Appendix F

NOISE ANALYSIS TECHNICAL MEMORANDUM

Jennings County Indiana • Des. No. 1173374 • July 2013

US 50 NORTH VERNON BYPASS - EAST
NOISE ANALYSIS TECHNICAL MEMORANDUM

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EXECUTIVE SUMMARY

A Noise Impact Analysis was conducted for the U.S. 50 North Vernon Bypass – East Project in Jennings County, Indiana in the spring of 2013. This study analyzed two alignments, Alternative 4NB2 and Alternative 6D. The Federal Highway Administration (FHWA) Traffic Noise Model (TNM) Version 2.5 was used to model proposed noise levels. Measured in A-weighted decibels (dBA), existing noise levels in the corridor range from 41.2 dBA to 57.7 dBA. Design year (2030) modeled traffic generated noise levels for both alternatives range from 46.5 dBA to 63.8 dBA. Because no design year noise levels have been predicted to approach or exceed the FHWA Noise Abatement Criteria (NAC) for Category B or C the project has not been found to have a traffic noise impact. Based on the Indiana Department of Transportation (INDOT) *Traffic Noise Analysis Procedure,* the feasibility and reasonableness of a noise barrier was not evaluated because there were no impacted receivers. During construction of the project, noise from construction activities may intermittently dominate the noise environment in the immediate area of construction.

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LIST OF ABBREVIATED TERMS

CFR	Code of Federal Regulations
dB	Decibel
dBA	A-weighted Decibels
EA	Environmental Assessment
FHWA	Federal Highway Administration
INDOT	Indiana Department of Transportation
Leq(h)	1-Hour A-weighted Equivalent Sound Level
NAC	Noise Abatement Criteria
NEPA	National Environmental Policy Act
TNM	FHWA Traffic Noise Model Version 2.5

1.0 INTRODUCTION

1.1 Purpose of the Noise Analysis Technical Memorandum

The purpose of this Noise Analysis Technical Memorandum is to evaluate noise impacts and abatement under the requirements of Title 23, Part 772 of the Code of Federal Regulations (23 CFR 772) "Procedures for Abatement of Highway Traffic Noise" for the US 50 North Vernon Bypass - East Project. 23 CFR 772 provides procedures for preparing operational and construction noise studies and evaluating noise abatement considered for federal and federal-aid highway projects. According to 23 CFR 772.3, all highway projects that are developed in conformance with this regulation are deemed to be in conformance with Federal Highway Administration (FHWA) noise standards.

The Indiana Department of Transportation (INDOT) *Traffic Noise Analysis Procedure* (INDOT Noise, 2011) establishes INDOT policy for implementing 23 CFR 772 in Indiana. The *Traffic Noise Analysis Procedure* outlines the requirements for analyzing highway traffic noise. Noise impacts associated with this project) will be included in the project's Environmental Assessment (EA), in compliance with the National Environmental Policy Act (NEPA).

1.2 Project Purpose and Need

The purpose of this project is to seek a cost-effective solution to the transportation problems in the U.S. 50/North Vernon area.

The purpose of this project is to resolve four documented transportation problems in the U.S. 50/North Vernon area. Specifically, the project would:

- Reduce congestion along U.S. 50 and S.R. 3/S.R. 7 through and around North Vernon;
- Provide a safer transportation facility for both truck and passenger vehicles through and around North Vernon;
- Provide an efficient transportation link between the existing and growing industrial area on the north side of North Vernon to U.S. 50; and
- Support state and local transportation planning.

2.0 METHODOLOGY

2.1 Fundamentals of Traffic Noise

The human ear perceives noise as a form of vibration that causes pressure variations. The ear is sensitive to this variation and perceives it as sound. The intensity of these pressure variations causes the ear to discern different levels of loudness. These pressure differences are commonly measured in decibels (dB). The decibel scale that is audible to the human ear spans about 140 decibels. A dB level of zero is barely audible to the human ear while 140 dB is an unrecognizable sound which is painful to the listener. The decibel scale is a logarithmic representation of the actual sound pressure variation. This means that a 26 percent change in energy level only changes the sound level 1 dB. It would be possible

for the human ear to detect this difference only in a laboratory. Increasing the energy level 100 percent would result in a 3 dB increase, which would be barely perceptible outdoors. A tripling in sound energy level would result in a clearly noticeable change of 5 dB in the sound level. An increase of ten times the energy level would result in a 10 dB increase in the sound level, which would be perceived as a doubling of the sound level.

The human ear has a non-linear sensitivity to noise. To account for this in noise measurement, electronic weighting scales are used to define the relative loudness of different frequencies. The "A" weighting scale, expressed as dBA, is widely used in environmental work because it most nearly matches the non-linear nature of human hearing.

The measurement that is most commonly used to express dBA levels for traffic noise is the Hourly Equivalent Sound Level [$L_{eq}(h)$]. The $L_{eq}(h)$ describes a noise-sensitive receptor's cumulative exposure from all noise-producing events over a 1-hour period.

Traffic noise studies for road projects in Indiana are performed in accordance with 23 CFR 772 and INDOT's *Traffic Noise Analysis Procedure.* There are five main steps comprising traffic noise studies:

1. identify noise sensitive receptors,
2. determine existing ambient peak noise levels,
3. predict future peak noise levels,
4. identify traffic noise impacts, and
5. evaluate mitigation measures for sensitive receptors where traffic noise impacts occur.

Traffic-generated $L_{eq}(h)$ noise levels were predicted for the design year (2030) using FHWA's Traffic Noise Model (TNM) Version 2.5, a computer simulation model. The model takes into account anticipated traffic volumes, vehicle types, vehicle speeds, roadway geometry, and sensitive receptor locations to calculate future traffic-generated noise levels. Noise levels were predicted for the outdoor living areas at each sensitive receptor using the worst traffic conditions likely to occur on a regular basis during the design year. Future noise levels were predicted for Alternative 4NB2 and Alternative 6D (see Tables C-1)

According to FHWA and INDOT noise policies, a traffic noise impact occurs when either of the following conditions result at a sensitive receptor:

- The future predicted $L_{eq}(h)$ noise level approaches (is within 1 dBA) or exceeds the Noise Abatement Criteria (NAC) shown in Table 1.
- The future predicted $L_{eq}(h)$ noise level substantially exceeds (by 15 or more dBA) the existing $L_{eq}(h)$ noise level. Traffic-generated noise level increases of 15 dBA or more are typically associated with roadway improvements on a new alignment.

2.2 Methods for Identifying Land Uses and Selecting Noise Measurement and Modeling Receptor Locations

A field investigation was conducted to identify land uses that could be subject to traffic and construction noise impacts from the proposed project. Land uses in the project area were categorized by land use type, Activity Category as defined in Table 1, and the extent of frequent human use. As stated in the *Traffic Noise Analysis Procedure,* noise abatement is only considered for areas of frequent human use that would benefit from a lowered noise level. Although all developed land uses are evaluated in this analysis, the focus is on locations of frequent human use that would benefit from a lowered noise level. Accordingly, this impact analysis focuses on locations with defined outdoor activity areas, such as residential backyards and common use areas at recreational facilities.

Table 1
Noise Abatement Criteria in 23 CFR 772

Activity Category	***$L_{Aeq}(h)$***	***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	67	Exterior	Residential.
C	67	Exterior	Active sport areas, amphitheaters, auditoriums, campgrounds, cemeteries, day care centers, hospitals, libraries, medical facilities, parks, picnic areas, places of worship, playgrounds, public meeting rooms, public or nonprofit institutional structure, radio stations, recording studios, recreation areas, Section 4(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 structure, radio studios, recording studios, schools, and television studios.
E	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.

2.3 Traffic Noise Level Prediction Methods

Traffic noise levels were predicted using TNM 2.5. Traffic noise was evaluated under design year conditions for both alternatives. Loudest-hour traffic volumes, vehicle classification percentages, and traffic speeds under design-year (2030) conditions were developed for input into the model. The loudest hour traffic volumes, vehicle classification percentages, and traffic speeds under design-year (2030) conditions were developed for input into the traffic noise model. The loudest hour is generally characterized by free-flowing traffic at the highway design speed (i.e., Level of Service [LOS] C or better). Peak traffic volumes for the new roadway alternatives are not predicted to exceed LOS B, therefore design hour traffic volumes were used in this analysis. Hourly traffic volumes used in this study were taken from the *Indiana Department of Transportation (Deliberative) US 50 Analysis Update Report* (INDOT Traffic 2011).

2.4 Methods for Identifying Traffic Noise Impacts and Consideration of Abatement

Traffic noise impacts are considered to occur at receptor locations where predicted design-year noise levels are at least 15 dBA greater than existing noise levels, or where predicted design year noise levels approach or exceed the NAC for the applicable activity category. Where traffic noise impacts are identified, noise abatement must be considered for reasonableness and feasibility as required by 23 CFR 772 and the *Traffic Noise Analysis Procedure.*

According to the *Traffic Noise Analysis Procedure,* abatement measures are considered acoustically feasible if a minimum noise reduction of 5 dBA at a majority of impacted receptors is predicted with implementation of the abatement measures. Other factors that affect feasibility include topography, access requirements for driveways and ramps, presence of local cross streets, utility conflicts, other noise sources in the area, and safety considerations. The overall reasonableness of noise abatement is determined by considering factors such as:

- Cost;
- Absolute predicted noise levels;
- Predicted future increase in noise levels;
- Expected noise abatement benefits;
- Achieve a 7dBA reduction for benefitted first row receptors in the design year;
- Build date of surrounding residential development along the highway;
- Environmental impacts of abatement construction;
- Opinions of affected residents;
- Input from the public and local agencies; and
- Social, legal, and technological factors.

Details of this evaluation are provided in Section 4.2.

3.0 EXISTING NOISE ENVIRONMENT

3.1 Existing Land Uses

A field investigation was conducted on March 14, 2013 to identify land uses that could be subject to traffic and construction noise impacts from the proposed project. Single-family residences, light industrial warehouses, manufacturing facilities, a state forest, a golf course, agricultural fields, unpermitted land likely to be developed, and a church were identified as Activity Category B, C, F and G land uses in the project area. While Activity Category G land uses exist in the project area no areas of frequent outdoor use were identified.

As required by the *Traffic Noise Analysis Procedure,* although all developed land uses are evaluated in this analysis, noise abatement is only considered for areas of frequent human use that would benefit from a lowered noise level. Accordingly, this impact analysis focuses on locations with defined outdoor activity areas, such as residential backyards and common use areas at other facilities.

For this project one receptor was modeled for a single corresponding dwelling unit or area of frequent outdoor use.

To determine the number of receptors appropriate for Selmier State Forest and St. Anne's Golf course the algorithm provided in the *Traffic Noise Analysis Procedure* was used. This algorithm converts total usage to equivalent receptors. The daily number of users for Selmier State forest was obtained through correspondence with Mr. Rob McGriff, the District Forester. The daily number of users for St. Anne's Golf Course was obtained through correspondence with Mr. Greg Bishop, the course general manager. The average daily users input into the algorithm for Selmier State Forest and St. Anne's Golf Course were 20 and 50, respectively.

Land uses in the project area have been grouped into a series of numbered Noise Sensitive Areas (NSAs) that are identified in Appendix A.

- NSA 1 is located on the east and west sides of SR 3 at the north end of the project. This area is generally flat. This area consists of several residences and one church.
- NSA 2 is located north of both alternatives, on either side of CR 75 W. This area is generally flat. This area consists of light industrial land uses.
- NSA 3 is located in the vicinity of the intersection of CR 250 N and CR 20 W. This area is generally rolling terrain. This area consists of rural residential land uses with interspersed woodlots.
- NSA 4 is located on the east and west side of the Vernon Fork of the Muscatatuck River in the middle of the project area. This area is generally rolling and is divided by the river. This area is entirely rural residential.
- NSA 5 is located in the vicinity of the intersection of CR 75 E and US 50. This area is generally flat. This area is predominately rural residential with one commercial property (a storage facility) and one church.
- NSA 6 is located both north and south of CR 350 N. This NSA is also located both north and south of the proposed Alternative 4NB2. This area is generally flat. This area is predominately

rural residential but also contains St. Anne's Golf Course to the north and Selmier State Forest to the south.

- NSA 7 is located in the northeast corner of the project area in the area south of CR 350 N and north of the Vernon Fork of the Muscatatuck River. This area is generally rolling and is divided by ravines associated with Unnamed Tributaries of the river. This area is entirely rural residential.
- NSA 8 is located in the vicinity of the intersection of CR 300 N and CR 175 E, on both sides of the proposed Alternative 4NB2. This area is generally flat. This area is predominately rural residential and agricultural.
- NSA 9 is located roughly between CR 175 E and CR 275 E along the existing US 50. This area is generally flat. Residential, commercial and agricultural land uses occur in this area.

3.2 Noise-Sensitive Receptors and Existing Noise Conditions

Noise-sensitive receptors are those locations where activities that could be affected by increased traffic noise levels occur (e.g., residences, motels, churches, schools, parks and libraries). Existing noise levels are determined for the most commonly used outdoor living areas at sensitive receptors. For residences, this is typically the backyard or front porch. Noise-sensitive receptors are sporadic throughout the project corridor (see Appendix A). A total of 82 sensitive receptors representing 82 equivalent residential units or areas of frequent outdoor use were identified in the project area for analysis as part of the noise study. These receptors include all Category B, C and F land uses located within approximately 500 feet of the alignments.

Existing noise levels at representative receptors throughout the corridor ranged from 41.2 to 57.7 dBA with a corridor average of 46.1 dBA. Table 2 summarizes the results of the existing noise measurements taken. Site conditions for each measurement are included on the field survey forms in Appendix D.

Table 2
Summary of Short-Term Measurements

Position	Address	Land Use	Start Time	Duration (minutes)	Measure $D_{Leq(h)}$
ST1	3280 N. State Hwy 3	Church	9:16 am	20	57.7
ST2	3355 N. 4th Street	Commercial	10:11 am	20	42.3
ST3	485 W CR 250N	Residential	10:45 am	20	44.7
ST4	N. Base Road	Residential	12:32 pm	20	41.2
ST5	1030 E CR 250N	Residential	3:48 pm	20	51.0
ST6	2015 N CR 175E	Residential	2:50 pm	20	47.9

These short term measurements were conducted using a Larson-Davis Model LXT sound level meter (serial number 2848). Measurements were taken over a 20-minute period at each site. Calibration of the meter was checked before and after field work using a Larson-Davis Model Cal 200 (serial number 8536). Noise meter calibration data is included in Appendix F.

TNM 2.5 was used to compare measured traffic noise levels to modeled noise levels at the measurement locations. This comparison used measurements ST1 and ST6 because these measurement sites were located adjacent to roadways that had traffic in sufficient quantity for input into the TNM 2.5 noise model. As shown in Table 3, comparing the modeled and measured noise levels using observed traffic counts confirms the applicability of the model to the study area. Modeled noise levels are within 2 decibels of measured noise levels at both locations. Existing traffic noise levels and predicted traffic noise levels for the existing condition are within +/- 3 dBA, indicating reasonable correlation. Therefore, this model is validated per 23 CFR 722.11 (d)(2), and no calibration of the model was made.

Modeled existing traffic generated noise levels do not account for ambient background noise, which was the dominant noise source for existing measurements ST2, ST3, ST4, and ST5. Low observed traffic counts on the nearest roadway resulted in modeled existing traffic noise levels lower than existing measured levels.

Table 3
Comparison of Measured to Predicted Sound Levels in the TNM Model

Measurement Position	Measured Sound Level (dBA)	Predicted Sound Level (dBA)	Measured minus Predicted (dBA)
ST1	57.7	58.1	-0.4
ST6	47.9	46.6	1.3

4.0 FUTURE NOISE ENVIRONMENT, IMPACTS, AND CONSIDERED ABATEMENT

4.1 Future Noise Environment and Impacts

As described in Section 2.3, these predictions utilize forecasted design hour traffic conditions to ensure a conservative estimate of noise levels for the loudest noise hour. The comparison to existing conditions is included in the analysis to identify traffic noise impacts under 23 CFR 772.

Predicted noise levels for Category B and C receptors for Alternatives 4NB2 and 6D range from 47.0 dBA to 63.8 dBA and 46.5 dBA to 63.8 dBA, respectively. Modeling results, shown in Table C-1 in Appendix C indicate that predicted traffic noise levels for the design-year with-project conditions do not approach or exceed the NAC of 67 dBA $L_{eq}(h)$. Based on the existing ambient noise levels and predicted future noise levels at nearby receptors, no receptors are predicted to experience a substantial noise increase.

As shown in Appendix A, undeveloped areas adjacent to the corridor are not predicted to approach or exceed the NAC based on the 66 dBA contour line.

4.2 Noise Abatement Analysis

In accordance with 23 CFR 772, noise abatement is considered where noise impacts are predicted in areas of frequent human use that would benefit from a lowered noise level. As no impacted receiver was identified as part of this project, a noise abatement analysis was not conducted.

5.0 CONSTRUCTION NOISE

During construction of the project, noise from construction activities may intermittently dominate the noise environment in the immediate area of construction.

Table 4 summarizes noise levels produced by construction equipment that is commonly used on roadway construction projects. Construction equipment is expected to generate noise levels ranging from 70 to 90 dBA at a distance of 50 feet, and noise produced by construction equipment would be reduced over distance at a rate of approximately 6 dBA per doubling of distance.

Table 4
Construction Equipment Noise

Equipment	Maximum Noise Level (dBA at 50 feet)
Scrapers	89
Bulldozers	85
Heavy Trucks	88
Backhoe	80
Pneumatic Tools	85
Concrete Pump	82

Source: U.S. Environmental Protection Agency 1971.

No adverse noise impacts from construction are anticipated because construction noise would be short-term and intermittent. Measures to minimize the temporary impacts will include requiring equipment to have sound-control devices that are no less effective than those provided on the original equipment and requiring all equipment to be muffled.

6.0 STATEMENT OF LIKELIHOOD

Based on the studies thus far conducted for U.S. 50 North Vernon Bypass – East Project, the State of Indiana has not identified any locations where noise abatement is likely. Noise abatement was not evaluated as no receivers were found to be impacted by this project. A reevaluation of the noise analysis will occur during final design. If during final design it is determined that conditions have changed such that noise abatement is feasible and reasonable, abatement measures might be provided. The final decision on the installation of any abatement measure(s) will be made upon the completion of the project's final design and the public involvement processes.

7.0 REFERENCES

23 CFR 772 (2011). "Procedures for Abatement of Highway Traffic Noise and Construction Noise." Accessed June 21, 2011.

Indiana Department of Transportation (INDOT, Noise). 2011. *Traffic Noise Analysis Procedure.*

Indiana Department of Transportation (INDOT, Traffic). 2011. *U.S. 50 Analysis Update Report.*

U.S. Environmental Protection Agency, “Noise from Construction Equipment and Operations, Building Equipment and Home Appliances,” NTID300.1, December 31, 1971.

APPENDIX A

MEASUREMENT AND MODELING LOCATIONS

0 100 200 400 Feet

1 inch = 200 feet

Legend

- Centerline - 4BN2
- ROW Permanent - 4NB2
- Short Term Measurements
- Receivers
- US 50 Bypass - West Right-of-way

Appendix A: SHEET 1

Measurement and Modeling Locations: Alternative 4NB2

0 100 200 400 Feet

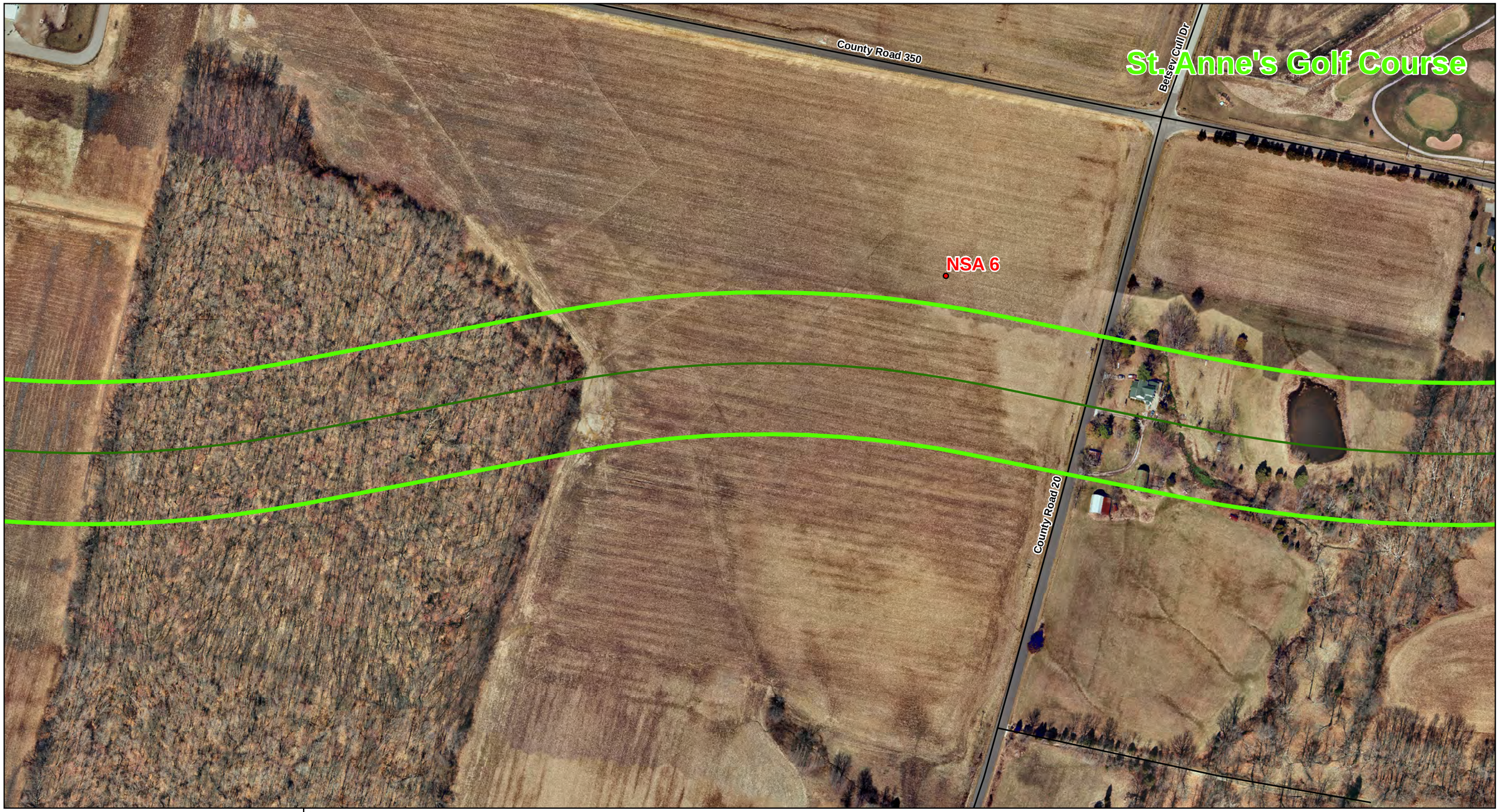
1 inch = 200 feet

Legend

- Centerline - 4BN2
- ROW Permanent - 4NB2
- Short Term Measurements
- Receivers
- US 50 Bypass - West Right-of-way

Appendix A: SHEET 2

Measurement and Modeling Locations: Alternative 4NB2



0 100 200 400 Feet

1 inch = 200 feet

Legend

- Centerline - 4BN2
- ROW Permanent - 4NB2
- Short Term Measurements
- Receivers
- US 50 Bypass - West Right-of-way

Appendix A: SHEET 3

Measurement and Modeling Locations: Alternative 4NB2

0 100 200 400 Feet

1 inch = 200 feet

Legend

- Centerline - 4BN2
- ROW Permanent - 4NB2
- Short Term Measurements
- Receivers
- US 50 Bypass - West Right-of-way

Appendix A: SHEET 4

Measurement and Modeling Locations: Alternative 4NB2

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0 100 200 400 Feet

1 inch = 200 feet

Legend

- Centerline - 4BN2
- ROW Permanent - 4NB2
- Short Term Measurements
- Receivers
- US 50 Bypass - West Right-of-way

