390N	Yes	1	B	57	62	5		59	3		58	4		57	5	1
R1390O	Yes	1	B	57	64	7		60	4		59	5	1	58	6	1
R1390P	Yes	1	B	57	62	5		58	4		56	6	1	53	9	1
R1390Q	Yes	1	B	57	64	7		60	4		57	7	1	54	10	1
R1390R	Yes	1	B	59	65	6		60	5	1	58	7	1	55	10	1
R1390S	Yes	1	B	58	65	7		60	5	1	57	8	1	55	10	1
R1390T	Yes	1	B	60	66	6	1	62	4		59	7	1	55	11	1
R1390U	Yes	1	B	61	67	6	1	62	5	1	60	7	1	55	12	1
R1390V	Yes	1	B	60	66	6	1	61	5	1	59	7	1	56	10	1
R1390W	Yes	1	B	62	68	6	1	63	5	1	60	8	1	57	11	1
R1390X	Yes	1	B	63	69	6	1	64	5	1	61	8	1	57	12	1
R1391A	Yes	1	B	60	66	6	1	61	5	1	59	7	1	57	9	1
R1391B	Yes	1	B	62	68	6	1	63	5	1	61	7	1	58	10	1
R1391C	Yes	1	B	63	69	6	1	64	5	1	61	8	1	58	11	1
R1391D	Yes	1	B	60	66	6	1	62	4		60	6	1	57	9	1
R1391E	Yes	1	B	62	68	6	1	64	4		61	7	1	58	10	1
R1391F	Yes	1	B	63	69	6	1	65	4		63	6	1	58	11	1
R1391G	Yes	1	B	60	66	6	1	62	4		60	6	1	57	9	1
R1391H	Yes	1	B	61	68	7	1	64	4		62	6	1	58	10	1
R1391I	Yes	1	B	63	69	6	1	65	4		63	6	1	58	11	1
R1391J	Yes	1	B	59	66	7	1	61	5	1	60	6	1	57	9	1
R1391K	Yes	1	B	61	67	6	1	64	3		62	5	1	58	9	1
R1391L	Yes	1	B	63	69	6	1	65	4		63	6	1	58	11	1
R1391M	Yes	1	B	57	54	-3		53	1		53	1		52	2	
R1391N	Yes	1	B	57	55	-2		54	1		54	1		53	2	
R1391O	Yes	1	B	57	56	-1		56	0		55	1		53	3	
R1391P	Yes	1	B	57	54	-3		52	2		52	2		51	3	
R1391Q	Yes	1	B	57	55	-2		54	1		53	2		52	3	
R1391R	Yes	1	B	57	56	-1		56	0		55	1		53	3	
R1391S	Yes	1	B	57	55	-2		53	2		52	3		52	3	
R1391T	Yes	1	B	57	56	-1		54	2		54	2		53	3	
R1391U	Yes	1	B	57	58	1		57	1		56	2		54	4	
R1391V	Yes	1	B	57	61	4		56	5	1	55	6	1	54	7	1
R1391W	Yes	1	B	57	64	7		59	5	1	57	7	1	55	9	1
R1391X	Yes	1	B	59	65	6		61	4		58	7	1	56	9	1
R1392A		1	B	57	60	3		59	1		58	2		54	6	1
R1392B		1	B	57	62	5		61	1		60	2		55	7	1
R1392C		1	B	58	63	5		62	1		61	2		56	7	1
R1392D		1	B	57	62	5		60	2		59	3		55	7	1
R1392E		1	B	58	63	5		62	1		61	2		56	7	1
R1392F		1	B	59	64	5		63	1		62	2		57	7	1
R1392G		1	B	57	63	6		61	2		60	3		56	7	1
R1392H		1	B	59	65	6		63	2		62	3		57	8	1
R1392I		1	B	60	66	6	1	64	2		63	3		58	8	1
R1392J		1	B	57	64	7		61	3		60	4		56	8	1
R1392K		1	B	59	65	6		63	2		62	3		58	7	1
R1392L		1	B	60	66	6	1	65	1		63	3		58	8	1
R1392M		1	B	57	62	5		59	3		58	4		55	7	1
R1392N		1	B	57	64	7		62	2		60	4		56	8	1
R1392O		1	B	58	65	7		63	2		61	4		57	8	1
R1392P		1	B	57	63	6		60	3		59	4		56	7	1
R1392Q		1	B	57	65	8		62	3		61	4		57	8	1
R1392R		1	B	59	66	7	1	64	2		62	4		58	8	1
R1392S		1	B	57	64	7		60	4		59	5	1	56	8	1
R1392T		1	B	58	65	7		63	2		61	4		57	8	1
R1392U		1	B	60	66	6	1	64	2		62	4		58	8	1
R1392V		1	B	57	65	8		61	4		60	5	1	56	9	1
R1392W		1	B	59	66	7	1	63	3		62	4		58	8	1
R1392X		1	B	61	67	6	1	65	2		63	4		58	9	1
R1393A	Yes	1	B	65	71	6	1	67	4		65	6	1	61	10	1
R1393B	Yes	1	B	68	74	6	1	68	6	1	66	8	1	62	12	1
R1393C	Yes	1	B	70	75	5	1	69	6	1	67	8	1	62	13	1
R1393D	Yes	1	B	63	69	6	1	66	3		64	5	1	60	9	1
R1393E	Yes	1	B	66	72	6	1	68	4		66	6	1	61	11	1
R1393F	Yes	1	B	68	73	5	1	69	4		67	6	1	61	12	1
R1393G	Yes	1	B	62	69	7	1	65	4		63	6	1	59	10	1
R1393H	Yes	1	B	65	71	6	1	67	4		65	6	1	60	11	1
R1393I	Yes	1	B	67	72	5	1	68	4		66	6	1	61	11	1
R1393J	Yes	1	B	66	72	6	1	67	5	1	65	7	1	62	10	1
R1393K	Yes	1	B	70	76	6	1	69	7	1	67	9	1	63	13	1
R1393L	Yes	1	B	71	77	6	1	70	7	1	68	9	1	64	13	1

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														Recommended[4]		
			NAC	Noise Levels[2]				Short Wall			Intermediate Wall			Tall Wall		
Receptor	First Row	Residences Represented	Land Use Category[1]	Existing dB(A)	Build dB(A)	Increase	Impacted Receptors	W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors
R1393M	Yes	1	B	57	58	1		56	2		55	3		54	4	
R1393N	Yes	1	B	57	61	4		59	2		58	3		55	6	1
R1393O	Yes	1	B	58	63	5		61	2		60	3		57	6	1
R1393P	Yes	1	B	57	57	0		55	2		55	2		53	4	
R1393Q	Yes	1	B	57	61	4		56	5	1	55	6	1	53	8	1
R1393R	Yes	1	B	58	64	6		57	7	1	56	8	1	54	10	1
R1393S	Yes	1	B	57	60	3		57	3		56	4		54	6	1
R1393T	Yes	1	B	59	64	5		58	6	1	57	7	1	54	10	1
R1393U	Yes	1	B	61	67	6	1	59	8	1	57	10	1	55	12	1
R1393V	Yes	1	B	61	65	4		60	5	1	59	6	1	56	9	1
R1393W	Yes	1	B	64	70	6	1	61	9	1	59	11	1	56	14	1
R1393X	Yes	1	B	66	72	6	1	62	10	1	60	12	1	57	15	1
R1394A	Yes	1	B	67	73	6	1	66	7	1	65	8	1	62	11	1
R1394B	Yes	1	B	70	76	6	1	68	8	1	67	9	1	63	13	1
R1394C	Yes	1	B	71	76	5	1	70	6	1	68	8	1	64	12	1
R1394D	Yes	1	B	65	72	7	1	66	6	1	65	7	1	61	11	1
R1394E	Yes	1	B	68	75	7	1	68	7	1	66	9	1	62	13	1
R1394F	Yes	1	B	69	75	6	1	69	6	1	67	8	1	63	12	1
R1394G	Yes	1	B	64	70	6	1	65	5	1	64	6	1	61	9	1
R1394H	Yes	1	B	67	73	6	1	67	6	1	65	8	1	62	11	1
R1394I	Yes	1	B	69	74	5	1	68	6	1	66	8	1	63	11	1
R1394J	Yes	1	B	63	69	6	1	63	6	1	62	7	1	59	10	1
R1394K	Yes	1	B	66	72	6	1	65	7	1	63	9	1	60	12	1
R1394L	Yes	1	B	67	73	6	1	67	6	1	64	9	1	60	13	1
R1394M	Yes	1	B	57	58	1		56	2		55	3		54	4	
R1394N	Yes	1	B	57	61	4		57	4		57	4		54	7	1
R1394O	Yes	1	B	57	62	5		59	3		58	4		55	7	1
R1394P	Yes	1	B	57	59	2		55	4		55	4		53	6	1
R1394Q	Yes	1	B	57	62	5		57	5	1	56	6	1	53	9	1
R1394R	Yes	1	B	58	63	5		58	5	1	56	7	1	54	9	1
R1394S	Yes	1	B	57	60	3		56	4		55	5	1	53	7	1
R1394T	Yes	1	B	58	64	6		57	7	1	56	8	1	53	11	1
R1394U	Yes	1	B	61	66	5	1	58	8	1	57	9	1	54	12	1
R1394V	Yes	1	B	60	64	4		59	5	1	58	6	1	55	9	1
R1394W	Yes	1	B	63	69	6	1	60	9	1	58	11	1	56	13	1
R1394X	Yes	1	B	66	71	5	1	62	9	1	60	11	1	56	15	1
R1395A		1	B	59	64	5		61	3		60	4		56	8	1
R1395B		1	B	61	67	6	1	63	4		62	5	1	57	10	1
R1395C		1	B	63	69	6	1	65	4		63	6	1	58	11	1
R1395D		1	B	59	65	6		63	2		62	3		57	8	1
R1395E		1	B	62	68	6	1	65	3		64	4		58	10	1
R1395F		1	B	63	69	6	1	66	3		64	5	1	59	10	1
R1395G		1	B	57	57	0		55	2		55	2		54	3	
R1395H		1	B	57	60	3		57	3		56	4		55	5	1
R1395I		1	B	58	63	5		58	5	1	57	6	1	56	7	1
R1395J		1	B	57	55	-2		55	0		55	0		54	1	
R1395K		1	B	57	57	0		57	0		57	0		56	1	
R1395L		1	B	57	59	2		58	1		58	1		57	2	
R1396A	Yes	1	B	67	73	6	1	69	4		68	5	1	64	9	1
R1396B	Yes	1	B	69	76	7	1	70	6	1	69	7	1	65	11	1
R1396C	Yes	1	B	71	76	5	1	72	4		70	6	1	66	10	1
R1396D	Yes	1	B	66	73	7	1	68	5	1	67	6	1	64	9	1
R1396E	Yes	1	B	69	75	6	1	70	5	1	69	6	1	65	10	1
R1396F	Yes	1	B	70	76	6	1	72	4		70	6	1	66	10	1
R1396G	Yes	1	B	67	73	6	1	68	5	1	67	6	1	64	9	1
R1396H	Yes	1	B	69	75	6	1	70	5	1	68	7	1	65	10	1
R1396I	Yes	1	B	70	76	6	1	72	4		69	7	1	66	10	1
R1396J	Yes	1	B	66	73	7	1	68	5	1	67	6	1	63	10	1
R1396K	Yes	1	B	69	75	6	1	70	5	1	68	7	1	65	10	1
R1396L	Yes	1	B	70	76	6	1	71	5	1	69	7	1	66	10	1
R1396M	Yes	1	B	61	68	7	1	65	3		64	4		61	7	1
R1396N	Yes	1	B	64	70	6	1	66	4		65	5	1	62	8	1
R1396O	Yes	1	B	65	71	6	1	67	4		66	5	1	63	8	1
R1396P	Yes	1	B	60	66	6	1	65	1		65	1		61	5	1
R1396Q	Yes	1	B	61	67	6	1	66	1		66	1		63	4	
R1396R	Yes	1	B	62	68	6	1	67	1		67	1		64	4	
R1396S	Yes	1	B	60	66	6	1	66	0		65	1		61	5	1
R1396T	Yes	1	B	62	67	5	1	67	0		67	0		63	4	
R1396U	Yes	1	B	63	68	5	1	68	0		67	1		64	4	
R1396V	Yes	1	B	63	69	6	1	67	2		66	3		62	7	1
R1396W	Yes	1	B	65	71	6	1	68	3		68	3		63	8	1
R1396X	Yes	1	B	65	71	6	1	69	2		68	3		64	7	1
R1397A	Yes	1	B	64	70	6	1	69	1		67	3		61	9	1
R1397B	Yes	1	B	66	72	6	1	71	1		69	3		62	10	1
R1397C	Yes	1	B	67	73	6	1	72	1		70	3		64	9	1
R1397D	Yes	1	B	64	70	6	1	69	1		67	3		61	9	1
R1397E	Yes	1	B	67	73	6	1	71	2		69	4		62	11	1
R1397F	Yes	1	B	68	74	6	1	72	2		70	4		63	11	1

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															Recommended[4]		
			NAC	Noise Levels[2]				Short Wall			Intermediate Wall			Tall Wall		
Receptor	First Row	Residences Represented	Land Use Category[1]	Existing dB(A)	Build dB(A)	Increase	Impacted Receptors	W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors
R1397G	Yes	1	B	65	70	5	1	69	1		67	3		61	9	1
R1397H	Yes	1	B	67	73	6	1	71	2		69	4		63	10	1
R1397I	Yes	1	B	68	74	6	1	72	2		70	4		64	10	1
R1397J	Yes	1	B	66	72	6	1	70	2		68	4		62	10	1
R1397K	Yes	1	B	68	74	6	1	72	2		70	4		64	10	1
R1397L	Yes	1	B	69	75	6	1	72	3		71	4		65	10	1
R1397M	Yes	1	B	57	61	4		57	4		57	4		55	6	1
R1397N	Yes	1	B	60	66	6	1	59	7	1	58	8	1	56	10	1
R1397O	Yes	1	B	63	69	6	1	61	8	1	59	10	1	57	12	1
R1397P	Yes	1	B	57	56	-1		55	1		54	2		53	3	
R1397Q	Yes	1	B	57	58	1		56	2		56	2		54	4	
R1397R	Yes	1	B	57	62	5		58	4		57	5	1	55	7	1
R1397S	Yes	1	B	57	55	-2		55	0		54	1		52	3	
R1397T	Yes	1	B	57	56	-1		56	0		55	1		53	3	
R1397U	Yes	1	B	57	59	2		57	2		57	2		55	4	
R1397V	Yes	1	B	57	58	1		58	0		57	1		56	2	
R1397W	Yes	1	B	57	60	3		60	0		59	1		58	2	
R1397X	Yes	1	B	58	61	3		61	0		60	1		59	2	
R1833A		1	B	57	62	5		61	1		61	1		60	2	
R1833B		1	B	57	63	6		62	1		62	1		61	2	
R1833C		1	B	57	64	7		63	1		62	2		62	2	
R1833D		1	B	57	63	6		62	1		61	2		60	3	
R1833E		1	B	57	65	8		63	2		63	2		62	3	
R1833F		1	B	58	65	7		64	1		63	2		62	3	
R1833G		1	B	57	63	6		62	1		61	2		61	2	
R1833H		1	B	57	64	7		63	1		63	1		62	2	
R1833I		1	B	57	65	8		64	1		64	1		63	2	
R1833J		1	B	57	62	5		61	1		61	1		61	1	
R1833K		1	B	57	63	6		62	1		62	1		62	1	
R1833L		1	B	57	64	7		63	1		63	1		62	2	
R1833M		1	B	57	63	6		62	1		61	2		61	2	
R1833N		1	B	57	64	7		63	1		63	1		62	2	
R1833O		1	B	57	65	8		64	1		64	1		63	2	
R1833P		1	B	57	63	6		62	1		62	1		62	1	
R1833Q		1	B	57	65	8		64	1		63	2		63	2	
R1833R		1	B	57	65	8		65	0		64	1		63	2	
R1833S		1	B	57	63	6		62	1		62	1		62	1	
R1833T		1	B	57	65	8		64	1		63	2		63	2	
R1833U		1	B	57	65	8		65	0		64	1		63	2	
R1833V		1	B	57	63	6		62	1		62	1		61	2	
R1833W		1	B	57	64	7		64	0		63	1		62	2	
R1833X		1	B	57	65	8		65	0		64	1		63	2	
R1834A		1	B	57	57	0		55	2		55	2		54	3	
R1834B		1	B	57	59	2		57	2		56	3		56	3	
R1834C		1	B	57	60	3		58	2		57	3		56	4	
R1834D		1	B	57	57	0		54	3		53	4		52	5	1
R1834E		1	B	57	59	2		56	3		55	4		53	6	1
R1834F		1	B	57	60	3		56	4		55	5	1	54	6	1
R1834G		1	B	57	59	2		55	4		54	5	1	52	7	1
R1834H		1	B	57	60	3		57	3		55	5	1	53	7	1
R1834I		1	B	57	61	4		57	4		56	5	1	53	8	1
R1834J		1	B	57	61	4		56	5	1	55	6	1	53	8	1
R1834K		1	B	57	63	6		59	4		57	6	1	54	9	1
R1834L		1	B	58	64	6		60	4		58	6	1	55	9	1
R1834M		1	B	57	64	7		60	4		59	5	1	57	7	1
R1834N		1	B	59	65	6		62	3		61	4		58	7	1
R1834O		1	B	60	67	7	1	63	4		62	5	1	58	9	1
R1834P		1	B	57	63	6		60	3		58	5	1	57	6	1
R1834Q		1	B	58	65	7		62	3		60	5	1	58	7	1
R1834R		1	B	59	66	7	1	63	3		61	5	1	58	8	1
R1834S		1	B	57	63	6		60	3		59	4		58	5	1
R1834T		1	B	58	65	7		62	3		61	4		59	6	1
R1834U		1	B	59	66	7	1	63	3		62	4		60	6	1
R1834V		1	B	57	63	6		61	2		60	3		59	4	
R1834W		1	B	57	65	8		63	2		62	3		61	4	
R1834X		1	B	58	66	8	1	64	2		63	3		61	5	1
R1835A		1	B	57	57	0		54	3		54	3		53	4	
R1835B		1	B	57	59	2		56	3		55	4		54	5	1
R1835C		1	B	57	61	4		57	4		56	5	1	55	6	1
R1835D		1	B	57	56	-1		54	2		54	2		53	3	
R1835E		1	B	57	58	1		56	2		55	3		54	4	
R1835F		1	B	57	59	2		57	2		56	3		54	5	1
R1835G		1	B	57	56	-1		55	1		54	2		53	3	
R1835H		1	B	57	58	1		56	2		55	3		54	4	
R1835I		1	B	57	59	2		57	2		56	3		55	4	
R1835J		1	B	57	58	1		55	3		54	4		53	5	1
R1835K		1	B	57	59	2		57	2		56	3		54	5	1
R1835L		1	B	57	60	3		58	2		57	3		55	5	1

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				Noise Levels[2]				Short Wall			Intermediate Wall			Recommended[4] Tall Wall		
Receptor	First Row	Residences Represented	NAC Land Use Category[1]	Existing dB(A)	Build dB(A)	Increase	Impacted Receptors	W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors
R1835M		1	B	57	57	0		55	2		54	3		53	4	
R1835N		1	B	57	59	2		56	3		56	3		54	5	1
R1835O		1	B	57	60	3		58	2		57	3		55	5	1
R1835P		1	B	57	57	0		54	3		54	3		53	4	
R1835Q		1	B	57	58	1		56	2		55	3		54	4	
R1835R		1	B	57	60	3		57	3		56	4		55	5	1
R1835S		1	B	57	58	1		54	4		54	4		53	5	1
R1835T		1	B	57	59	2		56	3		55	4		54	5	1
R1835U		1	B	57	60	3		58	2		56	4		55	5	1
R1835V		1	B	57	59	2		55	4		54	5	1	53	6	1
R1835W		1	B	57	60	3		57	3		56	4		54	6	1
R1835X		1	B	57	62	5		58	4		57	5	1	55	7	1
R1836A		1	B	57	60	3		58	2		57	3		55	5	1
R1836B		1	B	57	62	5		60	2		59	3		56	6	1
R1836C		1	B	57	63	6		61	2		60	3		57	6	1
R1836D		1	B	57	59	2		56	3		56	3		54	5	1
R1836E		1	B	57	60	3		58	2		57	3		55	5	1
R1836F		1	B	57	62	5		59	3		58	4		56	6	1
R1836G		1	B	57	58	1		56	2		55	3		54	4	
R1836H		1	B	57	60	3		58	2		57	3		55	5	1
R1836I		1	B	57	61	4		59	2		58	3		56	5	1
R1836J		1	B	57	58	1		56	2		56	2		55	3	
R1836K		1	B	57	60	3		58	2		57	3		56	4	
R1836L		1	B	57	61	4		59	2		58	3		56	5	1
R1836M		1	B	57	59	2		56	3		56	3		55	4	
R1836N		1	B	57	60	3		58	2		58	2		56	4	
R1836O		1	B	57	61	4		59	2		58	3		57	4	
R1836P		1	B	57	59	2		57	2		56	3		55	4	
R1836Q		1	B	57	60	3		59	1		58	2		56	4	
R1836R		1	B	57	61	4		60	1		59	2		56	5	1
R1836S		1	B	57	60	3		58	2		57	3		55	5	1
R1836T		1	B	57	61	4		60	1		59	2		56	5	1
R1836U		1	B	57	62	5		61	1		60	2		57	5	1
R1836V		1	B	57	60	3		59	1		58	2		55	5	1
R1836W		1	B	57	62	5		61	1		60	2		57	5	1
R1836X		1	B	57	63	6		62	1		60	3		57	6	1
R1837A		1	B	57	61	4		59	2		58	3		55	6	1
R1837B		1	B	57	63	6		62	1		60	3		57	6	1
R1837C		1	B	59	65	6		63	2		61	4		57	8	1
R1837D		1	B	57	62	5		61	1		60	2		56	6	1
R1837E		1	B	59	64	5		63	1		62	2		58	6	1
R1837F		1	B	60	66	6	1	64	2		63	3		59	7	1
R1837G		1	B	58	63	5		62	1		61	2		57	6	1
R1837H		1	B	60	66	6	1	63	3		63	3		59	7	1
R1837I		1	B	62	67	5	1	64	3		63	4		60	7	1
R1837J		1	B	59	64	5		62	2		62	2		58	6	1
R1837K		1	B	61	67	6	1	64	3		63	4		60	7	1
R1837L		1	B	63	69	6	1	65	4		64	5	1	60	9	1
R1837M		1	B	57	58	1		55	3		54	4		53	5	1
R1837N		1	B	57	61	4		57	4		56	5	1	54	7	1
R1837O		1	B	58	62	4		59	3		57	5	1	55	7	1
R1837P		1	B	57	57	0		55	2		54	3		53	4	
R1837Q		1	B	57	59	2		57	2		56	3		54	5	1
R1837R		1	B	57	61	4		58	3		57	4		56	5	1
R1837S		1	B	57	56	-1		54	2		54	2		53	3	
R1837T		1	B	57	59	2		57	2		56	3		54	5	1
R1837U		1	B	57	61	4		58	3		57	4		56	5	1
R1837V		1	B	57	56	-1		54	2		53	3		52	4	
R1837W		1	B	57	58	1		56	2		55	3		53	5	1
R1837X		1	B	57	60	3		57	3		56	4		54	6	1
R1839A		1	B	57	54	-3		52	2		52	2		51	3	
R1839B		1	B	57	55	-2		53	2		53	2		52	3	
R1839C		1	B	57	57	0		54	3		54	3		53	4	
R1839D		1	B	57	54	-3		52	2		52	2		51	3	
R1839E		1	B	57	56	-1		54	2		53	3		52	4	
R1839F		1	B	57	59	2		55	4		54	5	1	53	6	1
R1839G		1	B	57	55	-2		53	2		52	3		51	4	
R1839H		1	B	57	58	1		54	4		54	4		52	6	1
R1839I		1	B	57	61	4		56	5	1	55	6	1	53	8	1
R1839J		1	B	57	57	0		54	3		54	3		52	5	1
R1839K		1	B	57	59	2		55	4		55	4		53	6	1
R1839L		1	B	57	62	5		56	6	1	55	7	1	53	9	1
R1839M		1	B	58	61	3		60	1		60	1		57	4	
R1839N		1	B	59	64	5		62	2		61	3		59	5	1
R1839O		1	B	61	65	4		64	1		62	3		59	6	1
R1839P		1	B	58	62	4		62	0		61	1		58	4	
R1839Q		1	B	60	64	4		64	0		63	1		59	5	1
R1839R		1	B	61	66	5	1	65	1		64	2		60	6	1

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				Noise Levels[2]				Short Wall			Intermediate Wall			Recommended[4] Tall Wall		
Receptor	First Row	Residences Represented	NAC Land Use Category[1]	Existing dB(A)	Build dB(A)	Increase	Impacted Receptors	W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors
R1839S		1	B	57	62	5		62	0		62	0		57	5	1
R1839T		1	B	59	64	5		64	0		64	0		59	5	1
R1839U		1	B	60	66	6	1	65	1		65	1		60	6	1
R1839V		1	B	57	61	4		62	-1		61	0		56	5	1
R1839W		1	B	58	64	6		64	0		63	1		58	6	1
R1839X		1	B	59	65	6		65	0		64	1		59	6	1
R1840		RECREATIONAL	C	57	57	0										
R1840-1		NODAL ARRAY	C	57	58	1		55	3		54	4		53	5	5
R1840-2		NODAL ARRAY	C	57	57	0		55	2		54	3		53	4	
R1840-3		NODAL ARRAY	C	57	57	0		56	1		55	2		53	4	
R1840-4		NODAL ARRAY	C	57	57	0		55	2		54	3		53	4	
R1840-5		NODAL ARRAY	C	57	57	0		56	1		56	1		54	3	
R1841A		1	B	59	63	4		62	1		61	2		58	5	1
R1841B		1	B	61	65	4		65	0		64	1		60	5	1
R1841C		1	B	62	67	5	1	66	1		65	2		61	6	1
R1841D		1	B	60	64	4		63	1		62	2		58	6	1
R1841E		1	B	61	66	5	1	66	0		64	2		60	6	1
R1841F		1	B	63	68	5	1	67	1		66	2		61	7	1
R1841G		1	B	60	64	4		63	1		62	2		58	6	1
R1841H		1	B	62	67	5	1	66	1		65	2		60	7	1
R1841I		1	B	63	69	6	1	68	1		66	3		61	8	1
R1841J		1	B	61	65	4		65	0		64	1		59	6	1
R1841K		1	B	63	68	5	1	67	1		66	2		61	7	1
R1841L		1	B	64	70	6	1	68	2		67	3		62	8	1
R1841M		1	B	59	64	5		64	0		63	1		57	7	1
R1841N		1	B	61	67	6	1	66	1		65	2		59	8	1
R1841O		1	B	62	68	6	1	67	1		66	2		60	8	1
R1841P		1	B	57	62	5		62	0		61	1		55	7	1
R1841Q		1	B	58	64	6		64	0		63	1		57	7	1
R1841R		1	B	60	65	5		65	0		64	1		58	7	1
R1841S		1	B	57	60	3		59	1		58	2		53	7	1
R1841T		1	B	57	62	5		62	0		61	1		55	7	1
R1841U		1	B	58	64	6		63	1		62	2		56	8	1
R1841V		1	B	57	58	1		57	1		56	2		52	6	1
R1841W		1	B	57	60	3		60	0		59	1		53	7	1
R1841X		1	B	57	62	5		61	1		60	2		54	8	1
R1902A		1	B	57	62	5		60	2		60	2		60	2	
R1902B		1	B	57	63	6		62	1		62	1		61	2	
R1902C		1	B	57	64	7		63	1		63	1		62	2	
R1902D		1	B	57	62	5		61	1		60	2		60	2	
R1902E		1	B	57	63	6		62	1		62	1		61	2	
R1902F		1	B	57	64	7		63	1		63	1		62	2	
R1902G		1	B	57	62	5		61	1		61	1		60	2	
R1902H		1	B	57	63	6		62	1		62	1		61	2	
R1902I		1	B	57	64	7		63	1		63	1		62	2	
R1902J		1	B	57	62	5		61	1		61	1		60	2	
R1902K		1	B	57	63	6		63	0		62	1		62	1	
R1902L		1	B	57	64	7		64	0		63	1		62	2	
R1902M		1	B	57	62	5		61	1		60	2		60	2	
R1902N		1	B	57	63	6		62	1		62	1		61	2	
R1902O		1	B	57	64	7		63	1		63	1		62	2	
R1902P		1	B	57	62	5		61	1		60	2		60	2	
R1902Q		1	B	57	63	6		62	1		62	1		61	2	
R1902R		1	B	57	64	7		63	1		63	1		62	2	
R1902S		1	B	57	62	5		60	2		60	2		60	2	
R1902T		1	B	57	63	6		62	1		62	1		61	2	
R1902U		1	B	57	64	7		63	1		63	1		62	2	
R1902V		1	B	57	61	4		60	1		60	1		59	2	
R1902W		1	B	57	63	6		62	1		61	2		61	2	
R1902X		1	B	57	64	7		63	1		62	2		61	3	
R1903A		1	B	57	60	3		59	1		58	2		58	2	
R1903B		1	B	57	62	5		60	2		60	2		59	3	
R1903C		1	B	57	62	5		61	1		60	2		60	2	
R1903D		1	B	57	60	3		58	2		58	2		57	3	
R1903E		1	B	57	61	4		60	1		59	2		59	2	
R1903F		1	B	57	62	5		61	1		60	2		60	2	
R1903G		1	B	57	60	3		58	2		58	2		58	2	
R1903H		1	B	57	61	4		60	1		59	2		59	2	
R1903I		1	B	57	62	5		61	1		60	2		60	2	
R1903J		1	B	57	60	3		59	1		58	2		58	2	
R1903K		1	B	57	61	4		60	1		60	1		59	2	
R1903L		1	B	57	62	5		61	1		61	1		60	2	
R1903M		1	B	57	62	5		60	2		59	3		59	3	
R1903N		1	B	57	63	6		62	1		61	2		60	3	
R1903O		1	B	57	64	7		63	1		62	2		61	3	
R1903P		1	B	57	61	4		59	2		59	2		58	3	
R1903Q		1	B	57	62	5		61	1		60	2		60	2	
R1903R		1	B	57	63	6		62	1		61	2		60	3	

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				Noise Levels[2]				Short Wall			Intermediate Wall			Recommended[4] Tall Wall		
Receptor	First Row	Residences Represented	NAC Land Use Category[1]	Existing dB(A)	Build dB(A)	Increase	Impacted Receptors	W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors
R1903S		1	B	57	60	3		58	2		58	2		58	2	
R1903T		1	B	57	61	4		60	1		60	1		59	2	
R1903U		1	B	57	63	6		61	2		61	2		60	3	
R1903V		1	B	57	60	3		59	1		58	2		58	2	
R1903W		1	B	57	61	4		60	1		60	1		59	2	
R1903X		1	B	57	62	5		61	1		61	1		60	2	
R1904		RECREATIONAL	C	57	60	3										
R1904-1		NODAL ARRAY	C	57	60	3		57	3		56	4		55	5	5
R1904-2		NODAL ARRAY	C	57	60	3		57	3		56	4		55	5	5
R1904-3		NODAL ARRAY	C	57	60	3		57	3		56	4		54	6	5
R1904-4		NODAL ARRAY	C	57	60	3		57	3		56	4		55	5	5
R1904-5		NODAL ARRAY	C	57	60	3		57	3		56	4		55	5	5
R1905A		1	B	57	62	5		58	4		57	5	1	55	7	1
R1905B		1	B	57	63	6		60	3		59	4		56	7	1
R1905C		1	B	58	64	6		61	3		60	4		57	7	1
R1905D		1	B	57	61	4		58	3		56	5	1	55	6	1
R1905E		1	B	57	62	5		60	2		59	3		56	6	1
R1905F		1	B	57	63	6		61	2		59	4		56	7	1
R1905G		1	B	57	60	3		57	3		56	4		55	5	1
R1905H		1	B	57	62	5		59	3		58	4		56	6	1
R1905I		1	B	57	63	6		60	3		59	4		56	7	1
R1905J		1	B	57	60	3		57	3		56	4		55	5	1
R1905K		1	B	57	61	4		59	2		58	3		56	5	1
R1905L		1	B	57	62	5		60	2		59	3		56	6	1
R1905M		1	B	57	60	3		57	3		56	4		55	5	1
R1905N		1	B	57	61	4		59	2		58	3		56	5	1
R1905O		1	B	57	62	5		60	2		59	3		56	6	1
R1905P		1	B	57	60	3		57	3		56	4		55	5	1
R1905Q		1	B	57	61	4		59	2		58	3		56	5	1
R1905R		1	B	57	62	5		60	2		59	3		56	6	1
R1905S		1	B	57	60	3		57	3		56	4		54	6	1
R1905T		1	B	57	62	5		59	3		58	4		56	6	1
R1905U		1	B	57	63	6		61	2		59	4		56	7	1
R1905V		1	B	57	61	4		58	3		57	4		55	6	1
R1905W		1	B	57	62	5		60	2		59	3		57	5	1
R1905X		1	B	57	64	7		61	3		60	4		57	7	1
R1906A		1	B	57	58	1		56	2		55	3		54	4	
R1906B		1	B	57	60	3		58	2		56	4		55	5	1
R1906C		1	B	57	60	3		59	1		57	3		56	4	
R1906D		1	B	57	58	1		55	3		54	4		53	5	1
R1906E		1	B	57	59	2		57	2		56	3		55	4	
R1906F		1	B	57	60	3		58	2		57	3		55	5	1
R1906G		1	B	57	57	0		55	2		54	3		53	4	
R1906H		1	B	57	59	2		56	3		55	4		54	5	1
R1906I		1	B	57	59	2		58	1		56	3		55	4	
R1906J		1	B	57	57	0		55	2		54	3		53	4	
R1906K		1	B	57	58	1		56	2		55	3		54	4	
R1906L		1	B	57	59	2		57	2		56	3		55	4	
R1906M		1	B	57	57	0		55	2		54	3		54	3	
R1906N		1	B	57	58	1		56	2		55	3		55	3	
R1906O		1	B	57	59	2		57	2		56	3		55	4	
R1906P		1	B	57	57	0		55	2		54	3		54	3	
R1906Q		1	B	57	58	1		57	1		56	2		55	3	
R1906R		1	B	57	59	2		58	1		57	2		56	3	
R1906S		1	B	57	58	1		55	3		55	3		54	4	
R1906T		1	B	57	59	2		57	2		56	3		55	4	
R1906U		1	B	57	60	3		58	2		57	3		56	4	
R1906V		1	B	57	58	1		56	2		55	3		55	3	
R1906W		1	B	57	59	2		58	1		57	2		56	3	
R1906X		1	B	57	60	3		59	1		58	2		57	3	
R1907A		1	B	57	58	1		55	3		54	4		53	5	1
R1907B		1	B	57	59	2		57	2		56	3		55	4	
R1907C		1	B	57	60	3		58	2		56	4		55	5	1
R1907D		1	B	57	58	1		56	2		55	3		54	4	
R1907E		1	B	57	60	3		58	2		57	3		55	5	1
R1907F		1	B	57	61	4		59	2		58	3		56	5	1
R1907G		1	B	57	58	1		56	2		55	3		54	4	
R1907H		1	B	57	60	3		58	2		57	3		56	4	
R1907I		1	B	57	61	4		59	2		58	3		56	5	1
R1907J		1	B	57	58	1		55	3		55	3		54	4	
R1907K		1	B	57	59	2		57	2		56	3		55	4	
R1907L		1	B	57	61	4		58	3		57	4		56	5	1
R1907M		1	B	57	57	0		55	2		55	2		54	3	
R1907N		1	B	57	59	2		57	2		56	3		55	4	
R1907O		1	B	57	60	3		58	2		57	3		56	4	
R1907P		1	B	57	58	1		55	3		55	3		54	4	
R1907Q		1	B	57	59	2		57	2		56	3		55	4	
R1907R		1	B	57	60	3		58	2		57	3		56	4	

Complete 540
Traffic Noise Analysis

4/1/2015

Red Corridor

Noise Wall 47

															Recommended[4]		
			NAC	Noise Levels[2]				Short Wall			Intermediate Wall			Tall Wall		
Receptor	First Row	Residences Represented	Land Use Category[1]	Existing dB(A)	Build dB(A)	Increase	Impacted Receptors	W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors
R1907S		1	B	57	58	1		55	3		55	3		54	4	
R1907T		1	B	57	59	2		57	2		56	3		55	4	
R1907U		1	B	57	60	3		58	2		57	3		56	4	
R1907V		1	B	57	57	0		55	2		54	3		54	3	
R1907W		1	B	57	59	2		57	2		56	3		55	4	
R1907X		1	B	57	60	3		58	2		57	3		56	4	
R1908A		1	B	57	58	1		57	1		56	2		55	3	
R1908B		1	B	57	60	3		59	1		58	2		56	4	
R1908C		1	B	57	61	4		60	1		59	2		57	4	
R1908D		1	B	57	58	1		57	1		56	2		54	4	
R1908E		1	B	57	60	3		59	1		58	2		56	4	
R1908F		1	B	57	61	4		60	1		59	2		57	4	
R1908G		1	B	57	58	1		57	1		56	2		54	4	
R1908H		1	B	57	60	3		59	1		58	2		56	4	
R1908I		1	B	57	61	4		60	1		59	2		57	4	
R1908J		1	B	57	58	1		57	1		56	2		54	4	
R1908K		1	B	57	59	2		58	1		58	1		56	3	
R1908L		1	B	57	60	3		59	1		59	1		57	3	
R1908M		1	B	57	58	1		56	2		56	2		54	4	
R1908N		1	B	57	59	2		58	1		57	2		55	4	
R1908O		1	B	57	60	3		59	1		58	2		56	4	
R1908P		1	B	57	58	1		57	1		57	1		55	3	
R1908Q		1	B	57	60	3		59	1		58	2		56	4	
R1908R		1	B	57	61	4		60	1		59	2		57	4	
R1908S		1	B	57	59	2		58	1		57	2		55	4	
R1908T		1	B	57	60	3		59	1		58	2		56	4	
R1908U		1	B	57	61	4		60	1		60	1		57	4	
R1908V		1	B	57	59	2		58	1		57	2		55	4	
R1908W		1	B	57	60	3		60	0		59	1		56	4	
R1908X		1	B	57	61	4		60	1		60	1		57	4	
R1909A		1	B	57	58	1		57	1		57	1		55	3	
R1909B		1	B	57	60	3		59	1		59	1		57	3	
R1909C		1	B	57	61	4		60	1		60	1		58	3	
R1909D		1	B	57	58	1		57	1		56	2		54	4	
R1909E		1	B	57	59	2		59	0		58	1		56	3	
R1909F		1	B	57	61	4		60	1		59	2		57	4	
R1909G		1	B	57	58	1		56	2		56	2		54	4	
R1909H		1	B	57	59	2		58	1		57	2		55	4	
R1909I		1	B	57	60	3		59	1		58	2		56	4	
R1909J		1	B	57	57	0		56	1		55	2		54	3	
R1909K		1	B	57	59	2		57	2		57	2		55	4	
R1909L		1	B	57	60	3		58	2		58	2		56	4	
R1909M		1	B	57	58	1		58	0		57	1		55	3	
R1909N		1	B	57	60	3		60	0		59	1		56	4	
R1909O		1	B	57	61	4		61	0		60	1		57	4	
R1909P		1	B	57	59	2		58	1		58	1		56	3	
R1909Q		1	B	57	60	3		60	0		60	0		58	2	
R1909R		1	B	57	62	5		61	1		61	1		58	4	
R1909S		1	B	57	59	2		58	1		58	1		56	3	
R1909T		1	B	57	60	3		60	0		60	0		58	2	
R1909U		1	B	57	62	5		61	1		61	1		59	3	
R1909V		1	B	57	59	2		58	1		58	1		56	3	
R1909W		1	B	57	60	3		60	0		60	0		58	2	
R1909X		1	B	57	62	5		61	1		61	1		59	3	
R1910A		1	B	57	59	2		58	1		57	2		55	4	
R1910B		1	B	57	60	3		60	0		60	0		57	3	
R1910C		1	B	58	62	4		62	0		61	1		59	3	
R1910D		1	B	57	59	2		58	1		57	2		56	3	
R1910E		1	B	57	61	4		60	1		60	1		58	3	
R1910F		1	B	58	62	4		62	0		61	1		59	3	
R1910G		1	B	57	60	3		58	2		58	2		56	4	
R1910H		1	B	57	61	4		61	0		60	1		58	3	
R1910I		1	B	58	63	5		62	1		62	1		59	4	
R1910J		1	B	57	60	3		58	2		58	2		56	4	
R1910K		1	B	57	61	4		61	0		60	1		58	3	
R1910L		1	B	59	63	4		62	1		62	1		59	4	
R1910M		1	B	57	60	3		59	1		59	1		56	4	
R1910N		1	B	58	62	4		62	0		61	1		59	3	
R1910O		1	B	59	64	5		63	1		63	1		60	4	
R1910P		1	B	57	60	3		59	1		58	2		56	4	
R1910Q		1	B	58	62	4		61	1		61	1		58	4	
R1910R		1	B	59	63	4		63	0		62	1		60	3	
R1910S		1	B	57	60	3		59	1		58	2		56	4	
R1910T		1	B	58	61	3		61	0		61	0		58	3	
R1910U		1	B	59	63	4		62	1		62	1		59	4	
R1910V		1	B	57	59	2		58	1		58	1		56	3	
R1910W		1	B	57	61	4		61	0		60	1		58	3	
R1910X		1	B	58	62	4		62	0		62	0		59	3	

Complete 540
Traffic Noise Analysis

4/1/2015

Red Corridor

Noise Wall 47

Receptor	First Row	Residences Represented	NAC Land Use Category[1]	Noise Levels[2] Existing dB(A)	Build dB(A)	Increase	Impacted Receptors	Short Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	Intermediate Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	Recommended[4] Tall Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors

	Short Wall	Intermediate Wall	Recommended[4] Tall Wall
Length (ft)=	3021	3021	3021
Average Height =	10	14	24
Area of Noise Wall (sft)=	30215	42299	72514
Impacted Receptors=	171	171	171
Number of Benefited Receptors=	65	140	376
Area of Noise Wall per Benefit Receptor (sft)=	465	302	193
Average Increase in dB(A) of all Impacted Receptors=	6	6	6
Maximum Allowable Base Quantity of Noise Wall per Benefited Receptor (sft)=	2718	2718	2718
Feasible (5 dB(A) Reduction)=	Yes	Yes	Yes
Reasonable (Wall Area per Benefit) =	Yes	Yes	Yes
Reasonable (7 dB(A) Reduction) =	Yes	Yes	Yes
Breaks Line of Sight to Impacted Properties? =	No	No	Yes

(1) Category B denotes a residential property.
(2) Noise levels highlighted in red are levels above the Noise Abatment Criteria.
(3) Values highlighted in green are a 5 dB(A) or greater reduction in noise levels.
(4) A 24ft barrier is recommended because all criteria for feasible and reasonable have been met, the barrier breaks the line of sight, and the most properties are benefited.

Recommended 24ft wall

NCDOT SOUND BARRIER
FEASIBILITY and REASONABLENESS
WORKSHEET

PROJECT - Complete 540 TIP # - R-2721, R-2828, R-2829

LOCATION - Barrier 47 COUNTY(IES) - Wake and Johnston

IMPACTS - 171 # BENEFITS - 376 NAC: A (B) (C) D E F G (CIRCLE ALL THAT APPLY)

A. FEASIBILITY:

1	Can a 5-dB(A) reduction in traffic noise levels be achieved for at least one impacted receptor?	X YES	NO
2	Does topography negatively affect the proposed abatement measure?	YES	X NO
3	Does the abatement measure negatively affect property access, drainage, safety and maintenance requirements?	YES	X NO
4	Is there control of access in the vicinity of the proposed abatement measure?	YES	X NO

B. REASONABLENESS:

1	Can a 7-dB(A) reduction in traffic noise levels be achieved for at least one impacted front row receptor?	X YES	NO
2	Is the design criteria per benefited receptor of 193 (sq.ft.) / cu.yd (CIRCLE ONE) less than the maximum allowable design criteria per benefited receptor of 2718 (sq.ft.) / cu.yd.? (CIRCLE ONE)	X YES	NO

C. NOISE ABATEMENT DECISION:

1	Is the noise mitigation feasible?	X YES	NO
2	Is the noise mitigation reasonable?	X YES	NO
3	Is the noise mitigation likely?	X YES	NO
4	Have the owners' and residents' viewpoints been solicited?	YES	X NO
5	Is the noise mitigation recommended for construction?	YES	NO

D. OPTIONAL REASONABLENESS CONSIDERATION:

1	Was optional averaging noise abatement allowance within a common noise environment used for consideration of barrier reasonableness?	YES	X NO

2 If the answer to D.1 is YES, the design criteria per benefited receptor for each individual barrier within the common noise environment before averaging are:

Bar No. _____ _____ sq.ft./cu.yd (CIRCLE ONE) Bar No. _____ _____ sq.ft./cu.yd (CIRCLE ONE)

Bar No. _____ _____ sq.ft./cu.yd Bar No. _____ _____ sq.ft./cu.yd

3 If the answer to D.1 is YES, is the design criteria per benefited receptor for each individual barrier less than or equal to twice the maximum allowable design criteria per benefited receptor of _____ sq.ft./cu.yd (CIRCLE ONE) _____ YES _____ NO

Form Completed By: E SALUTZ Date: _____

In Consultation With: _____ Date: _____

Complete 540
Traffic Noise Analysis

3/25/2015

Red Corridor

Noise Wall 48

Receptor	First Row	Residences Represented	NAC Land Use Category[1]	Noise Levels[2] Existing dB(A)	Build dB(A)	Increase	Impacted Receptors	Short Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	Intermediate Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	Recommended[4] Tall Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors
R1621	Yes	1	B	57	68	11	1	61	7	1	61	7	1	60	8	1
R1423	Yes	SCHOOL	D	40	47	7		41	6	8	41	6	8	41	6	8
R1441A	Yes	1	B	57	65	8		61	4		60	5	1	60	5	1
R1441B	Yes	1	B	57	67	10	1	61	6	1	61	6	1	60	7	1
R1442A	Yes	1	B	57	67	10	1	61	6	1	60	7	1	60	7	1
R1442B	Yes	1	B	57	69	12	1	62	7	1	61	8	1	61	8	1
R1442C	Yes	1	B	57	65	8		61	4		60	5	1	60	5	1
R1443	Yes	1	B	57	70	13	1	63	7	1	62	8	1	62	8	1
R1444	Yes	1	B	57	64	7		61	3		60	4		59	5	1

Length (ft)=	2600	2600	2600
Average Height =	10	12	14
Area of Noise Wall (sft)=	26002	31200	36400
Impacted Receptors=	5	5	5
Number of Benefited Receptors=	13	15	16
Area of Noise Wall per Benefit Receptor (sft)=	2000	2080	2275
Average Increase in dB(A) of all Impacted Receptors=	11	11	11
Maximum Allowable Base Quantity of Noise Wall per Benefited Receptor (sft)=	2892	2892	2892
Feasible (5 dB(A) Reduction)=	Yes	Yes	Yes
Reasonable (Wall Area per Benefit) =	Yes	Yes	Yes
Reasonable (7 dB(A) Reduction) =	Yes	Yes	Yes
Breaks Line of Sight to Impacted Properties? =	Yes	Yes	Yes

(1) Category B denotes a residential property.
(2) Noise levels highlighted in red are levels above the Noise Abatment Criteria.
(3) Values highlighted in green are a 5 dB(A) or greater reduction in noise levels.

Recommended 14ft wall

NCDOT SOUND BARRIER
FEASIBILITY and REASONABLENESS
WORKSHEET

PROJECT - Complete 540 TIP # - R-2721, R-2828, R-2829

LOCATION - Barrier 48 COUNTY(IES) - Wake and Johnston

IMPACTS - 5 # BENEFITS - 16 NAC: A (B) C D E F G (CIRCLE ALL THAT APPLY)

A. FEASIBILITY:

1	Can a 5-dB(A) reduction in traffic noise levels be achieved for at least one impacted receptor?	X YES	NO
2	Does topography negatively affect the proposed abatement measure?	YES	X NO
3	Does the abatement measure negatively affect property access, drainage, safety and maintenance requirements?	YES	X NO
4	Is there control of access in the vicinity of the proposed abatement measure?	YES	X NO

B. REASONABLENESS:

1	Can a 7-dB(A) reduction in traffic noise levels be achieved for at least one impacted front row receptor?	X YES	NO
2	Is the design criteria per benefited receptor of 2275 (sq.ft.) / cu.yd (CIRCLE ONE) less than the maximum allowable design criteria per benefited receptor of 2892 (sq.ft.) / cu.yd.? (CIRCLE ONE)	X YES	NO

C. NOISE ABATEMENT DECISION:

1	Is the noise mitigation feasible?	X YES	NO
2	Is the noise mitigation reasonable?	X YES	NO
3	Is the noise mitigation likely?	X YES	NO
4	Have the owners' and residents' viewpoints been solicited?	YES	X NO
5	Is the noise mitigation recommended for construction?	YES	NO

D. OPTIONAL REASONABLENESS CONSIDERATION:

1	Was optional averaging noise abatement allowance within a common noise environment used for consideration of barrier reasonableness?	YES	X NO

2 If the answer to D.1 is YES, the design criteria per benefited receptor for each individual barrier within the common noise environment before averaging are: (CIRCLE ONE)

Bar No. _____ _____ sq.ft./cu.yd Bar No. _____ _____ sq.ft./cu.yd

Bar No. _____ _____ sq.ft./cu.yd Bar No. _____ _____ sq.ft./cu.yd

3	If the answer to D.1 is YES, is the design criteria per benefited receptor for each individual barrier less than or equal to twice the maximum allowable design criteria per benefited receptor of _____ sq.ft./cu.yd (CIRCLE ONE)	YES	NO

Form Completed By: E SALUTZ Date: _____

In Consultation With: _____ Date: _____

Complete 540
Traffic Noise Analysis

4/2/2015

Red Corridor

Noise Wall 51

												Recommended[4]					
			NAC	Noise Levels[2]				Short Wall			Intermediate Wall			Tall Wall			
Receptor	First Row	Residences Represented	Land Use Category[1]	Existing dB(A)	Build dB(A)	Increase	Impacted Receptors	W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors
R0916A	Yes	1	B	69	75	6	1	64	11	1	63	12	1	62	13	1
R0916B	Yes	1	B	70	77	7	1	65	12	1	64	13	1	64	13	1
R0916C	Yes	1	B	70	77	7	1	65	12	1	64	13	1	64	13	1
R0917		1	B	63	67	4	1	59	8	1	59	8	1	59	8	1
R0918A	Yes	1	B	70	76	6	1	65	11	1	65	11	1	64	12	1
R0918B	Yes	1	B	70	76	6	1	65	11	1	65	11	1	64	12	1
R0918C	Yes	1	B	69	76	7	1	65	11	1	65	11	1	64	12	1
R0919A		1	B	62	67	5	1	59	8	1	59	8	1	58	9	1
R0919B		1	B	60	64	4		58	6	1	57	7	1	57	7	1
R0920		1	B	57	60	3		56	4		56	4		55	5	1
R0921A		1	B	59	63	4		58	5	1	57	6	1	57	6	1
R0921B		1	B	61	65	4		60	5	1	59	6	1	58	7	1
R0921C		1	B	60	63	3		59	4		58	5	1	58	5	1
R0922A	Yes	1	B	68	75	7	1	65	10	1	64	11	1	63	12	1
R0922B	Yes	1	B	68	75	7	1	65	10	1	64	11	1	63	12	1
R0923A		1	B	66	71	5	1	63	8	1	63	8	1	62	9	1
R0923B		1	B	63	66	3	1	61	5	1	61	5	1	60	6	1
R0924A		1	B	58	60	2		57	3		56	4		56	4	
R0924B		1	B	58	60	2		57	3		57	3		56	4	
R0928		1	B	61	62	1		58	4		58	4		57	5	1
R0931A	Yes	1	B	67	72	5	1	64	8	1	63	9	1	62	10	1
R0931B	Yes	1	B	72	79	7	1	65	14	1	65	14	1	64	15	1
R0932A	Yes	1	B	70	74	4	1	64	10	1	63	11	1	63	11	1
R0932B	Yes	1	B	70	72	2	1	63	9	1	63	9	1	62	10	1
R0932C	Yes	1	B	69	70	1	1	62	8	1	62	8	1	61	9	1
R1637	Yes	1	B	71	72	1	1	63	9	1	62	10	1	61	11	1
R0933	Yes	1	B	66	66	0	1	63	3		62	4		62	4	
R0934A	Yes	1	B	60	58	-2		57	1		57	1		57	1	
R0934B	Yes	1	B	59	58	-1		56	2		56	2		55	3	
R0935A	Yes	1	B	55	56	1		53	3		53	3		53	3	
R0935B	Yes	1	B	56	57	1		55	2		54	3		54	3	
R0935C	Yes	1	B	54	54	0		52	2		52	2		52	2	
R2315	Yes	RECREATIONAL	C	55	66	11										
R2315-1	Yes	NODAL ARRAY	C	55	62	7		58	4		57	5	1	57	5	1
R2315-2	Yes	NODAL ARRAY	C	55	62	7		58	4		57	5	1	57	5	1
R2315-3	Yes	NODAL ARRAY	C	55	62	7		58	4		58	4		58	4	
R2315-4	Yes	NODAL ARRAY	C	55	61	6		59	2		58	3		58	3	
R2315-5	Yes	NODAL ARRAY	C	55	66	11	1	62	4		62	4		62	4	
R2315-6	Yes	NODAL ARRAY	C	55	67	12	1	64	3		64	3		63	4	

Length (ft)=	3501	3501	3501
Average Height =	16	18	20
Area of Noise Wall (sft)=	56022	63025	70029
Impacted Receptors=	21	21	21
Number of Benefited Receptors=	21	24	26
Area of Noise Wall per Benefit Receptor (sft)=	2668	2626	2693
Average Increase in dB(A) of all Impacted Receptors=	5	5	5
Maximum Allowable Base Quantity of Noise Wall per Benefited Receptor (sft)=	2688	2688	2688
Feasible (5 dB(A) Reduction)=	Yes	Yes	Yes
Reasonable (Wall Area per Benefit) =	Yes	Yes	No
Reasonable (7 dB(A) Reduction) =	Yes	Yes	Yes
Breaks Line of Sight to Impacted Properties? =	Yes	Yes	Yes

Recommended 18ft wall

(1) Category B denotes a residential property.
(2) Noise levels highlighted in red are levels above the Noise Abatment Criteria.
(3) Values highlighted in green are a 5 dB(A) or greater reduction in noise levels.
(4) A 18ft barrier is recommended because all criteria for feasible and reasonable have been met, and the most properties are benefited.

NCDOT SOUND BARRIER
FEASIBILITY and REASONABLENESS
WORKSHEET

PROJECT - Complete 540 TIP # - R-2721, R-2828, R-2829

LOCATION - Barrier 51 COUNTY(IES) - Wake and Johnston

IMPACTS - 21 # BENEFITS - 24 NAC: A (B) (C) D E F G (CIRCLE ALL THAT APPLY)

A. FEASIBILITY:

1	Can a 5-dB(A) reduction in traffic noise levels be achieved for at least one impacted receptor?	X YES	NO
2	Does topography negatively affect the proposed abatement measure?	YES	X NO
3	Does the abatement measure negatively affect property access, drainage, safety and maintenance requirements?	YES	X NO
4	Is there control of access in the vicinity of the proposed abatement measure?	YES	X NO

B. REASONABLENESS:

1	Can a 7-dB(A) reduction in traffic noise levels be achieved for at least one impacted front row receptor?	X YES	NO
2	Is the design criteria per benefited receptor of 2626 (sq.ft.)/cu.yd (CIRCLE ONE) less than the maximum allowable design criteria per benefited receptor of 2688 (sq.ft.)/ cu.yd.? (CIRCLE ONE)	X YES	NO

C. NOISE ABATEMENT DECISION:

1	Is the noise mitigation feasible?	X YES	NO
2	Is the noise mitigation reasonable?	X YES	NO
3	Is the noise mitigation likely?	X YES	NO
4	Have the owners' and residents' viewpoints been solicited?	YES	X NO
5	Is the noise mitigation recommended for construction?	YES	NO

D. OPTIONAL REASONABLENESS CONSIDERATION:

1	Was optional averaging noise abatement allowance within a common noise environment used for consideration of barrier reasonableness?	YES	X NO
2	If the answer to D.1 is YES, the design criteria per benefited receptor for each individual barrier within the common noise environment before averaging are:		

Bar No. _____ _____ sq.ft./cu.yd (CIRCLE ONE) Bar No. _____ _____ sq.ft./cu.yd (CIRCLE ONE)

Bar No. _____ _____ sq.ft./cu.yd Bar No. _____ _____ sq.ft./cu.yd

3	If the answer to D.1 is YES, is the design criteria per benefited receptor for each individual barrier less than or equal to twice the maximum allowable design criteria per benefited receptor of _____ sq.ft./cu.yd (CIRCLE ONE)	YES	NO

Form Completed By: E SALUTZ Date: _____

In Consultation With: _____ Date: _____

Complete 540
Traffic Noise Analysis

3/13/2015

Red Corridor

Noise Wall 52

Receptor	First Row	Residences Represented	NAC Land Use Category[1]	Noise Levels[2] Existing dB(A)	Build dB(A)	Increase	Impacted Receptors	Short Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	Intermediate Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	Tall Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors
R0856	Yes	1	B	64	69	5	1	64	5	1	63	6	1	62	7	1
R0857	Yes	1	B	66	71	5	1	68	3		65	6	1	64	7	1
R0858A	Yes	1	B	62	68	6	1	66	2		65	3		63	5	1
R0858B	Yes	1	B	61	67	6	1	65	2		63	4		62	5	1
R0859	Yes	1	B	65	71	6	1	67	4		65	6	1	64	7	1
R0860A	Yes	1	B	68	75	7	1	67	8	1	66	9	1	65	10	1
R0860B	Yes	1	B	68	75	7	1	68	7	1	67	8	1	67	8	1
R1842		1	B	59	64	5		62	2		61	3		60	4	
R1843A		1	B	62	68	6	1	66	2		65	3		63	5	1
R1843B		1	B	61	67	6	1	64	3		63	4		63	4	
R1844A		1	B	60	66	6	1	63	3		63	3		62	4	
R1844B		1	B	59	64	5		63	1		62	2		61	3	
R2291A		1	B	61	65	4		64	1		64	1		64	1	
R2291B		1	B	61	64	3		64	0		63	1		63	1	

Length (ft)=	1600	1600	1600
Average Height =	20	22	24
Area of Noise Wall (sft)=	31998	35199	38398
Impacted Receptors=	10	10	10
Number of Benefited Receptors=	3	5	8
Area of Noise Wall per Benefit Receptor (sft)=	10666	7040	4800
Average Increase in dB(A) of all Impacted Receptors=	6	6	6
Maximum Allowable Base Quantity of Noise Wall per Benefited Receptor (sft)=	2710	2710	2710
Feasible (5 dB(A) Reduction)=	Yes	Yes	Yes
Reasonable (Wall Area per Benefit) =	No	No	No
Reasonable (7 dB(A) Reduction) =	Yes	Yes	Yes
Breaks Line of Sight to Impacted Properties? =	No	Yes	Yes

(1) Category B denotes a residential property.
(2) Noise levels highlighted in red are levels above the Noise Abatment Criteria.
(3) Values highlighted in green are a 5 dB(A) or greater reduction in noise levels.

Note: Boxed results indicate barrier discussed in report text.

NCDOT SOUND BARRIER
FEASIBILITY and REASONABLENESS
WORKSHEET

PROJECT - Complete 540 TIP # - R-2721, R-2828, R-2829

LOCATION - Barrier 52 COUNTY(IES) - Wake and Johnston

IMPACTS - 10 # BENEFITS - 8 NAC: A (B) C D E F G (CIRCLE ALL THAT APPLY)

A. FEASIBILITY:

1	Can a 5-dB(A) reduction in traffic noise levels be achieved for at least one impacted receptor?	X YES	NO
2	Does topography negatively affect the proposed abatement measure?	YES	X NO
3	Does the abatement measure negatively affect property access, drainage, safety and maintenance requirements?	YES	X NO
4	Is there control of access in the vicinity of the proposed abatement measure?	YES	X NO

B. REASONABLENESS:

1	Can a 7-dB(A) reduction in traffic noise levels be achieved for at least one impacted front row receptor?	X YES	NO
2	Is the design criteria per benefited receptor of 4800 (CIRCLE ONE) (sq.ft.) / cu.yd less than the maximum allowable design criteria per benefited receptor of 2710 (CIRCLE ONE) (sq.ft.) / cu.yd.?	YES	X NO

C. NOISE ABATEMENT DECISION:

1	Is the noise mitigation feasible?	X YES	NO
2	Is the noise mitigation reasonable?	YES	X NO
3	Is the noise mitigation likely?	YES	X NO
4	Have the owners' and residents' viewpoints been solicited?	YES	X NO
5	Is the noise mitigation recommended for construction?	YES	NO

D. OPTIONAL REASONABLENESS CONSIDERATION:

1	Was optional averaging noise abatement allowance within a common noise environment used for consideration of barrier reasonableness?	YES	X NO

2 If the answer to D.1 is YES, the design criteria per benefited receptor for each individual barrier within the common noise environment before averaging are:

Bar No. _____ _____ (CIRCLE ONE) sq.ft./cu.yd Bar No. _____ _____ (CIRCLE ONE) sq.ft./cu.yd

Bar No. _____ _____ sq.ft./cu.yd Bar No. _____ _____ sq.ft./cu.yd

3 If the answer to D.1 is YES, is the design criteria per benefited receptor for each individual barrier less than or equal to twice the maximum allowable design criteria per benefited receptor of _____ (CIRCLE ONE) sq.ft./cu.yd _____ YES NO

Form Completed By: E SALUTZ Date: _____

In Consultation With: _____ Date: _____

Complete 540
Traffic Noise Analysis

3/18/2015

Green Corridor

Noise Wall 64

Receptor	First Row	Residences Represented	NAC Land Use Category[1]	Noise Levels[2] Existing dB(A)	Build dB(A)	Increase	Impacted Receptors	Short Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	Intermediate Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	Recommended[4] Tall Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors
R1490A		1	B	56	65	9		61	4		60	5	1	60	5	1
R1490B		1	B	56	68	12	1	64	4		63	5	1	63	5	1
R1491	Yes	1	B	56	76	20	1	71	5	1	69	7	1	67	9	1
R1492A		1	B	56	67	11	1	59	8	1	59	8	1	58	9	1
R1492B		1	B	56	66	10	1	59	7	1	58	8	1	58	8	1
R1493A	Yes	1	B	56	70	14	1	61	9	1	60	10	1	60	10	1
R1493B	Yes	1	B	56	69	13	1	61	8	1	60	9	1	60	9	1
R1495A	Yes	1	B	56	72	16	1	62	10	1	61	11	1	60	12	1
R1495B	Yes	1	B	56	73	17	1	63	10	1	62	11	1	61	12	1
R1496A		1	B	56	68	12	1	61	7	1	61	7	1	60	8	1
R1496B		1	B	56	69	13	1	61	8	1	60	9	1	59	10	1
R1497A	Yes	1	B	56	71	15	1	62	9	1	61	10	1	60	11	1
R1497B	Yes	1	B	56	73	17	1	63	10	1	62	11	1	61	12	1
R1499A	Yes	1	B	56	67	11	1	59	8	1	59	8	1	58	9	1
R1499B	Yes	1	B	56	67	11	1	59	8	1	58	9	1	58	9	1
R1499C	Yes	1	B	56	68	12	1	60	8	1	60	8	1	59	9	1
R1499D	Yes	1	B	56	68	12	1	61	7	1	61	7	1	60	8	1
R1852A		1	B	56	66	10	1	59	7	1	58	8	1	58	8	1
R1852B		1	B	56	64	8		58	6	1	57	7	1	57	7	1
R1853A		1	B	56	66	10	1	62	4		61	5	1	60	6	1
R1853B		1	B	56	67	11	1	61	6	1	61	6	1	60	7	1
R1854A		1	B	56	65	9		61	4		61	4		60	5	1
R1854B		1	B	56	66	10	1	61	5	1	61	5	1	60	6	1
R1871A		1	B	56	63	7		59	4		58	5	1	58	5	1
R1871B		1	B	56	61	5		58	3		58	3		58	3	
R1872A		1	B	56	63	7		60	3		59	4		59	4	
R1872B		1	B	56	62	6		60	2		59	3		59	3	
R1873A		1	B	56	64	8		62	2		61	3		60	4	
R1873B		1	B	56	62	6		61	1		60	2		59	3	
R1874A		1	B	56	63	7		61	2		60	3		60	3	
R1874B		1	B	56	62	6		59	3		59	3		58	4	

Length (ft)=	2200	2200	2200
Average Height =	14	16	18
Area of Noise Wall (sft)=	30800	35200	39600
Impacted Receptors=	20	20	20
Number of Benefited Receptors=	19	23	24
Area of Noise Wall per Benefit Receptor (sft)=	1621	1530	1650
Average Increase in dB(A) of all Impacted Receptors=	13	13	13
Maximum Allowable Base Quantity of Noise Wall per Benefited Receptor (sft)=	2950	2950	2950
Feasible (5 dB(A) Reduction)=	Yes	Yes	Yes
Reasonable (Wall Area per Benefit) =	Yes	Yes	Yes
Reasonable (7 dB(A) Reduction) =	Yes	Yes	Yes
Breaks Line of Sight to Impacted Properties? =	No	No	Yes

(1) Category B denotes a residential property.

Recommended 18 ft Wall

(2) Noise levels highlighted in red are levels above the Noise Abatment Criteria.

(3) Values highlighted in green are a 5 dB(A) or greater reduction in noise levels.

(4) A 18ft barrier is recommended because all criteria for feasible and reasonable have been met, the barrier breaks the line of sight, and the most properties are benefited.

NCDOT SOUND BARRIER
FEASIBILITY and REASONABLENESS
WORKSHEET

PROJECT - Complete 540 TIP # - R-2721, R-2828, R-2829

LOCATION - Barrier 64 COUNTY(IES) - Wake and Johnston

IMPACTS - 20 # BENEFITS - 24 NAC: A (B) C D E F G (CIRCLE ALL THAT APPLY)

A. FEASIBILITY:

1	Can a 5-dB(A) reduction in traffic noise levels be achieved for at least one impacted receptor?	X YES	NO
2	Does topography negatively affect the proposed abatement measure?	YES	X NO
3	Does the abatement measure negatively affect property access, drainage, safety and maintenance requirements?	YES	X NO
4	Is there control of access in the vicinity of the proposed abatement measure?	YES	X NO

B. REASONABLENESS:

1	Can a 7-dB(A) reduction in traffic noise levels be achieved for at least one impacted front row receptor?	X YES	NO
2	Is the design criteria per benefited receptor of 1650 (sq.ft.) / cu.yd (CIRCLE ONE) less than the maximum allowable design criteria per benefited receptor of 2950 (sq.ft.) / cu.yd.? (CIRCLE ONE)	X YES	NO

C. NOISE ABATEMENT DECISION:

1	Is the noise mitigation feasible?	X YES	NO
2	Is the noise mitigation reasonable?	X YES	NO
3	Is the noise mitigation likely?	X YES	NO
4	Have the owners' and residents' viewpoints been solicited?	YES	X NO
5	Is the noise mitigation recommended for construction?	YES	NO

D. OPTIONAL REASONABLENESS CONSIDERATION:

1	Was optional averaging noise abatement allowance within a common noise environment used for consideration of barrier reasonableness?	YES	X NO
2	If the answer to D.1 is YES, the design criteria per benefited receptor for each individual barrier within the common noise environment before averaging are:		

Bar No. _____ _____ sq.ft./cu.yd (CIRCLE ONE) Bar No. _____ _____ sq.ft./cu.yd (CIRCLE ONE)

Bar No. _____ _____ sq.ft./cu.yd Bar No. _____ _____ sq.ft./cu.yd

3	If the answer to D.1 is YES, is the design criteria per benefited receptor for each individual barrier less than or equal to twice the maximum allowable design criteria per benefited receptor of _____ sq.ft./cu.yd (CIRCLE ONE)	YES	NO

Form Completed By: E SALUTZ Date: _____

In Consultation With: _____ Date: _____

Complete 540
Traffic Noise Analysis

3/18/2015

Green Corridor

Noise Wall 65

Receptor	First Row	Residences Represented	NAC Land Use Category[1]	Noise Levels[2] Existing dB(A)	Build dB(A)	Increase	Impacted Receptors	Short Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	Intermediate Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	Recommended[4] Tall Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors
R1515A	Yes	1	B	56	70	14	1	66	4		65	5	1	61	9	1
R1515B	Yes	1	B	56	74	18	1	65	9	1	64	10	1	61	13	1
R1516A	Yes	1	B	60	69	9	1	60	9	1	59	10	1	57	12	1
R1516B	Yes	1	B	59	69	10	1	61	8	1	60	9	1	58	11	1
R1517	Yes	1	B	61	65	4		57	8	1	56	9	1	55	10	1
R1518	Yes	1	B	60	65	5		58	7	1	57	8	1	56	9	1
R1520A		1	B	56	66	10	1	63	3		61	5	1	59	7	1
R1520B		1	B	56	66	10	1	63	3		62	4		59	7	1
R1520C		1	B	56	67	11	1	63	4		62	5	1	59	8	1
R1521A		1	B	56	65	9		64	1		63	2		59	6	1
R1521B		1	B	56	64	8		63	1		61	3		59	5	1
R1521C		1	B	56	64	8		61	3		60	4		58	6	1
R1522A		1	B	56	61	5		57	4		57	4		55	6	1
R1522B		1	B	56	61	5		58	3		57	4		56	5	1
R1522C		1	B	56	61	5		57	4		56	5	1	55	6	1
R1523A		1	B	56	62	6		60	2		59	3		57	5	1
R1523B		1	B	56	62	6		60	2		59	3		57	5	1
R1524A		1	B	56	62	6		60	2		59	3		57	5	1
R1524B		1	B	56	63	7		60	3		59	4		57	6	1
R1525A		1	B	56	63	7		60	3		60	3		58	5	1
R1525B		1	B	56	63	7		62	1		61	2		59	4	
R1525C		1	B	56	63	7		60	3		59	4		57	6	1
R1526	Yes	1	B	56	68	12	1	66	2		64	4		61	7	1
R1527	Yes	1	B	56	70	14	1	66	4		64	6	1	61	9	1
R1528A	Yes	1	B	56	67	11	1	63	4		62	5	1	59	8	1
R1528B	Yes	1	B	56	71	15	1	67	4		65	6	1	62	9	1
R1528C	Yes	1	B	56	64	8		59	5	1	59	5	1	58	6	1
R1883A		1	B	56	62	6		61	1		60	2		58	4	
R1883B		1	B	56	62	6		58	4		58	4		57	5	1
R1883C		1	B	56	64	8		59	5	1	59	5	1	57	7	1
R1529A	Yes	1	B	56	74	18	1	65	9	1	64	10	1	61	13	1
R1529B	Yes	1	B	56	76	20	1	65	11	1	64	12	1	62	14	1
R1529C	Yes	1	B	56	77	21	1	66	11	1	65	12	1	63	14	1
R1530A		1	B	56	72	16	1	65	7	1	63	9	1	61	11	1
R1530B		1	B	56	73	17	1	64	9	1	63	10	1	61	12	1
R1531A		1	B	56	70	14	1	64	6	1	62	8	1	60	10	1
R1531B		1	B	56	70	14	1	63	7	1	62	8	1	60	10	1
R1533A	Yes	1	B	56	75	19	1	66	9	1	65	10	1	62	13	1
R1533B	Yes	1	B	56	75	19	1	66	9	1	65	10	1	62	13	1
R1533C	Yes	1	B	56	75	19	1	66	9	1	65	10	1	62	13	1
R1534A		1	B	56	72	16	1	65	7	1	64	8	1	61	11	1
R1534B		1	B	56	72	16	1	65	7	1	64	8	1	62	10	1
R1534C		1	B	56	72	16	1	65	7	1	64	8	1	61	11	1
R1535A		1	B	56	69	13	1	64	5	1	63	6	1	60	9	1
R1535B		1	B	56	69	13	1	64	5	1	63	6	1	60	9	1
R1535C		1	B	56	69	13	1	64	5	1	63	6	1	60	9	1
R1539A	Yes	1	B	56	77	21	1	67	10	1	66	11	1	63	14	1
R1539B	Yes	1	B	56	77	21	1	66	11	1	65	12	1	62	15	1
R1539C	Yes	1	B	56	74	18	1	65	9	1	64	10	1	62	12	1
R1540A		1	B	56	72	16	1	65	7	1	64	8	1	61	11	1
R1540B		1	B	56	73	17	1	65	8	1	64	9	1	62	11	1
R1540C		1	B	56	72	16	1	64	8	1	63	9	1	61	11	1
R1541A		1	B	56	70	14	1	64	6	1	63	7	1	61	9	1
R1541B		1	B	56	69	13	1	63	6	1	62	7	1	60	9	1
R1541C		1	B	56	68	12	1	63	5	1	62	6	1	60	8	1
R1541D		1	B	56	68	12	1	64	4		62	6	1	60	8	1
R1857A		1	B	56	68	12	1	63	5	1	61	7	1	59	9	1
R1857B		1	B	56	68	12	1	62	6	1	61	7	1	59	9	1
R1857C		1	B	56	68	12	1	63	5	1	62	6	1	59	9	1
R1858A		1	B	56	68	12	1	63	5	1	62	6	1	60	8	1
R1858B		1	B	56	68	12	1	63	5	1	62	6	1	59	9	1
R1858C		1	B	56	67	11	1	64	3		62	5	1	60	7	1
R1859A		1	B	56	66	10	1	61	5	1	60	6	1	58	8	1
R1859B		1	B	56	67	11	1	63	4		62	5	1	60	7	1
R1859C		1	B	56	68	12	1	63	5	1	62	6	1	60	8	1
R1859D		1	B	56	67	11	1	62	5	1	61	6	1	59	8	1
R1875A		1	B	56	61	5		57	4		56	5	1	55	6	1
R1875B		1	B	56	62	6		57	5	1	57	5	1	55	7	1
R1876A		1	B	56	62	6		58	4		57	5	1	56	6	1
R1876B		1	B	56	63	7		58	5	1	58	5	1	56	7	1
R1877A		1	B	56	64	8		59	5	1	59	5	1	57	7	1
R1877B		1	B	56	65	9		60	5	1	59	6	1	57	8	1
R1877C		1	B	56	65	9		61	4		60	5	1	58	7	1

Complete 540
Traffic Noise Analysis

3/18/2015

Green Corridor

Noise Wall 65

Receptor	First Row	Residences Represented	NAC Land Use Category[1]	Noise Levels[2] Existing dB(A)	Build dB(A)	Increase	Impacted Receptors	Short Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	Intermediate Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	Recommended[4] Tall Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors
R1878A		1	B	56	65	9		62	3		60	5	1	58	7	1
R1878B		1	B	56	66	10	1	62	4		61	5	1	58	8	1
R1879A		1	B	56	67	11	1	62	5	1	61	6	1	59	8	1
R1879B		1	B	56	66	10	1	63	3		61	5	1	59	7	1
R1879C		1	B	56	65	9		61	4		60	5	1	58	7	1
R1879D		1	B	56	66	10	1	61	5	1	60	6	1	58	8	1
R1880A		1	B	56	65	9		62	3		61	4		58	7	1
R1880B		1	B	56	65	9		62	3		60	5	1	58	7	1
R1914A		1	B	56	64	8		59	5	1	59	5	1	58	6	1
R1914B		1	B	56	64	8		61	3		60	4		58	6	1
R1914C		1	B	56	65	9		61	4		60	5	1	58	7	1
R1915A		1	B	56	63	7		61	2		60	3		58	5	1
R1915B		1	B	56	64	8		60	4		59	5	1	57	7	1
R1542A		1	B	56	66	10	1	62	4		61	5	1	59	7	1
R1542B		1	B	56	68	12	1	62	6	1	61	7	1	59	9	1
R1543A	Yes	1	B	56	72	16	1	63	9	1	62	10	1	60	12	1
R1543B	Yes	1	B	56	70	14	1	63	7	1	62	8	1	60	10	1
R1860A		1	B	56	64	8		61	3		60	4		58	6	1
R1860B		1	B	56	63	7		59	4		58	5	1	56	7	1
R1860C		1	B	56	65	9		61	4		60	5	1	58	7	1
R1546		1	B	56	67	11	1	62	5	1	61	6	1	59	8	1
R1547A	Yes	1	B	56	70	14	1	63	7	1	62	8	1	60	10	1
R1547B	Yes	1	B	56	73	17	1	64	9	1	63	10	1	61	12	1
R1861		1	B	56	64	8		60	4		59	5	1	57	7	1
R1548A	Yes	1	B	56	66	10	1	60	6	1	60	6	1	58	8	1
R1548B	Yes	1	B	56	69	13	1	62	7	1	61	8	1	59	10	1
R1548C	Yes	1	B	56	68	12	1	61	7	1	60	8	1	59	9	1
R1549A	Yes	1	B	56	65	9		59	6	1	59	6	1	58	7	1
R1549B	Yes	1	B	56	64	8		59	5	1	58	6	1	57	7	1
R1549C	Yes	1	B	56	66	10	1	60	6	1	59	7	1	58	8	1
R1550A	Yes	1	B	56	61	5		57	4		57	4		56	5	1
R1550B	Yes	1	B	56	62	6		57	5	1	57	5	1	56	6	1
R1550C	Yes	1	B	56	60	4		57	3		57	3		56	4	

Length (ft)=	5398	5398	5398
Average Height =	14	16	22
Area of Noise Wall (sft)=	75572	86369	118757
Impacted Receptors=	62	62	62
Number of Benefited Receptors=	60	84	103
Area of Noise Wall per Benefit Receptor (sft)=	1260	1028	1153
Average Increase in dB(A) of all Impacted Receptors=	14	14	14
Maximum Allowable Base Quantity of Noise Wall per Benefited Receptor (sft)=	2982	2982	2982
Feasible (5 dB(A) Reduction)=	Yes	Yes	Yes
Reasonable (Wall Area per Benefit) =	Yes	Yes	Yes
Reasonable (7 dB(A) Reduction) =	Yes	Yes	Yes
Breaks Line of Sight to Impacted Properties? =	No	No	Yes

(1) Category B denotes a residential property.

