

October 1, 2014

Delcan Corporation  
4342 Queen Street, Suite 407  
Niagara Falls, Ontario  
L2E 7J7

Attention: Andrew McGregor  
[andrew.mcgregor@parsons.com](mailto:andrew.mcgregor@parsons.com)

**VIA EMAIL**

**Re: Addendum Letter #1 to the Environmental Noise Assessment  
Britannia Road (Regional Road 6) Tremaine Road to Highway 407  
Transportation Corridor Improvements  
Region of Halton, Ontario  
VCL File: 110-160-110**

Dear Mr. McGregor:

Valcoustics Canada Ltd. (VCL) completed a revised Environmental Noise Assessment dated January 30, 2014, (herein referred to as the Noise Report) for the proposed improvements to Britannia Road, between Tremaine Road and Highway 407, in the Region of Halton.

This Addendum has been prepared to update the noise analysis to account for the proposed grade separation of Britannia Road at the CN crossing between Tremaine Road and First Line. Originally, Britannia Road was proposed to go under the existing rail line. The current proposal is for Britannia Road to go over the rail line. The overpass has a peak elevation of 197.25 and a grade of 4.2%. See Figure 1.

The closest receptors in the vicinity of the grade separation are R1 and R2. See Figure 2 for the locations of R1 and R2 relative to the grade separation. These receptors are several hundred metres from the grade separation location. Due to the setback from the proposed Britannia Road grade separation, the future sound level increase is predicted to be less than 0.05 dBA at these receptors. This is considered to be insignificant acoustically.

Future residential or other noise sensitive development in the area of the proposed grade separation is not considered a receptor for the purposes of this study. Future noise impacts, accounting for the proposed Britannia Road improvements, are to be assessed and mitigated by the developers of these lands as part of the development approvals process. Impacts and recommendations remain unchanged from those presented in the Noise Report.

If you have any questions, please do not hesitate to call.

Yours truly,

**VALCOUSTICS CANADA LTD.**

Original Signed By:

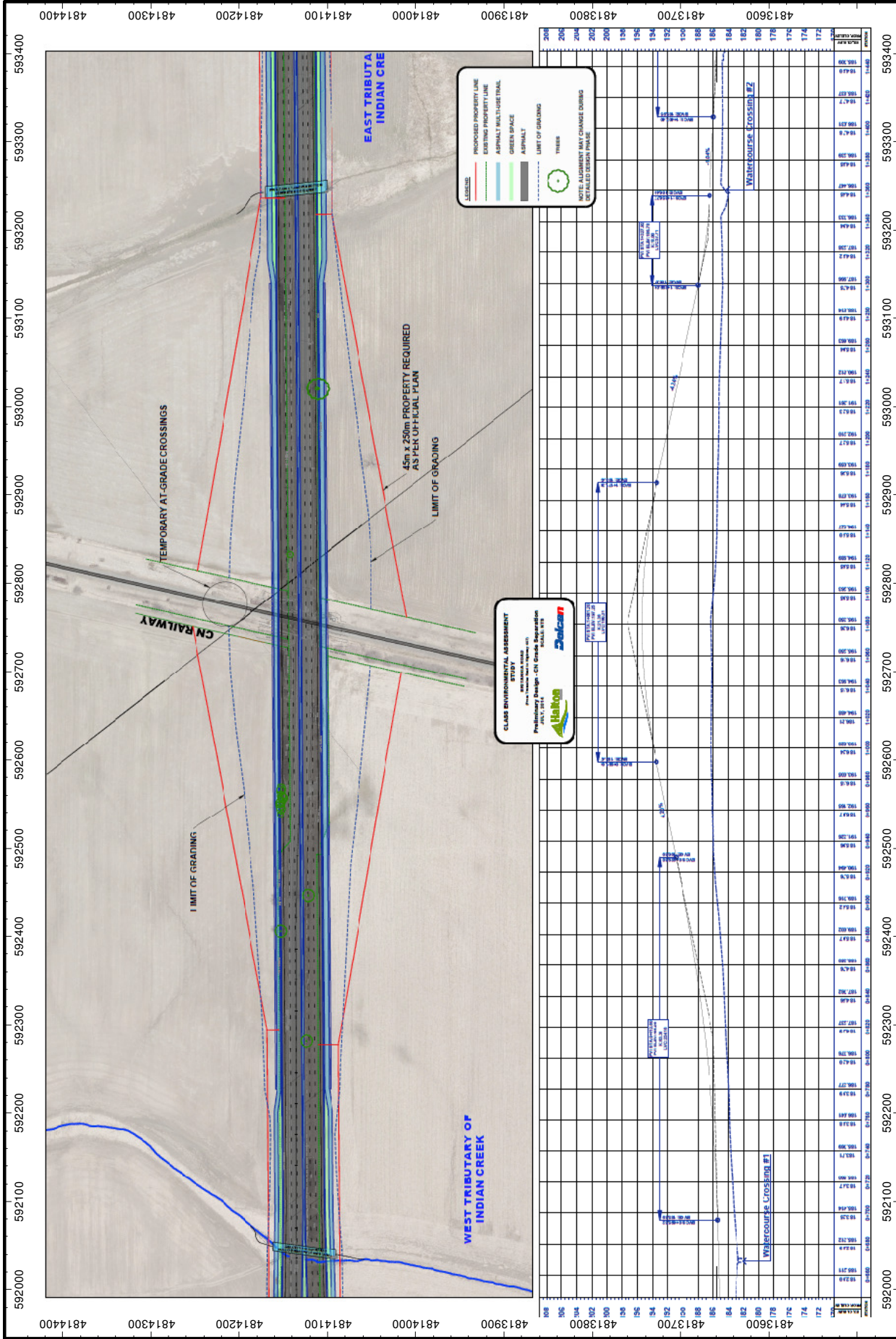
**Per:** \_\_\_\_\_  
**Seema Nagaraj, Ph.D., EIT**