Appendix A: SHEET 5

Measurement and Modeling Locations: Alternative 4NB2

PARSONS

0 100 200 400 Feet

1 inch = 200 feet

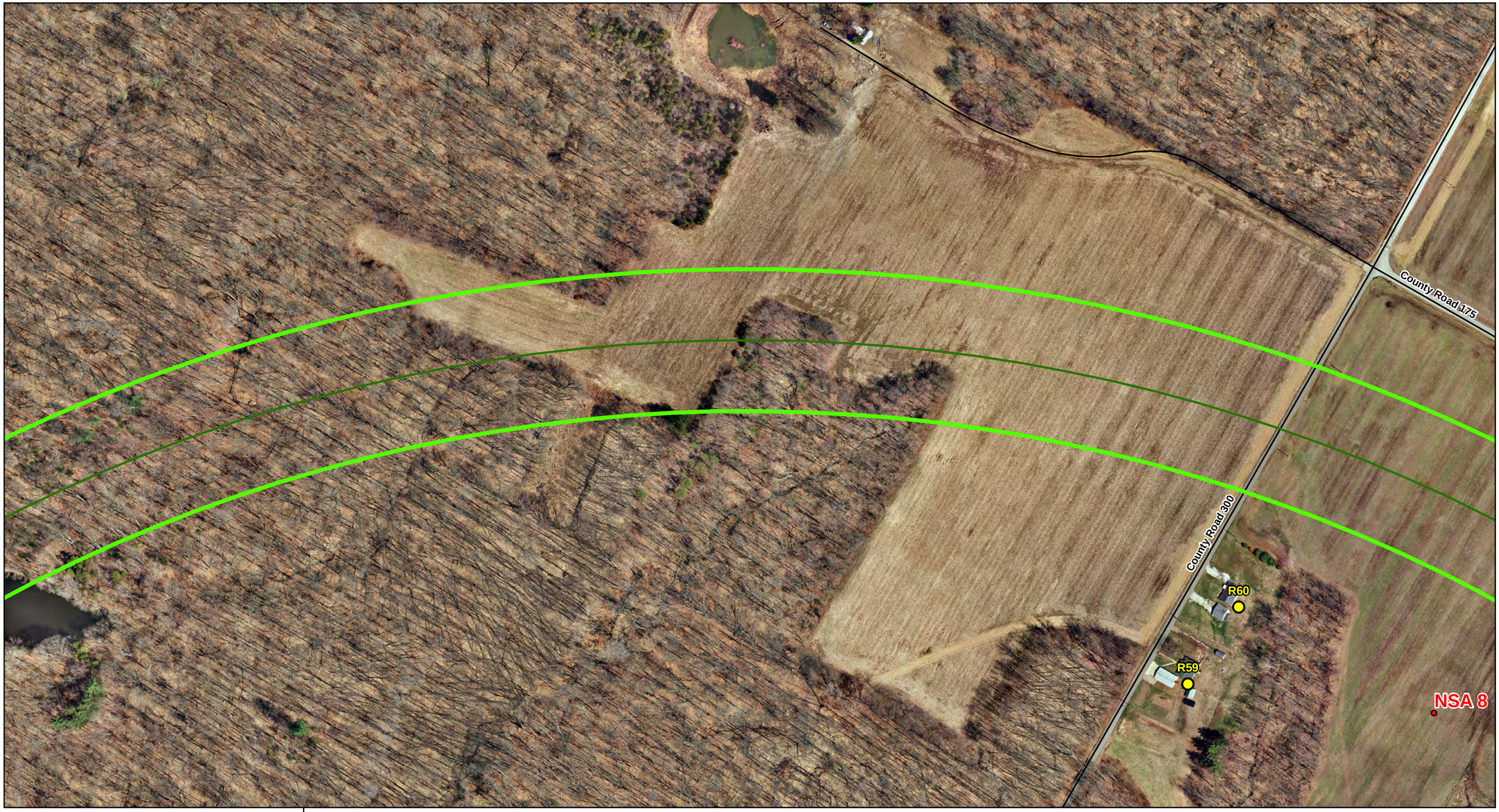
Legend

- Centerline - 4BN2
- ROW Permanent - 4NB2
- Short Term Measurements
- Receivers
- US 50 Bypass - West Right-of-way

Appendix A: SHEET 6

Measurement and Modeling Locations: Alternative 4NB2

PARSONS



0 100 200 400 Feet

1 inch = 200 feet

Legend

- Centerline - 4BN2
- ROW Permanent - 4NB2
- Short Term Measurements
- Receivers
- US 50 Bypass - West Right-of-way

Appendix A: SHEET 7

Measurement and Modeling Locations: Alternative 4NB2

PARSONS

0 100 200 400 Feet

1 inch = 200 feet

Legend

- Centerline - 4BN2
- ROW Permanent - 4NB2
- Short Term Measurements
- Receivers
- US 50 Bypass - West Right-of-way

Appendix A: SHEET 8

Measurement and Modeling Locations: Alternative 4NB2

PARSONS

0 100 200 400 Feet

1 inch = 200 feet

Legend

- Centerline - 4BN2
- ROW Permanent - 4NB2
- Short Term Measurements
- Receivers
- US 50 Bypass - West Right-of-way

Appendix A: SHEET 9

Measurement and Modeling Locations: Alternative 4NB2

0 100 200 400 Feet

1 inch = 200 feet

Legend

- Centerline - 4BN2
- ROW Permanent - 4NB2
- Short Term Measurements
- Receivers
- US 50 Bypass - West Right-of-way

Appendix A: SHEET 10

Measurement and Modeling Locations: Alternative 4NB2

0 100 200 400 Feet

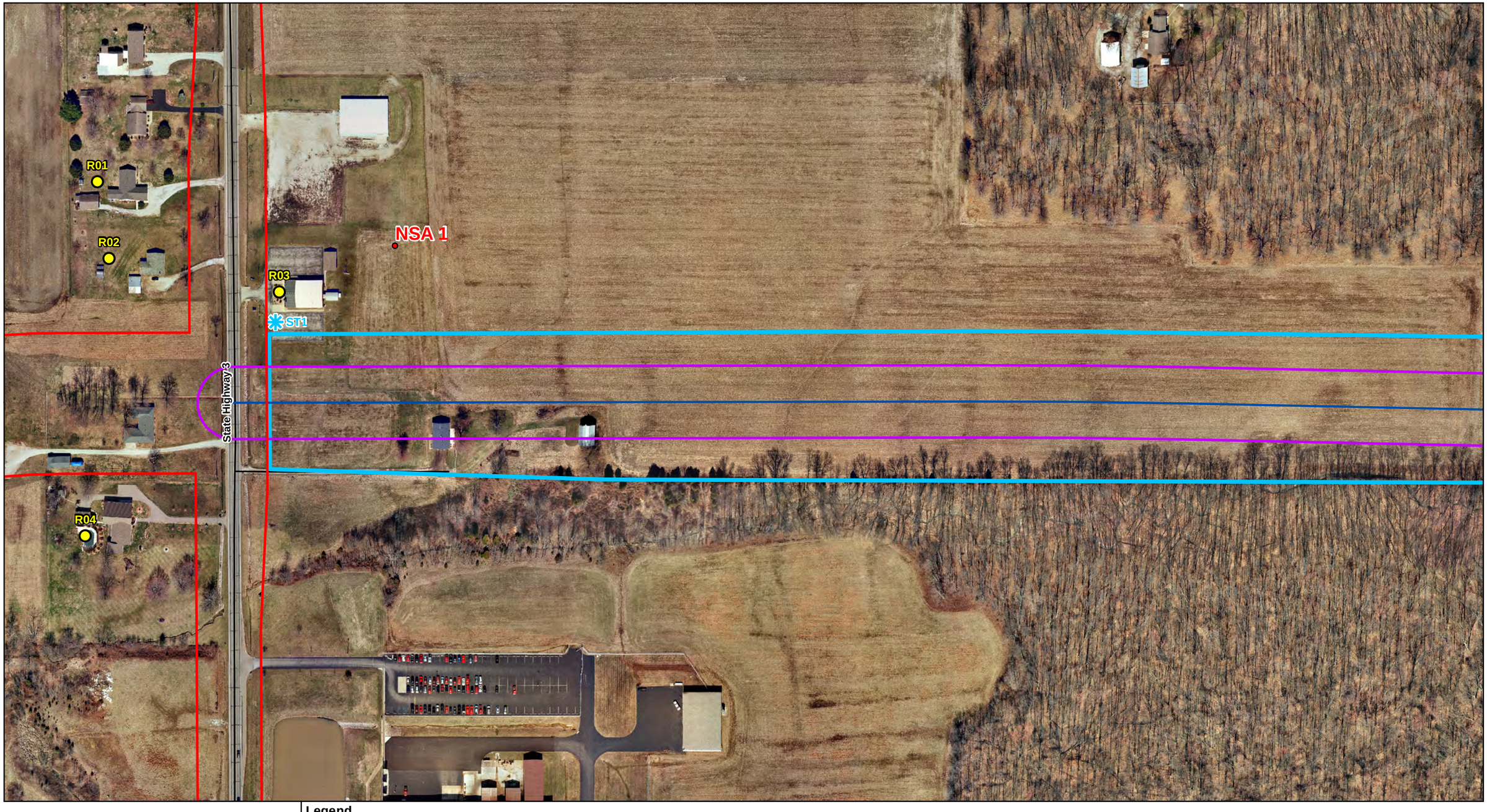
1 inch = 200 feet

Legend

- Centerline - 4BN2
- ROW Permanent - 4NB2
- Short Term Measurements
- Receivers
- US 50 Bypass - West Right-of-way

Appendix A: SHEET 11

Measurement and Modeling Locations: Alternative 4NB2



0 100 200 400 Feet

1 inch = 200 feet

Legend

- Centerline - 6D
- ROW Permanent - 6D
- Short Term Measurements
- Receivers
- 66dBA Contour Line
- US 50 Bypass - West Right-of-way

Appendix A: SHEET 12

Measurement and Modeling Locations: Alternative 6D

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0 100 200 400 Feet

1 inch = 200 feet

Legend

- Centerline - 6D
- ROW Permanent - 6D
- Short Term Measurements
- Receivers
- 66dBA Contour Line
- US 50 Bypass - West Right-of-way

Appendix A: SHEET 13

Measurement and Modeling Locations: Alternative 6D

0 100 200 400 Feet

1 inch = 200 feet

Legend

- Centerline - 6D
- ROW Permanent - 6D
- Short Term Measurements
- Receivers
- 66dBA Contour Line
- US 50 Bypass - West Right-of-way

Appendix A: SHEET 14

Measurement and Modeling Locations: Alternative 6D

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0 100 200 400 Feet

1 inch = 200 feet

Legend

- Centerline - 6D
- ROW Permanent - 6D
- Short Term Measurements
- Receivers
- 66dBA Contour Line
- US 50 Bypass - West Right-of-way

Appendix A: SHEET 15

Measurement and Modeling Locations: Alternative 6D

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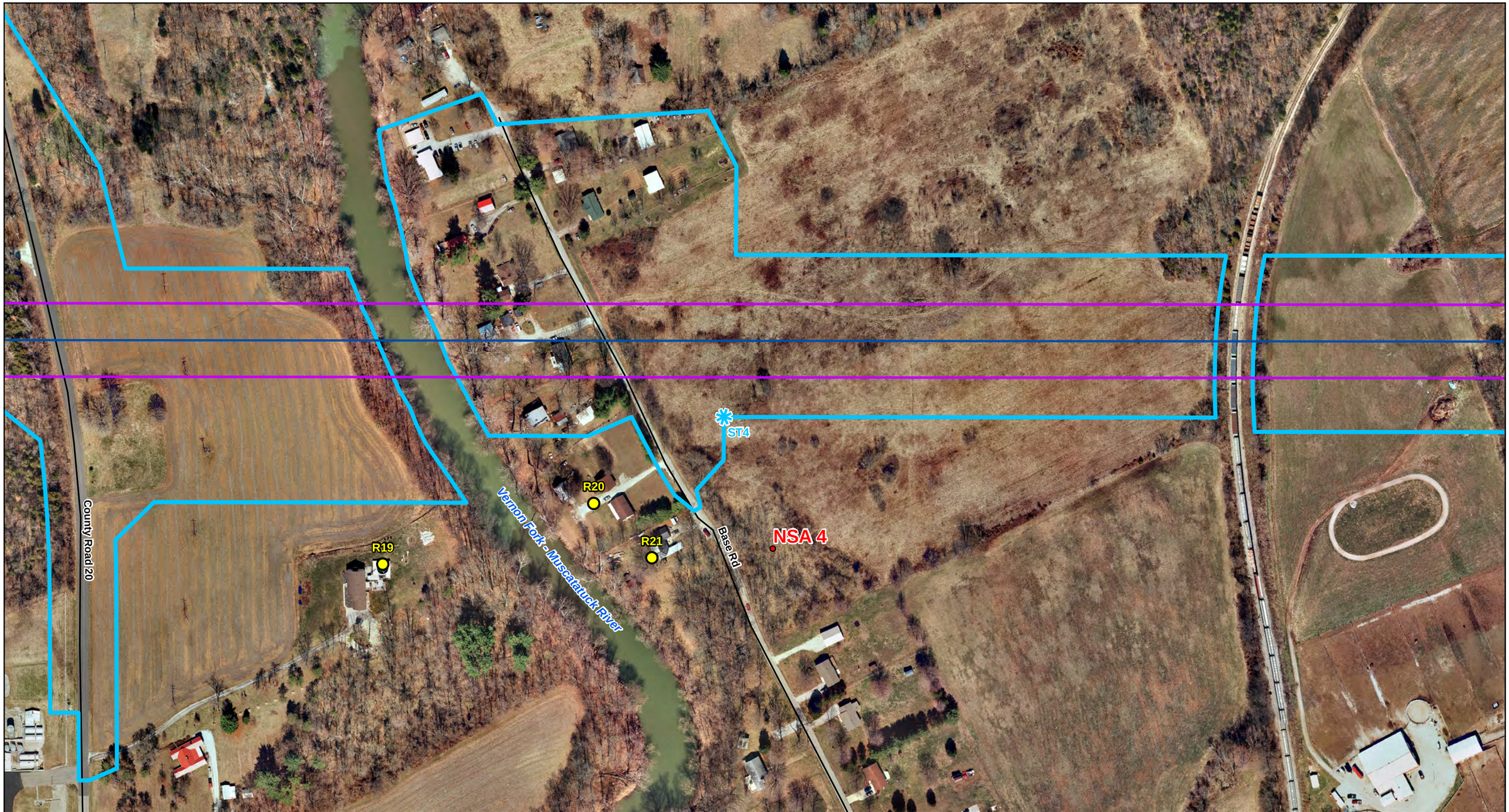
U.S. 50 North Vernon Bypass – East
Des. No. 1173374



0 100 200 400 Feet

1 inch = 200 feet

Legend

- Centerline - 6D
- ROW Permanent - 6D
- Short Term Measurements
- Receivers
- 66dBA Contour Line
- US 50 Bypass - West Right-of-way

Appendix A: SHEET 16

Measurement and Modeling Locations: Alternative 6D

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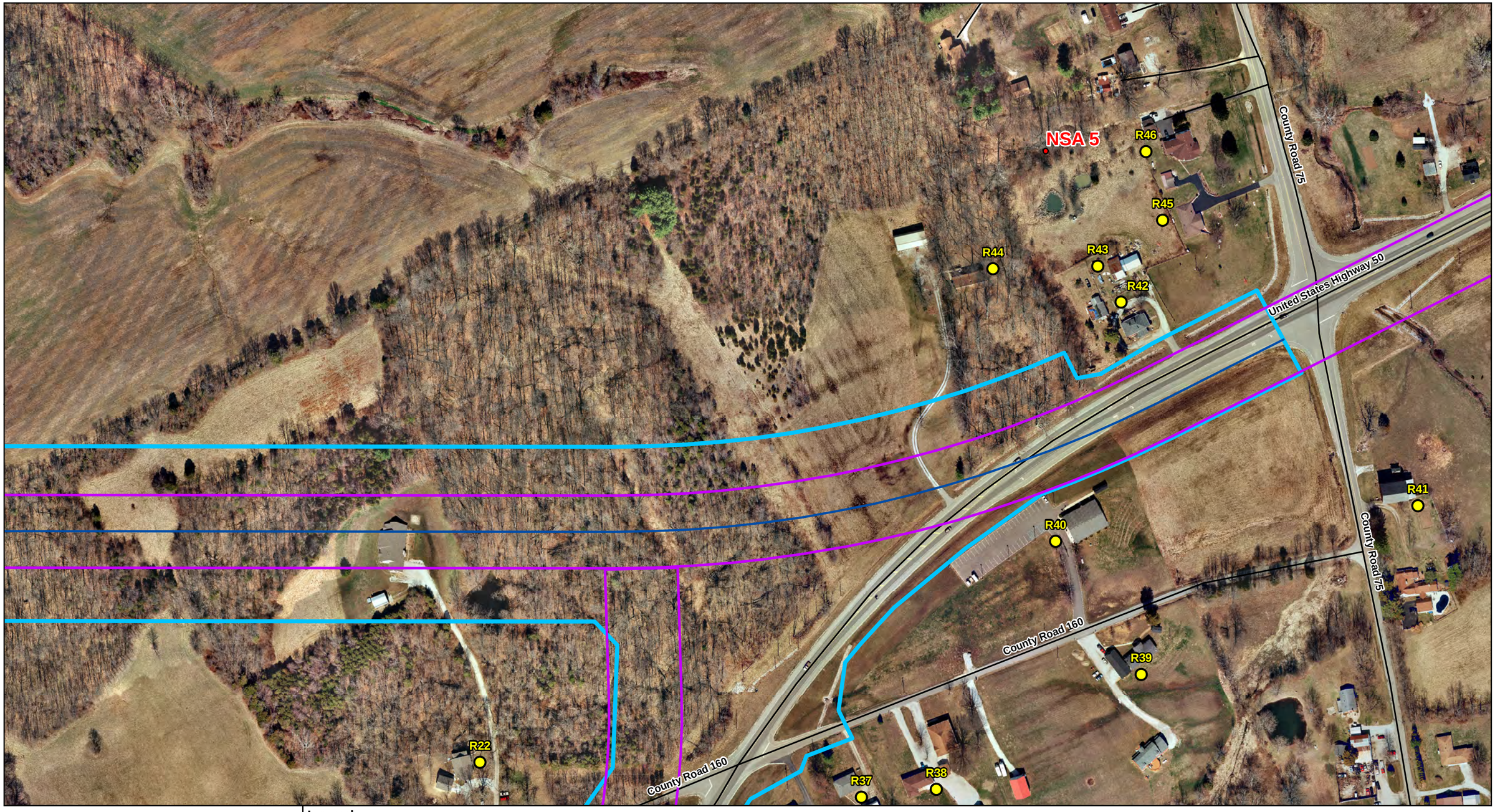

0 100 200 400 Feet

1 inch = 200 feet

Legend

- Centerline - 6D
- ROW Permanent - 6D
- Short Term Measurements
- Receivers
- 66dBA Contour Line
- US 50 Bypass - West Right-of-way

Appendix A: SHEET 17

Measurement and Modeling Locations: Alternative 6D

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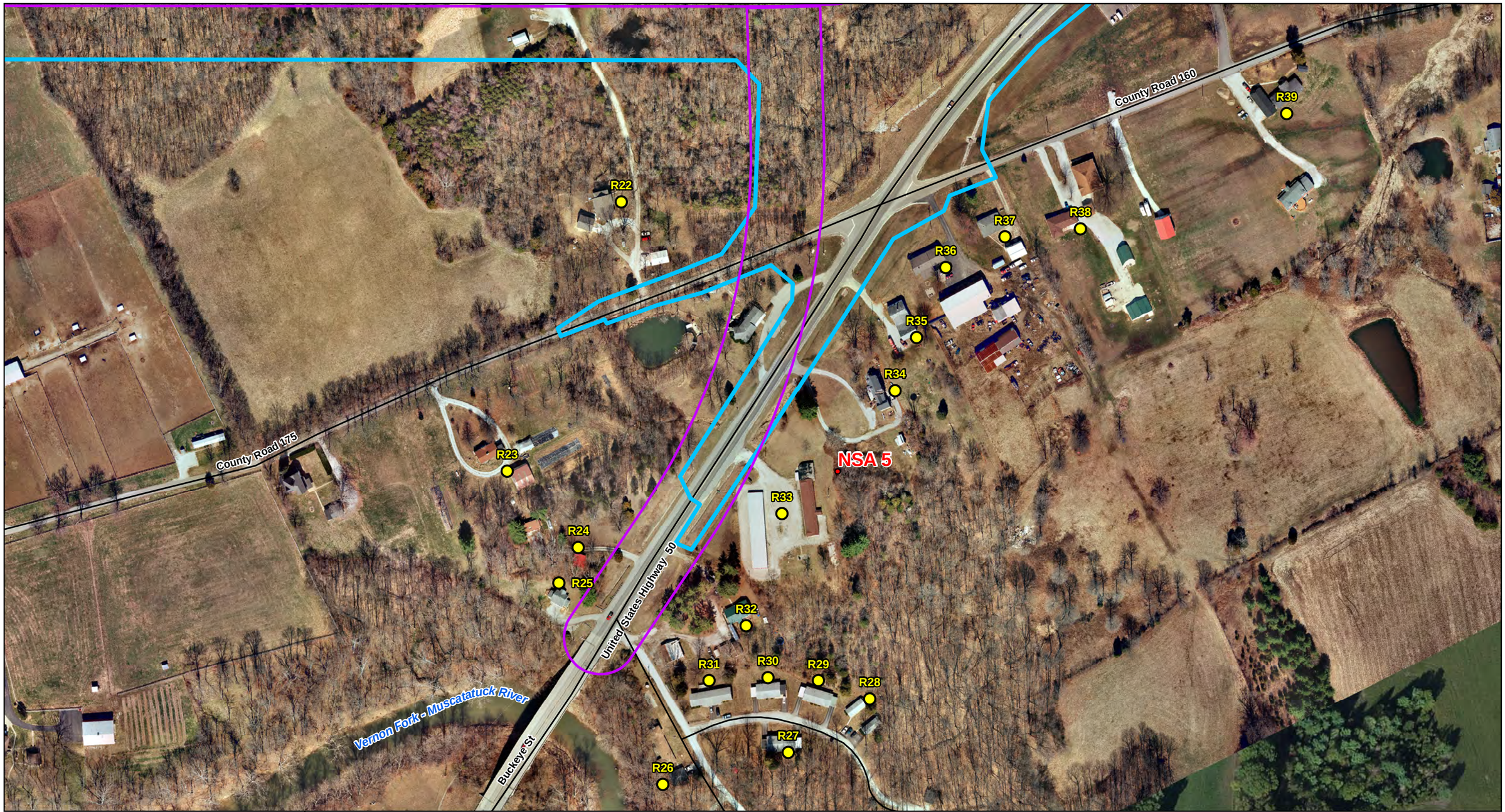

0 100 200 400 Feet

1 inch = 200 feet

Legend

- Centerline - 6D
- ROW Permanent - 6D
- Short Term Measurements
- Receivers
- 66dBA Contour Line
- US 50 Bypass - West Right-of-way

Appendix A: SHEET 18

Measurement and Modeling Locations: Alternative 6D

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APPENDIX B

TRAFFIC DATA

Table B-1, Traffic Data for Proposed Conditions

Traffic Direction	Segment	# of Lanes	Total Volume (2030) AADT	DHV %	Peak Hour Auto Volume	Peak Hour Heavy Truck Volume	Speed (AT/HT)
Mainline							
Eastbound	SR 3 to CR 75 W	1	1,322	10	91	41	55/50
Eastbound	CR 75 W to CR 20 W	1	1,309	10	90	41	55/50
Eastbound	CR 20 W to Existing US 50	1	1,206	10	83	37	55/50
Westbound	SR 3 to CR 75 W	1	1,334	10	92	41	55/50
Westbound	CR 75 W to CR 20 W	1	1,308	10	90	41	55/50
Westbound	CR 20 W to Existing US 50	1	1,213	10	84	38	55/50
Cross Streets							
Northbound	SR 3, North of Bypass	1	3,836	10	265	119	45/40
Northbound	SR 3, South of Bypass	1	822	10	57	25	45/40
Southbound	SR 3, North of Bypass	1	2,939	10	203	91	45/40
Southbound	SR 3, South of Bypass	1	822	10	57	25	45/40
Northbound	CR 75 W, North of Bypass	1	13	10	1	0	35/30
Southbound	CR 75 W, North of Bypass	1	25	10	2	1	35/30
Northbound	CR 20 W, North of Bypass	1	83	10	6	3	35/30
Northbound	CR 20 W, South of Bypass	1	18	10	1	1	35/30
Southbound	CR 20 , North of Bypass	1	76	10	5	2	35/30
Southbound	CR 20 W, South of Bypass	1	19	10	1	1	35/30
Eastbound	Existing US 50	2	491	10	34	15	55/50
Westbound	Existing US 50	2	500	10	35	15	55/50