(2) Noise levels highlighted in red are levels above the Noise Abatment Criteria.

(3) Values highlighted in green are a 5 dB(A) or greater reduction in noise levels.

(4) A 22ft barrier is recommended because all criteria for feasible and reasonable have been met, the barrier breaks the line of sight, and the most properties are benefited.

Recommended 22 ft Wall

NCDOT SOUND BARRIER
FEASIBILITY and REASONABLENESS
WORKSHEET

PROJECT - Complete 540 TIP # - R-2721, R-2828, R-2829

LOCATION - Barrier 65 COUNTY(IES) - Wake and Johnston

IMPACTS - 62 # BENEFITS - 103 NAC: A (B) C D E F G (CIRCLE ALL THAT APPLY)

A. FEASIBILITY:

1	Can a 5-dB(A) reduction in traffic noise levels be achieved for at least one impacted receptor?	X YES	NO
2	Does topography negatively affect the proposed abatement measure?	YES	X NO
3	Does the abatement measure negatively affect property access, drainage, safety and maintenance requirements?	YES	X NO
4	Is there control of access in the vicinity of the proposed abatement measure?	YES	X NO

B. REASONABLENESS:

1	Can a 7-dB(A) reduction in traffic noise levels be achieved for at least one impacted front row receptor?	X YES	NO
2	Is the design criteria per benefited receptor of 1153 (sq.ft.) cu.yd (CIRCLE ONE) less than the maximum allowable design criteria per benefited receptor of 2982 (sq.ft.) cu.yd.? (CIRCLE ONE)	X YES	NO

C. NOISE ABATEMENT DECISION:

1	Is the noise mitigation feasible?	X YES	NO
2	Is the noise mitigation reasonable?	X YES	NO
3	Is the noise mitigation likely?	X YES	NO
4	Have the owners' and residents' viewpoints been solicited?	YES	X NO
5	Is the noise mitigation recommended for construction?	YES	NO

D. OPTIONAL REASONABLENESS CONSIDERATION:

1	Was optional averaging noise abatement allowance within a common noise environment used for consideration of barrier reasonableness?	YES	X NO
2	If the answer to D.1 is YES, the design criteria per benefited receptor for each individual barrier within the common noise environment before averaging are:		

Bar No. _____ _____ sq.ft./cu.yd (CIRCLE ONE) Bar No. _____ _____ sq.ft./cu.yd (CIRCLE ONE)

Bar No. _____ _____ sq.ft./cu.yd Bar No. _____ _____ sq.ft./cu.yd

3	If the answer to D.1 is YES, is the design criteria per benefited receptor for each individual barrier less than or equal to twice the maximum allowable design criteria per benefited receptor of _____ sq.ft./cu.yd (CIRCLE ONE)	YES	NO

Form Completed By: E SALUTZ Date: _____

In Consultation With: _____ Date: _____

Complete 540
Traffic Noise Analysis

3/18/2015

Green Corridor

Noise Wall 66

											Recommended[4]					
			NAC	Noise Levels[2]				Short Wall			Intermediate Wall			Tall Wall		
Receptor	First Row	Residences Represented	Land Use Category[1]	Existing dB(A)	Build dB(A)	Increase	Impacted Receptors	W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors
R1558A		1	B	57	63	6		60	3		59	4		59	4	
R1558B		1	B	58	64	6		61	3		60	4		60	4	
R1558C		1	B	59	65	6		62	3		62	3		62	3	
R1559A	Yes	1	B	64	71	7	1	67	4		65	6	1	64	7	1
R1559B	Yes	1	B	63	70	7	1	65	5	1	64	6	1	63	7	1
R1559C	Yes	1	B	64	72	8	1	68	4		66	6	1	65	7	1
R1560A		1	B	59	64	5		59	5	1	59	5	1	59	5	1
R1560B		1	B	58	64	6		59	5	1	59	5	1	58	6	1
R1561A	Yes	1	B	66	73	7	1	63	10	1	62	11	1	62	11	1
R1561B	Yes	1	B	64	71	7	1	64	7	1	63	8	1	62	9	1
R1562A	Yes	1	B	64	69	5	1	61	8	1	61	8	1	61	8	1
R1562B	Yes	1	B	65	71	6	1	62	9	1	61	10	1	61	10	1
R1562C	Yes	1	B	62	67	5	1	61	6	1	60	7	1	60	7	1
R1862		1	B	60	65	5		59	6	1	59	6	1	59	6	1
R1881A		1	B	58	63	5		59	4		58	5	1	58	5	1
R1881B		1	B	57	62	5		58	4		57	5	1	57	5	1
R1882A		1	B	58	63	5		58	5	1	58	5	1	58	5	1
R1882B		1	B	57	62	5		58	4		57	5	1	57	5	1
R2301A		1	B	57	62	5		60	2		60	2		60	2	
R2301B		1	B	57	63	6		61	2		60	3		60	3	

Length (ft)=	1800	1800	1800
Average Height =	20	22	24
Area of Noise Wall (sft)=	36004	39602	43202
Impacted Receptors=	8	8	8
Number of Benefited Receptors=	10	15	15
Area of Noise Wall per Benefit Receptor (sft)=	3600	2640	2880
Average Increase in dB(A) of all Impacted Receptors=	7	7	7
Maximum Allowable Base Quantity of Noise Wall per Benefited Receptor (sft)=	2728	2728	2728
Feasible (5 dB(A) Reduction)=	Yes	Yes	Yes
Reasonable (Wall Area per Benefit) =	No	Yes	No
Reasonable (7 dB(A) Reduction) =	Yes	Yes	Yes
Breaks Line of Sight to Impacted Properties? =	No	No	No

(1) Category B denotes a residential property.
(2) Noise levels highlighted in red are levels above the Noise Abatment Criteria.
(3) Values highlighted in green are a 5 dB(A) or greater reduction in noise levels.

Recommended 22 ft Wall

NCDOT SOUND BARRIER
FEASIBILITY and REASONABLENESS
WORKSHEET

PROJECT - Complete 540 TIP # - R-2721, R-2828, R-2829

LOCATION - Barrier 66 COUNTY(IES) - Wake and Johnston

IMPACTS - 8 # BENEFITS - 15 NAC: A (B) C D E F G (CIRCLE ALL THAT APPLY)

A. FEASIBILITY:

1	Can a 5-dB(A) reduction in traffic noise levels be achieved for at least one impacted receptor?	X YES	NO
2	Does topography negatively affect the proposed abatement measure?	YES	X NO
3	Does the abatement measure negatively affect property access, drainage, safety and maintenance requirements?	YES	X NO
4	Is there control of access in the vicinity of the proposed abatement measure?	YES	X NO

B. REASONABLENESS:

1	Can a 7-dB(A) reduction in traffic noise levels be achieved for at least one impacted front row receptor?	YES	X NO
2	Is the design criteria per benefited receptor of 2640 (sq.ft.) / cu.yd (CIRCLE ONE) less than the maximum allowable design criteria per benefited receptor of 2728 (sq.ft.) / cu.yd.? (CIRCLE ONE)	X YES	NO

C. NOISE ABATEMENT DECISION:

1	Is the noise mitigation feasible?	X YES	NO
2	Is the noise mitigation reasonable?	X YES	NO
3	Is the noise mitigation likely?	X YES	NO
4	Have the owners' and residents' viewpoints been solicited?	YES	X NO
5	Is the noise mitigation recommended for construction?	YES	NO

D. OPTIONAL REASONABLENESS CONSIDERATION:

1	Was optional averaging noise abatement allowance within a common noise environment used for consideration of barrier reasonableness?	YES	X NO
2	If the answer to D.1 is YES, the design criteria per benefited receptor for each individual barrier within the common noise environment before averaging are:		

Bar No. _____ _____ sq.ft./cu.yd (CIRCLE ONE) Bar No. _____ _____ sq.ft./cu.yd (CIRCLE ONE)

Bar No. _____ _____ sq.ft./cu.yd Bar No. _____ _____ sq.ft./cu.yd

3	If the answer to D.1 is YES, is the design criteria per benefited receptor for each individual barrier less than or equal to twice the maximum allowable design criteria per benefited receptor of _____ sq.ft./cu.yd (CIRCLE ONE)	YES	NO

Form Completed By: E SALUTZ Date: _____

In Consultation With: _____ Date: _____

Complete 540
Traffic Noise Analysis

3/20/2015

Lilac Corridor

Noise Wall 73

Receptor	First Row	Residences Represented	NAC Land Use Category[1]	Noise Levels[2] Existing dB(A)	Build dB(A)	Increase	Impacted Receptors	Short Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	Intermediate Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	Recommended[4] Tall Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors
R0497A	Yes	1	B	45	67	22	1	62	5	1	61	6	1	59	8	1
R0497B	Yes	1	B	45	66	21	1	62	4		61	5	1	59	7	1
R0497C	Yes	1	B	45	67	22	1	64	3		62	5	1	59	8	1
R0498A	Yes	1	B	45	67	22	1	64	3		62	5	1	59	8	1
R0498B	Yes	1	B	45	67	22	1	64	3		62	5	1	60	7	1
R0498C	Yes	1	B	45	67	22	1	64	3		62	5	1	59	8	1
R0499A	Yes	1	B	45	69	24	1	63	6	1	62	7	1	60	9	1
R0499B	Yes	1	B	45	68	23	1	63	5	1	62	6	1	60	8	1
R0499C	Yes	1	B	45	69	24	1	62	7	1	62	7	1	60	9	1
R0500A		1	B	45	57	12		57	0		57	0		55	2	
R0500B		1	B	45	58	13		57	1		57	1		55	3	
R0501A	Yes	1	B	45	70	25	1	63	7	1	62	8	1	60	10	1
R0501B	Yes	1	B	45	70	25	1	63	7	1	62	8	1	60	10	1
R0502A		1	B	45	58	13		58	0		57	1		56	2	
R0502B		1	B	45	57	12		57	0		57	0		55	2	
R0503A	Yes	1	B	45	71	26	1	63	8	1	62	9	1	60	11	1
R0503B	Yes	1	B	45	71	26	1	63	8	1	62	9	1	60	11	1
R0504A		1	B	45	58	13		56	2		56	2		55	3	
R0504B		1	B	45	56	11		56	0		56	0		54	2	
R0505A	Yes	1	B	45	69	24	1	61	8	1	61	8	1	59	10	1
R0505B	Yes	1	B	45	67	22	1	60	7	1	60	7	1	58	9	1
R0506A	Yes	1	B	45	68	23	1	60	8	1	59	9	1	58	10	1
R0506B	Yes	1	B	45	65	20	1	58	7	1	58	7	1	57	8	1
R0507A		1	B	45	57	12		55	2		55	2		54	3	
R0507B		1	B	45	57	12		55	2		55	2		55	2	
R0508A		1	B	48	59	11		58	1		58	1		58	1	
R0508B		1	B	55	62	7		62	0		62	0		62	0	
R0509A		1	B	45	63	18	1	57	6	1	57	6	1	56	7	1
R0509B		1	B	52	63	11		58	5	1	57	6	1	56	7	1
R0513B	Yes	1	B	50	68	18	1	59	9	1	58	10	1	57	11	1
R1764A		1	B	45	61	16	1	59	2		58	3		57	4	
R1764B		1	B	45	60	15	1	58	2		57	3		55	5	1
R1765		1	B	45	59	14		57	2		56	3		54	5	1
R1766		1	B	45	57	12		55	2		54	3		53	4	
R1767A		1	B	45	57	12		56	1		55	2		54	3	
R1767B		1	B	45	56	11		55	1		55	1		53	3	
R1768		1	B	45	57	12		56	1		55	2		54	3	
R1769		1	B	45	56	11		55	1		55	1		54	2	

Length (ft)=	3400	3400	3400
Average Height =	12	14	20
Area of Noise Wall (sft)=	40801	47598	67999
Impacted Receptors=	21	21	21
Number of Benefited Receptors=	15	20	22
Area of Noise Wall per Benefit Receptor (sft)=	2720	2380	3091
Average Increase in dB(A) of all Impacted Receptors=	22	22	22
Maximum Allowable Base Quantity of Noise Wall per Benefited Receptor (sft)=	3267	3267	3267
Feasible (5 dB(A) Reduction)=	Yes	Yes	Yes
Reasonable (Wall Area per Benefit) =	Yes	Yes	Yes
Reasonable (7 dB(A) Reduction) =	Yes	Yes	Yes
Breaks Line of Sight to Impacted Properties? =	No	Yes	Yes

Recommended 20ft wall

(1) Category B denotes a residential property.
(2) Noise levels highlighted in red are levels above the Noise Abatement Criteria.
(3) Values highlighted in green are a 5 dB(A) or greater reduction in noise levels.
(4) A 20ft barrier is recommended because all criteria for feasible and reasonable have been met, and the most properties are benefited.

NCDOT SOUND BARRIER
FEASIBILITY and REASONABLENESS
WORKSHEET

PROJECT - Complete 540 TIP # - R-2721, R-2828, R-2829

LOCATION - Barrier 73 COUNTY(IES) - Wake and Johnston

IMPACTS - 21 # BENEFITS - 22 NAC: A (B) C D E F G (CIRCLE ALL THAT APPLY)

A. FEASIBILITY:

1	Can a 5-dB(A) reduction in traffic noise levels be achieved for at least one impacted receptor?	X YES	NO
2	Does topography negatively affect the proposed abatement measure?	YES	X NO
3	Does the abatement measure negatively affect property access, drainage, safety and maintenance requirements?	YES	X NO
4	Is there control of access in the vicinity of the proposed abatement measure?	YES	X NO

B. REASONABLENESS:

1	Can a 7-dB(A) reduction in traffic noise levels be achieved for at least one impacted front row receptor?	X YES	NO
2	Is the design criteria per benefited receptor of 3091 (sq.ft.) / cu.yd (CIRCLE ONE) less than the maximum allowable design criteria per benefited receptor of 3267 (sq.ft.) / cu.yd.? (CIRCLE ONE)	X YES	NO

C. NOISE ABATEMENT DECISION:

1	Is the noise mitigation feasible?	X YES	NO
2	Is the noise mitigation reasonable?	X YES	NO
3	Is the noise mitigation likely?	X YES	NO
4	Have the owners' and residents' viewpoints been solicited?	YES	X NO
5	Is the noise mitigation recommended for construction?	YES	NO

D. OPTIONAL REASONABLENESS CONSIDERATION:

1	Was optional averaging noise abatement allowance within a common noise environment used for consideration of barrier reasonableness?	YES	X NO
2	If the answer to D.1 is YES, the design criteria per benefited receptor for each individual barrier within the common noise environment before averaging are:		

Bar No. _____ _____ sq.ft./cu.yd (CIRCLE ONE) Bar No. _____ _____ sq.ft./cu.yd (CIRCLE ONE)

Bar No. _____ _____ sq.ft./cu.yd Bar No. _____ _____ sq.ft./cu.yd

3	If the answer to D.1 is YES, is the design criteria per benefited receptor for each individual barrier less than or equal to twice the maximum allowable design criteria per benefited receptor of _____ sq.ft./cu.yd (CIRCLE ONE)	YES	NO

Form Completed By: E SALUTZ Date: _____

In Consultation With: _____ Date: _____

Complete 540 3/31/2015
Traffic Noise Analysis

Lilac Corridor

Noise Wall 74

														Recommended[4]		
			NAC	Noise Levels[2]				Short Wall			Intermediate Wall			Tall Wall		
Receptor	First Row	Residences Represented	Land Use Category[1]	Existing dB(A)	Build dB(A)	Increase	Impacted Receptors	W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors
R0516	Yes	1	B	47	65	18	1	58	7	1	58	7	1	57	8	1
R0517	Yes	1	B	46	62	16	1	58	4		57	5	1	57	5	1
R0518A	Yes	1	B	45	66	21	1	59	7	1	59	7	1	58	8	1
R0518B	Yes	1	B	45	63	18	1	56	7	1	56	7	1	56	7	1
R0518C	Yes	1	B	45	67	22	1	60	7	1	59	8	1	59	8	1
R0519A	Yes	1	B	45	70	25	1	62	8	1	61	9	1	60	10	1
R0519B	Yes	1	B	45	68	23	1	60	8	1	60	8	1	59	9	1
R0520A	Yes	1	B	45	72	27	1	64	8	1	64	8	1	62	10	1
R0520B	Yes	1	B	45	69	24	1	62	7	1	62	7	1	61	8	1
R0521A	Yes	1	B	45	61	16	1	60	1		60	1		59	2	
R0521B	Yes	1	B	45	64	19	1	64	0		63	1		62	2	
R0522A	Yes	1	B	45	58	13		58	0		58	0		57	1	
R0522B	Yes	1	B	45	56	11		57	-1		56	0		56	0	
R0523A	Yes	1	B	45	57	12		57	0		57	0		56	1	
R0523B	Yes	1	B	45	57	12		56	1		56	1		56	1	
R0523C	Yes	1	B	45	55	10		55	0		55	0		54	1	
R0526A	Yes	1	B	45	55	10		56	-1		55	0		55	0	
R0526B	Yes	1	B	45	59	14		57	2		57	2		56	3	
R0526C	Yes	1	B	45	55	10		55	0		55	0		54	1	
R0527A	Yes	1	B	45	59	14		56	3		56	3		55	4	
R0527B	Yes	1	B	45	57	12		55	2		55	2		55	2	
R0534A	Yes	1	B	45	56	11		55	1		55	1		55	1	
R0534B	Yes	1	B	45	56	11		55	1		55	1		55	1	
R0534C	Yes	1	B	45	58	13		56	2		55	3		55	3	
R0541	Yes	CHURCH	D	40	44	4		44	0		44	0		44	0	
R0542	Yes	1	B	47	60	13		60	0		60	0		60	0	
R1630	Yes	1	B	45	67	22	1	65	2		64	3		63	4	
R1653A	Yes	1	B	45	71	26	1	65	6	1	64	7	1	62	9	1
R1653B	Yes	1	B	45	71	26	1	65	6	1	64	7	1	63	8	1
R1653C	Yes	1	B	45	69	24	1	65	4		64	5	1	62	7	1

Length (ft)=	2800	2800	2800
Average Height =	10	12	16
Area of Noise Wall (sft)=	28002	33603	44800
Impacted Receptors=	15	15	15
Number of Benefited Receptors=	10	12	12
Area of Noise Wall per Benefit Receptor (sft)=	2800	2800	3733
Average Increase in dB(A) of all Impacted Receptors=	22	22	22
Maximum Allowable Base Quantity of Noise Wall per Benefited Receptor (sft)=	3263	3263	3263
Feasible (5 dB(A) Reduction)=	Yes	Yes	Yes
Reasonable (Wall Area per Benefit) =	Yes	Yes	No
Reasonable (7 dB(A) Reduction) =	Yes	Yes	Yes
Breaks Line of Sight to Impacted Properties? =	No	Yes	Yes

Recommended 12ft wall

(1) Category B denotes a residential property.
(2) Noise levels highlighted in red are levels above the Noise Abatement Criteria.
(3) Values highlighted in green are a 5 dB(A) or greater reduction in noise levels.
(4) A 12ft barrier is recommended because all criteria for feasible and reasonable have been met, and the most properties are benefited.

NCDOT SOUND BARRIER
FEASIBILITY and REASONABLENESS
WORKSHEET

PROJECT - Complete 540 TIP # - R-2721, R-2828, R-2829

LOCATION - Barrier 74 COUNTY(IES) - Wake and Johnston

IMPACTS - 15 # BENEFITS - 12 NAC: A (B) C (D) E F G (CIRCLE ALL THAT APPLY)

A. FEASIBILITY:

1	Can a 5-dB(A) reduction in traffic noise levels be achieved for at least one impacted receptor?	X YES	NO
2	Does topography negatively affect the proposed abatement measure?	YES	X NO
3	Does the abatement measure negatively affect property access, drainage, safety and maintenance requirements?	YES	X NO
4	Is there control of access in the vicinity of the proposed abatement measure?	YES	X NO

B. REASONABLENESS:

1	Can a 7-dB(A) reduction in traffic noise levels be achieved for at least one impacted front row receptor?	X YES	NO
2	Is the design criteria per benefited receptor of 2800 (CIRCLE ONE) (sq.ft.) cu.yd less than the maximum allowable design criteria per benefited receptor of 3263 (CIRCLE ONE) (sq.ft.) cu.yd.?	X YES	NO

C. NOISE ABATEMENT DECISION:

1	Is the noise mitigation feasible?	X YES	NO
2	Is the noise mitigation reasonable?	X YES	NO
3	Is the noise mitigation likely?	X YES	NO
4	Have the owners' and residents' viewpoints been solicited?	YES	X NO
5	Is the noise mitigation recommended for construction?	YES	NO

D. OPTIONAL REASONABLENESS CONSIDERATION:

1	Was optional averaging noise abatement allowance within a common noise environment used for consideration of barrier reasonableness?	YES	X NO
2	If the answer to D.1 is YES, the design criteria per benefited receptor for each individual barrier within the common noise environment before averaging are:		

Bar No. _____ _____ (CIRCLE ONE) sq.ft./cu.yd Bar No. _____ _____ (CIRCLE ONE) sq.ft./cu.yd

Bar No. _____ _____ sq.ft./cu.yd Bar No. _____ _____ sq.ft./cu.yd

3	If the answer to D.1 is YES, is the design criteria per benefited receptor for each individual barrier less than or equal to twice the maximum allowable design criteria per benefited receptor of _____ (CIRCLE ONE) sq.ft./cu.yd	YES	NO

Form Completed By: E SALUTZ Date: _____

In Consultation With: _____ Date: _____

Complete 540
Traffic Noise Analysis

3/16/2015

Lilac Corridor

Noise Wall 75

				Noise Levels[2]					Short Wall			Intermediate Wall			Recommended[4] Tall Wall		
Receptor	First Row	Residences Represented	NAC Land Use Category[1]	Existing dB(A)	Build dB(A)	Increase	Benefit Increases	Impacted Receptors	W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors
R0510A		1	B	53	61	8			62	-1		61	0		61	0	
R0510B		1	B	50	60	10			61	-1		61	-1		60	0	
R0511A	Yes	1	B	47	61	14			63	-2		62	-1		61	0	
R0511B	Yes	1	B	51	64	13			64	0		64	0		62	2	
R0512A		1	B	46	57	11			59	-2		58	-1		58	-1	
R0512B		1	B	46	57	11			59	-2		59	-2		58	-1	
R0569A		1	B	46	65	19	19	1	59	6	1	58	7	1	57	8	1
R0569B		1	B	46	65	19	19	1	58	7	1	58	7	1	56	9	1
R0572A		1	B	46	64	18	18	1	58	6	1	57	7	1	56	8	1
R0572B		1	B	46	63	17	17	1	57	6	1	56	7	1	55	8	1
R0578	Yes	1	B	46	67	21	21	1	59	8	1	59	8	1	57	10	1
R0579	Yes	1	B	46	66	20	20	1	59	7	1	59	7	1	57	9	1
R0580	Yes	1	B	46	67	21	21	1	59	8	1	59	8	1	57	10	1
R0584	Yes	1	B	46	65	19	19	1	58	7	1	58	7	1	56	9	1
R0586A	Yes	1	B	46	67	21	21	1	58	9	1	58	9	1	56	11	1
R0586B	Yes	1	B	46	66	20	20	1	59	7	1	58	8	1	56	10	1
R0587A		1	B	46	65	19	19	1	58	7	1	58	7	1	56	9	1
R0587B		1	B	46	64	18	18	1	58	6	1	57	7	1	55	9	1
R0587C		1	B	46	63	17	17	1	58	5	1	57	6	1	55	8	1
R0588A	Yes	1	B	46	69	23	23	1	61	8	1	60	9	1	58	11	1
R0588B	Yes	1	B	46	67	21	21	1	59	8	1	58	9	1	57	10	1
R0592		1	B	46	66	20	20	1	58	8	1	58	8	1	56	10	1
R0593A		1	B	46	65	19	19	1	58	7	1	57	8	1	56	9	1
R0593B		1	B	46	65	19	19	1	59	6	1	59	6	1	57	8	1
R0594A		1	B	46	65	19	19	1	59	6	1	59	6	1	57	8	1
R0594B		1	B	46	64	18	18	1	60	4		59	5	1	57	7	1
R0594C		1	B	46	64	18	18	1	60	4		59	5	1	57	7	1
R0595A		1	B	46	63	17	17	1	59	4		59	4		57	6	1
R0595B		1	B	46	63	17	17	1	59	4		59	4		57	6	1
R0596A	Yes	1	B	46	65	19	19	1	60	5	1	59	6	1	58	7	1
R0596B	Yes	1	B	46	65	19	19	1	60	5	1	59	6	1	58	7	1
R0596C	Yes	1	B	46	65	19	19	1	60	5	1	59	6	1	58	7	1
R0597A	Yes	1	B	46	67	21	21	1	60	7	1	59	8	1	57	10	1
R0597B	Yes	1	B	46	66	20	20	1	58	8	1	57	9	1	55	11	1
R1770A		1	B	46	53	7			56	-3		56	-3		55	-2	
R1770B		1	B	46	58	12			56	2		56	2		54	4	
R1771A		1	B	46	63	17	17	1	60	3		59	4		57	6	1
R1771B		1	B	46	63	17	17	1	60	3		59	4		57	6	1
R1771C		1	B	46	64	18	18	1	61	3		60	4		58	6	1
R1772A		1	B	46	55	9			58	-3		57	-2		56	-1	
R1772B		1	B	46	55	9			58	-3		57	-2		56	-1	
R1773A		1	B	46	58	12			57	1		56	2		55	3	
R1773B		1	B	46	57	11			58	-1		57	0		57	0	
R1774A		1	B	46	57	11			57	0		56	1		56	1	
R1774B		1	B	46	56	10			56	0		55	1		55	1	
R1774C		1	B	46	56	10			58	-2		57	-1		56	0	
R1775A		1	B	46	64	18	18	1	57	7	1	57	7	1	55	9	1
R1775B		1	B	46	63	17	17	1	57	6	1	56	7	1	55	8	1
R1776		1	B	46	63	17	17	1	57	6	1	56	7	1	55	8	1
R1777A		1	B	46	62	16	16	1	57	5	1	56	6	1	55	7	1
R1777B		1	B	46	63	17	17	1	56	7	1	56	7	1	55	8	1
R1778A		1	B	46	62	16	16	1	55	7	1	55	7	1	54	8	1
R1778B		1	B	46	61	15	15	1	56	5	1	56	5	1	54	7	1
R1779		1	B	46	62	16	16	1	57	5	1	57	5	1	55	7	1
R1790A		1	B	46	63	17	17	1	57	6	1	57	6	1	55	8	1
R1790B		1	B	46	63	17	17	1	58	5	1	57	6	1	56	7	1
R1790C		1	B	46	62	16	16	1	58	4		57	5	1	56	6	1
R1791A		1	B	46	62	16	16	1	57	5	1	57	5	1	55	7	1
R1791B		1	B	46	61	15	15	1	57	4		57	4		56	5	1
R1792A		1	B	46	62	16	16	1	57	5	1	57	5	1	56	6	1
R1792B		1	B	46	61	15	15	1	58	3		58	3		56	5	1
R1793A		1	B	46	63	17	17	1	59	4		58	5	1	57	6	1
R1793B		1	B	46	64	18	18	1	56	8	1	56	8	1	55	9	1
R1884A		1	B	46	57	11			56	1		55	2		54	3	
R1884B		1	B	46	57	11			55	2		54	3		53	4	
R1885A		1	B	46	57	11			56	1		55	2		54	3	
R1885B		1	B	46	57	11			61	-4		61	-4		58	-1	
R1886A		1	B	46	69	23	23	1	62	7	1	62	7	1	60	9	1
R1887A		1	B	46	61	15	15	1	56	5	1	56	5	1	54	7	1
R1887B		1	B	46	60	14			56	4		55	5	1	54	6	1
R1888		1	B	46	58	12			55	3		54	4		53	5	1
R1889		1	B	46	62	16	16	1	57	5	1	56	6	1	55	7	1
R1890		1	B	46	61	15	15	1	56	5	1	56	5	1	54	7	1
R1891A		1	B	46	60	14			55	5	1	55	5	1	53	7	1
R1891B		1	B	46	59	13			55	4		55	4		54	5	1
R1891C		1	B	46	60	14			55	5	1	55	5	1	53	7	1
R1892A		1	B	46	65	19	19	1	58	7	1	58	7	1	56	9	1
R1892B		1	B	46	65	19	19	1	58	7	1	58	7	1	56	9	1
R1892C		1	B	46	63	17	17	1	57	6	1	57	6	1	55	8	1
R1893A		1	B	46	61	15	15	1	56	5	1	55	6	1	54	7	1
R1893B		1	B	46	62	16	16	1	56	6	1	56	6	1	54	8	1

Complete 540
Traffic Noise Analysis

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Lilac Corridor

Noise Wall 75

Receptor	First Row	Residences Represented	NAC Land Use Category[1]	Noise Levels[2] Existing dB(A)	Build dB(A)	Increase	Benefit Increases	Impacted Receptors	Short Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	Intermediate Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	Recommended[4] Tall Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors
R1894		1	B	46	60	14			55	5	1	55	5	1	53	7	1
R1895		1	B	46	61	15	15	1	56	5	1	55	6	1	54	7	1
R1896A		1	B	46	59	13			54	5	1	54	5	1	52	7	1
R1896B		1	B	46	58	12			54	4		53	5	1	52	6	1
R1897		1	B	46	60	14			55	5	1	54	6	1	53	7	1
R1898		1	B	46	59	13			54	5	1	54	5	1	53	6	1
R1899A		1	B	46	60	14			55	5	1	55	5	1	53	7	1
R1899B		1	B	46	61	15	15	1	56	5	1	56	5	1	54	7	1
R1899C		1	B	46	59	13			54	5	1	54	5	1	53	6	1
R1900A		1	B	46	60	14			56	4		56	4		54	6	1
R1900B		1	B	46	59	13			54	5	1	54	5	1	53	6	1
R1901A		1	B	46	60	14			56	4		56	4		55	5	1
R1901B		1	B	46	59	13			55	4		55	4		54	5	1
R1901C		1	B	46	59	13			55	4		55	4		54	5	1

Length (ft)=	5936	5936	5936
Average Height =	14	16	24
Area of Noise Wall (sft)=	83104	94973	142462
Impacted Receptors=	59	59	59
Number of Benefited Receptors=	57	63	76
Area of Noise Wall per Benefit Receptor (sft)=	1458	1508	1875
Average Increase in dB(A) of all Impacted Receptors=	18	18	18
Maximum Allowable Base Quantity of Noise Wall per Benefited Receptor (sft)=	3125	3125	3125
Feasible (5 dB(A) Reduction)=	Yes	Yes	Yes
Reasonable (Wall Area per Benefit) =	Yes	Yes	Yes
Reasonable (7 dB(A) Reduction) =	Yes	Yes	Yes
Breaks Line of Sight to Impacted Properties? =	Yes	Yes	Yes

(1) Category B denotes a residential property.
(2) Noise levels highlighted in red are levels above the Noise Abatement Criteria.
(3) Values highlighted in green are a 5 dB(A) or greater reduction in noise levels.
(4) A 24ft barrier is recommended because all criteria for feasible and reasonable have been met, and the most properties are benefited.

Recommended 24ft wall

NCDOT SOUND BARRIER
FEASIBILITY and REASONABLENESS
WORKSHEET

PROJECT - Complete 540 TIP # - R-2721, R-2828, R-2829

LOCATION - Barrier 75 COUNTY(IES) - Wake and Johnston

IMPACTS - 59 # BENEFITS - 76 NAC: A (B) C D E F G (CIRCLE ALL THAT APPLY)

A. FEASIBILITY:

1	Can a 5-dB(A) reduction in traffic noise levels be achieved for at least one impacted receptor?	X YES	NO
2	Does topography negatively affect the proposed abatement measure?	YES	X NO
3	Does the abatement measure negatively affect property access, drainage, safety and maintenance requirements?	YES	X NO
4	Is there control of access in the vicinity of the proposed abatement measure?	YES	X NO

B. REASONABLENESS:

1	Can a 7-dB(A) reduction in traffic noise levels be achieved for at least one impacted front row receptor?	X YES	NO
2	Is the design criteria per benefited receptor of 1875 (CIRCLE ONE) (sq.ft.) cu.yd less than the maximum allowable design criteria per benefited receptor of 3125 (CIRCLE ONE) (sq.ft.) cu.yd.?	X YES	NO

C. NOISE ABATEMENT DECISION:

1	Is the noise mitigation feasible?	X YES	NO
2	Is the noise mitigation reasonable?	X YES	NO
3	Is the noise mitigation likely?	X YES	NO
4	Have the owners' and residents' viewpoints been solicited?	YES	X NO
5	Is the noise mitigation recommended for construction?	YES	NO

D. OPTIONAL REASONABLENESS CONSIDERATION:

1	Was optional averaging noise abatement allowance within a common noise environment used for consideration of barrier reasonableness?	YES	X NO
2	If the answer to D.1 is YES, the design criteria per benefited receptor for each individual barrier within the common noise environment before averaging are:		

Bar No. _____ _____ (CIRCLE ONE) sq.ft./cu.yd Bar No. _____ _____ (CIRCLE ONE) sq.ft./cu.yd

Bar No. _____ _____ sq.ft./cu.yd Bar No. _____ _____ sq.ft./cu.yd

3	If the answer to D.1 is YES, is the design criteria per benefited receptor for each individual barrier less than or equal to twice the maximum allowable design criteria per benefited receptor of _____ (CIRCLE ONE) sq.ft./cu.yd	YES	NO

Form Completed By: E SALUTZ Date: _____

In Consultation With: _____ Date: _____

Complete 540
Traffic Noise Analysis

3/16/2015

Lilac Corridor

Noise Wall 76

															Recommended[4]		
			NAC	Noise Levels[2]				Short Wall			Intermediate Wall			Tall Wall		
Receptor	First Row	Residences Represented	Land Use Category[1]	Existing dB(A)	Build dB(A)	Increase	Impacted Receptors	W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors
R0515	Yes	1	B	49	70	21	1	67	3		67	3		63	7	1
R0550	Yes	1	B	46	69	23	1	61	8	1	60	9	1	60	9	1
R0551A	Yes	1	B	46	67	21	1	61	6	1	60	7	1	59	8	1
R0551B	Yes	1	B	46	69	23	1	62	7	1	61	8	1	60	9	1
R0552	Yes	1	B	46	64	18	1	59	5	1	58	6	1	57	7	1
R0553	Yes	1	B	46	62	16	1	58	4		56	6	1	55	7	1
R0554A	Yes	1	B	46	57	11		53	4		52	5	1	51	6	1
R0554B	Yes	1	B	46	57	11		54	3		53	4		52	5	1
R0555A	Yes	1	B	46	59	13		55	4		54	5	1	53	6	1
R0555B	Yes	1	B	46	62	16	1	56	6	1	55	7	1	54	8	1
R0555C	Yes	1	B	46	62	16	1	57	5	1	56	6	1	55	7	1
R0563A	Yes	1	B	46	60	14		55	5	1	54	6	1	54	6	1
R0563B	Yes	1	B	46	60	14		55	5	1	54	6	1	54	6	1
R0564A	Yes	1	B	46	59	13		55	4		54	5	1	53	6	1
R0564B	Yes	1	B	46	60	14		56	4		55	5	1	54	6	1
R0564C	Yes	1	B	46	63	17	1	58	5	1	57	6	1	56	7	1
R0565A	Yes	1	B	46	64	18	1	58	6	1	57	7	1	57	7	1
R0565B	Yes	1	B	46	65	19	1	59	6	1	58	7	1	58	7	1
R0576A	Yes	1	B	46	66	20	1	60	6	1	59	7	1	59	7	1
R0576B	Yes	1	B	46	65	19	1	59	6	1	58	7	1	58	7	1
R0577A		1	B	46	63	17	1	58	5	1	57	6	1	57	6	1
R0577B		1	B	46	62	16	1	58	4		57	5	1	57	5	1
R0577C		1	B	46	64	18	1	59	5	1	58	6	1	58	6	1
R0582A	Yes	1	B	46	63	17	1	59	4		57	6	1	57	6	1
R0582B	Yes	1	B	46	64	18	1	59	5	1	58	6	1	57	7	1
R0583A	Yes	1	B	46	65	19	1	60	5	1	59	6	1	58	7	1
R0583B	Yes	1	B	46	65	19	1	60	5	1	59	6	1	58	7	1
R0601A	Yes	1	B	46	66	20	1	60	6	1	59	7	1	59	7	1
R0601B	Yes	1	B	46	65	19	1	60	5	1	59	6	1	58	7	1
R0601C	Yes	1	B	46	66	20	1	61	5	1	60	6	1	59	7	1
R0603A	Yes	1	B	46	72	26	1	68	4		64	8	1	63	9	1
R0603B	Yes	1	B	46	72	26	1	66	6	1	64	8	1	63	9	1
R0604A	Yes	1	B	46	65	19	1	62	3		60	5	1	59	6	1
R0604B	Yes	1	B	46	65	19	1	63	2		60	5	1	59	6	1
R0604C	Yes	1	B	46	65	19	1	63	2		61	4		59	6	1
R0606A	Yes	1	B	46	76	30	1	70	6	1	66	10	1	65	11	1
R0606B	Yes	1	B	46	66	20	1	63	3		61	5	1	60	6	1
R0607A		1	B	46	65	19	1	63	2		61	4		60	5	1
R0607B		1	B	46	66	20	1	64	2		62	4		60	6	1
R0608A	Yes	1	B	46	68	22	1	65	3		63	5	1	61	7	1
R0608B	Yes	1	B	46	67	21	1	64	3		60	7	1	59	8	1
R0623	Yes	1	B	46	65	19	1	62	3		60	5	1	59	6	1
R0624A	Yes	1	B	46	68	22	1	66	2		63	5	1	61	7	1
R0624B	Yes	1	B	46	68	22	1	66	2		63	5	1	62	6	1
R0625A	Yes	1	B	46	69	23	1	66	3		63	6	1	62	7	1
R0625B	Yes	1	B	46	68	22	1	66	2		63	5	1	62	6	1
R0626A	Yes	1	B	46	70	24	1	67	3		64	6	1	63	7	1
R0626B	Yes	1	B	53	69	16	1	66	3		64	5	1	63	6	1
R0626C	Yes	1	B	46	70	24	1	66	4		64	6	1	62	8	1
R0628		1	B	46	62	16	1	59	3		57	5	1	56	6	1
R0629		1	B	46	60	14		58	2		56	4		55	5	1
R0630A	Yes	1	B	52	62	10		60	2		59	3		59	3	
R0630B	Yes	1	B	52	61	9		60	1		59	2		59	2	
R0630C	Yes	1	B	55	63	8		62	1		61	2		60	3	
R1780A		1	B	46	59	13		56	3		55	4		54	5	1
R1780B		1	B	46	60	14		56	4		55	5	1	54	6	1
R1780C		1	B	46	60	14		57	3		56	4		55	5	1
R1781A		1	B	46	61	15	1	58	3		56	5	1	56	5	1
R1781B		1	B	46	62	16	1	58	4		57	5	1	56	6	1
R1781C		1	B	46	61	15	1	58	3		56	5	1	55	6	1
R1782A		1	B	46	58	12		57	1		54	4		53	5	1
R1782B		1	B	46	59	13		57	2		55	4		54	5	1
R1783A		1	B	46	58	12		57	1		54	4		54	4	
R1783B		1	B	46	59	13		57	2		55	4		54	5	1
R1783C		1	B	46	59	13		57	2		55	4		54	5	1
R1784A		1	B	46	61	15	1	58	3		56	5	1	55	6	1
R1784B		1	B	46	60	14		57	3		55	5	1	55	5	1
R1785A		1	B	46	62	16	1	59	3		57	5	1	56	6	1
R1785B		1	B	46	62	16	1	59	3		57	5	1	56	6	1
R1785C		1	B	46	62	16	1	58	4		57	5	1	56	6	1
R1786A		1	B	46	61	15	1	58	3		56	5	1	55	6	1
R1786B		1	B	46	61	15	1	57	4		56	5	1	55	6	1
R1787A		1	B	46	61	15	1	59	2		57	4		56	5	1
R1787B		1	B	46	61	15	1	58	3		56	5	1	55	6	1

Complete 540
Traffic Noise Analysis

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Lilac Corridor

Noise Wall 76

				Noise Levels[2]				Short Wall			Intermediate Wall			Recommended[4] Tall Wall		
Receptor	First Row	Residences Represented	NAC Land Use Category[1]	Existing dB(A)	Build dB(A)	Increase	Impacted Receptors	W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors
R1788A		1	B	46	61	15	1	59	2		57	4		56	5	1
R1788B		1	B	46	62	16	1	60	2		57	5	1	56	6	1
R1789A		1	B	46	63	17	1	61	2		58	5	1	57	6	1
R1789B		1	B	46	64	18	1	62	2		59	5	1	58	6	1
R1794A		1	B	46	63	17	1	59	4		57	6	1	56	7	1
R1794B		1	B	46	61	15	1	58	3		56	5	1	55	6	1
R1795A		1	B	46	61	15	1	58	3		55	6	1	55	6	1
R1795B		1	B	46	61	15	1	58	3		56	5	1	55	6	1
R1796A		1	B	46	62	16	1	60	2		57	5	1	56	6	1
R1796B		1	B	46	62	16	1	60	2		58	4		57	5	1
R1797		1	B	46	62	16	1	60	2		57	5	1	57	5	1

Length (ft)=	7193	7193	7193
Average Height =	10	12	14
Area of Noise Wall (sft)=	71935	86320	100699
Impacted Receptors=	65	65	65
Number of Benefited Receptors=	23	66	81
Area of Noise Wall per Benefit Receptor (sft)=	3128	1308	1243
Average Increase in dB(A) of all Impacted Receptors=	19	19	19
Maximum Allowable Base Quantity of Noise Wall per Benefited Receptor (sft)=	3148	3148	3148
Feasible (5 dB(A) Reduction)=	Yes	Yes	Yes
Reasonable (Wall Area per Benefit) =	Yes	Yes	Yes
Reasonable (7 dB(A) Reduction) =	Yes	Yes	Yes
Breaks Line of Sight to Impacted Properties? =	No	Yes	Yes

(1) Category B denotes a residential property.
(2) Noise levels highlighted in red are levels above the Noise Abatement Criteria.
(3) Values highlighted in green are a 5 dB(A) or greater reduction in noise levels.
(4) A 14ft barrier is recommended because all criteria for feasible and reasonable have been met, and the most properties are benefited.

Recommended 14ft wall

NCDOT SOUND BARRIER
FEASIBILITY and REASONABLENESS
WORKSHEET

PROJECT - Complete 540 TIP # - R-2721, R-2828, R-2829

LOCATION - Barrier 76 COUNTY(IES) - Wake and Johnston

IMPACTS - 65 # BENEFITS - 81 NAC: A (B) C D E F G (CIRCLE ALL THAT APPLY)

A. FEASIBILITY:

1	Can a 5-dB(A) reduction in traffic noise levels be achieved for at least one impacted receptor?	X YES	NO
2	Does topography negatively affect the proposed abatement measure?	YES	X NO
3	Does the abatement measure negatively affect property access, drainage, safety and maintenance requirements?	YES	X NO
4	Is there control of access in the vicinity of the proposed abatement measure?	YES	X NO

B. REASONABLENESS:

1	Can a 7-dB(A) reduction in traffic noise levels be achieved for at least one impacted front row receptor?	X YES	NO
2	Is the design criteria per benefited receptor of 1243 (CIRCLE ONE) (sq.ft.) cu.yd less than the maximum allowable design criteria per benefited receptor of 3148 (CIRCLE ONE) (sq.ft.) cu.yd.?	X YES	NO

C. NOISE ABATEMENT DECISION:

1	Is the noise mitigation feasible?	X YES	NO
2	Is the noise mitigation reasonable?	X YES	NO
3	Is the noise mitigation likely?	X YES	NO
4	Have the owners' and residents' viewpoints been solicited?	YES	X NO
5	Is the noise mitigation recommended for construction?	YES	NO

D. OPTIONAL REASONABLENESS CONSIDERATION:

1	Was optional averaging noise abatement allowance within a common noise environment used for consideration of barrier reasonableness?	YES	X NO

2 If the answer to D.1 is YES, the design criteria per benefited receptor for each individual barrier within the common noise environment before averaging are:

Bar No.		sq.ft./cu.yd (CIRCLE ONE)	Bar No.		sq.ft./cu.yd (CIRCLE ONE)
Bar No.		sq.ft./cu.yd	Bar No.		sq.ft./cu.yd

3	If the answer to D.1 is YES, is the design criteria per benefited receptor for each individual barrier less than or equal to twice the maximum allowable design criteria per benefited receptor of (CIRCLE ONE) sq.ft./cu.yd	YES	NO

Form Completed By: E SALUTZ Date:

In Consultation With: Date:

Complete 540
Traffic Noise Analysis

4/2/2015

Lilac Corridor

Noise Wall 77

Receptor	First Row	Residences Represented	NAC Land Use Category[1]	Noise Levels[2] Existing dB(A)	Build dB(A)	Increase	Impacted Receptors	Short Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	Intermediate Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	Recommended[4] Tall Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors
R0668A	Yes	1	B	55	64	9		61	3		61	3		60	4	
R0668B	Yes	1	B	52	64	12		61	3		60	4		59	5	1
R0668C	Yes	1	B	62	67	5	1	62	5	1	60	7	1	59	8	1
R0669A		1	B	50	63	13		58	5	1	58	5	1	57	6	1
R0669B		1	B	50	65	15	1	58	7	1	57	8	1	56	9	1
R0670A	Yes	1	B	54	67	13	1	58	9	1	57	10	1	57	10	1
R0670B	Yes	1	B	51	65	14	1	58	7	1	57	8	1	57	8	1
R0671A	Yes	1	B	63	70	7	1	61	9	1	58	12	1	58	12	1
R0671B	Yes	1	B	57	69	12	1	60	9	1	58	11	1	58	11	1
R0691A	Yes	1	B	50	68	18	1	61	7	1	59	9	1	58	10	1
R0691B	Yes	1	B	50	66	16	1	61	5	1	58	8	1	58	8	1
R0691C	Yes	1	B	50	68	18	1	60	8	1	59	9	1	58	10	1
R0693A	Yes	1	B	50	69	19	1	67	2		62	7	1	61	8	1
R0693B	Yes	1	B	50	71	21	1	68	3		63	8	1	62	9	1
R0694		RECREATIONAL	C	50	63	13										
R0694-1		NODAL ARRAY	C	50	62	12		61	1		57	5	3	57	5	3
R0694-2		NODAL ARRAY	C	50	63	13		60	3		58	5	3	57	6	3
R0694-3		NODAL ARRAY	C	50	63	13		62	1		57	6	3	57	6	3
R0694-4		NODAL ARRAY	C	50	63	13		62	1		58	5	3	57	6	3
R0694-5		NODAL ARRAY	C	50	63	13		62	1		58	5	3	57	6	3
R0694-6		NODAL ARRAY	C	50	64	14		63	1		58	6	3	58	6	3
R0694-7		NODAL ARRAY	C	50	64	14		63	1		58	6	3	58	6	3
R0694-8		NODAL ARRAY	C	50	64	14		63	1		58	6	3	58	6	3
R0694-9		NODAL ARRAY	C	50	64	14		63	1		59	5	1	58	6	1
R0694-10		NODAL ARRAY	C	50	64	14		63	1		59	5	1	58	6	1
R0699A	Yes	1	B	50	66	16	1	66	0		62	4		61	5	1
R0699B	Yes	1	B	50	68	18	1	67	1		61	7	1	60	8	1
R0700A	Yes	1	B	50	65	15	1	65	0		62	3		60	5	1
R0700B	Yes	1	B	50	70	20	1	69	1		66	4		62	8	1
R0701	Yes	1	B	50	67	17	1	65	2		59	8	1	58	9	1
R0702A	Yes	1	B	50	62	12		57	5	1	55	7	1	55	7	1
R0702B	Yes	1	B	50	63	13		59	4		57	6	1	57	6	1
R0703A		1	B	50	60	10		55	5	1	54	6	1	54	6	1
R0703B		1	B	50	59	9		55	4		54	5	1	53	6	1
R0704A		1	B	50	59	9		55	4		53	6	1	53	6	1
R0704B		1	B	50	59	9		54	5	1	53	6	1	53	6	1
R0705	Yes	1	B	50	63	13		57	6	1	56	7	1	56	7	1
R0706A	Yes	1	B	50	60	10		55	5	1	55	5	1	54	6	1
R0706B	Yes	1	B	50	62	12		57	5	1	55	7	1	55	7	1
R0707A		1	B	50	58	8		54	4		53	5	1	53	5	1
R0707B		1	B	50	58	8		53	5	1	53	5	1	52	6	1
R0708A	Yes	1	B	50	62	12		56	6	1	55	7	1	55	7	1
R0708B	Yes	1	B	50	65	15	1	58	7	1	57	8	1	56	9	1
R0709		1	B	50	59	9		54	5	1	54	5	1	53	6	1
R0710	Yes	1	B	50	63	13		56	7	1	55	8	1	55	8	1

Length (ft)=	5893	5893	5893
Average Height =	12	18	20
Area of Noise Wall (sft)=	70718	106073	117859
Impacted Receptors=	17	17	17
Number of Benefited Receptors=	21	55	59
Area of Noise Wall per Benefit Receptor (sft)=	3368	1929	1998
Average Increase in dB(A) of all Impacted Receptors=	15	15	15
Maximum Allowable Base Quantity of Noise Wall per Benefited Receptor (sft)=	3033	3033	3033
Feasible (5 dB(A) Reduction)=	Yes	Yes	Yes
Reasonable (Wall Area per Benefit) =	No	Yes	Yes
Reasonable (7 dB(A) Reduction) =	Yes	Yes	Yes
Breaks Line of Sight to Impacted Properties? =	No	No	Yes

(1) Category B denotes a residential property.
(2) Noise levels highlighted in red are levels above the Noise Abatement Criteria.
(3) Values highlighted in green are a 5 dB(A) or greater reduction in noise levels.
(4) A 20ft barrier is recommended because all criteria for feasible and reasonable have been met, and the most properties are benefited.

Recommended 20ft wall

NCDOT SOUND BARRIER
FEASIBILITY and REASONABLENESS
WORKSHEET

PROJECT - Complete 540 TIP # - R-2721, R-2828, R-2829

LOCATION - Barrier 77 COUNTY(IES) - Wake and Johnston

IMPACTS - 17 # BENEFITS - 59 NAC: A (B) (C) D E F G (CIRCLE ALL THAT APPLY)

A. FEASIBILITY:

1	Can a 5-dB(A) reduction in traffic noise levels be achieved for at least one impacted receptor?	X YES	NO
2	Does topography negatively affect the proposed abatement measure?	YES	X NO
3	Does the abatement measure negatively affect property access, drainage, safety and maintenance requirements?	YES	X NO
4	Is there control of access in the vicinity of the proposed abatement measure?	YES	X NO

B. REASONABLENESS:

1	Can a 7-dB(A) reduction in traffic noise levels be achieved for at least one impacted front row receptor?	X YES	NO
2	Is the design criteria per benefited receptor of 1998 (CIRCLE ONE) (sq.ft.) / cu.yd less than the maximum allowable design criteria per benefited receptor of 3033 (CIRCLE ONE) (sq.ft.) / cu.yd.?	X YES	NO

C. NOISE ABATEMENT DECISION:

1	Is the noise mitigation feasible?	X YES	NO
2	Is the noise mitigation reasonable?	X YES	NO
3	Is the noise mitigation likely?	X YES	NO
4	Have the owners' and residents' viewpoints been solicited?	YES	X NO
5	Is the noise mitigation recommended for construction?	YES	NO

D. OPTIONAL REASONABLENESS CONSIDERATION:

1	Was optional averaging noise abatement allowance within a common noise environment used for consideration of barrier reasonableness?	YES	X NO

2 If the answer to D.1 is YES, the design criteria per benefited receptor for each individual barrier within the common noise environment before averaging are:

Bar No. _____ _____ (CIRCLE ONE) sq.ft./cu.yd Bar No. _____ _____ (CIRCLE ONE) sq.ft./cu.yd

Bar No. _____ _____ sq.ft./cu.yd Bar No. _____ _____ sq.ft./cu.yd

3 If the answer to D.1 is YES, is the design criteria per benefited receptor for each individual barrier less than or equal to twice the maximum allowable design criteria per benefited receptor of _____ (CIRCLE ONE) sq.ft./cu.yd YES NO

Form Completed By: E SALUTZ Date: _____

In Consultation With: _____ Date: _____

Complete 540
Traffic Noise Analysis

3/16/2015

Lilac Corridor

Noise Wall 78

				Noise Levels[2]				Short Wall			Intermediate Wall			Recommended[4] Tall Wall		
Receptor	First Row	Residences Represented	NAC Land Use Category[1]	Existing dB(A)	Build dB(A)	Increase	Impacted Receptors	W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors
R0674A	Yes	1	B	54	67	13	1	61	6	1	61	6	1	60	7	1
R0674B	Yes	1	B	56	66	10	1	63	3		63	3		62	4	
R0676	Yes	1	B	50	66	16	1	59	7	1	58	8	1	57	9	1
R0677A	Yes	1	B	50	66	16	1	60	6	1	60	6	1	59	7	1
R0677B	Yes	1	B	50	66	16	1	60	6	1	60	6	1	59	7	1
R0678A	Yes	1	B	50	66	16	1	61	5	1	60	6	1	60	6	1
R0678B	Yes	1	B	50	65	15	1	61	4		60	5	1	59	6	1
R0679A		1	B	54	62	8		60	2		60	2		59	3	
R0679B		1	B	54	64	10		61	3		61	3		60	4	
R0679C		1	B	56	65	9		62	3		62	3		62	3	
R0680	Yes	COMMERCIAL	E	60	63	3		62	1		62	1		62	1	
R0681A	Yes	1	B	53	61	8		59	2		58	3		58	3	
R0681B	Yes	1	B	59	62	3		61	1		61	1		61	1	
R0681C	Yes	1	B	56	60	4		60	0		59	1		59	1	
R0683		1	B	50	65	15	1	59	6	1	58	7	1	58	7	1
R0684A		1	B	50	66	16	1	59	7	1	58	8	1	57	9	1
R0684B		1	B	50	67	17	1	59	8	1	58	9	1	58	9	1
R0685A		1	B	50	66	16	1	60	6	1	59	7	1	58	8	1
R0685B		1	B	50	66	16	1	61	5	1	60	6	1	59	7	1
R0686	Yes	1	B	50	67	17	1	59	8	1	58	9	1	58	9	1
R0689A	Yes	1	B	50	73	23	1	64	9	1	63	10	1	62	11	1
R0689B	Yes	1	B	50	69	19	1	66	3		62	7	1	61	8	1
R0690A		1	B	50	60	10		57	3		56	4		55	5	1
R0690B		1	B	50	61	11		58	3		57	4		56	5	1
R0692	Yes	1	B	50	75	25	1	70	5	1	67	8	1	65	10	1
R0695A		1	B	50	63	13		58	5	1	57	6	1	56	7	1
R0695B		1	B	50	63	13		58	5	1	57	6	1	56	7	1
R0696A	Yes	1	B	50	62	12		56	6	1	55	7	1	55	7	1
R0696B	Yes	1	B	50	61	11		57	4		56	5	1	55	6	1
R0697	Yes	1	B	50	66	16	1	59	7	1	58	8	1	58	8	1
R0712	Yes	1	B	50	64	14		58	6	1	57	7	1	57	7	1
R0713	Yes	1	B	50	68	18	1	59	9	1	58	10	1	58	10	1
R0714		1	B	50	61	11		56	5	1	55	6	1	55	6	1
R0715A	Yes	1	B	50	68	18	1	61	7	1	60	8	1	59	9	1
R0715B	Yes	1	B	50	69	19	1	61	8	1	61	8	1	60	9	1
R0715C	Yes	1	B	50	67	17	1	60	7	1	60	7	1	59	8	1
R0716A		1	B	50	60	10		55	5	1	55	5	1	54	6	1
R0716B		1	B	50	60	10		55	5	1	55	5	1	54	6	1
R0716C		1	B	50	60	10		55	5	1	55	5	1	55	5	1
R0717A	Yes	1	B	50	68	18	1	61	7	1	60	8	1	60	8	1
R0717B	Yes	1	B	50	67	17	1	60	7	1	59	8	1	59	8	1
R0718A		1	B	50	60	10		56	4		55	5	1	55	5	1
R0718B		1	B	50	61	11		56	5	1	56	5	1	55	6	1
R0720A	Yes	1	B	50	62	12		56	6	1	56	6	1	56	6	1
R0720B	Yes	1	B	50	64	14		57	7	1	57	7	1	56	8	1
R1803		1	B	50	61	11		59	2		58	3		57	4	
R1804		1	B	50	62	12		60	2		58	4		57	5	1
R1805		1	B	50	64	14		61	3		59	5	1	58	6	1
R1806A		1	B	50	63	13		61	2		58	5	1	57	6	1
R1806B		1	B	50	62	12		60	2		57	5	1	57	5	1
R1807		1	B	50	62	12		59	3		57	5	1	56	6	1

Length (ft)=	4600	4600	4600
Average Height =	10	12	14
Area of Noise Wall (sft)=	46000	55198	64401
Impacted Receptors=	23	23	23
Number of Benefited Receptors=	31	39	42
Area of Noise Wall per Benefit Receptor (sft)=	1484	1415	1533
Average Increase in dB(A) of all Impacted Receptors=	17	17	17
Maximum Allowable Base Quantity of Noise Wall per Benefited Receptor (sft)=	3092	3092	3092
Feasible (5 dB(A) Reduction)=	Yes	Yes	Yes
Reasonable (Wall Area per Benefit) =	Yes	Yes	Yes
Reasonable (7 dB(A) Reduction) =	Yes	Yes	Yes
Breaks Line of Sight to Impacted Properties? =	No	Yes	Yes

(1) Category B denotes a residential property.
(2) Noise levels highlighted in red are levels above the Noise Abatement Criteria.
(3) Values highlighted in green are a 5 dB(A) or greater reduction in noise levels.
(4) A 14ft barrier is recommended because all criteria for feasible and reasonable have been met, and the most properties are benefited.

Recommended 14ft wall

NCDOT SOUND BARRIER
FEASIBILITY and REASONABLENESS
WORKSHEET

PROJECT - Complete 540 TIP # - R-2721, R-2828, R-2829

LOCATION - Barrier 78 COUNTY(IES) - Wake and Johnston

IMPACTS - 23 # BENEFITS - 42 NAC: A (B) C D (E) F G (CIRCLE ALL THAT APPLY)

A. FEASIBILITY:

1	Can a 5-dB(A) reduction in traffic noise levels be achieved for at least one impacted receptor?	X YES	NO
2	Does topography negatively affect the proposed abatement measure?	YES	X NO
3	Does the abatement measure negatively affect property access, drainage, safety and maintenance requirements?	YES	X NO
4	Is there control of access in the vicinity of the proposed abatement measure?	YES	X NO

B. REASONABLENESS:

1	Can a 7-dB(A) reduction in traffic noise levels be achieved for at least one impacted front row receptor?	X YES	NO
2	Is the design criteria per benefited receptor of 1533 (sq.ft.) / cu.yd (CIRCLE ONE) less than the maximum allowable design criteria per benefited receptor of 3092 (sq.ft.) / cu.yd.? (CIRCLE ONE)	X YES	NO

C. NOISE ABATEMENT DECISION:

1	Is the noise mitigation feasible?	X YES	NO
2	Is the noise mitigation reasonable?	X YES	NO
3	Is the noise mitigation likely?	X YES	NO
4	Have the owners' and residents' viewpoints been solicited?	YES	X NO
5	Is the noise mitigation recommended for construction?	YES	NO

D. OPTIONAL REASONABLENESS CONSIDERATION:

1	Was optional averaging noise abatement allowance within a common noise environment used for consideration of barrier reasonableness?	YES	X NO
2	If the answer to D.1 is YES, the design criteria per benefited receptor for each individual barrier within the common noise environment before averaging are:		

Bar No. _____ _____ sq.ft./cu.yd (CIRCLE ONE) Bar No. _____ _____ sq.ft./cu.yd (CIRCLE ONE)

Bar No. _____ _____ sq.ft./cu.yd Bar No. _____ _____ sq.ft./cu.yd

3	If the answer to D.1 is YES, is the design criteria per benefited receptor for each individual barrier less than or equal to twice the maximum allowable design criteria per benefited receptor of _____ sq.ft./cu.yd (CIRCLE ONE)	YES	NO

Form Completed By: E SALUTZ Date: _____

In Consultation With: _____ Date: _____

Complete 540
Traffic Noise Analysis

3/17/2015

Lilac Corridor

Noise Wall 79

Receptor	First Row	Residences Represented	NAC Land Use Category[1]	Noise Levels[2] Existing dB(A)	Build dB(A)	Increase	Impacted Receptors	Short Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	Intermediate Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	Tall Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors
R0841A	Yes	1	B	49	68	19	1	61	7	1	60	8	1	60	8	1
R0841B	Yes	1	B	49	66	17	1	62	4		61	5	1	61	5	1
R0844	Yes	1	B	49	63	14		62	1		61	2		61	2	
R0851A	Yes	1	B	49	59	10		59	0		59	0		58	1	
R0851B	Yes	1	B	49	60	11		60	0		59	1		59	1	
R0852A	Yes	1	B	49	68	19	1	66	2		64	4		63	5	1
R0852B	Yes	1	B	49	70	21	1	66	4		64	6	1	63	7	1
R0853A	Yes	1	B	49	63	14		59	4		58	5	1	58	5	1
R0853B	Yes	1	B	49	65	16	1	59	6	1	58	7	1	58	7	1
R0853C	Yes	1	B	49	66	17	1	59	7	1	59	7	1	58	8	1
R0854A	Yes	1	B	49	63	14		59	4		59	4		59	4	
R0854B	Yes	1	B	49	65	16	1	60	5	1	60	5	1	59	6	1
R0855A	Yes	1	B	49	66	17	1	61	5	1	60	6	1	60	6	1
R0855B	Yes	1	B	49	64	15	1	60	4		59	5	1	59	5	1
R0855C	Yes	1	B	49	63	14		59	4		59	4		59	4	
R1845A		1	B	49	62	13		61	1		60	2		60	2	
R1845B		1	B	49	62	13		61	1		61	1		60	2	
R1846A		1	B	49	61	12		59	2		59	2		59	2	
R1846B		1	B	49	62	13		60	2		59	3		59	3	
R1847A		1	B	49	62	13		60	2		60	2		59	3	
R1847B		1	B	49	62	13		59	3		59	3		58	4	
R1847C		1	B	49	63	14		61	2		60	3		60	3	

Length (ft)=	2557	2557	2557
Average Height =	12	14	16
Area of Noise Wall (sft)=	30685	35799	40913
Impacted Receptors=	9	9	9
Number of Benefited Receptors=	5	9	10
Area of Noise Wall per Benefit Receptor (sft)=	6137	3978	4091
Average Increase in dB(A) of all Impacted Receptors=	17	17	17
Maximum Allowable Base Quantity of Noise Wall per Benefited Receptor (sft)=	3111	3111	3111
Feasible (5 dB(A) Reduction)=	Yes	Yes	Yes
Reasonable (Wall Area per Benefit) =	No	No	No
Reasonable (7 dB(A) Reduction) =	Yes	Yes	Yes
Breaks Line of Sight to Impacted Properties? =	No	No	Yes

(1) Category B denotes a residential property.
(2) Noise levels highlighted in red are levels above the Noise Abatement Criteria.
(3) Values highlighted in green are a 5 dB(A) or greater reduction in noise levels.

Note: Boxed results indicate barrier discussed in report text.

NCDOT SOUND BARRIER
FEASIBILITY and REASONABLENESS
WORKSHEET

PROJECT - Complete 540 TIP # - R-2721, R-2828, R-2829

LOCATION - Barrier 79 COUNTY(IES) - Wake and Johnston

IMPACTS - 9 # BENEFITS - 10 NAC: A (B) C D E F G (CIRCLE ALL THAT APPLY)

A. FEASIBILITY:

1	Can a 5-dB(A) reduction in traffic noise levels be achieved for at least one impacted receptor?	X YES	NO
2	Does topography negatively affect the proposed abatement measure?	YES	X NO
3	Does the abatement measure negatively affect property access, drainage, safety and maintenance requirements?	YES	X NO
4	Is there control of access in the vicinity of the proposed abatement measure?	YES	X NO

B. REASONABLENESS:

1	Can a 7-dB(A) reduction in traffic noise levels be achieved for at least one impacted front row receptor?	X YES	NO
2	Is the design criteria per benefited receptor of 4091 (sq.ft.) / cu.yd (CIRCLE ONE) less than the maximum allowable design criteria per benefited receptor of 3111 (sq.ft.) / cu.yd.? (CIRCLE ONE)	YES	X NO

C. NOISE ABATEMENT DECISION:

1	Is the noise mitigation feasible?	X YES	NO
2	Is the noise mitigation reasonable?	YES	X NO
3	Is the noise mitigation likely?	YES	X NO
4	Have the owners' and residents' viewpoints been solicited?	YES	X NO
5	Is the noise mitigation recommended for construction?	YES	NO

D. OPTIONAL REASONABLENESS CONSIDERATION:

1	Was optional averaging noise abatement allowance within a common noise environment used for consideration of barrier reasonableness?	YES	X NO

2 If the answer to D.1 is YES, the design criteria per benefited receptor for each individual barrier within the common noise environment before averaging are:

Bar No. _____ _____ sq.ft./cu.yd (CIRCLE ONE) Bar No. _____ _____ sq.ft./cu.yd (CIRCLE ONE)

Bar No. _____ _____ sq.ft./cu.yd Bar No. _____ _____ sq.ft./cu.yd

3 If the answer to D.1 is YES, is the design criteria per benefited receptor for each individual barrier less than or equal to twice the maximum allowable design criteria per benefited receptor of _____ sq.ft./cu.yd (CIRCLE ONE) _____ YES _____ NO

Form Completed By: E SALUTZ Date: _____

In Consultation With: _____ Date: _____

Complete 540
Traffic Noise Analysis

3/16/2015

Lilac Corridor

Noise Wall 80

Receptor	First Row	Residences Represented	NAC Land Use Category[1]	Noise Levels[2] Existing dB(A)	Build dB(A)	Increase	Impacted Receptors	Short Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	Intermediate Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	Recommended[4] Tall Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors
R0833A	Yes	1	B	49	60	11		58	2		58	2		58	2	
R0833B	Yes	1	B	49	59	10		57	2		57	2		57	2	
R0834A	Yes	1	B	49	62	13		59	3		58	4		58	4	
R0834B	Yes	1	B	49	62	13		59	3		59	3		58	4	
R0835A		1	B	49	63	14		60	3		60	3		59	4	
R0835B		1	B	49	63	14		61	2		60	3		60	3	
R0836A	Yes	1	B	49	64	15	1	60	4		59	5	1	59	5	1
R0836B	Yes	1	B	49	63	14		59	4		58	5	1	58	5	1
R0837A	Yes	1	B	49	68	19	1	62	6	1	61	7	1	61	7	1
R0837B	Yes	1	B	49	67	18	1	61	6	1	60	7	1	60	7	1
R0838A		1	B	49	59	10		57	2		57	2		56	3	
R0838B		1	B	49	61	12		58	3		57	4		57	4	
R0839A		1	B	49	65	16	1	61	4		60	5	1	59	6	1
R0839B		1	B	49	63	14		59	4		59	4		58	5	1
R0840A	Yes	1	B	49	66	17	1	62	4		61	5	1	61	5	1
R0840B	Yes	1	B	49	70	21	1	64	6	1	63	7	1	62	8	1

Length (ft)=	1760	1760	1760
Average Height =	10	12	14
Area of Noise Wall (sft)=	17593	21111	24629
Impacted Receptors=	6	6	6
Number of Benefited Receptors=	3	7	8
Area of Noise Wall per Benefit Receptor (sft)=	5864	3016	3079
Average Increase in dB(A) of all Impacted Receptors=	18	18	18
Maximum Allowable Base Quantity of Noise Wall per Benefited Receptor (sft)=	3118	3118	3118
Feasible (5 dB(A) Reduction)=	Yes	Yes	Yes
Reasonable (Wall Area per Benefit) =	No	Yes	Yes
Reasonable (7 dB(A) Reduction) =	No	Yes	Yes
Breaks Line of Sight to Impacted Properties? =	No	Yes	Yes

Recommended 14ft wall

(1) Category B denotes a residential property.
(2) Noise levels highlighted in red are levels above the Noise Abatement Criteria.
(3) Values highlighted in green are a 5 dB(A) or greater reduction in noise levels.
(4) A 14ft barrier is recommended because all criteria for feasible and reasonable have been met, the barrier breaks the line of sight, and the most properties are benefited.

NCDOT SOUND BARRIER
FEASIBILITY and REASONABLENESS
WORKSHEET

PROJECT - Complete 540 TIP # - R-2721, R-2828, R-2829

LOCATION - Barrier 80 COUNTY(IES) - Wake and Johnston

IMPACTS - 6 # BENEFITS - 8 NAC: A (B) C D E F G (CIRCLE ALL THAT APPLY)

A. FEASIBILITY:

1	Can a 5-dB(A) reduction in traffic noise levels be achieved for at least one impacted receptor?	X YES	NO
2	Does topography negatively affect the proposed abatement measure?	YES	X NO
3	Does the abatement measure negatively affect property access, drainage, safety and maintenance requirements?	YES	X NO
4	Is there control of access in the vicinity of the proposed abatement measure?	YES	X NO

B. REASONABLENESS:

1	Can a 7-dB(A) reduction in traffic noise levels be achieved for at least one impacted front row receptor?	X YES	NO
2	Is the design criteria per benefited receptor of 3079 (sq.ft.) / cu.yd (CIRCLE ONE) less than the maximum allowable design criteria per benefited receptor of 3118 (sq.ft.) / cu.yd.? (CIRCLE ONE)	X YES	NO

C. NOISE ABATEMENT DECISION:

1	Is the noise mitigation feasible?	X YES	NO
2	Is the noise mitigation reasonable?	X YES	NO
3	Is the noise mitigation likely?	X YES	NO
4	Have the owners' and residents' viewpoints been solicited?	YES	X NO
5	Is the noise mitigation recommended for construction?	YES	NO

D. OPTIONAL REASONABLENESS CONSIDERATION:

1	Was optional averaging noise abatement allowance within a common noise environment used for consideration of barrier reasonableness?	YES	X NO
2	If the answer to D.1 is YES, the design criteria per benefited receptor for each individual barrier within the common noise environment before averaging are:		

Bar No. _____ _____ sq.ft./cu.yd (CIRCLE ONE) Bar No. _____ _____ sq.ft./cu.yd (CIRCLE ONE)

Bar No. _____ _____ sq.ft./cu.yd Bar No. _____ _____ sq.ft./cu.yd

3	If the answer to D.1 is YES, is the design criteria per benefited receptor for each individual barrier less than or equal to twice the maximum allowable design criteria per benefited receptor of _____ sq.ft./cu.yd (CIRCLE ONE)	YES	NO

Form Completed By: E SALUTZ Date: _____

In Consultation With: _____ Date: _____

Complete 540 3/16/2015
Traffic Noise Analysis

Lilac Corridor

Noise Wall 81

Receptor	First Row	Residences Represented	NAC Land Use Category[1]	Noise Levels[2] Existing dB(A)	Build dB(A)	Increase	Impacted Receptors	Short Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	Intermediate Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	Tall Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors
R0856	Yes	1	B	64	70	6	1	65	5	1	64	6	1	64	6	1
R0857	Yes	1	B	66	72	6	1	67	5	1	65	7	1	64	8	1
R0858A	Yes	1	B	62	68	6	1	65	3		65	3		63	5	1
R0858B	Yes	1	B	61	67	6	1	64	3		63	4		62	5	1
R0859	Yes	1	B	65	72	7	1	67	5	1	65	7	1	64	8	1
R0860A	Yes	1	B	68	75	7	1	68	7	1	66	9	1	65	10	1
R0860B	Yes	1	B	68	75	7	1	68	7	1	67	8	1	66	9	1
R1842		1	B	59	65	6		62	3		61	4		60	5	1
R1843A		1	B	62	68	6	1	65	3		64	4		63	5	1
R1843B		1	B	61	67	6	1	64	3		63	4		62	5	1
R1844A		1	B	60	66	6	1	63	3		62	4		61	5	1
R1844B		1	B	59	65	6		62	3		61	4		61	4	
R2291A		1	B	61	64	3		62	2		62	2		61	3	
R2291B		1	B	61	63	2		62	1		62	1		62	1	

Length (ft)=	2000	2000	2000
Average Height =	12	14	16
Area of Noise Wall (sft)=	24000	28000	32000
Impacted Receptors=	10	10	10
Number of Benefited Receptors=	5	5	11
Area of Noise Wall per Benefit Receptor (sft)=	4800	5600	2909
Average Increase in dB(A) of all Impacted Receptors=	6	6	6
Maximum Allowable Base Quantity of Noise Wall per Benefited Receptor (sft)=	2721	2721	2721
Feasible (5 dB(A) Reduction)=	Yes	Yes	Yes
Reasonable (Wall Area per Benefit) =	No	No	No
Reasonable (7 dB(A) Reduction) =	Yes	Yes	Yes
Breaks Line of Sight to Impacted Properties? =	No	Yes	Yes

(1) Category B denotes a residential property.
(2) Noise levels highlighted in red are levels above the Noise Abatement Criteria.
(3) Values highlighted in green are a 5 dB(A) or greater reduction in noise levels.

Note: Boxed results indicate barrier discussed in report text.

NCDOT SOUND BARRIER
FEASIBILITY and REASONABLENESS
WORKSHEET

PROJECT - Complete 540 TIP # - R-2721, R-2828, R-2829

LOCATION - Barrier 81 COUNTY(IES) - Wake and Johnston

IMPACTS - 10 # BENEFITS - 11 NAC: A (B) C D E F G (CIRCLE ALL THAT APPLY)

A. FEASIBILITY:

1	Can a 5-dB(A) reduction in traffic noise levels be achieved for at least one impacted receptor?	X YES	NO
2	Does topography negatively affect the proposed abatement measure?	YES	X NO
3	Does the abatement measure negatively affect property access, drainage, safety and maintenance requirements?	YES	X NO
4	Is there control of access in the vicinity of the proposed abatement measure?	YES	X NO

B. REASONABLENESS:

1	Can a 7-dB(A) reduction in traffic noise levels be achieved for at least one impacted front row receptor?	X YES	NO
2	Is the design criteria per benefited receptor of 2909 (sq.ft.) cu.yd (CIRCLE ONE) less than the maximum allowable design criteria per benefited receptor of 2721 (sq.ft.) cu.yd.? (CIRCLE ONE)	YES	X NO

C. NOISE ABATEMENT DECISION:

1	Is the noise mitigation feasible?	X YES	NO
2	Is the noise mitigation reasonable?	YES	X NO
3	Is the noise mitigation likely?	YES	X NO
4	Have the owners' and residents' viewpoints been solicited?	YES	X NO
5	Is the noise mitigation recommended for construction?	YES	NO

D. OPTIONAL REASONABLENESS CONSIDERATION:

1	Was optional averaging noise abatement allowance within a common noise environment used for consideration of barrier reasonableness?	YES	X NO

2 If the answer to D.1 is YES, the design criteria per benefited receptor for each individual barrier within the common noise environment before averaging are:

Bar No. _____ _____ sq.ft./cu.yd (CIRCLE ONE) Bar No. _____ _____ sq.ft./cu.yd (CIRCLE ONE)

Bar No. _____ _____ sq.ft./cu.yd Bar No. _____ _____ sq.ft./cu.yd

3 If the answer to D.1 is YES, is the design criteria per benefited receptor for each individual barrier less than or equal to twice the maximum allowable design criteria per benefited receptor of _____ sq.ft./cu.yd (CIRCLE ONE) _____ YES NO

Form Completed By: E SALUTZ Date: _____

In Consultation With: _____ Date: _____

Complete 540
Traffic Noise Analysis

4/2/2015

Lilac Corridor

Noise Wall 82

Receptor	First Row	Residences Represented	NAC Land Use Category[1]	Noise Levels[2] Existing dB(A)	Build dB(A)	Increase	Impacted Receptors	Short Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	Intermediate Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	Recommended[4] Tall Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors
R0916A	Yes	1	B	69	74	5	1	64	10	1	64	10	1	63	11	1
R0916B	Yes	1	B	70	76	6	1	65	11	1	64	12	1	64	12	1
R0916C	Yes	1	B	70	76	6	1	66	10	1	65	11	1	64	12	1
R0917		1	B	63	66	3	1	61	5	1	60	6	1	60	6	1
R0918A	Yes	1	B	70	75	5	1	67	8	1	66	9	1	65	10	1
R0918B	Yes	1	B	70	75	5	1	67	8	1	66	9	1	65	10	1
R0918C	Yes	1	B	69	75	6	1	66	9	1	65	10	1	64	11	1
R0919A		1	B	62	66	4	1	60	6	1	60	6	1	59	7	1
R0919B		1	B	60	63	3		59	4		59	4		58	5	1
R0920		1	B	57	60	3		57	3		57	3		57	3	
R0921A		1	B	59	63	4		59	4		59	4		58	5	1
R0921B		1	B	61	64	3		60	4		60	4		59	5	1
R0921C		1	B	60	63	3		60	3		59	4		59	4	
R0922A	Yes	1	B	68	74	6	1	66	8	1	65	9	1	64	10	1
R0922B	Yes	1	B	68	74	6	1	66	8	1	64	10	1	63	11	1
R0923A		1	B	66	70	4	1	65	5	1	64	6	1	63	7	1
R0923B		1	B	63	66	3	1	62	4		61	5	1	61	5	1
R0924A		1	B	58	61	3		58	3		57	4		57	4	
R0924B		1	B	58	61	3		58	3		57	4		57	4	
R0928		1	B	61	64	3		60	4		59	5	1	58	6	1
R0931A	Yes	1	B	67	72	5	1	66	6	1	65	7	1	64	8	1
R0931B	Yes	1	B	72	77	5	1	69	8	1	67	10	1	66	11	1
R0932A	Yes	1	B	70	76	6	1	68	8	1	66	10	1	65	11	1
R0932B	Yes	1	B	70	75	5	1	66	9	1	65	10	1	64	11	1
R0932C	Yes	1	B	69	74	5	1	64	10	1	63	11	1	62	12	1
R0933	Yes	1	B	66	69	3	1	64	5	1	64	5	1	64	5	1
R0934A	Yes	1	B	60	63	3		60	3		59	4		59	4	
R0934B	Yes	1	B	59	62	3		57	5	1	57	5	1	57	5	1
R0935A	Yes	1	B	55	58	3		55	3		55	3		55	3	
R0935B	Yes	1	B	56	59	3		57	2		57	2		57	2	
R0935C	Yes	1	B	54	57	3		56	1		56	1		56	1	
R1637	Yes	1	B	71	76	5	1	63	13	1	62	14	1	62	14	1
R2315	Yes	RECREATIONAL	C	55	66	11										
R2315-1	Yes	NODAL ARRAY	C	55	62	7		60	2		60	2		59	3	
R2315-2	Yes	NODAL ARRAY	C	55	62	7		60	2		60	2		59	3	
R2315-3	Yes	NODAL ARRAY	C	55	62	7		61	1		60	2		60	2	
R2315-4	Yes	NODAL ARRAY	C	55	62	7		61	1		60	2		60	2	
R2315-5	Yes	NODAL ARRAY	C	55	66	11	1	64	2		64	2		63	3	
R2315-6	Yes	NODAL ARRAY	C	55	67	12	1	65	2		65	2		64	3	

Length (ft)=	3102	3102	3102
Average Height =	14	16	18
Area of Noise Wall (sft)=	43430	49635	55839
Impacted Receptors=	21	21	21
Number of Benefited Receptors=	19	21	24
Area of Noise Wall per Benefit Receptor (sft)=	2286	2364	2327
Average Increase in dB(A) of all Impacted Receptors=	6	6	6
Maximum Allowable Base Quantity of Noise Wall per Benefited Receptor (sft)=	2693	2693	2693
Feasible (5 dB(A) Reduction)=	Yes	Yes	Yes
Reasonable (Wall Area per Benefit) =	Yes	Yes	Yes
Reasonable (7 dB(A) Reduction) =	Yes	Yes	Yes
Breaks Line of Sight to Impacted Properties? =	No	Yes	Yes

Recommended 18ft wall

(1) Category B denotes a residential property.
(2) Noise levels highlighted in red are levels above the Noise Abatement Criteria.
(3) Values highlighted in green are a 5 dB(A) or greater reduction in noise levels.
(4) A 18ft barrier is recommended because all criteria for feasible and reasonable have been met, and the most properties are benefited and below the NAC impact criteria.

NCDOT SOUND BARRIER
FEASIBILITY and REASONABLENESS
WORKSHEET

PROJECT - Complete 540 TIP # - R-2721, R-2828, R-2829

LOCATION - Barrier 82 COUNTY(IES) - Wake and Johnston

IMPACTS - 21 # BENEFITS - 24 NAC: A (B) (C) D E F G (CIRCLE ALL THAT APPLY)

A. FEASIBILITY:

1	Can a 5-dB(A) reduction in traffic noise levels be achieved for at least one impacted receptor?	X YES	NO
2	Does topography negatively affect the proposed abatement measure?	YES	X NO
3	Does the abatement measure negatively affect property access, drainage, safety and maintenance requirements?	YES	X NO
4	Is there control of access in the vicinity of the proposed abatement measure?	YES	X NO

B. REASONABLENESS:

1	Can a 7-dB(A) reduction in traffic noise levels be achieved for at least one impacted front row receptor?	X YES	NO
2	Is the design criteria per benefited receptor of 2327 (sq.ft.) / cu.yd (CIRCLE ONE) less than the maximum allowable design criteria per benefited receptor of 2693 (sq.ft.) / cu.yd.? (CIRCLE ONE)	X YES	NO

C. NOISE ABATEMENT DECISION:

1	Is the noise mitigation feasible?	X YES	NO
2	Is the noise mitigation reasonable?	X YES	NO
3	Is the noise mitigation likely?	X YES	NO
4	Have the owners' and residents' viewpoints been solicited?	YES	X NO
5	Is the noise mitigation recommended for construction?	YES	NO

D. OPTIONAL REASONABLENESS CONSIDERATION:

1	Was optional averaging noise abatement allowance within a common noise environment used for consideration of barrier reasonableness?	YES	X NO
2	If the answer to D.1 is YES, the design criteria per benefited receptor for each individual barrier within the common noise environment before averaging are:		

Bar No. _____ _____ sq.ft./cu.yd (CIRCLE ONE) Bar No. _____ _____ sq.ft./cu.yd (CIRCLE ONE)

Bar No. _____ _____ sq.ft./cu.yd Bar No. _____ _____ sq.ft./cu.yd

3	If the answer to D.1 is YES, is the design criteria per benefited receptor for each individual barrier less than or equal to twice the maximum allowable design criteria per benefited receptor of _____ sq.ft./cu.yd (CIRCLE ONE)	YES	NO

Form Completed By: E SALUTZ Date: _____

In Consultation With: _____ Date: _____

Complete 540
Traffic Noise Analysis

3/16/2015

Purple Corridor

Noise Wall 83

Receptor	First Row	Residences Represented	NAC Land Use Category[1]	Noise Levels[2] Existing dB(A)	Build dB(A)	Increase	Impacted Receptors	Short Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	Intermediate Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	Tall Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors
R2053	Yes	1	B	47	68	21	1	61	7	1	60	8	1	60	8	1
R2054	Yes	1	B	47	69	22	1	62	7	1	61	8	1	61	8	1
R2055	Yes	1	B	47	67	20	1	63	4		61	6	1	61	6	1
R2056	Yes	1	B	50	63	13		59	4		59	4		58	5	1
R2057	Yes	1	B	58	69	11	1	65	4		64	5	1	64	5	1
R2070	Yes	1	B	47	68	21	1	63	5	1	62	6	1	61	7	1
R2071	Yes	1	B	47	69	22	1	63	6	1	62	7	1	62	7	1

Length (ft)=	3800	3800	3800
Average Height =	10	12	14
Area of Noise Wall (sft)=	37996	45600	53200
Impacted Receptors=	6	6	6
Number of Benefited Receptors=	4	6	7
Area of Noise Wall per Benefit Receptor (sft)=	9499	7600	7600
Average Increase in dB(A) of all Impacted Receptors=	20	20	20
Maximum Allowable Base Quantity of Noise Wall per Benefited Receptor (sft)=	3183	3183	3183
Feasible (5 dB(A) Reduction)=	Yes	Yes	Yes
Reasonable (Wall Area per Benefit) =	No	No	No
Reasonable (7 dB(A) Reduction) =	Yes	Yes	Yes
Breaks Line of Sight to Impacted Properties? =	Yes	Yes	Yes

(1) Category B denotes a residential property.
(2) Noise levels highlighted in red are levels above the Noise Abatement Criteria.
(3) Values highlighted in green are a 5 dB(A) or greater reduction in noise levels.

Note: Boxed results indicate barrier discussed in report text.

NCDOT SOUND BARRIER
FEASIBILITY and REASONABLENESS
WORKSHEET

PROJECT - Complete 540 TIP # - R-2721, R-2828, R-2829

LOCATION - Barrier 83 COUNTY(IES) - Wake and Johnston

IMPACTS - 6 # BENEFITS - 7 NAC: A (B) C D E F G (CIRCLE ALL THAT APPLY)

A. FEASIBILITY:

1	Can a 5-dB(A) reduction in traffic noise levels be achieved for at least one impacted receptor?	X YES	NO
2	Does topography negatively affect the proposed abatement measure?	YES	X NO
3	Does the abatement measure negatively affect property access, drainage, safety and maintenance requirements?	YES	X NO
4	Is there control of access in the vicinity of the proposed abatement measure?	YES	X NO

B. REASONABLENESS:

1	Can a 7-dB(A) reduction in traffic noise levels be achieved for at least one impacted front row receptor?	X YES	NO
2	Is the design criteria per benefited receptor of 7600 (CIRCLE ONE) (sq.ft.) / cu.yd less than the maximum allowable design criteria per benefited receptor of 3183 (CIRCLE ONE) (sq.ft.) / cu.yd.?	YES	X NO

C. NOISE ABATEMENT DECISION:

1	Is the noise mitigation feasible?	X YES	NO
2	Is the noise mitigation reasonable?	YES	X NO
3	Is the noise mitigation likely?	YES	X NO
4	Have the owners' and residents' viewpoints been solicited?	YES	X NO
5	Is the noise mitigation recommended for construction?	YES	NO

D. OPTIONAL REASONABLENESS CONSIDERATION:

1	Was optional averaging noise abatement allowance within a common noise environment used for consideration of barrier reasonableness?	YES	X NO

2 If the answer to D.1 is YES, the design criteria per benefited receptor for each individual barrier within the common noise environment before averaging are:

Bar No. _____ _____ (CIRCLE ONE) sq.ft./cu.yd Bar No. _____ _____ (CIRCLE ONE) sq.ft./cu.yd

Bar No. _____ _____ sq.ft./cu.yd Bar No. _____ _____ sq.ft./cu.yd

3	If the answer to D.1 is YES, is the design criteria per benefited receptor for each individual barrier less than or equal to twice the maximum allowable design criteria per benefited receptor of _____ (CIRCLE ONE) sq.ft./cu.yd	YES	NO

Form Completed By: E SALUTZ Date: _____

In Consultation With: _____ Date: _____

Complete 540
Traffic Noise Analysis

3/16/2015

Purple Corridor

Noise Wall 84

Receptor	First Row	Residences Represented	NAC Land Use Category[1]	Noise Levels[2] Existing dB(A)	Build dB(A)	Increase	Impacted Receptors	Short Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	Intermediate Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	Recommended[4] Tall Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors
R2029A		1	B	55	56	1		55	1		55	1		55	1	
R2029B		1	B	55	55	0		55	0		55	0		55	0	
R2029C		1	B	55	59	4		58	1		58	1		58	1	
R2030A		1	B	55	60	5		59	1		59	1		59	1	
R2030B		1	B	55	59	4		58	1		58	1		58	1	
R2030C		1	B	58	63	5		62	1		62	1		62	1	
R2031A		1	B	60	64	4		64	0		64	0		63	1	
R2031B		1	B	60	65	5		64	1		64	1		64	1	
R2031C		1	B	60	63	3		63	0		63	0		63	0	
R2032A		1	B	55	58	3		56	2		55	3		55	3	
R2032B		1	B	55	60	5		58	2		57	3		56	4	
R2033A		1	B	55	57	2		55	2		55	2		54	3	
R2033B		1	B	55	57	2		55	2		55	2		54	3	
R2034A		1	B	55	56	1		55	1		54	2		54	2	
R2034B		1	B	55	56	1		54	2		54	2		53	3	
R2034C		1	B	55	58	3		57	1		57	1		56	2	
R2035A		1	B	55	59	4		58	1		58	1		58	1	
R2035B		1	B	55	53	-2		52	1		52	1		52	1	
R2036A		1	B	55	57	2		53	4		53	4		52	5	1
R2036B		1	B	55	54	-1		52	2		52	2		52	2	
R2037A		1	B	58	67	9	1	64	3		64	3		64	3	
R2037B		1	B	56	66	10	1	64	2		64	2		63	3	
R2038A		1	B	55	63	8		59	4		59	4		58	5	1
R2038B		1	B	55	63	8		59	4		59	4		58	5	1
R2038C		1	B	55	64	9		60	4		60	4		60	4	
R2039A		1	B	58	68	10	1	65	3		65	3		64	4	
R2039B		1	B	59	69	10	1	64	5	1	64	5	1	64	5	1
R2040	Yes	1	B	58	69	11	1	63	6	1	63	6	1	62	7	1
R2041A		1	B	55	63	8		56	7	1	55	8	1	54	9	1
R2041B		1	B	55	60	5		56	4		56	4		55	5	1
R2042A		1	B	55	63	8		57	6	1	56	7	1	55	8	1
R2042B		1	B	55	60	5		55	5	1	54	6	1	54	6	1
R2043A	Yes	1	B	55	70	15	1	61	9	1	61	9	1	60	10	1
R2043B	Yes	1	B	55	70	15	1	61	9	1	61	9	1	60	10	1
R2044A		1	B	55	60	5		56	4		55	5	1	54	6	1
R2044B		1	B	55	59	4		56	3		55	4		55	4	
R2045A	Yes	1	B	55	69	14	1	62	7	1	61	8	1	60	9	1
R2045B	Yes	1	B	55	69	14	1	62	7	1	61	8	1	60	9	1
R2046A		1	B	55	62	7		59	3		58	4		57	5	1
R2046B		1	B	55	61	6		58	3		57	4		56	5	1
R2047A	Yes	1	B	55	69	14	1	62	7	1	61	8	1	60	9	1
R2047B	Yes	1	B	55	69	14	1	62	7	1	61	8	1	60	9	1
R2048A	Yes	1	B	55	68	13	1	63	5	1	62	6	1	60	8	1
R2048B	Yes	1	B	55	69	14	1	63	6	1	61	8	1	60	9	1
R2049A	Yes	1	B	55	68	13	1	65	3		62	6	1	60	8	1
R2049B	Yes	1	B	55	68	13	1	64	4		62	6	1	60	8	1
R2050A	Yes	1	B	55	66	11	1	64	2		61	5	1	59	7	1
R2050B	Yes	1	B	55	66	11	1	65	1		61	5	1	59	7	1
R2051	Yes	1	B	47	72	25	1	66	6	1	65	7	1	63	9	1
R2052	Yes	1	B	47	70	23	1	66	4		63	7	1	61	9	1
R2072	Yes	1	B	47	70	23	1	68	2		65	5	1	64	6	1
R1808A		1	B	55	63	8		60	3		58	5	1	57	6	1
R1808B		1	B	55	63	8		61	2		59	4		57	6	1
R1809A		1	B	55	62	7		60	2		58	4		57	5	1
R1809B		1	B	55	62	7		60	2		58	4		57	5	1
R1809C		1	B	55	62	7		60	2		58	4		57	5	1
R1810A		1	B	55	64	9		63	1		61	3		59	5	1
R1810B		1	B	55	65	10	1	63	2		61	4		58	7	1
R1810C		1	B	55	64	9		62	2		61	3		58	6	1

Length (ft)=	4000	4000	4000
Average Height =	8	10	14
Area of Noise Wall (sft)=	32000	39996	56001
Impacted Receptors=	21	21	21
Number of Benefited Receptors=	14	22	35
Area of Noise Wall per Benefit Receptor (sft)=	2286	1818	1600
Average Increase in dB(A) of all Impacted Receptors=	14	14	14
Maximum Allowable Base Quantity of Noise Wall per Benefited Receptor (sft)=	2987	2987	2987
Feasible (5 dB(A) Reduction)=	Yes	Yes	Yes
Reasonable (Wall Area per Benefit) =	Yes	Yes	Yes
Reasonable (7 dB(A) Reduction) =	Yes	Yes	Yes
Breaks Line of Sight to Impacted Properties? =	No	Yes	Yes

Recommended 14 ft wall

(1) Category B denotes a residential property.
(2) Noise levels highlighted in red are levels above the Noise Abatement Criteria.
(3) Values highlighted in green are a 5 dB(A) or greater reduction in noise levels.
(4) A 14ft barrier is recommended because all criteria for feasible and reasonable have been met, and the most properties are benefited.

NCDOT SOUND BARRIER
FEASIBILITY and REASONABLENESS
WORKSHEET

PROJECT - Complete 540 TIP # - R-2721, R-2828, R-2829

LOCATION - Barrier 84 COUNTY(IES) - Wake and Johnston

IMPACTS - 21 # BENEFITS - 35 NAC: A (B) C D E F G (CIRCLE ALL THAT APPLY)

A. FEASIBILITY:

1	Can a 5-dB(A) reduction in traffic noise levels be achieved for at least one impacted receptor?	X YES	NO
2	Does topography negatively affect the proposed abatement measure?	YES	X NO
3	Does the abatement measure negatively affect property access, drainage, safety and maintenance requirements?	YES	X NO
4	Is there control of access in the vicinity of the proposed abatement measure?	YES	X NO

B. REASONABLENESS:

1	Can a 7-dB(A) reduction in traffic noise levels be achieved for at least one impacted front row receptor?	X YES	NO
2	Is the design criteria per benefited receptor of 1600 (sq.ft.) / cu.yd (CIRCLE ONE) less than the maximum allowable design criteria per benefited receptor of 2987 (sq.ft.) / cu.yd.? (CIRCLE ONE)	X YES	NO

C. NOISE ABATEMENT DECISION:

1	Is the noise mitigation feasible?	X YES	NO
2	Is the noise mitigation reasonable?	X YES	NO
3	Is the noise mitigation likely?	X YES	NO
4	Have the owners' and residents' viewpoints been solicited?	YES	X NO
5	Is the noise mitigation recommended for construction?	YES	NO

D. OPTIONAL REASONABLENESS CONSIDERATION:

1	Was optional averaging noise abatement allowance within a common noise environment used for consideration of barrier reasonableness?	YES	X NO
2	If the answer to D.1 is YES, the design criteria per benefited receptor for each individual barrier within the common noise environment before averaging are:		

Bar No. _____ _____ sq.ft./cu.yd (CIRCLE ONE) Bar No. _____ _____ sq.ft./cu.yd (CIRCLE ONE)

Bar No. _____ _____ sq.ft./cu.yd Bar No. _____ _____ sq.ft./cu.yd

3	If the answer to D.1 is YES, is the design criteria per benefited receptor for each individual barrier less than or equal to twice the maximum allowable design criteria per benefited receptor of _____ sq.ft./cu.yd (CIRCLE ONE)	YES	NO

Form Completed By: E SALUTZ Date: _____

In Consultation With: _____ Date: _____

Complete 540
Traffic Noise Analysis

3/16/2015

Purple Corridor

Noise Wall 85

Receptor	First Row	Residences Represented	NAC Land Use Category[1]	Noise Levels[2] Existing dB(A)	Build dB(A)	Increase	Impacted Receptors	Short Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	Intermediate Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	Tall Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors
R2075	Yes	1	B	47	64	17	1	62	2		61	3		61	3	
R2076	Yes	1	B	47	64	17	1	61	3		60	4		59	5	1
R2078		1	B	47	67	20	1	62	5	1	60	7	1	59	8	1
R2079	Yes	1	B	47	75	28	1	63	12	1	62	13	1	62	13	1
R2080	Yes	1	B	47	68	21	1	59	9	1	58	10	1	58	10	1
R1811A		1	B	54	60	6		57	3		56	4		56	4	
R1811B		1	B	54	60	6		57	3		56	4		55	5	1
R1812A		1	B	54	65	11	1	60	5	1	59	6	1	58	7	1
R1812B		1	B	54	66	12	1	61	5	1	60	6	1	59	7	1
R1813A		1	B	54	64	10		58	6	1	58	6	1	57	7	1
R1813B		1	B	54	62	8		57	5	1	57	5	1	56	6	1
R1813C		1	B	54	66	12	1	59	7	1	58	8	1	57	9	1

Length (ft)=	3200	3200	3200
Average Height =	18	20	22
Area of Noise Wall (sft)=	57599	63999	70397
Impacted Receptors=	8	8	8
Number of Benefited Receptors=	8	8	10
Area of Noise Wall per Benefit Receptor (sft)=	7200	8000	7040
Average Increase in dB(A) of all Impacted Receptors=	17	17	17
Maximum Allowable Base Quantity of Noise Wall per Benefited Receptor (sft)=	3104	3104	3104
Feasible (5 dB(A) Reduction)=	Yes	Yes	Yes
Reasonable (Wall Area per Benefit) =	No	No	No
Reasonable (7 dB(A) Reduction) =	Yes	Yes	Yes
Breaks Line of Sight to Impacted Properties? =	Yes	Yes	Yes

(1) Category B denotes a residential property.
(2) Noise levels highlighted in red are levels above the Noise Abatement Criteria.
(3) Values highlighted in green are a 5 dB(A) or greater reduction in noise levels.

Note: Boxed results indicate barrier discussed in report text.

NCDOT SOUND BARRIER
FEASIBILITY and REASONABLENESS
WORKSHEET

PROJECT - Complete 540 TIP # - R-2721, R-2828, R-2829

LOCATION - Barrier 85 COUNTY(IES) - Wake and Johnston

IMPACTS - 8 # BENEFITS - 10 NAC: A (B) C D E F G (CIRCLE ALL THAT APPLY)

A. FEASIBILITY:

1	Can a 5-dB(A) reduction in traffic noise levels be achieved for at least one impacted receptor?	X YES	NO
2	Does topography negatively affect the proposed abatement measure?	YES	X NO
3	Does the abatement measure negatively affect property access, drainage, safety and maintenance requirements?	YES	X NO
4	Is there control of access in the vicinity of the proposed abatement measure?	YES	X NO

B. REASONABLENESS:

1	Can a 7-dB(A) reduction in traffic noise levels be achieved for at least one impacted front row receptor?	X YES	NO
2	Is the design criteria per benefited receptor of 7040 (CIRCLE ONE) (sq.ft.) / cu.yd less than the maximum allowable design criteria per benefited receptor of	YES	X NO
	3104 (CIRCLE ONE) (sq.ft.) / cu.yd.?		

C. NOISE ABATEMENT DECISION:

1	Is the noise mitigation feasible?	X YES	NO
2	Is the noise mitigation reasonable?	YES	X NO
3	Is the noise mitigation likely?	YES	X NO
4	Have the owners' and residents' viewpoints been solicited?	YES	X NO
5	Is the noise mitigation recommended for construction?	YES	NO

D. OPTIONAL REASONABLENESS CONSIDERATION:

1	Was optional averaging noise abatement allowance within a common noise environment used for consideration of barrier reasonableness?	YES	X NO

2 If the answer to D.1 is YES, the design criteria per benefited receptor for each individual barrier within the common noise environment before averaging are:

Bar No.		sq.ft./cu.yd (CIRCLE ONE)	Bar No.		sq.ft./cu.yd (CIRCLE ONE)
Bar No.		sq.ft./cu.yd	Bar No.		sq.ft./cu.yd

3	If the answer to D.1 is YES, is the design criteria per benefited receptor for each individual barrier less than or equal to twice the maximum allowable design criteria per benefited receptor of	sq.ft./cu.yd (CIRCLE ONE)	YES	NO

Form Completed By: E SALUTZ Date:

In Consultation With: Date:

Complete 540
Traffic Noise Analysis

3/25/2015

Purple Corridor

Noise Wall 86

				Noise Levels[2]				Short Wall			Intermediate Wall			Tall Wall		
Receptor	First Row	Residences Represented	NAC Land Use Category[1]	Existing dB(A)	Build dB(A)	Increase	Impacted Receptors	W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors
R2077	Yes	1	B	47	64	17	1	61	3		60	4		59	5	1
R2081A	Yes	1	B	54	68	14	1	60	8	1	58	10	1	58	10	1
R2081B	Yes	1	B	54	66	12	1	58	8	1	57	9	1	56	10	1
R2082A	Yes	1	B	54	67	13	1	60	7	1	58	9	1	58	9	1
R2082B	Yes	1	B	54	66	12	1	59	7	1	58	8	1	57	9	1
R2083	Yes	1	B	54	65	11	1	60	5	1	58	7	1	58	7	1
R2084	Yes	1	B	54	65	11	1	59	6	1	58	7	1	57	8	1
R2085	Yes	1	B	54	65	11	1	58	7	1	57	8	1	57	8	1
R2086A	Yes	1	B	54	65	11	1	58	7	1	57	8	1	56	9	1
R2086B	Yes	1	B	54	64	10		57	7	1	56	8	1	56	8	1
R2087	Yes	1	B	54	59	5		55	4		54	5	1	54	5	1
R2088A	Yes	1	B	54	62	8		55	7	1	55	7	1	54	8	1
R2088B	Yes	1	B	54	61	7		55	6	1	54	7	1	54	7	1
R2089A		1	B	54	57	3		53	4		52	5	1	52	5	1
R2089B		1	B	54	57	3		54	3		53	4		52	5	1
R2090		1	B	54	57	3		54	3		53	4		53	4	
R2092		1	B	54	54	0		52	2		52	2		52	2	
R2093		1	B	54	57	3		54	3		53	4		53	4	
R2095		1	B	54	59	5		58	1		58	1		58	1	
R1814		1	B	54	64	10		57	7	1	56	8	1	55	9	1
R1815A		1	B	54	62	8		56	6	1	55	7	1	55	7	1
R1815B		1	B	54	62	8		57	5	1	55	7	1	55	7	1
R1816A		1	B	54	62	8		57	5	1	56	6	1	55	7	1
R1816B		1	B	54	62	8		58	4		56	6	1	56	6	1
R1817A		1	B	54	61	7		57	4		55	6	1	55	6	1
R1817B		1	B	54	61	7		56	5	1	54	7	1	54	7	1
R1818A		1	B	54	62	8		60	2		58	4		57	5	1
R1818B		1	B	54	62	8		60	2		58	4		57	5	1
R1819		1	B	54	60	6		57	3		56	4		55	5	1

Length (ft)=	4200	4200	4200
Average Height =	14	18	20
Area of Noise Wall (sft)=	56000	75603	84003
Impacted Receptors=	9	9	9
Number of Benefited Receptors=	16	20	25
Area of Noise Wall per Benefit Receptor (sft)=	3500	3780	3360
Average Increase in dB(A) of all Impacted Receptors=	12	12	12
Maximum Allowable Base Quantity of Noise Wall per Benefited Receptor (sft)=	2936	2936	2936
Feasible (5 dB(A) Reduction)=	Yes	Yes	Yes
Reasonable (Wall Area per Benefit) =	No	No	No
Reasonable (7 dB(A) Reduction) =	Yes	Yes	Yes
Breaks Line of Sight to Impacted Properties? =	No	Yes	Yes

(1) Category B denotes a residential property.
(2) Noise levels highlighted in red are levels above the Noise Abatement Criteria.
(3) Values highlighted in green are a 5 dB(A) or greater reduction in noise levels.

Note: Boxed results indicate barrier discussed in report text.

NCDOT SOUND BARRIER
FEASIBILITY and REASONABLENESS
WORKSHEET

PROJECT - Complete 540 TIP # - R-2721, R-2828, R-2829

LOCATION - Barrier 86 COUNTY(IES) - Wake and Johnston

IMPACTS - 9 # BENEFITS - 25 NAC: A (B) C D E F G (CIRCLE ALL THAT APPLY)

A. FEASIBILITY:

1	Can a 5-dB(A) reduction in traffic noise levels be achieved for at least one impacted receptor?	X YES	NO
2	Does topography negatively affect the proposed abatement measure?	YES	X NO
3	Does the abatement measure negatively affect property access, drainage, safety and maintenance requirements?	YES	X NO
4	Is there control of access in the vicinity of the proposed abatement measure?	YES	X NO

B. REASONABLENESS:

1	Can a 7-dB(A) reduction in traffic noise levels be achieved for at least one impacted front row receptor?	X YES	NO
2	Is the design criteria per benefited receptor of 3360 (CIRCLE ONE) (sq.ft.) / cu.yd less than the maximum allowable design criteria per benefited receptor of 2936 (CIRCLE ONE) (sq.ft.) / cu.yd.?	YES	X NO

C. NOISE ABATEMENT DECISION:

1	Is the noise mitigation feasible?	X YES	NO
2	Is the noise mitigation reasonable?	YES	X NO
3	Is the noise mitigation likely?	YES	X NO
4	Have the owners' and residents' viewpoints been solicited?	YES	X NO
5	Is the noise mitigation recommended for construction?	YES	NO

D. OPTIONAL REASONABLENESS CONSIDERATION:

1	Was optional averaging noise abatement allowance within a common noise environment used for consideration of barrier reasonableness?	YES	X NO
2	If the answer to D.1 is YES, the design criteria per benefited receptor for each individual barrier within the common noise environment before averaging are:		

Bar No. _____ _____ (CIRCLE ONE) sq.ft./cu.yd Bar No. _____ _____ (CIRCLE ONE) sq.ft./cu.yd

Bar No. _____ _____ sq.ft./cu.yd Bar No. _____ _____ sq.ft./cu.yd

3	If the answer to D.1 is YES, is the design criteria per benefited receptor for each individual barrier less than or equal to twice the maximum allowable design criteria per benefited receptor of _____ (CIRCLE ONE) sq.ft./cu.yd	YES	NO

Form Completed By: E SALUTZ Date: _____

In Consultation With: _____ Date: _____

Complete 540
Traffic Noise Analysis

3/16/2015

Purple Corridor

Noise Wall 87

												Recommended[4]					
			NAC	Noise Levels[2]				Short Wall			Intermediate Wall			Tall Wall		
Receptor	First Row	Residences Represented	Land Use Category[1]	Existing dB(A)	Build dB(A)	Increase	Impacted Receptors	W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors
R2098	Yes	1	B	56	66	10	1	65	1		63	3		63	3	
R2099A		1	B	54	58	4		56	2		56	2		56	2	
R2099B		1	B	54	57	3		55	2		54	3		54	3	
R2100		1	B	54	56	2		54	2		53	3		53	3	
R2101		1	B	54	56	2		54	2		53	3		53	3	
R2102		1	B	54	58	4		57	1		57	1		57	1	
R2103A		1	B	54	58	4		58	0		58	0		58	0	
R2103B		1	B	54	53	-1		53	0		53	0		53	0	
R2104		1	B	55	60	5		60	0		60	0		60	0	
R2105		1	B	54	53	-1		52	1		51	2		51	2	
R2106A		1	B	54	53	-1		52	1		52	1		52	1	
R2106B		1	B	54	55	1		54	1		54	1		54	1	
R2107A		1	B	54	56	2		54	2		53	3		53	3	
R2107B		1	B	54	56	2		54	2		53	3		53	3	
R2108A		1	B	54	52	-2		51	1		50	2		50	2	
R2108B		1	B	54	52	-2		52	0		51	1		51	1	
R2109A		1	B	54	56	2		53	3		53	3		52	4	
R2109B		1	B	54	56	2		53	3		53	3		53	3	
R2109C		1	B	54	57	3		53	4		52	5	1	52	5	1
R2110A		1	B	54	53	-1		52	1		51	2		51	2	
R2110B		1	B	54	53	-1		51	2		51	2		51	2	
R2111		1	B	54	54	0		52	2		51	3		51	3	
R2112	Yes	1	B	54	68	14	1	61	7	1	61	7	1	60	8	1
R2113		1	B	54	64	10		59	5	1	58	6	1	57	7	1
R2114A		1	B	54	60	6		56	4		56	4		55	5	1
R2114B		1	B	54	60	6		56	4		55	5	1	55	5	1
R2115A		1	B	54	59	5		55	4		54	5	1	54	5	1
R2115B		1	B	54	59	5		55	4		54	5	1	54	5	1
R2125	Yes	1	B	54	66	12	1	60	6	1	59	7	1	59	7	1
R2126	Yes	1	B	54	65	11	1	60	5	1	59	6	1	58	7	1
R2127A	Yes	1	B	54	60	6		56	4		55	5	1	54	6	1
R2127B	Yes	1	B	54	57	3		54	3		53	4		53	4	
R2127C	Yes	1	B	54	66	12	1	60	6	1	59	7	1	59	7	1
R2129A	Yes	1	B	54	69	15	1	62	7	1	61	8	1	61	8	1
R2129B	Yes	1	B	54	68	14	1	62	6	1	61	7	1	60	8	1
R2129C	Yes	1	B	54	71	17	1	63	8	1	62	9	1	61	10	1
R2131A	Yes	1	B	54	71	17	1	63	8	1	62	9	1	61	10	1
R2131B	Yes	1	B	54	70	16	1	62	8	1	61	9	1	61	9	1
R2132		1	B	54	66	12	1	60	6	1	59	7	1	58	8	1
R2133		1	B	54	65	11	1	60	5	1	59	6	1	58	7	1
R2134		1	B	54	63	9		59	4		57	6	1	57	6	1
R2135		1	B	54	60	6		56	4		55	5	1	54	6	1
R2136		1	B	54	59	5		58	1		56	3		56	3	
R2137		1	B	54	62	8		59	3		58	4		57	5	1
R2138	Yes	1	B	54	72	18	1	64	8	1	63	9	1	62	10	1

Length (ft)=	4200	4200	4200
Average Height =	12	14	16
Area of Noise Wall (sft)=	50399	58799	67201
Impacted Receptors=	13	13	13
Number of Benefited Receptors=	13	20	22
Area of Noise Wall per Benefit Receptor (sft)=	3877	2940	3055
Average Increase in dB(A) of all Impacted Receptors=	14	14	14
Maximum Allowable Base Quantity of Noise Wall per Benefited Receptor (sft)=	2982	2982	2982
Feasible (5 dB(A) Reduction)=	Yes	Yes	Yes
Reasonable (Wall Area per Benefit) =	No	Yes	No
Reasonable (7 dB(A) Reduction) =	Yes	Yes	Yes
Breaks Line of Sight to Impacted Properties? =	No	Yes	Yes

Recommended 14 ft wall

(1) Category B denotes a residential property.
(2) Noise levels highlighted in red are levels above the Noise Abatement Criteria.
(3) Values highlighted in green are a 5 dB(A) or greater reduction in noise levels.
(4) A 14ft barrier is recommended because all criteria for feasible and reasonable have been met, and the most properties are benefited.

NCDOT SOUND BARRIER
FEASIBILITY and REASONABLENESS
WORKSHEET

PROJECT - Complete 540 TIP # - R-2721, R-2828, R-2829

LOCATION - Barrier 87 COUNTY(IES) - Wake and Johnston

IMPACTS - 13 # BENEFITS - 20 NAC: A (B) C D E F G (CIRCLE ALL THAT APPLY)

A. FEASIBILITY:

1	Can a 5-dB(A) reduction in traffic noise levels be achieved for at least one impacted receptor?	X YES	NO
2	Does topography negatively affect the proposed abatement measure?	YES	X NO
3	Does the abatement measure negatively affect property access, drainage, safety and maintenance requirements?	YES	X NO
4	Is there control of access in the vicinity of the proposed abatement measure?	YES	X NO

B. REASONABLENESS:

1	Can a 7-dB(A) reduction in traffic noise levels be achieved for at least one impacted front row receptor?	X YES	NO
2	Is the design criteria per benefited receptor of 2940 (CIRCLE ONE) (sq.ft.) / cu.yd less than the maximum allowable design criteria per benefited receptor of 2982 (CIRCLE ONE) (sq.ft.) / cu.yd.?	X YES	NO

C. NOISE ABATEMENT DECISION:

1	Is the noise mitigation feasible?	X YES	NO
2	Is the noise mitigation reasonable?	X YES	NO
3	Is the noise mitigation likely?	X YES	NO
4	Have the owners' and residents' viewpoints been solicited?	YES	X NO
5	Is the noise mitigation recommended for construction?	YES	NO

D. OPTIONAL REASONABLENESS CONSIDERATION:

1	Was optional averaging noise abatement allowance within a common noise environment used for consideration of barrier reasonableness?	YES	X NO
2	If the answer to D.1 is YES, the design criteria per benefited receptor for each individual barrier within the common noise environment before averaging are:		

Bar No. _____ _____ (CIRCLE ONE) sq.ft./cu.yd Bar No. _____ _____ (CIRCLE ONE) sq.ft./cu.yd

Bar No. _____ _____ sq.ft./cu.yd Bar No. _____ _____ sq.ft./cu.yd

3	If the answer to D.1 is YES, is the design criteria per benefited receptor for each individual barrier less than or equal to twice the maximum allowable design criteria per benefited receptor of _____ (CIRCLE ONE) sq.ft./cu.yd	YES	NO

Form Completed By: E SALUTZ Date: _____

In Consultation With: _____ Date: _____

Complete 540
Traffic Noise Analysis

3/16/2015

Purple Corridor

Noise Wall 88

Receptor	First Row	Residences Represented	NAC Land Use Category[1]	Noise Levels[2] Existing dB(A)	Build dB(A)	Increase	Impacted Receptors	Short Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	Intermediate Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	Tall Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors
R2118	Yes	1	B	54	59	5		58	1		58	1		58	1	
R2119A	Yes	1	B	54	59	5		58	1		58	1		58	1	
R2119B	Yes	1	B	54	58	4		57	1		57	1		57	1	
R2120A	Yes	1	B	54	57	3		55	2		54	3		54	3	
R2120B	Yes	1	B	54	58	4		57	1		57	1		57	1	
R2121	Yes	1	B	54	67	13	1	62	5	1	61	6	1	60	7	1
R2122		1	B	54	67	13	1	61	6	1	60	7	1	60	7	1
R2123	Yes	1	B	54	73	19	1	63	10	1	62	11	1	61	12	1
R2124	Yes	1	B	54	72	18	1	64	8	1	62	10	1	62	10	1
R2128	Yes	1	B	54	71	17	1	68	3		65	6	1	63	8	1
R2130	Yes	1	B	54	67	13	1	64	3		61	6	1	60	7	1
R2139	Yes	1	B	54	66	12	1	62	4		60	6	1	60	6	1
R2140A	Yes	1	B	54	66	12	1	63	3		62	4		61	5	1
R2140B	Yes	1	B	54	72	18	1	64	8	1	64	8	1	63	9	1
R1820		1	B	54	62	8		61	1		60	2		58	4	
R1821A		1	B	54	64	10		63	1		61	3		61	3	
R1821B		1	B	54	62	8		61	1		59	3		58	4	
R1822A		1	B	54	62	8		61	1		59	3		59	3	
R1822B		1	B	54	62	8		61	1		59	3		59	3	

Length (ft)=	3200	3200	3200
Average Height =	12	14	16
Area of Noise Wall (sft)=	38400	44800	51200
Impacted Receptors=	9	9	9
Number of Benefited Receptors=	5	8	9
Area of Noise Wall per Benefit Receptor (sft)=	7680	5600	5689
Average Increase in dB(A) of all Impacted Receptors=	15	15	15
Maximum Allowable Base Quantity of Noise Wall per Benefited Receptor (sft)=	3025	3025	3025
Feasible (5 dB(A) Reduction)=	Yes	Yes	Yes
Reasonable (Wall Area per Benefit) =	No	No	No
Reasonable (7 dB(A) Reduction) =	Yes	Yes	Yes
Breaks Line of Sight to Impacted Properties? =	No	Yes	Yes

(1) Category B denotes a residential property.
(2) Noise levels highlighted in red are levels above the Noise Abatement Criteria.
(3) Values highlighted in green are a 5 dB(A) or greater reduction in noise levels.

Note: Boxed results indicate barrier discussed in report text.

NCDOT SOUND BARRIER
FEASIBILITY and REASONABLENESS
WORKSHEET

PROJECT - Complete 540 TIP # - R-2721, R-2828, R-2829

LOCATION - Barrier 88 COUNTY(IES) - Wake and Johnston

IMPACTS - 9 # BENEFITS - 8 NAC: A (B) C D E F G (CIRCLE ALL THAT APPLY)

A. FEASIBILITY:

1	Can a 5-dB(A) reduction in traffic noise levels be achieved for at least one impacted receptor?	X YES	NO
2	Does topography negatively affect the proposed abatement measure?	YES	X NO
3	Does the abatement measure negatively affect property access, drainage, safety and maintenance requirements?	YES	X NO
4	Is there control of access in the vicinity of the proposed abatement measure?	YES	X NO

B. REASONABLENESS:

1	Can a 7-dB(A) reduction in traffic noise levels be achieved for at least one impacted front row receptor?	X YES	NO
2	Is the design criteria per benefited receptor of 5600 (sq.ft.) / cu.yd (CIRCLE ONE) less than the maximum allowable design criteria per benefited receptor of 3025 (sq.ft.) / cu.yd.? (CIRCLE ONE)	YES	X NO

C. NOISE ABATEMENT DECISION:

1	Is the noise mitigation feasible?	X YES	NO
2	Is the noise mitigation reasonable?	YES	X NO
3	Is the noise mitigation likely?	YES	X NO
4	Have the owners' and residents' viewpoints been solicited?	YES	X NO
5	Is the noise mitigation recommended for construction?	YES	NO

D. OPTIONAL REASONABLENESS CONSIDERATION:

1	Was optional averaging noise abatement allowance within a common noise environment used for consideration of barrier reasonableness?	YES	X NO

2 If the answer to D.1 is YES, the design criteria per benefited receptor for each individual barrier within the common noise environment before averaging are:

Bar No. _____ _____ sq.ft./cu.yd (CIRCLE ONE) Bar No. _____ _____ sq.ft./cu.yd (CIRCLE ONE)

Bar No. _____ _____ sq.ft./cu.yd Bar No. _____ _____ sq.ft./cu.yd

3 If the answer to D.1 is YES, is the design criteria per benefited receptor for each individual barrier less than or equal to twice the maximum allowable design criteria per benefited receptor of _____ sq.ft./cu.yd (CIRCLE ONE) _____ YES _____ NO

Form Completed By: E SALUTZ Date: _____

In Consultation With: _____ Date: _____

Complete 540
Traffic Noise Analysis

3/16/2015

Blue Corridor

Noise Wall 89

Receptor	First Row	Residences Represented	NAC Land Use Category[1]	Noise Levels[2] Existing dB(A)	Build dB(A)	Increase	Impacted Receptors	Short Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	Intermediate Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	Tall Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors
R2150	Yes	1	B	55	72	17	1	60	12	1	59	13	1	57	15	1
R2151	Yes	1	B	55	70	15	1	62	8	1	62	8	1	60	10	1
R2152		CHURCH	D	40	41	1		39	2		39	2		38	3	
R2153	Yes	1	B	55	67	12	1	63	4		63	4		62	5	1
R2154	Yes	1	B	55	64	9		60	4		60	4		59	5	1

Length (ft)=	1400	1400	1400
Average Height =	12	14	18
Area of Noise Wall (sft)=	16801	19601	25201
Impacted Receptors=	3	3	3
Number of Benefited Receptors=	2	2	4
Area of Noise Wall per Benefit Receptor (sft)=	8401	9801	6300
Average Increase in dB(A) of all Impacted Receptors=	15	15	15
Maximum Allowable Base Quantity of Noise Wall per Benefited Receptor (sft)=	3013	3013	3013
Feasible (5 dB(A) Reduction)=	Yes	Yes	Yes
Reasonable (Wall Area per Benefit) =	No	No	No
Reasonable (7 dB(A) Reduction) =	Yes	Yes	Yes
Breaks Line of Sight to Impacted Properties? =	No	Yes	Yes

(1) Category B denotes a residential property.
(2) Noise levels highlighted in red are levels above the Noise Abatement Criteria.
(3) Values highlighted in green are a 5 dB(A) or greater reduction in noise levels.

Note: Boxed results indicate barrier discussed in report text.

NCDOT SOUND BARRIER
FEASIBILITY and REASONABLENESS
WORKSHEET

PROJECT - Complete 540 TIP # - R-2721, R-2828, R-2829

LOCATION - Barrier 89 COUNTY(IES) - Wake and Johnston

IMPACTS - 3 # BENEFITS - 4 NAC: A (B) C (D) E F G (CIRCLE ALL THAT APPLY)

A. FEASIBILITY:

1	Can a 5-dB(A) reduction in traffic noise levels be achieved for at least one impacted receptor?	X YES	NO
2	Does topography negatively affect the proposed abatement measure?	YES	X NO
3	Does the abatement measure negatively affect property access, drainage, safety and maintenance requirements?	YES	X NO
4	Is there control of access in the vicinity of the proposed abatement measure?	YES	X NO

B. REASONABLENESS:

1	Can a 7-dB(A) reduction in traffic noise levels be achieved for at least one impacted front row receptor?	X YES	NO
2	Is the design criteria per benefited receptor of 6300 (sq.ft.)/cu.yd (CIRCLE ONE) less than the maximum allowable design criteria per benefited receptor of 3013 (sq.ft.)/ cu.yd.? (CIRCLE ONE)	YES	X NO

C. NOISE ABATEMENT DECISION:

1	Is the noise mitigation feasible?	X YES	NO
2	Is the noise mitigation reasonable?	YES	X NO
3	Is the noise mitigation likely?	YES	X NO
4	Have the owners' and residents' viewpoints been solicited?	YES	X NO
5	Is the noise mitigation recommended for construction?	YES	NO

D. OPTIONAL REASONABLENESS CONSIDERATION:

1	Was optional averaging noise abatement allowance within a common noise environment used for consideration of barrier reasonableness?	YES	X NO

2 If the answer to D.1 is YES, the design criteria per benefited receptor for each individual barrier within the common noise environment before averaging are:

Bar No. _____ _____ sq.ft./cu.yd (CIRCLE ONE) Bar No. _____ _____ sq.ft./cu.yd (CIRCLE ONE)

Bar No. _____ _____ sq.ft./cu.yd Bar No. _____ _____ sq.ft./cu.yd

3 If the answer to D.1 is YES, is the design criteria per benefited receptor for each individual barrier less than or equal to twice the maximum allowable design criteria per benefited receptor of _____ sq.ft./cu.yd (CIRCLE ONE) _____ YES _____ NO

Form Completed By: E SALUTZ Date: _____

In Consultation With: _____ Date: _____

Complete 540
Traffic Noise Analysis

3/31/2015

Blue Corridor

Noise Wall 90

Receptor	First Row	Residences Represented	NAC Land Use Category[1]	Noise Levels[2] Existing dB(A)	Build dB(A)	Increase	Impacted Receptors	Short Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	Intermediate Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	Tall Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors
R2155A	Yes	1	B	55	66	11	1	61	5	1	60	6	1	59	7	1
R2155B	Yes	1	B	55	62	7		59	3		58	4		57	5	1
R2156A	Yes	1	B	55	65	10	1	61	4		60	5	1	59	6	1
R2156B	Yes	1	B	55	67	12	1	61	6	1	60	7	1	59	8	1
R2157A		1	B	55	59	4		58	1		57	2		56	3	
R2157B		1	B	55	58	3		58	0		58	0		57	1	
R2158		1	B	55	63	8		63	0		63	0		62	1	
R2159	Yes	1	B	55	67	12	1	61	6	1	60	7	1	58	9	1
R2160		1	B	55	63	8		63	0		63	0		62	1	
R2161		1	B	55	62	7		64	-2		64	-2		64	-2	
R2162	Yes	1	B	57	64	7		60	4		60	4		59	5	1
R2163		1	B	59	66	7	1	66	0		66	0		66	0	
R2164		1	B	58	64	6		64	0		64	0		64	0	
R2165		COMMERCIAL	F	59	62	3		62	0		62	0		62	0	

Length (ft)=	2423	2423	2423
Average Height =	10	12	16
Area of Noise Wall (sft)=	24230	29077	38769
Impacted Receptors=	5	5	5
Number of Benefited Receptors=	3	4	6
Area of Noise Wall per Benefit Receptor (sft)=	8077	7269	6462
Average Increase in dB(A) of all Impacted Receptors=	10	10	10
Maximum Allowable Base Quantity of Noise Wall per Benefited Receptor (sft)=	2864	2864	2864
Feasible (5 dB(A) Reduction)=	Yes	Yes	Yes
Reasonable (Wall Area per Benefit) =	No	No	No
Reasonable (7 dB(A) Reduction) =	No	Yes	Yes
Breaks Line of Sight to Impacted Properties? =	No	Yes	Yes

(1) Category B denotes a residential property.
(2) Noise levels highlighted in red are levels above the Noise Abatement Criteria.
(3) Values highlighted in green are a 5 dB(A) or greater reduction in noise levels.

Note: Boxed results indicate barrier discussed in report text.

NCDOT SOUND BARRIER
FEASIBILITY and REASONABLENESS
WORKSHEET

PROJECT - Complete 540 TIP # - R-2721, R-2828, R-2829

LOCATION - Barrier 90 COUNTY(IES) - Wake and Johnston

IMPACTS - 5 # BENEFITS - 4 NAC: A (B) C D E F G (CIRCLE ALL THAT APPLY)

A. FEASIBILITY:

1	Can a 5-dB(A) reduction in traffic noise levels be achieved for at least one impacted receptor?	X YES	NO
2	Does topography negatively affect the proposed abatement measure?	YES	X NO
3	Does the abatement measure negatively affect property access, drainage, safety and maintenance requirements?	YES	X NO
4	Is there control of access in the vicinity of the proposed abatement measure?	YES	X NO

B. REASONABLENESS:

1	Can a 7-dB(A) reduction in traffic noise levels be achieved for at least one impacted front row receptor?	X YES	NO
2	Is the design criteria per benefited receptor of 7269 (CIRCLE ONE) (sq.ft.) / cu.yd less than the maximum allowable design criteria per benefited receptor of 2864 (CIRCLE ONE) (sq.ft.) / cu.yd.?	YES	X NO

C. NOISE ABATEMENT DECISION:

1	Is the noise mitigation feasible?	X YES	NO
2	Is the noise mitigation reasonable?	YES	X NO
3	Is the noise mitigation likely?	YES	X NO
4	Have the owners' and residents' viewpoints been solicited?	YES	X NO
5	Is the noise mitigation recommended for construction?	YES	NO

D. OPTIONAL REASONABLENESS CONSIDERATION:

1	Was optional averaging noise abatement allowance within a common noise environment used for consideration of barrier reasonableness?	YES	X NO
2	If the answer to D.1 is YES, the design criteria per benefited receptor for each individual barrier within the common noise environment before averaging are:		

Bar No. _____ _____ (CIRCLE ONE) sq.ft./cu.yd Bar No. _____ _____ (CIRCLE ONE) sq.ft./cu.yd

Bar No. _____ _____ sq.ft./cu.yd Bar No. _____ _____ sq.ft./cu.yd

3	If the answer to D.1 is YES, is the design criteria per benefited receptor for each individual barrier less than or equal to twice the maximum allowable design criteria per benefited receptor of _____ (CIRCLE ONE) sq.ft./cu.yd	YES	NO

Form Completed By: E SALUTZ Date: _____

In Consultation With: _____ Date: _____

Complete 540 3/16/2015
Traffic Noise Analysis

Blue Corridor

Noise Wall 92

Receptor	First Row	Residences Represented	NAC Land Use Category[1]	Noise Levels[2] Existing dB(A)	Build dB(A)	Increase	Impacted Receptors	Short Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	Recommended[4] Intermediate Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	Tall Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors
R2183A		1	B	52	52	0		52	0		52	0		52	0	
R2183B		1	B	52	51	-1		51	0		51	0		51	0	
R2184A		1	B	52	51	-1		51	0		50	1		50	1	
R2184B		1	B	52	52	0		51	1		51	1		51	1	
R2186	Yes	1	B	52	71	19	1	63	8	1	62	9	1	61	10	1
R2187	Yes	1	B	52	69	17	1	61	8	1	60	9	1	60	9	1
R2188	Yes	1	B	52	69	17	1	62	7	1	61	8	1	60	9	1

	Short Wall	Recommended[4] Intermediate Wall	Tall Wall
Length (ft)=	800	800	800
Average Height =	8	10	12
Area of Noise Wall (sft)=	6400	8000	9600
Impacted Receptors=	3	3	3
Number of Benefited Receptors=	3	3	3
Area of Noise Wall per Benefit Receptor (sft)=	2133	2667	3200
Average Increase in dB(A) of all Impacted Receptors=	18	18	18
Maximum Allowable Base Quantity of Noise Wall per Benefited Receptor (sft)=	3118	3118	3118
Feasible (5 dB(A) Reduction)=	Yes	Yes	Yes
Reasonable (Wall Area per Benefit) =	Yes	Yes	No
Reasonable (7 dB(A) Reduction) =	Yes	Yes	Yes
Breaks Line of Sight to Impacted Properties? =	Yes	Yes	Yes

Recommended 10ft wall

(1) Category B denotes a residential property.
(2) Noise levels highlighted in red are levels above the Noise Abatement Criteria.
(3) Values highlighted in green are a 5 dB(A) or greater reduction in noise levels.
(4) A 10ft barrier was chosen because all criteria for feasible and reasonable have been met, and the most properties are benefited.

NCDOT SOUND BARRIER
FEASIBILITY and REASONABLENESS
WORKSHEET

PROJECT - Complete 540 TIP # - R-2721, R-2828, R-2829

LOCATION - Barrier 92 COUNTY(IES) - Wake and Johnston

IMPACTS - 3 # BENEFITS - 3 NAC: A (B) C D E F G (CIRCLE ALL THAT APPLY)

A. FEASIBILITY:

1	Can a 5-dB(A) reduction in traffic noise levels be achieved for at least one impacted receptor?	X YES	NO
2	Does topography negatively affect the proposed abatement measure?	YES	X NO
3	Does the abatement measure negatively affect property access, drainage, safety and maintenance requirements?	YES	X NO
4	Is there control of access in the vicinity of the proposed abatement measure?	YES	X NO

B. REASONABLENESS:

1	Can a 7-dB(A) reduction in traffic noise levels be achieved for at least one impacted front row receptor?	X YES	NO
2	Is the design criteria per benefited receptor of 2667 (sq.ft.) / cu.yd (CIRCLE ONE) less than the maximum allowable design criteria per benefited receptor of 3118 (sq.ft.) / cu.yd.? (CIRCLE ONE)	X YES	NO

C. NOISE ABATEMENT DECISION:

1	Is the noise mitigation feasible?	X YES	NO
2	Is the noise mitigation reasonable?	X YES	NO
3	Is the noise mitigation likely?	X YES	NO
4	Have the owners' and residents' viewpoints been solicited?	YES	X NO
5	Is the noise mitigation recommended for construction?	YES	NO

D. OPTIONAL REASONABLENESS CONSIDERATION:

1	Was optional averaging noise abatement allowance within a common noise environment used for consideration of barrier reasonableness?	YES	X NO
2	If the answer to D.1 is YES, the design criteria per benefited receptor for each individual barrier within the common noise environment before averaging are:		

Bar No. _____ _____ sq.ft./cu.yd (CIRCLE ONE) Bar No. _____ _____ sq.ft./cu.yd (CIRCLE ONE)

Bar No. _____ _____ sq.ft./cu.yd Bar No. _____ _____ sq.ft./cu.yd

3	If the answer to D.1 is YES, is the design criteria per benefited receptor for each individual barrier less than or equal to twice the maximum allowable design criteria per benefited receptor of _____ sq.ft./cu.yd (CIRCLE ONE)	YES	NO

Form Completed By: E SALUTZ Date: _____

In Consultation With: _____ Date: _____

Complete 540 4/1/2015
Traffic Noise Analysis

Blue Corridor

Noise Wall 93

Receptor	First Row	Residences Represented	NAC Land Use Category[1]	Noise Levels[2] Existing dB(A)	Build dB(A)	Increase	Impacted Receptors	Short Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	Intermediate Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	Tall Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors
R2190A	Yes	1	B	52	63	11		59	4		58	5	1	58	5	1
R2190B	Yes	1	B	52	57	5		55	2		55	2		54	3	
R2191A	Yes	1	B	52	59	7		57	2		57	2		56	3	
R2191B	Yes	1	B	52	59	7		57	2		57	2		56	3	
R2192A	Yes	1	B	52	59	7		57	2		57	2		56	3	
R2192B	Yes	1	B	52	64	12		59	5	1	58	6	1	58	6	1
R2193		1	B	52	67	15	1	61	6	1	60	7	1	59	8	1
R2194A		1	B	52	62	10		58	4		57	5	1	57	5	1
R2194B		1	B	52	57	5		54	3		54	3		53	4	
R2195		1	B	52	54	2		52	2		52	2		51	3	
R2196A		1	B	52	54	2		51	3		51	3		51	3	
R2196B		1	B	52	53	1		51	2		51	2		50	3	
R2197A		1	B	52	51	-1		50	1		50	1		49	2	
R2197B		1	B	52	48	-4		48	0		48	0		48	0	
R2204A		1	B	52	57	5		54	3		54	3		53	4	
R2204B		1	B	52	58	6		55	3		55	3		55	3	
R2205A		1	B	52	61	9		59	2		59	2		59	2	
R2205B		1	B	52	60	8		57	3		57	3		57	3	
R2205C		1	B	52	61	9		60	1		60	1		60	1	
R2205D		1	B	52	61	9		60	1		60	1		60	1	
R2206		1	B	57	61	4		61	0		61	0		61	0	

Length (ft)=	1531	1531	1531
Average Height =	10	12	14
Area of Noise Wall (sft)=	15312	18375	21437
Impacted Receptors=	1	1	1
Number of Benefited Receptors=	2	4	4
Area of Noise Wall per Benefit Receptor (sft)=	7656	4594	5359
Average Increase in dB(A) of all Impacted Receptors=	15	15	15
Maximum Allowable Base Quantity of Noise Wall per Benefited Receptor (sft)=	3025	3025	3025
Feasible (5 dB(A) Reduction)=	Yes	Yes	Yes
Reasonable (Wall Area per Benefit) =	No	No	No
Reasonable (7 dB(A) Reduction) =	No	Yes	Yes
Breaks Line of Sight to Impacted Properties? =	No	Yes	Yes

(1) Category B denotes a residential property.
(2) Noise levels highlighted in red are levels above the Noise Abatement Criteria.
(3) Values highlighted in green are a 5 dB(A) or greater reduction in noise levels.

Note: Boxed results indicate barrier discussed in report text.

NCDOT SOUND BARRIER
FEASIBILITY and REASONABLENESS
WORKSHEET

PROJECT - Complete 540 TIP # - R-2721, R-2828, R-2829

LOCATION - Barrier 93 COUNTY(IES) - Wake and Johnston

IMPACTS - 1 # BENEFITS - 4 NAC: A (B) C D E F G (CIRCLE ALL THAT APPLY)

A. FEASIBILITY:

1	Can a 5-dB(A) reduction in traffic noise levels be achieved for at least one impacted receptor?	X YES	NO
2	Does topography negatively affect the proposed abatement measure?	YES	X NO
3	Does the abatement measure negatively affect property access, drainage, safety and maintenance requirements?	YES	X NO
4	Is there control of access in the vicinity of the proposed abatement measure?	YES	X NO

B. REASONABLENESS:

1	Can a 7-dB(A) reduction in traffic noise levels be achieved for at least one impacted front row receptor?	X YES	NO
2	Is the design criteria per benefited receptor of 4594 (CIRCLE ONE) (sq.ft.) / cu.yd less than the maximum allowable design criteria per benefited receptor of 3025 (CIRCLE ONE) (sq.ft.) / cu.yd.?	YES	X NO

C. NOISE ABATEMENT DECISION:

1	Is the noise mitigation feasible?	X YES	NO
2	Is the noise mitigation reasonable?	YES	X NO
3	Is the noise mitigation likely?	YES	X NO
4	Have the owners' and residents' viewpoints been solicited?	YES	X NO
5	Is the noise mitigation recommended for construction?	YES	NO

D. OPTIONAL REASONABLENESS CONSIDERATION:

1	Was optional averaging noise abatement allowance within a common noise environment used for consideration of barrier reasonableness?	YES	X NO
2	If the answer to D.1 is YES, the design criteria per benefited receptor for each individual barrier within the common noise environment before averaging are:		

Bar No. _____ _____ (CIRCLE ONE) sq.ft./cu.yd Bar No. _____ _____ (CIRCLE ONE) sq.ft./cu.yd

Bar No. _____ _____ sq.ft./cu.yd Bar No. _____ _____ sq.ft./cu.yd

3	If the answer to D.1 is YES, is the design criteria per benefited receptor for each individual barrier less than or equal to twice the maximum allowable design criteria per benefited receptor of _____ (CIRCLE ONE) sq.ft./cu.yd	YES	NO

Form Completed By: E SALUTZ Date: _____

In Consultation With: _____ Date: _____

Complete 540
Traffic Noise Analysis

3/16/2015

Blue Corridor

Noise Wall 94

Receptor	First Row	Residences Represented	NAC Land Use Category[1]	Noise Levels[2] Existing dB(A)	Build dB(A)	Increase	Impacted Receptors	Short Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	Intermediate Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	Recommended[4] Tall Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors
R2216A		1	B	52	65	13	1	57	8	1	57	8	1	57	8	1
R2216B		1	B	52	67	15	1	58	9	1	57	10	1	57	10	1
R2216C		1	B	52	63	11		56	7	1	56	7	1	56	7	1
R2217		1	B	52	60	8		55	5	1	54	6	1	54	6	1
R2218A		1	B	52	59	7		54	5	1	54	5	1	53	6	1
R2218B		1	B	52	60	8		55	5	1	54	6	1	54	6	1
R2219		1	B	52	57	5		54	3		54	3		54	3	
R2220A	Yes	1	B	52	71	19	1	60	11	1	59	12	1	59	12	1
R2220B	Yes	1	B	52	72	20	1	60	12	1	59	13	1	59	13	1
R2220C	Yes	1	B	52	70	18	1	59	11	1	59	11	1	58	12	1
R2221A	Yes	1	B	52	73	21	1	63	10	1	61	12	1	60	13	1
R2221B	Yes	1	B	52	72	20	1	63	9	1	62	10	1	61	11	1
R2222A	Yes	1	B	52	72	20	1	67	5	1	64	8	1	63	9	1
R2222B	Yes	1	B	52	66	14	1	64	2		62	4		61	5	1
R2223A		1	B	52	64	12		62	2		61	3		60	4	
R2223B		1	B	52	60	8		59	1		59	1		58	2	
R1823		1	B	52	60	8		55	5	1	54	6	1	54	6	1

Length (ft)=	2000	2000	2000
Average Height =	16	18	20
Area of Noise Wall (sft)=	31999	35999	40003
Impacted Receptors=	9	9	9
Number of Benefited Receptors=	13	13	14
Area of Noise Wall per Benefit Receptor (sft)=	2461	2769	2857
Average Increase in dB(A) of all Impacted Receptors=	18	18	18
Maximum Allowable Base Quantity of Noise Wall per Benefited Receptor (sft)=	3122	3122	3122
Feasible (5 dB(A) Reduction)=	Yes	Yes	Yes
Reasonable (Wall Area per Benefit) =	Yes	Yes	Yes
Reasonable (7 dB(A) Reduction) =	Yes	Yes	Yes
Breaks Line of Sight to Impacted Properties? =	No	Yes	Yes

(1) Category B denotes a residential property.
(2) Noise levels highlighted in red are levels above the Noise Abatement Criteria.
(3) Values highlighted in green are a 5 dB(A) or greater reduction in noise levels.
(4) A 20ft barrier was chosen because all criteria for feasible and reasonable have been met, and the most properties are benefited.