Source: *U.S. 50 Analysis Update Report.*

Note: AADT-Average Annual Daily Traffic
DHV - Design Hourly Volume
AT- Auto Traffic
HT – Heavy Truck Traffic

APPENDIX C

PREDICTED NOISE LEVELS

Table C-1 – Predicted Noise Levels

Receiver ID	Noise Study Area (NSA)	Land Use	Activity Category	NAC level	Number of Noise Sensitive Receptors	Build Alternative Noise Analysis				
						Non-Preferred Alternative (Alternative 4NB2)	Impact Type	Preferred Alternative (Alternative 6D)	Impact Type	Barrier Reduction
R01	1	Residential	B	67	1	58.7	None	58.6	None	N/A
R02	1	Residential	B	67	1	59.7	None	59.7	None	N/A
R03	1	Church	C	67	1	63.8	None	63.8	None	N/A
R04	1	Residential	B	67	1	55.6	None	55.5	None	N/A
R05	2	Industrial	F	N/A	1	56.0	None	56.0	None	N/A
R06	2	Industrial	F	N/A	1	47.6	None	46.9	None	N/A
R07	2	Industrial	F	N/A	1	47.6	None	46.5	None	N/A
R08	3	Residential	B	67	1	†	None	53.8	None	N/A
R08a	3	Residential	B	67	1	†	None	50.1	None	N/A
R09	3	Residential	B	67	1	†	None	48.5	None	N/A
R10	3	Residential	B	67	1	†	None	52.0	None	N/A
R11	3	Residential	B	67	1	†	None	56.5	None	N/A
R12	3	Residential	B	67	1	†	None	50.7	None	N/A
R13	3	Residential	B	67	1	†	None	48.7	None	N/A
R14	3	Residential	B	67	1	†	None	48.1	None	N/A
R15	3	Residential	B	67	1	†	None	47.9	None	N/A
R16	3	Residential	B	67	1	†	None	52.2	None	N/A
R17	3	Residential	B	67	1	†	None	56.0	None	N/A
R18	3	Residential	B	67	1	†	None	47.5	None	N/A
R19	4	Residential	B	67	1	†	None	49.9	None	N/A
R20	4	Residential	B	67	1	†	None	52.8	None	N/A
R21	4	Residential	B	67	1	†	None	50.3	None	N/A
R22	5	Residential	B	67	1	†	None	52.3	None	N/A
R23	5	Residential	B	67	1	†	None	47.8	None	N/A
R24	5	Residential	B	67	1	†	None	57.9	None	N/A
R25	5	Residential	B	67	1	†	None	58.8	None	N/A
R26	5	Residential	B	67	1	†	None	52.2	None	N/A
R27	5	Residential	B	67	1	†	None	49.9	None	N/A
R28	5	Residential	B	67	1	†	None	48.3	None	N/A
R29	5	Residential	B	67	1	†	None	50.1	None	N/A
R30	5	Residential	B	67	1	†	None	52.7	None	N/A
R31	5	Residential	B	67	1	†	None	57.0	None	N/A

Table C-1 – Predicted Noise Levels

Receiver ID	Noise Study Area (NSA)	Land Use	Activity Category	NAC level	Number of Noise Sensitive Receptors	Build Alternative Noise Analysis				
						Non-Preferred Alternative (Alternative 4NB2)	Impact Type	Preferred Alternative (Alternative 6D)	Impact Type	Barrier Reduction
R32	5	Residential	B	67	1	†	None	60.6	None	N/A
R33	5	Commercial	F	N/A	1	†	None	58.2	None	N/A
R34	5	Residential	B	67	1	†	None	57.6	None	N/A
R35	5	Residential	B	67	1	†	None	57.8	None	N/A
R36	5	Residential	B	67	1	†	None	55.9	None	N/A
R37	5	Residential	B	67	1	†	None	53.1	None	N/A
R38	5	Residential	B	67	1	†	None	51.8	None	N/A
R39	5	Commercial	F	N/A	1	†	None	53.1	None	N/A
R40	5	Church	C	67	1	†	None	60.6	None	N/A
R41	5	Residential	B	67	1	†	None	55.0	None	N/A
R42	5	Residential	B	67	1	†	None	58.4	None	N/A
R43	5	Residential	B	67	1	†	None	55.1	None	N/A
R44	5	Residential	B	67	1	†	None	53.8	None	N/A
R45	5	Residential	B	67	1	†	None	53.2	None	N/A
R46	5	Residential	B	67	1	†	None	49.8	None	N/A
R47	6	Residential	B	67	1	52.6	None	†	None	N/A
R48	6	Residential	B	67	1	54.3	None	†	None	N/A
R49	6	Residential	B	67	1	60.8	None	†	None	N/A
R50	6	Residential	B	67	1	57.1	None	†	None	N/A
R51	6	Residential	B	67	1	54.5	None	†	None	N/A
R52	6	Residential	B	67	1	57.1	None	†	None	N/A
R53	6	Residential	B	67	1	61.9	None	†	None	N/A
R54	7	Residential	B	67	1	49.3	None	†	None	N/A
R55	7	Residential	B	67	1	53.3	None	†	None	N/A
R56	7	Residential	B	67	1	48.8	None	†	None	N/A
R57	7	Residential	B	67	1	52.0	None	†	None	N/A
R58	7	Residential	B	67	1	52.3	None	†	None	N/A
R59	8	Residential	B	67	1	50.5	None	†	None	N/A
R60	8	Residential	B	67	1	53.6	None	†	None	N/A
R61	8	Residential	B	67	1	52.2	None	†	None	N/A
R62	8	Residential	B	67	1	56.3	None	†	None	N/A
R63	9	Residential	B	67	1	50.1	None	†	None	N/A
R64	9	Residential	B	67	1	55.3	None	†	None	N/A

Table C-1 – Predicted Noise Levels

Receiver ID	Noise Study Area (NSA)	Land Use	Activity Category	NAC level	Number of Noise Sensitive Receptors	Build Alternative Noise Analysis				
						Non-Preferred Alternative (Alternative 4NB2)	Impact Type	Preferred Alternative (Alternative 6D)	Impact Type	Barrier Reduction
R65	9	Commercial	F	N/A	1	52.4	None	†	None	N/A
R66	9	Residential	B	67	1	51.2	None	†	None	N/A
R67	9	Residential	B	67	1	50.9	None	†	None	N/A
R68	9	Residential	B	67	1	62.0	None	†	None	N/A
R69	9	Residential	B	67	1	52.3	None	†	None	N/A
R70	9	Residential	B	67	1	55.3	None	†	None	N/A
R71	9	Commercial	F	N/A	1	57.3	None	†	None	N/A
R72	9	Residential	B	67	1	52.5	None	†	None	N/A
R73	9	Residential	B	67	1	57.4	None	†	None	N/A
R74	9	Residential	B	67	1	57.5	None	†	None	N/A
SF01	6	Recreational	C	67	1	59.1	None	†	None	N/A
SF02	6	Recreational	C	67	1	58.4	None	†	None	N/A
GC01	6	Recreational	C	67	1	47.0	None	†	None	N/A
GC02	6	Recreational	C	67	1	51.8	None	†	None	N/A
GC03	6	Recreational	C	67	1	49.2	None	†	None	N/A
GC04	6	Recreational	C	67	1	53.4	None	†	None	N/A
GC05	6	Recreational	C	67	1	51.2	None	†	None	N/A

†– Residence corresponding to receiver location either displaced or not within 500 ft of the proposed alternative.

APPENDIX D

FIELD SURVEY FORMS

FIELD SURVEY FORM

PROJECT: US 50 East Bypass		ENGINEER: R. Connally, S. Stamatis	DATE: 3/14/13
MEASUREMENT ADDRESS: Lord of Life Lutheran Church 3280 N. State Hwy 3	CITY: N. Vernon	☐ Single-Family ☐ Multi-Family ☐ Recreational ☒ Commercial	SITE NO.: ST-1

SOUND LEVEL METER:	MICROPHONE:	PRE AMP:	NOTES:
☐ LD-870 ☐ LD-820	☐ NON-POLAR ☐ POLARIZED	☐ LD-900	SYSTEM PWR: ☒ BAT ☐ AC
☐ LD-824 ☐ LD-812	☒ 1/2-INCH ☐ FREEFIELD	☐ LD-828	(observations at start of measurement)
☐ B&K-2250 ☒ LxT	☐ 1-INCH ☐ RANDOM	☐ _____	TEMP: 27 °F R.H.: 54.1 %
SERIAL #: 2848	SERIAL #: 2361	SERIAL #:	WIND SPEED: 4.2 MPH

CALIBRATOR: (cal 200)
☐ LD CA250
☐ B&K 4231
S/N 8536

Freq, Hz.
☐ 250
☐ 1000
☐ _____

CALIBRATION RECORD:
Input, dB / Reading, dB / Offset, dB / Time
Before _____/_____/_____/_____
After _____/_____/_____/_____

TOWARD (DIR): E
SKIES: Mostly Sunny
CAMERA _____
PHOTO NOs. _____

METER SETTINGS:
☒ A-WTD ☐ LINEAR ☒ SLOW ☐ 1/1 OCT ☒ INTERVALS _____- MINUTE
☐ C-WTD ☐ IMPULSE ☐ FAST ☐ 1/3 OCT ☐ L_N PERCENTILE VALUES

NOTES: Some heavy equipment noise in the distance, dry pavement

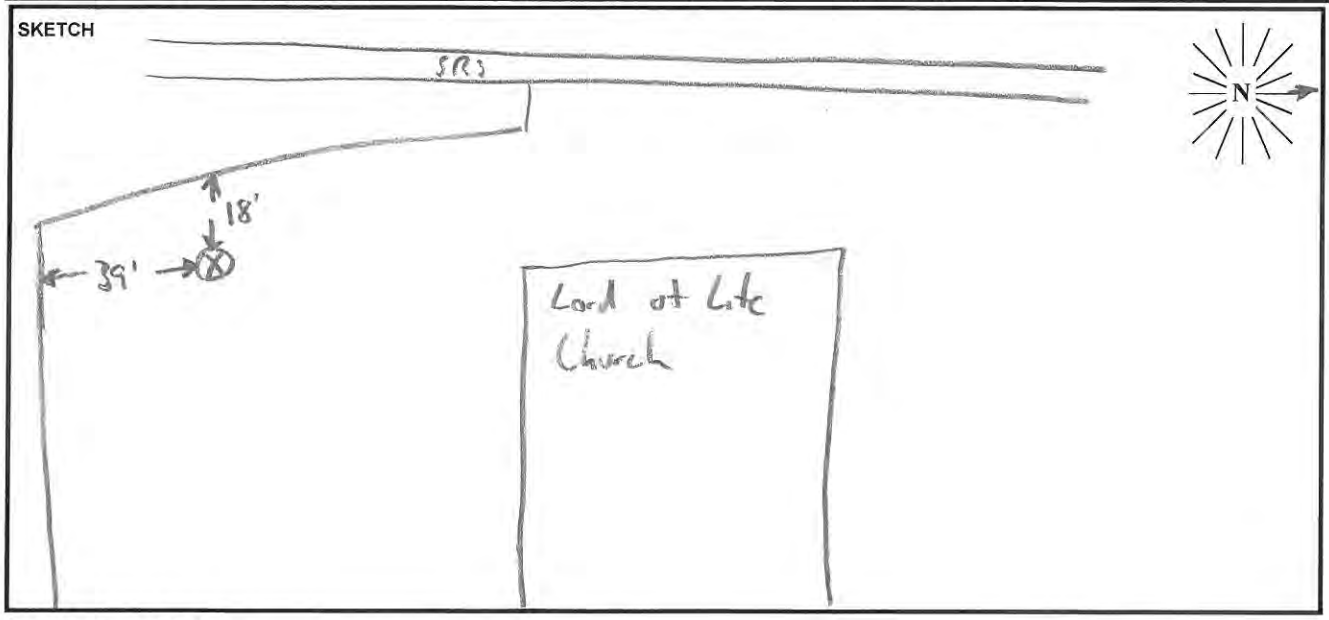
Dist. to Center of Nearest Lane 86
☐ Video ☐ Radar

Counts	AT	MT	HT
20min	28	0	7
1h	84	0	21

MEAS. TYPE:
☐ Long Term
☒ Short Term

DATE	START TIME	STOP TIME	L_{MIN}	L_{99}	L_{90}	L_{50}	L_{25}	L_{10}	L_{01}	L_{MAX}	L_{EQ}	NOTES:
3/14	9:16	9:36									57.7	20min

SKETCH



PARSONS

FIELD SURVEY FORM

PROJECT: US 50 East Bypass		ENGINEER: R. Connolly S. Stamatiu	DATE: 3/14
MEASUREMENT ADDRESS: 3355 N. 4th Street 47265	CITY: N. Vernon	☐ Single-Family ☐ Multi-Family ☐ Recreational ☒ Commercial	SITE NO.: ST-2

SOUND LEVEL METER:
☐ LD-870 ☐ LD-820
☐ LD-824 ☐ LD-812
☐ B&K-2250 ☒ L_XT
SERIAL #: 2848

MICROPHONE: ☐ WIND SCREEN
☐ NON-POLAR ☒ POLARIZED
☒ 1/2-INCH ☐ FREEFIELD
☐ 1-INCH ☐ RANDOM
SERIAL #:

PRE AMP:
☐ LD-900
☐ LD-828
☐ _____
SERIAL #:

CALIBRATOR:
☐ LD CA250
☐ B&K 4231
☒ CAL 200
S/N 8536
Freq, Hz.
☐ 250
☐ 1000
☐ _____

CALIBRATION RECORD:
Input, dB / Reading, dB / Offset, dB / Time
Before _____/_____/_____/_____
After _____/_____/_____/_____

METER SETTINGS:
☒ A-WTD ☐ LINEAR ☒ SLOW ☐ 1/1 OCT ☐ INTERVALS _____- MINUTE
☐ C-WTD ☐ IMPULSE ☐ FAST ☒ 1/3 OCT ☑ L_N PERCENTILE VALUES

NOTES:
SYSTEM PWR: ☐ BAT ☒ AC
(observations at start of measurement)
TEMP: 24 °F R.H.: 58.5 %
WIND SPEED: 3.8 MPH
TOWARD (DIR): E
SKIES: Mostly Sunny
CAMERA _____
PHOTO NOs. _____

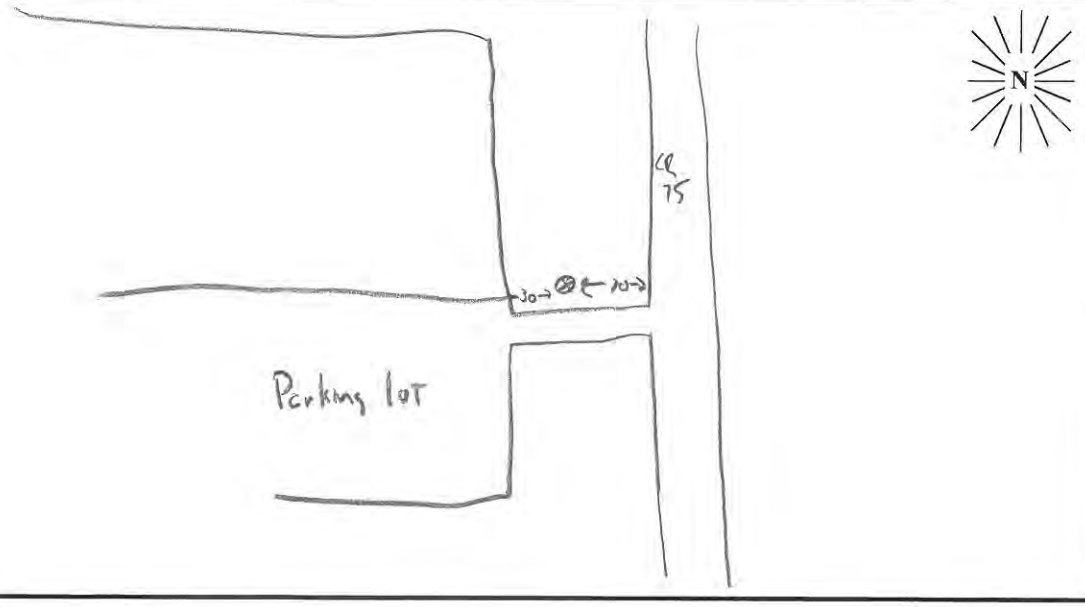
NOTES: 0009 Data file
Dist. to Center of Nearest Lane 75
☐ Video ☐ Radar

Counts	AT	MT	HT
20min x3	10	0	0
1hr	30	0	0

MEAS. TYPE:
☐ Long Term
☒ Short Term

DATE	START TIME	STOP TIME	L_{MIN}	L_{99}	L_{90}	L_{50}	L_{25}	L_{10}	L_{01}	L_{MAX}	L_{EQ}	NOTES:
3/14	10:11	10:21									42.3	Quiet

SKETCH



PARSONS

FIELD SURVEY FORM

PROJECT: US50 East Bypass		ENGINEER: R Connolly S. Stamatis	DATE: 3/14
MEASUREMENT ADDRESS: 485 W. CR 250 N. 47265 N. Vernon	CITY: N. Vernon	☒ Single-Family ☐ Multi-Family ☐ Recreational ☐ Commercial	SITE NO.: ST-3

SOUND LEVEL METER:	MICROPHONE:	PRE AMP:	NOTES:
☐ LD-870 ☐ LD-820	☐ NON-POLAR ☒ POLARIZED	☐ LD-900	SYSTEM PWR: ☒ BAT ☐ AC
☐ LD-824 ☐ LD-812	☒ 1/2-INCH ☐ FREEFIELD	☐ LD-828	(observations at start of measurement)
☐ B&K-2250 ☒ L&T	☐ 1-INCH ☐ RANDOM	☐ _____	TEMP: 23.2 °F R.H.: 55 %
SERIAL #: 2848	SERIAL #: 2361	SERIAL #:	WIND SPEED: 1.4 MPH

CALIBRATOR:	Freq, Hz.	CALIBRATION RECORD: Input, dB / Reading, dB / Offset, dB / Time	
Cal 200 ☐ LD CA250 ☐ B&K 4231	☐ 250 ☐ 1000	Before _____ / _____ / _____ / _____	TOWARD (DIR): W
S/N 8536	☐ _____	After _____ / _____ / _____ / _____	SKIES: Mstly Cloudy

METER SETTINGS:
☒ A-WTD ☐ LINEAR ☒ SLOW ☐ 1/1 OCT ☐ INTERVALS 20 - MINUTE
☐ C-WTD ☐ IMPULSE ☐ FAST ☒ 1/3 OCT ☐ L_N PERCENTILE VALUES

CAMERA _____

PHOTO NOs. _____

NOTES:

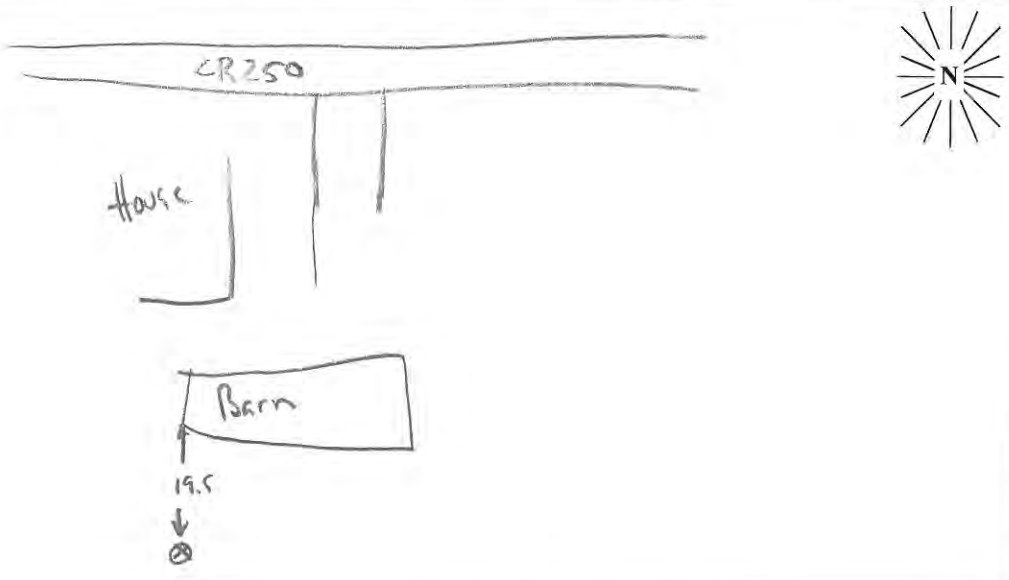
Dist. to Center of Nearest Lane _____ ☐ Video ☐ Radar

Counts	AT	MT	HT
20mm	3	0	0
1hr	9	0	0

MEAS. TYPE:
☐ Long Term
☒ Short Term

DATE	START TIME	STOP TIME	L_{MIN}	L_{99}	L_{90}	L_{50}	L_{25}	L_{10}	L_{01}	L_{MAX}	L_{EQ}	NOTES:
3/17	10:45	11:05									44.7	

SKETCH



PARSONS

FIELD SURVEY FORM

PROJECT: US 50 East Bypass		ENGINEER: R. Connolly, S. Stamatis	DATE: 3/14
MEASUREMENT ADDRESS: N. Base Road	CITY: N. Vernon	☐ Single-Family ☐ Multi-Family ☐ Recreational ☐ Commercial	SITE NO.: ST-4

SOUND LEVEL METER:	MICROPHONE:	PRE AMP:	NOTES:
☐ LD-870 ☐ LD-820	☐ NON-POLAR ☒ POLARIZED	☐ LD-900	SYSTEM PWR: ☐ BAT ☐ AC
☐ LD-824 ☐ LD-812	☒ 1/2-INCH ☐ FREEFIELD	☐ LD-828	(observations at start of measurement)
☐ B&K-2250 ☒ L_{AT}	☐ 1-INCH ☐ RANDOM	☐ _____	
SERIAL #: 2548	SERIAL #: 2361	SERIAL #:	TEMP: 38 °F R.H.: 51 %

CALIBRATOR:	CALIBRATION RECORD:	NOTES:
☐ LD CA250 ☐ B&K 4231 S/N 8536	Freq, Hz. ☐ 250 ☐ 1000 ☐ _____	Input, dB / Reading, dB / Offset, dB / Time Before _____/_____/_____/_____ After _____/_____/_____/_____	WIND SPEED: 4.1 MPH TOWARD (DIR): W SKIES: Cloudy CAMERA _____ PHOTO NOs. _____

METER SETTINGS:
☒ A-WTD ☐ LINEAR ☒ SLOW ☐ 1/1 OCT ☐ INTERVALS _____- MINUTE
☐ C-WTD ☐ IMPULSE ☐ FAST ☒ 1/3 OCT ☐ L_N PERCENTILE VALUES

NOTES:

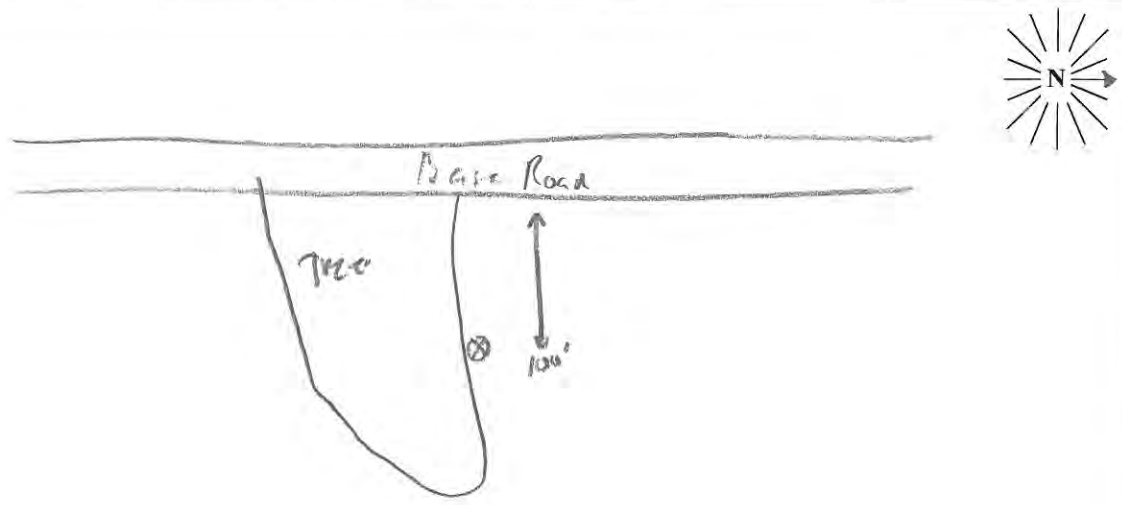
Dist. to Center of Nearest Lane 100' ☐ Video ☐ Radar

Counts	AT	MT	HT
Zone	4	0	0
14, 16	0	0	

MEAS. TYPE:
☐ Long Term
☒ Short Term

DATE	START TIME	STOP TIME	L_{MIN}	L_{99}	L_{90}	L_{50}	L_{25}	L_{10}	L_{01}	L_{MAX}	L_{EQ}	NOTES:
3/14	12:32	12:52									61.2	

SKETCH



PARSONS

FIELD SURVEY FORM

PROJECT: US 50 East Bypass		ENGINEER: R. Connolly S. Stamatis	DATE: 3/14
MEASUREMENT ADDRESS: 1020 E CR 250 N.	CITY: N. Vernon	☒ Single-Family ☐ Multi-Family ☐ Recreational ☐ Commercial	SITE NO.: ST-5

SOUND LEVEL METER:	MICROPHONE:	PRE AMP:	NOTES:
☐ LD-870 ☐ LD-820	☐ NON-POLAR ☒ POLARIZED	☐ LD-900	SYSTEM PWR: ☐ BAT ☒ AC
☐ LD-824 ☐ LD-812	☒ 1/2-INCH ☐ FREEFIELD	☐ LD-828	(observations at start of measurement)
☐ B&K-2250 ☒ $L_x T$	☐ 1-INCH ☐ RANDOM	☐ _____	TEMP: 45 °F R.H.: 25.1 %
SERIAL #: 2848	SERIAL #: 2361	SERIAL #:	WIND SPEED: 0.5 MPH

CALIBRATOR:	CALIBRATION RECORD:	
Cal 200	Freq, Hz.	Input, dB / Reading, dB / Offset, dB / Time
☐ LD CA250	☐ 250	Before _____/_____/_____/_____
☐ B&K 4231	☐ 1000	After _____/_____/_____/_____
S/N 8536	☐ _____	

TOWARD (DIR): W

SKIES: Pt-ly Cloudy

CAMERA _____

PHOTO NOs. _____

METER SETTINGS:
☒ A-WTD ☒ LINEAR ☒ SLOW ☐ 1/1 OCT ☐ INTERVALS _____ - MINUTE
☐ C-WTD ☐ IMPULSE ☐ FAST ☒ 1/3 OCT ☐ L_N PERCENTILE VALUES

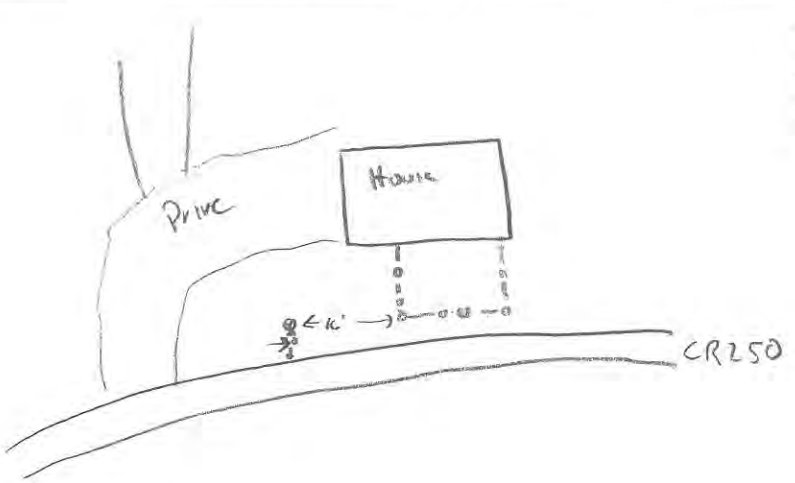
NOTES: Dist. to Center of Nearest Lane _____ ☐ Video ☐ Radar

Counts	AT	MT	HT
20min	6	0	0
1hr	18	0	0

MEAS. TYPE: ☐ Long Term ☒ Short Term

DATE	START TIME	STOP TIME	L_{MIN}	L_{99}	L_{90}	L_{50}	L_{25}	L_{10}	L_{01}	L_{MAX}	L_{EQ}	NOTES:
3/14	3:48	4:08									51.0	

SKETCH



PARSONS

FIELD SURVEY FORM

PROJECT: US 50 East Bypass		ENGINEER: R. Connelly & Associates	DATE: 3/14/
MEASUREMENT ADDRESS: 2015 N. CR 175E	CITY: N. Vernon	☒ Single-Family ☐ Multi-Family ☐ Recreational ☐ Commercial	SITE NO.: ST-6

SOUND LEVEL METER:
☐ LD-870 ☐ LD-820
☐ LD-824 ☐ LD-812
☐ B&K-2250 ☒ Lxt
SERIAL #: 2848

MICROPHONE: ☐ WIND SCREEN
☐ NON-POLAR ☒ POLARIZED
☒ 1/2-INCH ☐ FREEFIELD
☐ 1-INCH ☐ RANDOM
SERIAL #: 2361

PRE AMP:
☐ LD-900
☐ LD-828
☐ _____
SERIAL #:

CALIBRATOR:
Cal 200
☐ LD CA250
☐ B&K 4231
S/N 8536
Freq, Hz.
☐ 250
☐ 1000
☐ _____

CALIBRATION RECORD:
Input, dB / Reading, dB / Offset, dB / Time
Before _____/_____/_____/_____
After _____/_____/_____/_____

METER SETTINGS:
☒ A-WTD ☐ LINEAR ☒ SLOW ☐ 1/1 OCT ☐ INTERVALS _____- MINUTE
☐ C-WTD ☐ IMPULSE ☐ FAST ☒ 1/3 OCT ☐ L_N PERCENTILE VALUES

NOTES:
SYSTEM PWR: ☐ BAT ☐ AC
(observations at start of measurement)
TEMP: 41 °F R.H.: 52 %
WIND SPEED: 3.2 MPH
TOWARD (DIR): W
SKIES: Overcast
CAMERA _____
PHOTO NOs. _____

NOTES: Dist. to Center of Nearest Lane 607 ☐ Video ☐ Radar

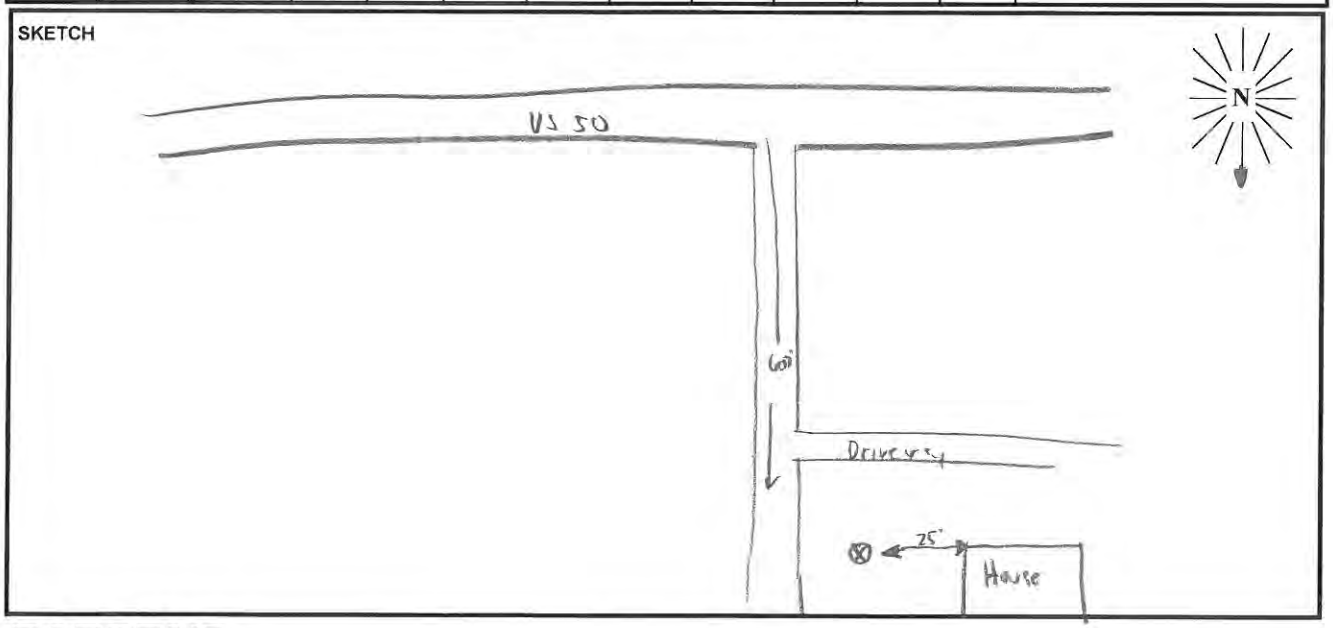
Counts

	AT	MT	HT
	119	3	18
	357	9	54

MEAS. TYPE:
☐ Long Term
☒ Short Term

DATE	START TIME	STOP TIME	L_{MIN}	L_{99}	L_{90}	L_{50}	L_{25}	L_{10}	L_{01}	L_{MAX}	L_{EQ}	NOTES:
3/14	2:50	3:10									47.9	20min

SKETCH



PARSONS

APPENDIX E

TNM Data Tables

APPENDIX E-1

Proposed Roadway Tables

PTG 26 June 2013
RJC TNM 2.5

INPUT: ROADWAYS
PROJECT/CONTRACT: US 50 East Bypass
RUN: 6_D_proposed

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

Roadway		Points									
Name	Width	Name	No.	Coordinates (pavement)			Flow Control			Segment	
				X	Y	Z	Control Device	Speed Constraint	Percent Vehicles Affected	Pvmt Type	On Struct?
	ft			ft	ft	ft		mph	%		
WB US 50 -CR 20 to US 50	12.0	172+79.38	1	148,191.0	70,506.2	726.40				Average	
		172+00.00	2	148,111.6	70,505.8	726.37				Average	
		171+00.00	3	148,011.6	70,505.4	728.87				Average	
		170+00.00	4	147,911.6	70,504.9	731.90				Average	
		169+00.00	5	147,811.7	70,506.6	734.77				Average	
		168+00.00	6	147,711.8	70,512.3	737.21				Average	
		167+00.00	7	147,612.3	70,521.9	739.22				Average	
		166+00.00	8	147,513.2	70,535.5	740.63				Average	
		165+00.00	9	147,414.8	70,553.0	741.43				Average	
		164+00.00	10	147,317.1	70,574.4	741.63				Average	
		163+00.00	11	147,220.4	70,599.7	741.23				Average	
		162+00.00	12	147,124.7	70,628.9	740.23				Average	
		161+00.00	13	147,030.3	70,661.8	738.63				Average	
		160+00.00	14	146,937.3	70,698.5	736.70				Average	
		159+00.00	15	146,845.8	70,738.9	734.77				Average	
		158+00.00	16	146,755.9	70,782.7	733.11				Average	
		157+00.00	17	146,666.4	70,827.3	731.52				Average	
		156+00.00	18	146,576.9	70,871.9	729.86				Average	
		155+00.00	19	146,487.4	70,916.5	728.17				Average	
		154+00.00	20	146,397.9	70,961.1	726.38				Average	
		153+00.00	21	146,308.4	71,005.7	724.75				Average	
		152+00.00	22	146,218.9	71,050.4	723.69				Average	
		151+00.00	23	146,129.4	71,095.0	723.19				Average	
		150+00.00	24	146,039.9	71,139.6	723.25				Average	
		149+00.00	25	145,950.4	71,184.2	723.86				Average	

		148+00.00	26	145,860.9	71,228.8	724.76				Average	
		147+00.00	27	145,771.4	71,273.4	725.66				Average	
		146+00.00	28	145,681.9	71,318.0	726.56				Average	
		145+00.00	29	145,592.4	71,362.6	727.46				Average	
		144+00.00	30	145,503.0	71,407.2	728.36				Average	
		143+00.00	31	145,413.5	71,451.9	729.26				Average	
		142+00.00	32	145,324.0	71,496.5	730.16				Average	
		141+00.00	33	145,234.5	71,541.1	731.06				Average	
		140+00.00	34	145,145.0	71,585.7	731.78				Average	
		139+00.00	35	145,055.5	71,630.3	731.87				Average	
		138+00.00	36	144,966.0	71,674.9	731.31				Average	
		137+00.00	37	144,876.5	71,719.5	730.10				Average	
		136+00.00	38	144,787.0	71,764.1	728.24				Average	
		135+00.00	39	144,697.5	71,808.8	725.73				Average	
		134+00.00	40	144,608.0	71,853.4	722.76				Average	
		133+00.00	41	144,518.5	71,898.0	719.76				Average	
		132+00.00	42	144,429.0	71,942.6	716.76				Average	
		131+00.00	43	144,339.5	71,987.2	713.76				Average	
		130+00.00	44	144,250.0	72,031.8	710.76				Average	
		129+00.00	45	144,160.5	72,076.4	707.76				Average	
		128+00.00	46	144,071.0	72,121.0	704.76				Average	
		127+00.00	47	143,981.5	72,165.6	701.76				Average	
		126+00.00	48	143,892.0	72,210.3	698.89				Average	
		125+00.00	49	143,802.5	72,254.9	696.60				Average	
		124+00.00	50	143,713.0	72,299.5	694.94				Average	
		123+00.00	51	143,623.5	72,344.1	693.91				Average	
		122+00.00	52	143,534.0	72,388.7	693.37				Average	
		121+00.00	53	143,444.5	72,433.3	692.87				Average	
		120+00.00	54	143,355.0	72,477.9	692.37				Average	
		119+00.00	55	143,265.5	72,522.5	691.87				Average	
		118+00.00	56	143,176.0	72,567.2	691.37				Average	
		117+00.00	57	143,086.5	72,611.8	690.87				Average	
		116+00.00	58	142,997.0	72,656.4	690.37				Average	
		115+00.00	59	142,907.5	72,701.0	689.92				Average	
		114+00.00	60	142,814.7	72,745.6	689.50				Average	
		113+00.00	61	142,730.5	72,789.5	689.40					
EB US 50 -SR3 to CR 75	12.0	0+00.00	175	135,636.7	78,663.8	729.40				Average	
		1+00.00	176	135,794.0	78,661.5	729.90				Average	

		2+00.00	177	135,894.0	78,661.7	730.40				Average	
		3+00.00	178	135,994.0	78,661.9	730.90				Average	
		4+00.00	179	136,094.0	78,662.0	731.40				Average	
		5+00.00	180	136,194.0	78,662.2	731.90				Average	
		6+00.00	181	136,294.0	78,662.4	732.40				Average	
		7+00.00	182	136,394.0	78,662.6	732.90				Average	
		8+00.00	183	136,494.0	78,662.8	733.40				Average	
		9+00.00	184	136,594.0	78,663.0	733.90				Average	
		10+00.00	185	136,694.0	78,663.2	734.40				Average	
		11+00.00	186	136,794.0	78,663.4	734.90				Average	
		12+00.00	187	136,894.0	78,663.6	735.40				Average	
		13+00.00	188	136,994.0	78,663.7	735.90				Average	
		14+00.00	189	137,094.0	78,663.9	736.40				Average	
		15+00.00	190	137,194.0	78,664.1	736.90				Average	
		16+00.00	191	137,294.0	78,664.3	737.40				Average	
		17+00.00	192	137,394.0	78,664.5	737.90				Average	
		18+00.00	193	137,494.0	78,664.7	738.40				Average	
		19+00.00	194	137,594.0	78,664.9	738.90				Average	
		20+00.00	195	137,694.0	78,665.1	739.40				Average	
		21+00.00	196	137,794.0	78,665.3	739.80				Average	
		22+00.00	197	137,894.0	78,665.5	740.30				Average	
		23+00.00	198	137,994.0	78,665.6	740.70				Average	
		24+00.00	199	138,094.0	78,665.8	741.00				Average	
		25+00.00	200	138,194.0	78,666.0	741.30				Average	
		26+00.00	201	138,294.0	78,666.2	741.60				Average	
		27+00.00	202	138,394.0	78,666.4	741.90				Average	
		28+00.00	203	138,494.0	78,666.6	742.20				Average	
		29+00.00	204	138,594.0	78,666.8	742.50				Average	
		30+00.00	205	138,694.0	78,667.0	742.80				Average	
		31+00.00	206	138,794.0	78,667.2	743.10				Average	
		32+00.00	207	138,894.0	78,667.3	743.40				Average	
		33+00.00	208	138,994.0	78,667.5	743.70				Average	
		34+00.00	209	139,094.0	78,667.7	744.00				Average	
		35+00.00	210	139,194.0	78,667.9	744.40				Average	
		36+00.00	211	139,294.0	78,667.8	744.80				Average	
		37+00.00	212	139,393.9	78,664.4	745.10				Average	
		38+00.00	213	139,493.7	78,657.2	745.40				Average	
		39+00.00	214	139,620.1	78,645.4	745.70					

CR 20 NB S of Bypass	12.0	point385	385	142,419.3	72,033.1	681.80				Average	
		point384	384	142,441.4	72,077.9	683.00				Average	
		point383	383	142,485.5	72,167.6	686.50				Average	
		point382	382	142,529.7	72,257.4	691.20				Average	
		point381	381	142,572.1	72,347.7	696.10				Average	
		point380	380	142,611.2	72,438.5	701.00				Average	
		point379	379	142,647.0	72,532.6	705.90				Average	
		point378	378	142,679.4	72,627.1	710.00				Average	
		point377	377	142,708.4	72,722.6	712.00				Average	
		point376	376	142,722.3	72,774.0	711.70					
SR 3 SB S of Bypass	12.0	point386	386	135,607.5	78,655.6	728.70	Signal	0.00	50	Average	
		point387	387	135,607.8	78,597.1	727.80				Average	
		point388	388	135,608.1	78,547.1	726.90				Average	
		point389	389	135,608.7	78,447.1	725.10				Average	
		point390	390	135,609.2	78,347.1	723.60				Average	
		point391	391	135,609.7	78,247.1	722.90				Average	
		point392	392	135,610.3	78,147.1	722.70				Average	
		point393	393	135,610.8	78,047.1	723.20				Average	
		point394	394	135,611.4	77,947.1	724.30				Average	
		point395	395	135,611.9	77,847.1	725.40				Average	
		point396	396	135,612.5	77,747.1	726.80				Average	
		point397	397	135,614.1	77,647.1	728.00				Average	
		point398	398	135,618.2	77,547.1	729.30				Average	
		point399	399	135,622.3	77,447.1	730.50				Average	
		point400	400	135,626.4	77,347.1	731.50					
CR 75 NB_S of bypass	12.0	point401	401	139,652.2	77,715.3	745.20				Average	
		point402	402	139,651.2	77,815.2	745.10				Average	
		point403	403	139,648.5	77,915.0	744.80				Average	
		point404	404	139,644.4	78,014.8	743.90				Average	
		point405	405	139,641.6	78,114.8	742.90				Average	
		point406	406	139,640.4	78,215.0	742.00				Average	
		point407	407	139,640.3	78,315.1	741.10				Average	
		point408	408	139,640.2	78,415.1	741.60				Average	
		point409	409	139,640.1	78,515.1	744.70				Average	
		point410	410	139,640.0	78,615.1	749.90				Average	
		point411	411	139,637.8	78,629.7	753.50					
CR 75 SB_S of bypass	12.0	point412	412	139,613.6	78,635.1	753.50	Stop	0.00	100	Average	
		point413	413	139,614.8	78,616.2	749.90				Average	

		point414	414	139,618.1	78,515.1	744.70				Average	
		point415	415	139,618.2	78,415.1	741.60				Average	
		point416	416	139,618.3	78,315.1	741.10				Average	
		point417	417	139,618.4	78,215.0	742.00				Average	
		point418	418	139,620.5	78,114.8	742.90				Average	
		point419	419	139,628.4	78,014.8	743.90				Average	
		point420	420	139,637.2	77,915.0	744.80				Average	
		point421	421	139,640.1	77,815.2	745.10				Average	
		point422	422	139,641.2	77,715.3	745.20					
SR 3 NB S of Bypass	12.0	point423	423	135,638.6	77,347.1	731.50	Signal	0.00	50	Average	
		point424	424	135,638.1	77,447.1	730.50				Average	
		point425	425	135,637.5	77,547.1	729.30				Average	
		point426	426	135,637.0	77,647.1	728.00				Average	
		point427	427	135,636.5	77,747.1	726.80				Average	
		point428	428	135,635.9	77,847.1	725.40				Average	
		point429	429	135,635.4	77,947.1	724.30				Average	
		point430	430	135,634.9	78,047.1	723.20				Average	
		point431	431	135,634.3	78,147.1	722.70				Average	
		point432	432	135,633.7	78,247.1	722.90				Average	
		point433	433	135,633.2	78,347.1	723.60				Average	
		point434	434	135,632.6	78,447.1	725.10				Average	
		point435	435	135,625.6	78,579.9	726.90				Average	
		point436	436	135,626.1	78,656.4	728.70					
SR 3 NB N of Bypass	12.0	point437	437	135,629.4	78,686.1	728.70	Signal	0.00	50	Average	
		point438	438	135,631.0	78,747.1	730.50				Average	
		point439	439	135,630.4	78,847.1	732.10				Average	
		point440	440	135,629.9	78,947.1	733.30				Average	
		point441	441	135,629.3	79,047.1	734.10				Average	
		point442	442	135,628.8	79,147.1	734.40				Average	
		point443	443	135,628.2	79,247.1	734.50				Average	
		point444	444	135,627.7	79,347.1	734.70				Average	
		point445	445	135,627.2	79,447.1	734.90				Average	
		point446	446	135,626.7	79,547.1	735.00				Average	
		point447	447	135,626.1	79,647.1	735.10				Average	
		point448	448	135,625.6	79,746.6	735.10					
SR 3 SB N of Bypass	12.0	point449	449	135,613.6	79,746.7	735.10	Signal	0.00	50	Average	
		point450	450	135,610.6	79,647.1	735.10				Average	
		point452	452	135,607.5	79,547.1	735.00				Average	

		point453	453	135,604.5	79,447.1	734.90				Average	
		point454	454	135,603.7	79,347.1	734.70				Average	
		point455	455	135,604.2	79,247.1	734.50				Average	
		point456	456	135,604.8	79,147.1	734.40				Average	
		point457	457	135,605.3	79,047.1	734.10				Average	
		point458	458	135,605.9	78,947.1	733.30				Average	
		point459	459	135,606.4	78,847.1	732.10				Average	
		point460	460	135,607.0	78,747.1	730.50				Average	
		point461	461	135,607.1	78,684.1	728.70					
CR 75 NB_N of Bypass	12.0	point462	462	139,638.8	78,672.4	753.50	Stop	0.00	100	Average	
		point463	463	139,639.8	78,815.1	751.90				Average	
		point464	464	139,640.3	78,915.4	748.50				Average	
		point465	465	139,642.4	79,015.6	745.10				Average	
		point466	466	139,646.1	79,115.7	742.30				Average	
		point467	467	139,649.5	79,215.3	741.10				Average	
		point468	468	139,651.1	79,315.0	740.90				Average	
		point469	469	139,651.3	79,369.3	740.70					
CR 75 SB	12.0	point470	470	139,640.3	79,369.3	740.70				Average	
		point471	471	139,638.1	79,315.0	740.90				Average	
		point472	472	139,631.5	79,215.3	741.10				Average	
		point473	473	139,624.1	79,115.7	742.30				Average	
		point474	474	139,620.4	79,015.6	745.10				Average	
		point475	475	139,618.2	78,915.4	748.50				Average	
		point476	476	139,617.8	78,815.1	751.90				Average	
		point477	477	139,617.9	78,671.4	753.50					
WB US 50 -SR3 to CR 75-2	12.0	point478	478	139,617.5	78,659.6	746.40				Average	
		38+00.00	136	139,493.7	78,669.3	746.11				Average	
		37+00.00	137	139,393.9	78,676.5	745.81				Average	
		36+00.00	138	139,294.0	78,679.8	745.50				Average	
		35+00.00	139	139,194.0	78,679.9	744.75				Average	
		34+00.00	140	139,094.0	78,679.7	744.17				Average	
		33+00.00	141	138,994.0	78,679.5	743.73				Average	
		32+00.00	142	138,894.0	78,679.4	743.43				Average	
		31+00.00	143	138,794.0	78,679.2	743.13				Average	
		30+00.00	144	138,694.0	78,679.0	742.83				Average	
		29+00.00	145	138,594.0	78,678.8	742.53				Average	
		28+00.00	146	138,494.0	78,678.6	742.23				Average	
		27+00.00	147	138,394.0	78,678.4	741.93				Average	