Recommended 20ft wall

NCDOT SOUND BARRIER
FEASIBILITY and REASONABLENESS
WORKSHEET

PROJECT - Complete 540 TIP # - R-2721, R-2828, R-2829

LOCATION - Barrier 94 COUNTY(IES) - Wake and Johnston

IMPACTS - 9 # BENEFITS - 14 NAC: A (B) C D E F G (CIRCLE ALL THAT APPLY)

A. FEASIBILITY:

1	Can a 5-dB(A) reduction in traffic noise levels be achieved for at least one impacted receptor?	X YES	NO
2	Does topography negatively affect the proposed abatement measure?	YES	X NO
3	Does the abatement measure negatively affect property access, drainage, safety and maintenance requirements?	YES	X NO
4	Is there control of access in the vicinity of the proposed abatement measure?	YES	X NO

B. REASONABLENESS:

1	Can a 7-dB(A) reduction in traffic noise levels be achieved for at least one impacted front row receptor?	X YES	NO
2	Is the design criteria per benefited receptor of 2857 (sq.ft.) / cu.yd (CIRCLE ONE) less than the maximum allowable design criteria per benefited receptor of 3122 (sq.ft.) / cu.yd.? (CIRCLE ONE)	X YES	NO

C. NOISE ABATEMENT DECISION:

1	Is the noise mitigation feasible?	X YES	NO
2	Is the noise mitigation reasonable?	X YES	NO
3	Is the noise mitigation likely?	X YES	NO
4	Have the owners' and residents' viewpoints been solicited?	YES	X NO
5	Is the noise mitigation recommended for construction?	YES	NO

D. OPTIONAL REASONABLENESS CONSIDERATION:

1	Was optional averaging noise abatement allowance within a common noise environment used for consideration of barrier reasonableness?	YES	X NO
2	If the answer to D.1 is YES, the design criteria per benefited receptor for each individual barrier within the common noise environment before averaging are:		

Bar No. _____ _____ sq.ft./cu.yd (CIRCLE ONE) Bar No. _____ _____ sq.ft./cu.yd (CIRCLE ONE)

Bar No. _____ _____ sq.ft./cu.yd Bar No. _____ _____ sq.ft./cu.yd

3	If the answer to D.1 is YES, is the design criteria per benefited receptor for each individual barrier less than or equal to twice the maximum allowable design criteria per benefited receptor of _____ sq.ft./cu.yd (CIRCLE ONE)	YES	NO

Form Completed By: E SALUTZ Date: _____

In Consultation With: _____ Date: _____

Complete 540 3/16/2015
Traffic Noise Analysis

Blue Corridor

Noise Wall 95

Receptor	First Row	Residences Represented	NAC Land Use Category[1]	Noise Levels[2] Existing dB(A)	Build dB(A)	Increase	Impacted Receptors	Short Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	Intermediate Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	Tall Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors
R2229A		1	B	52	61	9		61	0		61	0		61	0	
R2229B		1	B	52	60	8		60	0		60	0		60	0	
R2229C		1	B	56	64	8		64	0		64	0		64	0	
R2230A		1	B	52	59	7		58	1		58	1		57	2	
R2230B		1	B	52	59	7		58	1		58	1		58	1	
R2231	Yes	1	B	52	70	18	1	63	7	1	63	7	1	62	8	1
R2232	Yes	1	B	52	68	16	1	63	5	1	62	6	1	61	7	1
R2233	Yes	1	B	52	64	12		59	5	1	58	6	1	57	7	1
R2242		1	B	56	64	8		58	6	1	57	7	1	56	8	1
R2243A		1	B	52	65	13	1	61	4		58	7	1	57	8	1
R2243B		1	B	52	62	10		60	2		58	4		56	6	1
R2244	Yes	1	B	52	67	15	1	59	8	1	58	9	1	58	9	1
R2245	Yes	1	B	52	63	11		58	5	1	57	6	1	56	7	1
R2246A		1	B	52	64	12		61	3		60	4		59	5	1
R2246B		1	B	52	64	12		60	4		59	5	1	58	6	1
R2247	Yes	1	B	52	63	11		59	4		58	5	1	58	5	1
R2248A	Yes	1	B	52	67	15	1	61	6	1	61	6	1	60	7	1
R2248B	Yes	1	B	52	66	14	1	61	5	1	60	6	1	60	6	1
R2249	Yes	1	B	52	66	14	1	60	6	1	60	6	1	59	7	1
R2250A		1	B	52	57	5		54	3		54	3		53	4	
R2250B		1	B	52	56	4		54	2		53	3		53	3	
R2250C		1	B	52	57	5		55	2		55	2		54	3	
R2251	Yes	1	B	52	70	18	1	62	8	1	61	9	1	61	9	1

Length (ft)=	3423	3423	3423
Average Height =	12	14	16
Area of Noise Wall (sft)=	41077	47924	54769
Impacted Receptors=	8	8	8
Number of Benefited Receptors=	10	13	15
Area of Noise Wall per Benefit Receptor (sft)=	4108	3686	3651
Average Increase in dB(A) of all Impacted Receptors=	15	15	15
Maximum Allowable Base Quantity of Noise Wall per Benefited Receptor (sft)=	3038	3038	3038
Feasible (5 dB(A) Reduction)=	Yes	Yes	Yes
Reasonable (Wall Area per Benefit) =	No	No	No
Reasonable (7 dB(A) Reduction) =	Yes	Yes	Yes
Breaks Line of Sight to Impacted Properties? =	No	Yes	Yes

(1) Category B denotes a residential property.
(2) Noise levels highlighted in red are levels above the Noise Abatement Criteria.
(3) Values highlighted in green are a 5 dB(A) or greater reduction in noise levels.

Note: Boxed results indicate barrier discussed in report text.

NCDOT SOUND BARRIER
FEASIBILITY and REASONABLENESS
WORKSHEET

PROJECT - Complete 540 TIP # - R-2721, R-2828, R-2829

LOCATION - Barrier 95 COUNTY(IES) - Wake and Johnston

IMPACTS - 8 # BENEFITS - 15 NAC: A (B) C D E F G (CIRCLE ALL THAT APPLY)

A. FEASIBILITY:

1	Can a 5-dB(A) reduction in traffic noise levels be achieved for at least one impacted receptor?	X YES	NO
2	Does topography negatively affect the proposed abatement measure?	YES	X NO
3	Does the abatement measure negatively affect property access, drainage, safety and maintenance requirements?	YES	X NO
4	Is there control of access in the vicinity of the proposed abatement measure?	YES	X NO

B. REASONABLENESS:

1	Can a 7-dB(A) reduction in traffic noise levels be achieved for at least one impacted front row receptor?	X YES	NO
2	Is the design criteria per benefited receptor of 3651 (sq.ft.) / cu.yd (CIRCLE ONE) less than the maximum allowable design criteria per benefited receptor of 3038 (sq.ft.) / cu.yd.? (CIRCLE ONE)	YES	X NO

C. NOISE ABATEMENT DECISION:

1	Is the noise mitigation feasible?	X YES	NO
2	Is the noise mitigation reasonable?	YES	X NO
3	Is the noise mitigation likely?	YES	X NO
4	Have the owners' and residents' viewpoints been solicited?	YES	X NO
5	Is the noise mitigation recommended for construction?	YES	NO

D. OPTIONAL REASONABLENESS CONSIDERATION:

1	Was optional averaging noise abatement allowance within a common noise environment used for consideration of barrier reasonableness?	YES	X NO

2 If the answer to D.1 is YES, the design criteria per benefited receptor for each individual barrier within the common noise environment before averaging are: (CIRCLE ONE)

Bar No. _____ _____ sq.ft./cu.yd Bar No. _____ _____ sq.ft./cu.yd

Bar No. _____ _____ sq.ft./cu.yd Bar No. _____ _____ sq.ft./cu.yd

3 If the answer to D.1 is YES, is the design criteria per benefited receptor for each individual barrier less than or equal to twice the maximum allowable design criteria per benefited receptor of _____ sq.ft./cu.yd (CIRCLE ONE) YES NO

Form Completed By: E SALUTZ Date: _____

In Consultation With: _____ Date: _____

Complete 540
Traffic Noise Analysis

4/1/2015

Blue Corridor

Noise Wall 97

Receptor	First Row	Residences Represented	NAC Land Use Category[1]	Noise Levels[2] Existing dB(A)	Build dB(A)	Increase	Impacted Receptors	Short Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	Intermediate Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	Tall Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors
R2266		1	B	51	63	12		58	5	1	57	6	1	57	6	1
R2267A		1	B	51	62	11		59	3		58	4		57	5	1
R2267B		1	B	51	60	9		57	3		57	3		56	4	
R2268	Yes	1	B	51	70	19	1	63	7	1	63	7	1	62	8	1
R2269A		1	B	51	64	13		60	4		60	4		59	5	1
R2269B		1	B	51	62	11		58	4		58	4		57	5	1
R2270		1	B	51	60	9		57	3		56	4		56	4	
R2271		1	B	51	57	6		55	2		55	2		54	3	

Length (ft)=	1417	1417	1417
Average Height =	12	14	16
Area of Noise Wall (sft)=	17003	19836	22668
Impacted Receptors=	1	1	1
Number of Benefited Receptors=	2	2	5
Area of Noise Wall per Benefit Receptor (sft)=	8502	9918	4534
Average Increase in dB(A) of all Impacted Receptors=	19	19	19
Maximum Allowable Base Quantity of Noise Wall per Benefited Receptor (sft)=	3165	3165	3165
Feasible (5 dB(A) Reduction)=	Yes	Yes	Yes
Reasonable (Wall Area per Benefit) =	No	No	No
Reasonable (7 dB(A) Reduction) =	Yes	Yes	Yes
Breaks Line of Sight to Impacted Properties? =	No	Yes	Yes

(1) Category B denotes a residential property.
(2) Noise levels highlighted in red are levels above the Noise Abatement Criteria.
(3) Values highlighted in green are a 5 dB(A) or greater reduction in noise levels.

Note: Boxed results indicate barrier discussed in report text.

NCDOT SOUND BARRIER
FEASIBILITY and REASONABLENESS
WORKSHEET

PROJECT - Complete 540 TIP # - R-2721, R-2828, R-2829

LOCATION - Barrier 97 COUNTY(IES) - Wake and Johnston

IMPACTS - 1 # BENEFITS - 5 NAC: A (B) C D E F G (CIRCLE ALL THAT APPLY)

A. FEASIBILITY:

1	Can a 5-dB(A) reduction in traffic noise levels be achieved for at least one impacted receptor?	X YES	NO
2	Does topography negatively affect the proposed abatement measure?	YES	X NO
3	Does the abatement measure negatively affect property access, drainage, safety and maintenance requirements?	YES	X NO
4	Is there control of access in the vicinity of the proposed abatement measure?	YES	X NO

B. REASONABLENESS:

1	Can a 7-dB(A) reduction in traffic noise levels be achieved for at least one impacted front row receptor?	X YES	NO
2	Is the design criteria per benefited receptor of 4534 (CIRCLE ONE) (sq.ft.) / cu.yd less than the maximum allowable design criteria per benefited receptor of 3165 (CIRCLE ONE) (sq.ft.) / cu.yd.?	YES	X NO

C. NOISE ABATEMENT DECISION:

1	Is the noise mitigation feasible?	X YES	NO
2	Is the noise mitigation reasonable?	YES	X NO
3	Is the noise mitigation likely?	YES	X NO
4	Have the owners' and residents' viewpoints been solicited?	YES	X NO
5	Is the noise mitigation recommended for construction?	YES	NO

D. OPTIONAL REASONABLENESS CONSIDERATION:

1	Was optional averaging noise abatement allowance within a common noise environment used for consideration of barrier reasonableness?	YES	X NO
2	If the answer to D.1 is YES, the design criteria per benefited receptor for each individual barrier within the common noise environment before averaging are:		

Bar No. _____ _____ (CIRCLE ONE) sq.ft./cu.yd Bar No. _____ _____ (CIRCLE ONE) sq.ft./cu.yd

Bar No. _____ _____ sq.ft./cu.yd Bar No. _____ _____ sq.ft./cu.yd

3	If the answer to D.1 is YES, is the design criteria per benefited receptor for each individual barrier less than or equal to twice the maximum allowable design criteria per benefited receptor of _____ (CIRCLE ONE) sq.ft./cu.yd	YES	NO

Form Completed By: E SALUTZ Date: _____

In Consultation With: _____ Date: _____

Complete 540 3/16/2015
Traffic Noise Analysis

Blue Corridor

Noise Wall 98

Receptor	First Row	Residences Represented	NAC Land Use Category[1]	Noise Levels[2] Existing dB(A)	Build dB(A)	Increase	Impacted Receptors	Short Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	Intermediate Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	Tall Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors
R2279	Yes	1	B	46	62	16	1	58	4		58	4		57	5	1
R2280	Yes	1	B	46	60	14		56	4		56	4		55	5	1
R2281	Yes	1	B	46	62	16	1	58	4		57	5	1	56	6	1
R0651	Yes	1	B	46	67	21	1	63	4		59	8	1	58	9	1
R2282A	Yes	1	B	46	69	23	1	63	6	1	62	7	1	60	9	1
R2282B	Yes	1	B	46	66	20	1	61	5	1	59	7	1	59	7	1
R2283		1	B	46	62	16	1	60	2		57	5	1	56	6	1
R2284A	Yes	1	B	46	70	24	1	62	8	1	61	9	1	61	9	1
R2284B	Yes	1	B	46	70	24	1	62	8	1	61	9	1	60	10	1
R2285A		1	B	46	60	14		56	4		55	5	1	54	6	1
R2285B		1	B	46	58	12		55	3		54	4		54	4	
R2286A	Yes	1	B	46	66	20	1	60	6	1	60	6	1	59	7	1
R2286B	Yes	1	B	46	69	23	1	61	8	1	61	8	1	60	9	1

Length (ft)=	3800	3800	3800
Average Height =	10	12	14
Area of Noise Wall (sft)=	37994	45592	53191
Impacted Receptors=	10	10	10
Number of Benefited Receptors=	6	10	12
Area of Noise Wall per Benefit Receptor (sft)=	6332	4559	4433
Average Increase in dB(A) of all Impacted Receptors=	20	20	20
Maximum Allowable Base Quantity of Noise Wall per Benefited Receptor (sft)=	3211	3211	3211
Feasible (5 dB(A) Reduction)=	Yes	Yes	Yes
Reasonable (Wall Area per Benefit) =	No	No	No
Reasonable (7 dB(A) Reduction) =	Yes	Yes	Yes
Breaks Line of Sight to Impacted Properties? =	No	Yes	Yes

(1) Category B denotes a residential property.
(2) Noise levels highlighted in red are levels above the Noise Abatement Criteria.
(3) Values highlighted in green are a 5 dB(A) or greater reduction in noise levels.

Note: Boxed results indicate barrier discussed in report text.

NCDOT SOUND BARRIER
FEASIBILITY and REASONABLENESS
WORKSHEET

PROJECT - Complete 540 TIP # - R-2721, R-2828, R-2829

LOCATION - Barrier 98 COUNTY(IES) - Wake and Johnston

IMPACTS - 10 # BENEFITS - 12 NAC: A (B) C D E F G (CIRCLE ALL THAT APPLY)

A. FEASIBILITY:

1	Can a 5-dB(A) reduction in traffic noise levels be achieved for at least one impacted receptor?	X YES	NO
2	Does topography negatively affect the proposed abatement measure?	YES	X NO
3	Does the abatement measure negatively affect property access, drainage, safety and maintenance requirements?	YES	X NO
4	Is there control of access in the vicinity of the proposed abatement measure?	YES	X NO

B. REASONABLENESS:

1	Can a 7-dB(A) reduction in traffic noise levels be achieved for at least one impacted front row receptor?	X YES	NO
2	Is the design criteria per benefited receptor of 4433 (CIRCLE ONE) (sq.ft.) / cu.yd less than the maximum allowable design criteria per benefited receptor of 3211 (CIRCLE ONE) (sq.ft.) / cu.yd.?	YES	X NO

C. NOISE ABATEMENT DECISION:

1	Is the noise mitigation feasible?	X YES	NO
2	Is the noise mitigation reasonable?	YES	X NO
3	Is the noise mitigation likely?	YES	X NO
4	Have the owners' and residents' viewpoints been solicited?	YES	X NO
5	Is the noise mitigation recommended for construction?	YES	NO

D. OPTIONAL REASONABLENESS CONSIDERATION:

1	Was optional averaging noise abatement allowance within a common noise environment used for consideration of barrier reasonableness?	YES	X NO
2	If the answer to D.1 is YES, the design criteria per benefited receptor for each individual barrier within the common noise environment before averaging are:		

Bar No. _____ _____ (CIRCLE ONE) sq.ft./cu.yd Bar No. _____ _____ (CIRCLE ONE) sq.ft./cu.yd

Bar No. _____ _____ sq.ft./cu.yd Bar No. _____ _____ sq.ft./cu.yd

3	If the answer to D.1 is YES, is the design criteria per benefited receptor for each individual barrier less than or equal to twice the maximum allowable design criteria per benefited receptor of _____ (CIRCLE ONE) sq.ft./cu.yd	YES	NO

Form Completed By: E SALUTZ Date: _____

In Consultation With: _____ Date: _____

Complete 540
Traffic Noise Analysis

4/1/2015

Blue Corridor

Noise Wall 99

Receptor	First Row	Residences Represented	NAC Land Use Category[1]	Noise Levels[2] Existing dB(A)	Build dB(A)	Increase	Benefit Increases	Impacted Receptors	Short Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	Intermediate Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	Tall Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors
R0637	Yes	1	B	46	55	9			53	2		53	2		52	3	
R0638	Yes	1	B	50	57	7			56	1		55	2		55	2	
R0639A	Yes	1	B	51	60	9			59	1		57	3		57	3	
R0639B	Yes	1	B	52	59	7			58	1		57	2		56	3	
R0639C	Yes	1	B	52	59	7			58	1		56	3		56	3	
R0641A	Yes	1	B	46	62	16	16	1	59	3		57	5	1	57	5	1
R0641B	Yes	1	B	46	63	17	17	1	61	2		59	4		58	5	1
R0641C	Yes	1	B	46	62	16	16	1	61	1		58	4		58	4	
R0642A	Yes	1	B	46	70	24	24	1	61	9	1	60	10	1	60	10	1
R0642B	Yes	1	B	46	67	21	21	1	61	6	1	60	7	1	59	8	1
R0642C	Yes	1	B	46	68	22	22	1	63	5	1	61	7	1	60	8	1

Length (ft)=	2200	2200	2200
Average Height =	10	12	14
Area of Noise Wall (sft)=	22002	26401	30800
Impacted Receptors=	6	6	6
Number of Benefited Receptors=	3	4	5
Area of Noise Wall per Benefit Receptor (sft)=	7334	6600	6160
Average Increase in dB(A) of all Impacted Receptors=	19	19	19
Maximum Allowable Base Quantity of Noise Wall per Benefited Receptor (sft)=	3177	3177	3177
Feasible (5 dB(A) Reduction)=	Yes	Yes	Yes
Reasonable (Wall Area per Benefit) =	No	No	No
Reasonable (7 dB(A) Reduction) =	Yes	Yes	Yes
Breaks Line of Sight to Impacted Properties? =	No	No	Yes

(1) Category B denotes a residential property.
(2) Noise levels highlighted in red are levels above the Noise Abatement Criteria.
(3) Values highlighted in green are a 5 dB(A) or greater reduction in noise levels.

Note: Boxed results indicate barrier discussed in report text.

NCDOT SOUND BARRIER
FEASIBILITY and REASONABLENESS
WORKSHEET

PROJECT - Complete 540 TIP # - R-2721, R-2828, R-2829

LOCATION - Barrier 99 COUNTY(IES) - Wake and Johnston

IMPACTS - 6 # BENEFITS - 5 NAC: A (B) C D E F G (CIRCLE ALL THAT APPLY)

A. FEASIBILITY:

1	Can a 5-dB(A) reduction in traffic noise levels be achieved for at least one impacted receptor?	X YES	NO
2	Does topography negatively affect the proposed abatement measure?	YES	X NO
3	Does the abatement measure negatively affect property access, drainage, safety and maintenance requirements?	YES	X NO
4	Is there control of access in the vicinity of the proposed abatement measure?	YES	X NO

B. REASONABLENESS:

1	Can a 7-dB(A) reduction in traffic noise levels be achieved for at least one impacted front row receptor?	X YES	NO
2	Is the design criteria per benefited receptor of 6160 (CIRCLE ONE) (sq.ft.) / cu.yd less than the maximum allowable design criteria per benefited receptor of 3177 (CIRCLE ONE) (sq.ft.) / cu.yd.?	YES	X NO

C. NOISE ABATEMENT DECISION:

1	Is the noise mitigation feasible?	X YES	NO
2	Is the noise mitigation reasonable?	YES	X NO
3	Is the noise mitigation likely?	YES	X NO
4	Have the owners' and residents' viewpoints been solicited?	YES	X NO
5	Is the noise mitigation recommended for construction?	YES	NO

D. OPTIONAL REASONABLENESS CONSIDERATION:

1	Was optional averaging noise abatement allowance within a common noise environment used for consideration of barrier reasonableness?	YES	X NO
2	If the answer to D.1 is YES, the design criteria per benefited receptor for each individual barrier within the common noise environment before averaging are:		

Bar No. _____ _____ (CIRCLE ONE) sq.ft./cu.yd Bar No. _____ _____ (CIRCLE ONE) sq.ft./cu.yd

Bar No. _____ _____ sq.ft./cu.yd Bar No. _____ _____ sq.ft./cu.yd

3	If the answer to D.1 is YES, is the design criteria per benefited receptor for each individual barrier less than or equal to twice the maximum allowable design criteria per benefited receptor of _____ (CIRCLE ONE) sq.ft./cu.yd	YES	NO

Form Completed By: E SALUTZ Date: _____

In Consultation With: _____ Date: _____

Complete 540 3/13/2015
Traffic Noise Analysis

Brown Corridor

Noise Wall 100

Receptor	First Row	Residences Represented	NAC Land Use Category[1]	Noise Levels[2] Existing dB(A)	Build dB(A)	Increase	Impacted Receptors	Short Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	Recommended[4] Intermediate Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	Tall Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors
R0961A	Yes	1	B	53	61	8		60	1		60	1		60	1	
R0961B	Yes	1	B	55	64	9		63	1		63	1		63	1	
R0961C	Yes	1	B	58	66	8	1	65	1		65	1		65	1	
R0962A		1	B	51	63	12		59	4		59	4		59	4	
R0962B		1	B	51	62	11		59	3		58	4		58	4	
R0962C		1	B	51	65	14	1	60	5	1	59	6	1	59	6	1
R0963A	Yes	1	B	51	66	15	1	59	7	1	58	8	1	58	8	1
R0963B	Yes	1	B	57	68	11	1	60	8	1	60	8	1	59	9	1
R0965A		1	B	51	63	12		58	5	1	58	5	1	57	6	1
R0965B		1	B	51	62	11		58	4		57	5	1	57	5	1
R0966	Yes	1	B	51	66	15	1	59	7	1	58	8	1	58	8	1
R0967A		1	B	51	63	12		58	5	1	57	6	1	57	6	1
R0967B		1	B	51	64	13		58	6	1	57	7	1	56	8	1
R0968A		1	B	51	63	12		57	6	1	56	7	1	56	7	1
R0968B		1	B	51	63	12		57	6	1	57	6	1	56	7	1
R0969	Yes	1	B	51	65	14	1	59	6	1	58	7	1	58	7	1

Length (ft)=	2000	2000	2000
Average Height =	12	14	16
Area of Noise Wall (sft)=	23999	27999	31999
Impacted Receptors=	6	6	6
Number of Benefited Receptors=	10	11	11
Area of Noise Wall per Benefit Receptor (sft)=	2400	2545	2909
Average Increase in dB(A) of all Impacted Receptors=	13	13	13
Maximum Allowable Base Quantity of Noise Wall per Benefited Receptor (sft)=	2949	2949	2949
Feasible (5 dB(A) Reduction)=	Yes	Yes	Yes
Reasonable (Wall Area per Benefit) =	Yes	Yes	Yes
Reasonable (7 dB(A) Reduction) =	Yes	Yes	Yes
Breaks Line of Sight to Impacted Properties? =	Yes	Yes	Yes

(1) Category B denotes a residential property.
(2) Noise levels highlighted in red are levels above the Noise Abatement Criteria.
(3) Values highlighted in green are a 5 dB(A) or greater reduction in noise levels.
(4) A 14ft barrier was chosen because all criteria for feasible and reasonable have been met, and the most properties are benefited.

Recommended 14ft wall

NCDOT SOUND BARRIER
FEASIBILITY and REASONABLENESS
WORKSHEET

PROJECT - Complete 540 TIP # - R-2721, R-2828, R-2829

LOCATION - Barrier 100 COUNTY(IES) - Wake and Johnston

IMPACTS - 6 # BENEFITS - 11 NAC: A (B) C D E F G (CIRCLE ALL THAT APPLY)

A. FEASIBILITY:

1	Can a 5-dB(A) reduction in traffic noise levels be achieved for at least one impacted receptor?	X YES	NO
2	Does topography negatively affect the proposed abatement measure?	YES	X NO
3	Does the abatement measure negatively affect property access, drainage, safety and maintenance requirements?	YES	X NO
4	Is there control of access in the vicinity of the proposed abatement measure?	YES	X NO

B. REASONABLENESS:

1	Can a 7-dB(A) reduction in traffic noise levels be achieved for at least one impacted front row receptor?	X YES	NO
2	Is the design criteria per benefited receptor of 2545 (sq.ft.) cu.yd (CIRCLE ONE) less than the maximum allowable design criteria per benefited receptor of 2949 (sq.ft.) cu.yd.? (CIRCLE ONE)	X YES	NO

C. NOISE ABATEMENT DECISION:

1	Is the noise mitigation feasible?	X YES	NO
2	Is the noise mitigation reasonable?	X YES	NO
3	Is the noise mitigation likely?	X YES	NO
4	Have the owners' and residents' viewpoints been solicited?	YES	X NO
5	Is the noise mitigation recommended for construction?	YES	NO

D. OPTIONAL REASONABLENESS CONSIDERATION:

1	Was optional averaging noise abatement allowance within a common noise environment used for consideration of barrier reasonableness?	YES	X NO
2	If the answer to D.1 is YES, the design criteria per benefited receptor for each individual barrier within the common noise environment before averaging are:		

Bar No. _____ _____ sq.ft./cu.yd (CIRCLE ONE) Bar No. _____ _____ sq.ft./cu.yd (CIRCLE ONE)

Bar No. _____ _____ sq.ft./cu.yd Bar No. _____ _____ sq.ft./cu.yd

3	If the answer to D.1 is YES, is the design criteria per benefited receptor for each individual barrier less than or equal to twice the maximum allowable design criteria per benefited receptor of _____ sq.ft./cu.yd (CIRCLE ONE)	YES	NO

Form Completed By: E SALUTZ Date: _____

In Consultation With: _____ Date: _____

Complete 540 3/16/2015
Traffic Noise Analysis

Brown Corridor

Noise Wall 101

Receptor	First Row	Residences Represented	NAC Land Use Category[1]	Noise Levels[2] Existing dB(A)	Build dB(A)	Increase	Impacted Receptors	Short Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	Intermediate Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	Tall Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors
R0970A	Yes	1	B	51	67	16	1	63	4		61	6	1	60	7	1
R0970B	Yes	1	B	51	66	15	1	61	5	1	61	5	1	60	6	1
R0971A	Yes	1	B	51	68	17	1	63	5	1	62	6	1	60	8	1
R0971B	Yes	1	B	51	67	16	1	62	5	1	61	6	1	60	7	1
R0972A	Yes	1	B	51	65	14	1	61	4		60	5	1	59	6	1
R0972B	Yes	1	B	51	65	14	1	61	4		60	5	1	59	6	1
R0973A	Yes	1	B	51	66	15	1	61	5	1	61	5	1	60	6	1
R0973B	Yes	1	B	51	66	15	1	61	5	1	60	6	1	59	7	1
R0974	Yes	1	B	51	69	18	1	63	6	1	63	6	1	62	7	1
R1849A		1	B	51	59	8		57	2		56	3		56	3	
R1849B		1	B	51	58	7		56	2		56	2		55	3	
R1850A		1	B	51	60	9		58	2		58	2		57	3	
R1850B		1	B	51	60	9		57	3		57	3		57	3	
R1851A		1	B	51	62	11		60	2		60	2		59	3	
R1851B		1	B	51	62	11		59	3		59	3		59	3	
R1851C		1	B	51	59	8		57	2		57	2		57	2	
R1851D		1	B	51	58	7		57	1		57	1		56	2	
R1851E		1	B	51	59	8		57	2		57	2		57	2	
R1851F		1	B	51	62	11		61	1		60	2		60	2	
R1851G		1	B	51	61	10		60	1		60	1		60	1	
R1851H		1	B	51	61	10		60	1		59	2		59	2	

Length (ft)=	2000	2000	2000
Average Height =	14	16	20
Area of Noise Wall (sft)=	28000	32000	40000
Impacted Receptors=	9	9	9
Number of Benefited Receptors=	6	9	9
Area of Noise Wall per Benefit Receptor (sft)=	4667	3556	4444
Average Increase in dB(A) of all Impacted Receptors=	16	16	16
Maximum Allowable Base Quantity of Noise Wall per Benefited Receptor (sft)=	3044	3044	3044
Feasible (5 dB(A) Reduction)=	Yes	Yes	Yes
Reasonable (Wall Area per Benefit) =	No	No	No
Reasonable (7 dB(A) Reduction) =	No	No	Yes
Breaks Line of Sight to Impacted Properties? =	No	Yes	Yes

(1) Category B denotes a residential property.
(2) Noise levels highlighted in red are levels above the Noise Abatement Criteria.
(3) Values highlighted in green are a 5 dB(A) or greater reduction in noise levels.

Note: Boxed results indicate barrier discussed in report text.

NCDOT SOUND BARRIER
FEASIBILITY and REASONABLENESS
WORKSHEET

PROJECT - Complete 540 TIP # - R-2721, R-2828, R-2829

LOCATION - Barrier 101 COUNTY(IES) - Wake and Johnston

IMPACTS - 9 # BENEFITS - 9 NAC: A (B) C D E F G (CIRCLE ALL THAT APPLY)

A. FEASIBILITY:

1	Can a 5-dB(A) reduction in traffic noise levels be achieved for at least one impacted receptor?	X YES	NO
2	Does topography negatively affect the proposed abatement measure?	YES	X NO
3	Does the abatement measure negatively affect property access, drainage, safety and maintenance requirements?	YES	X NO
4	Is there control of access in the vicinity of the proposed abatement measure?	YES	X NO

B. REASONABLENESS:

1	Can a 7-dB(A) reduction in traffic noise levels be achieved for at least one impacted front row receptor?	X YES	NO
2	Is the design criteria per benefited receptor of 4444 (CIRCLE ONE) (sq.ft.) cu.yd less than the maximum allowable design criteria per benefited receptor of 3044 (CIRCLE ONE) (sq.ft.) cu.yd.?	YES	X NO

C. NOISE ABATEMENT DECISION:

1	Is the noise mitigation feasible?	X YES	NO
2	Is the noise mitigation reasonable?	YES	X NO
3	Is the noise mitigation likely?	YES	X NO
4	Have the owners' and residents' viewpoints been solicited?	YES	X NO
5	Is the noise mitigation recommended for construction?	YES	NO

D. OPTIONAL REASONABLENESS CONSIDERATION:

1	Was optional averaging noise abatement allowance within a common noise environment used for consideration of barrier reasonableness?	YES	X NO

2 If the answer to D.1 is YES, the design criteria per benefited receptor for each individual barrier within the common noise environment before averaging are:

Bar No. _____ _____ (CIRCLE ONE) sq.ft./cu.yd Bar No. _____ _____ (CIRCLE ONE) sq.ft./cu.yd

Bar No. _____ _____ sq.ft./cu.yd Bar No. _____ _____ sq.ft./cu.yd

3 If the answer to D.1 is YES, is the design criteria per benefited receptor for each individual barrier less than or equal to twice the maximum allowable design criteria per benefited receptor of _____ (CIRCLE ONE) sq.ft./cu.yd _____ YES _____ NO

Form Completed By: E SALUTZ Date: _____

In Consultation With: _____ Date: _____

Complete 540 3/12/2015
Traffic Noise Analysis

Tan Corridor

Noise Wall 102

Receptor	First Row	Residences Represented	NAC Land Use Category[1]	Noise Levels[2] Existing dB(A)	Build dB(A)	Increase	Impacted Receptors	Short Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	Intermediate Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	Tall Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors
R0961A	Yes	1	B	53	62	9		60	2		60	2		60	2	
R0961B	Yes	1	B	55	64	9		63	1		63	1		63	1	
R0961C	Yes	1	B	58	67	9	1	65	2		65	2		65	2	
R0962A		1	B	51	63	12		60	3		60	3		59	4	
R0962B		1	B	51	63	12		60	3		59	4		59	4	
R0962C		1	B	51	65	14	1	60	5	1	60	5	1	59	6	1
R0963A	Yes	1	B	51	67	16	1	60	7	1	59	8	1	59	8	1
R0963B	Yes	1	B	57	69	12	1	61	8	1	60	9	1	60	9	1
R0965A		1	B	51	63	12		60	3		59	4		58	5	1
R0965B		1	B	51	63	12		60	3		59	4		58	5	1
R0966	Yes	1	B	51	66	15	1	60	6	1	59	7	1	59	7	1
R0967A		1	B	51	64	13		60	4		59	5	1	59	5	1
R0967B		1	B	51	64	13		60	4		59	5	1	58	6	1
R0968A		1	B	51	64	13		59	5	1	58	6	1	58	6	1
R0968B		1	B	51	64	13		59	5	1	59	5	1	58	6	1
R0969	Yes	1	B	51	66	15	1	59	7	1	59	7	1	58	8	1

Length (ft)=	1800	1800	1800
Average Height =	14	16	20
Area of Noise Wall (sft)=	25201	28801	36004
Impacted Receptors=	6	6	6
Number of Benefited Receptors=	7	9	11
Area of Noise Wall per Benefit Receptor (sft)=	3600	3200	3273
Average Increase in dB(A) of all Impacted Receptors=	14	14	14
Maximum Allowable Base Quantity of Noise Wall per Benefited Receptor (sft)=	2973	2973	2973
Feasible (5 dB(A) Reduction)=	Yes	Yes	Yes
Reasonable (Wall Area per Benefit) =	No	No	No
Reasonable (7 dB(A) Reduction) =	Yes	Yes	Yes
Breaks Line of Sight to Impacted Properties? =	Yes	Yes	Yes

(1) Category B denotes a residential property.
(2) Noise levels highlighted in red are levels above the Noise Abatement Criteria.
(3) Values highlighted in green are a 5 dB(A) or greater reduction in noise levels.

Note: Boxed results indicate barrier discussed in report text.

NCDOT SOUND BARRIER
FEASIBILITY and REASONABLENESS
WORKSHEET

PROJECT - Complete 540 TIP # - R-2721, R-2828, R-2829

LOCATION - Barrier 102 COUNTY(IES) - Wake and Johnston

IMPACTS - 6 # BENEFITS - 9 NAC: A (B) C D E F G (CIRCLE ALL THAT APPLY)

A. FEASIBILITY:

1	Can a 5-dB(A) reduction in traffic noise levels be achieved for at least one impacted receptor?	X YES	NO
2	Does topography negatively affect the proposed abatement measure?	YES	X NO
3	Does the abatement measure negatively affect property access, drainage, safety and maintenance requirements?	YES	X NO
4	Is there control of access in the vicinity of the proposed abatement measure?	YES	X NO

B. REASONABLENESS:

1	Can a 7-dB(A) reduction in traffic noise levels be achieved for at least one impacted front row receptor?	X YES	NO
2	Is the design criteria per benefited receptor of 3200 (CIRCLE ONE) (sq.ft.) cu.yd less than the maximum allowable design criteria per benefited receptor of 2973 (CIRCLE ONE) (sq.ft.) cu.yd.?	YES	X NO

C. NOISE ABATEMENT DECISION:

1	Is the noise mitigation feasible?	X YES	NO
2	Is the noise mitigation reasonable?	YES	X NO
3	Is the noise mitigation likely?	YES	X NO
4	Have the owners' and residents' viewpoints been solicited?	YES	X NO
5	Is the noise mitigation recommended for construction?	YES	NO

D. OPTIONAL REASONABLENESS CONSIDERATION:

1	Was optional averaging noise abatement allowance within a common noise environment used for consideration of barrier reasonableness?	YES	X NO

2 If the answer to D.1 is YES, the design criteria per benefited receptor for each individual barrier within the common noise environment before averaging are:

Bar No. _____ _____ (CIRCLE ONE) sq.ft./cu.yd Bar No. _____ _____ (CIRCLE ONE) sq.ft./cu.yd

Bar No. _____ _____ sq.ft./cu.yd Bar No. _____ _____ sq.ft./cu.yd

3 If the answer to D.1 is YES, is the design criteria per benefited receptor for each individual barrier less than or equal to twice the maximum allowable design criteria per benefited receptor of _____ (CIRCLE ONE) sq.ft./cu.yd YES NO

Form Completed By: E SALUTZ Date: _____

In Consultation With: _____ Date: _____

Complete 540 4/2/2015
Traffic Noise Analysis

Tan Corridor

Noise Wall 103

												Recommended[4]					
			NAC	Noise Levels[2]				Short Wall			Intermediate Wall			Tall Wall		
Receptor	First Row	Residences Represented	Land Use Category[1]	Existing dB(A)	Build dB(A)	Increase	Impacted Receptors	W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors
R0970A	Yes	1	B	51	68	17	1	62	6	1	62	6	1	62	6	1
R0970B	Yes	1	B	51	67	16	1	62	5	1	61	6	1	61	6	1
R0971A	Yes	1	B	51	68	17	1	62	6	1	62	6	1	61	7	1
R0971B	Yes	1	B	51	67	16	1	62	5	1	61	6	1	61	6	1
R0972A	Yes	1	B	51	65	14	1	61	4		60	5	1	60	5	1
R0972B	Yes	1	B	51	65	14	1	61	4		60	5	1	60	5	1
R0973A	Yes	1	B	51	65	14	1	60	5	1	60	5	1	60	5	1
R0973B	Yes	1	B	51	65	14	1	60	5	1	60	5	1	60	5	1
R0974	Yes	1	B	51	68	17	1	62	6	1	61	7	1	61	7	1
R1849A		1	B	51	58	7		56	2		56	2		56	2	
R1849B		1	B	51	58	7		56	2		55	3		55	3	
R1850A		1	B	51	59	8		57	2		57	2		57	2	
R1850B		1	B	51	59	8		57	2		56	3		56	3	
R1851A		1	B	51	61	10		59	2		59	2		59	2	
R1851B		1	B	51	61	10		58	3		58	3		58	3	
R1851C		1	B	51	59	8		57	2		57	2		57	2	
R1851D		1	B	51	58	7		57	1		57	1		56	2	
R1851E		1	B	51	58	7		57	1		57	1		57	1	
R1851F		1	B	51	62	11		60	2		60	2		60	2	
R1851G		1	B	51	61	10		60	1		60	1		60	1	
R1851H		1	B	51	61	10		60	1		60	1		60	1	

Length (ft)=	1699	1699	1699
Average Height =	14	16	18
Area of Noise Wall (sft)=	23780	27177	30574
Impacted Receptors=	9	9	9
Number of Benefited Receptors=	7	9	9
Area of Noise Wall per Benefit Receptor (sft)=	3397	3020	3397
Average Increase in dB(A) of all Impacted Receptors=	15	15	15
Maximum Allowable Base Quantity of Noise Wall per Benefited Receptor (sft)=	3041	3041	3041
Feasible (5 dB(A) Reduction)=	Yes	Yes	Yes
Reasonable (Wall Area per Benefit) =	No	Yes	No
Reasonable (7 dB(A) Reduction) =	No	Yes	Yes
Breaks Line of Sight to Impacted Properties? =	Yes	Yes	Yes

Recommended 16 ft Wall

(1) Category B denotes a residential property.
(2) Noise levels highlighted in red are levels above the Noise Abatment Criteria.
(3) Values highlighted in green are a 5 dB(A) or greater reduction in noise levels.
(4) A 16ft barrier is recommended because all criteria for feasible and reasonable have been met, and the most properties are benefited.

NCDOT SOUND BARRIER
FEASIBILITY and REASONABLENESS
WORKSHEET

PROJECT - Complete 540 TIP # - R-2721, R-2828, R-2829

LOCATION - Barrier 103 COUNTY(IES) - Wake and Johnston

IMPACTS - 9 # BENEFITS - 9 NAC: A (B) C D E F G (CIRCLE ALL THAT APPLY)

A. FEASIBILITY:

1	Can a 5-dB(A) reduction in traffic noise levels be achieved for at least one impacted receptor?	X YES	NO
2	Does topography negatively affect the proposed abatement measure?	YES	X NO
3	Does the abatement measure negatively affect property access, drainage, safety and maintenance requirements?	YES	X NO
4	Is there control of access in the vicinity of the proposed abatement measure?	YES	X NO

B. REASONABLENESS:

1	Can a 7-dB(A) reduction in traffic noise levels be achieved for at least one impacted front row receptor?	X YES	NO
2	Is the design criteria per benefited receptor of 3020 (CIRCLE ONE) (sq.ft.) cu.yd less than the maximum allowable design criteria per benefited receptor of 3041 (CIRCLE ONE) (sq.ft.) cu.yd.?	X YES	NO

C. NOISE ABATEMENT DECISION:

1	Is the noise mitigation feasible?	X YES	NO
2	Is the noise mitigation reasonable?	X YES	NO
3	Is the noise mitigation likely?	X YES	NO
4	Have the owners' and residents' viewpoints been solicited?	YES	X NO
5	Is the noise mitigation recommended for construction?	YES	NO

D. OPTIONAL REASONABLENESS CONSIDERATION:

1	Was optional averaging noise abatement allowance within a common noise environment used for consideration of barrier reasonableness?	YES	X NO
2	If the answer to D.1 is YES, the design criteria per benefited receptor for each individual barrier within the common noise environment before averaging are:		

Bar No. _____ _____ (CIRCLE ONE) sq.ft./cu.yd Bar No. _____ _____ (CIRCLE ONE) sq.ft./cu.yd

Bar No. _____ _____ sq.ft./cu.yd Bar No. _____ _____ sq.ft./cu.yd

3	If the answer to D.1 is YES, is the design criteria per benefited receptor for each individual barrier less than or equal to twice the maximum allowable design criteria per benefited receptor of _____ (CIRCLE ONE) sq.ft./cu.yd	YES	NO

Form Completed By: E SALUTZ Date: _____

In Consultation With: _____ Date: _____

Complete 540
Traffic Noise Analysis

3/20/2015

Tan Corridor

Noise Wall 104

Receptor	First Row	Residences Represented	NAC Land Use Category[1]	Noise Levels[2] Existing dB(A)	Build dB(A)	Increase	Impacted Receptors	Short Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	Intermediate Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	Tall Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors
R1464A	Yes	1	B	51	70	19	1	66	4		65	5	1	64	6	1
R1464B	Yes	1	B	51	70	19	1	66	4		65	5	1	65	5	1
R1468A	Yes	1	B	51	67	16	1	63	4		62	5	1	61	6	1
R1468B	Yes	1	B	51	72	21	1	64	8	1	63	9	1	62	10	1
R1473	Yes	1	B	51	67	16	1	63	4		62	5	1	60	7	1
R1474	Yes	1	B	51	71	20	1	66	5	1	63	8	1	62	9	1
R1476A	Yes	1	B	51	66	15	1	61	5	1	60	6	1	60	6	1
R1476B	Yes	1	B	51	66	15	1	63	3		61	5	1	60	6	1
R1476C	Yes	1	B	51	65	14	1	61	4		60	5	1	59	6	1
R1477	Yes	1	B	51	67	16	1	61	6	1	60	7	1	60	7	1
R1478A		1	B	51	64	13		62	2		60	4		60	4	
R1478B		1	B	51	65	14	1	63	2		62	3		61	4	
R1478C		1	B	51	63	12		61	2		59	4		59	4	
R1479A	Yes	1	B	51	73	22	1	64	9	1	64	9	1	63	10	1
R1479B	Yes	1	B	51	73	22	1	65	8	1	64	9	1	64	9	1
R1479C	Yes	1	B	51	71	20	1	64	7	1	63	8	1	63	8	1
R1480A		1	B	51	67	16	1	65	2		64	3		64	3	
R1480B		1	B	51	65	14	1	63	2		62	3		62	3	
R1481	Yes	1	B	51	75	24	1	66	9	1	65	10	1	65	10	1
R1867		1	B	51	63	12		60	3		59	4		58	5	1
R1868A		1	B	51	61	10		58	3		57	4		57	4	
R1868B		1	B	51	61	10		59	2		59	2		57	4	
R1869A		1	B	51	61	10		59	2		58	3		58	3	
R1869B		1	B	51	61	10		59	2		58	3		57	4	
R1870A		1	B	51	61	10		59	2		58	3		57	4	
R1870B		1	B	51	61	10		59	2		58	3		58	3	

	Short Wall	Intermediate Wall	Tall Wall
Length (ft)=	3200	3200	3200
Average Height =	14	16	18
Area of Noise Wall (sft)=	44804	51207	57606
Impacted Receptors=	17	17	17
Number of Benefited Receptors=	8	14	15
Area of Noise Wall per Benefit Receptor (sft)=	5601	3658	3840
Average Increase in dB(A) of all Impacted Receptors=	18	18	18
Maximum Allowable Base Quantity of Noise Wall per Benefited Receptor (sft)=	3124	3124	3124
Feasible (5 dB(A) Reduction)=	Yes	Yes	Yes
Reasonable (Wall Area per Benefit) =	No	No	No
Reasonable (7 dB(A) Reduction) =	Yes	Yes	Yes
Breaks Line of Sight to Impacted Properties? =	No	No	Yes

(1) Category B denotes a residential property.
(2) Noise levels highlighted in red are levels above the Noise Abatement Criteria.
(3) Values highlighted in green are a 5 dB(A) or greater reduction in noise levels.

Note: Boxed results indicate barrier discussed in report text.

NCDOT SOUND BARRIER
FEASIBILITY and REASONABLENESS
WORKSHEET

PROJECT - Complete 540 TIP # - R-2721, R-2828, R-2829

LOCATION - Barrier 104 COUNTY(IES) - Wake and Johnston

IMPACTS - 17 # BENEFITS - 14 NAC: A (B) C D E F G (CIRCLE ALL THAT APPLY)

A. FEASIBILITY:

1	Can a 5-dB(A) reduction in traffic noise levels be achieved for at least one impacted receptor?	X YES	NO
2	Does topography negatively affect the proposed abatement measure?	YES	X NO
3	Does the abatement measure negatively affect property access, drainage, safety and maintenance requirements?	YES	X NO
4	Is there control of access in the vicinity of the proposed abatement measure?	YES	X NO

B. REASONABLENESS:

1	Can a 7-dB(A) reduction in traffic noise levels be achieved for at least one impacted front row receptor?	X YES	NO
2	Is the design criteria per benefited receptor of 3658 (sq.ft.) cu.yd (CIRCLE ONE) less than the maximum allowable design criteria per benefited receptor of 3124 (sq.ft.) cu.yd.? (CIRCLE ONE)	YES	X NO

C. NOISE ABATEMENT DECISION:

1	Is the noise mitigation feasible?	X YES	NO
2	Is the noise mitigation reasonable?	YES	X NO
3	Is the noise mitigation likely?	YES	X NO
4	Have the owners' and residents' viewpoints been solicited?	YES	X NO
5	Is the noise mitigation recommended for construction?	YES	NO

D. OPTIONAL REASONABLENESS CONSIDERATION:

1	Was optional averaging noise abatement allowance within a common noise environment used for consideration of barrier reasonableness?	YES	X NO

2 If the answer to D.1 is YES, the design criteria per benefited receptor for each individual barrier within the common noise environment before averaging are:

Bar No. _____ _____ sq.ft./cu.yd (CIRCLE ONE) Bar No. _____ _____ sq.ft./cu.yd (CIRCLE ONE)

Bar No. _____ _____ sq.ft./cu.yd Bar No. _____ _____ sq.ft./cu.yd

3 If the answer to D.1 is YES, is the design criteria per benefited receptor for each individual barrier less than or equal to twice the maximum allowable design criteria per benefited receptor of _____ sq.ft./cu.yd (CIRCLE ONE) _____ YES _____ NO

Form Completed By: E SALUTZ Date: _____

In Consultation With: _____ Date: _____

Complete 540
Traffic Noise Analysis

3/12/2015

Teal Corridor

Noise Wall 105

Receptor	First Row	Residences Represented	NAC Land Use Category[1]	Noise Levels[2] Existing dB(A)	Build dB(A)	Increase	Impacted Receptors	Short Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	Intermediate Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	Tall Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors
R1431A	Yes	1	B	57	66	9	1	63	3		62	4		62	4	
R1431B	Yes	1	B	57	65	8		61	4		61	4		61	4	
R1430	Yes	1	B	57	65	8		60	5	1	60	5	1	60	5	1

	Short Wall	Intermediate Wall	Tall Wall
Length (ft)=	2400	2400	2400
Average Height =	16	18	20
Area of Noise Wall (sft)=	38401	43200	48002
Impacted Receptors=	1	1	1
Number of Benefited Receptors=	1	1	1
Area of Noise Wall per Benefit Receptor (sft)=	38401	43200	48002
Average Increase in dB(A) of all Impacted Receptors=	9	9	9
Maximum Allowable Base Quantity of Noise Wall per Benefited Receptor (sft)=	2815	2815	2815
Feasible (5 dB(A) Reduction)=	Yes	Yes	Yes
Reasonable (Wall Area per Benefit) =	No	No	No
Reasonable (7 dB(A) Reduction) =	No	No	No
Breaks Line of Sight to Impacted Properties? =	Yes	Yes	Yes

(1) Category B denotes a residential property.
(2) Noise levels highlighted in red are levels above the Noise Abatement Criteria.
(3) Values highlighted in green are a 5 dB(A) or greater reduction in noise levels.

Note: Boxed results indicate barrier discussed in report text.

NCDOT SOUND BARRIER
FEASIBILITY and REASONABLENESS
WORKSHEET

PROJECT - Complete 540 TIP # - R-2721, R-2828, R-2829

LOCATION - Barrier 105 COUNTY(IES) - Wake and Johnston

IMPACTS - 1 # BENEFITS - 1 NAC: A (B) C D E F G (CIRCLE ALL THAT APPLY)

A. FEASIBILITY:

1	Can a 5-dB(A) reduction in traffic noise levels be achieved for at least one impacted receptor?	____ YES	X NO
2	Does topography negatively affect the proposed abatement measure?	____ YES	X NO
3	Does the abatement measure negatively affect property access, drainage, safety and maintenance requirements?	____ YES	X NO
4	Is there control of access in the vicinity of the proposed abatement measure?	____ YES	X NO

B. REASONABLENESS:

1	Can a 7-dB(A) reduction in traffic noise levels be achieved for at least one impacted front row receptor?	____ YES	X NO
2	Is the design criteria per benefited receptor of 43200 (sq.ft.) / cu.yd (CIRCLE ONE) less than the maximum allowable design criteria per benefited receptor of ____ 2815 (sq.ft.) / cu.yd. (CIRCLE ONE)?	____ YES	X NO

C. NOISE ABATEMENT DECISION:

1	Is the noise mitigation feasible?	____ YES	X NO
2	Is the noise mitigation reasonable?	____ YES	X NO
3	Is the noise mitigation likely?	____ YES	X NO
4	Have the owners' and residents' viewpoints been solicited?	____ YES	X NO
5	Is the noise mitigation recommended for construction?	____ YES	____ NO

D. OPTIONAL REASONABLENESS CONSIDERATION:

1	Was optional averaging noise abatement allowance within a common noise environment used for consideration of barrier reasonableness?	____ YES	X NO

2 If the answer to D.1 is YES, the design criteria per benefited receptor for each individual barrier within the common noise environment before averaging are:

Bar No. ____ ____ sq.ft./cu.yd (CIRCLE ONE) Bar No. ____ ____ sq.ft./cu.yd (CIRCLE ONE)

Bar No. ____ ____ sq.ft./cu.yd Bar No. ____ ____ sq.ft./cu.yd

3 If the answer to D.1 is YES, is the design criteria per benefited receptor for each individual barrier less than or equal to twice the maximum allowable design criteria per benefited receptor of ____ sq.ft./cu.yd (CIRCLE ONE) ____ YES ____ NO

Form Completed By: E SALUTZ Date: ____

In Consultation With: ____ Date: ____

Complete 540
Traffic Noise Analysis

3/12/2015

Teal Corridor

Noise Wall 106

Receptor	First Row	Residences Represented	NAC Land Use Category[1]	Noise Levels[2] Existing dB(A)	Build dB(A)	Increase	Impacted Receptors	Short Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	Intermediate Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	Tall Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors
R1620	Yes	1	B	57	69	12	1	63	6	1	62	7	1	61	8	1
R1434	Yes	1	B	58	65	7		64	1		64	1		64	1	
R1435A	Yes	1	B	57	65	8		64	1		64	1		64	1	
R1435B	Yes	1	B	57	62	5		62	0		62	0		62	0	
R1437A	Yes	1	B	57	60	3		60	0		60	0		60	0	
R1437B	Yes	1	B	57	61	4		60	1		60	1		60	1	
R1437C	Yes	1	B	57	60	3		60	0		60	0		59	1	
R1438A	Yes	1	B	57	59	2		58	1		58	1		58	1	
R1438B	Yes	1	B	57	59	2		59	0		59	0		59	0	
R1438C	Yes	1	B	57	59	2		58	1		58	1		58	1	
R1618	Yes	1	B	57	58	1		57	1		56	2		56	2	
R1619	Yes	1	B	57	60	3		59	1		59	1		59	1	
R1648	Yes	1	B	57	66	9	1	62	4		62	4		62	4	

Length (ft)=	2000	2000	2000
Average Height =	12	14	16
Area of Noise Wall (sft)=	24000	27999	31999
Impacted Receptors=	2	2	2
Number of Benefited Receptors=	1	1	1
Area of Noise Wall per Benefit Receptor (sft)=	24000	27999	31999
Average Increase in dB(A) of all Impacted Receptors=	11	11	11
Maximum Allowable Base Quantity of Noise Wall per Benefited Receptor (sft)=	2868	2868	2868
Feasible (5 dB(A) Reduction)=	Yes	Yes	Yes
Reasonable (Wall Area per Benefit) =	No	No	No
Reasonable (7 dB(A) Reduction) =	No	Yes	Yes
Breaks Line of Sight to Impacted Properties? =	Yes	Yes	Yes

(1) Category B denotes a residential property.
(2) Noise levels highlighted in red are levels above the Noise Abatement Criteria.
(3) Values highlighted in green are a 5 dB(A) or greater reduction in noise levels.

Note: Boxed results indicate barrier discussed in report text.

NCDOT SOUND BARRIER
FEASIBILITY and REASONABLENESS
WORKSHEET

PROJECT - Complete 540 TIP # - R-2721, R-2828, R-2829

LOCATION - Barrier 106 COUNTY(IES) - Wake and Johnston

IMPACTS - 2 # BENEFITS - 1 NAC: A (B) C D E F G (CIRCLE ALL THAT APPLY)

A. FEASIBILITY:

1	Can a 5-dB(A) reduction in traffic noise levels be achieved for at least one impacted receptor?	X YES	NO
2	Does topography negatively affect the proposed abatement measure?	YES	X NO
3	Does the abatement measure negatively affect property access, drainage, safety and maintenance requirements?	YES	X NO
4	Is there control of access in the vicinity of the proposed abatement measure?	YES	X NO

B. REASONABLENESS:

1	Can a 7-dB(A) reduction in traffic noise levels be achieved for at least one impacted front row receptor?	X YES	NO
2	Is the design criteria per benefited receptor of 27999 (sq.ft.) / cu.yd (CIRCLE ONE) less than the maximum allowable design criteria per benefited receptor of 2868 (sq.ft.) / cu.yd.? (CIRCLE ONE)	YES	X NO

C. NOISE ABATEMENT DECISION:

1	Is the noise mitigation feasible?	X YES	NO
2	Is the noise mitigation reasonable?	YES	X NO
3	Is the noise mitigation likely?	YES	X NO
4	Have the owners' and residents' viewpoints been solicited?	YES	X NO
5	Is the noise mitigation recommended for construction?	YES	NO

D. OPTIONAL REASONABLENESS CONSIDERATION:

1	Was optional averaging noise abatement allowance within a common noise environment used for consideration of barrier reasonableness?	YES	X NO

2 If the answer to D.1 is YES, the design criteria per benefited receptor for each individual barrier within the common noise environment before averaging are:

Bar No. _____ _____ sq.ft./cu.yd (CIRCLE ONE) Bar No. _____ _____ sq.ft./cu.yd (CIRCLE ONE)

Bar No. _____ _____ sq.ft./cu.yd Bar No. _____ _____ sq.ft./cu.yd

3 If the answer to D.1 is YES, is the design criteria per benefited receptor for each individual barrier less than or equal to twice the maximum allowable design criteria per benefited receptor of _____ sq.ft./cu.yd (CIRCLE ONE) YES NO

Form Completed By: E SALUTZ Date: _____

In Consultation With: _____ Date: _____

Complete 540
Traffic Noise Analysis

3/18/2015

Green Corridor

Noise Wall 107

Receptor	First Row	Residences Represented	NAC Land Use Category[1]	Noise Levels[2] Existing dB(A)	Build dB(A)	Increase	Impacted Receptors	Short Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	Intermediate Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	Recommended[4] Tall Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors
R1556A	Yes	1	B	60	66	6	1	64	2		62	4		61	5	1
R1556B	Yes	1	B	60	66	6	1	64	2		63	3		62	4	
R1556C	Yes	1	B	57	63	6		61	2		60	3		60	3	
R2302		1	B	57	62	5		59	3		58	4		58	4	
R2303A	Yes	1	B	62	67	5	1	65	2		63	4		62	5	1
R2303B	Yes	1	B	61	66	5	1	64	2		63	3		61	5	1
R2303C	Yes	1	B	63	69	6	1	65	4		63	6	1	62	7	1
R2304A	Yes	1	B	65	70	5	1	67	3		64	6	1	63	7	1
R2304B	Yes	1	B	64	70	6	1	66	4		64	6	1	63	7	1
R2304C	Yes	1	B	66	71	5	1	67	4		65	6	1	63	8	1
R2305A	Yes	1	B	67	72	5	1	67	5	1	64	8	1	63	9	1
R2305B	Yes	1	B	67	72	5	1	65	7	1	64	8	1	63	9	1
R2305C	Yes	1	B	66	71	5	1	67	4		65	6	1	64	7	1
R2306A	Yes	1	B	66	72	6	1	65	7	1	64	8	1	63	9	1
R2306B	Yes	1	B	66	71	5	1	64	7	1	63	8	1	62	9	1
R2306C	Yes	1	B	66	72	6	1	65	7	1	64	8	1	63	9	1
R2307A	Yes	1	B	66	71	5	1	64	7	1	63	8	1	62	9	1
R2307B	Yes	1	B	66	71	5	1	64	7	1	63	8	1	62	9	1
R2307C	Yes	1	B	65	71	6	1	64	7	1	63	8	1	62	9	1
R2308A	Yes	1	B	66	71	5	1	64	7	1	63	8	1	62	9	1
R2308B	Yes	1	B	65	71	6	1	64	7	1	63	8	1	62	9	1
R2309A	Yes	1	B	66	72	6	1	65	7	1	64	8	1	63	9	1
R2309B	Yes	1	B	66	72	6	1	66	6	1	65	7	1	63	9	1
R2310A	Yes	1	B	66	72	6	1	66	6	1	65	7	1	64	8	1
R2310B	Yes	1	B	66	72	6	1	67	5	1	65	7	1	64	8	1
R2310C	Yes	1	B	66	72	6	1	66	6	1	65	7	1	64	8	1
R2324A		1	B	60	65	5		64	1		62	3		61	4	
R2324B		1	B	59	65	6		63	2		62	3		61	4	
R2325A		1	B	58	64	6		62	2		61	3		59	5	1
R2325B		1	B	59	64	5		62	2		61	3		60	4	
R2325C		1	B	57	63	6		61	2		60	3		58	5	1
R2326A		1	B	58	63	5		61	2		60	3		59	4	
R2326B		1	B	58	64	6		61	3		60	4		59	5	1
R2326C		1	B	58	63	5		62	1		61	2		59	4	
R2327A		1	B	60	65	5		62	3		61	4		60	5	1
R2327B		1	B	60	65	5		63	2		61	4		60	5	1
R2327C		1	B	59	64	5		62	2		61	3		60	4	
R2328A		1	B	60	66	6	1	63	3		61	5	1	60	6	1
R2328B		1	B	60	65	5		63	2		61	4		60	5	1
R2328C		1	B	61	66	5	1	63	3		61	5	1	60	6	1
R2329A		1	B	60	65	5		61	4		60	5	1	59	6	1
R2329B		1	B	60	65	5		62	3		60	5	1	60	5	1
R2329C		1	B	60	65	5		61	4		60	5	1	59	6	1
R2330A		1	B	60	65	5		61	4		60	5	1	59	6	1
R2330B		1	B	60	65	5		62	3		60	5	1	59	6	1
R2330C		1	B	59	65	6		61	4		60	5	1	59	6	1
R2331A		1	B	59	64	5		61	3		60	4		59	5	1
R2331B		1	B	59	64	5		61	3		60	4		59	5	1
R2331C		1	B	59	65	6		62	3		60	5	1	59	6	1
R2332A		1	B	59	65	6		62	3		60	5	1	59	6	1
R2332B		1	B	58	64	6		61	3		59	5	1	59	5	1
R2333A		1	B	60	66	6	1	63	3		61	5	1	60	6	1
R2333B		1	B	61	67	6	1	64	3		62	5	1	61	6	1
R2334A	Yes	1	B	65	72	7	1	64	8	1	63	9	1	62	10	1
R2334B	Yes	1	B	65	72	7	1	63	9	1	62	10	1	62	10	1
R2334C	Yes	1	B	64	71	7	1	64	7	1	63	8	1	62	9	1
R2335A		1	B	60	65	5		61	4		60	5	1	59	6	1
R2335B		1	B	59	65	6		61	4		60	5	1	59	6	1
R2336A		1	B	59	65	6		61	4		60	5	1	59	6	1
R2336B		1	B	58	64	6		60	4		59	5	1	58	6	1
R2337A		1	B	59	64	5		61	3		60	4		59	5	1
R2337B		1	B	59	64	5		62	2		61	3		59	5	1
R2338A		1	B	58	63	5		60	3		58	5	1	58	5	1
R2338B		1	B	58	64	6		60	4		59	5	1	58	6	1
R2339A		1	B	58	64	6		60	4		59	5	1	58	6	1
R2339B		1	B	57	63	6		60	3		58	5	1	57	6	1
R2339C		1	B	57	62	5		59	3		58	4		57	5	1
R2340A		1	B	57	63	6		60	3		58	5	1	57	6	1
R2340B		1	B	58	63	5		60	3		59	4		58	5	1
R2341A		1	B	58	64	6		60	4		59	5	1	59	5	1
R2341B		1	B	58	64	6		59	5	1	59	5	1	58	6	1

Length (ft)=	3302	3302	3302
Average Height =	16	18	20
Area of Noise Wall (sft)=	52840	59444	66046
Impacted Receptors=	31	31	31
Number of Benefited Receptors=	19	47	62
Area of Noise Wall per Benefit Receptor (sft)=	2781	1265	1065
Average Increase in dB(A) of all Impacted Receptors=	6	6	6
Maximum Allowable Base Quantity of Noise Wall per Benefited Receptor (sft)=	2700	2700	2700
Feasible (5 dB(A) Reduction)=	Yes	Yes	Yes
Reasonable (Wall Area per Benefit) =	No	Yes	Yes
Reasonable (7 dB(A) Reduction) =	Yes	Yes	Yes
Breaks Line of Sight to Impacted Properties? =	No	Yes	Yes

(1) Category B denotes a residential property.
(2) Noise levels highlighted in red are levels above the Noise Abatment Criteria.
(3) Values highlighted in green are a 5 dB(A) or greater reduction in noise levels.
(4) A 20ft barrier is Recommended because all criteria for feasible and reasonable have been met, and the most properties are benefited.

Recommended 20 ft Wall

NCDOT SOUND BARRIER
FEASIBILITY and REASONABLENESS
WORKSHEET

PROJECT - Complete 540 TIP # - R-2721, R-2828, R-2829

LOCATION - Barrier 107 COUNTY(IES) - Wake and Johnston

IMPACTS - 31 # BENEFITS - 62 NAC: A (B) C D E F G (CIRCLE ALL THAT APPLY)

A. FEASIBILITY:

1	Can a 5-dB(A) reduction in traffic noise levels be achieved for at least one impacted receptor?	X YES	NO
2	Does topography negatively affect the proposed abatement measure?	YES	X NO
3	Does the abatement measure negatively affect property access, drainage, safety and maintenance requirements?	YES	X NO
4	Is there control of access in the vicinity of the proposed abatement measure?	YES	X NO

B. REASONABLENESS:

1	Can a 7-dB(A) reduction in traffic noise levels be achieved for at least one impacted front row receptor?	X YES	NO
2	Is the design criteria per benefited receptor of 1065 (CIRCLE ONE) (sq.ft.) / cu.yd less than the maximum allowable design criteria per benefited receptor of 2700 (CIRCLE ONE) (sq.ft.) / cu.yd.?	X YES	NO

C. NOISE ABATEMENT DECISION:

1	Is the noise mitigation feasible?	X YES	NO
2	Is the noise mitigation reasonab	X YES	NO
3	Is the noise mitigation likely?	X YES	NO
4	Have the owners' and residents' viewpoints been solicited?	YES	X NO
5	Is the noise mitigation recommended for construction?	YES	NO

D. OPTIONAL REASONABLENESS CONSIDERATION:

1	Was optional averaging noise abatement allowance within a common noise environment used for consideration of barrier reasonableness?	YES	X NO
2	If the answer to D.1 is YES, the design criteria per benefited receptor for each individual barrier within the common noise environment before averaging are:		

Bar No. _____ _____ (CIRCLE ONE) sq.ft./cu.yd Bar No. _____ _____ (CIRCLE ONE) sq.ft./cu.yd

Bar No. _____ _____ sq.ft./cu.yd Bar No. _____ _____ sq.ft./cu.yd

3	If the answer to D.1 is YES, is the design criteria per benefited receptor for each individual barrier less than or equal to twice the maximum allowable design criteria per benefited receptor of _____ (CIRCLE ONE) sq.ft./cu.yd	YES	NO

Form Completed By: E SALUTZ Date: _____

In Consultation With: _____ Date: _____

Complete 540
Traffic Noise Analysis

4/2/2015

Orange Corridor

Noise Wall 108

															Recommended[4]		
			NAC	Noise Levels[2]				Short Wall			Intermediate Wall			Tall Wall			
Receptor	First Row	Residences Represented	Land Use Category[1]	Existing dB(A)	Build dB(A)	Increase	Impacted Receptors	W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors
R0075	Yes	RECREATIONAL	C	53	67	14	1									
R0075-1	Yes	NODAL ARRAY	C	53	72	19	1	62	10	4	61	11	4	60	12	4
R0075-2	Yes	NODAL ARRAY	C	53	72	19	1	62	10	4	61	11	4	60	12	4
R0075-3		NODAL ARRAY	C	53	71	18	1	62	9	4	61	10	4	60	11	4
R0075-4		NODAL ARRAY	C	53	70	17	1	62	8	4	61	9	4	60	10	4
R0075-5		NODAL ARRAY	C	53	69	16	1	64	5	4	61	8	4	60	9	4
R0075-6		NODAL ARRAY	C	53	67	14	1	61	6	4	60	7	4	59	8	4
R0075-7		NODAL ARRAY	C	53	65	12	1	62	3		59	6	4	58	7	4
R0075-8		NODAL ARRAY	C	53	65	12	1	62	3		59	6	4	58	7	4
R0075-9		NODAL ARRAY	C	53	65	12	1	59	6	4	58	7	4	57	8	4
R0075-10		NODAL ARRAY	C	53	65	12	1	59	6	4	58	7	4	57	8	4
R0085A	Yes	1	B	53	66	13	1	63	3		60	6	1	59	7	1
R0085B	Yes	1	B	53	70	17	1	66	4		63	7	1	61	9	1
R0086		1	B	53	60	7		61	-1		59	1		58	2	
R0087A	Yes	1	B	53	62	9		64	-2		63	-1		63	-1	
R0087B	Yes	1	B	53	63	10		64	-1		64	-1		63	0	
R0088A	Yes	1	B	62	64	2		64	0		64	0		64	0	
R0088B	Yes	1	B	57	62	5		62	0		62	0		62	0	
R0088C	Yes	1	B	55	62	7		64	-2		63	-1		63	-1	
R2287A	Yes	1	B	53	71	18	1	61	10	1	60	11	1	59	12	1
R2287B	Yes	1	B	53	68	15	1	60	8	1	59	9	1	58	10	1
R2342A		1	B	53	64	11		58	6	1	57	7	1	56	8	1
R2342B		1	B	53	66	13	1	60	6	1	58	8	1	58	8	1
R2343A		1	B	53	62	9		55	7	1	55	7	1	54	8	1
R2343B		1	B	53	62	9		56	6	1	55	7	1	55	7	1
R2343C		1	B	53	61	8		55	6	1	54	7	1	54	7	1
R2344		1	B	53	59	6		54	5	1	53	6	1	53	6	1
R2345		1	B	53	59	6		54	5	1	54	5	1	53	6	1
R2346A		1	B	53	63	10		60	3		58	5	1	57	6	1
R2346B		1	B	53	63	10		60	3		57	6	1	57	6	1
R2346C		1	B	53	62	9		59	3		57	5	1	56	6	1
R2346D		1	B	53	66	13	1	62	4		60	6	1	59	7	1
R2346E		1	B	53	65	12	1	61	4		60	5	1	58	7	1
R2346F		1	B	53	64	11		61	3		59	5	1	58	6	1
R2347A		1	B	53	69	16	1	65	4		63	6	1	62	7	1
R2347B		1	B	53	69	16	1	65	4		63	6	1	61	8	1
R2347C		1	B	53	69	16	1	65	4		63	6	1	62	7	1
R2347D		1	B	53	70	17	1	65	5	1	63	7	1	62	8	1
R2348A	Yes	1	B	53	70	17	1	64	6	1	63	7	1	62	8	1
R2348B	Yes	1	B	53	70	17	1	64	6	1	63	7	1	62	8	1
R2348C	Yes	1	B	53	70	17	1	64	6	1	63	7	1	62	8	1
R2348D	Yes	1	B	53	69	16	1	63	6	1	62	7	1	61	8	1
R2348E	Yes	1	B	53	69	16	1	63	6	1	62	7	1	61	8	1
R2348F	Yes	1	B	53	70	17	1	63	7	1	62	8	1	61	9	1
R2349A	Yes	1	B	53	70	17	1	62	8	1	61	9	1	60	10	1
R2349B	Yes	1	B	53	70	17	1	62	8	1	61	9	1	60	10	1
R2349C	Yes	1	B	53	70	17	1	62	8	1	61	9	1	60	10	1
R2349D	Yes	1	B	53	70	17	1	62	8	1	61	9	1	61	9	1
R2349E	Yes	1	B	53	70	17	1	63	7	1	62	8	1	61	9	1
R2350A	Yes	1	B	53	69	16	1	63	6	1	62	7	1	61	8	1
R2350B	Yes	1	B	53	69	16	1	63	6	1	62	7	1	61	8	1
R2350C	Yes	1	B	53	69	16	1	63	6	1	61	8	1	61	8	1
R2350D	Yes	1	B	53	70	17	1	63	7	1	61	9	1	61	9	1
R2350E	Yes	1	B	53	70	17	1	63	7	1	61	9	1	60	10	1
R2350F	Yes	1	B	53	70	17	1	63	7	1	61	9	1	60	10	1
R2351A	Yes	1	B	53	69	16	1	63	6	1	62	7	1	61	8	1
R2351B	Yes	1	B	53	69	16	1	62	7	1	62	7	1	61	8	1
R2351C	Yes	1	B	53	69	16	1	62	7	1	62	7	1	61	8	1
R2351D	Yes	1	B	53	69	16	1	62	7	1	61	8	1	61	8	1
R2352A		1	B	53	62	9		58	4		57	5	1	57	5	1
R2352B		1	B	53	62	9		58	4		57	5	1	57	5	1
R2352C		1	B	53	62	9		58	4		57	5	1	57	5	1
R2352D		1	B	53	61	8		57	4		57	4		57	4	
R2353A		1	B	53	62	9		58	4		57	5	1	57	5	1
R2353B		1	B	53	62	9		58	4		57	5	1	57	5	1
R2353C		1	B	53	62	9		57	5	1	57	5	1	57	5	1
R2353D		1	B	53	63	10		58	5	1	57	6	1	57	6	1
R2353E		1	B	53	62	9		57	5	1	57	5	1	57	5	1
R2354A		1	B	53	61	8		57	4		57	4		56	5	1
R2354B		1	B	53	61	8		57	4		57	4		56	5	1
R2354C		1	B	53	61	8		58	3		58	3		58	3	
R2354D		1	B	53	62	9		57	5	1	57	5	1	56	6	1
R2355A		1	B	53	63	10		60	3		59	4		59	4	
R2355B		1	B	53	63	10		60	3		59	4		58	5	1
R2355C		1	B	53	62	9		59	3		59	3		58	4	
R2355D		1	B	53	61	8		58	3		58	3		58	3	

Complete 540
Traffic Noise Analysis

4/2/2015

Orange Corridor

Noise Wall 108

Receptor	First Row	Residences Represented	NAC Land Use Category[1]	Noise Levels[2] Existing dB(A)	Build dB(A)	Increase	Impacted Receptors	Short Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	Intermediate Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	Recommended[4] Tall Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors
R2356A		1	B	53	62	9		59	3		59	3		58	4	
R2356B		1	B	53	61	8		59	2		58	3		58	3	
R2356C		1	B	53	60	7		58	2		58	2		58	2	
R2356D		1	B	53	60	7		58	2		57	3		57	3	
R2356E		1	B	53	59	6		57	2		57	2		57	2	

Length (ft)=	3600	3600	3600
Average Height =	12	14	16
Area of Noise Wall (sft)=	43199	50398	57597
Impacted Receptors=	43	43	43
Number of Benefited Receptors=	67	91	94
Area of Noise Wall per Benefit Receptor (sft)=	645	554	613
Average Increase in dB(A) of all Impacted Receptors=	16	16	16
Maximum Allowable Base Quantity of Noise Wall per Benefited Receptor (sft)=	3053	3053	3053
Feasible (5 dB(A) Reduction)=	Yes	Yes	Yes
Reasonable (Wall Area per Benefit) =	Yes	Yes	Yes
Reasonable (7 dB(A) Reduction) =	Yes	Yes	Yes
Breaks Line of Sight to Impacted Properties? =	No	No	Yes

(1) Category B denotes a residential property.

Recommended 16 ft Wall

(2) Noise levels highlighted in red are levels above the Noise Abatment Criteria.

(3) Values highlighted in green are a 5 dB(A) or greater reduction in noise levels.

(4) A 16ft barrier is recommended because all criteria for feasible and reasonable have been met, and the most properties are benefited.

NCDOT SOUND BARRIER
FEASIBILITY and REASONABLENESS
WORKSHEET

PROJECT - Complete 540 TIP # - R-2721, R-2828, R-2829

LOCATION - Barrier 108 COUNTY(IES) - Wake and Johnston

IMPACTS - 43 # BENEFITS - 94 NAC: A (B) (C) D E F G (CIRCLE ALL THAT APPLY)

A. FEASIBILITY:

1	Can a 5-dB(A) reduction in traffic noise levels be achieved for at least one impacted receptor?	X YES	NO
2	Does topography negatively affect the proposed abatement measure?	YES	X NO
3	Does the abatement measure negatively affect property access, drainage, safety and maintenance requirements?	YES	X NO
4	Is there control of access in the vicinity of the proposed abatement measure?	YES	X NO

B. REASONABLENESS:

1	Can a 7-dB(A) reduction in traffic noise levels be achieved for at least one impacted front row receptor?	X YES	NO
2	Is the design criteria per benefited receptor of 613 (sq.ft.) / cu.yd (CIRCLE ONE) less than the maximum allowable design criteria per benefited receptor of 3053 (sq.ft.) / cu.yd.? (CIRCLE ONE)	X YES	NO

C. NOISE ABATEMENT DECISION:

1	Is the noise mitigation feasible?	X YES	NO
2	Is the noise mitigation reasonable?	X YES	NO
3	Is the noise mitigation likely?	X YES	NO
4	Have the owners' and residents' viewpoints been solicited?	YES	X NO
5	Is the noise mitigation recommended for construction?	YES	NO

D. OPTIONAL REASONABLENESS CONSIDERATION:

1	Was optional averaging noise abatement allowance within a common noise environment used for consideration of barrier reasonableness?	YES	X NO
2	If the answer to D.1 is YES, the design criteria per benefited receptor for each individual barrier within the common noise environment before averaging are:		

Bar No. _____ _____ sq.ft./cu.yd (CIRCLE ONE) Bar No. _____ _____ sq.ft./cu.yd (CIRCLE ONE)

Bar No. _____ _____ sq.ft./cu.yd Bar No. _____ _____ sq.ft./cu.yd

3	If the answer to D.1 is YES, is the design criteria per benefited receptor for each individual barrier less than or equal to twice the maximum allowable design criteria per benefited receptor of _____ sq.ft./cu.yd (CIRCLE ONE)	YES	NO

Form Completed By: E SALUTZ Date: _____

In Consultation With: _____ Date: _____

Complete 540
Traffic Noise Analysis

4/1/2015

Orange Corridor

Noise Wall 109

															Recommended[4]		
			NAC	Noise Levels[2]				Short Wall			Intermediate Wall			Tall Wall			
Receptor	First Row	Residences Represented	Land Use Category[1]	Existing dB(A)	Build dB(A)	Increase	Impacted Receptors	W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors
R0125A	Yes	1	B	57	58	1		55	3		55	3		55	3	
R0125B	Yes	1	B	56	56	0		54	2		54	2		54	2	
R0126A		1	B	52	54	2		54	0		54	0		53	1	
R0126B		1	B	52	54	2		54	0		54	0		54	0	
R0126C		1	B	52	54	2		54	0		54	0		54	0	
R0126D		1	B	52	54	2		54	0		54	0		54	0	
R0127A		1	B	52	54	2		53	1		53	1		53	1	
R0127B		1	B	52	54	2		53	1		53	1		53	1	
R0127C		1	B	52	54	2		53	1		53	1		53	1	
R0127D		1	B	52	54	2		53	1		53	1		53	1	
R0127E		1	B	52	54	2		54	0		53	1		53	1	
R0128A		1	B	52	52	0		52	0		52	0		52	0	
R0128B		1	B	52	52	0		52	0		52	0		52	0	
R0128C		1	B	52	53	1		53	0		53	0		53	0	
R0128D		1	B	52	53	1		53	0		53	0		53	0	
R0129A		1	B	52	53	1		53	0		53	0		53	0	
R0129B		1	B	52	54	2		54	0		54	0		54	0	
R0129C		1	B	52	54	2		54	0		54	0		54	0	
R0129D		1	B	52	54	2		54	0		54	0		54	0	
R0129E		1	B	52	55	3		55	0		55	0		55	0	
R0130A	Yes	1	B	59	62	3		57	5	1	56	6	1	55	7	1
R0130B	Yes	1	B	60	63	3		57	6	1	56	7	1	55	8	1
R0130C	Yes	1	B	61	64	3		57	7	1	56	8	1	55	9	1
R0130D	Yes	1	B	58	65	7		56	9	1	55	10	1	55	10	1
R0130E	Yes	1	B	58	66	8	1	56	10	1	55	11	1	55	11	1
R0130F	Yes	1	B	58	60	2		56	4		56	4		55	5	1
R0131A	Yes	1	B	62	68	6	1	59	9	1	58	10	1	58	10	1
R0131B	Yes	1	B	62	68	6	1	58	10	1	57	11	1	56	12	1
R0131C	Yes	1	B	61	65	4		58	7	1	57	8	1	56	9	1
R0131D	Yes	1	B	61	67	6	1	57	10	1	56	11	1	55	12	1
R0131E	Yes	1	B	61	68	7	1	57	11	1	56	12	1	55	13	1
R0131F	Yes	1	B	61	64	3		58	6	1	57	7	1	56	8	1

Length (ft)=	616	616	616
Average Height =	10	12	14
Area of Noise Wall (sft)=	6162	7394	8627
Impacted Receptors=	5	5	5
Number of Benefited Receptors=	11	11	12
Area of Noise Wall per Benefit Receptor (sft)=	560	672	719
Average Increase in dB(A) of all Impacted Receptors=	7	7	7
Maximum Allowable Base Quantity of Noise Wall per Benefited Receptor (sft)=	2731	2731	2731
Feasible (5 dB(A) Reduction)=	Yes	Yes	Yes
Reasonable (Wall Area per Benefit) =	Yes	Yes	Yes
Reasonable (7 dB(A) Reduction) =	Yes	Yes	Yes
Breaks Line of Sight to Impacted Properties? =	No	Yes	Yes

(1) Category B denotes a residential property.
(2) Noise levels highlighted in red are levels above the Noise Abatment Criteria.
(3) Values highlighted in green are a 5 dB(A) or greater reduction in noise levels.
(4) A 14ft barrier is recommended because all criteria for feasible and reasonable have been met, and the most properties are benefited.

Recommended 14 ft Wall

NCDOT SOUND BARRIER
FEASIBILITY and REASONABLENESS
WORKSHEET

PROJECT - Complete 540 TIP # - R-2721, R-2828, R-2829

LOCATION - Barrier 108 COUNTY(IES) - Wake and Johnston

IMPACTS - 5 # BENEFITS - 12 NAC: A (B) C D E F G (CIRCLE ALL THAT APPLY)

A. FEASIBILITY:

1	Can a 5-dB(A) reduction in traffic noise levels be achieved for at least one impacted receptor?	X YES	NO
2	Does topography negatively affect the proposed abatement measure?	YES	X NO
3	Does the abatement measure negatively affect property access, drainage, safety and maintenance requirements?	YES	X NO
4	Is there control of access in the vicinity of the proposed abatement measure?	YES	X NO

B. REASONABLENESS:

1	Can a 7-dB(A) reduction in traffic noise levels be achieved for at least one impacted front row receptor?	X YES	NO
2	Is the design criteria per benefited receptor of 719 (sq.ft.)/cu.yd (CIRCLE ONE) less than the maximum allowable design criteria per benefited receptor of 2731 (sq.ft.)/ cu.yd.? (CIRCLE ONE)	X YES	NO

C. NOISE ABATEMENT DECISION:

1	Is the noise mitigation feasible?	X YES	NO
2	Is the noise mitigation reasonable?	X YES	NO
3	Is the noise mitigation likely?	X YES	NO
4	Have the owners' and residents' viewpoints been solicited?	YES	X NO
5	Is the noise mitigation recommended for construction?	YES	NO

D. OPTIONAL REASONABLENESS CONSIDERATION:

1	Was optional averaging noise abatement allowance within a common noise environment used for consideration of barrier reasonableness?	YES	X NO
2	If the answer to D.1 is YES, the design criteria per benefited receptor for each individual barrier within the common noise environment before averaging are:		

Bar No. _____ _____ sq.ft./cu.yd (CIRCLE ONE) Bar No. _____ _____ sq.ft./cu.yd (CIRCLE ONE)

Bar No. _____ _____ sq.ft./cu.yd Bar No. _____ _____ sq.ft./cu.yd

3	If the answer to D.1 is YES, is the design criteria per benefited receptor for each individual barrier less than or equal to twice the maximum allowable design criteria per benefited receptor of _____ sq.ft./cu.yd (CIRCLE ONE)	YES	NO

Form Completed By: E SALUTZ Date: _____

In Consultation With: _____ Date: _____

Complete 540
Traffic Noise Analysis

4/1/2015

Orange Corridor

Noise Wall 110

Receptor	First Row	Residences Represented	NAC Land Use Category[1]	Noise Levels[2] Existing dB(A)	Build dB(A)	Increase	Benefit Increases	Impacted Receptors	Short Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	Intermediate Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	Tall Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors
R0140A	Yes	1	B	52	64	12			64	0		64	0		64	0	
R0140B	Yes	1	B	52	64	12			63	1		63	1		63	1	
R0141A	Yes	1	B	53	64	11			63	1		63	1		63	1	
R0141B	Yes	1	B	54	64	10			62	2		62	2		62	2	
R0142A	Yes	1	B	55	65	10	10	1	61	4		61	4		60	5	1
R0142B	Yes	1	B	54	64	10			61	3		61	3		61	3	
R0143A	Yes	1	B	56	65	9			61	4		60	5	1	60	5	1
R0143B	Yes	1	B	56	65	9			60	5	1	60	5	1	59	6	1
R0144A		1	B	52	64	12			64	0		64	0		64	0	
R0144B		1	B	52	63	11			63	0		63	0		63	0	
R0144C		1	B	52	63	11			62	1		62	1		62	1	
R0145		1	B	52	61	9			60	1		60	1		60	1	
R0146A		1	B	52	59	7			59	0		59	0		59	0	
R0146B		1	B	52	59	7			59	0		59	0		59	0	

Length (ft)=	1335	1335	1335
Average Height =	14	16	22
Area of Noise Wall (sft)=	18694	21365	29375
Impacted Receptors=	1	1	1
Number of Benefited Receptors=	1	2	3
Area of Noise Wall per Benefit Receptor (sft)=	18694	10683	9792
Average Increase in dB(A) of all Impacted Receptors=	10	10	10
Maximum Allowable Base Quantity of Noise Wall per Benefited Receptor (sft)=	2850	2850	2850
Feasible (5 dB(A) Reduction)=	Yes	Yes	Yes
Reasonable (Wall Area per Benefit) =	No	No	No
Reasonable (7 dB(A) Reduction) =	No	No	No
Breaks Line of Sight to Impacted Properties? =	No	Yes	Yes

(1) Category B denotes a residential property.
(2) Noise levels highlighted in red are levels above the Noise Abatment Criteria.
(3) Values highlighted in green are a 5 dB(A) or greater reduction in noise levels.

Note: Boxed results indicate barrier discussed in report text.

NCDOT SOUND BARRIER
FEASIBILITY and REASONABLENESS
WORKSHEET

PROJECT - Complete 540 TIP # - R-2721, R-2828, R-2829

LOCATION - Barrier 110 COUNTY(IES) - Wake and Johnston

IMPACTS - 1 # BENEFITS - 3 NAC: A (B) C D E F G (CIRCLE ALL THAT APPLY)

A. FEASIBILITY:

1	Can a 5-dB(A) reduction in traffic noise levels be achieved for at least one impacted receptor?	X YES	NO
2	Does topography negatively affect the proposed abatement measure?	YES	X NO
3	Does the abatement measure negatively affect property access, drainage, safety and maintenance requirements?	YES	X NO
4	Is there control of access in the vicinity of the proposed abatement measure?	YES	X NO

B. REASONABLENESS:

1	Can a 7-dB(A) reduction in traffic noise levels be achieved for at least one impacted front row receptor?	X YES	NO
2	Is the design criteria per benefited receptor of 9792 (CIRCLE ONE) (sq.ft.) cu.yd less than the maximum allowable design criteria per benefited receptor of 2850 (CIRCLE ONE) (sq.ft.) cu.yd.?	YES	X NO

C. NOISE ABATEMENT DECISION:

1	Is the noise mitigation feasible?	X YES	NO
2	Is the noise mitigation reasonable?	YES	X NO
3	Is the noise mitigation likely?	YES	X NO
4	Have the owners' and residents' viewpoints been solicited?	YES	X NO
5	Is the noise mitigation recommended for construction?	YES	NO

D. OPTIONAL REASONABLENESS CONSIDERATION:

1	Was optional averaging noise abatement allowance within a common noise environment used for consideration of barrier reasonableness?	YES	X NO

2 If the answer to D.1 is YES, the design criteria per benefited receptor for each individual barrier within the common noise environment before averaging are:

Bar No. _____ _____ (CIRCLE ONE) sq.ft./cu.yd Bar No. _____ _____ (CIRCLE ONE) sq.ft./cu.yd

Bar No. _____ _____ sq.ft./cu.yd Bar No. _____ _____ sq.ft./cu.yd

3	If the answer to D.1 is YES, is the design criteria per benefited receptor for each individual barrier less than or equal to twice the maximum allowable design criteria per benefited receptor of _____ (CIRCLE ONE) sq.ft./cu.yd	YES	NO

Form Completed By: E SALUTZ Date: _____

In Consultation With: _____ Date: _____

Complete 540
Traffic Noise Analysis

4/1/2015

Orange Corridor

Noise Wall 111

Receptor	First Row	Residences Represented	NAC Land Use Category[1]	Noise Levels[2] Existing dB(A)	Build dB(A)	Increase	Impacted Receptors	Short Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	Intermediate Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	Tall Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors
R0192A	Yes	1	B	51	65	14	1	60	5	1	60	5	1	60	5	1
R0192B	Yes	1	B	49	67	18	1	61	6	1	60	7	1	60	7	1
R0192C	Yes	1	B	55	69	14	1	64	5	1	62	7	1	61	8	1
R1725A		1	B	54	63	9		61	2		60	3		60	3	
R1725B		1	B	58	63	5		63	0		63	0		63	0	

Length (ft)=	1409	1409	1409
Average Height =	18	20	22
Area of Noise Wall (sft)=	25363	28181	30998
Impacted Receptors=	3	3	3
Number of Benefited Receptors=	3	3	3
Area of Noise Wall per Benefit Receptor (sft)=	8454	9394	10333
Average Increase in dB(A) of all Impacted Receptors=	15	15	15
Maximum Allowable Base Quantity of Noise Wall per Benefited Receptor (sft)=	3037	3037	3037
Feasible (5 dB(A) Reduction)=	Yes	Yes	Yes
Reasonable (Wall Area per Benefit) =	No	No	No
Reasonable (7 dB(A) Reduction) =	No	Yes	Yes
Breaks Line of Sight to Impacted Properties? =	No	No	Yes

(1) Category B denotes a residential property.
(2) Noise levels highlighted in red are levels above the Noise Abatment Criteria.
(3) Values highlighted in green are a 5 dB(A) or greater reduction in noise levels.

Note: Boxed results indicate barrier discussed in report text.

NCDOT SOUND BARRIER
FEASIBILITY and REASONABLENESS
WORKSHEET

PROJECT - Complete 540 TIP # - R-2721, R-2828, R-2829

LOCATION - Barrier 111 COUNTY(IES) - Wake and Johnston

IMPACTS - 3 # BENEFITS - 3 NAC: A (B) C D E F G (CIRCLE ALL THAT APPLY)

A. FEASIBILITY:

1	Can a 5-dB(A) reduction in traffic noise levels be achieved for at least one impacted receptor?	X YES	NO
2	Does topography negatively affect the proposed abatement measure?	YES	X NO
3	Does the abatement measure negatively affect property access, drainage, safety and maintenance requirements?	YES	X NO
4	Is there control of access in the vicinity of the proposed abatement measure?	YES	X NO

B. REASONABLENESS:

1	Can a 7-dB(A) reduction in traffic noise levels be achieved for at least one impacted front row receptor?	X YES	NO
2	Is the design criteria per benefited receptor of 9394 (CIRCLE ONE) (sq.ft.) cu.yd less than the maximum allowable design criteria per benefited receptor of 3037 (CIRCLE ONE) (sq.ft.) cu.yd.?	YES	X NO

C. NOISE ABATEMENT DECISION:

1	Is the noise mitigation feasible?	X YES	NO
2	Is the noise mitigation reasonable?	YES	X NO
3	Is the noise mitigation likely?	YES	X NO
4	Have the owners' and residents' viewpoints been solicited?	YES	X NO
5	Is the noise mitigation recommended for construction?	YES	NO

D. OPTIONAL REASONABLENESS CONSIDERATION:

1	Was optional averaging noise abatement allowance within a common noise environment used for consideration of barrier reasonableness?	YES	X NO

2 If the answer to D.1 is YES, the design criteria per benefited receptor for each individual barrier within the common noise environment before averaging are:

Bar No. _____ _____ (CIRCLE ONE) sq.ft./cu.yd Bar No. _____ _____ (CIRCLE ONE) sq.ft./cu.yd

Bar No. _____ _____ sq.ft./cu.yd Bar No. _____ _____ sq.ft./cu.yd

3	If the answer to D.1 is YES, is the design criteria per benefited receptor for each individual barrier less than or equal to twice the maximum allowable design criteria per benefited receptor of _____ (CIRCLE ONE) sq.ft./cu.yd	YES	NO

Form Completed By: E SALUTZ Date: _____

In Consultation With: _____ Date: _____

Complete 540
Traffic Noise Analysis

4/1/2015

Green Corridor

Noise Wall 112

Receptor	First Row	Residences Represented	NAC Land Use Category[1]	Noise Levels[2] Existing dB(A)	Build dB(A)	Increase	Impacted Receptors	Short Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	Intermediate Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	Tall Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors
R1557A	Yes	1	B	61	68	7	1	64	4		63	5	1	62	6	1
R1557B	Yes	1	B	63	70	7	1	64	6	1	63	7	1	62	8	1
R1557C	Yes	1	B	64	72	8	1	66	6	1	64	8	1	63	9	1
R2300A		1	B	57	62	5		61	1		61	1		61	1	
R2300B		1	B	58	62	4		61	1		61	1		61	1	

Length (ft)=	1200	1200	1200
Average Height =	18	20	22
Area of Noise Wall (sft)=	21602	24002	26402
Impacted Receptors=	3	3	3
Number of Benefited Receptors=	2	3	3
Area of Noise Wall per Benefit Receptor (sft)=	10801	8001	8801
Average Increase in dB(A) of all Impacted Receptors=	7	7	7
Maximum Allowable Base Quantity of Noise Wall per Benefited Receptor (sft)=	2757	2757	2757
Feasible (5 dB(A) Reduction)=	Yes	Yes	Yes
Reasonable (Wall Area per Benefit) =	No	No	No
Reasonable (7 dB(A) Reduction) =	No	Yes	Yes
Breaks Line of Sight to Impacted Properties? =	No	Yes	Yes

(1) Category B denotes a residential property.
(2) Noise levels highlighted in red are levels above the Noise Abatment Criteria.
(3) Values highlighted in green are a 5 dB(A) or greater reduction in noise levels.

Note: Boxed results indicate barrier discussed in report text.

NCDOT SOUND BARRIER
FEASIBILITY and REASONABLENESS
WORKSHEET

PROJECT - Complete 540 TIP # - R-2721, R-2828, R-2829

LOCATION - Barrier 112 COUNTY(IES) - Wake and Johnston

IMPACTS - 3 # BENEFITS - 3 NAC: A (B) C D E F G (CIRCLE ALL THAT APPLY)

A. FEASIBILITY:

1	Can a 5-dB(A) reduction in traffic noise levels be achieved for at least one impacted receptor?	X YES	NO
2	Does topography negatively affect the proposed abatement measure?	YES	X NO
3	Does the abatement measure negatively affect property access, drainage, safety and maintenance requirements?	YES	X NO
4	Is there control of access in the vicinity of the proposed abatement measure?	YES	X NO

B. REASONABLENESS:

1	Can a 7-dB(A) reduction in traffic noise levels be achieved for at least one impacted front row receptor?	X YES	NO
2	Is the design criteria per benefited receptor of 8001 (sq.ft.) / cu.yd (CIRCLE ONE) less than the maximum allowable design criteria per benefited receptor of 2757 (sq.ft.) / cu.yd.? (CIRCLE ONE)	YES	X NO

C. NOISE ABATEMENT DECISION:

1	Is the noise mitigation feasible?	X YES	NO
2	Is the noise mitigation reasonable?	YES	X NO
3	Is the noise mitigation likely?	YES	X NO
4	Have the owners' and residents' viewpoints been solicited?	YES	X NO
5	Is the noise mitigation recommended for construction?	YES	NO

D. OPTIONAL REASONABLENESS CONSIDERATION:

1	Was optional averaging noise abatement allowance within a common noise environment used for consideration of barrier reasonableness?	YES	X NO

2 If the answer to D.1 is YES, the design criteria per benefited receptor for each individual barrier within the common noise environment before averaging are:

Bar No. _____ _____ sq.ft./cu.yd (CIRCLE ONE) Bar No. _____ _____ sq.ft./cu.yd (CIRCLE ONE)

Bar No. _____ _____ sq.ft./cu.yd Bar No. _____ _____ sq.ft./cu.yd

3 If the answer to D.1 is YES, is the design criteria per benefited receptor for each individual barrier less than or equal to twice the maximum allowable design criteria per benefited receptor of _____ sq.ft./cu.yd (CIRCLE ONE) YES NO

Form Completed By: E SALUTZ Date: _____

In Consultation With: _____ Date: _____

Complete 540
Traffic Noise Analysis

4/1/2015

Orange Corridor

Noise Wall 113

Receptor	First Row	Residences Represented	NAC Land Use Category[1]	Noise Levels[2] Existing dB(A)	Build dB(A)	Increase	Impacted Receptors	Short Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	Intermediate Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors	Tall Wall W/Wall[2] dB(A)	Reduction[3]	Benefited Receptors
R0189A	Yes	1	B	46	67	21	1	63	4		62	5	1	62	5	1
R0189B	Yes	1	B	46	67	21	1	61	6	1	61	6	1	60	7	1
R0189C	Yes	1	B	46	65	19	1	60	5	1	60	5	1	59	6	1
R0190	Yes	1	B	55	60	5		60	0		60	0		60	0	
R0191A	Yes	1	B	56	65	9		61	4		61	4		60	5	1
R0191B	Yes	1	B	55	62	7		60	2		60	2		60	2	

Length (ft)=	2000	2000	2000
Average Height =	14	16	18
Area of Noise Wall (sft)=	28002	32002	36002
Impacted Receptors=	3	3	3
Number of Benefited Receptors=	2	3	4
Area of Noise Wall per Benefit Receptor (sft)=	14001	10667	9001
Average Increase in dB(A) of all Impacted Receptors=	20	20	20
Maximum Allowable Base Quantity of Noise Wall per Benefited Receptor (sft)=	3212	3212	3212
Feasible (5 dB(A) Reduction)=	Yes	Yes	Yes
Reasonable (Wall Area per Benefit) =	No	No	No
Reasonable (7 dB(A) Reduction) =	No	No	Yes
Breaks Line of Sight to Impacted Properties? =	Yes	Yes	Yes

(1) Category B denotes a residential property.
(2) Noise levels highlighted in red are levels above the Noise Abatment Criteria.
(3) Values highlighted in green are a 5 dB(A) or greater reduction in noise levels.

Note: Boxed results indicate barrier discussed in report text.

NCDOT SOUND BARRIER
FEASIBILITY and REASONABLENESS
WORKSHEET

PROJECT - Complete 540 TIP # - R-2721, R-2828, R-2829

LOCATION - Barrier 113 COUNTY(IES) - Wake and Johnston

IMPACTS - 3 # BENEFITS - 4 NAC: A (B) C D E F G (CIRCLE ALL THAT APPLY)

A. FEASIBILITY:

1	Can a 5-dB(A) reduction in traffic noise levels be achieved for at least one impacted receptor?	X YES	NO
2	Does topography negatively affect the proposed abatement measure?	YES	X NO
3	Does the abatement measure negatively affect property access, drainage, safety and maintenance requirements?	YES	X NO
4	Is there control of access in the vicinity of the proposed abatement measure?	YES	X NO

B. REASONABLENESS:

1	Can a 7-dB(A) reduction in traffic noise levels be achieved for at least one impacted front row receptor?	X YES	NO
2	Is the design criteria per benefited receptor of 9001 (CIRCLE ONE) (sq.ft.) cu.yd less than the maximum allowable design criteria per benefited receptor of 3212 (CIRCLE ONE) (sq.ft.) cu.yd.?	YES	X NO

C. NOISE ABATEMENT DECISION:

1	Is the noise mitigation feasible?	X YES	NO
2	Is the noise mitigation reasonable?	YES	X NO
3	Is the noise mitigation likely?	YES	X NO
4	Have the owners' and residents' viewpoints been solicited?	YES	X NO
5	Is the noise mitigation recommended for construction?	YES	NO

D. OPTIONAL REASONABLENESS CONSIDERATION:

1	Was optional averaging noise abatement allowance within a common noise environment used for consideration of barrier reasonableness?	YES	X NO

2 If the answer to D.1 is YES, the design criteria per benefited receptor for each individual barrier within the common noise environment before averaging are:

Bar No. _____ _____ (CIRCLE ONE) sq.ft./cu.yd Bar No. _____ _____ (CIRCLE ONE) sq.ft./cu.yd

Bar No. _____ _____ sq.ft./cu.yd Bar No. _____ _____ sq.ft./cu.yd

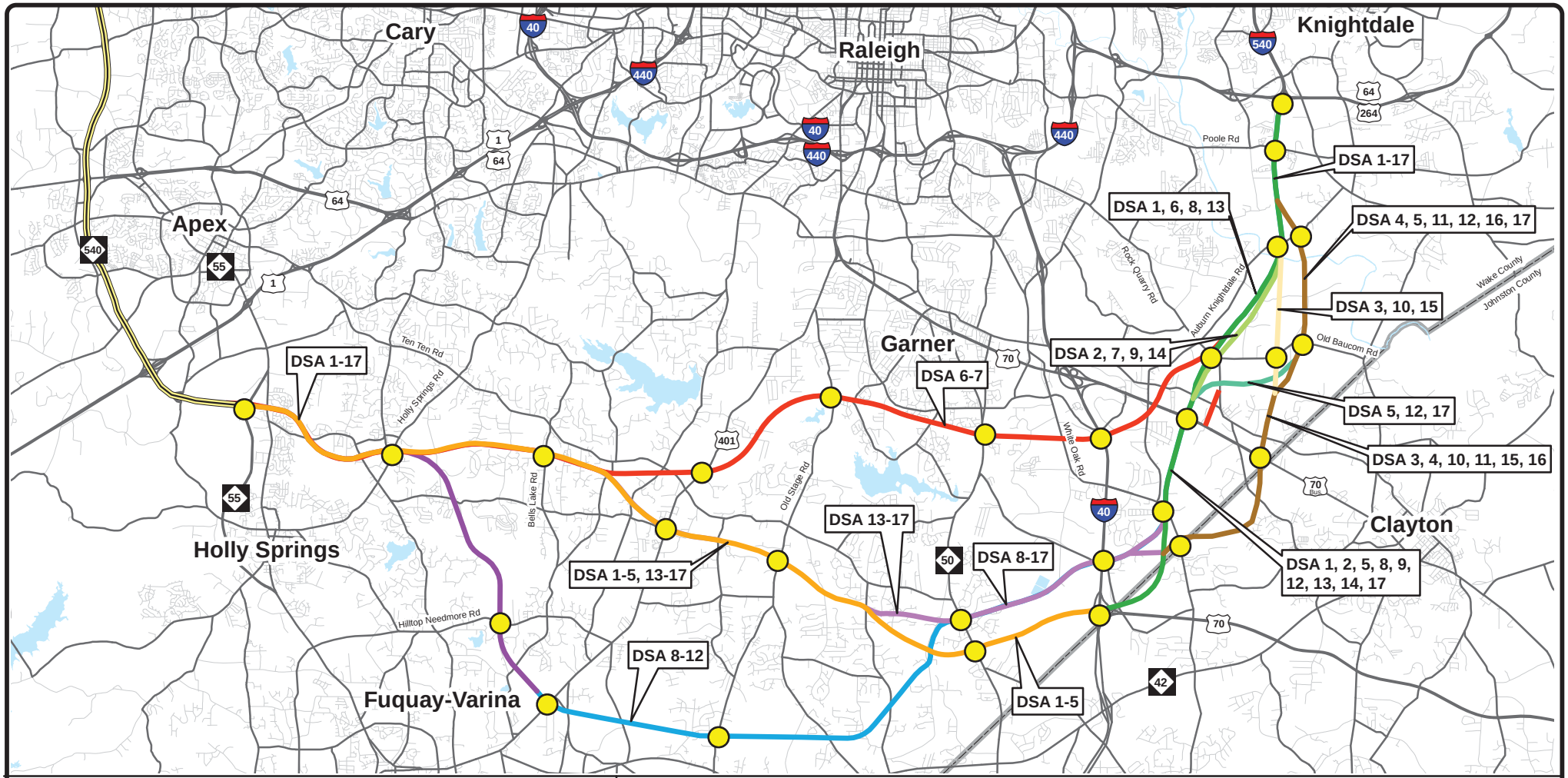
3 If the answer to D.1 is YES, is the design criteria per benefited receptor for each individual barrier less than or equal to twice the maximum allowable design criteria per benefited receptor of _____ (CIRCLE ONE) sq.ft./cu.yd _____ YES _____ NO

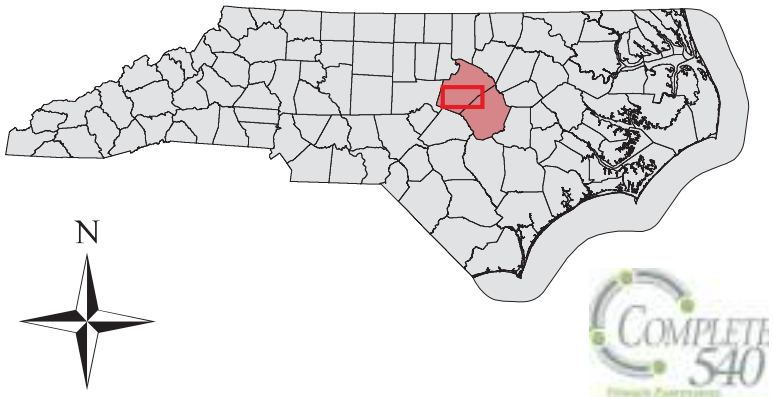
Form Completed By: E SALUTZ Date: _____

In Consultation With: _____ Date: _____

APPENDIX 5

TRAFFIC USED IN THIS ANALYSIS





Detailed Study Alternative Corridors

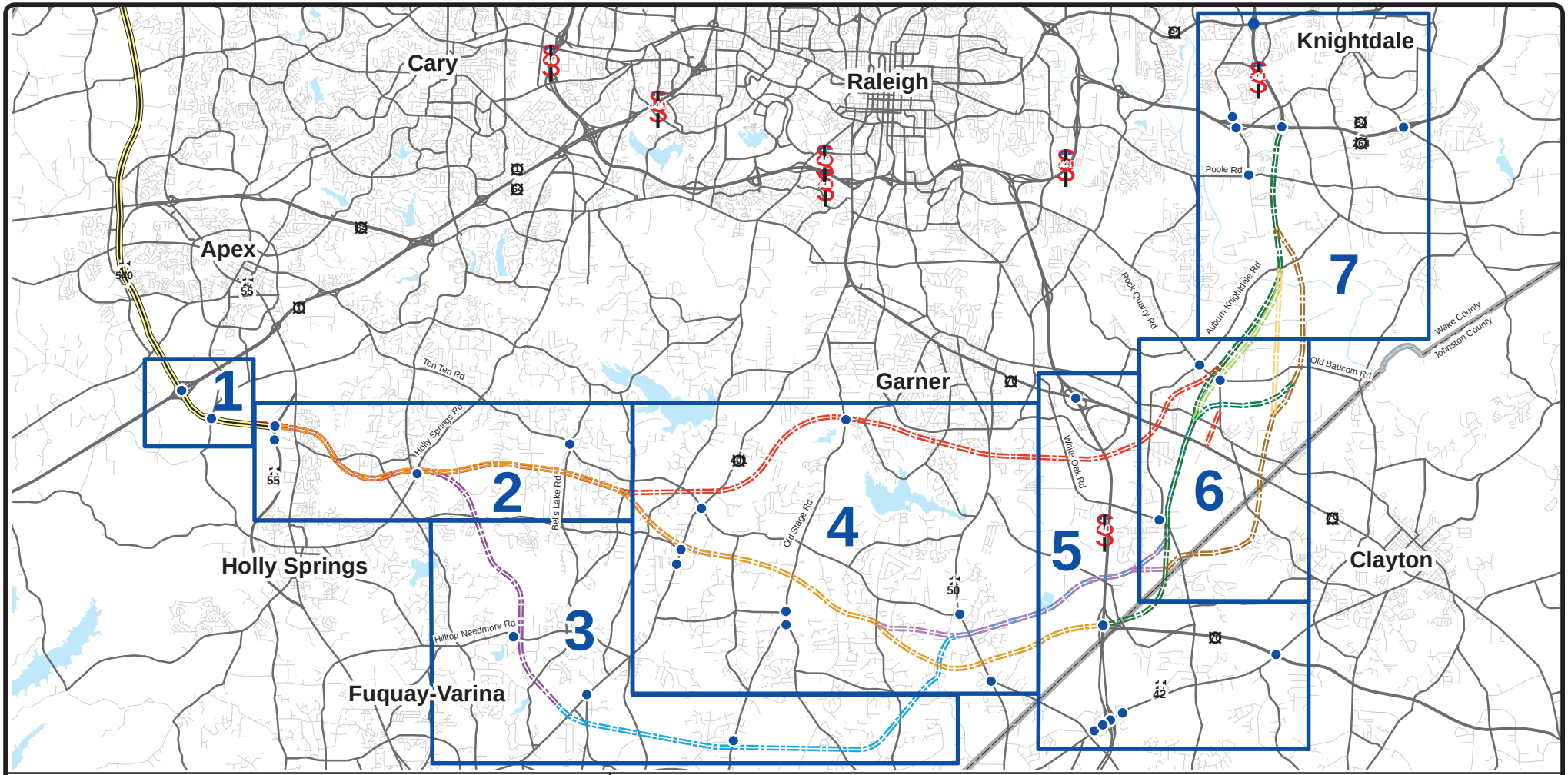
Legend

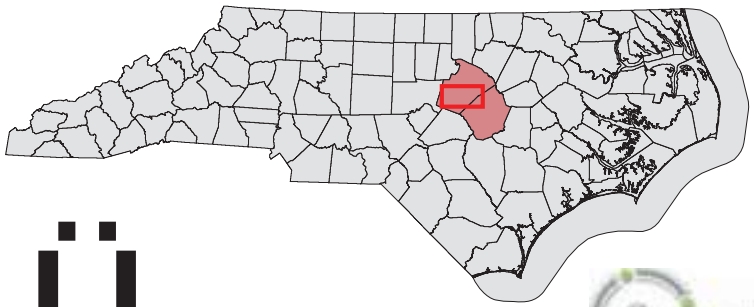
- Interchanges
- Triangle Expressway
- Major Roads
- Counties

DSA Corridors

- Orange
- Green
- Mint
- Brown
- Tan
- Teal
- Lilac
- Red
- Blue
- Purple

STIP: R-2721, R-2828, R-2829	**WBS:** 37673.1.TA2, 35516.1.TA1, 35517.1.TA1
COUNTY: Wake/Johnston	**DIVISION:** 5/4
DATE: April 2014	
PREPARED BY: HNTB North Carolina, P.C. 343 E. Six Forks Rd, Suite 200 Raleigh, NC 27609	
LOCATION: NC 55 Bypass (Holly Springs) to US 64 Bypass (Knightdale)	
PROJECT: Triangle Expressway Southeast Extension	**Figure 1**





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No Build Traffic Forecast Figures Sheet Key

Legend

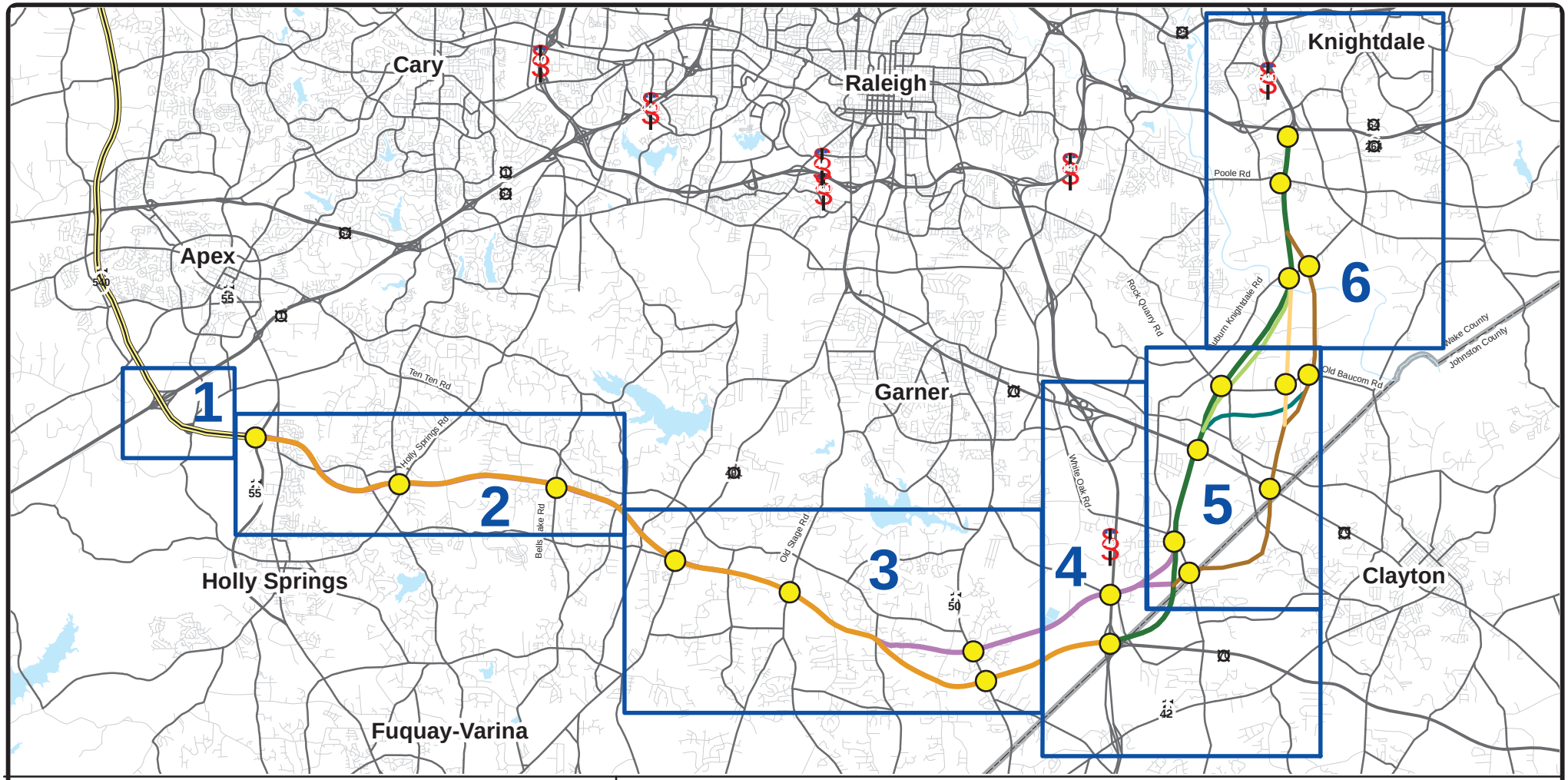
- Forecasted Intersections
- Triangle Expressway
- Major Roads
- Counties

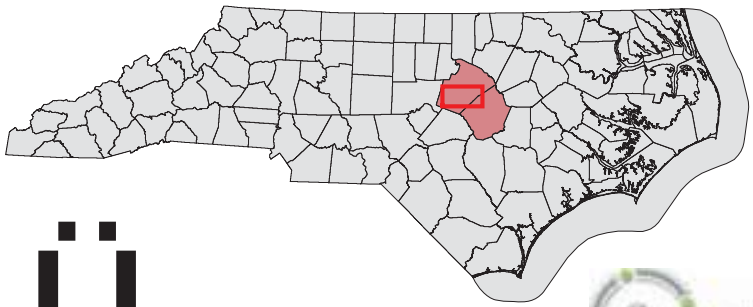
DSA Corridors

- Orange
- Green
- Mint
- Brown
- Tan
- Teal
- Lilac
- Red
- Blue
- Purple

STIP: R-2721, R-2828, R-2829	**WBS:** 37673.1.TA2, 35516.1.TA1, 35517.1.TA1
COUNTY: Wake/Johnston	**DIVISION:** 5/4
DATE: April 2014	
PREPARED BY:	HNTB North Carolina, P.C. 343 E. Six Forks Rd, Suite 200 Raleigh, NC 27609
LOCATION:	NC 55 Bypass (Holly Springs) to US 64 Bypass (Knightdale)
PROJECT:	Triangle Expressway Southeast Extension

Figure 7





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DSA 1-5, 13-17 Traffic Forecast Figures Sheet Key

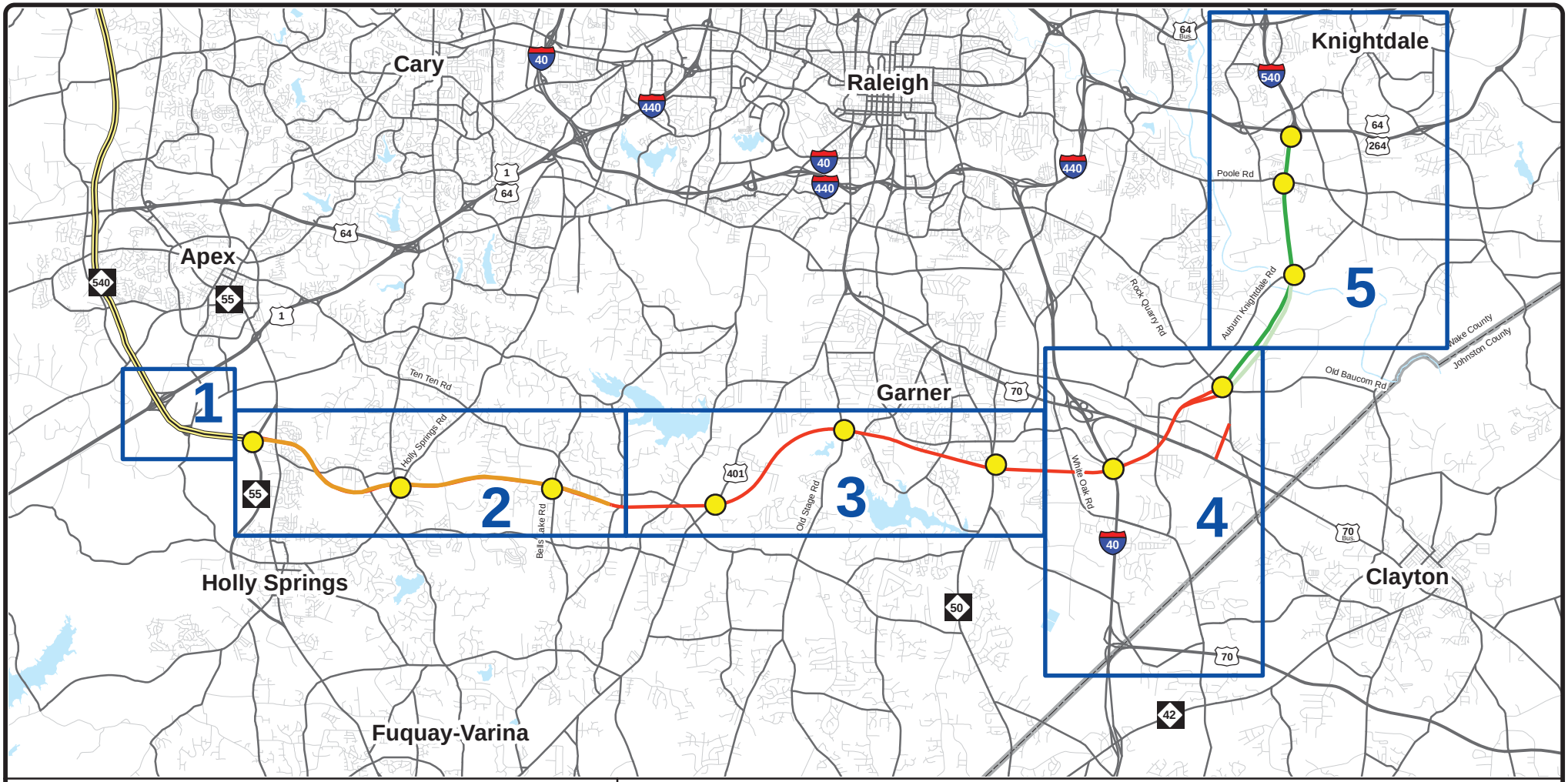
Legend

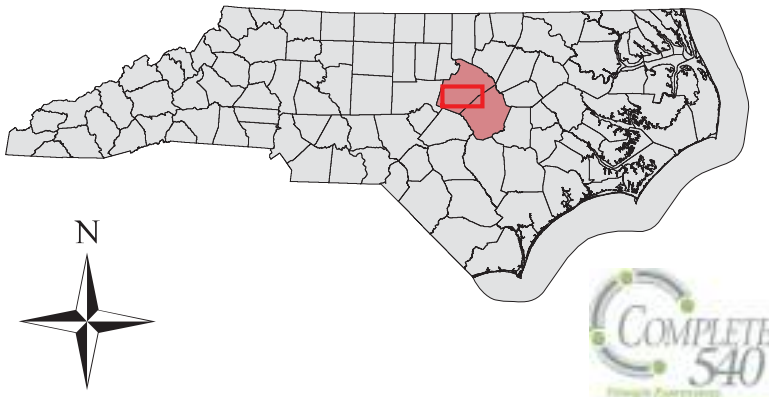
- Interchanges
- Triangle Expressway
- Major Roads
- Counties

DSA Corridors

- Orange
- Green
- Mint
- Brown
- Tan
- Teal
- Lilac

STIP: R-2721, R-2828, R-2829	**WBS:** 37673.1.TA2, 35516.1.TA1, 35517.1.TA1
COUNTY: Wake/Johnston	**DIVISION:** 5/4
DATE: April 2014	
PREPARED BY: HNTB North Carolina, P.C. 343 E. Six Forks Rd, Suite 200 Raleigh, NC 27609	
LOCATION: NC 55 Bypass (Holly Springs) to US 64 Bypass (Knightdale)	
PROJECT: Triangle Expressway Southeast Extension	**Figure 8**



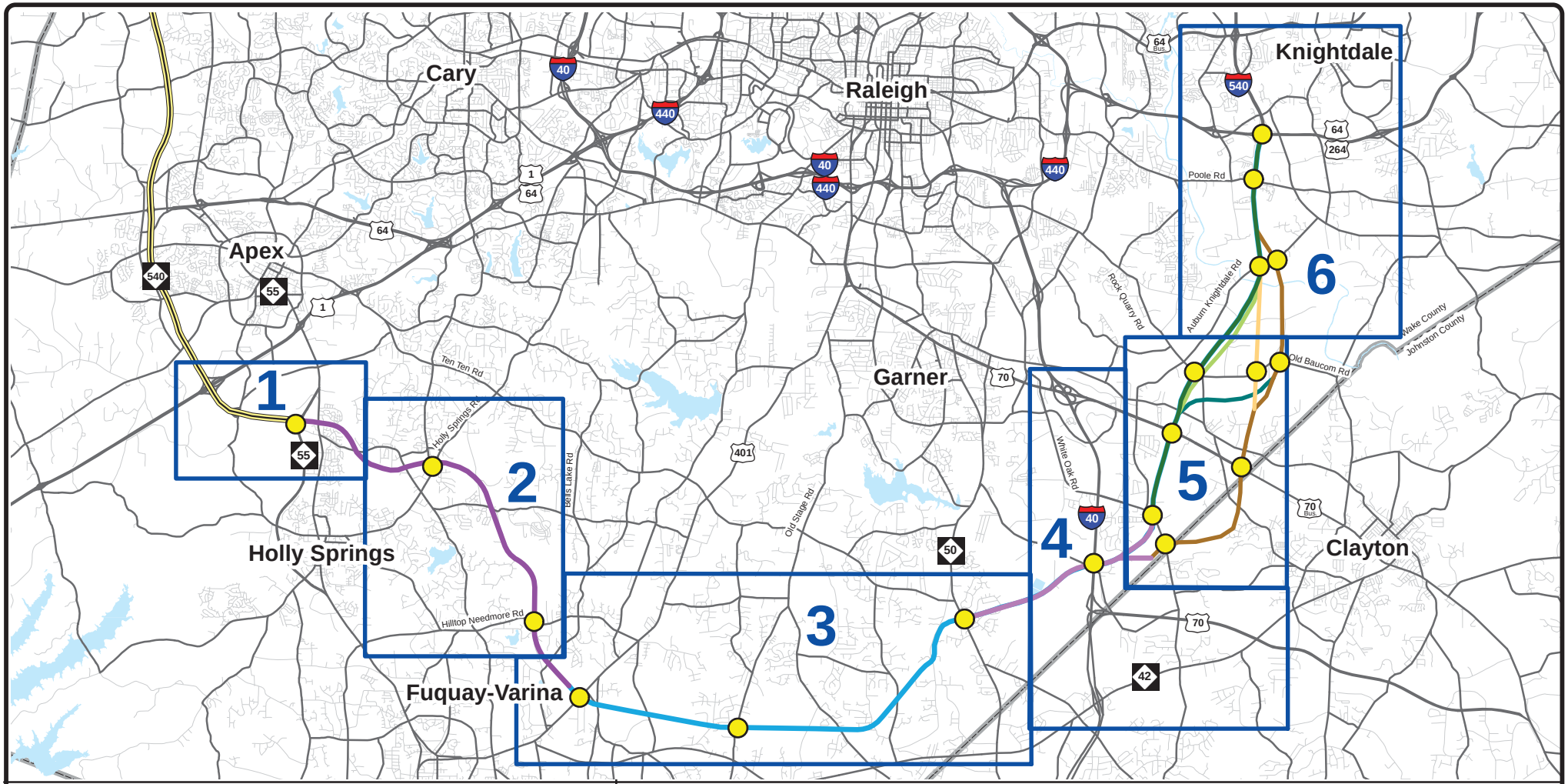


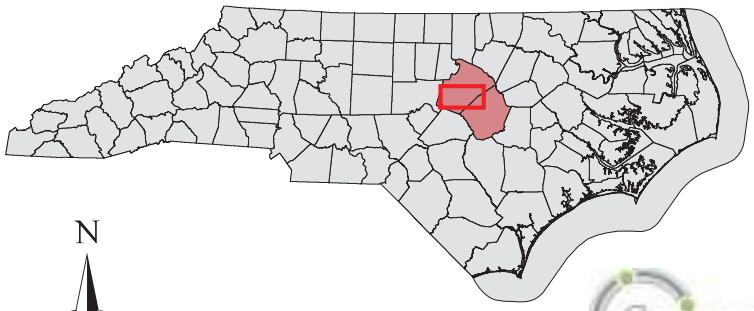
DSA 6-7 Traffic Forecast Figures Sheet Key

Legend

- Interchanges
- Triangle Expressway
- Major Roads
- Counties
- Orange Corridor
- Red Corridor
- Green Corridor
- Mint Corridor

STIP: R-2721, R-2828, R-2829	**WBS:** 37673.1.TA2, 35516.1.TA1, 35517.1.TA1
COUNTY: Wake/Johnston	**DIVISION:** 5/4
DATE: April 2014	
PREPARED BY: HNTB North Carolina, P.C. 343 E. Six Forks Rd, Suite 200 Raleigh, NC 27609	
LOCATION: NC 55 Bypass (Holly Springs) to US 64 Bypass (Knightdale)	
PROJECT: Triangle Expressway Southeast Extension	**Figure 9**





DSA 8-12 Traffic Forecast Figures Sheet Key

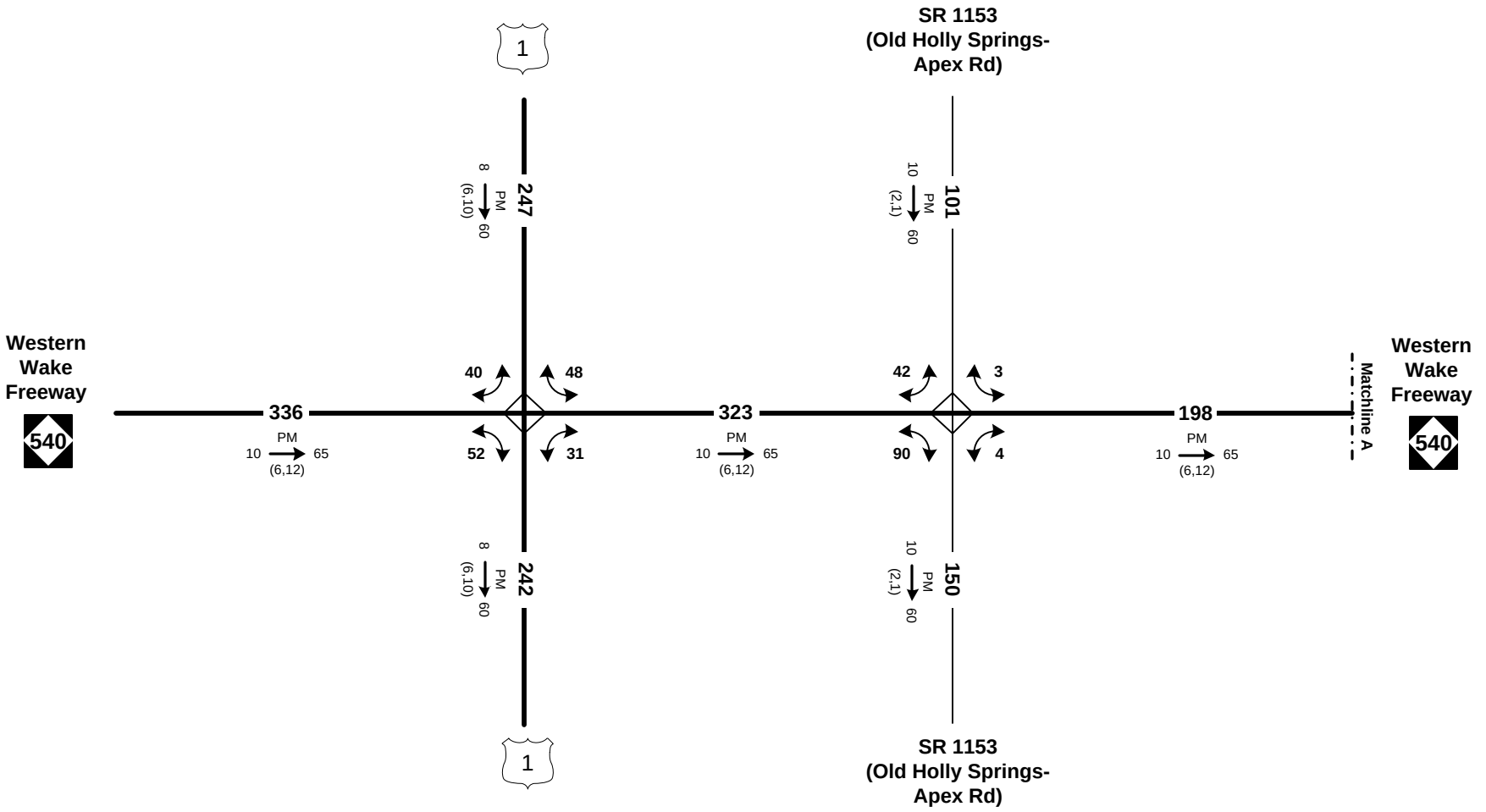
Legend

- Interchanges
- Triangle Expressway
- Major Roads
- Counties

DSA Corridor

- Green Corridor
- Lilac Corridor
- Mint Corridor
- Blue Corridor
- Brown Corridor
- Purple Corridor
- Tan Corridor
- Teal Corridor

STIP: R-2721, R-2828, R-2829	**WBS:** 37673.1.TA2, 35516.1.TA1, 35517.1.TA1
COUNTY: Wake/Johnston	**DIVISION:** 5/4
DATE: April 2014	
PREPARED BY: HNTB North Carolina, P.C. 343 E. Six Forks Rd, Suite 200 Raleigh, NC 27609	
LOCATION: NC 55 Bypass (Holly Springs) to US 64 Bypass (Knightdale)	
PROJECT: Triangle Expressway Southeast Extension	**Figure 10**



2012 AVERAGE ANNUAL DAILY TRAFFIC

No-Build

LEGEND

- ——— = Existing Roadway
- - - - - - - - - = Future Roadway
- ### = No. of Vehicles Per Day in 100s
- PM DHV → D (d,t)
- DHV = Design Hourly Volume = K30
- PM = PM Peak Period
- D = Directional Split (%)
- → = Indicates Direction of D
- (d,t) = Duals, TT-ST's (%)
- = Daily Turn Movements

N

NTS

STIP: R2721, R-2828, R-2829

WBS: 37673.1.TA2, 35516.1.TA1, 35517.1.TA1

COUNTY: Wake/Johnston

DIVISION: 5/4

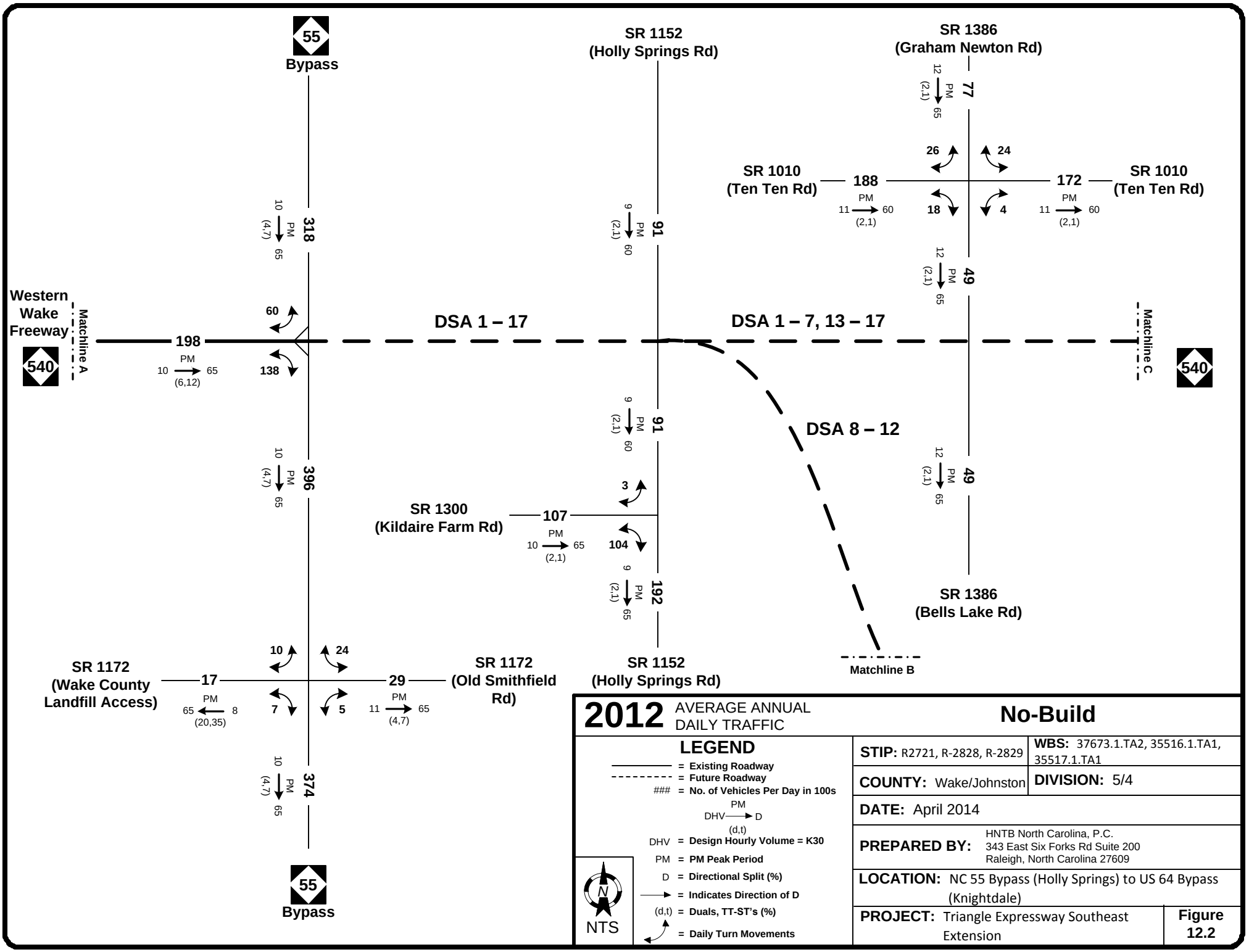
DATE: April 2014

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 US 64 Bypass (Knightdale)

PROJECT: Triangle Expressway Southeast Extension

Figure 12.1



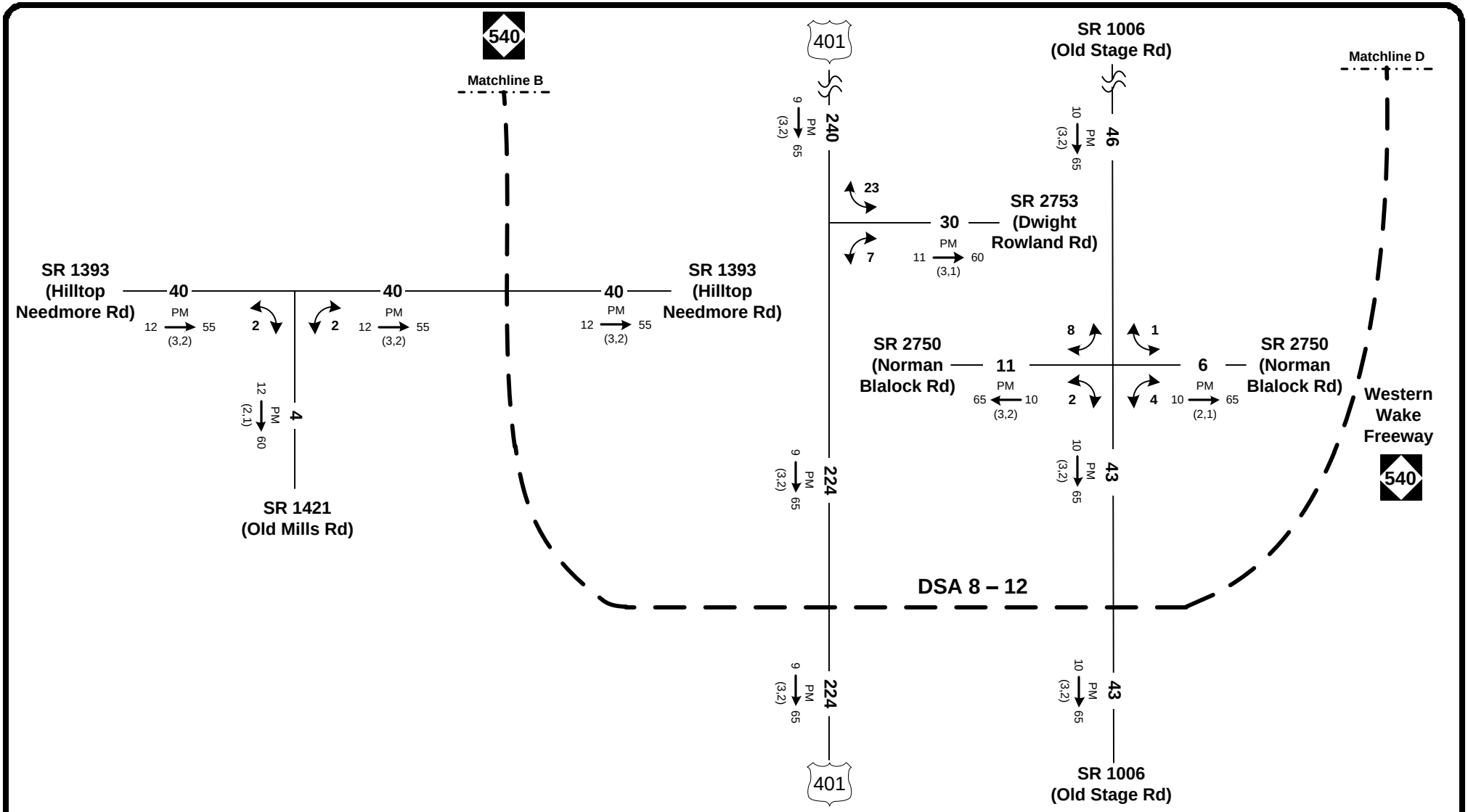
2012 AVERAGE ANNUAL DAILY TRAFFIC

No-Build

LEGEND

- = Existing Roadway
- = Future Roadway
- ### = No. of Vehicles Per Day in 100s
- PM / DHV → D / (d,t)
- DHV = Design Hourly Volume = K30
- PM = PM Peak Period
- D = Directional Split (%)
- → = Indicates Direction of D
- (d,t) = Duals, TT-ST's (%)
- = Daily Turn Movements

STIP: R2721, R-2828, R-2829	**WBS:** 37673.1.TA2, 35516.1.TA1, 35517.1.TA1
COUNTY: Wake/Johnston	**DIVISION:** 5/4
DATE: April 2014	
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 US 64 Bypass (Knightdale)	
PROJECT: Triangle Expressway Southeast Extension	**Figure 12.2**



2012 AVERAGE ANNUAL DAILY TRAFFIC

No-Build

LEGEND

- = Existing Roadway
- = Future Roadway
- ### = No. of Vehicles Per Day in 100s
- PM DHV → D (d,t)
- DHV = Design Hourly Volume = K30
- PM = PM Peak Period
- D = Directional Split (%)
- → = Indicates Direction of D
- (d,t) = Duals, TT-ST's (%)
- = Daily Turn Movements