		26+00.00	148	138,294.0	78,678.2	741.63				Average	
		25+00.00	149	138,194.0	78,678.0	741.33				Average	
		24+00.00	150	138,094.0	78,677.8	741.02				Average	
		23+00.00	151	137,994.0	78,677.6	740.66				Average	
		22+00.00	152	137,894.0	78,677.5	740.27				Average	
		21+00.00	153	137,794.0	78,677.3	739.84				Average	
		20+00.00	154	137,694.0	78,677.1	739.37				Average	
		19+00.00	155	137,594.0	78,676.9	738.87				Average	
		18+00.00	156	137,494.0	78,676.7	738.37				Average	
		17+00.00	157	137,394.0	78,676.5	737.87				Average	
		16+00.00	158	137,294.0	78,676.3	737.37				Average	
		15+00.00	159	137,194.0	78,676.1	736.87				Average	
		14+00.00	160	137,094.0	78,675.9	736.37				Average	
		13+00.00	161	136,994.0	78,675.8	735.87				Average	
		12+00.00	162	136,894.0	78,675.6	735.37				Average	
		11+00.00	163	136,794.0	78,675.4	734.87				Average	
		10+00.00	164	136,694.0	78,675.2	734.37				Average	
		9+00.00	165	136,594.0	78,675.0	733.87				Average	
		8+00.00	166	136,494.0	78,674.8	733.37				Average	
		7+00.00	167	136,394.0	78,674.6	732.87				Average	
		6+00.00	168	136,294.0	78,674.4	732.37				Average	
		5+00.00	169	136,194.0	78,674.2	731.87				Average	
		4+00.00	170	136,094.0	78,674.0	731.37				Average	
		3+00.00	171	135,994.0	78,673.9	730.87				Average	
		2+00.00	172	135,894.0	78,673.7	730.37				Average	
		1+00.00	173	135,794.0	78,673.5	729.87				Average	
		0+00.00	174	135,636.4	78,674.3	729.37					
WB US 50 -CR 75 W to CR 20 W	12.0	point479	479	139,635.4	78,643.5	745.70				Average	
		40+00.00	215	139,691.9	78,631.2	746.00				Average	
		41+00.00	216	139,790.1	78,612.5	746.30				Average	
		42+00.00	217	139,887.6	78,590.0	746.60				Average	
		43+00.00	218	139,984.1	78,563.7	746.90				Average	
		44+00.00	219	140,079.4	78,533.7	747.20				Average	
		45+00.00	220	140,173.6	78,500.0	747.50				Average	
		46+00.00	221	140,266.4	78,462.7	747.80				Average	
		47+00.00	222	140,357.6	78,421.9	748.10				Average	
		48+00.00	223	140,447.3	78,377.5	748.40				Average	
		49+00.00	224	140,535.1	78,329.7	748.70				Average	

		50+00.00	225	140,621.0	78,278.6	749.00				Average	
		51+00.00	226	140,704.9	78,224.1	749.30				Average	
		52+00.00	227	140,786.6	78,166.5	749.60				Average	
		53+00.00	228	140,866.0	78,105.7	749.90				Average	
		54+00.00	229	140,943.0	78,041.9	750.20				Average	
		55+00.00	230	141,017.4	77,975.1	750.50				Average	
		56+00.00	231	141,089.2	77,905.6	750.80				Average	
		57+00.00	232	141,158.3	77,833.3	751.10				Average	
		58+00.00	233	141,224.5	77,758.3	751.40				Average	
		59+00.00	234	141,287.8	77,680.9	751.70				Average	
		60+00.00	235	141,348.0	77,601.1	752.00				Average	
		61+00.00	236	141,405.1	77,519.0	752.30				Average	
		62+00.00	237	141,458.9	77,434.7	752.60				Average	
		63+00.00	238	141,509.5	77,348.4	752.80				Average	
		64+00.00	239	141,556.7	77,260.3	753.10				Average	
		65+00.00	240	141,600.4	77,170.3	753.40				Average	
		66+00.00	241	141,640.6	77,078.8	753.70				Average	
		67+00.00	242	141,677.2	76,985.8	754.00				Average	
		68+00.00	243	141,710.2	76,891.4	754.30				Average	
		69+00.00	244	141,739.6	76,795.8	754.60				Average	
		70+00.00	245	141,765.2	76,699.1	754.90				Average	
		71+00.00	246	141,787.0	76,601.5	755.20				Average	
		72+00.00	247	141,805.0	76,503.2	755.50				Average	
		73+00.00	248	141,819.3	76,404.2	755.60				Average	
		74+00.00	249	141,829.6	76,304.7	755.40				Average	
		75+00.00	250	141,836.1	76,205.0	754.80				Average	
		76+00.00	251	141,838.8	76,105.0	754.00				Average	
		77+00.00	252	141,838.8	76,005.0	752.70				Average	
		78+00.00	253	141,838.8	75,905.0	751.30				Average	
		79+00.00	254	141,838.8	75,805.0	749.60				Average	
		80+00.00	255	141,838.8	75,705.0	747.60				Average	
		81+00.00	256	141,838.8	75,605.0	745.20				Average	
		82+00.00	257	141,838.8	75,505.0	742.60				Average	
		83+00.00	258	141,838.8	75,405.0	739.90				Average	
		84+00.00	259	141,838.8	75,305.0	737.20				Average	
		85+00.00	260	141,838.8	75,205.0	734.50				Average	
		86+00.00	261	141,838.8	75,105.0	731.80				Average	
		87+00.00	262	141,838.8	75,005.0	729.10				Average	

		88+00.00	263	141,838.8	74,905.0	726.40				Average	
		89+00.00	264	141,838.8	74,805.0	723.70				Average	
		90+00.00	265	141,838.8	74,705.0	721.00				Average	
		91+00.00	266	141,838.8	74,605.0	718.30				Average	
		92+00.00	267	141,838.8	74,505.0	715.60				Average	
		93+00.00	268	141,838.8	74,405.0	713.00				Average	
		94+00.00	269	141,838.8	74,305.0	710.60				Average	
		95+00.00	270	141,838.8	74,205.0	708.50				Average	
		96+00.00	271	141,838.8	74,105.0	706.70				Average	
		97+00.00	272	141,840.6	74,005.0	705.30				Average	
		98+00.00	273	141,849.1	73,905.4	704.30				Average	
		99+00.00	274	141,864.9	73,806.7	703.30				Average	
		100+00.00	275	141,887.8	73,709.4	702.20				Average	
		101+00.00	276	141,917.7	73,614.0	701.20				Average	
		102+00.00	277	141,954.4	73,521.0	700.20				Average	
		103+00.00	278	141,997.8	73,430.9	699.20				Average	
		104+00.00	279	142,047.6	73,344.2	698.10				Average	
		105+00.00	280	142,103.5	73,261.3	697.10				Average	
		106+00.00	281	142,165.3	73,182.7	696.10				Average	
		107+00.00	282	142,232.6	73,108.8	695.10				Average	
		108+00.00	283	142,305.1	73,040.0	694.10				Average	
		109+00.00	284	142,382.4	72,976.6	693.00				Average	
		110+00.00	285	142,464.1	72,918.9	692.00				Average	
		111+00.00	286	142,549.8	72,867.3	691.00				Average	
		112+00.00	287	142,638.7	72,821.6	690.20				Average	
		113+00.00	288	142,705.7	72,787.6	689.70					
WB US 50 -SR3 to CR 75-2	12.0	point480	480	142,713.9	72,798.1	689.40				Average	
		112+00.00	62	142,639.0	72,834.8	689.58				Average	
		111+00.00	63	142,550.3	72,880.8	690.11				Average	
		110+00.00	64	142,464.8	72,932.8	691.14				Average	
		109+00.00	65	142,383.5	72,990.9	692.18				Average	
		108+00.00	66	142,306.6	73,054.7	693.21				Average	
		107+00.00	67	142,234.5	73,124.1	694.24				Average	
		106+00.00	68	142,167.7	73,198.5	695.27				Average	
		105+00.00	69	142,106.6	73,277.6	696.30				Average	
		104+00.00	70	142,051.4	73,360.9	697.33				Average	
		103+00.00	71	142,002.4	73,448.1	698.36				Average	
		102+00.00	72	141,959.9	73,538.6	699.40				Average	

		101+00.00	73	141,924.2	73,631.9	700.43				Average	
		100+00.00	74	141,895.3	73,727.7	701.46				Average	
		99+00.00	75	141,873.6	73,825.3	702.49				Average	
		98+00.00	76	141,859.0	73,924.2	703.53				Average	
		97+00.00	77	141,851.8	74,023.9	704.64				Average	
		96+00.00	78	141,850.9	74,123.9	706.45				Average	
		95+00.00	79	141,850.9	74,223.9	708.57				Average	
		94+00.00	80	141,850.9	74,323.9	710.90				Average	
		93+00.00	81	141,850.9	74,423.9	713.50				Average	
		92+00.00	82	141,850.9	74,523.9	716.15				Average	
		91+00.00	83	141,850.9	74,623.9	718.85				Average	
		90+00.00	84	141,850.9	74,723.9	721.55				Average	
		89+00.00	85	141,850.9	74,823.9	724.25				Average	
		88+00.00	86	141,850.9	74,923.9	726.95				Average	
		87+00.00	87	141,850.9	75,023.9	729.65				Average	
		86+00.00	88	141,850.9	75,123.9	732.35				Average	
		85+00.00	89	141,850.9	75,223.9	735.05				Average	
		84+00.00	90	141,850.9	75,323.9	737.75				Average	
		83+00.00	91	141,850.9	75,423.9	740.45				Average	
		82+00.00	92	141,850.9	75,523.9	743.15				Average	
		81+00.00	93	141,850.9	75,623.9	745.71				Average	
		80+00.00	94	141,850.9	75,723.9	747.96				Average	
		79+00.00	95	141,850.9	75,823.9	749.92				Average	
		78+00.00	96	141,850.9	75,923.9	751.73				Average	
		77+00.00	97	141,850.9	76,023.9	753.34				Average	
		76+00.00	98	141,850.6	76,123.9	754.83				Average	
		75+00.00	99	141,847.2	76,223.8	755.63				Average	
		74+00.00	100	141,840.0	76,323.5	756.09				Average	
		73+00.00	101	141,829.0	76,422.9	756.25				Average	
		72+00.00	102	141,814.1	76,521.8	756.13				Average	
		71+00.00	103	141,795.4	76,620.0	755.84				Average	
		70+00.00	104	141,773.0	76,717.5	755.55				Average	
		69+00.00	105	141,746.8	76,814.0	755.25				Average	
		68+00.00	106	141,716.9	76,909.4	754.96				Average	
		67+00.00	107	141,683.4	77,003.6	754.66				Average	
		66+00.00	108	141,646.2	77,096.4	754.37				Average	
		65+00.00	109	141,605.5	77,187.8	754.07				Average	
		64+00.00	110	141,561.3	77,277.5	753.78				Average	

		63+00.00	111	141,513.7	77,365.4	753.48				Average	
		62+00.00	112	141,462.7	77,451.4	753.19				Average	
		61+00.00	113	141,408.5	77,535.4	752.89				Average	
		60+00.00	114	141,351.1	77,617.3	752.60				Average	
		59+00.00	115	141,290.5	77,696.9	752.30				Average	
		58+00.00	116	141,226.9	77,774.0	752.01				Average	
		57+00.00	117	141,160.4	77,848.7	751.71				Average	
		56+00.00	118	141,091.1	77,920.7	751.42				Average	
		55+00.00	119	141,019.0	77,990.1	751.12				Average	
		54+00.00	120	140,944.3	78,056.6	750.83				Average	
		53+00.00	121	140,867.1	78,120.1	750.53				Average	
		52+00.00	122	140,787.5	78,180.7	750.24				Average	
		51+00.00	123	140,705.7	78,238.1	749.94				Average	
		50+00.00	124	140,621.7	78,292.3	749.65				Average	
		49+00.00	125	140,535.6	78,343.3	749.35				Average	
		48+00.00	126	140,447.7	78,390.8	749.06				Average	
		47+00.00	127	140,358.0	78,435.0	748.76				Average	
		46+00.00	128	140,266.6	78,475.7	748.47				Average	
		45+00.00	129	140,173.8	78,512.8	748.17				Average	
		44+00.00	130	140,079.6	78,546.3	747.88				Average	
		43+00.00	131	139,984.1	78,576.2	747.58				Average	
		42+00.00	132	139,887.6	78,602.3	747.29				Average	
		41+00.00	133	139,790.2	78,624.8	746.99				Average	
		40+00.00	134	139,691.9	78,643.4	746.70				Average	
		39+00.00	135	139,634.7	78,656.3	746.40					
EB US 50 -CR 20 to US 50	12.0	point481	481	142,725.4	72,776.5	689.70				Average	
		114+00.00	289	142,817.7	72,732.4	689.60				Average	
		115+00.00	290	142,907.2	72,687.8	689.90				Average	
		116+00.00	291	142,996.7	72,643.1	690.40				Average	
		117+00.00	292	143,086.1	72,598.5	690.90				Average	
		118+00.00	293	143,175.6	72,553.9	691.40				Average	
		119+00.00	294	143,265.1	72,509.3	691.90				Average	
		120+00.00	295	143,354.6	72,464.7	692.40				Average	
		121+00.00	296	143,444.1	72,420.1	692.90				Average	
		122+00.00	297	143,533.6	72,375.5	693.40				Average	
		123+00.00	298	143,623.1	72,330.9	694.00				Average	
		124+00.00	299	143,712.6	72,286.3	695.00				Average	
		125+00.00	300	143,802.1	72,241.6	696.70				Average	

		126+00.00	301	143,891.6	72,197.0	699.00				Average	
		127+00.00	302	143,981.1	72,152.4	701.90				Average	
		128+00.00	303	144,070.6	72,107.8	704.90				Average	
		129+00.00	304	144,160.1	72,063.2	707.90				Average	
		130+00.00	305	144,249.6	72,018.6	710.90				Average	
		131+00.00	306	144,339.1	71,974.0	713.90				Average	
		132+00.00	307	144,428.6	71,929.4	716.90				Average	
		133+00.00	308	144,518.1	71,884.7	719.90				Average	
		134+00.00	309	144,607.6	71,840.1	722.90				Average	
		135+00.00	310	144,697.1	71,795.5	725.90				Average	
		136+00.00	311	144,786.6	71,750.9	728.40				Average	
		137+00.00	312	144,876.1	71,706.3	730.20				Average	
		138+00.00	313	144,965.6	71,661.7	731.40				Average	
		139+00.00	314	145,055.1	71,617.1	731.90				Average	
		140+00.00	315	145,144.6	71,572.5	731.80				Average	
		141+00.00	316	145,234.1	71,527.9	731.00				Average	
		142+00.00	317	145,323.6	71,483.2	730.10				Average	
		143+00.00	318	145,413.1	71,438.6	729.20				Average	
		144+00.00	319	145,502.6	71,394.0	728.30				Average	
		145+00.00	320	145,592.1	71,349.4	727.40				Average	
		146+00.00	321	145,681.6	71,304.8	726.50				Average	
		147+00.00	322	145,771.1	71,260.2	725.60				Average	
		148+00.00	323	145,860.6	71,215.6	724.70				Average	
		149+00.00	324	145,950.1	71,171.0	723.80				Average	
		150+00.00	325	146,039.6	71,126.3	723.20				Average	
		151+00.00	326	146,129.1	71,081.7	723.20				Average	
		152+00.00	327	146,218.6	71,037.1	723.70				Average	
		153+00.00	328	146,308.1	70,992.5	724.80				Average	
		154+00.00	329	146,397.6	70,947.9	726.50				Average	
		155+00.00	330	146,487.1	70,903.3	728.30				Average	
		156+00.00	331	146,576.5	70,858.7	730.10				Average	
		157+00.00	332	146,666.0	70,814.1	731.90				Average	
		158+00.00	333	146,755.5	70,769.5	733.70				Average	
		159+00.00	334	146,845.5	70,725.8	735.50				Average	
		160+00.00	335	146,937.1	70,685.6	737.50				Average	
		161+00.00	336	147,030.2	70,649.1	739.40				Average	
		162+00.00	337	147,124.6	70,616.3	741.00				Average	
		163+00.00	338	147,220.3	70,587.3	741.90				Average	

		164+00.00	339	147,317.1	70,562.1	742.30				Average	
		165+00.00	340	147,414.8	70,540.7	742.10				Average	
		166+00.00	341	147,513.2	70,523.3	741.30				Average	
		167+00.00	342	147,612.3	70,509.8	739.90				Average	
		168+00.00	343	147,711.8	70,500.2	737.90				Average	
		169+00.00	344	147,811.7	70,494.6	735.30				Average	
		170+00.00	345	147,911.7	70,492.9	732.20				Average	
		171+00.00	346	148,011.7	70,493.4	729.10				Average	
		172+00.00	347	148,111.7	70,493.8	726.40				Average	
		172+79.41	348	148,191.1	70,494.2	726.40					
CR 20 SB N of Bypass	12.0	point369	482	142,864.5	73,608.8	709.70				Average	
		point370	483	142,860.1	73,508.4	705.40				Average	
		point371	484	142,847.9	73,409.6	702.60				Average	
		a	485	142,828.4	73,311.8	701.50				Average	
		a	486	142,807.8	73,213.9	703.20				Average	
		point374	487	142,766.4	73,018.3	706.20				Average	
		point375	488	142,744.6	72,921.3	709.30				Average	
		point376	489	142,718.6	72,798.3	711.70					
CR 20 NB N of Bypass	12.0	point499	499	142,727.6	72,797.4	711.70	Stop	0.00	100	Average	
		point375	375	142,755.4	72,916.4	709.30				Average	
		point374	374	142,776.4	73,014.3	706.20				Average	
		a	373	142,817.7	73,209.9	703.20				Average	
		a	372	142,838.4	73,307.8	701.50				Average	
		point371	371	142,857.9	73,405.6	702.60				Average	
		point370	370	142,870.1	73,504.4	705.40				Average	
		point369	369	142,874.5	73,604.8	709.70					
CR 20 SB S of Bypass	12.0	point500	500	142,712.4	72,781.1	711.70	Stop	0.00	100	Average	
		point377	490	142,698.4	72,726.6	712.00				Average	
		point378	491	142,669.4	72,631.1	710.00				Average	
		point379	492	142,637.0	72,536.6	705.90				Average	
		point380	493	142,601.2	72,442.5	701.00				Average	
		point381	494	142,562.1	72,351.7	696.10				Average	
		point382	495	142,519.8	72,261.4	691.20				Average	
		point383	496	142,475.5	72,171.6	686.50				Average	
		point384	497	142,431.4	72,081.9	683.00				Average	
		point385	498	142,409.3	72,037.1	681.80					
Existng US 50 EB	12.0	point516	531	145,794.3	69,392.9	740.00				Average	
		point517	532	145,926.1	69,484.4	739.00				Average	

		point518	533	146,084.7	69,591.7	739.00				Average	
		point519	534	146,200.9	69,674.4	738.00				Average	
		point520	535	146,299.2	69,745.8	738.00				Average	
		point521	536	146,388.6	69,810.6	737.00				Average	
		point522	537	146,509.2	69,911.2	737.00				Average	
		point523	538	146,600.8	69,998.3	736.00				Average	
		point524	539	146,672.3	70,092.1	736.00				Average	
		point525	540	146,737.1	70,201.6	736.00				Average	
		point526	541	146,781.8	70,322.3	736.00				Average	
		point527	542	146,819.8	70,442.9	736.00				Average	
		point528	543	146,848.8	70,556.8	735.00				Average	
		point529	544	146,868.9	70,661.8	735.00				Average	
		point530	545	146,871.2	70,695.4	735.00					
Existing US 50 WB	12.0	point515	546	146,862.0	70,696.1	735.00	Stop	0.00	100	Average	
		point514	547	146,859.7	70,662.6	735.00				Average	
		point513	548	146,839.6	70,557.6	735.00				Average	
		point512	549	146,810.6	70,443.6	736.00				Average	
		point511	550	146,772.6	70,323.0	736.00				Average	
		point510	551	146,727.9	70,202.4	736.00				Average	
		point509	552	146,663.1	70,092.9	736.00				Average	
		point508	553	146,591.6	69,999.0	736.00				Average	
		point507	554	146,500.0	69,911.9	737.00				Average	
		point506	555	146,379.4	69,811.4	737.00				Average	
		point505	556	146,290.0	69,746.6	738.00				Average	
		point504	557	146,191.7	69,675.1	738.00				Average	
		point503	558	146,075.5	69,592.4	739.00				Average	
		point502	559	145,916.9	69,485.2	739.00				Average	
		point501	560	145,785.1	69,393.6	740.00					

PTG 26 June 2013
RJC TNM 2.5

INPUT: ROADWAYS
PROJECT/CONTRACT: US 50 East
RUN: 4_NB

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

Roadway		Points									
Name	Width	Name	No.	Coordinates (pavement) X	Y	Z	Flow Control Control Device	Speed Constraint	Percent Vehicles Affected	Segment Pvmt Type	On Struct?
	ft			ft	ft	ft		mph	%		
EB US 50 -SR3 to CR 75	12.0	342+02.11	1	135,632.9	78,643.1	728.46				Average	
		343+00.00	2	135,717.6	78,643.3	728.85				Average	
		344+00.00	3	135,817.6	78,643.5	729.25				Average	
		345+00.00	4	135,917.6	78,643.7	729.65				Average	
		346+00.00	5	136,017.6	78,643.9	730.05				Average	
		347+00.00	6	136,117.6	78,644.0	730.45				Average	
		348+00.00	7	136,217.6	78,644.2	730.85				Average	
		349+00.00	8	136,317.6	78,644.4	731.25				Average	
		350+00.00	9	136,417.6	78,644.6	731.65				Average	
		351+00.00	10	136,517.6	78,644.8	732.05				Average	
		352+00.00	11	136,617.6	78,645.0	732.45				Average	
		353+00.00	12	136,717.6	78,645.2	732.85				Average	
		354+00.00	13	136,817.6	78,645.4	733.25				Average	
		355+00.00	14	136,917.6	78,645.6	733.65				Average	
		356+00.00	15	137,017.6	78,645.8	734.05				Average	
		357+00.00	16	137,117.6	78,645.9	734.45				Average	
		358+00.00	17	137,217.6	78,646.1	734.85				Average	
		359+00.00	18	137,317.6	78,646.3	735.25				Average	
		360+00.00	19	137,417.6	78,646.5	735.65				Average	
		361+00.00	20	137,517.6	78,646.7	736.05				Average	
		362+00.00	21	137,617.6	78,646.9	736.45				Average	
		363+00.00	22	137,717.6	78,647.1	736.85				Average	
		364+00.00	23	137,817.6	78,647.3	737.25				Average	
		365+00.00	24	137,917.6	78,647.5	737.65				Average	
		366+00.00	25	138,017.6	78,647.6	738.05				Average	