N

NTS

STIP: R2721, R-2828, R-2829

WBS: 37673.1.TA2, 35516.1.TA1, 35517.1.TA1

COUNTY: Wake/Johnston

DIVISION: 5/4

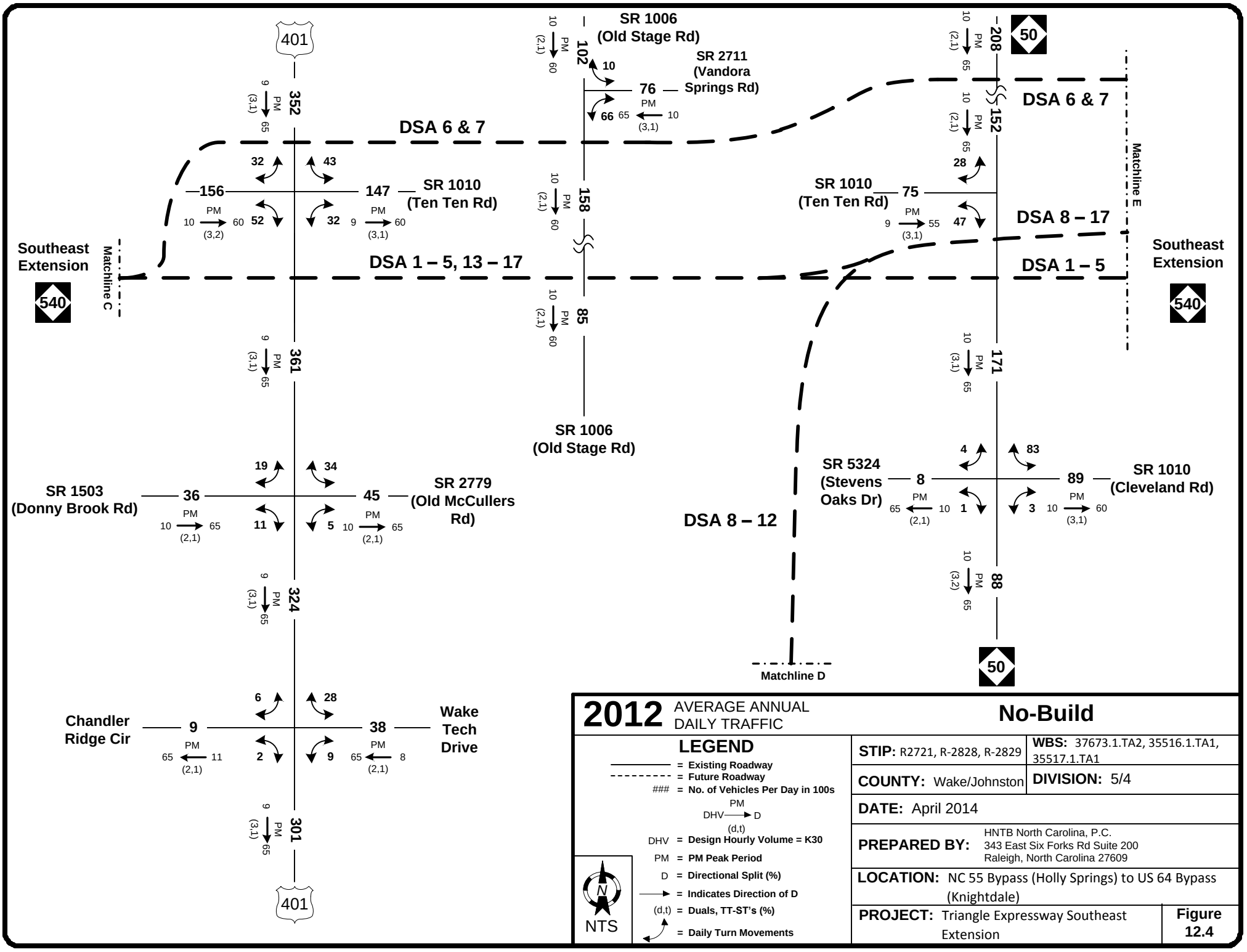
DATE: April 2014

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 US 64 Bypass (Knightdale)

PROJECT: Triangle Expressway Southeast Extension

Figure 12.3



2012 AVERAGE ANNUAL DAILY TRAFFIC

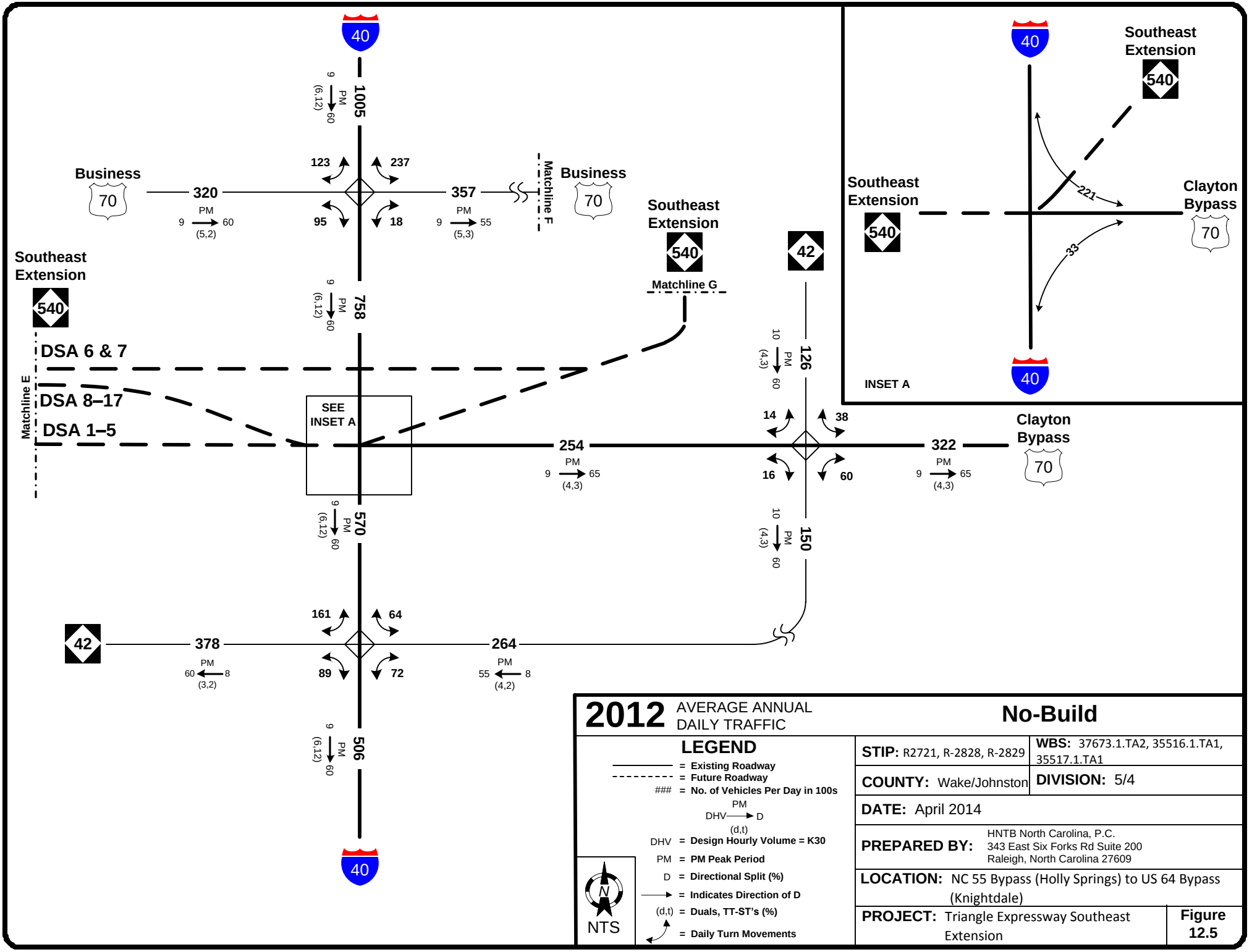
No-Build

LEGEND

- = Existing Roadway
- = Future Roadway
- ### = No. of Vehicles Per Day in 100s
- PM DHV → D (d,t)
- DHV = Design Hourly Volume = K30
- PM = PM Peak Period
- D = Directional Split (%)
- → = Indicates Direction of D
- (d,t) = Duals, TT-ST's (%)
- = Daily Turn Movements

NTS

STIP: R2721, R-2828, R-2829	**WBS:** 37673.1.TA2, 35516.1.TA1, 35517.1.TA1
COUNTY: Wake/Johnston	**DIVISION:** 5/4
DATE: April 2014	
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 US 64 Bypass (Knightdale)	
PROJECT: Triangle Expressway Southeast Extension	**Figure 12.4**



2012 AVERAGE ANNUAL DAILY TRAFFIC

No-Build

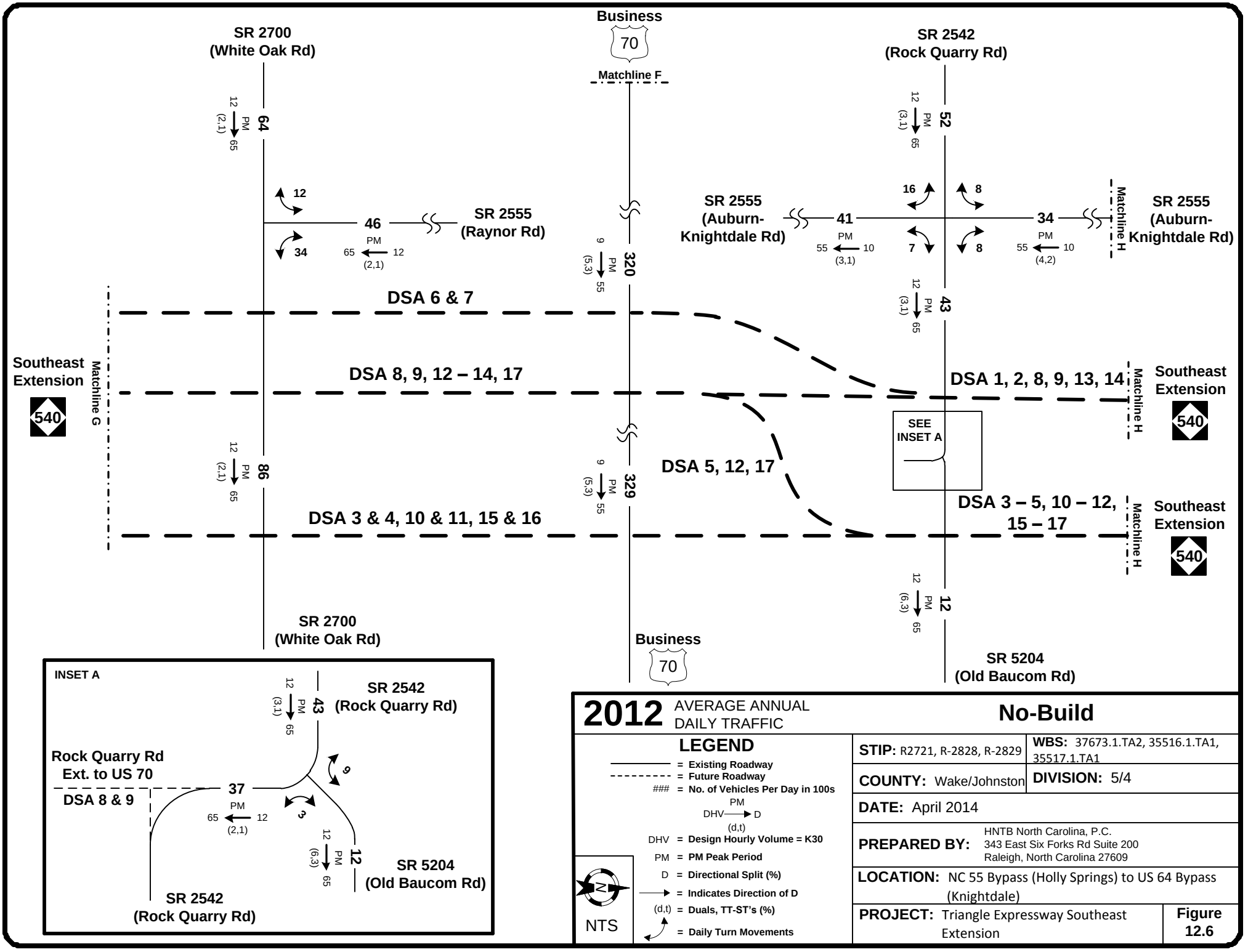
LEGEND

- = Existing Roadway
- = Future Roadway
- ### = No. of Vehicles Per Day in 100s
- PM DHV → D (d,t)
- DHV = Design Hourly Volume = K30
- PM = PM Peak Period
- D = Directional Split (%)
- → = Indicates Direction of D
- (d,t) = Duals, TT-ST's (%)
- = Daily Turn Movements

N

NTS

STIP: R2721, R-2828, R-2829	**WBS:** 37673.1.TA2, 35516.1.TA1, 35517.1.TA1
COUNTY: Wake/Johnston	**DIVISION:** 5/4
DATE: April 2014	
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 US 64 Bypass (Knightdale)	
PROJECT: Triangle Expressway Southeast Extension	**Figure 12.5**



2012 AVERAGE ANNUAL DAILY TRAFFIC

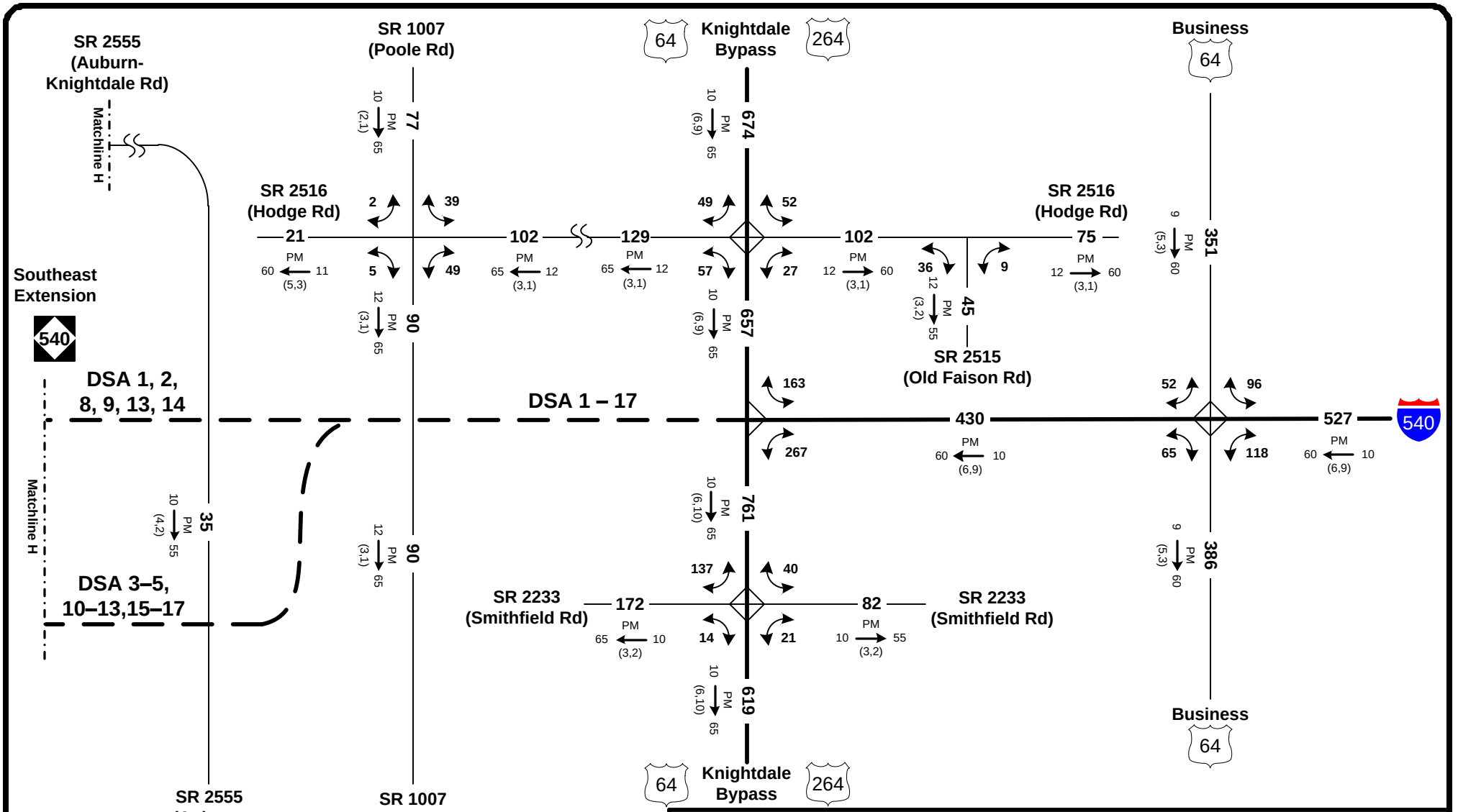
No-Build

LEGEND

= Existing Roadway
= Future Roadway
= No. of Vehicles Per Day in 100s
PM
DHV → D
(d,t)
DHV = Design Hourly Volume = K30
PM = PM Peak Period
D = Directional Split (%)
= Indicates Direction of D
(d,t) = Duals, TT-ST's (%)
= Daily Turn Movements

NTS

STIP: R2721, R-2828, R-2829	**WBS:** 37673.1.TA2, 35516.1.TA1, 35517.1.TA1
COUNTY: Wake/Johnston	**DIVISION:** 5/4
DATE: April 2014	
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 US 64 Bypass (Knightdale)	
PROJECT: Triangle Expressway Southeast Extension	**Figure 12.6**



2012 AVERAGE ANNUAL DAILY TRAFFIC

No-Build

LEGEND

= Existing Roadway
= Future Roadway
= No. of Vehicles Per Day in 100s
PM DHV → D (d,t)
DHV = Design Hourly Volume = K30
PM = PM Peak Period
D = Directional Split (%)
→ = Indicates Direction of D
(d,t) = Duals, TT-ST's (%)
= Daily Turn Movements

NTS

STIP: R2721, R-2828, R-2829

WBS: 37673.1.TA2, 35516.1.TA1, 35517.1.TA1

COUNTY: Wake/Johnston

DIVISION: 5/4

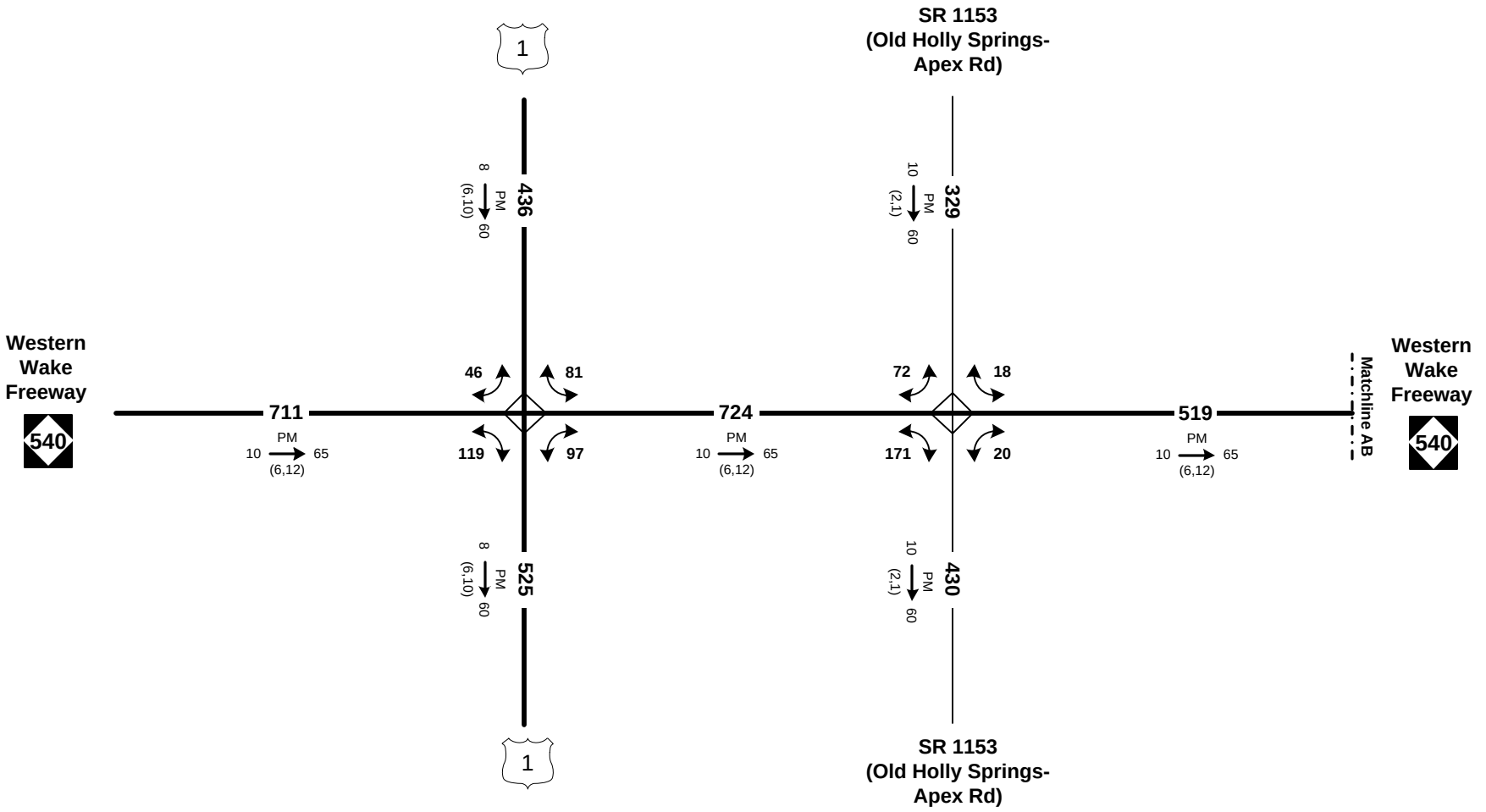
DATE: April 2014

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 US 64 Bypass (Knightdale)

PROJECT: Triangle Expressway Southeast Extension

Figure 12.7



2035 AVERAGE ANNUAL DAILY TRAFFIC

Build – DSA 1 & 2, 13 & 14

LEGEND

= Existing Roadway
= Future Roadway
= No. of Vehicles Per Day in 100s
PM
DHV → D
(d,t)
DHV = Design Hourly Volume = K30
PM = PM Peak Period
D = Directional Split (%)
→ = Indicates Direction of D
(d,t) = Duals, TT-ST's (%)
= Daily Turn Movements

N
NTS

STIP: R2721, R-2828, R-2829

WBS: 37673.1.TA2, 35516.1.TA1, 35517.1.TA1

COUNTY: Wake/Johnston

DIVISION: 5/4

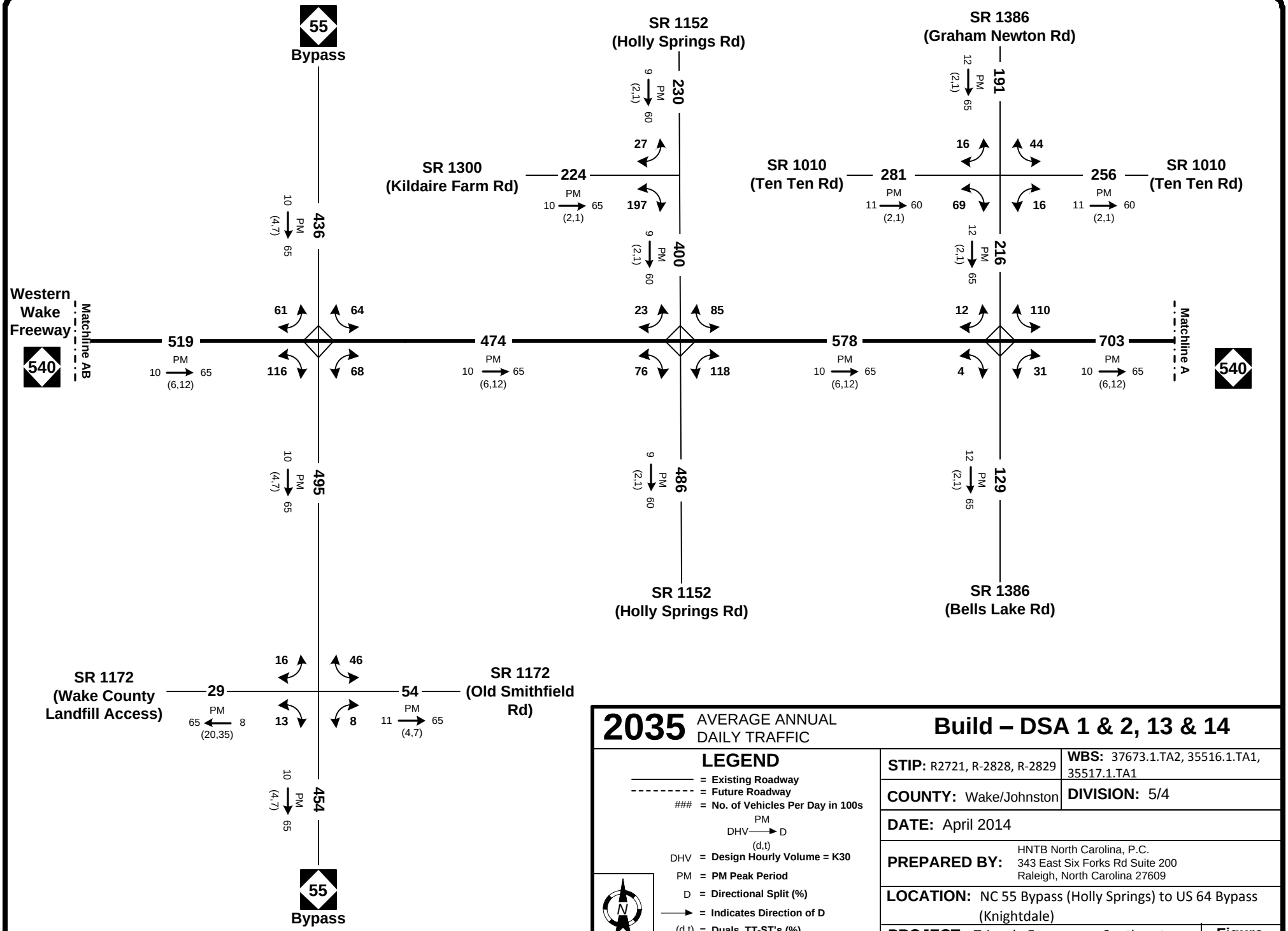
DATE: April 2014

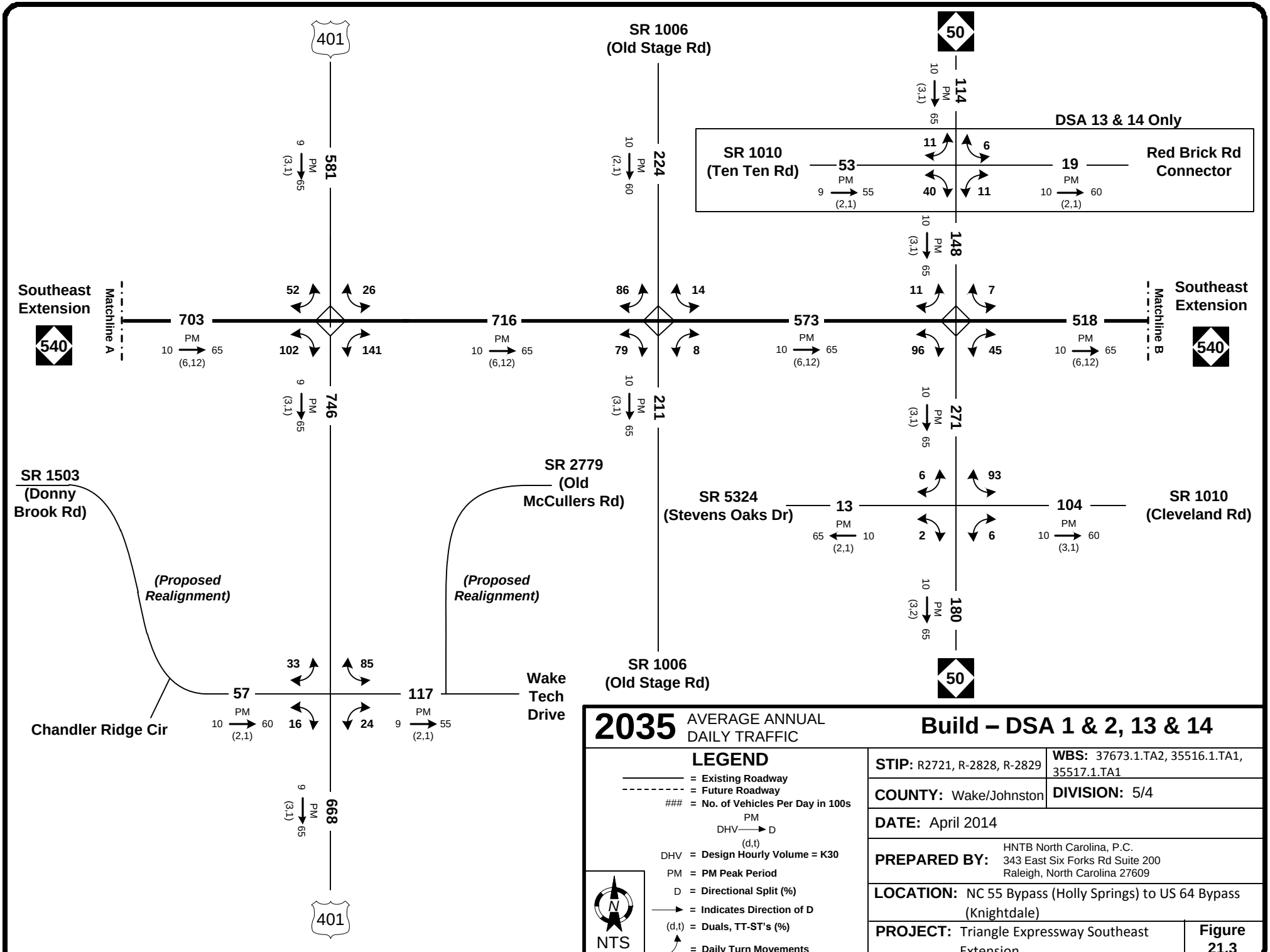
PREPARED BY: HNTB North Carolina, P.C.
343 East Six Forks Rd Suite 200
Raleigh, North Carolina 27609

LOCATION: NC 55 Bypass (Holly Springs) to US 64 Bypass (Knightdale)

PROJECT: Triangle Expressway Southeast Extension

Figure 21.1


55
Bypass
SR 1152
(Holly Springs Rd)
SR 1386
(Graham Newton Rd)
SR 1300
(Kildaire Farm Rd)
SR 1010
(Ten Ten Rd)
SR 1010
(Ten Ten Rd)
Western
Wake
Freeway
540
Matchline AB
Matchline A
540
SR 1152
(Holly Springs Rd)
SR 1386
(Bells Lake Rd)
SR 1172
(Wake County
Landfill Access)
SR 1172
(Old Smithfield
Rd)
55
Bypass
2035 AVERAGE ANNUAL DAILY TRAFFIC
Build – DSA 1 & 2, 13 & 14
LEGEND
= Existing Roadway
= Future Roadway
= No. of Vehicles Per Day in 100s
PM
DHV → D
(d,t)
DHV = Design Hourly Volume = K30
PM = PM Peak Period
D = Directional Split (%)
→ = Indicates Direction of D
(d,t) = Duals, TT-ST's (%)
= Daily Turn Movements
N
NTS
STIP: R2721, R-2828, R-2829
WBS: 37673.1.TA2, 35516.1.TA1, 35517.1.TA1
COUNTY: Wake/Johnston
DIVISION: 5/4
DATE: April 2014
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 US 64 Bypass (Knightdale)
PROJECT: Triangle Expressway Southeast Extension
Figure 21.2



2035 AVERAGE ANNUAL DAILY TRAFFIC

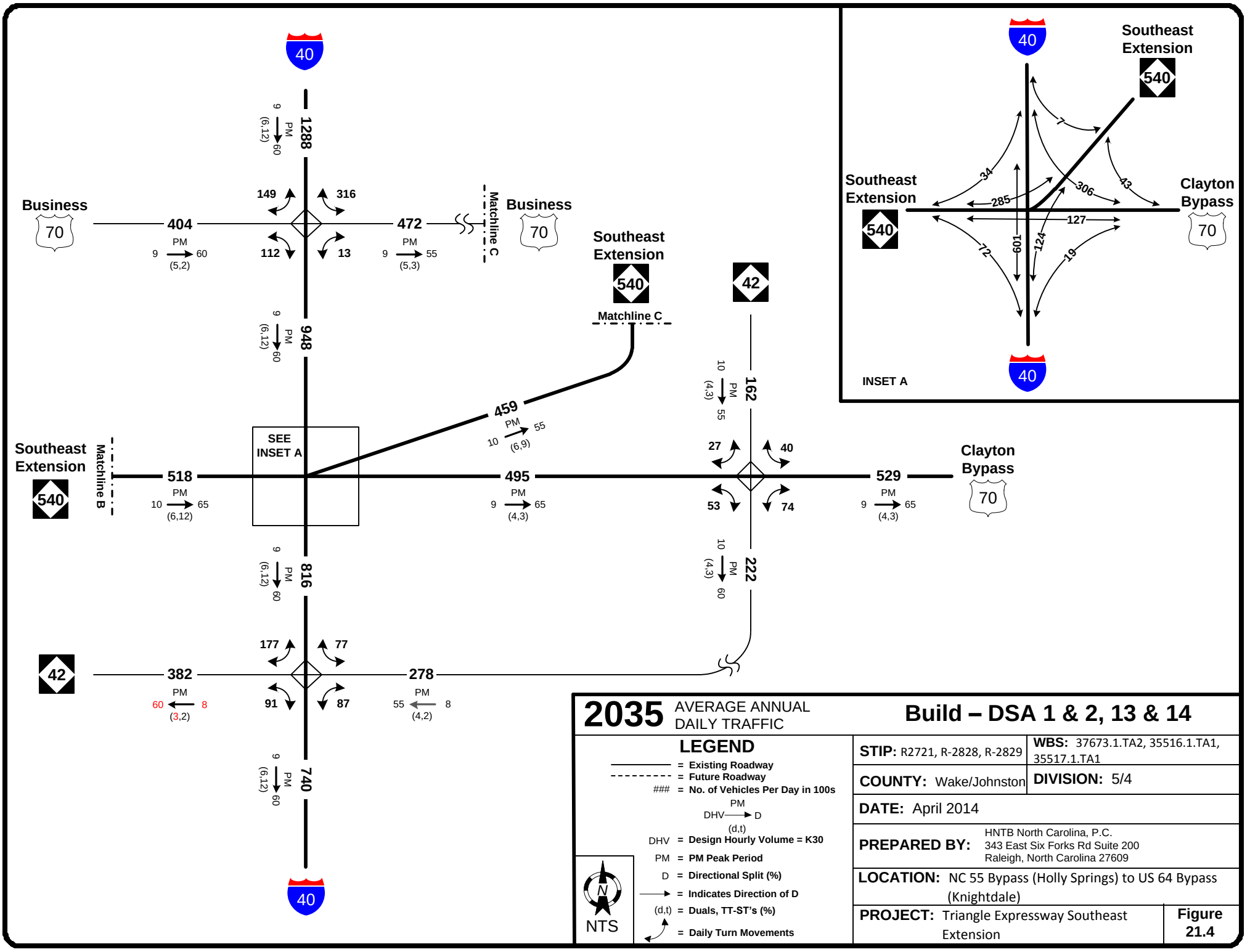
Build – DSA 1 & 2, 13 & 14

LEGEND

- = Existing Roadway
- = Future Roadway
- ### = No. of Vehicles Per Day in 100s
- PM DHV → D (d,t)
- DHV = Design Hourly Volume = K30
- PM = PM Peak Period
- D = Directional Split (%)
- → = Indicates Direction of D
- (d,t) = Duals, TT-ST's (%)
- = Daily Turn Movements

NTS

STIP: R2721, R-2828, R-2829	**WBS:** 37673.1.TA2, 35516.1.TA1, 35517.1.TA1
COUNTY: Wake/Johnston	**DIVISION:** 5/4
DATE: April 2014	
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 US 64 Bypass (Knightdale)	
PROJECT: Triangle Expressway Southeast Extension	**Figure 21.3**



2035 AVERAGE ANNUAL DAILY TRAFFIC

Build – DSA 1 & 2, 13 & 14

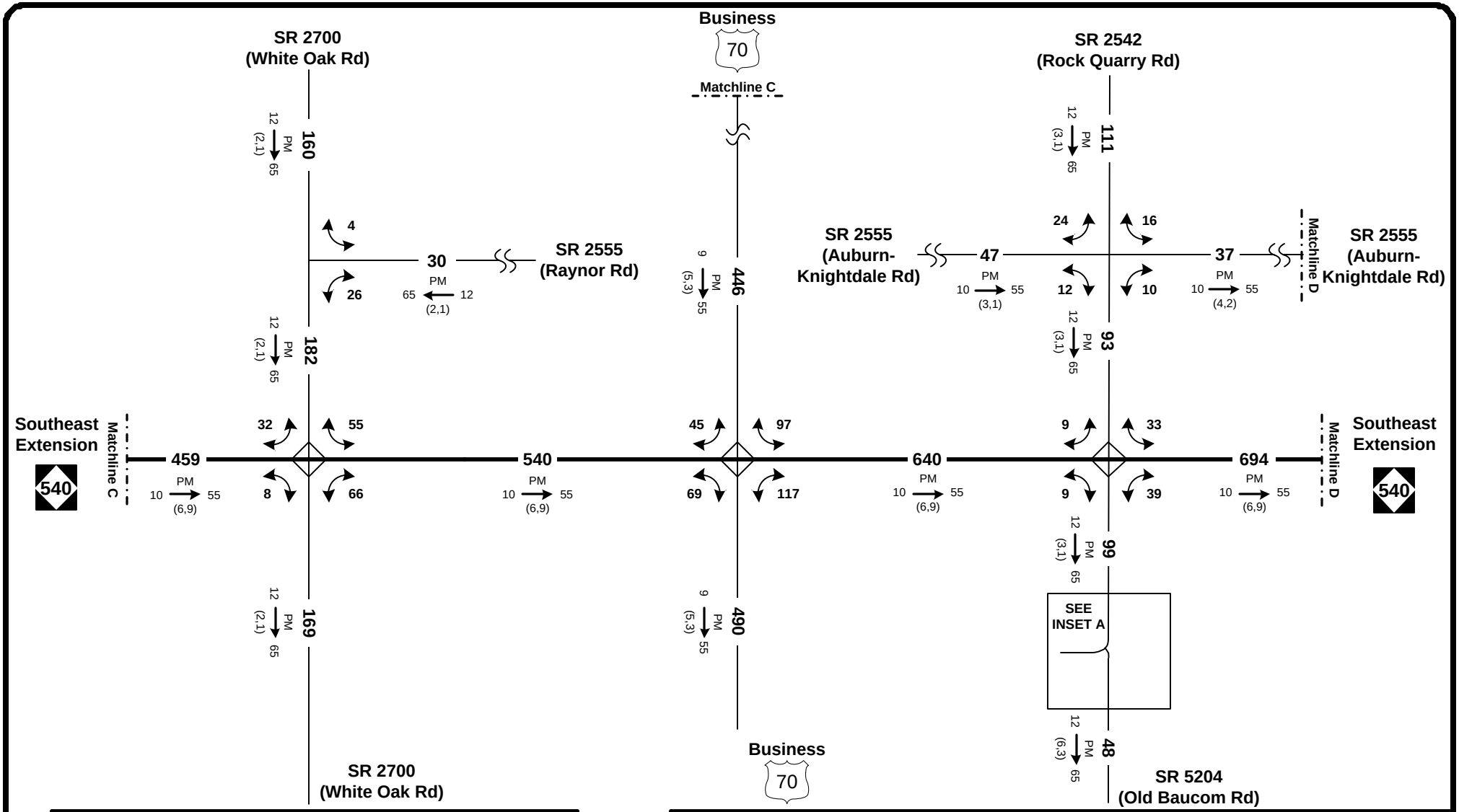
LEGEND

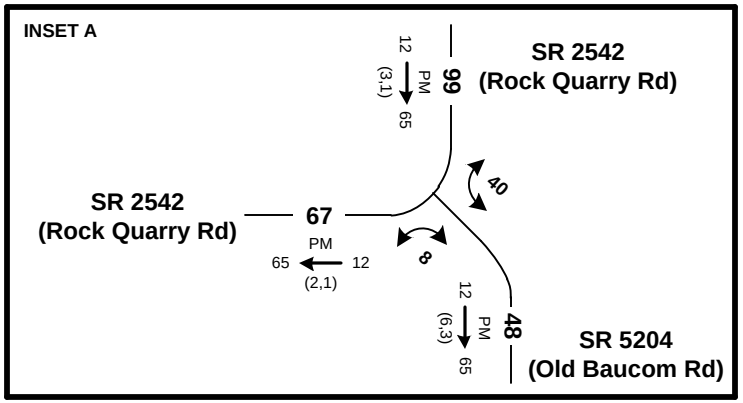
- = Existing Roadway
- = Future Roadway
- ### = No. of Vehicles Per Day in 100s
- PM DHV → D (d,t)
- DHV = Design Hourly Volume = K30
- PM = PM Peak Period
- D = Directional Split (%)
- → = Indicates Direction of D
- (d,t) = Duals, TT-ST's (%)
- = Daily Turn Movements

N

NTS

STIP: R2721, R-2828, R-2829	**WBS:** 37673.1.TA2, 35516.1.TA1, 35517.1.TA1
COUNTY: Wake/Johnston	**DIVISION:** 5/4
DATE: April 2014	
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 US 64 Bypass (Knightdale)	
PROJECT: Triangle Expressway Southeast Extension	**Figure 21.4**





2035 AVERAGE ANNUAL DAILY TRAFFIC

Build – DSA 1 & 2, 13 & 14

LEGEND

- = Existing Roadway
- = Future Roadway
- ### = No. of Vehicles Per Day in 100s
- PM DHV → D (d,t)
- DHV = Design Hourly Volume = K30
- PM = PM Peak Period
- D = Directional Split (%)
- → = Indicates Direction of D
- (d,t) = Duals, TT-ST's (%)
- = Daily Turn Movements

NTS

STIP: R2721, R-2828, R-2829

WBS: 37673.1.TA2, 35516.1.TA1, 35517.1.TA1

COUNTY: Wake/Johnston

DIVISION: 5/4

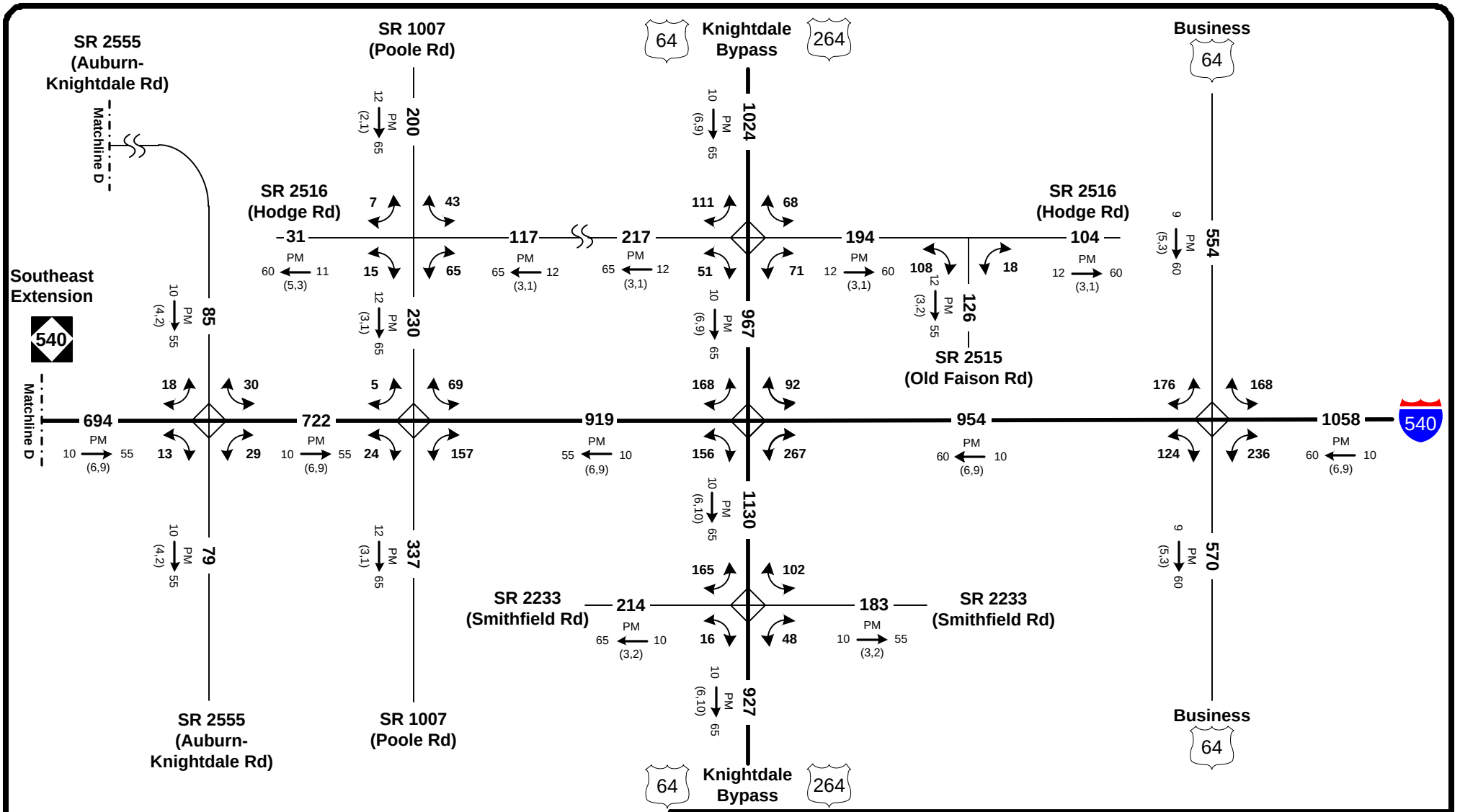
DATE: April 2014

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 US 64 Bypass (Knightdale)

PROJECT: Triangle Expressway Southeast Extension

Figure 21.5



2035 AVERAGE ANNUAL DAILY TRAFFIC

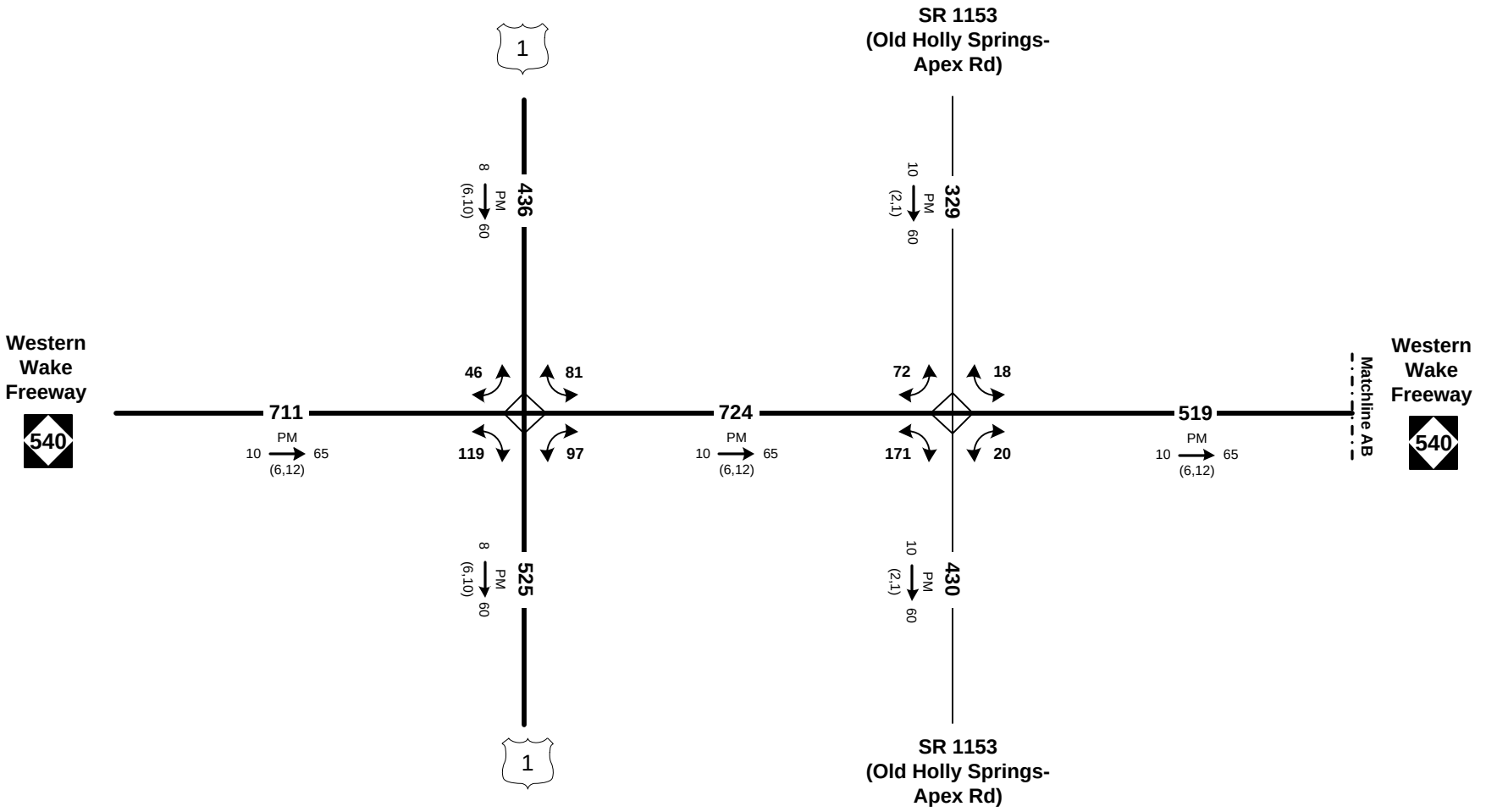
Build – DSA 1 & 2, 13 & 14

LEGEND

- ——— = Existing Roadway
- - - - - - - - - = Future Roadway
- ### = No. of Vehicles Per Day in 100s
- PM / DHV → D / (d,t)
- DHV = Design Hourly Volume = K30
- PM = PM Peak Period
- D = Directional Split (%)
- → = Indicates Direction of D
- (d,t) = Duals, TT-ST's (%)
- = Daily Turn Movements

NTS

STIP: R2721, R-2828, R-2829	**WBS:** 37673.1.TA2, 35516.1.TA1, 35517.1.TA1
COUNTY: Wake/Johnston	**DIVISION:** 5/4
DATE: April 2014	
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 US 64 Bypass (Knightdale)	
PROJECT: Triangle Expressway Southeast Extension	**Figure 21.6**



2035 AVERAGE ANNUAL DAILY TRAFFIC

Build – DSA 3 & 4, 15 & 16

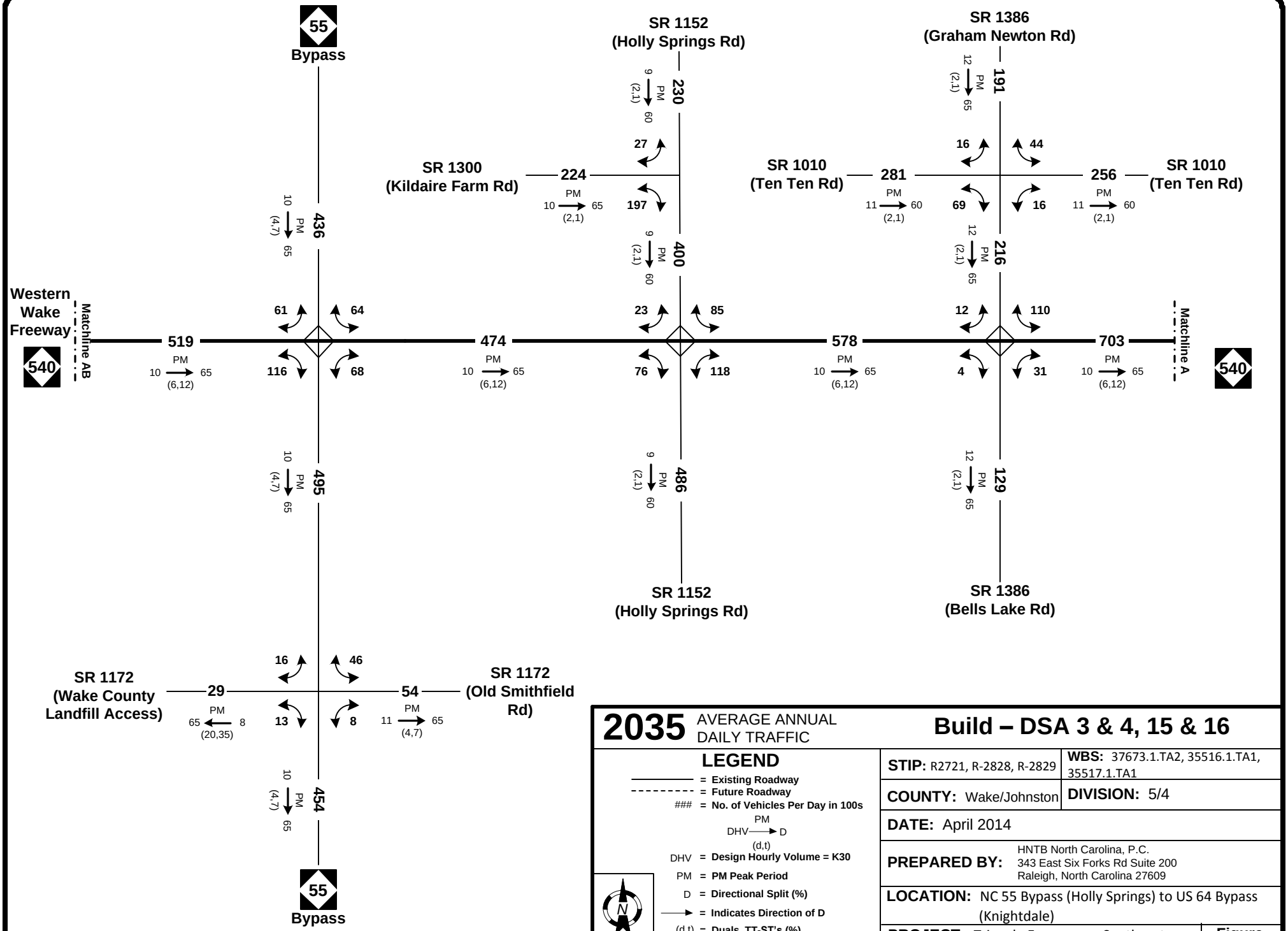
LEGEND

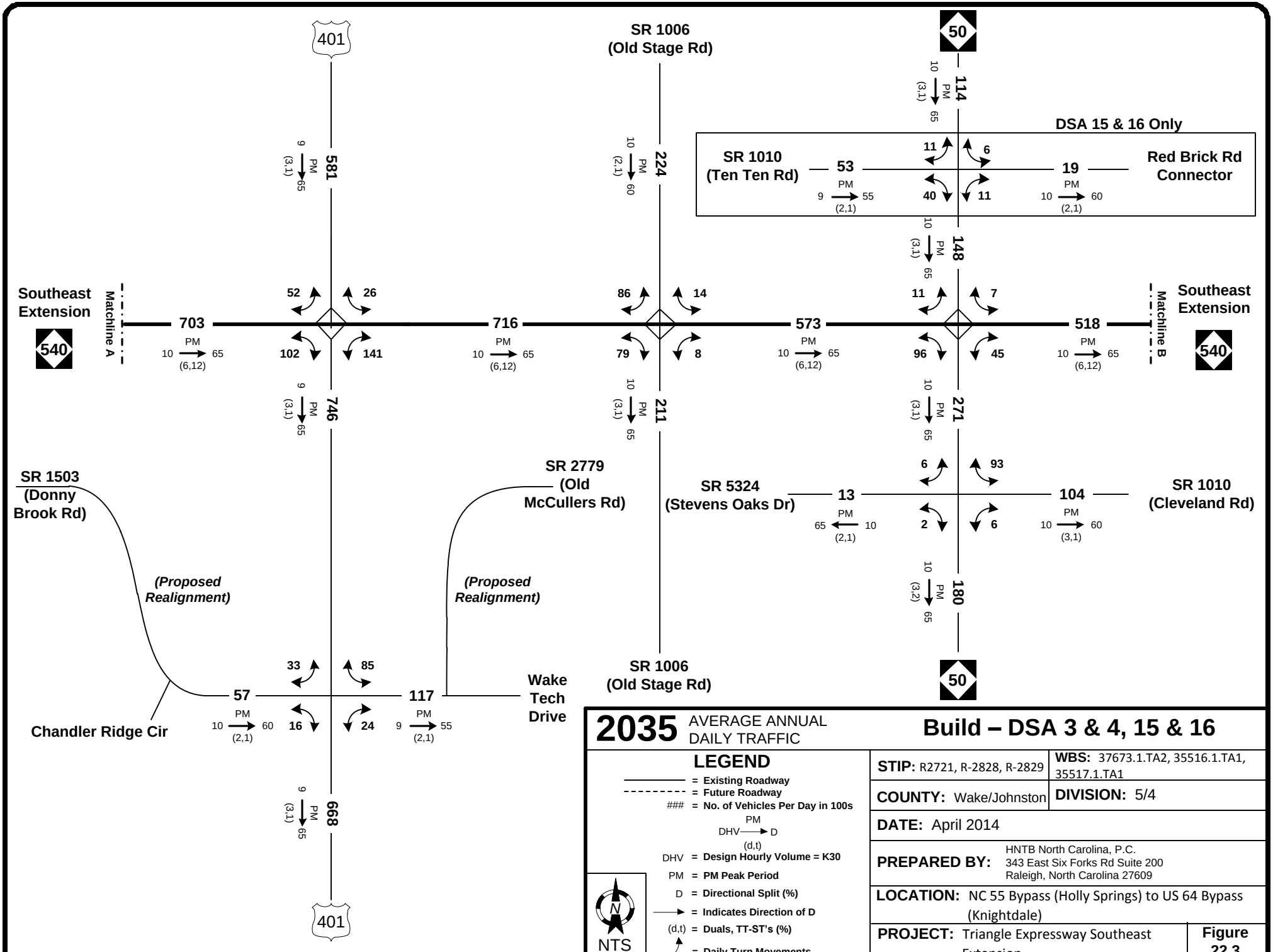
- = Existing Roadway
- = Future Roadway
- ### = No. of Vehicles Per Day in 100s
- PM DHV → D (d,t)
- DHV = Design Hourly Volume = K30
- PM = PM Peak Period
- D = Directional Split (%)
- → = Indicates Direction of D
- (d,t) = Duals, TT-ST's (%)
- = Daily Turn Movements

N

NTS

STIP: R2721, R-2828, R-2829	**WBS:** 37673.1.TA2, 35516.1.TA1, 35517.1.TA1
COUNTY: Wake/Johnston	**DIVISION:** 5/4
DATE: April 2014	
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 US 64 Bypass (Knightdale)	
PROJECT: Triangle Expressway Southeast Extension	**Figure 22.1**


55
Bypass
SR 1152
(Holly Springs Rd)
SR 1386
(Graham Newton Rd)
SR 1300
(Kildaire Farm Rd)
SR 1010
(Ten Ten Rd)
SR 1010
(Ten Ten Rd)
Western
Wake
Freeway
540
Matchline AB
Matchline A
540
SR 1152
(Holly Springs Rd)
SR 1386
(Bells Lake Rd)
SR 1172
(Wake County
Landfill Access)
SR 1172
(Old Smithfield
Rd)
55
Bypass
2035 AVERAGE ANNUAL DAILY TRAFFIC
Build – DSA 3 & 4, 15 & 16
LEGEND
= Existing Roadway
= Future Roadway
= No. of Vehicles Per Day in 100s
PM
DHV → D
(d,t)
DHV = Design Hourly Volume = K30
PM = PM Peak Period
D = Directional Split (%)
→ = Indicates Direction of D
(d,t) = Duals, TT-ST's (%)
= Daily Turn Movements
N
NTS
STIP: R2721, R-2828, R-2829
WBS: 37673.1.TA2, 35516.1.TA1, 35517.1.TA1
COUNTY: Wake/Johnston
DIVISION: 5/4
DATE: April 2014
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 US 64 Bypass (Knightdale)
PROJECT: Triangle Expressway Southeast Extension
Figure 22.2



2035 AVERAGE ANNUAL DAILY TRAFFIC

Build – DSA 3 & 4, 15 & 16

LEGEND

- = Existing Roadway
- = Future Roadway
- ### = No. of Vehicles Per Day in 100s
- PM DHV → D (d,t)
- DHV = Design Hourly Volume = K30
- PM = PM Peak Period
- D = Directional Split (%)
- → = Indicates Direction of D
- (d,t) = Duals, TT-ST's (%)
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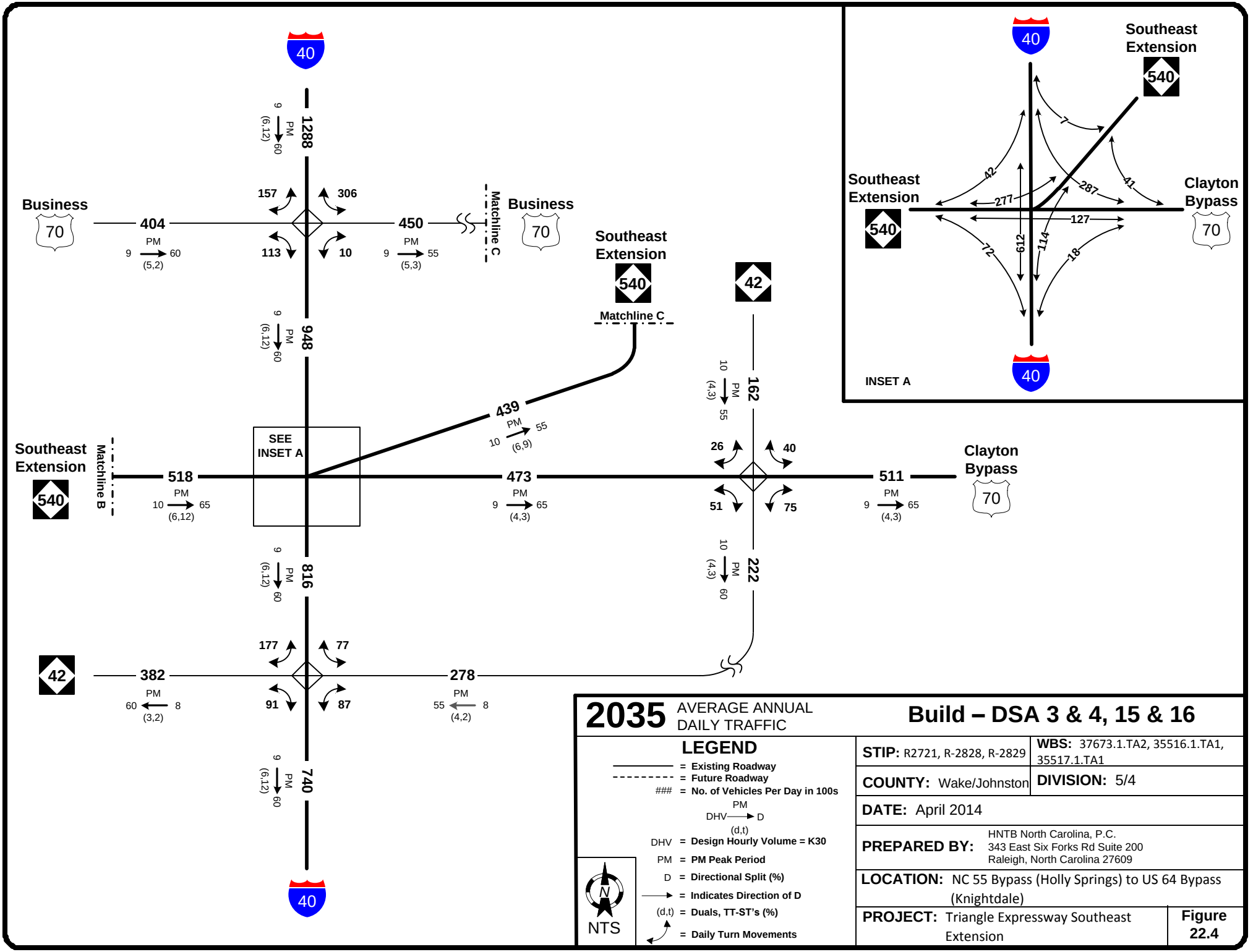
NTS

STIP: R2721, R-2828, R-2829	**WBS:** 37673.1.TA2, 35516.1.TA1, 35517.1.TA1
COUNTY: Wake/Johnston	**DIVISION:** 5/4
DATE: April 2014	
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 US 64 Bypass (Knightdale)	
PROJECT: Triangle Expressway Southeast Extension	**Figure 22.3**



2035 AVERAGE ANNUAL DAILY TRAFFIC

Build – DSA 3 & 4, 15 & 16

LEGEND

= Existing Roadway
= Future Roadway
= No. of Vehicles Per Day in 100s
PM
DHV → D
(d,t)
DHV = Design Hourly Volume = K30
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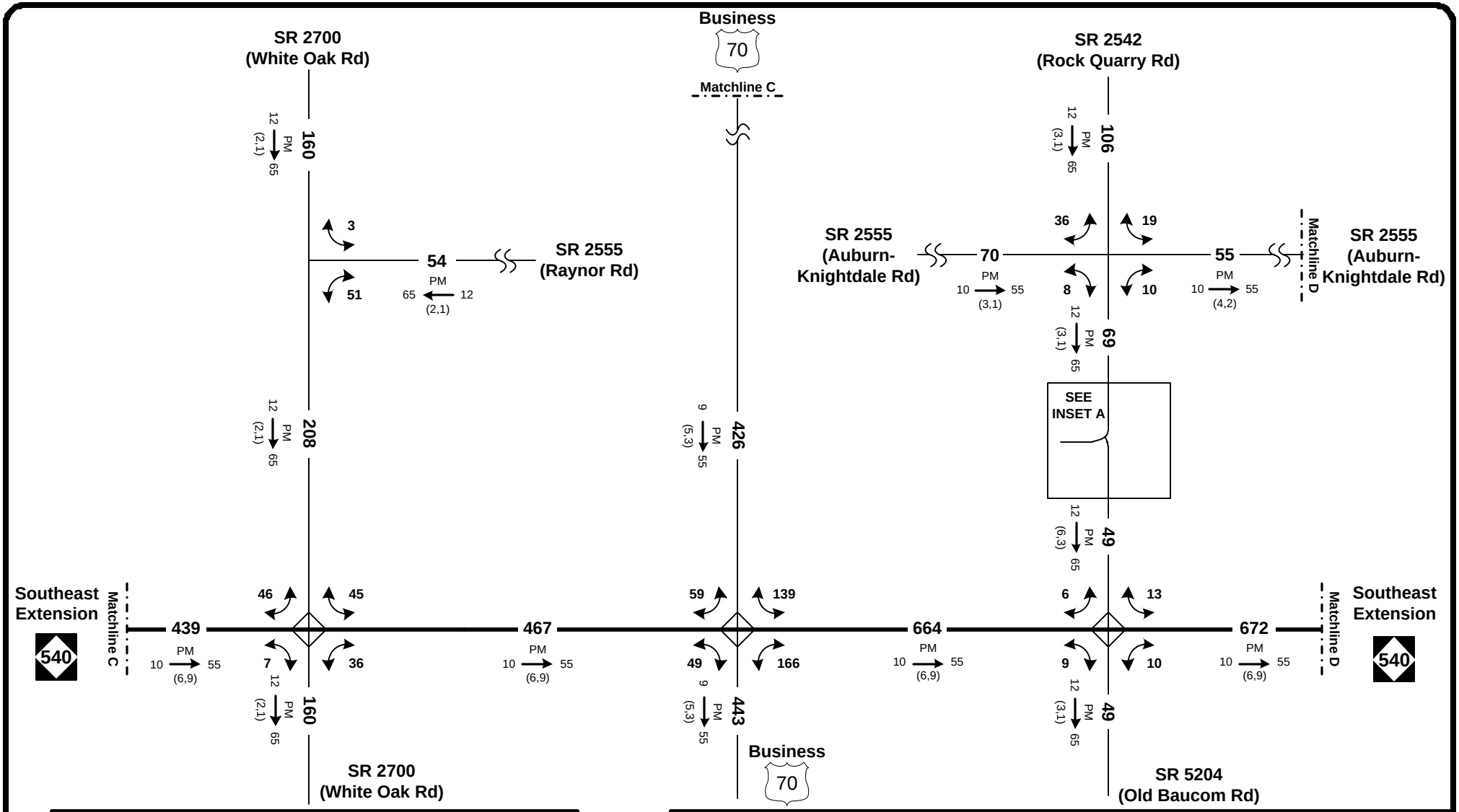
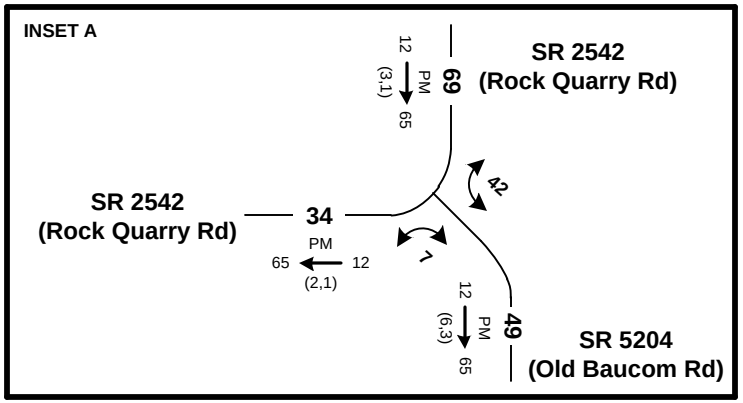
(d,t) = Duals, TT-ST's (%)
= Daily Turn Movements

N
NTS

STIP: R2721, R-2828, R-2829	**WBS:** 37673.1.TA2, 35516.1.TA1, 35517.1.TA1
COUNTY: Wake/Johnston	**DIVISION:** 5/4
DATE: April 2014	
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 US 64 Bypass (Knightdale)	
PROJECT: Triangle Expressway Southeast Extension	**Figure 22.4**





2035 AVERAGE ANNUAL DAILY TRAFFIC

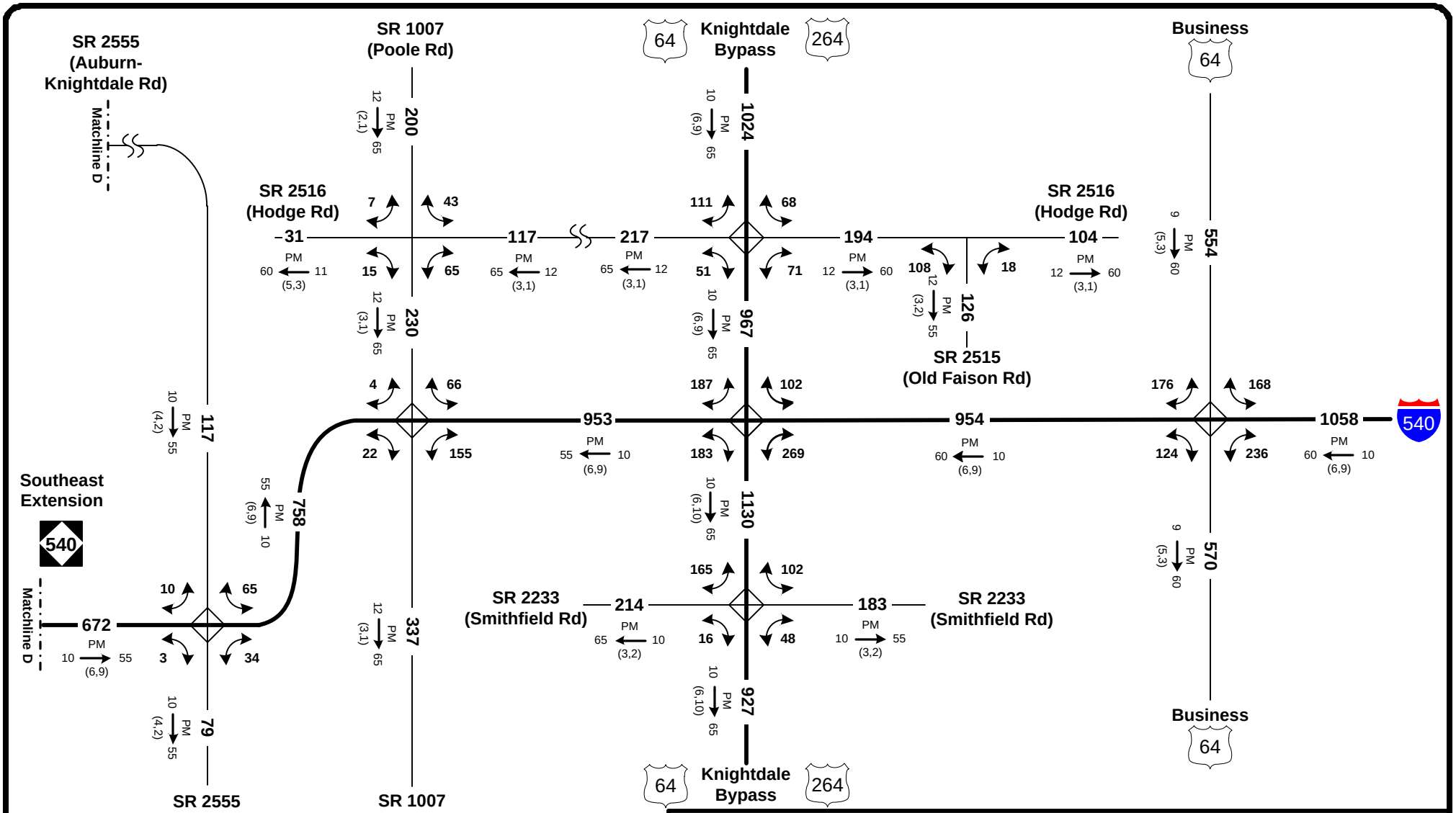
Build – DSA 3 & 4, 15 & 16

LEGEND

- = Existing Roadway
- = Future Roadway
- ### = No. of Vehicles Per Day in 100s
- PM DHV → D (d,t)
- DHV = Design Hourly Volume = K30
- PM = PM Peak Period
- D = Directional Split (%)
- → = Indicates Direction of D
- (d,t) = Duals, TT-ST's (%)
- = Daily Turn Movements

NTS

STIP: R2721, R-2828, R-2829	**WBS:** 37673.1.TA2, 35516.1.TA1, 35517.1.TA1
COUNTY: Wake/Johnston	**DIVISION:** 5/4
DATE: April 2014	
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 US 64 Bypass (Knightdale)	
PROJECT: Triangle Expressway Southeast Extension	**Figure 22.5**



2035 AVERAGE ANNUAL DAILY TRAFFIC

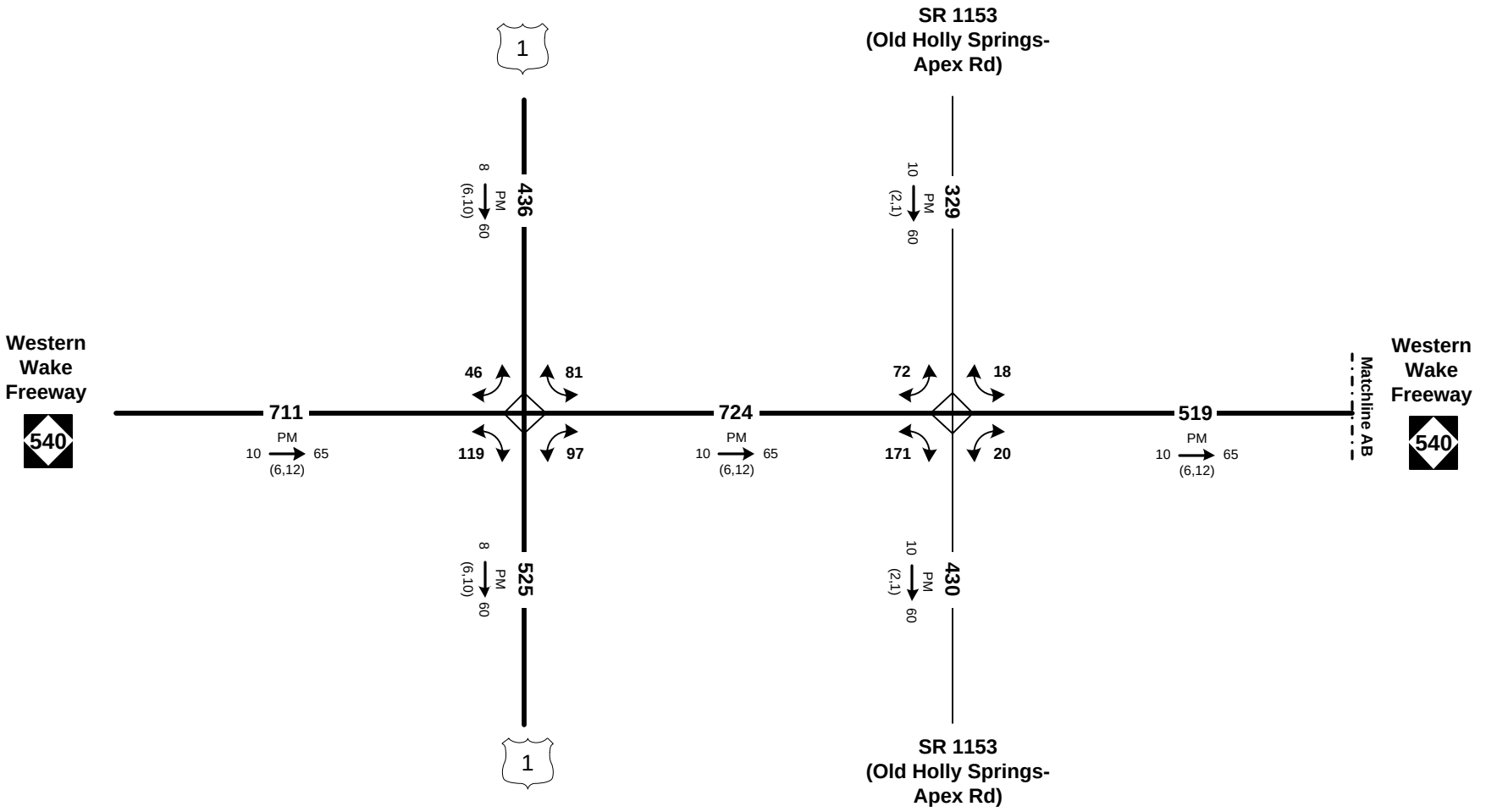
Build – DSA 3 & 4, 15 & 16

LEGEND

- = Existing Roadway
- = Future Roadway
- ### = No. of Vehicles Per Day in 100s
- PM DHV → D (d,t)
- DHV = Design Hourly Volume = K30
- PM = PM Peak Period
- D = Directional Split (%)
- → = Indicates Direction of D
- (d,t) = Duals, TT-ST's (%)
- = Daily Turn Movements

NTS

STIP: R2721, R-2828, R-2829	**WBS:** 37673.1.TA2, 35516.1.TA1, 35517.1.TA1
COUNTY: Wake/Johnston	**DIVISION:** 5/4
DATE: April 2014	
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 US 64 Bypass (Knightdale)	
PROJECT: Triangle Expressway Southeast Extension	**Figure 22.6**



2035 AVERAGE ANNUAL DAILY TRAFFIC

Build – DSA 5 & 17

LEGEND

= Existing Roadway
= Future Roadway
= No. of Vehicles Per Day in 100s
PM
DHV → D
(d,t)
DHV = Design Hourly Volume = K30
PM = PM Peak Period
D = Directional Split (%)
→ = Indicates Direction of D
(d,t) = Duals, TT-ST's (%)
= Daily Turn Movements

N
NTS

STIP: R2721, R-2828, R-2829

WBS: 37673.1.TA2, 35516.1.TA1, 35517.1.TA1

COUNTY: Wake/Johnston

DIVISION: 5/4

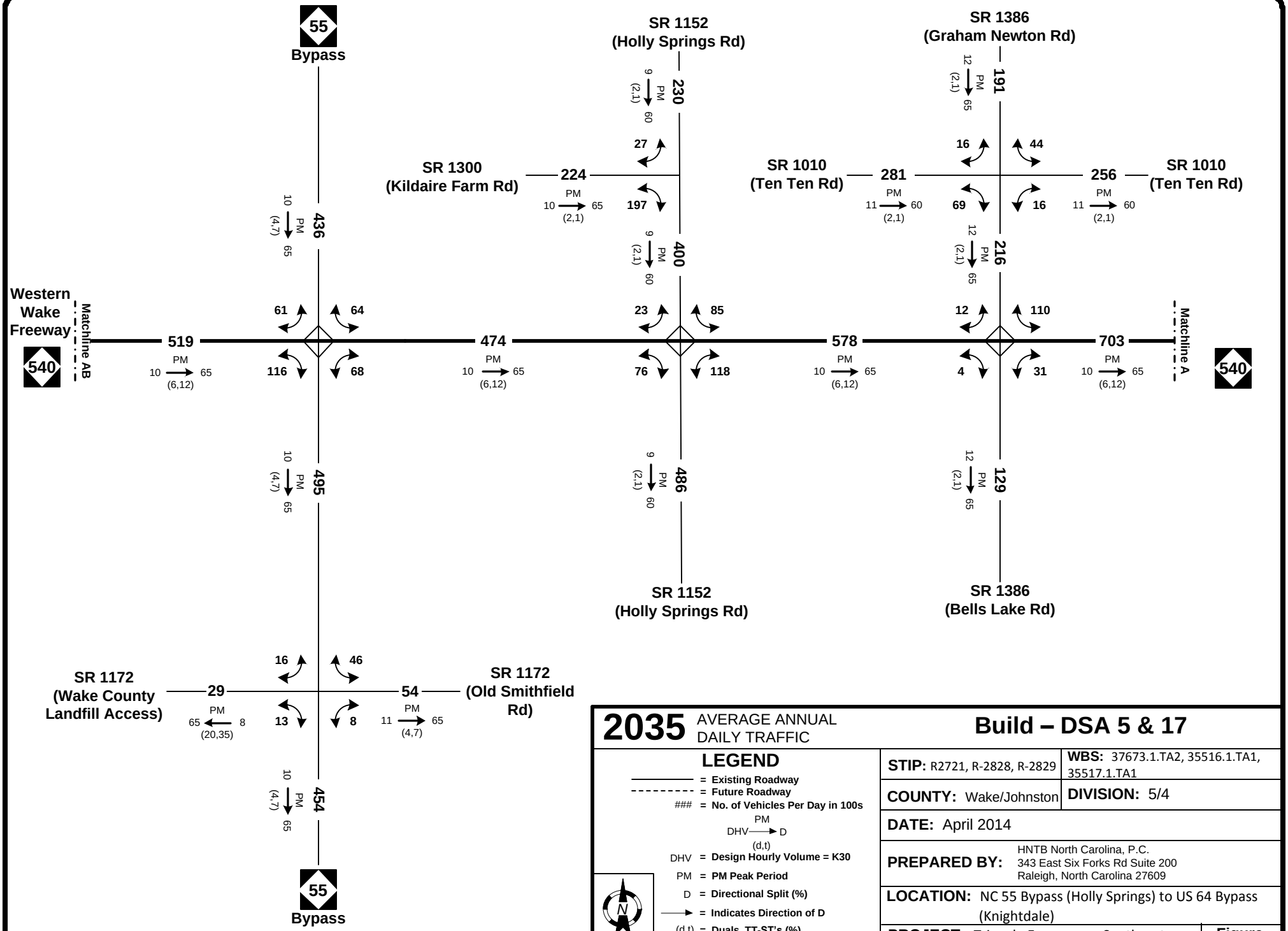
DATE: April 2014

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 US 64 Bypass (Knightdale)

PROJECT: Triangle Expressway Southeast Extension

Figure 23.1



2035 AVERAGE ANNUAL DAILY TRAFFIC

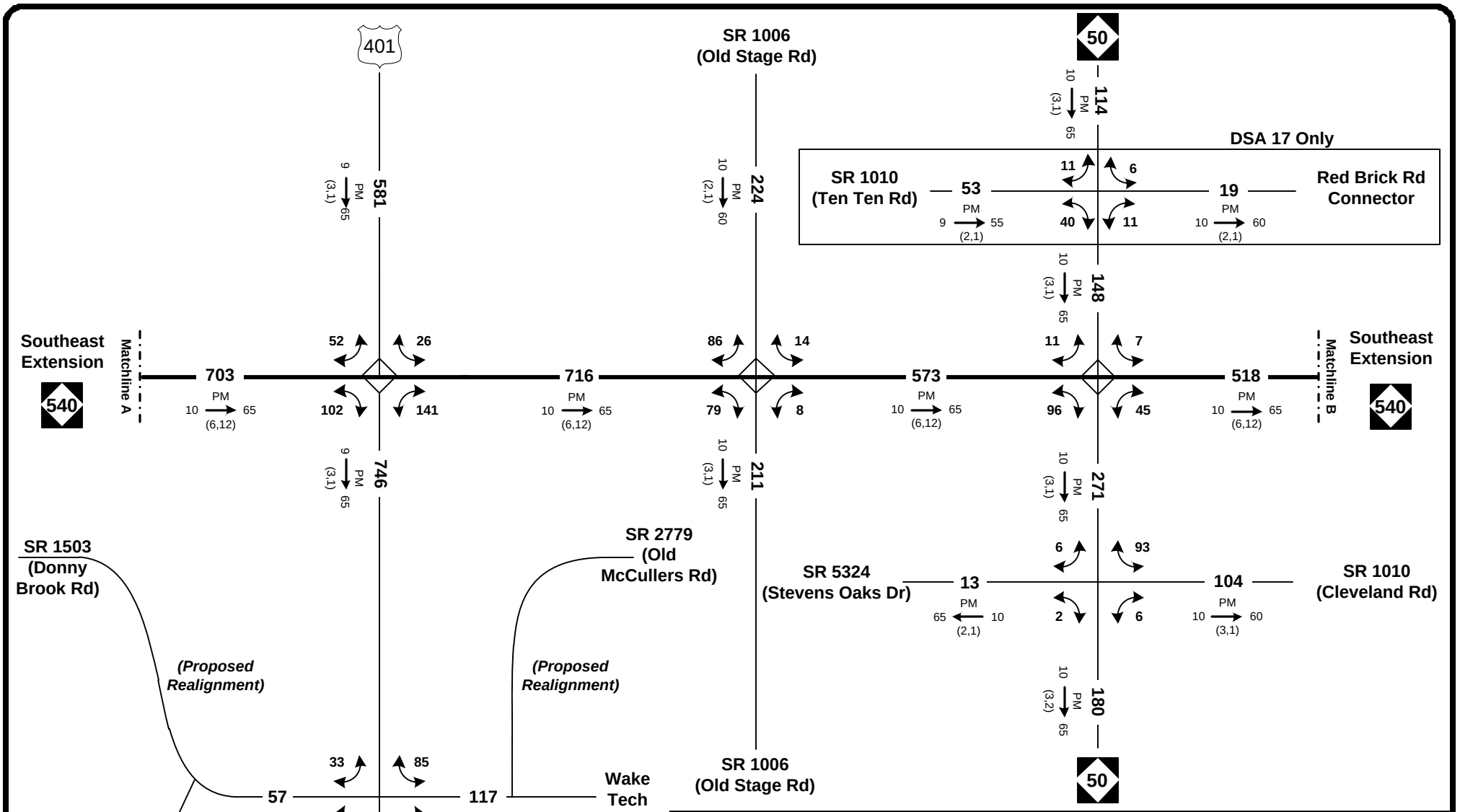
Build – DSA 5 & 17

LEGEND

- = Existing Roadway
- = Future Roadway
- ### = No. of Vehicles Per Day in 100s
- PM DHV → D (d,t)
- DHV = Design Hourly Volume = K30
- PM = PM Peak Period
- D = Directional Split (%)
- → = Indicates Direction of D
- (d,t) = Duals, TT-ST's (%)
- = Daily Turn Movements

NTS

STIP: R2721, R-2828, R-2829	**WBS:** 37673.1.TA2, 35516.1.TA1, 35517.1.TA1
COUNTY: Wake/Johnston	**DIVISION:** 5/4
DATE: April 2014	
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 US 64 Bypass (Knightdale)	
PROJECT: Triangle Expressway Southeast Extension	**Figure 23.2**



2035 AVERAGE ANNUAL DAILY TRAFFIC

Build – DSA 5 & 17

LEGEND

- ——— = Existing Roadway
- - - - - = Future Roadway
- ### = No. of Vehicles Per Day in 100s
- DHV —PM→ D (d,t)
- DHV = Design Hourly Volume = K30
- PM = PM Peak Period
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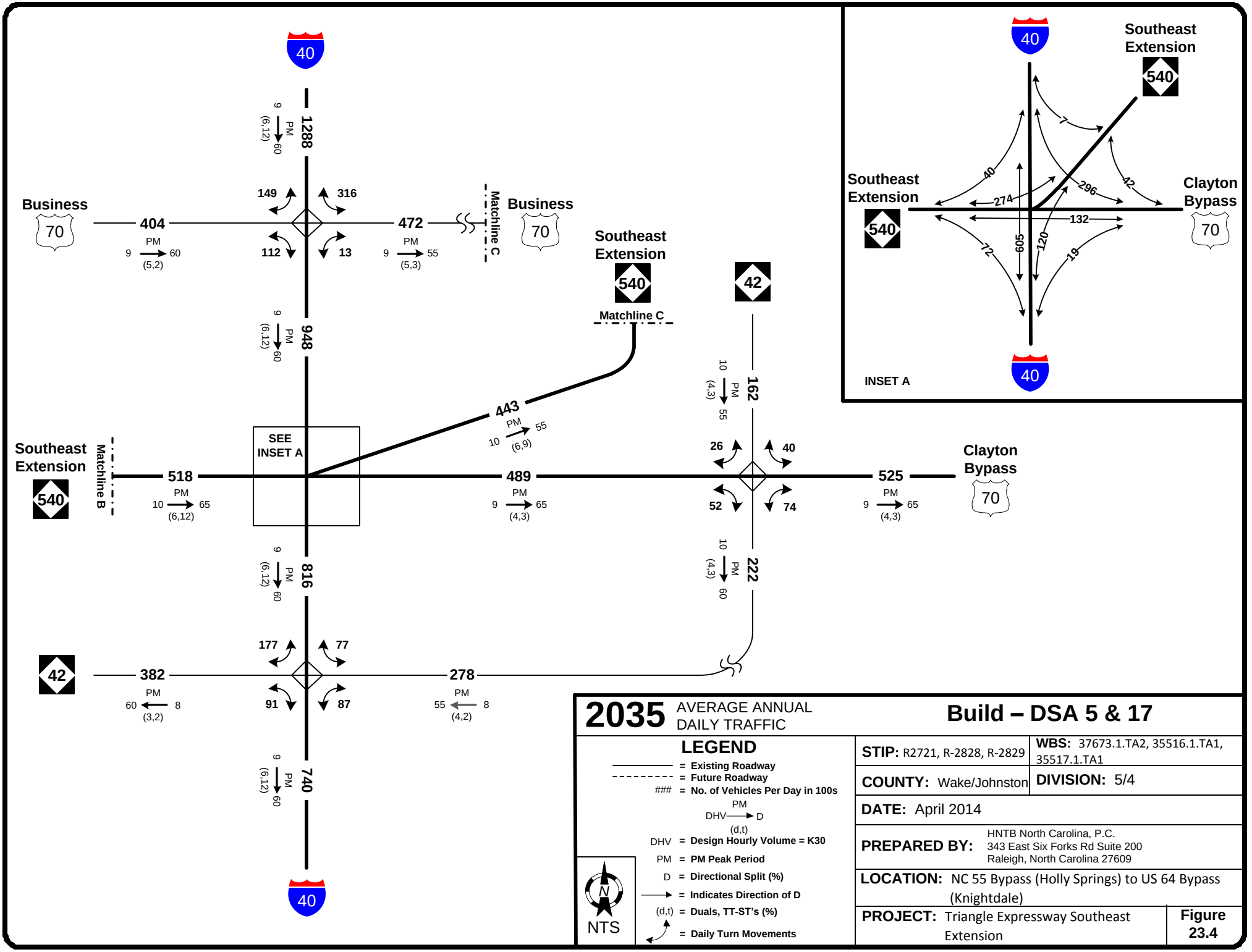
NTS

STIP: R2721, R-2828, R-2829	**WBS:** 37673.1.TA2, 35516.1.TA1, 35517.1.TA1
COUNTY: Wake/Johnston	**DIVISION:** 5/4
DATE: April 2014	
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 US 64 Bypass (Knightdale)	
PROJECT: Triangle Expressway Southeast Extension	**Figure 23.3**



2035 AVERAGE ANNUAL DAILY TRAFFIC

Build – DSA 5 & 17

LEGEND

- ——— = Existing Roadway
- - - - - - - - - = Future Roadway
- ### = No. of Vehicles Per Day in 100s
- PM DHV → D (d,t)
- DHV = Design Hourly Volume = K30
- PM = PM Peak Period
- D = Directional Split (%)
- → = Indicates Direction of D
- (d,t) = Duals, TT-ST's (%)
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N

NTS

STIP: R2721, R-2828, R-2829	**WBS:** 37673.1.TA2, 35516.1.TA1, 35517.1.TA1
COUNTY: Wake/Johnston	**DIVISION:** 5/4
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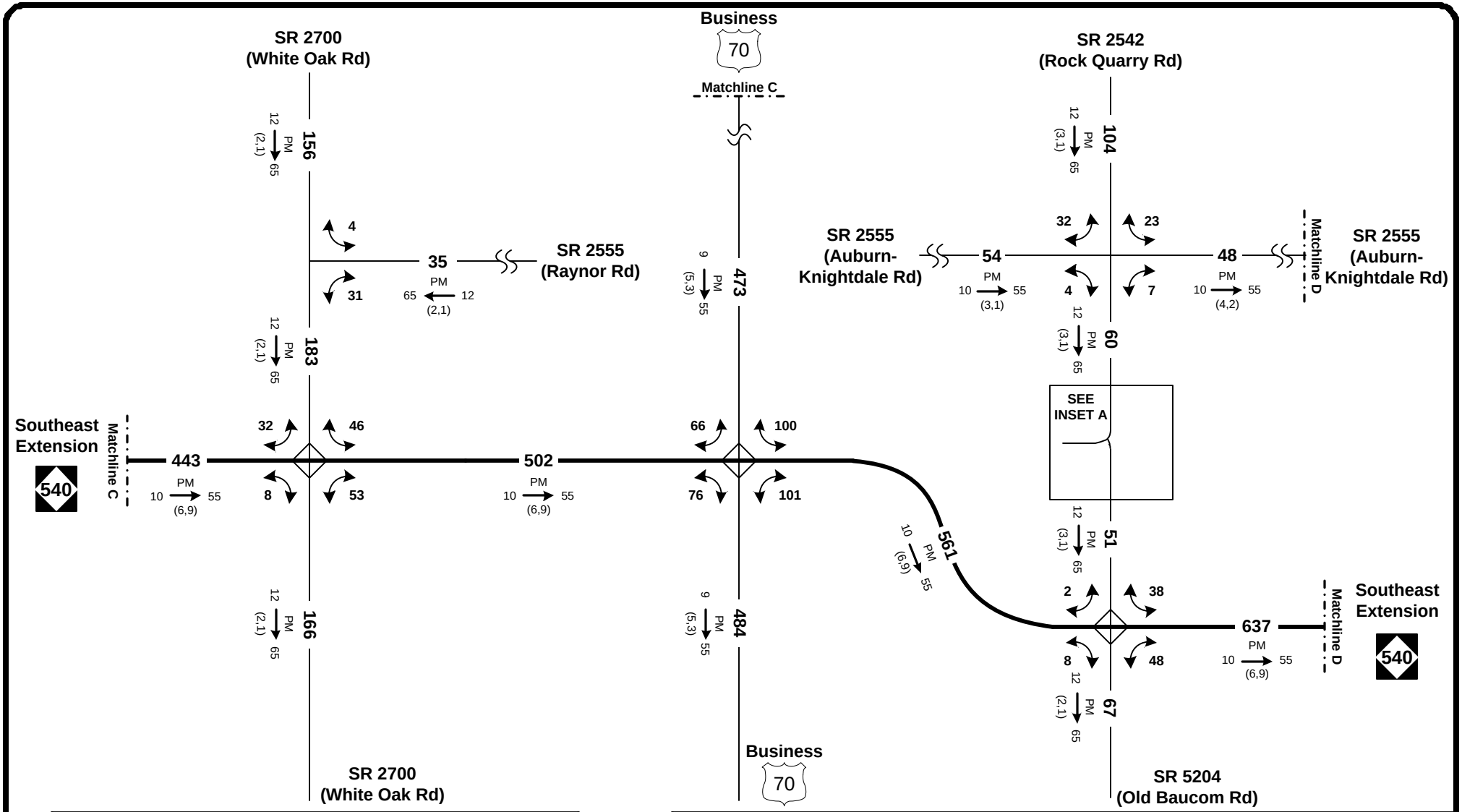
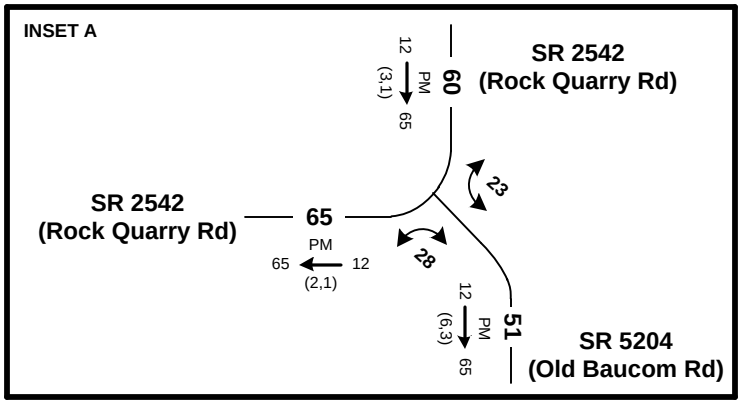
LOCATION: NC 55 Bypass (Holly Springs) to US 64 Bypass (Knightdale)	
PROJECT: Triangle Expressway Southeast Extension	**Figure 23.4**





2035 AVERAGE ANNUAL DAILY TRAFFIC

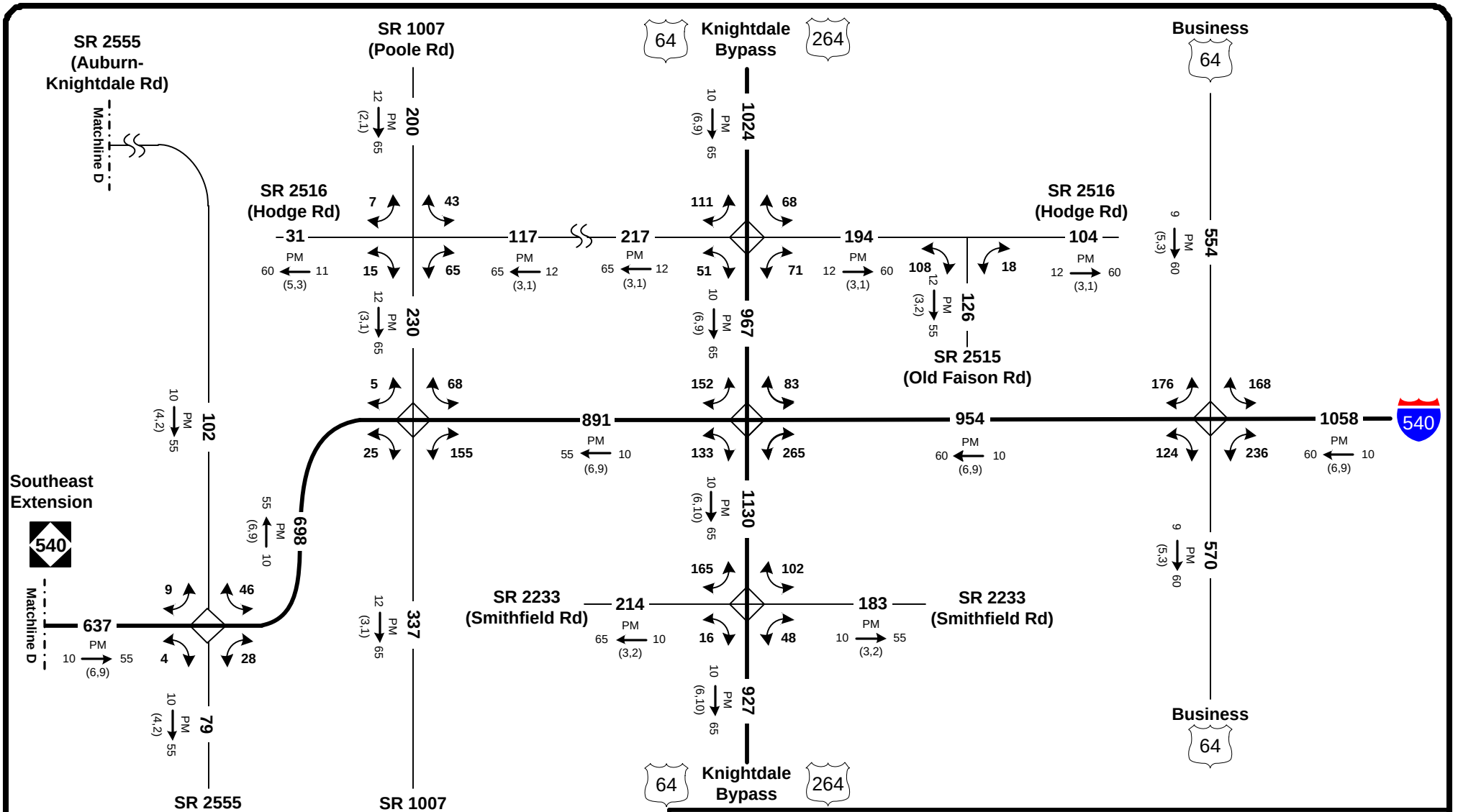
Build – DSA 5 & 17

LEGEND

- = Existing Roadway
- = Future Roadway
- ### = No. of Vehicles Per Day in 100s
- PM DHV → D (d,t)
- DHV = Design Hourly Volume = K30
- PM = PM Peak Period
- D = Directional Split (%)
- → = Indicates Direction of D
- (d,t) = Duals, TT-ST's (%)
- = Daily Turn Movements

NTS

STIP: R2721, R-2828, R-2829	**WBS:** 37673.1.TA2, 35516.1.TA1, 35517.1.TA1
COUNTY: Wake/Johnston	**DIVISION:** 5/4
DATE: April 2014	
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 US 64 Bypass (Knightdale)	
PROJECT: Triangle Expressway Southeast Extension	**Figure 23.5**



2035 AVERAGE ANNUAL DAILY TRAFFIC

Build – DSA 5 & 17

LEGEND

- ——— = Existing Roadway
- - - - - - - - - = Future Roadway
- ### = No. of Vehicles Per Day in 100s
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- (d,t) = Duals, TT-ST's (%)
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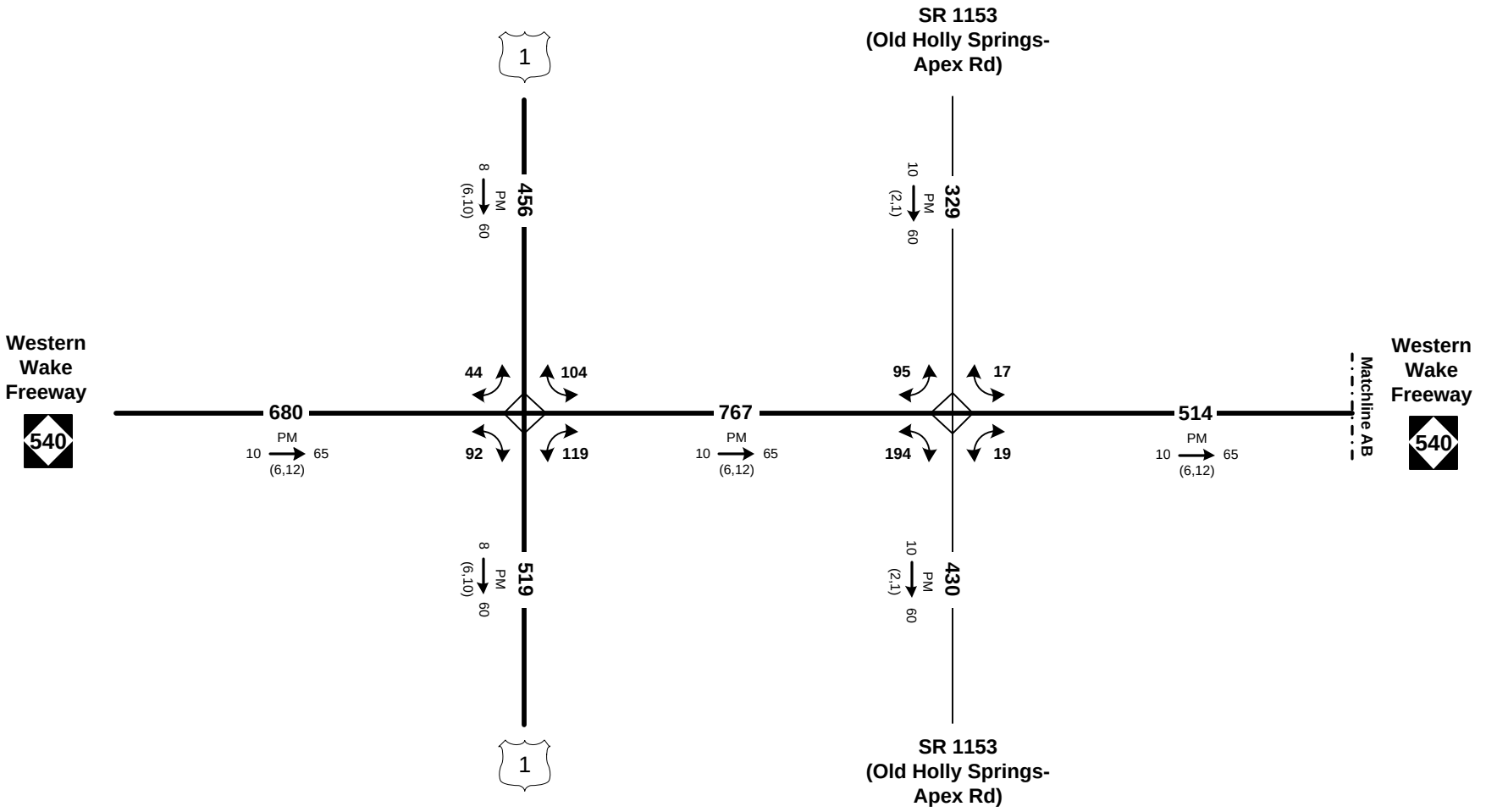
NTS

STIP: R2721, R-2828, R-2829	**WBS:** 37673.1.TA2, 35516.1.TA1, 35517.1.TA1
COUNTY: Wake/Johnston	**DIVISION:** 5/4
DATE: April 2014	
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 US 64 Bypass (Knightdale)	
PROJECT: Triangle Expressway Southeast Extension	**Figure 23.6**



2035 AVERAGE ANNUAL DAILY TRAFFIC

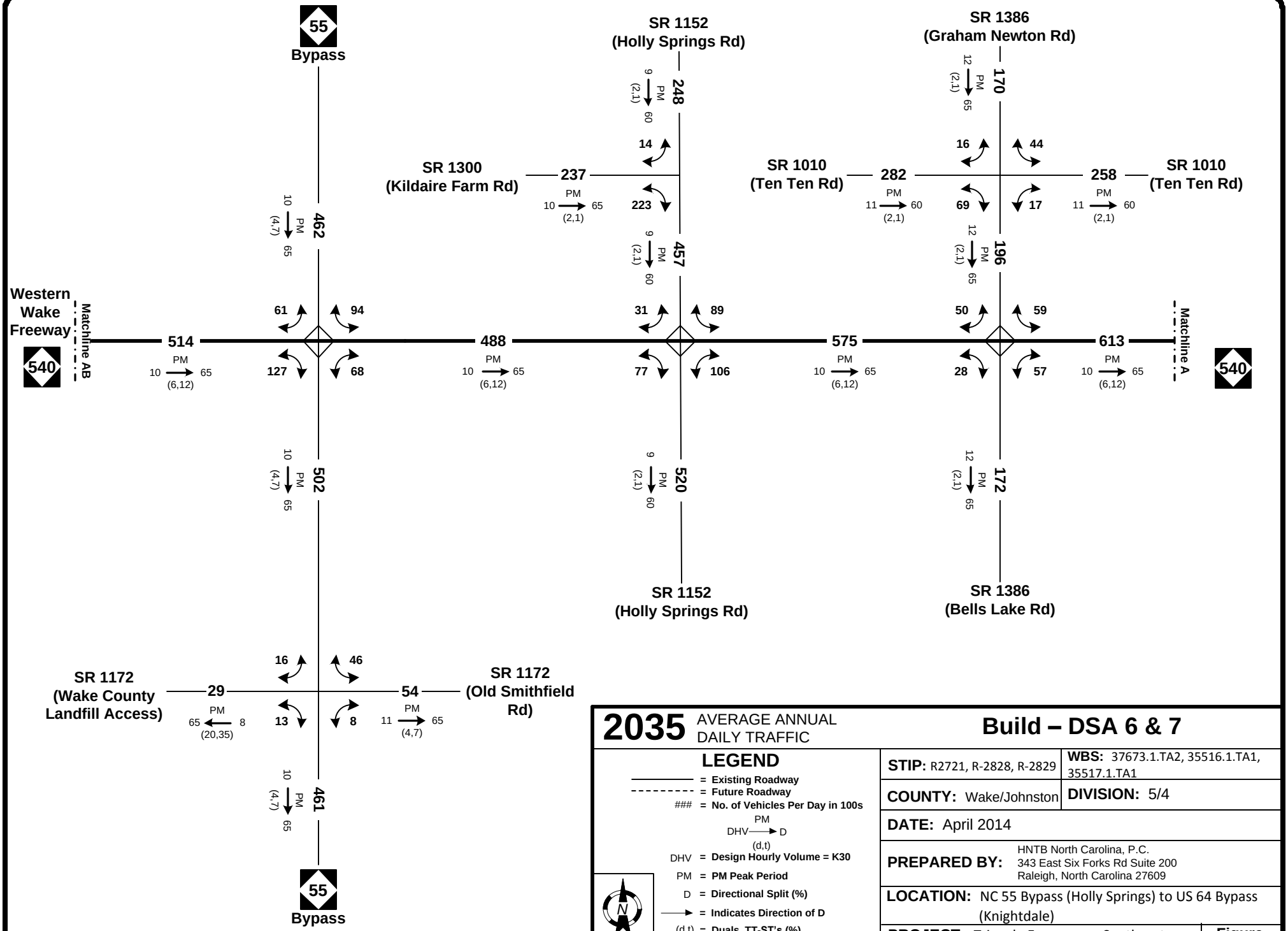
Build – DSA 6 & 7

LEGEND

= Existing Roadway
= Future Roadway
= No. of Vehicles Per Day in 100s
PM
DHV → D
(d,t)
DHV = Design Hourly Volume = K30
PM = PM Peak Period
D = Directional Split (%)
→ = Indicates Direction of D
(d,t) = Duals, TT-ST's (%)
= Daily Turn Movements

N
NTS

STIP: R2721, R-2828, R-2829	**WBS:** 37673.1.TA2, 35516.1.TA1, 35517.1.TA1
COUNTY: Wake/Johnston	**DIVISION:** 5/4
DATE: April 2014	
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 US 64 Bypass (Knightdale)	
PROJECT: Triangle Expressway Southeast Extension	**Figure 24.1**


55
Bypass
SR 1152
(Holly Springs Rd)
SR 1386
(Graham Newton Rd)
SR 1300
(Kildaire Farm Rd)
SR 1010
(Ten Ten Rd)
SR 1010
(Ten Ten Rd)
Western
Wake
Freeway
540
Matchline AB
Matchline A
540
SR 1152
(Holly Springs Rd)
SR 1386
(Bells Lake Rd)
SR 1172
(Wake County
Landfill Access)
SR 1172
(Old Smithfield
Rd)
55
Bypass
2035 AVERAGE ANNUAL DAILY TRAFFIC
Build – DSA 6 & 7
LEGEND
= Existing Roadway
= Future Roadway
= No. of Vehicles Per Day in 100s
PM
DHV → D
(d,t)
DHV = Design Hourly Volume = K30
PM = PM Peak Period
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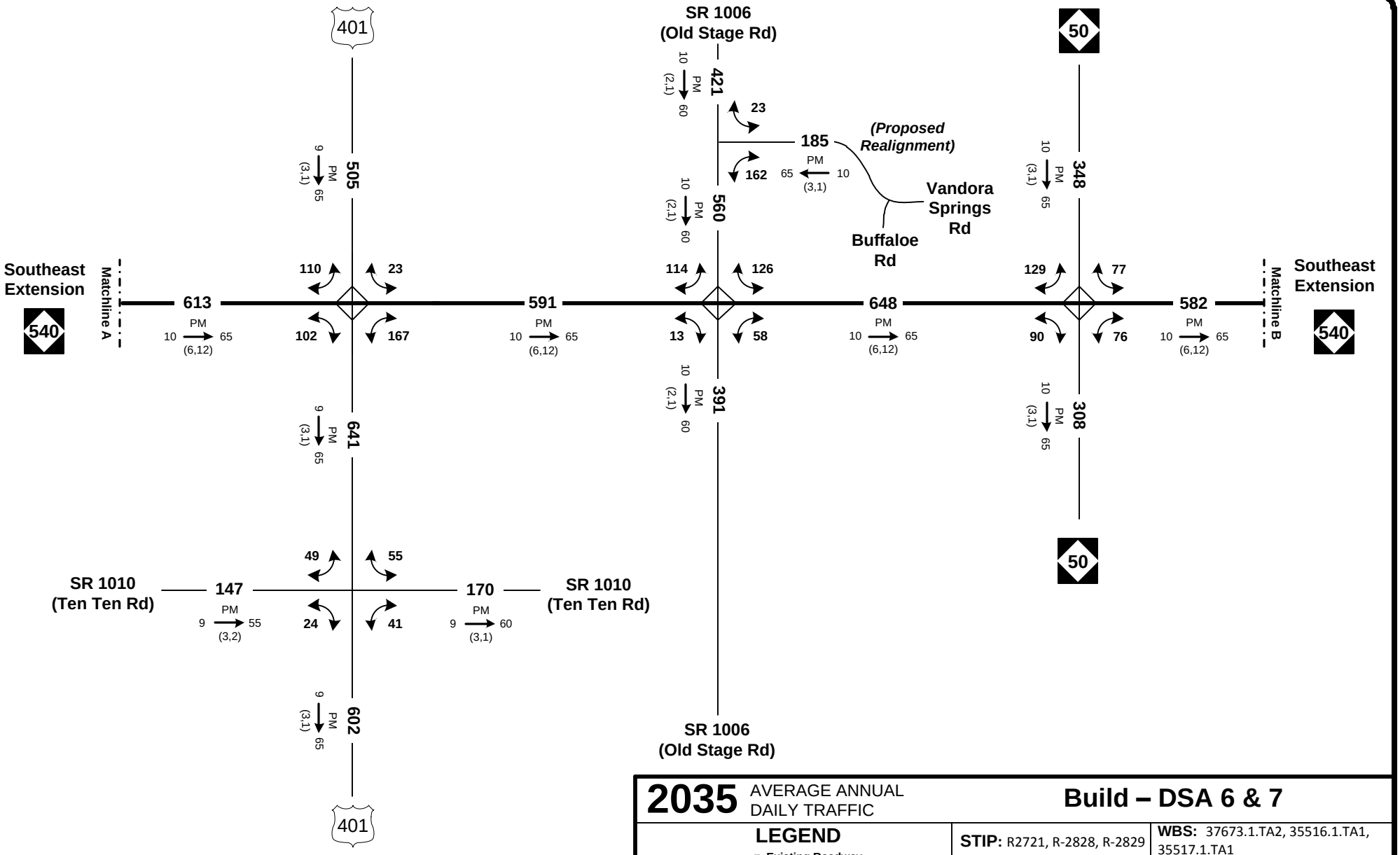
(d,t) = Duals, TT-ST's (%)
= Daily Turn Movements
N
NTS
STIP: R2721, R-2828, R-2829
WBS: 37673.1.TA2, 35516.1.TA1, 35517.1.TA1
COUNTY: Wake/Johnston
DIVISION: 5/4
DATE: April 2014
PREPARED BY: HNTB North Carolina, P.C.
343 East Six Forks Rd Suite 200
Raleigh, North Carolina 27609
LOCATION: NC 55 Bypass (Holly Springs) to US 64 Bypass (Knightdale)
PROJECT: Triangle Expressway Southeast Extension
Figure 24.2



2035 AVERAGE ANNUAL DAILY TRAFFIC

Build – DSA 6 & 7

LEGEND

- ——— = Existing Roadway
- - - - - - - - - = Future Roadway
- ### = No. of Vehicles Per Day in 100s
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- (d,t) = Duals, TT-ST's (%)
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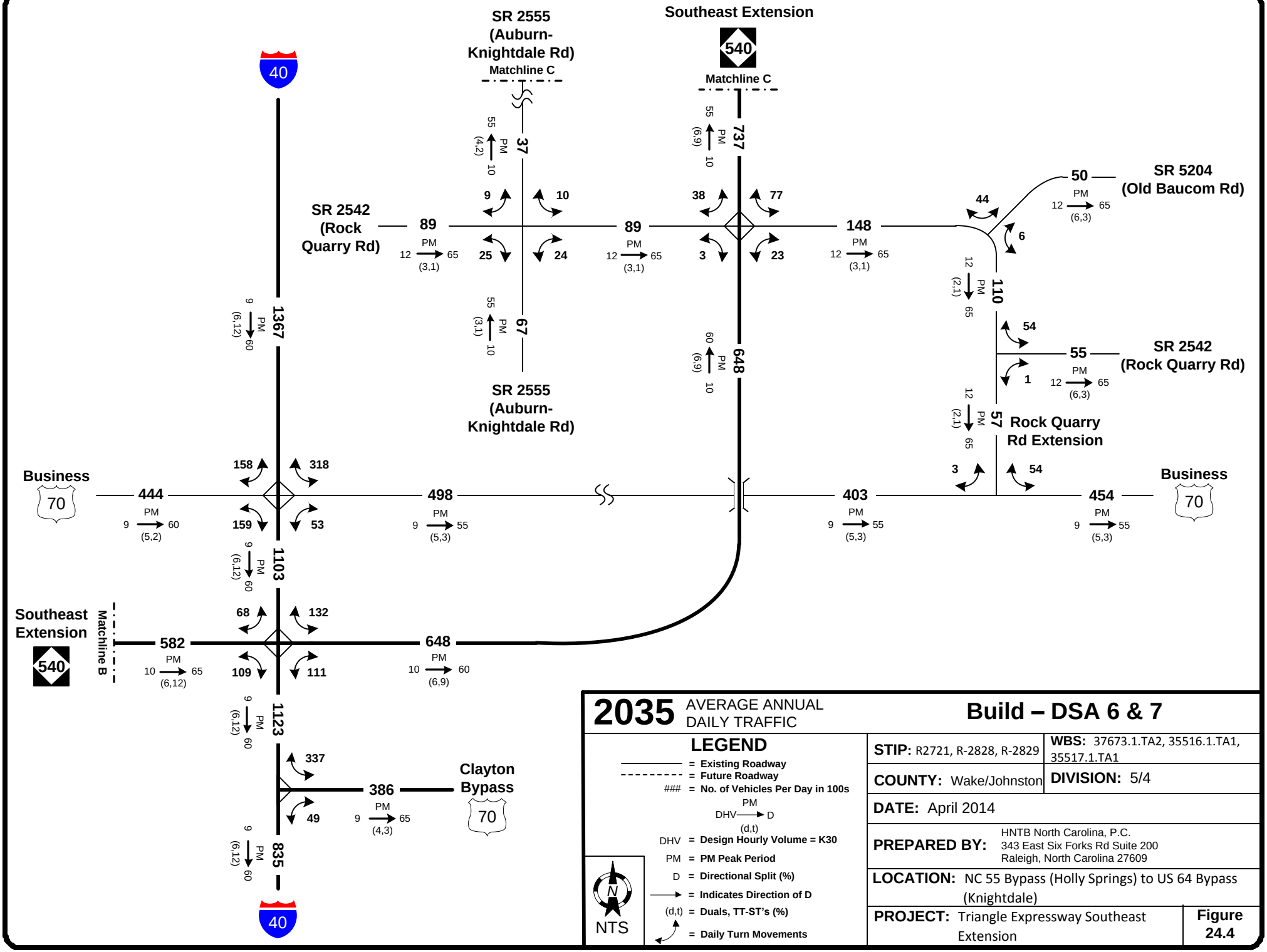
N

NTS

STIP: R2721, R-2828, R-2829	**WBS:** 37673.1.TA2, 35516.1.TA1, 35517.1.TA1
COUNTY: Wake/Johnston	**DIVISION:** 5/4
DATE: April 2014	
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 US 64 Bypass (Knightdale)	
PROJECT: Triangle Expressway Southeast Extension	**Figure 24.3**


SR 2555 (Auburn-Knightdale Rd)
Matchline C
Southeast Extension
540
Matchline C
40
SR 2542 (Rock Quarry Rd)
SR 2555 (Auburn-Knightdale Rd)
SR 5204 (Old Baucom Rd)
SR 2542 (Rock Quarry Rd)
Rock Quarry Rd Extension
Business 70
Business 70
Southeast Extension 540
Matchline B
Clayton Bypass 70
40
2035 AVERAGE ANNUAL DAILY TRAFFIC
Build – DSA 6 & 7
LEGEND
= Existing Roadway
= Future Roadway
= No. of Vehicles Per Day in 100s
DHV = Design Hourly Volume = K30
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D = Directional Split (%)
= Indicates Direction of D
(d,t) = Duals, TT-ST's (%)
= Daily Turn Movements
NTS
STIP: R2721, R-2828, R-2829
WBS: 37673.1.TA2, 35516.1.TA1, 35517.1.TA1
COUNTY: Wake/Johnston
DIVISION: 5/4
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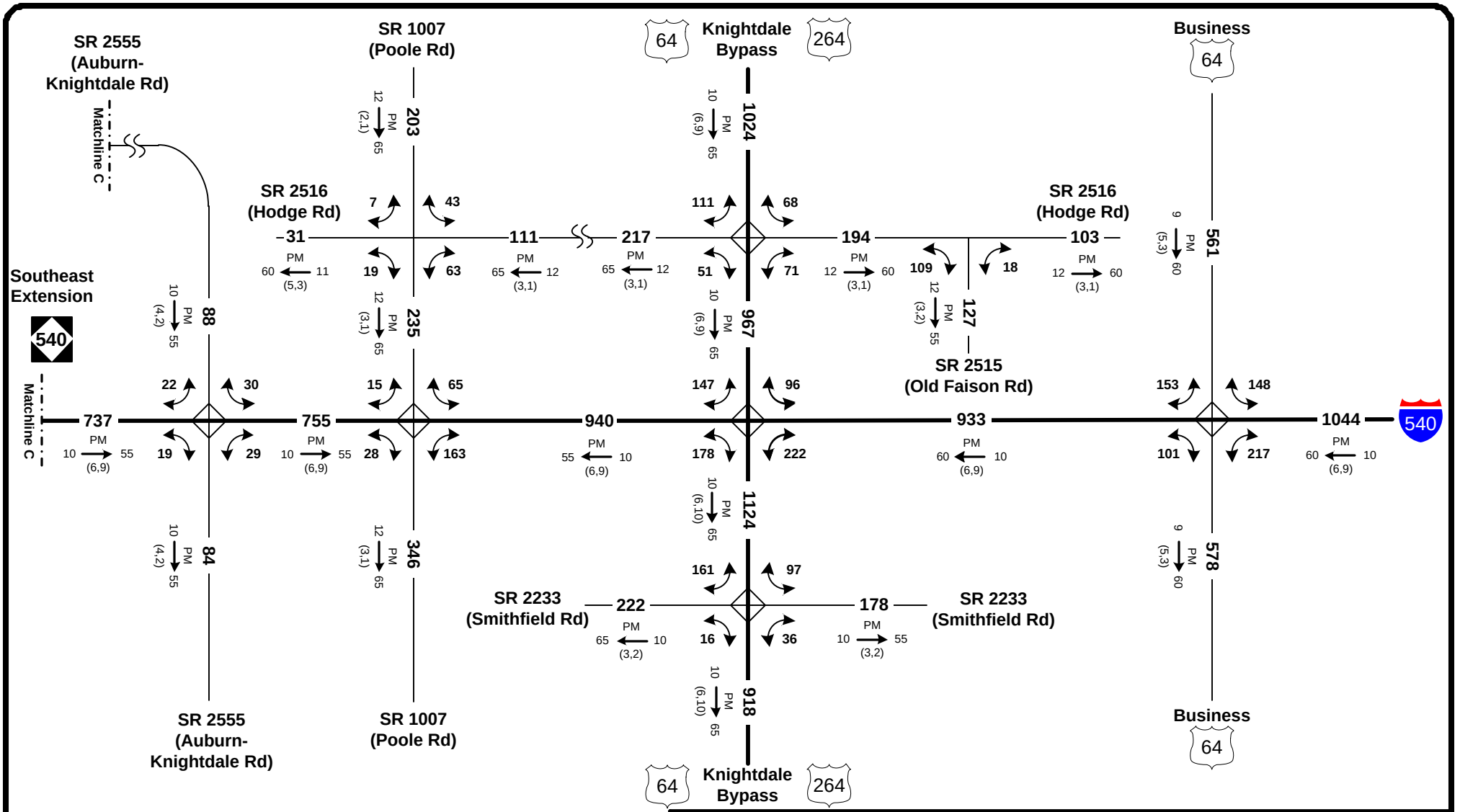
LOCATION: NC 55 Bypass (Holly Springs) to US 64 Bypass (Knightdale)
PROJECT: Triangle Expressway Southeast Extension
Figure 24.4



2035 AVERAGE ANNUAL DAILY TRAFFIC

Build – DSA 6 & 7

LEGEND

- ——— = Existing Roadway
- - - - - - - - - = Future Roadway
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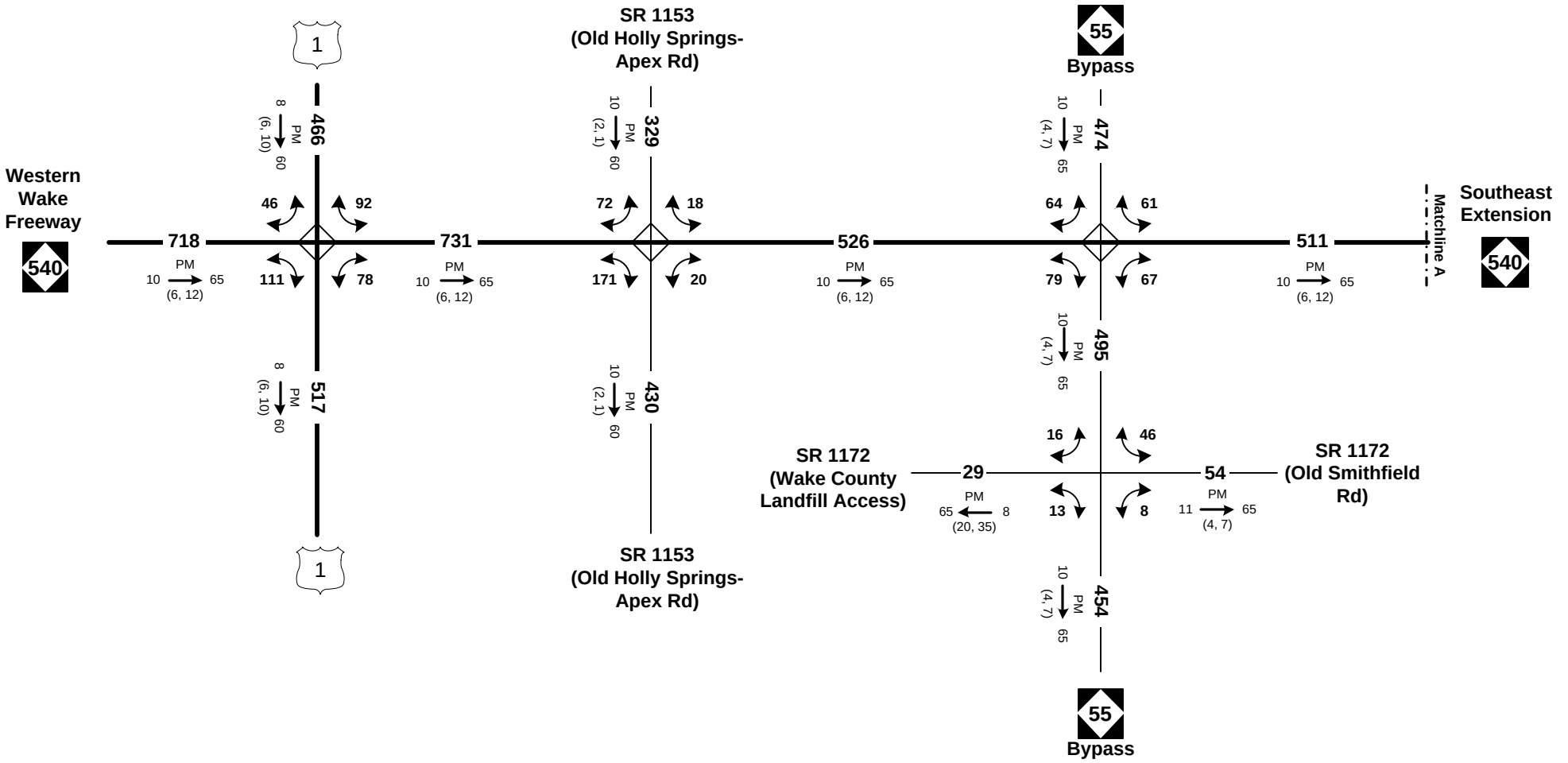
- (d,t) = Duals, TT-ST's (%)
- = Daily Turn Movements

NTS

STIP: R2721, R-2828, R-2829	**WBS:** 37673.1.TA2, 35516.1.TA1, 35517.1.TA1
COUNTY: Wake/Johnston	**DIVISION:** 5/4
DATE: April 2014	
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 US 64 Bypass (Knightdale)	
PROJECT: Triangle Expressway Southeast Extension	**Figure 24.5**



2035 AVERAGE ANNUAL DAILY TRAFFIC

Build – DSA 8 & 9

LEGEND

- ——— = Existing Roadway
- - - - - - - - - = Future Roadway
- ### = No. of Vehicles Per Day in 100s
- PM DHV → D (d,t)
- DHV = Design Hourly Volume = K30
- PM = PM Peak Period
- D = Directional Split (%)
- → = Indicates Direction of D
- (d,t) = Duals, TT-ST's (%)
- = Daily Turn Movements

N

NTS

STIP: R2721, R-2828, R-2829

WBS: 37673.1.TA2, 35516.1.TA1, 35517.1.TA1

COUNTY: Wake/Johnston

DIVISION: 5/4

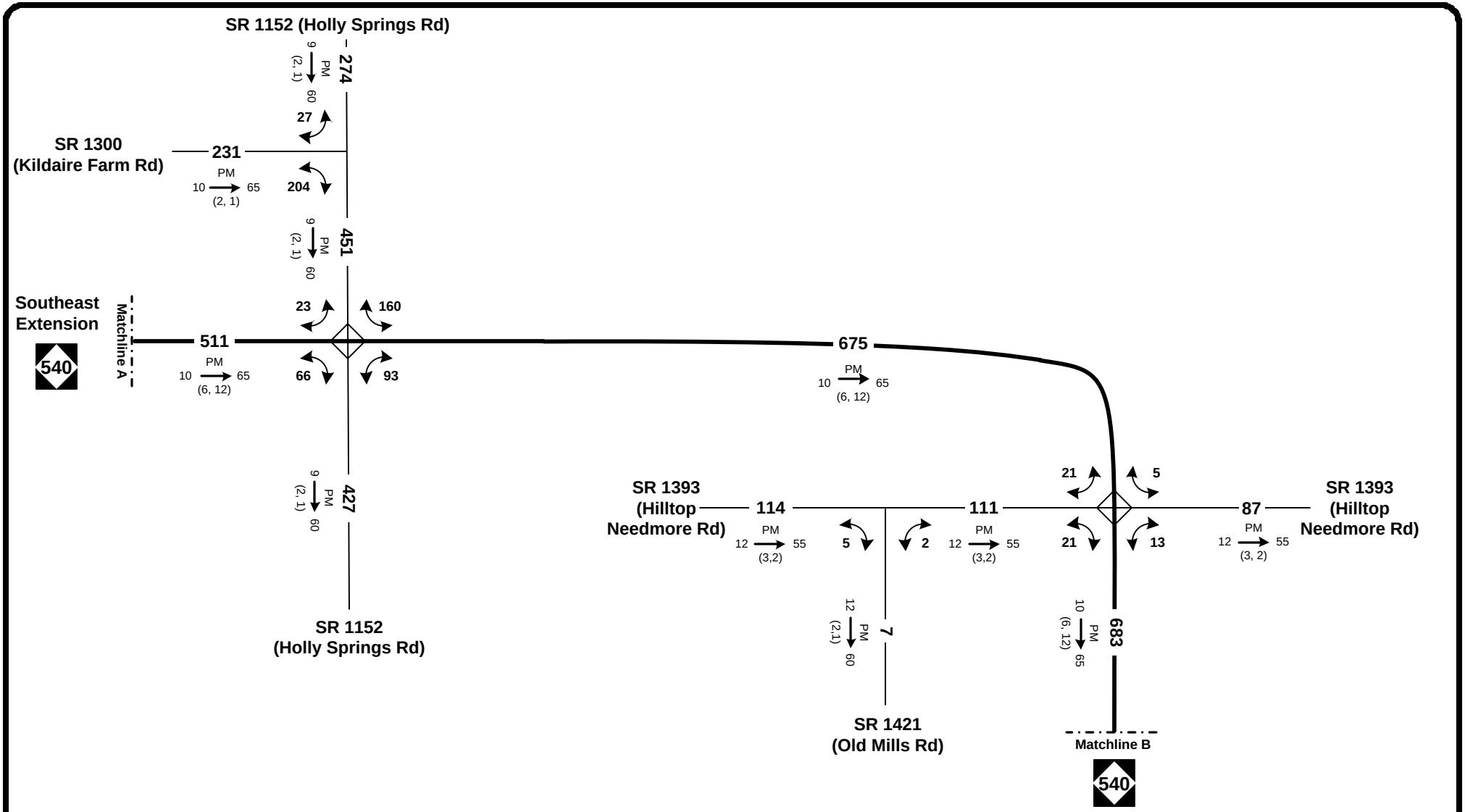
DATE: April 2014

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 US 64 Bypass (Knightdale)

PROJECT: Triangle Expressway Southeast Extension

Figure 25.1



2035 AVERAGE ANNUAL DAILY TRAFFIC

Build – DSA 8 & 9

LEGEND

- = Existing Roadway
- = Future Roadway
- ### = No. of Vehicles Per Day in 100s
- PM DHV → D (d,t)
- DHV = Design Hourly Volume = K30
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- (d,t) = Duals, TT-ST's (%)
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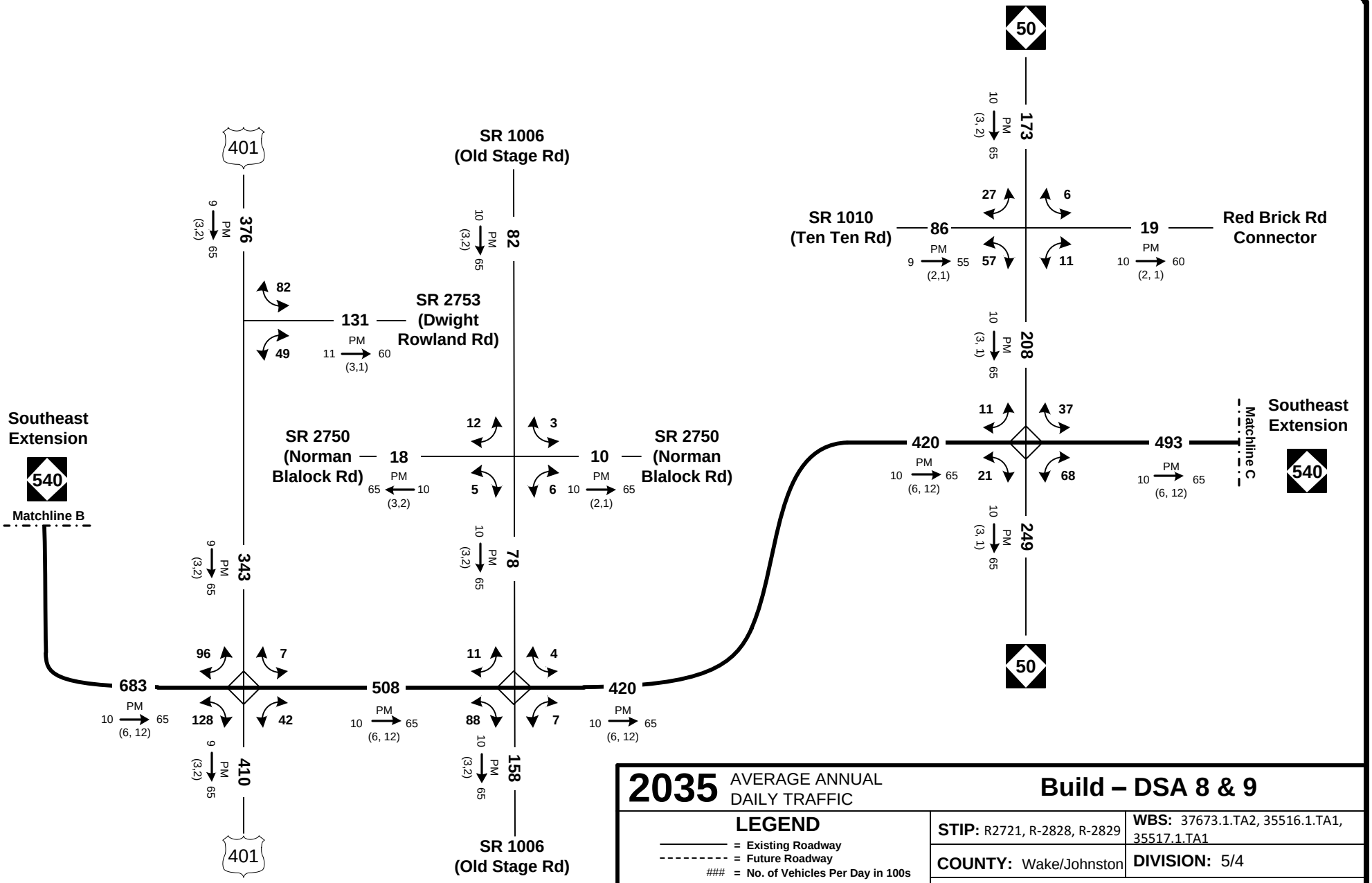
NTS

STIP: R2721, R-2828, R-2829	**WBS:** 37673.1.TA2, 35516.1.TA1, 35517.1.TA1
COUNTY: Wake/Johnston	**DIVISION:** 5/4
DATE: April 2014	
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 US 64 Bypass (Knightdale)	
PROJECT: Triangle Expressway Southeast Extension	**Figure 25.2**



2035 AVERAGE ANNUAL DAILY TRAFFIC

Build – DSA 8 & 9

LEGEND

- = Existing Roadway
- = Future Roadway
- ### = No. of Vehicles Per Day in 100s
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NTS

STIP: R2721, R-2828, R-2829	**WBS:** 37673.1.TA2, 35516.1.TA1, 35517.1.TA1
COUNTY: Wake/Johnston	**DIVISION:** 5/4
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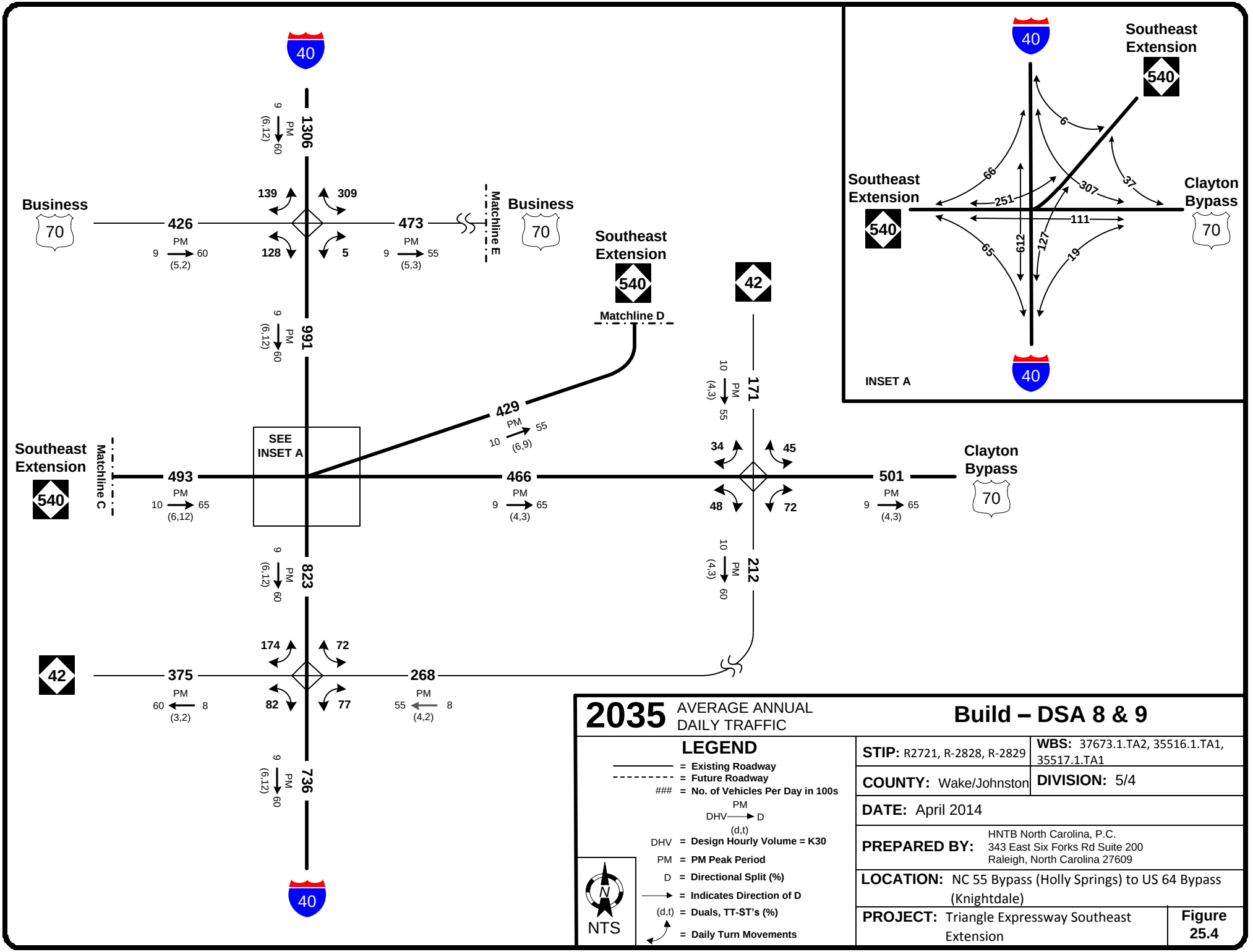
LOCATION: NC 55 Bypass (Holly Springs) to US 64 Bypass (Knightdale)	
PROJECT: Triangle Expressway Southeast Extension	**Figure 25.3**