		367+00.00	26	138,117.6	78,647.8	738.45				Average	
		368+00.00	27	138,217.6	78,648.0	738.85				Average	
		369+00.00	28	138,317.6	78,648.2	739.25				Average	
		370+00.00	29	138,417.6	78,648.4	739.65				Average	
		371+00.00	30	138,517.6	78,648.6	740.05				Average	
		372+00.00	31	138,617.6	78,648.8	740.45				Average	
		373+00.00	32	138,717.6	78,649.0	740.85				Average	
		374+00.00	33	138,817.6	78,649.2	741.25				Average	
		375+00.00	34	138,917.6	78,649.4	741.65				Average	
		376+00.00	35	139,017.6	78,649.5	742.05				Average	
		377+00.00	36	139,117.6	78,649.7	742.45				Average	
		378+00.00	37	139,217.6	78,649.9	742.85				Average	
		379+00.00	38	139,317.6	78,650.1	743.25				Average	
		380+00.00	39	139,417.6	78,650.3	743.65				Average	
		381+00.00	40	139,517.6	78,650.5	744.05				Average	
		382+00.00	41	139,605.0	78,650.7	744.45					
WB US 50 -SR3 to CR 75	12.0	point881	881	139,595.9	78,669.6	744.50				Average	
		point880	880	139,511.2	78,668.5	744.10				Average	
		point879	879	139,411.2	78,668.4	743.70				Average	
		point878	878	139,311.2	78,668.2	743.30				Average	
		point877	877	139,211.2	78,668.0	742.90				Average	
		point876	876	139,111.2	78,667.8	742.50				Average	
		point875	875	139,011.2	78,667.6	742.10				Average	
		point874	874	138,911.2	78,667.4	741.70				Average	
		point873	873	138,811.2	78,667.2	741.30				Average	
		point872	872	138,711.2	78,667.0	740.90				Average	
		point871	871	138,611.2	78,666.8	740.50				Average	
		point870	870	138,511.2	78,666.7	740.10				Average	
		point869	869	138,411.2	78,666.5	739.70				Average	
		point868	868	138,311.2	78,666.3	739.30				Average	
		point867	867	138,211.2	78,666.1	738.90				Average	
		point866	866	138,111.2	78,665.9	738.50				Average	
		point865	865	138,011.2	78,665.7	738.10				Average	
		point864	864	137,911.2	78,665.5	737.70				Average	
		point863	863	137,811.2	78,665.3	737.30				Average	
		point862	862	137,711.2	78,665.1	736.90				Average	
		point861	861	137,611.2	78,664.9	736.50				Average	
		point860	860	137,511.2	78,664.8	736.10				Average	

		point859	859	137,411.2	78,664.6	735.70				Average	
		point858	858	137,311.2	78,664.4	735.30				Average	
		point857	857	137,211.2	78,664.2	734.90				Average	
		point856	856	137,111.2	78,664.0	734.50				Average	
		point855	855	137,011.2	78,663.8	734.10				Average	
		point854	854	136,911.2	78,663.6	733.70				Average	
		point853	853	136,811.2	78,663.4	733.30				Average	
		point852	852	136,711.2	78,663.2	732.90				Average	
		point851	851	136,611.2	78,663.1	732.50				Average	
		point850	850	136,511.2	78,662.9	732.10				Average	
		point849	849	136,411.2	78,662.7	731.70				Average	
		point848	848	136,311.2	78,662.5	731.30				Average	
		point847	847	136,211.2	78,662.3	730.90				Average	
		point846	846	136,111.2	78,662.1	730.50				Average	
		point845	845	136,011.2	78,661.9	730.10				Average	
		point844	844	135,911.2	78,661.7	729.70				Average	
		point843	843	135,811.2	78,661.5	729.30				Average	
		point842	842	135,711.2	78,661.3	728.90				Average	
		point841	841	135,630.4	78,663.6	728.50					
SR 3 SB N of Bypass	12.0	point449	1188	135,613.6	79,746.7	735.10	Signal	0.00	50	Average	
		point450	1189	135,610.6	79,647.1	735.10				Average	
		point452	1190	135,607.5	79,547.1	735.00				Average	
		point453	1191	135,604.5	79,447.1	734.90				Average	
		point454	1192	135,603.7	79,347.1	734.70				Average	
		point455	1193	135,604.2	79,247.1	734.50				Average	
		point456	1194	135,604.8	79,147.1	734.40				Average	
		point457	1195	135,605.3	79,047.1	734.10				Average	
		point458	1196	135,605.9	78,947.1	733.30				Average	
		point459	1197	135,606.4	78,847.1	732.10				Average	
		point460	1198	135,607.0	78,747.1	730.50				Average	
		point461	1199	135,607.1	78,684.1	728.70					
SR 3 NB N of Bypass	12.0	point437	1224	135,628.6	78,675.7	728.70	Signal	0.00	50	Average	
		point438	1223	135,631.0	78,747.1	730.50				Average	
		point439	1222	135,630.4	78,847.1	732.10				Average	
		point440	1221	135,629.9	78,947.1	733.30				Average	
		point441	1220	135,629.3	79,047.1	734.10				Average	
		point442	1219	135,628.8	79,147.1	734.40				Average	
		point443	1218	135,628.2	79,247.1	734.50				Average	

		point444	1217	135,627.7	79,347.1	734.70				Average	
		point445	1216	135,627.2	79,447.1	734.90				Average	
		point446	1215	135,626.7	79,547.1	735.00				Average	
		point447	1214	135,626.1	79,647.1	735.10				Average	
		point448	1213	135,625.6	79,746.6	735.10					
CR 20 W SB	12.0	point1238	1238	143,016.0	79,852.7	756.20				Average	
		a	1239	143,012.0	79,752.6	755.90				Average	
		point1240	1240	143,007.0	79,652.6	755.80				Average	
		point1241	1241	143,003.0	79,552.2	753.20				Average	
		point1242	1242	142,999.0	79,452.3	750.70				Average	
		point1243	1243	142,993.5	79,361.1	748.30				Average	
		point1244	1244	142,989.5	79,261.1	747.70					
CR 20 W NB	12.0	point1264	1264	143,000.0	79,262.7	747.70	Stop	0.00	100	Average	
		point1263	1263	143,004.0	79,352.6	748.30				Average	
		point1262	1262	143,009.0	79,452.3	750.70				Average	
		point1261	1261	143,013.0	79,552.2	753.20				Average	
		point1259	1259	143,022.0	79,752.6	755.90				Average	
		point1258	1258	143,026.0	79,852.7	756.20					
CR 75 SB	12.0	point1274	1274	139,640.3	79,369.3	740.70	Stop	0.00	100	Average	
		point1275	1275	139,638.1	79,315.0	740.90				Average	
		point1276	1276	139,631.5	79,215.3	741.10				Average	
		point1277	1277	139,624.1	79,115.7	742.30				Average	
		point1278	1278	139,620.4	79,015.6	745.10				Average	
		point1279	1279	139,618.2	78,915.4	748.50				Average	
		point1280	1280	139,617.8	78,815.1	751.90				Average	
		point1281	1281	139,617.9	78,671.4	753.50					
CR 75 NB_N of Bypass	12.0	point1299	1299	139,638.8	78,672.4	753.50	Stop	0.00	50	Average	
		point1298	1298	139,639.8	78,815.1	751.90				Average	
		point1297	1297	139,640.3	78,915.4	748.50				Average	
		point1296	1296	139,642.4	79,015.6	745.10				Average	
		point1295	1295	139,646.1	79,115.7	742.30				Average	
		point1294	1294	139,649.5	79,215.3	741.10				Average	
		point1293	1293	139,651.1	79,315.0	740.90				Average	
		point1292	1292	139,651.3	79,369.3	740.70					
WB US 50 -CR 75 W to CR 20 W	12.0	point1312	1312	142,982.1	79,254.0	752.15				Average	
		point915	915	142,932.1	79,253.4	753.00				Average	
		point914	914	142,832.1	79,252.4	754.50				Average	
		point913	913	142,732.4	79,251.1	755.50				Average	

		point912	912	142,633.5	79,246.5	756.10				Average	
		point911	911	142,535.0	79,237.7	756.30				Average	
		point910	910	142,436.8	79,224.7	756.10				Average	
		point909	909	142,339.4	79,207.6	755.70				Average	
		point908	908	142,242.7	79,186.5	755.30				Average	
		point907	907	142,147.0	79,161.2	754.90				Average	
		point906	906	142,052.5	79,132.0	754.50				Average	
		point905	905	141,959.3	79,098.8	754.10				Average	
		point904	904	141,867.2	79,061.6	753.70				Average	
		point903	903	141,775.1	79,022.9	753.30				Average	
		point902	902	141,682.9	78,984.1	752.90				Average	
		point901	901	141,590.7	78,945.3	752.50				Average	
		point900	900	141,498.5	78,906.6	752.10				Average	
		point899	899	141,406.3	78,867.8	751.70				Average	
		point898	898	141,313.6	78,829.2	751.30				Average	
		point897	897	141,219.0	78,793.7	750.90				Average	
		point896	896	141,123.0	78,762.3	750.50				Average	
		point895	895	141,025.6	78,735.3	750.10				Average	
		point894	894	140,927.2	78,712.5	749.70				Average	
		point893	893	140,827.9	78,694.1	749.30				Average	
		point892	892	140,727.8	78,680.1	748.90				Average	
		point891	891	140,627.2	78,670.5	748.50				Average	
		point890	890	140,526.3	78,665.3	748.10				Average	
		point889	889	140,425.6	78,664.2	747.70				Average	
		point888	888	140,325.6	78,664.1	747.30				Average	
		point887	887	140,225.6	78,663.9	746.90				Average	
		point886	886	140,125.6	78,663.7	746.50				Average	
		point885	885	140,025.6	78,663.5	746.10				Average	
		point884	884	139,925.6	78,663.3	745.70				Average	
		point883	883	139,825.6	78,663.1	745.30				Average	
		point882	882	139,725.6	78,662.9	744.90				Average	
		point1310	1310	139,643.6	78,664.5	744.50					
EB US 50 -CR 75 W to CR 20 W	12.0	point1311	1311	139,642.5	78,639.3	744.45				Average	
		383+00.00	42	139,723.6	78,637.7	744.85				Average	
		384+00.00	43	139,823.6	78,637.9	745.25				Average	
		385+00.00	44	139,923.6	78,638.0	745.65				Average	
		386+00.00	45	140,023.6	78,638.2	746.05				Average	
		387+00.00	46	140,123.5	78,638.4	746.45				Average	

		388+00.00	47	140,223.5	78,638.6	746.85				Average	
		389+00.00	48	140,323.5	78,638.8	747.25				Average	
		390+00.00	49	140,423.5	78,639.0	747.65				Average	
		391+00.00	50	140,523.5	78,640.0	748.05				Average	
		392+00.00	51	140,623.4	78,644.9	748.45				Average	
		393+00.00	52	140,723.0	78,654.1	748.85				Average	
		394+00.00	53	140,822.1	78,667.6	749.25				Average	
		395+00.00	54	140,920.5	78,685.3	749.65				Average	
		396+00.00	55	141,018.0	78,707.3	750.05				Average	
		397+00.00	56	141,114.5	78,733.4	750.45				Average	
		398+00.00	57	141,209.8	78,763.7	750.85				Average	
		399+00.00	58	141,303.7	78,798.1	751.25				Average	
		400+00.00	59	141,396.2	78,836.2	751.65				Average	
		401+00.00	60	141,488.4	78,874.9	752.05				Average	
		402+00.00	61	141,580.6	78,913.7	752.45				Average	
		403+00.00	62	141,672.7	78,952.4	752.85				Average	
		404+00.00	63	141,764.9	78,991.2	753.25				Average	
		405+00.00	64	141,857.1	79,030.0	753.65				Average	
		406+00.00	65	141,949.6	79,068.0	754.05				Average	
		407+00.00	66	142,043.5	79,102.3	754.45				Average	
		408+00.00	67	142,138.8	79,132.6	754.85				Average	
		409+00.00	68	142,235.3	79,158.7	755.25				Average	
		410+00.00	69	142,332.9	79,180.6	755.65				Average	
		411+00.00	70	142,431.3	79,198.3	756.05				Average	
		412+00.00	71	142,530.4	79,211.8	756.31				Average	
		413+00.00	72	142,629.9	79,220.9	756.15				Average	
		414+00.00	73	142,729.8	79,225.8	755.56				Average	
		415+00.00	74	142,829.8	79,227.2	754.54				Average	
		416+00.00	75	142,929.8	79,228.2	753.09				Average	
		point1313	1313	142,983.5	79,227.9	752.22					
EB US 50 -CR 20 W to US 50	12.0	point1314	1314	143,003.9	79,231.0	752.22				Average	
		417+00.00	76	143,027.1	79,231.0	751.35				Average	
		418+00.00	77	143,129.8	79,230.2	749.60				Average	
		419+00.00	78	143,229.8	79,231.2	747.85				Average	
		420+00.00	79	143,329.7	79,234.3	746.10				Average	
		421+00.00	80	143,429.5	79,241.0	744.35				Average	
		422+00.00	81	143,529.0	79,251.2	742.61				Average	
		423+00.00	82	143,628.0	79,264.9	741.29				Average	

		424+00.00	83	143,726.5	79,282.1	740.69				Average	
		425+00.00	84	143,824.4	79,302.8	740.82				Average	
		426+00.00	85	143,921.4	79,326.9	741.66				Average	
		427+00.00	86	144,017.5	79,354.5	743.23				Average	
		428+00.00	87	144,112.6	79,385.5	745.23				Average	
		429+00.00	88	144,207.2	79,417.9	747.23				Average	
		430+00.00	89	144,301.8	79,450.3	749.23				Average	
		431+00.00	90	144,396.4	79,482.7	751.23				Average	
		432+00.00	91	144,491.0	79,515.1	753.23				Average	
		433+00.00	92	144,585.6	79,547.5	755.23				Average	
		434+00.00	93	144,680.2	79,579.9	756.99				Average	
		435+00.00	94	144,774.8	79,612.3	758.29				Average	
		436+00.00	95	144,869.4	79,644.7	759.11				Average	
		437+00.00	96	144,964.1	79,677.1	759.47				Average	
		438+00.00	97	145,058.7	79,709.5	759.35				Average	
		439+00.00	98	145,153.3	79,741.9	759.00				Average	
		440+00.00	99	145,247.9	79,774.3	758.65				Average	
		441+00.00	100	145,342.5	79,806.7	758.30				Average	
		442+00.00	101	145,437.2	79,838.7	757.95				Average	
		443+00.00	102	145,532.7	79,868.4	757.60				Average	
		444+00.00	103	145,629.0	79,895.3	757.25				Average	
		445+00.00	104	145,726.0	79,919.4	756.90				Average	
		446+00.00	105	145,823.7	79,940.8	756.55				Average	
		447+00.00	106	145,922.0	79,959.3	756.20				Average	
		448+00.00	107	146,020.8	79,974.9	755.85				Average	
		449+00.00	108	146,119.9	79,987.7	755.50				Average	
		450+00.00	109	146,219.4	79,997.6	755.15				Average	
		451+00.00	110	146,319.2	80,004.7	754.80				Average	
		452+00.00	111	146,419.1	80,008.9	754.45				Average	
		453+00.00	112	146,519.1	80,010.4	754.10				Average	
		454+00.00	113	146,619.1	80,011.4	753.75				Average	
		455+00.00	114	146,719.1	80,012.5	753.40				Average	
		456+00.00	115	146,819.1	80,013.5	753.05				Average	
		457+00.00	116	146,919.1	80,014.5	752.70				Average	
		458+00.00	117	147,019.1	80,015.5	752.35				Average	
		459+00.00	118	147,119.1	80,016.5	752.00				Average	
		460+00.00	119	147,219.1	80,017.5	751.59				Average	
		461+00.00	120	147,319.0	80,018.5	750.75				Average	

		462+00.00	121	147,419.0	80,019.5	749.42				Average	
		463+00.00	122	147,519.0	80,020.5	747.60				Average	
		464+00.00	123	147,619.0	80,021.5	745.29				Average	
		465+00.00	124	147,719.0	80,022.5	742.55				Average	
		466+00.00	125	147,819.0	80,023.5	739.75				Average	
		467+00.00	126	147,919.0	80,024.5	736.95				Average	
		468+00.00	127	148,019.0	80,025.6	734.15				Average	
		469+00.00	128	148,119.0	80,026.6	731.35				Average	
		470+00.00	129	148,219.0	80,027.6	728.55				Average	
		471+00.00	130	148,319.0	80,028.6	725.75				Average	
		472+00.00	131	148,419.0	80,029.6	722.95				Average	
		473+00.00	132	148,519.0	80,030.6	720.15				Average	
		474+00.00	133	148,619.0	80,031.6	717.35				Average	
		475+00.00	134	148,719.0	80,032.6	714.55				Average	
		476+00.00	135	148,819.0	80,033.6	711.75				Average	
		477+00.00	136	148,919.0	80,034.6	708.95				Average	
		478+00.00	137	149,019.0	80,035.6	706.15				Average	
		479+00.00	138	149,119.0	80,036.6	703.43				Average	
		480+00.00	139	149,218.9	80,037.6	701.26				Average	
		481+00.00	140	149,318.9	80,038.4	699.72				Average	
		482+00.00	141	149,418.9	80,036.7	698.81				Average	
		483+00.00	142	149,518.8	80,032.1	698.53				Average	
		484+00.00	143	149,618.5	80,024.6	698.80				Average	
		485+00.00	144	149,718.0	80,014.3	699.15				Average	
		486+00.00	145	149,817.1	80,001.1	699.50				Average	
		487+00.00	146	149,915.8	79,985.0	699.85				Average	
		488+00.00	147	150,014.0	79,966.2	700.20				Average	
		489+00.00	148	150,111.6	79,944.5	700.55				Average	
		490+00.00	149	150,208.6	79,920.0	700.90				Average	
		491+00.00	150	150,304.8	79,892.7	701.25				Average	
		492+00.00	151	150,400.2	79,862.6	701.60				Average	
		493+00.00	152	150,494.6	79,829.8	701.95				Average	
		494+00.00	153	150,588.1	79,794.3	702.34				Average	
		495+00.00	154	150,680.5	79,756.2	703.17				Average	
		496+00.00	155	150,771.8	79,715.3	704.53				Average	
		497+00.00	156	150,861.9	79,671.9	706.42				Average	
		498+00.00	157	150,950.7	79,625.9	708.83				Average	
		499+00.00	158	151,038.1	79,577.3	711.74				Average	

		500+00.00	159	151,124.1	79,526.3	714.74				Average	
		501+00.00	160	151,208.5	79,472.8	717.74				Average	
		502+00.00	161	151,291.4	79,416.9	720.74				Average	
		503+00.00	162	151,372.7	79,358.6	723.74				Average	
		504+00.00	163	151,452.2	79,298.0	726.74				Average	
		505+00.00	164	151,530.0	79,235.1	729.74				Average	
		506+00.00	165	151,605.9	79,170.0	732.74				Average	
		507+00.00	166	151,679.9	79,102.8	735.74				Average	
		508+00.00	167	151,752.0	79,033.4	738.74				Average	
		509+00.00	168	151,822.0	78,962.0	741.74				Average	
		510+00.00	169	151,889.9	78,888.7	744.51				Average	
		511+00.00	170	151,955.7	78,813.4	746.84				Average	
		512+00.00	171	152,019.3	78,736.2	748.71				Average	
		513+00.00	172	152,080.6	78,657.2	750.14				Average	
		514+00.00	173	152,139.7	78,576.5	751.11				Average	
		515+00.00	174	152,196.4	78,494.1	751.64				Average	
		516+00.00	175	152,250.7	78,410.1	751.94				Average	
		517+00.00	176	152,302.5	78,324.6	752.24				Average	
		518+00.00	177	152,351.9	78,237.7	752.54				Average	
		519+00.00	178	152,398.7	78,149.3	752.84				Average	
		520+00.00	179	152,443.0	78,059.7	753.14				Average	
		521+00.00	180	152,484.6	77,968.8	753.44				Average	
		522+00.00	181	152,523.7	77,876.7	753.74				Average	
		523+00.00	182	152,560.0	77,783.5	754.04				Average	
		524+00.00	183	152,593.7	77,689.4	754.34				Average	
		525+00.00	184	152,624.6	77,594.3	754.64				Average	
		526+00.00	185	152,652.8	77,498.4	754.94				Average	
		527+00.00	186	152,678.2	77,401.6	755.24				Average	
		528+00.00	187	152,700.8	77,304.2	755.54				Average	
		529+00.00	188	152,720.6	77,206.2	755.84				Average	
		530+00.00	189	152,737.6	77,107.7	756.14				Average	
		531+00.00	190	152,751.7	77,008.7	756.44				Average	
		532+00.00	191	152,763.0	76,909.3	756.74				Average	
		533+00.00	192	152,771.4	76,809.7	757.04				Average	
		534+00.00	193	152,776.9	76,709.8	757.34				Average	
		535+00.00	194	152,779.5	76,609.9	757.64				Average	
		536+00.00	195	152,779.3	76,509.9	757.94				Average	
		537+00.00	196	152,776.1	76,409.9	758.24				Average	

		538+00.00	197	152,770.1	76,310.1	758.54				Average	
		539+00.00	198	152,761.3	76,210.5	758.84				Average	
		540+00.00	199	152,749.5	76,111.2	759.14				Average	
		541+00.00	200	152,734.9	76,012.3	759.44				Average	
		542+00.00	201	152,717.5	75,913.8	759.74				Average	
		543+00.00	202	152,697.2	75,815.9	760.04				Average	
		544+00.00	203	152,674.1	75,718.6	760.34				Average	
		545+00.00	204	152,648.2	75,622.0	760.64				Average	
		546+00.00	205	152,619.6	75,526.2	760.94				Average	
		547+00.00	206	152,588.2	75,431.3	761.24				Average	
		548+00.00	207	152,554.1	75,337.2	761.54				Average	
		549+00.00	208	152,519.4	75,243.4	761.84				Average	
		550+00.00	209	152,484.7	75,149.7	762.14				Average	
		551+00.00	210	152,450.0	75,055.9	762.44				Average	
		552+00.00	211	152,415.3	74,962.1	762.74				Average	
		553+00.00	212	152,380.6	74,868.3	763.04				Average	
		554+00.00	213	152,345.9	74,774.5	763.34				Average	
		555+00.00	214	152,311.2	74,680.7	763.64				Average	
		556+00.00	215	152,276.5	74,586.9	763.94				Average	
		557+00.00	216	152,241.8	74,493.2	764.24				Average	
		558+00.00	217	152,207.3	74,399.3	764.54				Average	
		559+00.00	218	152,176.4	74,304.2	764.84				Average	
		560+00.00	219	152,150.8	74,207.6	765.14				Average	
		561+00.00	220	152,130.6	74,109.6	765.44				Average	
		562+00.00	221	152,115.9	74,010.7	765.74				Average	
		563+00.00	222	152,106.6	73,911.2	766.04				Average	
		564+00.00	223	152,102.9	73,811.3	766.34				Average	
		565+00.00	224	152,104.6	73,711.3	766.64				Average	
		566+00.00	225	152,111.9	73,611.6	766.94				Average	
		567+00.00	226	152,124.7	73,512.4	767.26				Average	
		568+00.00	227	152,142.9	73,414.1	767.71				Average	
		569+00.00	228	152,166.5	73,316.9	768.31				Average	
		570+00.00	229	152,195.5	73,221.2	769.06				Average	
		571+00.00	230	152,229.7	73,127.3	769.96				Average	
		572+00.00	231	152,269.0	73,035.4	770.99				Average	
		573+00.00	232	152,313.4	72,945.7	772.04				Average	
		574+00.00	233	152,362.6	72,858.7	773.09				Average	
		575+00.00	234	152,416.6	72,774.5	774.14				Average	

		576+00.00	235	152,475.1	72,693.5	775.19				Average	
		577+00.00	236	152,538.0	72,615.8	776.24				Average	
		578+00.00	237	152,605.1	72,541.6	777.29				Average	
		579+00.00	238	152,676.2	72,471.4	778.34				Average	
		580+00.00	239	152,751.1	72,405.1	779.11				Average	
		581+00.00	240	152,829.5	72,343.1	779.32				Average	
		582+00.00	241	152,911.3	72,285.5	778.97				Average	
		583+00.00	242	152,996.1	72,232.5	778.06				Average	
		584+00.00	243	153,083.6	72,184.2	776.59				Average	
		585+00.00	244	153,173.7	72,140.9	774.84				Average	
		586+00.00	245	153,266.1	72,102.6	773.09				Average	
		587+00.00	246	153,360.5	72,069.5	771.34				Average	
		588+00.00	247	153,456.5	72,041.6	769.59				Average	
		589+00.00	248	153,553.9	72,019.1	767.84				Average	
		590+00.00	249	153,652.4	72,002.0	766.09				Average	
		591+00.00	250	153,751.7	71,990.3	764.44				Average	
		592+00.00	251	153,851.5	71,984.2	763.18				Average	
		593+00.00	252	153,951.5	71,983.6	762.33				Average	
		594+00.00	253	154,051.4	71,988.5	761.89				Average	
		595+00.00	254	154,150.8	71,998.9	761.87				Average	
		596+00.00	255	154,249.5	72,014.7	762.15				Average	
		597+00.00	256	154,347.2	72,036.1	762.45				Average	
		598+00.00	257	154,443.6	72,062.7	762.75				Average	
		599+00.00	258	154,538.3	72,094.7	763.05				Average	
		600+00.00	259	154,631.2	72,131.8	763.35				Average	
		601+00.00	260	154,721.8	72,174.0	763.65				Average	
		602+00.00	261	154,809.7	72,221.7	763.95				Average	
		603+00.00	262	154,894.2	72,275.1	764.25				Average	
		604+00.00	263	154,978.8	72,328.5	764.55				Average	
		605+00.00	264	155,063.3	72,381.9	764.85				Average	
		606+00.00	265	155,147.9	72,435.3	765.15				Average	
		607+00.00	266	155,232.4	72,488.7	765.45				Average	
		608+00.00	267	155,316.9	72,542.1	765.75				Average	
		609+00.00	268	155,401.5	72,595.5	766.05				Average	
		610+00.00	269	155,486.8	72,647.7	766.35				Average	
		611+00.00	270	155,573.3	72,697.9	766.65				Average	
		612+00.00	271	155,660.9	72,746.1	766.95				Average	
		613+00.00	272	155,749.5	72,792.4	767.25				Average	

		614+00.00	273	155,839.2	72,836.6	767.55				Average	
		615+00.00	274	155,929.9	72,878.7	767.85				Average	
		616+00.00	275	156,021.5	72,918.8	768.15				Average	
		617+00.00	276	156,114.0	72,956.8	768.45				Average	
		618+00.00	277	156,207.3	72,992.7	768.75				Average	
		619+00.00	278	156,300.9	73,027.9	769.05				Average	
		620+00.00	279	156,394.5	73,063.1	769.35				Average	
		621+00.00	280	156,488.1	73,098.3	769.65				Average	
		622+00.00	281	156,581.7	73,133.6	769.95				Average	
		623+00.00	282	156,675.3	73,168.8	770.25				Average	
		624+00.00	283	156,768.9	73,204.0	770.55				Average	
		625+00.00	284	156,862.5	73,239.2	770.85				Average	
		626+00.00	285	156,956.1	73,274.4	771.15				Average	
		627+00.00	286	157,049.7	73,309.6	771.45				Average	
		628+00.00	287	157,143.3	73,344.8	771.75				Average	
		629+00.00	288	157,236.9	73,380.0	771.97				Average	
		630+00.00	289	157,330.5	73,415.2	772.04				Average	
		631+00.00	290	157,424.1	73,450.4	772.04				Average	
		632+00.00	291	157,517.7	73,485.6	772.03				Average	
		633+00.00	292	157,611.3	73,520.8	772.03				Average	
		634+00.00	293	157,704.9	73,556.0	772.02				Average	
		635+00.00	294	157,798.5	73,591.2	772.02				Average	
		636+00.00	295	157,892.1	73,626.5	772.01				Average	
		637+00.00	296	157,985.7	73,661.7	772.01				Average	
		638+00.00	593	158,079.3	73,696.9	772.00				Average	
		639+00.00	594	158,172.9	73,732.1	772.00				Average	
		640+00.00	595	158,266.5	73,767.3	772.00				Average	
		641+00.00	596	158,360.1	73,802.5	772.00				Average	
		641+23.35	597	159,517.0	74,132.9	772.00					
WB US 50 -CR 20 W to US 50	12.0	point1137	1137	159,487.2	74,174.1	772.00				Average	
		point1184	1184	158,353.4	73,832.3	772.00				Average	
		point1187	1187	158,263.8	73,797.3	772.00				Average	
		point1186	1186	158,174.3	73,762.3	772.00				Average	
		point1185	1185	158,084.8	73,727.3	772.00				Average	
		point1136	1136	157,995.3	73,692.3	772.00				Average	
		point1135	1135	157,901.8	73,657.1	772.00				Average	
		point1134	1134	157,808.2	73,621.9	772.00				Average	
		point1133	1133	157,714.6	73,586.6	772.00				Average	

		point1132	1132	157,621.0	73,551.4	772.00				Average	
		point1131	1131	157,527.4	73,516.2	772.00				Average	
		point1130	1130	157,433.8	73,481.0	772.00				Average	
		point1129	1129	157,340.2	73,445.8	772.00				Average	
		point1128	1128	157,246.6	73,410.6	772.00				Average	
		point1127	1127	157,153.0	73,375.4	771.80				Average	
		point1126	1126	157,059.4	73,340.2	771.50				Average	
		point1125	1125	156,965.8	73,305.0	771.20				Average	
		point1124	1124	156,872.2	73,269.8	770.90				Average	
		point1123	1123	156,778.6	73,234.6	770.60				Average	
		point1122	1122	156,685.0	73,199.4	770.30				Average	
		point1121	1121	156,591.4	73,164.2	770.00				Average	
		point1120	1120	156,497.8	73,129.0	769.70				Average	
		point1119	1119	156,404.2	73,093.7	769.40				Average	
		point1118	1118	156,310.6	73,058.5	769.10				Average	
		point1117	1117	156,217.0	73,023.3	768.80				Average	
		point1116	1116	156,123.9	72,987.9	768.50				Average	
		point1115	1115	156,031.7	72,950.5	768.20				Average	
		point1114	1114	155,940.4	72,911.1	767.90				Average	
		point1113	1113	155,850.0	72,869.6	767.60				Average	
		point1112	1112	155,760.6	72,826.2	767.30				Average	
		point1111	1111	155,672.0	72,780.6	767.00				Average	
		point1110	1110	155,584.6	72,733.2	766.70				Average	
		point1109	1109	155,498.3	72,683.8	766.40				Average	
		point1108	1108	155,413.1	72,632.5	766.10				Average	
		point1107	1107	155,328.7	72,579.4	765.80				Average	
		point1106	1106	155,244.1	72,526.0	765.50				Average	
		point1105	1105	155,159.6	72,472.6	765.20				Average	
		point1104	1104	155,075.0	72,419.2	764.90				Average	
		point1103	1103	154,990.5	72,365.8	764.60				Average	
		point1102	1102	154,906.0	72,312.4	764.30				Average	
		point1101	1101	154,821.4	72,259.0	764.00				Average	
		point1100	1100	154,733.0	72,208.1	763.70				Average	
		point1099	1099	154,641.6	72,164.0	763.40				Average	
		point1098	1098	154,548.0	72,125.3	763.10				Average	
		point1097	1097	154,452.3	72,091.9	762.80				Average	
		point1096	1096	154,354.9	72,064.1	762.50				Average	
		point1095	1095	154,256.1	72,041.8	762.20				Average	

		point1094	1094	154,156.1	72,025.1	761.90				Average	
		point1093	1093	154,055.4	72,014.1	761.90				Average	
		point1092	1092	153,954.2	72,008.9	762.30				Average	
		point1091	1091	153,852.9	72,009.4	763.20				Average	
		point1090	1090	153,751.5	72,015.7	764.50				Average	
		point1089	1089	153,650.9	72,027.7	766.20				Average	
		point1088	1088	153,551.1	72,045.4	768.00				Average	
		point1087	1087	153,452.6	72,068.8	769.80				Average	
		point1086	1086	153,355.5	72,097.7	771.60				Average	
		point1085	1085	153,260.1	72,132.0	773.40				Average	
		point1084	1084	153,166.9	72,171.7	775.20				Average	
		point1083	1083	153,076.1	72,216.7	777.00				Average	
		point1082	1082	152,988.0	72,266.7	778.30				Average	
		point1081	1081	152,902.6	72,321.8	779.10				Average	
		point1080	1080	152,820.8	72,381.5	779.30				Average	
		point1079	1079	152,742.4	72,445.7	778.90				Average	
		point1078	1078	152,667.9	72,514.3	778.00				Average	
		point1077	1077	152,597.3	72,587.0	776.90				Average	
		point1076	1076	152,531.0	72,663.6	775.80				Average	
		point1075	1075	152,469.1	72,743.8	774.70				Average	
		point1074	1074	152,411.9	72,827.4	773.60				Average	
		point1073	1073	152,359.5	72,914.1	772.60				Average	
		point1072	1072	152,312.0	73,004.0	771.50				Average	
		point1071	1071	152,269.8	73,096.1	770.40				Average	
		point1070	1070	152,232.9	73,190.5	769.40				Average	
		point1069	1069	152,201.4	73,286.7	768.60				Average	
		point1068	1068	152,175.4	73,384.7	767.90				Average	
		point1067	1067	152,155.0	73,483.9	767.40				Average	
		point1066	1066	152,140.3	73,584.1	767.00				Average	
		point1065	1065	152,131.3	73,685.1	766.70				Average	
		point1064	1064	152,128.0	73,786.6	766.40				Average	
		point1063	1063	152,130.6	73,887.9	766.10				Average	
		point1062	1062	152,138.8	73,988.9	765.80				Average	
		point1061	1061	152,152.8	74,089.2	765.50				Average	
		point1060	1060	152,172.4	74,188.6	765.20				Average	
		point1059	1059	152,197.7	74,286.8	764.90				Average	
		point1058	1058	152,228.4	74,383.3	764.60				Average	
		point1057	1057	152,263.0	74,477.6	764.30				Average	

		point1056	1056	152,297.7	74,571.4	764.00				Average	
		point1055	1055	152,332.4	74,665.2	763.70				Average	
		point1054	1054	152,367.1	74,759.0	763.40				Average	
		point1053	1053	152,401.8	74,852.8	763.10				Average	
		point1052	1052	152,436.5	74,946.5	762.80				Average	
		point1051	1051	152,471.2	75,040.3	762.50				Average	
		point1050	1050	152,505.9	75,134.1	762.20				Average	
		point1049	1049	152,540.6	75,227.9	761.90				Average	
		point1048	1048	152,575.3	75,321.7	761.60				Average	
		point1047	1047	152,609.3	75,415.3	761.30				Average	
		point1046	1046	152,640.7	75,509.5	761.00				Average	
		point1045	1045	152,669.5	75,604.6	760.70				Average	
		point1044	1044	152,695.5	75,700.4	760.40				Average	
		point1043	1043	152,718.8	75,796.9	760.10				Average	
		point1042	1042	152,739.3	75,894.1	759.80				Average	
		point1041	1041	152,757.1	75,991.8	759.50				Average	
		point1040	1040	152,772.1	76,090.0	759.20				Average	
		point1039	1039	152,784.3	76,188.5	758.90				Average	
		point1038	1038	152,793.7	76,287.4	758.60				Average	
		point1037	1037	152,800.3	76,386.5	758.30				Average	
		point1036	1036	152,804.0	76,485.7	758.00				Average	
		point1035	1035	152,808.7	76,587.6	765.90				Average	
		point1034	1034	152,803.1	76,684.4	757.40				Average	
		point1033	1033	152,798.4	76,783.6	757.10				Average	
		point1032	1032	152,790.8	76,882.7	756.80				Average	
		point1031	1031	152,780.5	76,981.4	756.50				Average	
		point1030	1030	152,767.4	77,079.9	756.20				Average	
		point1029	1029	152,751.4	77,177.9	755.90				Average	
		point1028	1028	152,732.7	77,275.4	755.60				Average	
		point1027	1027	152,711.3	77,372.4	755.30				Average	
		point1026	1026	152,687.1	77,468.7	755.00				Average	
		point1025	1025	152,660.1	77,564.2	754.80				Average	
		point1024	1024	152,630.5	77,659.0	754.50				Average	
		point1023	1023	152,598.2	77,752.9	754.20				Average	
		point1022	1022	152,563.2	77,845.9	753.90				Average	
		point1021	1021	152,525.6	77,937.8	753.60				Average	
		point1020	1020	152,485.4	78,028.6	753.30				Average	
		point1019	1019	152,442.6	78,118.2	753.00				Average	

		point1018	1018	152,397.3	78,206.6	752.70				Average	
		point1017	1017	152,349.5	78,293.8	752.40				Average	
		point1016	1016	152,299.2	78,379.4	752.10				Average	
		point1015	1015	152,246.6	78,463.6	751.80				Average	
		point1014	1014	152,191.5	78,546.3	751.50				Average	
		point1013	1013	152,134.2	78,627.4	750.70				Average	
		point1012	1012	152,074.5	78,706.8	749.60				Average	
		point1011	1011	152,012.7	78,784.4	748.00				Average	
		point1010	1010	151,948.6	78,860.3	746.00				Average	
		point1009	1009	151,882.4	78,934.4	743.50				Average	
		point1008	1008	151,814.2	79,006.5	740.60				Average	
		point1007	1007	151,743.9	79,076.7	737.70				Average	
		point1006	1006	151,671.7	79,144.8	734.70				Average	
		point1005	1005	151,597.5	79,210.9	731.70				Average	
		point1004	1004	151,521.5	79,274.8	728.80				Average	
		point1003	1003	151,443.8	79,336.5	725.80				Average	
		point1002	1002	151,364.3	79,396.1	722.90				Average	
		point1001	1001	151,283.1	79,453.3	719.90				Average	
		point1000	1000	151,200.4	79,508.2	717.00				Average	
		point999	999	151,115.9	79,560.8	714.00				Average	
		point998	998	151,030.2	79,610.9	711.00				Average	
		point997	997	150,943.1	79,658.5	708.30				Average	
		point996	996	150,854.6	79,703.7	706.00				Average	
		point995	995	150,764.9	79,746.3	704.20				Average	
		point994	994	150,674.1	79,786.4	703.00				Average	
		point993	993	150,582.1	79,823.8	702.30				Average	
		point992	992	150,489.1	79,858.6	701.90				Average	
		point991	991	150,395.1	79,890.8	701.60				Average	
		point990	990	150,300.3	79,920.3	701.20				Average	
		point989	989	150,204.7	79,947.1	700.90				Average	
		point988	988	150,108.3	79,971.2	700.50				Average	
		point987	987	150,011.4	79,992.5	700.20				Average	
		point986	986	149,913.8	80,011.0	699.80				Average	
		point985	985	149,815.8	80,026.8	699.50				Average	
		point984	984	149,717.3	80,039.8	699.10				Average	
		point983	983	149,618.5	80,050.0	698.80				Average	
		point982	982	149,519.5	80,057.3	698.50				Average	
		point981	981	149,420.1	80,061.9	698.80				Average	

		point980	980	149,320.8	80,063.6	699.70				Average	
		point979	979	149,221.2	80,062.9	701.20				Average	
		point978	978	149,121.2	80,061.9	703.40				Average	
		point977	977	149,021.2	80,060.9	706.10				Average	
		point976	976	148,921.2	80,059.9	708.90				Average	
		point975	975	148,821.2	80,058.9	711.70				Average	
		point974	974	148,721.2	80,057.9	714.50				Average	
		point973	973	148,621.3	80,056.9	717.30				Average	
		point972	972	148,521.3	80,055.9	720.10				Average	
		point971	971	148,421.3	80,054.9	722.90				Average	
		point970	970	148,321.3	80,053.8	725.70				Average	
		point969	969	148,221.3	80,052.8	728.50				Average	
		point968	968	148,121.3	80,051.8	731.30				Average	
		point967	967	148,021.3	80,050.8	734.10				Average	
		point966	966	147,921.3	80,049.8	736.90				Average	
		point965	965	147,821.3	80,048.8	739.70				Average	
		point964	964	147,721.3	80,047.8	742.50				Average	
		point963	963	147,621.3	80,046.8	745.20				Average	
		point962	962	147,521.3	80,045.8	747.50				Average	
		point961	961	147,421.3	80,044.8	749.40				Average	
		point960	960	147,321.3	80,043.8	750.70				Average	
		point959	959	147,221.3	80,042.8	751.60				Average	
		point958	958	147,121.3	80,041.8	752.00				Average	
		point957	957	147,021.3	80,040.7	752.30				Average	
		point956	956	146,921.3	80,039.7	752.70				Average	
		point955	955	146,821.3	80,038.7	753.00				Average	
		point954	954	146,721.3	80,037.7	753.40				Average	
		point953	953	146,621.4	80,036.7	753.70				Average	
		point952	952	146,521.4	80,035.7	754.10				Average	
		point951	951	146,421.7	80,034.2	754.40				Average	
		point950	950	146,322.5	80,030.2	754.80				Average	
		point949	949	146,223.4	80,023.3	755.10				Average	
		point948	948	146,124.6	80,013.6	755.50				Average	
		point947	947	146,026.1	80,001.1	755.80				Average	
		point946	946	145,927.9	79,985.9	756.20				Average	
		point945	945	145,830.3	79,967.8	756.50				Average	
		point944	944	145,733.2	79,947.0	756.90				Average	
		point943	943	145,636.7	79,923.4	757.20				Average	

		point942	942	145,541.0	79,897.1	757.50				Average	
		point941	941	145,446.0	79,868.1	757.90				Average	
		point940	940	145,351.6	79,836.5	758.20				Average	
		point939	939	145,257.0	79,804.1	758.60				Average	
		point938	938	145,162.4	79,771.7	758.90				Average	
		point937	937	145,067.8	79,739.3	759.30				Average	
		point936	936	144,973.2	79,706.9	759.50				Average	
		point935	935	144,878.6	79,674.5	759.20				Average	
		point934	934	144,784.0	79,642.1	758.50				Average	
		point933	933	144,689.3	79,609.7	757.30				Average	
		point932	932	144,594.7	79,577.3	755.60				Average	
		point931	931	144,500.1	79,544.9	753.60				Average	
		point930	930	144,405.5	79,512.5	751.60				Average	
		point929	929	144,310.9	79,480.1	749.60				Average	
		point928	928	144,216.3	79,447.7	747.60				Average	
		point927	927	144,121.7	79,415.3	745.60				Average	
		point926	926	144,026.1	79,383.6	743.60				Average	
		point925	925	143,929.4	79,355.3	741.90				Average	
		point924	924	143,831.6	79,330.4	740.90				Average	
		point923	923	143,733.1	79,309.1	740.70				Average	
		point922	922	143,633.8	79,291.4	741.20				Average	
		point921	921	143,533.9	79,277.2	742.50				Average	
		point920	920	143,433.6	79,266.7	744.20				Average	
		point919	919	143,333.0	79,259.8	746.00				Average	
		point918	918	143,232.2	79,256.5	747.80				Average	
		point917	917	143,132.1	79,255.5	749.60				Average	
		point916	916	143,032.1	79,254.5	751.30				Average	
		point1316	1316	143,002.6	79,254.6	752.15					
SR 3 NB S of Bypass	12.0	point423	1237	135,638.6	77,347.1	731.50	Signal	0.00	50	Average	
		point424	1236	135,638.1	77,447.1	730.50				Average	
		point425	1235	135,637.5	77,547.1	729.30				Average	
		point426	1234	135,637.0	77,647.1	728.00				Average	
		point427	1233	135,636.5	77,747.1	726.80				Average	
		point428	1232	135,635.9	77,847.1	725.40				Average	
		point429	1231	135,635.4	77,947.1	724.30				Average	
		point430	1230	135,634.9	78,047.1	723.20				Average	
		point431	1229	135,634.3	78,147.1	722.70				Average	
		point432	1228	135,633.7	78,247.1	722.90				Average	

		point433	1227	135,633.2	78,347.1	723.60				Average	
		point434	1226	135,632.6	78,447.1	725.10				Average	
		point435	1225	135,625.6	78,579.9	726.90				Average	
		point436	1317	135,624.9	78,633.6	728.70					
SR 3 SB S of Bypass	12.0	point386	1319	135,606.3	78,632.8	728.70	Signal	0.00	50	Average	
		point387	1318	135,607.8	78,597.1	727.80				Average	
		point388	1200	135,608.1	78,547.1	726.90				Average	
		point389	1201	135,608.7	78,447.1	725.10				Average	
		point390	1202	135,609.2	78,347.1	723.60				Average	
		point391	1203	135,609.7	78,247.1	722.90				Average	
		point392	1204	135,610.3	78,147.1	722.70				Average	
		point393	1205	135,610.8	78,047.1	723.20				Average	
		point394	1206	135,611.4	77,947.1	724.30				Average	
		point395	1207	135,611.9	77,847.1	725.40				Average	
		point396	1208	135,612.5	77,747.1	726.80				Average	
		point397	1209	135,614.1	77,647.1	728.00				Average	
		point398	1210	135,618.2	77,547.1	729.30				Average	
		point399	1211	135,622.3	77,447.1	730.50				Average	
		point400	1212	135,626.4	77,347.1	731.50					
CR 75 NB_S of bypass	12.0	point1309	1309	139,652.2	77,715.3	745.20				Average	
		point1308	1308	139,651.2	77,815.2	745.10				Average	
		point1307	1307	139,648.5	77,915.0	744.80				Average	
		point1306	1306	139,644.4	78,014.8	743.90				Average	
		point1305	1305	139,641.6	78,114.8	742.90				Average	
		point1304	1304	139,640.4	78,215.0	742.00				Average	
		point1303	1303	139,640.3	78,315.1	741.10				Average	
		point1302	1302	139,640.2	78,415.1	741.60				Average	
		point1301	1301	139,640.1	78,515.1	744.70				Average	
		point1300	1300	139,640.0	78,615.1	749.90				Average	
		point1320	1320	139,637.8	78,629.7	753.50					
CR 75 SB_S of bypass	12.0	point1321	1321	139,613.6	78,635.1	753.50	Stop	0.00	50	Average	
		point1282	1282	139,614.8	78,616.2	749.90				Average	
		point1283	1283	139,618.1	78,515.1	744.70				Average	
		point1284	1284	139,618.2	78,415.1	741.60				Average	
		point1285	1285	139,618.3	78,315.1	741.10				Average	
		point1286	1286	139,618.4	78,215.0	742.00				Average	
		point1287	1287	139,620.5	78,114.8	742.90				Average	
		point1288	1288	139,628.4	78,014.8	743.90				Average	

		point1289	1289	139,637.2	77,915.0	744.80				Average	
		point1290	1290	139,640.1	77,815.2	745.10				Average	
		point1291	1291	139,641.2	77,715.3	745.20					
CR 20 W NB-2	12.0	point1272	1272	142,951.0	78,452.6	740.00				Average	
		point1271	1271	142,960.0	78,552.3	740.20				Average	
		point1270	1270	142,969.0	78,652.6	741.80				Average	
		point1269	1269	142,976.0	78,752.6	743.30				Average	
		point1268	1268	142,982.0	78,852.6	744.90				Average	
		point1267	1267	142,987.0	78,952.6	746.10				Average	
		point1266	1266	142,991.0	79,052.6	746.60				Average	
		point1265	1265	142,996.0	79,152.6	747.20				Average	
		point1324	1324	142,997.3	79,225.4	747.70					
CR 20 W SB-2	12.0	point1325	1325	142,987.3	79,225.9	747.70	Stop	0.00	100	Average	
		point1245	1245	142,986.0	79,152.6	747.20				Average	
		point1246	1246	142,981.0	79,052.6	746.60				Average	
		point1247	1247	142,977.0	78,952.6	746.10				Average	
		point1248	1248	142,972.0	78,852.6	744.90				Average	
		a	1249	142,966.0	78,752.6	743.30				Average	
		point1250	1250	142,959.0	78,652.6	741.80				Average	
		point1251	1251	142,950.0	78,552.3	740.20				Average	
		point1252	1252	142,941.0	78,452.6	740.00					