2035 AVERAGE ANNUAL DAILY TRAFFIC

Build – DSA 8 & 9

LEGEND

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= Future Roadway
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DHV → D
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DHV = Design Hourly Volume = K30
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(d,t) = Duals, TT-ST's (%)
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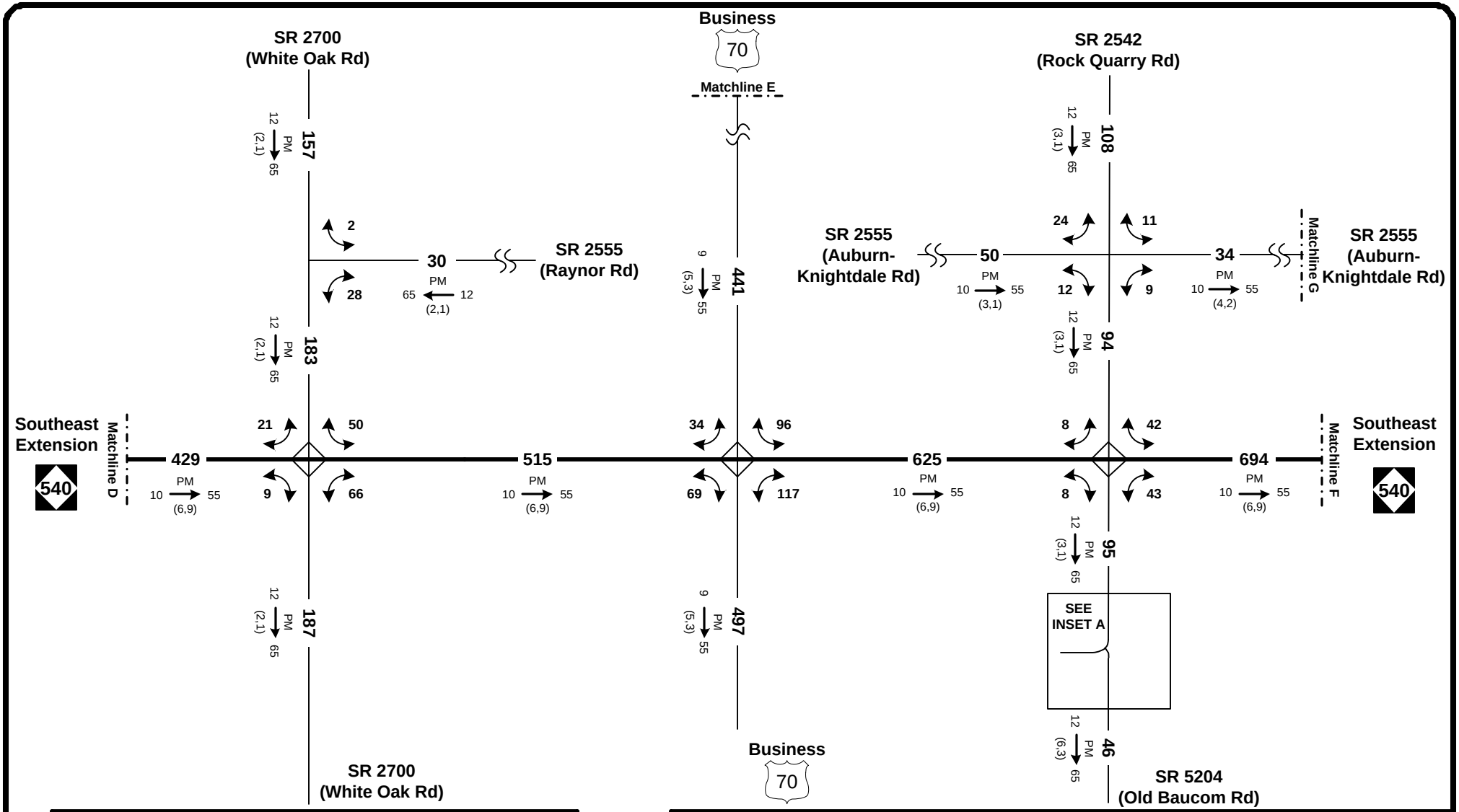
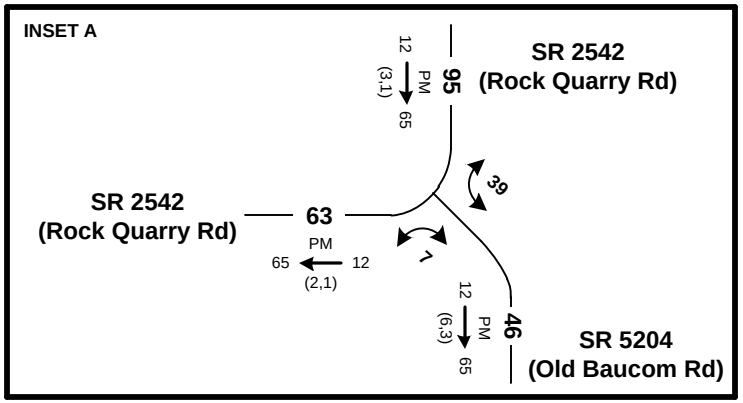
N
NTS

STIP: R2721, R-2828, R-2829	**WBS:** 37673.1.TA2, 35516.1.TA1, 35517.1.TA1
COUNTY: Wake/Johnston	**DIVISION:** 5/4
DATE: April 2014	
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 US 64 Bypass (Knightdale)	
PROJECT: Triangle Expressway Southeast Extension	**Figure 25.4**





2035 AVERAGE ANNUAL DAILY TRAFFIC

Build – DSA 8 & 9

LEGEND

- = Existing Roadway
- = Future Roadway
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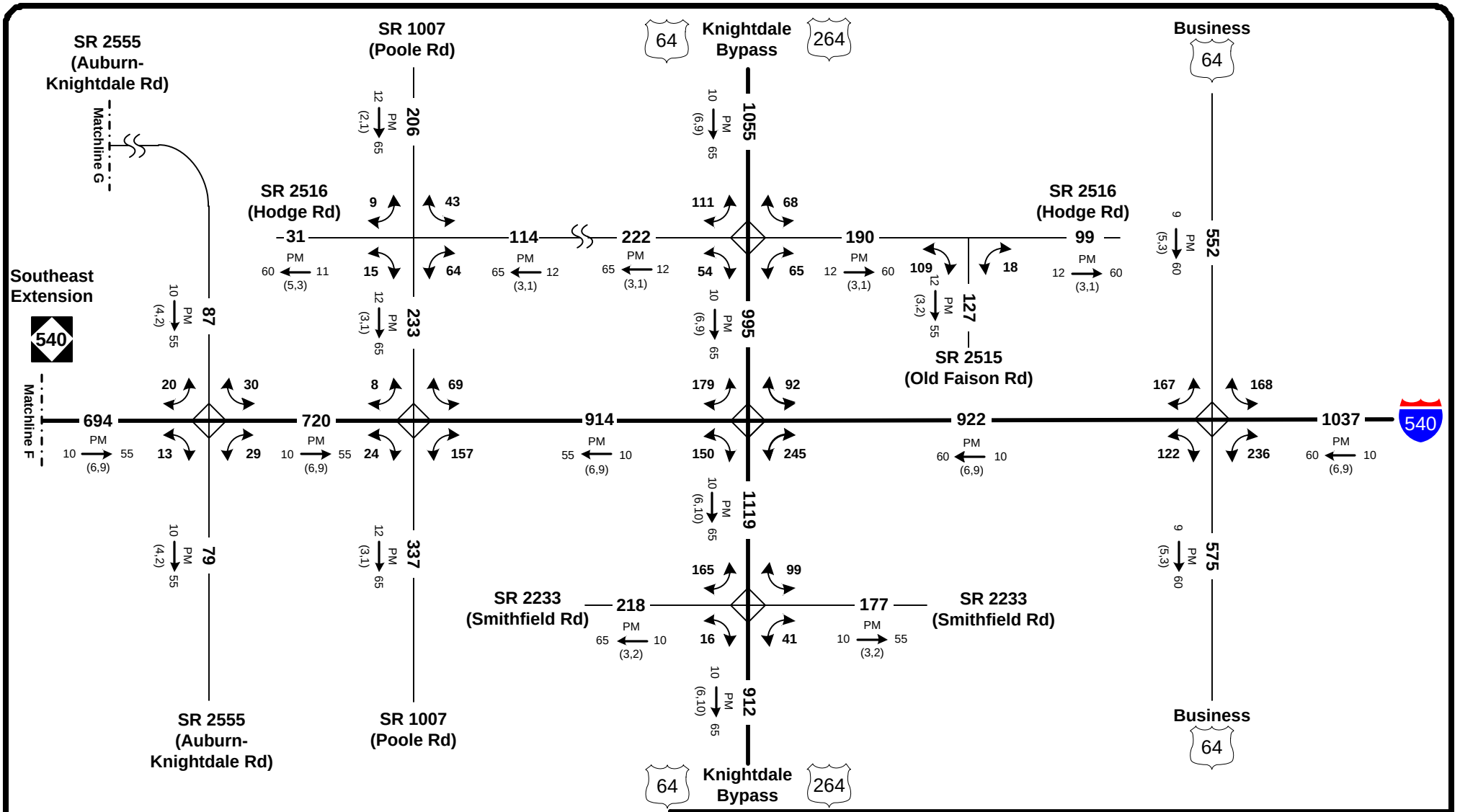
- → = Indicates Direction of D
- (d,t) = Duals, TT-ST's (%)
- = Daily Turn Movements

NTS

STIP: R2721, R-2828, R-2829	**WBS:** 37673.1.TA2, 35516.1.TA1, 35517.1.TA1
COUNTY: Wake/Johnston	**DIVISION:** 5/4
DATE: April 2014	
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 US 64 Bypass (Knightdale)	
PROJECT: Triangle Expressway Southeast Extension	**Figure 25.5**



2035 AVERAGE ANNUAL DAILY TRAFFIC

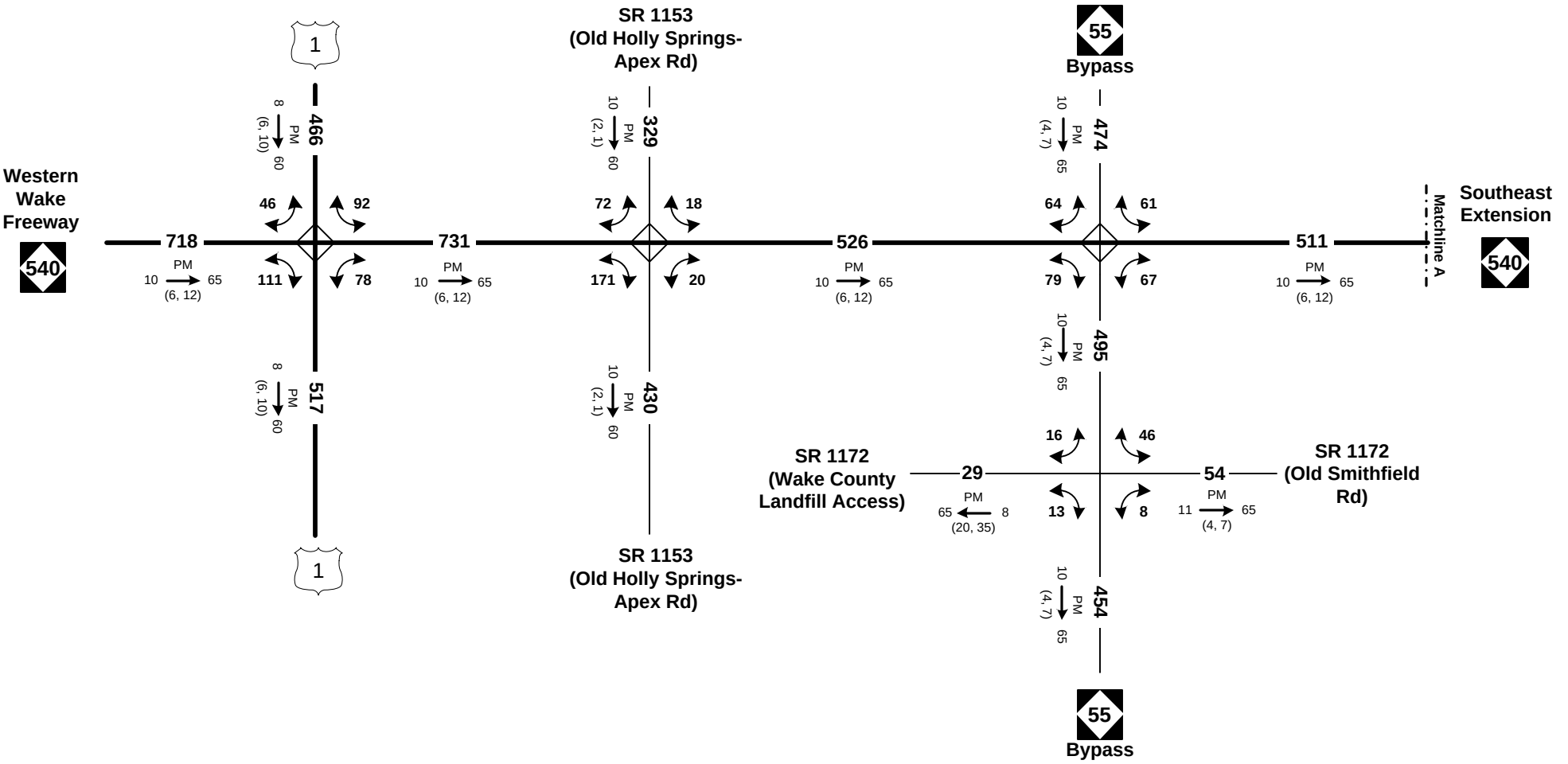
Build – DSA 8 & 9

LEGEND

- ——— = Existing Roadway
- - - - - - - - - = Future Roadway
- ### = No. of Vehicles Per Day in 100s
- PM DHV → D (d,t)
- DHV = Design Hourly Volume = K30
- PM = PM Peak Period
- D = Directional Split (%)
- → = Indicates Direction of D
- (d,t) = Duals, TT-ST's (%)
- = Daily Turn Movements

NTS

STIP: R2721, R-2828, R-2829	**WBS:** 37673.1.TA2, 35516.1.TA1, 35517.1.TA1
COUNTY: Wake/Johnston	**DIVISION:** 5/4
DATE: April 2014	
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 US 64 Bypass (Knightdale)	
PROJECT: Triangle Expressway Southeast Extension	**Figure 25.6**



2035 AVERAGE ANNUAL DAILY TRAFFIC

Build – DSA 10 & 11

LEGEND

- ——— = Existing Roadway
- - - - - - - - - = Future Roadway
- ### = No. of Vehicles Per Day in 100s
- PM DHV → D (d,t)
- DHV = Design Hourly Volume = K30
- PM = PM Peak Period
- D = Directional Split (%)
- → = Indicates Direction of D
- (d,t) = Duals, TT-ST's (%)
- = Daily Turn Movements

N

NTS

STIP: R2721, R-2828, R-2829

WBS: 37673.1.TA2, 35516.1.TA1, 35517.1.TA1

COUNTY: Wake/Johnston

DIVISION: 5/4

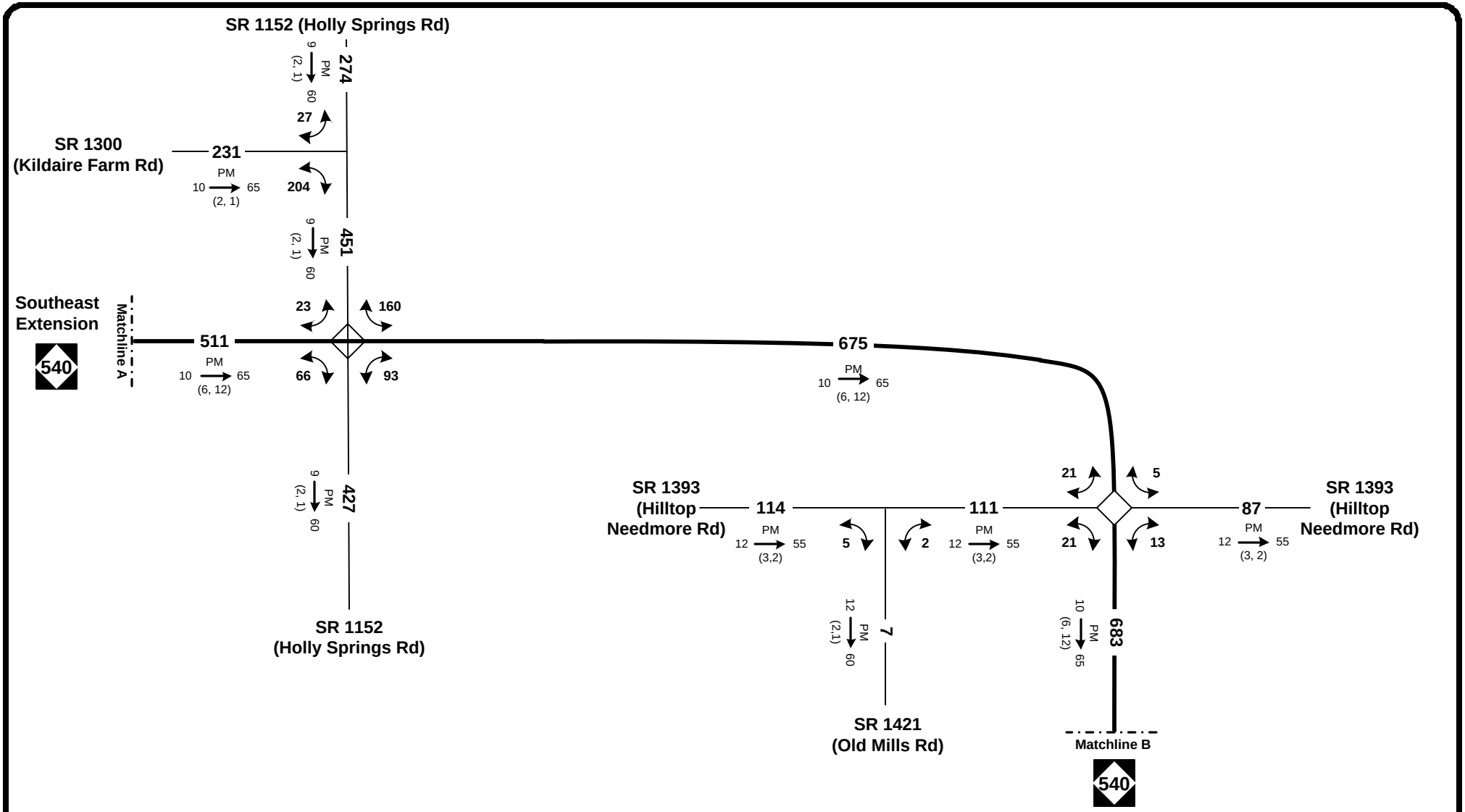
DATE: April 2014

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 US 64 Bypass (Knightdale)

PROJECT: Triangle Expressway Southeast Extension

Figure 26.1



2035 AVERAGE ANNUAL DAILY TRAFFIC

Build – DSA 10 & 11

LEGEND

- = Existing Roadway
- = Future Roadway
- ### = No. of Vehicles Per Day in 100s
- PM DHV → D (d,t)
- DHV = Design Hourly Volume = K30
- PM = PM Peak Period
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- (d,t) = Duals, TT-ST's (%)
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NTS

STIP: R2721, R-2828, R-2829	**WBS:** 37673.1.TA2, 35516.1.TA1, 35517.1.TA1
COUNTY: Wake/Johnston	**DIVISION:** 5/4
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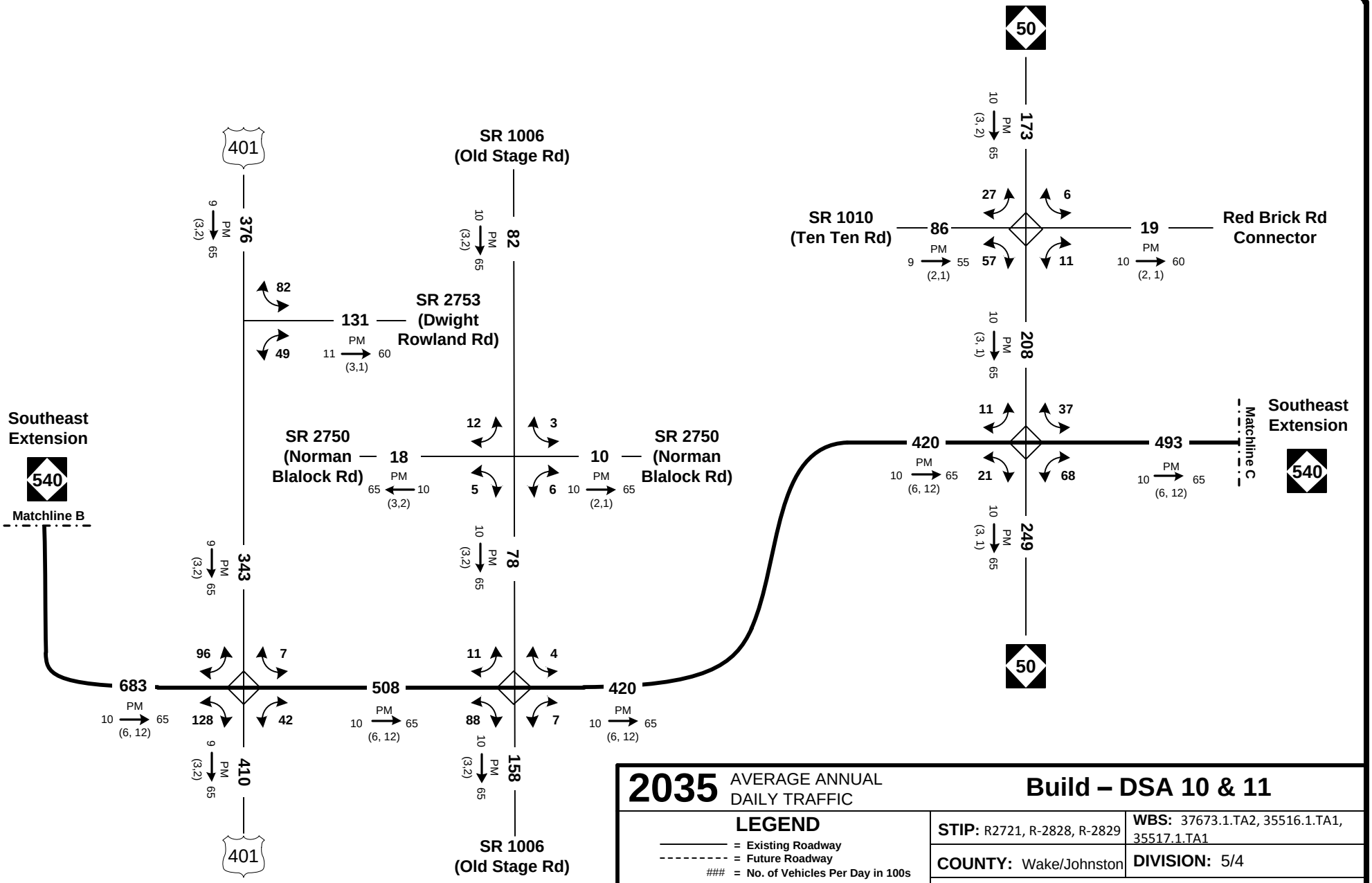
PREPARED BY: HNTB North Carolina, P.C. 343 East Six Forks Rd Suite 200 Raleigh, North Carolina 27609	
LOCATION: NC 55 Bypass (Holly Springs) to US 64 Bypass (Knightdale)	
PROJECT: Triangle Expressway Southeast Extension	**Figure 26.2**



2035 AVERAGE ANNUAL DAILY TRAFFIC

Build – DSA 10 & 11

LEGEND

- = Existing Roadway
- = Future Roadway
- ### = No. of Vehicles Per Day in 100s
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- (d,t) = Duals, TT-ST's (%)
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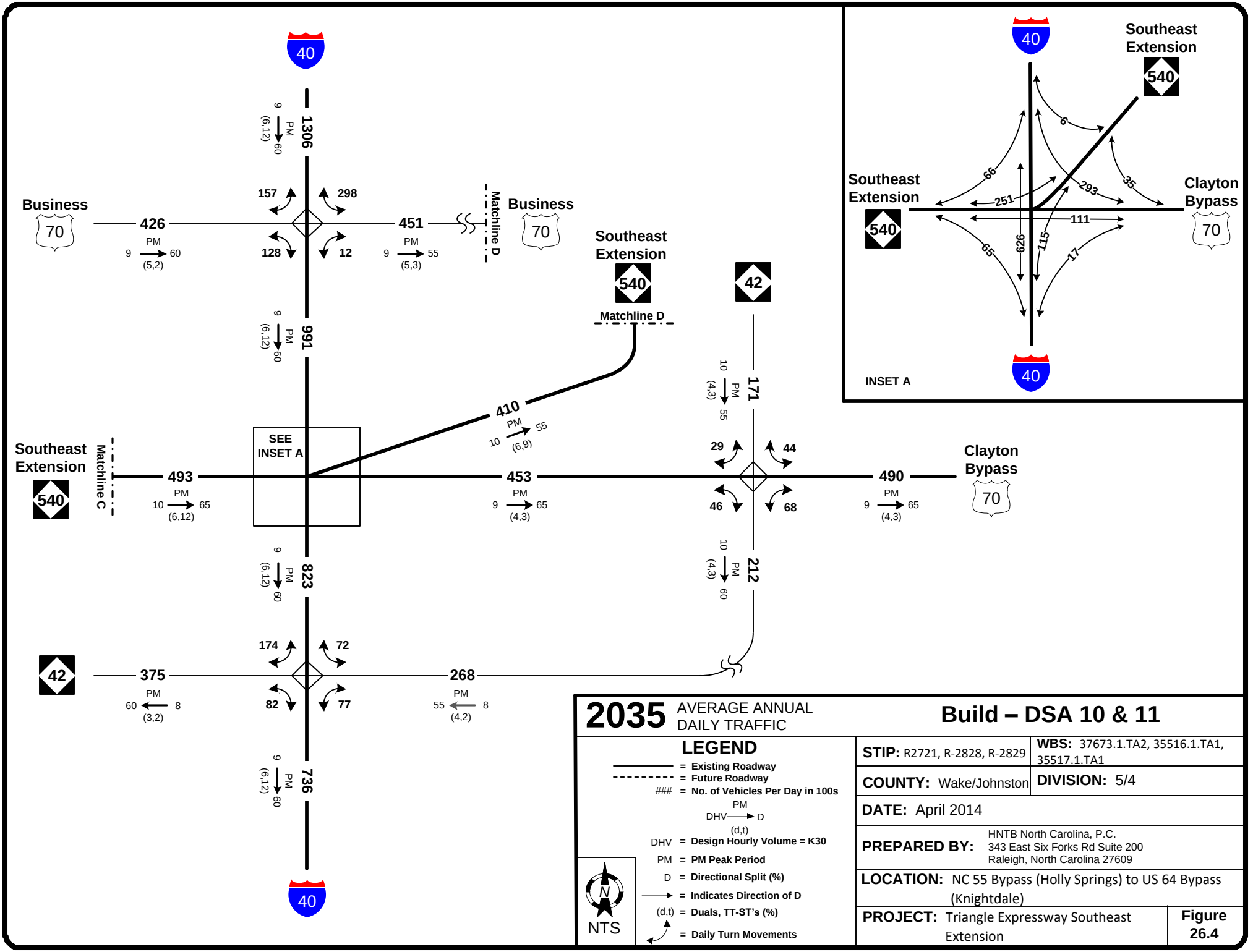
N

NTS

STIP: R2721, R-2828, R-2829	**WBS:** 37673.1.TA2, 35516.1.TA1, 35517.1.TA1
COUNTY: Wake/Johnston	**DIVISION:** 5/4
DATE: April 2014	
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 US 64 Bypass (Knightdale)	
PROJECT: Triangle Expressway Southeast Extension	**Figure 26.3**



2035 AVERAGE ANNUAL DAILY TRAFFIC

Build – DSA 10 & 11

LEGEND

- ——— = Existing Roadway
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NTS

STIP: R2721, R-2828, R-2829

WBS: 37673.1.TA2, 35516.1.TA1, 35517.1.TA1

COUNTY: Wake/Johnston

DIVISION: 5/4

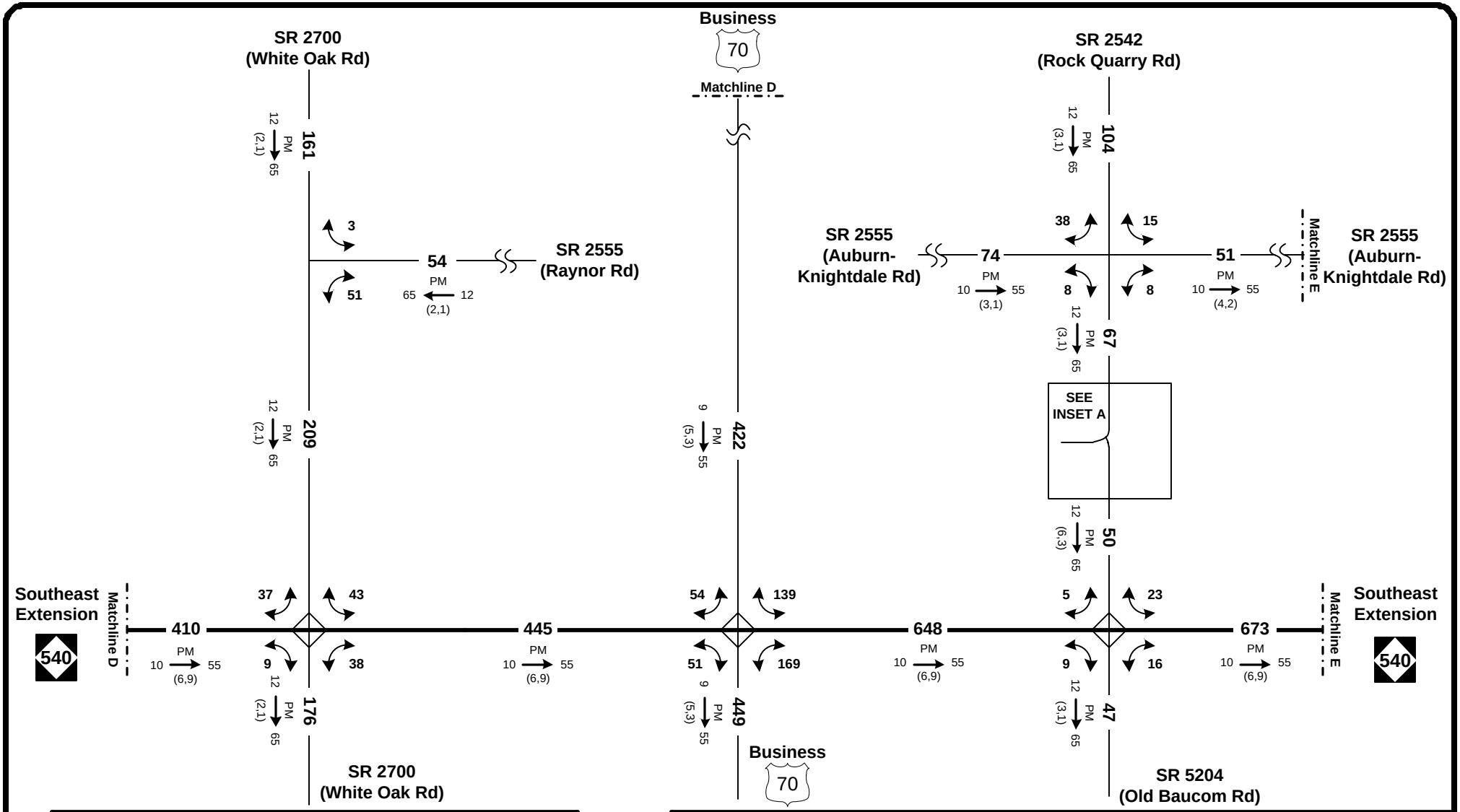
DATE: April 2014

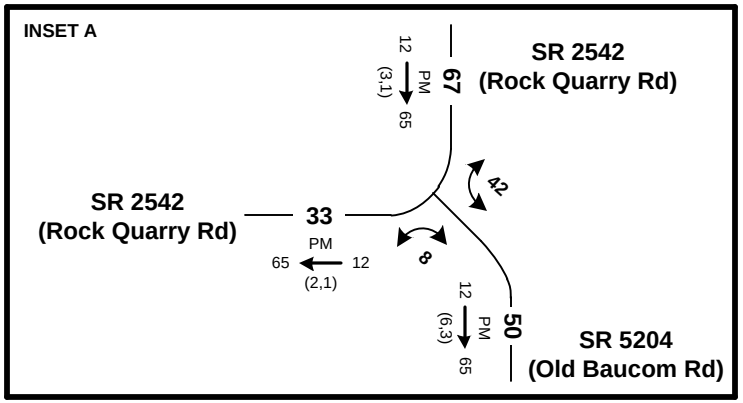
PREPARED BY: HNTB North Carolina, P.C.
343 East Six Forks Rd Suite 200
Raleigh, North Carolina 27609

LOCATION: NC 55 Bypass (Holly Springs) to US 64 Bypass (Knightdale)

PROJECT: Triangle Expressway Southeast Extension

Figure 26.4





2035 AVERAGE ANNUAL DAILY TRAFFIC

Build – DSA 10 & 11

LEGEND

= Existing Roadway
= Future Roadway
= No. of Vehicles Per Day in 100s
PM
DHV → D
(d,t)
DHV = Design Hourly Volume = K30
PM = PM Peak Period
D = Directional Split (%)
→ = Indicates Direction of D
(d,t) = Duals, TT-ST's (%)
= Daily Turn Movements

NTS

STIP: R2721, R-2828, R-2829

WBS: 37673.1.TA2, 35516.1.TA1, 35517.1.TA1

COUNTY: Wake/Johnston

DIVISION: 5/4

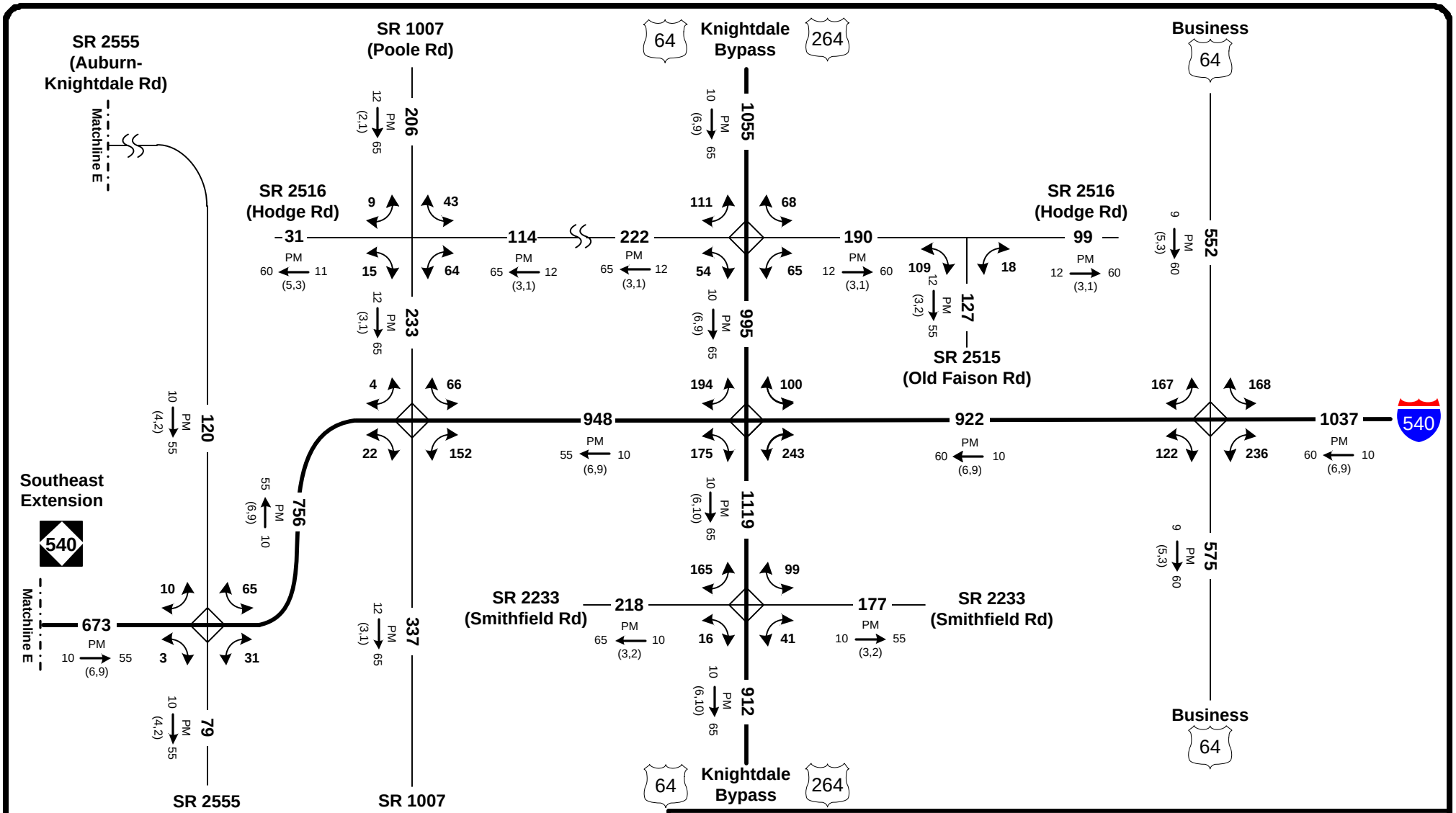
DATE: April 2014

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 US 64 Bypass (Knightdale)

PROJECT: Triangle Expressway Southeast Extension

Figure 26.5



2035 AVERAGE ANNUAL DAILY TRAFFIC

Build – DSA 10 & 11

LEGEND

- = Existing Roadway
- = Future Roadway
- ### = No. of Vehicles Per Day in 100s
- PM DHV → D (d,t)
- DHV = Design Hourly Volume = K30
- PM = PM Peak Period
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NTS

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COUNTY: Wake/Johnston

DIVISION: 5/4

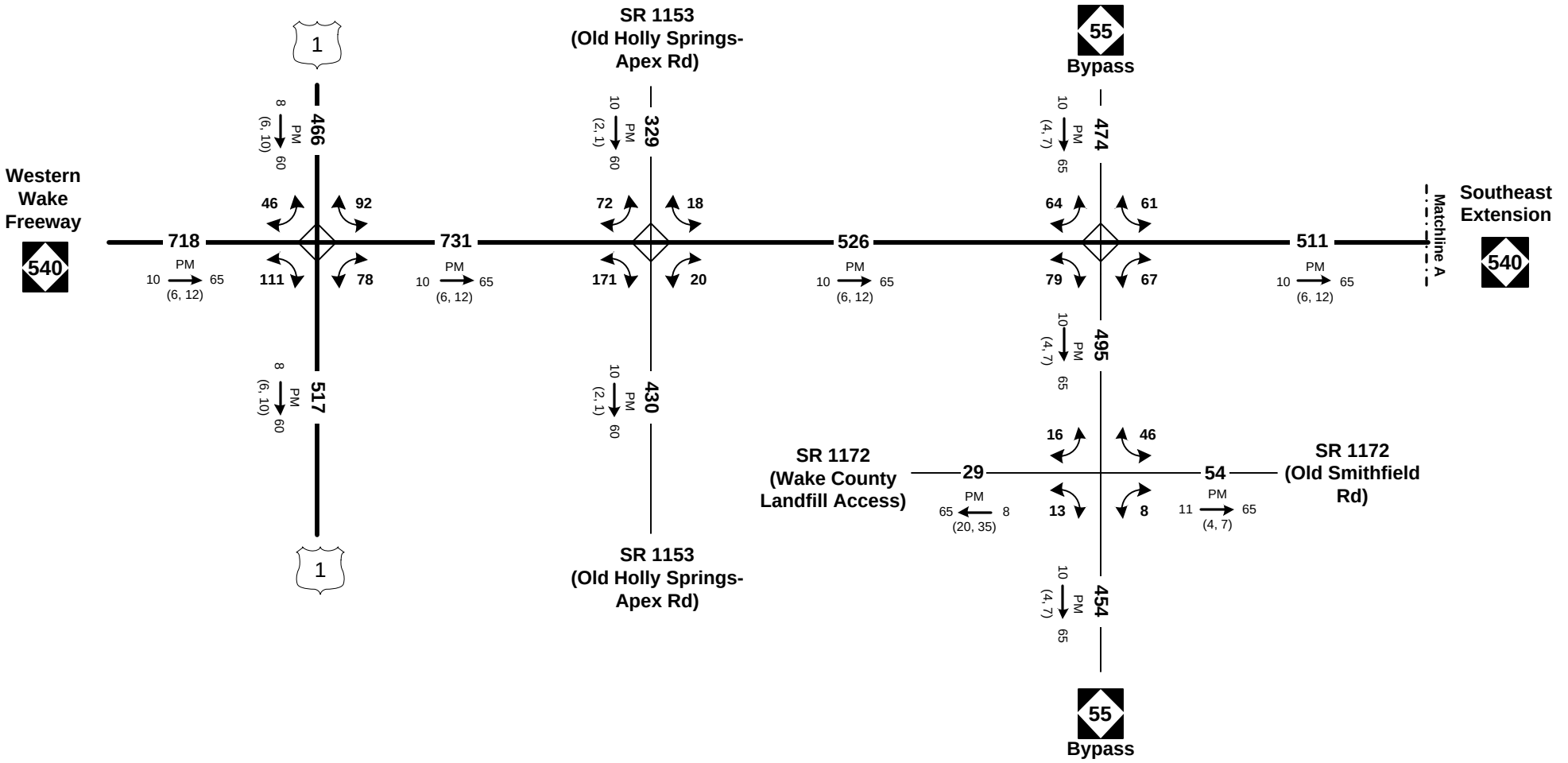
DATE: April 2014

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 US 64 Bypass (Knightdale)

PROJECT: Triangle Expressway Southeast Extension

Figure 26.6



2035 AVERAGE ANNUAL DAILY TRAFFIC

Build – DSA 12

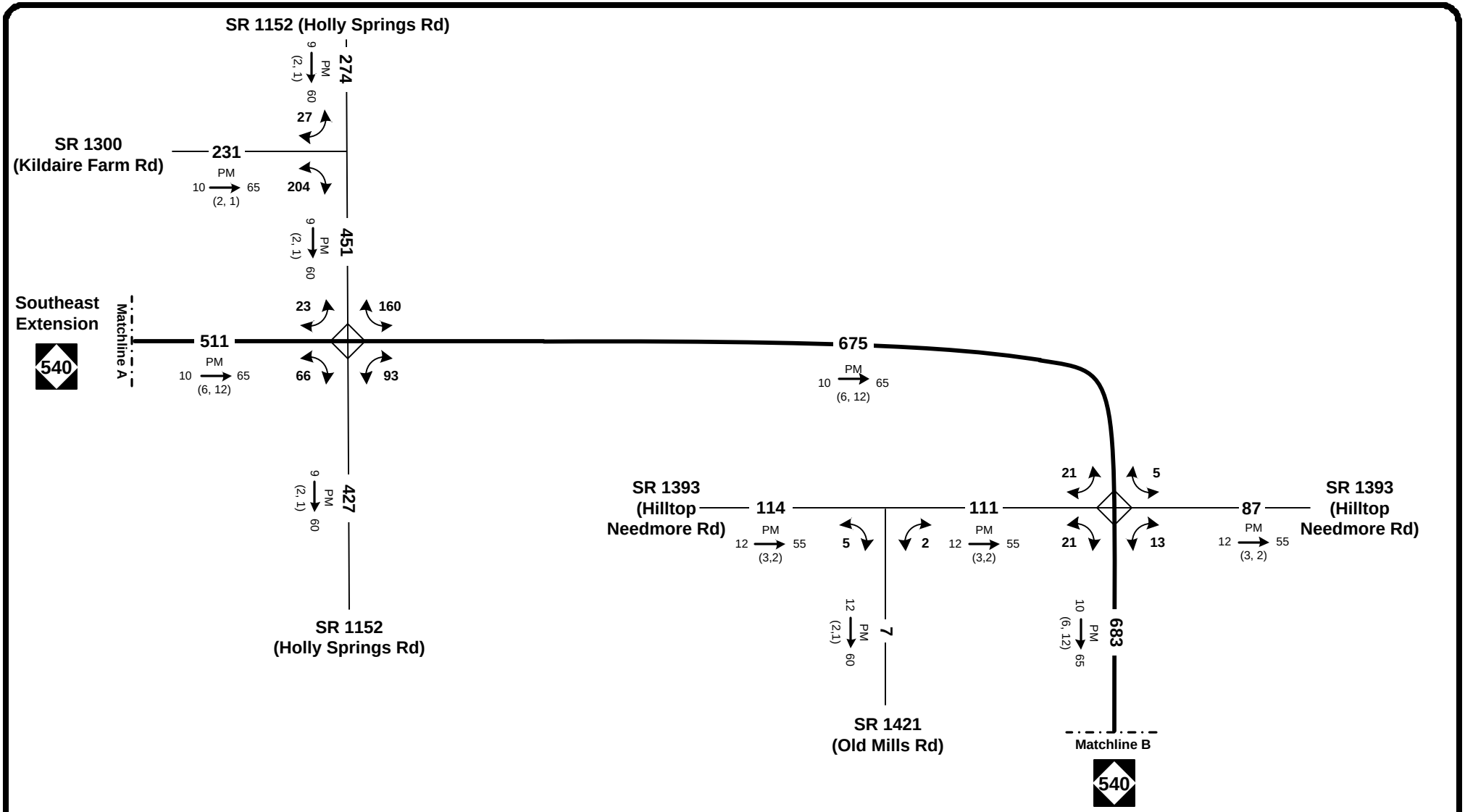
LEGEND

- ——— = Existing Roadway
- - - - - - - - - = Future Roadway
- ### = No. of Vehicles Per Day in 100s
- PM DHV → D (d,t)
- DHV = Design Hourly Volume = K30
- PM = PM Peak Period
- D = Directional Split (%)
- → = Indicates Direction of D
- (d,t) = Duals, TT-ST's (%)
- = Daily Turn Movements

N

NTS

STIP: R2721, R-2828, R-2829	**WBS:** 37673.1.TA2, 35516.1.TA1, 35517.1.TA1
COUNTY: Wake/Johnston	**DIVISION:** 5/4
DATE: April 2014	
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 US 64 Bypass (Knightdale)	
PROJECT: Triangle Expressway Southeast Extension	**Figure 27.1**



2035 AVERAGE ANNUAL DAILY TRAFFIC

Build – DSA 12

LEGEND

- = Existing Roadway
- = Future Roadway
- ### = No. of Vehicles Per Day in 100s
- PM DHV → D (d,t)
- DHV = Design Hourly Volume = K30
- PM = PM Peak Period
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- (d,t) = Duals, TT-ST's (%)
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NTS

STIP: R2721, R-2828, R-2829

WBS: 37673.1.TA2, 35516.1.TA1, 35517.1.TA1

COUNTY: Wake/Johnston

DIVISION: 5/4

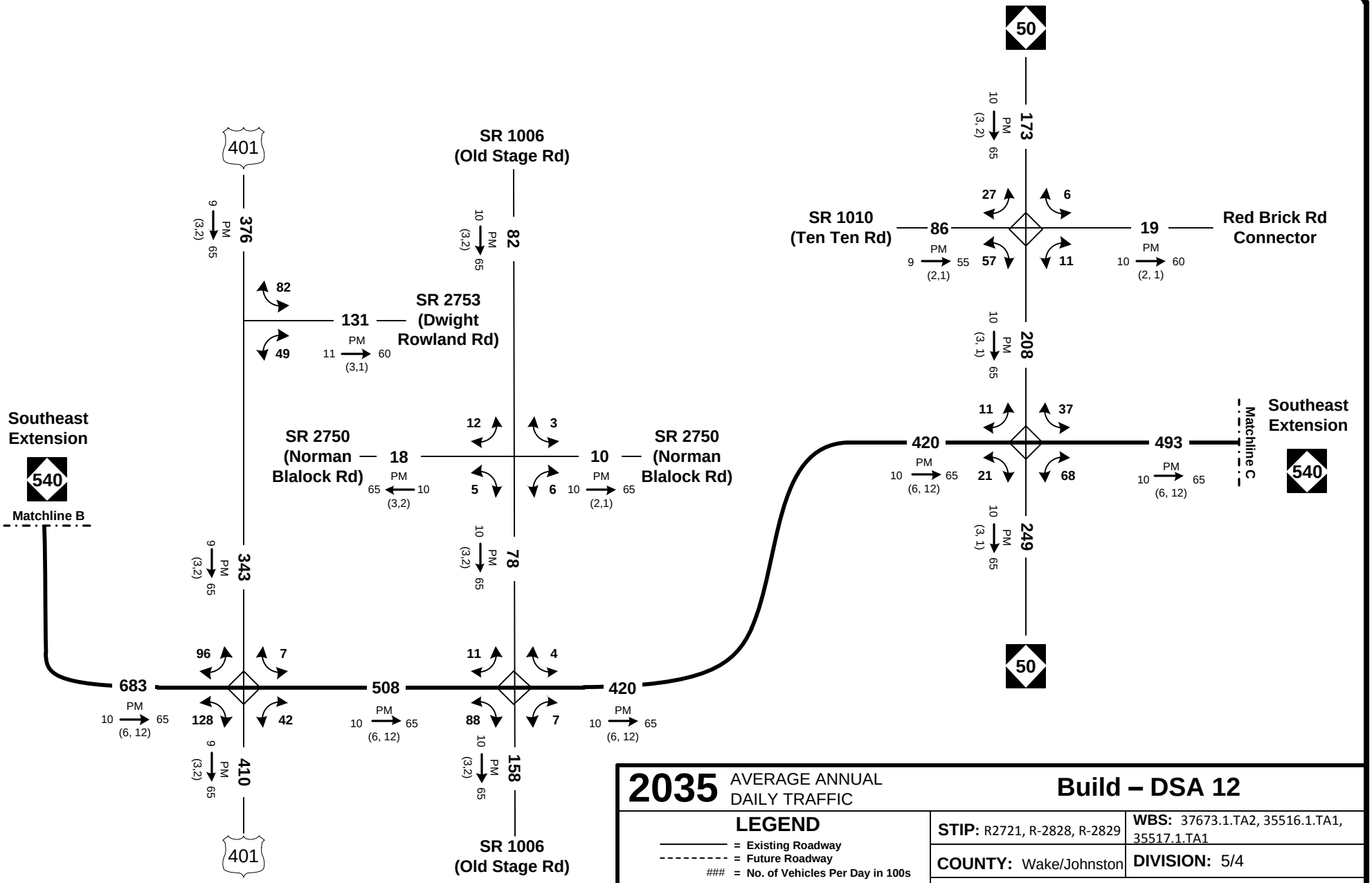
DATE: April 2014

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 US 64 Bypass (Knightdale)

PROJECT: Triangle Expressway Southeast Extension

Figure 27.2



2035 AVERAGE ANNUAL DAILY TRAFFIC

Build – DSA 12

LEGEND

= Existing Roadway
= Future Roadway
= No. of Vehicles Per Day in 100s
PM
DHV → D
(d,t)
DHV = Design Hourly Volume = K30
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D = Directional Split (%)
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(d,t) = Duals, TT-ST's (%)
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N
NTS

STIP: R2721, R-2828, R-2829

WBS: 37673.1.TA2, 35516.1.TA1, 35517.1.TA1

COUNTY: Wake/Johnston

DIVISION: 5/4

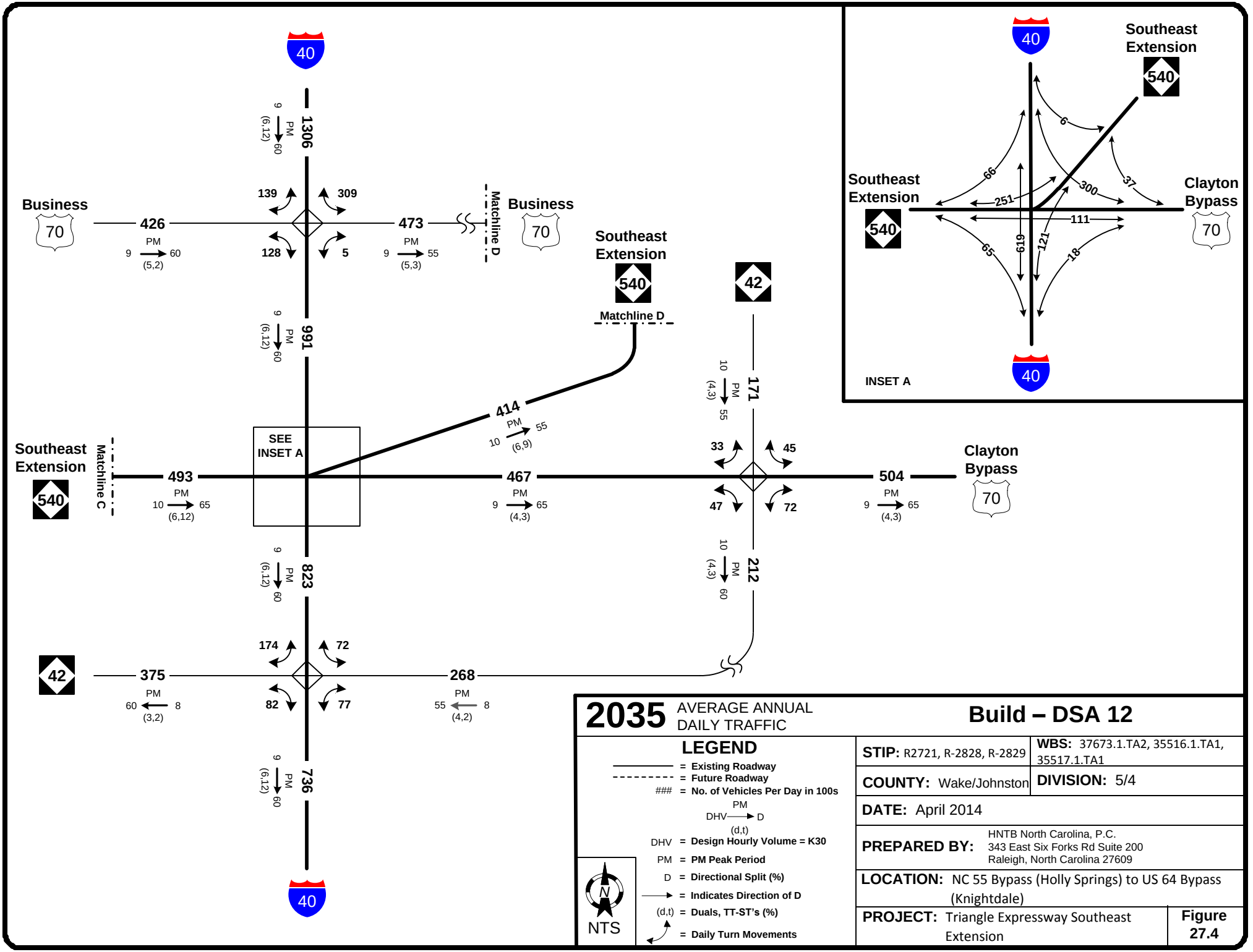
DATE: April 2014

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 US 64 Bypass (Knightdale)

PROJECT: Triangle Expressway Southeast Extension

Figure 27.3



2035 AVERAGE ANNUAL DAILY TRAFFIC

Build – DSA 12

LEGEND

- ——— = Existing Roadway
- - - - - - - - - = Future Roadway
- ### = No. of Vehicles Per Day in 100s
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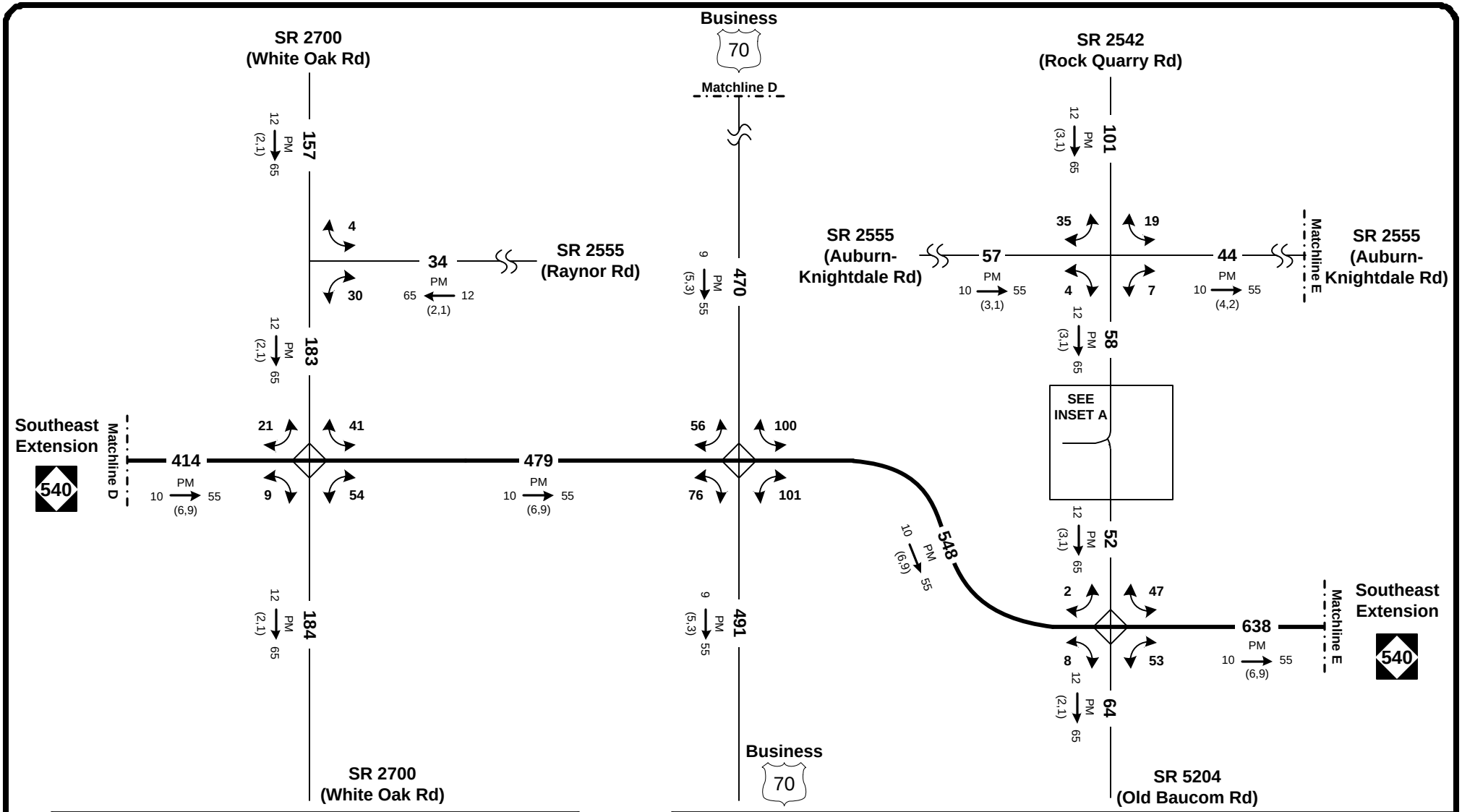
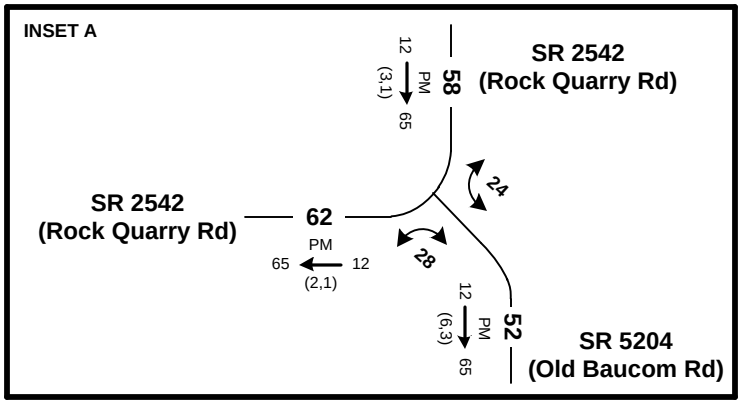
NTS

STIP: R2721, R-2828, R-2829	**WBS:** 37673.1.TA2, 35516.1.TA1, 35517.1.TA1
COUNTY: Wake/Johnston	**DIVISION:** 5/4
DATE: April 2014	
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 US 64 Bypass (Knightdale)	
PROJECT: Triangle Expressway Southeast Extension	**Figure 27.4**





2035 AVERAGE ANNUAL DAILY TRAFFIC

Build – DSA 12

LEGEND

- = Existing Roadway
- = Future Roadway
- ### = No. of Vehicles Per Day in 100s
- PM DHV → D (d,t)
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NTS

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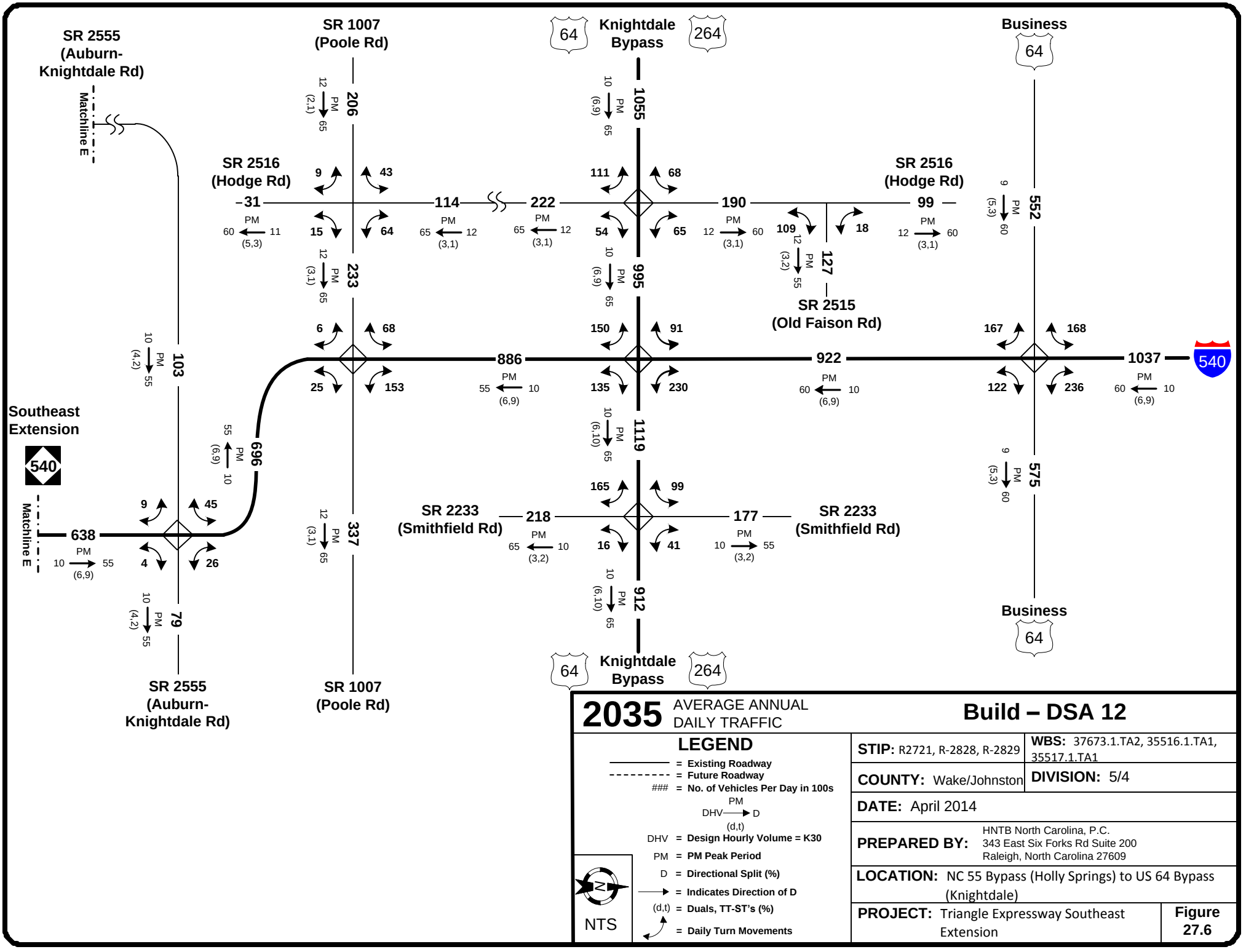
COUNTY: Wake/Johnston	**DIVISION:** 5/4
DATE: April 2014	
PREPARED BY: HNTB North Carolina, P.C. 343 East Six Forks Rd Suite 200 Raleigh, North Carolina 27609	
LOCATION: NC 55 Bypass (Holly Springs) to US 64 Bypass (Knightdale)	
PROJECT: Triangle Expressway Southeast Extension	**Figure 27.5**



2035 AVERAGE ANNUAL DAILY TRAFFIC

Build – DSA 12

LEGEND

- ——— = Existing Roadway
- - - - - - - - - = Future Roadway
- ### = No. of Vehicles Per Day in 100s
- PM / DHV → D / (d,t)
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COUNTY: Wake/Johnston

DIVISION: 5/4

DATE: April 2014

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 US 64 Bypass (Knightdale)

PROJECT: Triangle Expressway Southeast Extension

Figure 27.6

APPENDIX 6

NCDOT TRAFFIC NOISE ABATEMENT POLICY

NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

TRAFFIC NOISE ABATEMENT POLICY

Effective Date: July 13, 2011

Noise Policy Committee:

Jay Bennett, PE..... Roadway Design Unit
Drew Joyner, PE.....Human Environment Unit
Daniel Keel, PE.....NCDOT Operations
Mike Mills, PE.....NCDOT Division 7
Gregory A. Smith, PE.....Human Environment Unit

Technical Resource Team:

Missy Dickens Pair, PE.....Project Development & Environmental Analysis Branch
Ed Lewis.....Human Environment Unit
Joe Rauseo.....Human Environment Unit
Tracy Roberts, AICP.....North Carolina Turnpike Authority
Steve Walker.....Human Environment Unit

Sponsors:

Rob Ayers.....Federal Highway Administration
Felix Davila, PE.....Federal Highway Administration
Mike Fox.....Board of Transportation
Nina Szlosberg-Landis.....Board of Transportation

APPROVED BY:

3/9/2011
Date of Approval

John F. Sullivan, III, PE
Division Administrator
Federal Highway Administration

2/28/2011
Date of Approval

Gene Conti
Secretary of Transportation

2/22/11
Date of Approval

Robert A. Collier, Jr.
Chairman
Board of Transportation

Person Responsible for Policy:

Gregory A. Smith, PE
Traffic Noise & Air Quality Supervisor
Human Environment Unit
1598 Mail Service Center
Raleigh, North Carolina 27699-1598
(919) 707-6087
gasmith@ncdot.gov

INTRODUCTION

This document contains 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 (CFR) Part 772 as they relate to federal and 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 Analysis and Abatement Guidance 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 traffic 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

This policy applies to all "Type I" federal, state or federal-aid highway projects in the State of North Carolina, including federal projects that are administered by local public agencies. NCDOT does not participate in nor fund Type II (retrofit) projects along existing state 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 the state.

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 section 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 highway projects which are developed in conformance with this policy shall be deemed to be in accordance with the FHWA noise standards.

Projects let for construction on or after July 13, 2011 shall be reviewed under the criteria of this policy; however, the original date of public knowledge shall remain unchanged.

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).

After this date, the federal and state governments are no longer responsible for providing noise abatement measures for new development within the noise impact area of the proposed highway project. It is the responsibility of local governments and private landowners to ensure that noise-compatible designs are used for development permitted after the Date of Public Knowledge.

This policy applies only to developed land and to undeveloped land for which development is permitted before the project Date of Public Knowledge. The criteria (trigger date) for determining when undeveloped land is permitted for development is the approval date of a building permit for an individual lot or site.

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 for project alternative screening or for land use planning, but shall not be used for determining highway traffic noise impacts.

Traffic characteristics that would yield the loudest hourly equivalent traffic noise levels for the design year shall be used in predicting noise levels and assessing noise impacts.

Traffic noise prediction must adhere to all methodologies detailed in the NCDOT Traffic Noise Analysis and Abatement Guidance Manual.

NOISE IMPACT DETERMINATION

Traffic noise abatement for NCDOT highway projects is warranted and must be considered when traffic noise impacts are created by either of the following two conditions:

(a) 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 1, found on page 4 of this policy, OR

(b) The predicted traffic noise levels for the Design Year substantially exceed existing noise levels as defined in Table 2, found on page 5 of this policy.

A receptor is a discrete or representative location of 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.

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 each Activity Category listed in Table 1 that is present in the study area.

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.

Table 2	
Substantial Noise Level Increase Hourly Equivalent A-Weighted Sound Level (decibels (dB(A))	
Existing Noise Level[1] (Leq(h))	**Predicted Design Year Noise Level Increase[2] (Leq(h))**
50 or less	15 or more
51	14 or more
52	13 or more
53	12 or more
54	11 or more
55 or more	10 or more

1 Loudest hourly equivalent noise level from the combination of natural and mechanical sources and human activity usually present in a particular area.

2 Predicted hourly equivalent Design Year traffic noise level minus existing noise level.

ANALYSIS OF NOISE ABATEMENT MEASURES

When traffic noise impacts are identified and noise abatement is warranted, noise abatement measures shall be considered and evaluated for feasibility and reasonableness. All of the following conditions must be met in order for noise abatement 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.

Feasibility

The combination of acoustical and engineering factors considered in the evaluation of a noise abatement measure.

(a) Any receptor that receives a minimum noise level reduction of five dB(A) due to noise abatement measures shall be considered a benefited receptor. Noise reduction of five dB(A) must be achieved for at least one impacted receptor.

(b) Engineering feasibility of the noise abatement measure(s) 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 abatement measure.

(a) Viewpoints of the property owners and residents of all benefited receptors shall be solicited. One owner ballot and one resident ballot shall be solicited for each benefited receptor. Points per ballot shall be distributed in the following weighted manner:

- 3 points/ballot for benefited front row property owners
- 1 point/ballot for all other benefited property owners
- 1 point/ballot vote for all residents

Consideration of the noise abatement measure will continue unless a simple majority of all distributed points are returned that indicates the balloted voters do not want the abatement measure.

(b) The maximum allowable base quantity of noise walls and/or earthen berms per benefited receptor shall not exceed 2,500 ft^2 and 7,000 yd^3, respectively. Additionally, an incremental increase of 35 ft^2 for noise walls and 100 yd^3 for earthen berms shall be added to the base quantity per the average increase in dB(A) between existing and predicted exterior noise levels of all impacted receptors within each noise sensitive area, which is defined as a group of receptors that are exposed to similar noise sources. A base dollar value of $37,500 plus an incremental increase of $525 (as defined above) shall be used to determine reasonableness of buffer zones and noise insulation.

(c) A noise reduction design goal of at least 7 dB(A) must be evaluated for all front row receptors. At least one benefited front row receptor must achieve the noise reduction design goal of 7 dB(A) to indicate the noise abatement measure effectively reduces traffic noise.

Other Considerations

Prior to CE approval or issuance of a FONSI or ROD, NCDOT shall identify in environmental documents:

(a) Noise abatement measures that are feasible and reasonable,

(b) Noise impacts for which no abatement appears to be feasible and reasonable;

(c) Locations where noise impacts will occur, where noise abatement is feasible and reasonable, and the locations that have no feasible and reasonable abatement.

(d) Whether it is "likely" or "unlikely" that noise abatement measures will be installed for each noise sensitive area identified. "Likely" does not mean a firm commitment. The final decision on the installation of the abatement measures shall be made upon

completion of the project design, the public involvement process, concurrence with the NCDOT Policy, and FHWA approval.

Acceptable Noise Abatement Measures

The following noise abatement measures may be considered for incorporation into a project to reduce traffic noise impacts.

(a) Construction of noise barriers

(b) Traffic management measures

(c) Alteration of horizontal and vertical alignments

(d) Establishment of buffer zones

(e) Noise insulation of Activity Category D land use facilities listed in Table 1 on Page 4 of this policy.

Third Party Participation

(a) Third party funding of noise abatement measures cannot be used to make up the difference between the reasonable base quantity allowance and the actual quantity of noise abatement. Third party funding is allowed only by public entities, and can only be used to pay for additional features such as landscaping and aesthetic treatments for noise barriers that meet cost-effectiveness criteria.

(b) Traditional highway construction resources pay for required noise abatement measures. Should a local government request that materials be used that are more costly than those 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 abatement measure deemed not reasonable by NCDOT, an abatement measure 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 engineering, actual construction and 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 abatement design begins and payment shall be made to NCDOT before project construction begins.

Quantity Averaging

NCDOT will utilize abatement measure quantity averaging among all noise sensitive areas within the same Activity Category in Table 1 that are exposed to a common noise environment, i.e., similar noise sources and levels, traffic volumes, traffic mix, speed and topographic features, if:

(a) No single common noise environment exceeds two times the base quantity reasonableness criteria (e.g., two times 2,500 square feet, or two times 7,000 cubic yards); and,

(b) Collectively, all common noise environments being averaged do not exceed the base quantity reasonableness criteria.

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 measures in attenuating traffic noise and the types of noise abatement measures that may be considered. The concerns of the community shall be a major consideration in reaching a decision on the abatement measures to be provided.

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 assistance to local jurisdictions in the development of local noise controls, when requested. NCDOT will advocate the planning, design and construction of noise-compatible development and encourage its practice among planners, building officials, developers and others.

All noise-sensitive areas and any known noise abatement measures will be presented and discussed at the Design Public Hearing and Design Public Meetings.

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 abatement measures 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) Abatement measures 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.