APPENDIX E-2

TNM Receiver Input

PTG
RJC

1 July 2013
TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: US 50 East
RUN: 4_NB
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	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
R01	1	1	0.0	58.7	66	58.7	10	----	58.7	0.0	8	-8.0
R02	2	1	0.0	59.7	66	59.7	10	----	59.7	0.0	8	-8.0
R03	3	1	0.0	63.8	66	63.8	10	----	63.8	0.0	8	-8.0
R04	4	1	0.0	55.6	66	55.6	10	----	55.6	0.0	8	-8.0
R05	5	1	0.0	56.0	66	56.0	10	----	56.0	0.0	8	-8.0
R06	6	1	0.0	47.6	66	47.6	10	----	47.6	0.0	8	-8.0
R07	7	1	0.0	47.6	66	47.6	10	----	47.6	0.0	8	-8.0
R47	9	1	0.0	52.6	66	52.6	10	----	52.6	0.0	8	-8.0
R48	10	1	0.0	54.3	66	54.3	10	----	54.3	0.0	8	-8.0
R49	11	1	0.0	60.8	66	60.8	10	----	60.8	0.0	8	-8.0
R50	12	1	0.0	57.1	66	57.1	10	----	57.1	0.0	8	-8.0
R51	13	1	0.0	54.5	66	54.5	10	----	54.5	0.0	8	-8.0
R52	16	1	0.0	57.1	66	57.1	10	----	57.1	0.0	8	-8.0
R53	17	1	0.0	61.9	66	61.9	10	----	61.9	0.0	8	-8.0
R54	18	1	0.0	49.3	66	49.3	10	----	49.3	0.0	8	-8.0
R55	19	1	0.0	53.3	66	53.3	10	----	53.3	0.0	8	-8.0
R56	22	1	0.0	48.8	66	48.8	10	----	48.8	0.0	8	-8.0
R57	23	1	0.0	52.0	66	52.0	10	----	52.0	0.0	8	-8.0
R58	24	1	0.0	52.3	66	52.3	10	----	52.3	0.0	8	-8.0
R59	25	1	0.0	50.5	66	50.5	10	----	50.5	0.0	8	-8.0
R60	26	1	0.0	53.6	66	53.6	10	----	53.6	0.0	8	-8.0
R61	27	1	0.0	52.2	66	52.2	10	----	52.2	0.0	8	-8.0
R62	29	1	0.0	56.3	66	56.3	10	----	56.3	0.0	8	-8.0

R63	30	1	0.0	50.1	66	50.1	10	----	50.1	0.0	8	-8.0
R64	34	1	0.0	55.3	66	55.3	10	----	55.3	0.0	8	-8.0
R65	35	1	0.0	52.4	66	52.4	10	----	52.4	0.0	8	-8.0
R66	36	1	0.0	51.2	66	51.2	10	----	51.2	0.0	8	-8.0
R67	37	1	0.0	50.9	66	50.9	10	----	50.9	0.0	8	-8.0
R68	40	1	0.0	62.0	66	62.0	10	----	62.0	0.0	8	-8.0
R69	41	1	0.0	52.3	66	52.3	10	----	52.3	0.0	8	-8.0
R70	43	1	0.0	55.3	66	55.3	10	----	55.3	0.0	8	-8.0
R71	44	1	0.0	57.3	66	57.3	10	----	57.3	0.0	8	-8.0
R72	45	1	0.0	52.5	66	52.5	10	----	52.5	0.0	8	-8.0
R73	46	1	0.0	57.4	66	57.4	10	----	57.4	0.0	8	-8.0
R74	47	1	0.0	57.5	66	57.5	10	----	57.5	0.0	8	-8.0
SF01	49	1	0.0	59.1	66	59.1	10	----	59.1	0.0	8	-8.0
SF02	52	1	0.0	58.4	66	58.4	10	----	58.4	0.0	8	-8.0
GC01	53	1	0.0	47.0	66	47.0	10	----	47.0	0.0	8	-8.0
GC02	54	1	0.0	51.8	66	51.8	10	----	51.8	0.0	8	-8.0
GC03	55	1	0.0	49.2	66	49.2	10	----	49.2	0.0	8	-8.0
GC04	56	1	0.0	53.4	66	53.4	10	----	53.4	0.0	8	-8.0
GC05	58	1	0.0	51.2	66	51.2	10	----	51.2	0.0	8	-8.0

Dwelling Units	# DUs	Noise Reduction		
		Min	Avg	Max
		dB	dB	dB
All Selected	42	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

PTG
RJC

1 July 2013
TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: US 50 East Bypass
RUN: 6_D_proposed
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	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
R01	18	1	0.0	58.6	66	58.6	10	----	58.6	0.0	8	-8.0
R02	19	1	0.0	59.7	66	59.7	10	----	59.7	0.0	8	-8.0
R03	20	1	0.0	63.8	66	63.8	10	----	63.8	0.0	8	-8.0
R04	21	1	0.0	55.5	66	55.5	10	----	55.5	0.0	8	-8.0
R05	22	1	0.0	56.0	66	56.0	10	----	56.0	0.0	8	-8.0
R06	23	1	0.0	46.9	66	46.9	10	----	46.9	0.0	8	-8.0
R07	24	1	0.0	46.5	66	46.5	10	----	46.5	0.0	8	-8.0
R08	28	1	0.0	53.8	66	53.8	10	----	53.8	0.0	8	-8.0
R08a	29	1	0.0	50.1	66	50.1	10	----	50.1	0.0	8	-8.0
R09	31	1	0.0	48.5	66	48.5	10	----	48.5	0.0	8	-8.0
R10	32	1	0.0	52.0	66	52.0	10	----	52.0	0.0	8	-8.0
R11	33	1	0.0	56.5	66	56.5	10	----	56.5	0.0	8	-8.0
R12	34	1	0.0	50.7	66	50.7	10	----	50.7	0.0	8	-8.0
R13	35	1	0.0	48.7	66	48.7	10	----	48.7	0.0	8	-8.0
R14	36	1	0.0	48.1	66	48.1	10	----	48.1	0.0	8	-8.0
R15	54	1	0.0	47.9	66	47.9	10	----	47.9	0.0	8	-8.0
R16	55	1	0.0	52.2	66	52.2	10	----	52.2	0.0	8	-8.0
R17	56	1	0.0	56.0	66	56.0	10	----	56.0	0.0	8	-8.0
R18	57	1	0.0	47.5	66	47.5	10	----	47.5	0.0	8	-8.0
R19	58	1	0.0	49.9	66	49.9	10	----	49.9	0.0	8	-8.0
R20	59	1	0.0	52.8	66	52.8	10	----	52.8	0.0	8	-8.0
R21	61	1	0.0	50.3	66	50.3	10	----	50.3	0.0	8	-8.0
R22	62	1	0.0	52.3	66	52.3	10	----	52.3	0.0	8	-8.0

R23	63	1	0.0	47.8	66	47.8	10	----	47.8	0.0	8	-8.0
R24	64	1	0.0	57.9	66	57.9	10	----	57.9	0.0	8	-8.0
R25	65	1	0.0	58.8	66	58.8	10	----	58.8	0.0	8	-8.0
R26	66	1	0.0	52.2	66	52.2	10	----	52.2	0.0	8	-8.0
R27	67	1	0.0	49.9	66	49.9	10	----	49.9	0.0	8	-8.0
R28	68	1	0.0	48.3	66	48.3	10	----	48.3	0.0	8	-8.0
R29	69	1	0.0	50.1	66	50.1	10	----	50.1	0.0	8	-8.0
R30	70	1	0.0	52.7	66	52.7	10	----	52.7	0.0	8	-8.0
R31	71	1	0.0	57.0	66	57.0	10	----	57.0	0.0	8	-8.0
R32	72	1	0.0	60.6	66	60.6	10	----	60.6	0.0	8	-8.0
R33	73	1	0.0	58.2	66	58.2	10	----	58.2	0.0	8	-8.0
R34	74	1	0.0	57.6	66	57.6	10	----	57.6	0.0	8	-8.0
R35	75	1	0.0	57.8	66	57.8	10	----	57.8	0.0	8	-8.0
R36	76	1	0.0	55.9	66	55.9	10	----	55.9	0.0	8	-8.0
R37	77	1	0.0	53.1	66	53.1	10	----	53.1	0.0	8	-8.0
R38	79	1	0.0	51.8	66	51.8	10	----	51.8	0.0	8	-8.0
R39	80	1	0.0	53.1	66	53.1	10	----	53.1	0.0	8	-8.0
R40	83	1	0.0	60.6	66	60.6	10	----	60.6	0.0	8	-8.0
R41	84	1	0.0	55.0	66	55.0	10	----	55.0	0.0	8	-8.0
R42	86	1	0.0	58.4	66	58.4	10	----	58.4	0.0	8	-8.0
R43	87	1	0.0	55.1	66	55.1	10	----	55.1	0.0	8	-8.0
R44	89	1	0.0	53.8	66	53.8	10	----	53.8	0.0	8	-8.0
R45	92	1	0.0	53.2	66	53.2	10	----	53.2	0.0	8	-8.0
R46	93	1	0.0	49.8	66	49.8	10	----	49.8	0.0	8	-8.0

Dwelling Units	# DUs	Noise Reduction		
		Min	Avg	Max
		dB	dB	dB
All Selected	47	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

APPENDIX F

Noise Meter Calibration Data

THE MODAL SHOP INC.
A PCB GROUP CO.

~Calibration Certificate~

3149 East Kemper Rd.
Cincinnati, OH 45241
Ph : 513-351-9919
Fax: 513-458-2172
www.modalshop.com

Manufacturer:	Larson Davis	Asset ID:	
Model:	CAL200	Calibration Date:	June 15, 2012
Serial Number:	8536	Due Date:	
Description:	Acoustic Calibrator	Technician:	Ed Devlin
Customer:	TMS Rental	Approval:	

Calibration Results:

Measured SPL : 93.96 dB re. 20µPa

Measured Frequency : 1,000.00 Hz

Temperature:	22 °C (72 °F)
Humidity:	41.70%
Pressure:	999.2 mbar

Upon receipt for calibration, the instrument was found to be:
WITHIN the stated tolerance of the manufacturer's specification.

Note: As Found / As Left: In Tolerance.

Measurement uncertainty at 95% confidence level: 0.3 dB

The subject instrument was calibrated to the indicated specification using standards stated below or to accepted values of natural physical constants. This document certifies that the instrument met the following specification upon its return to the customer.

This calibration is traceable through : 822/278767-10

Notes:

The calibration was performed under operating procedures intended to implement the requirements of ISO 9001, ISO 17025 and ANSI Z540. Unless otherwise noted, the reported value is both "as found" and "as left" data. Calibration results relate only to the items calibrated. This certificate may not be reproduced, except in full, without written permission.

Reference Equipment Used:

Manuf.	*Model*	*Serial*	*Cal. Date*	*Due Date*
GRAS	40AG	77606	9/16/2011	9/16/2012

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~Calibration Certificate~

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Cincinnati, OH 45241
Ph : 513-351-9919
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Manufacturer:	Larson Davis	Asset ID:	
Model:	CAL200	Calibration Date:	June 15, 2012
Serial Number:	8536	Due Date:	
Description:	Acoustic Calibrator	Technician:	Ed Devlin
Customer:	TMS Rental	Approval:	

Calibration Results:

	Temperature:	22 °C (72 °F)
Measured SPL : 113.96 dB re. 20µPa	Humidity:	41.70%
Measured Frequency : 1,000.00 Hz	Pressure:	999.2 mbar

Upon receipt for calibration, the instrument was found to be:
WITHIN the stated tolerance of the manufacturer's specification.

Note: As Found / As Left: In Tolerance.

Measurement uncertainty at 95% confidence level: 0.3 dB

The subject instrument was calibrated to the indicated specification using standards stated below or to accepted values of natural physical constants. This document certifies that the instrument met the following specification upon its return to the customer.

This calibration is traceable through : 822/278767-10

Notes:

The calibration was performed under operating procedures intended to implement the requirements of ISO 9001, ISO 17025 and ANSI Z540. Unless otherwise noted, the reported value is both "as found" and "as left" data. Calibration results relate only to the items calibrated. This certificate may not be reproduced, except in full, without written permission.

Reference Equipment Used:

Manuf.	*Model*	*Serial*	*Cal. Date*	*Due Date*
GRAS	40AG	77606	9/16/2011	9/16/2012

Certificate of Calibration and Conformance

This document certifies that the instrument referenced below meets published specifications per Procedure PRD-P263; ANSI S1.4-1983 (R 2006) Type 1; S1.4A-1985; S1.43-1997 Type 1; S1.11-2004 Octave Band Class 0; S1.25-1991; IEC 61672-2002 Class 1; 60651-2001 Type 1; 60804-2000 Type 1; 61260-2001 Class 0; 61252-2002.

Manufacturer:	Larson Davis	Temperature:	70.7	°F
Model Number:	LxT		23	°C
Serial Number:	2848	Rel. Humidity:	23	%
Customer:		Pressure:	999	mbars
Description:	Sound Level Meter		999	hPa

Note: As Found / As Left: In Tolerance

Upon receipt for testing, this instrument was found to be:

Within the Stated tolerance of the manufacturer's specification

Calibration Date: 14-Dec-12 Calibration Due:

Calibration Standards Used:

Manufacturer	Model	Serial Number	Cal Due	Traceability No.
Larson Davis	LDSigGen/2239	0760/0109	4/16/2013	2012-157887

This Certificate attests that this instrument has been calibrated under the stated conditions with Measurement and Test Equipment (M&TE) Standards traceable to the 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 The Modal Shop and/or Larson Davis Corporate Headquarters. 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 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. 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 Modal Shop.

Technician: Tim Rarden Signature:

THE MODAL SHOP INC.
A PCB GROUP CO.

The Modal Shop, Inc.
3149 East Kemper Road
Cincinnati, OH 45241
Phone: (513) 351-9919
(800) 860-4867
www.modalshop.com

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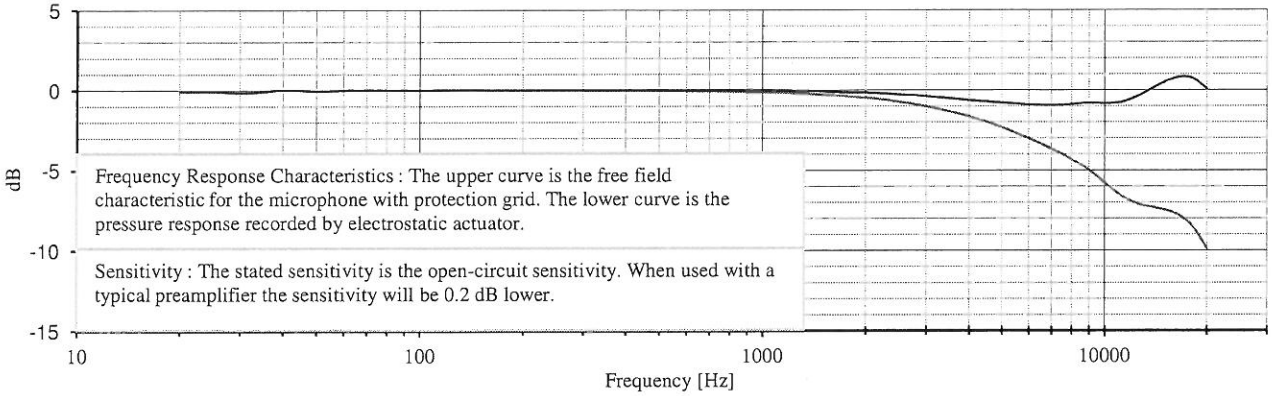
~Certificate of Calibration~

Manufacturer:	PCB	**Asset ID:**	
Model Number:	377B02	**Customer:**	TMS Rental
Serial Number:	LW135135	**Calibration Date:**	Feb 28, 2013 12:44:16
Description:	Free-Field Microphone	**Due Date:**	

Sensitivity:	**250 Hz**	**1 kHz**		**Temperature:**	71 (22)	°F (°C)
	-25.10	-25.23	dB re. 1V/Pa	**Humidity:**	28	%
	55.58	54.78	mV/Pa	**Ambient Pressure:**	987.8	mbar

Cal. Results: In Tolerance **Polarization Voltage:** 0 VDC



Traceability: The calibration is traceable through 681/280411-11.

Notes: Calibration results relate only to the items calibrated.
This certificate may not be reproduced, except in full, without written permission.
This calibration is performed in compliance with ISO 9001, ISO 17025 and ANSI Z540.
Measurement uncertainty (250 Hz sensitivity calibration) at 95% confidence level: 0.30 dB.
Calibrated per procedure PRD-P204.

User Note : As Found / As Left: In Tolerance.

Frequency Response with reference to level at 250 Hz

Frequency (Hz)	Upper (dB)	Frequency (Hz)	Upper (dB)	Frequency (Hz)	Upper (dB)	Frequency (Hz)	Upper (dB)
20	-0.07	**630**	-0.01	**4500**	-0.72		
25	-0.07	**800**	0.01	**5000**	-0.80		
31.5	-0.14	**1000**	-0.01	**5600**	-0.88		
40	0.03	**1120**	-0.02	**6300**	-0.93		
50	-0.05	**1250**	-0.04	**7100**	-0.95		
63	0.01	**1400**	-0.05	**8000**	-0.89		
80	0.01	**1600**	-0.12	**9000**	-0.80		
100	0.00	**1800**	-0.15	**10000**	-0.84		
125	0.02	**2000**	-0.16	**11200**	-0.75		
160	0.00	**2240**	-0.22	**12500**	-0.38		
200	0.00	**2500**	-0.28	**14000**	0.19		
250	0.00	**2800**	-0.34	**16000**	0.75		
315	0.00	**3150**	-0.43	**18000**	0.77		
400	-0.01	**3550**	-0.53	**20000**	0.07		
500	0.01	**4000**	-0.65				

ACCREDITED

Technician: Ed Devlin

Approval: Edward A. Devlin

Reference Equipment Used:

Manuf.	*Model*	*Serial*	*Cal. Date*	*Due Date*
GRAS	40AG	77606	9/21/2012	9/21/2013

1681 West 820 North • Provo, Utah 84601 • (801) 375-0177 • Fax (801) 375-0182 • http://www.lardav.com

LARSON•DAVIS

Model CAL200
Sound Level Calibrator

The Larson•Davis Model CAL200 is a Class 1L microphone calibrator intended for the Larson•Davis 1/2" or 1/4" diameter microphones typically used on Larson•Davis Model 812, 814, 820, 870, 2800, 2900 and 3200. The CAL200 provides a choice of calibration sound pressure levels, 94.0 and 114.0 dB (switch selectable) at a frequency of 1 kHz.

Using the Calibrator

1. Select the desired calibration sound pressure level using the switch mounted on the side of the calibrator. When the atmospheric pressure differs from 1013 millibars, add the pressure correction listed on the CAL200 back label to the nominal sound pressure level of 94 or 114 dB to determine the actual level.
2. Insert the 1/2" microphone fully into the microphone opening at the top of the calibrator. For level verification with 1/4" microphones, insert the AD112 adaptor into the microphone opening and then insert the microphone fully into the adaptor.
3. With the microphone connected to the instrument being calibrated, press the CAL200's ON button. With a fresh battery, the calibrator will emit an accurate tone for more than 60 seconds before automatically shutting off.
4. Make a reading. If the reading is not within tolerance, refer to the instrument's manual for instructions on how to adjust the instrument.

   Note 1: When making a sequence of measurements, a calibration check and an adjustment (if necessary) of the instrument should be made at the beginning. At the end of the measurements, calibration should be checked again. The inaccuracy of the measurements will be at least the difference between the beginning and ending calibration values.
5. Keep a calibration history of all adjustments.

   Calibration history keeping can be minimized if adjustments to the instrument are made only when the tolerance is exceeded. This is a user decision, but reasonable values might be ±0.2, ±0.5, or ±1.0 dB for Type 1 measurements.

Calibration History

Larson•Davis strongly recommends that a history report of each calibration adjustment be kept for each piece of equipment. Normally, most modern equipment requires little or no adjustment once the initial calibration is performed. But systematic drifts are possible, and these should be recorded for corrective action.

The Larson•Davis Models 812, 814, 820, and 870 automatically keep a calibration history that can be printed out before an overall reset.

Battery Replacement

At the 114 dB calibration level, the battery will last for approximately 42 hours, which corresponds to about 1,700 calibrations. When using the 94 dB calibration level, the battery will last for approximately 63 hours, corresponding to about 2,500 calibrations. As the battery becomes weaker, the calibration accuracy will not degrade, but the operating time will decrease until the time is too short to accomplish an adequate calibration. At this time, the battery should be replaced.

Environmental Precautions

While the CAL200 will perform normally under a variety of gradually changing environmental conditions, some precautions should be taken when sudden changes occur:

1. The temperature of the CAL200 should be stable. If the temperature changes suddenly, such as moving outdoor to indoor, provide a stabilization time of 15 minutes. This will ensure that the temperature compensation sensors are at the

Prevost, Daniel

From: Bales, Ronald [rbales@indot.IN.gov]
Sent: Wednesday, July 24, 2013 11:50 AM
To: Mills, Trevor
Cc: Mills, Trevor; Coordinator7; Mcmullen, Kenneth B.; Prevost, Daniel; Randolph, Tobias; Connolly, Richard
Subject: Des. No. 1173374, US 50 North Vernon Bypass East Project, Jennings County, Indiana (Noise Analysis)

A Traffic Noise Analysis report was completed by Parsons on July 24, 2013 for the US 50 North Vernon Bypass East in Jennings County, Indiana. Based on the results of this analysis, the state of Indiana has not identified any locations where noise abatement is likely. Noise abatement was not evaluated for this segment of the North Vernon Bypass as no receptors were found to be impacted by the project in the design year. A reevaluation of the noise analysis will occur during final design. If during final design it is determined that conditions have changed such that noise abatement is feasible and reasonable, abatement measures might be provided. The final decision on the installation of any abatement measure(s) will be made upon completion of the project's final design and the public involvement processes.

Therefore we are not recommending noise barriers be included in this project.

This e-mail serves as approval of the traffic noise analysis report.

Please let us know if you would like to view the full report or discuss further. Thank you.

Ron Bales
Senior Environmental Manager
INDOT-Environmental Services Division
317-234-4916

From: Coordinator7
Sent: Wednesday, July 24, 2013 11:14 AM
To: Mcmullen, Kenneth B.
Cc: Bales, Ronald; Mills, Trevor
Subject: FW: File Upload Confirmation; DES 1173374

1 – File of Revised Noise Analysis Technical Memorandum is ready for review. file is in CO REVIEW STATUS IN ERMS.

Syed.

Syed Ali
Central Office Coordinator
Highway Design and Technical Division
Tel: 317 - 233 - 2058
E - Mail: Sali@indot.in.gov

From: Connolly, Richard [mailto:Richard.Connolly@parsons.com]
Sent: Wednesday, July 24, 2013 8:48 AM

To: Coordinator7
Cc: Bales, Ronald; Mcmullen, Kenneth B.; Mills, Trevor; Randolph, Tobias; Prevost, Daniel
Subject: FW: File Upload Confirmation; DES 1173374

Coordinator 7,

We are requesting a review and approval of the **Revised Noise Analysis Technical Memorandum** for the following project: ***US 50 North Vernon Bypass - East Des No. 1173374.*** 1 file has been uploaded to ERMS for Roadway Services.

Please let me know if you have any questions.

Des 1173374 – 1 file has been uploaded.

Thanks.
Richard Connolly, CPESC, CESSWI
Senior Environmental Planner
PARSONS
101 West Ohio Street, Suite 2121
Indianapolis, IN 46204
(317)616-1004
richard.connolly@parsons.com