Original Signed By:

**Per:** \_\_\_\_\_  
**John Emeljanow, B.Eng., P.Eng.**


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Enclosures



	<b>CN Grade Separation</b>		Date <b>July 29, 2014</b>	Figure <b>1</b>
	Project Name <b>Britannia Road Grade Separation</b>		Project No. <b>110-160-110</b>	



 <b>Canada Ltd.</b> consulting acoustical engineers	<b>Receptor Locations</b> Project Name <b>Britannia Road Grade Separation</b>		Date <b>July 29, 2014</b>	Figure <b>2</b>
			Project No. <b>110-160-110</b>	

**UPDATE**

**Environmental Noise Assessment**

**Britannia Road  
(Regional Road 6)**

**Transportation Corridor Improvements**  
Tremaine Road (Regional Road 22) to Highway 407  
Region of Halton

January 30, 2014  
Project: 110-160-100

Prepared for

**Delcan Corporation**

Prepared by

Original Signed By:

---

John Emeljanow, B.Eng., P.Eng.



**VALCOUSTICS**

*Canada Ltd.*

consulting acoustical engineers



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30 Wertheim Court, Unit 25  
Richmond Hill, Ontario, Canada L4B 1B9

email • [solutions@valcoustics.com](mailto:solutions@valcoustics.com)

web • [www.valcoustics.com](http://www.valcoustics.com)

telephone • 905 764-5223

fax • 905 764-6813

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# **UPDATE**

## **Environmental Noise Assessment**

### **Britannia Road (Regional Road 6)**

#### **Transportation Corridor Improvements** Tremaine Road (Regional Road 22) to Highway 407 Region of Halton

## **1.0 INTRODUCTION**

There is a proposal to improve Britannia Road between Tremaine Road and Highway 407. See Figure 1.

This report summarizes the expected traffic noise impact from the proposed improvements, including the potential impact of construction noise. In addition, the need for noise mitigation based on the requirements of the Ministry of Transportation (MTO)/Ministry of the Environment (MOE) protocol is evaluated.

## **2.0 ENVIRONMENTAL NOISE GUIDELINES**

### **2.1 MOE**

Based on the MTO/MOE Noise Protocol, where an existing roadway is proposed to be modified/widened adjacent to a Noise Sensitive Area (NSA), MOE requires that the future noise levels without the proposed improvements be compared to the future noise levels with the proposed improvements. A private home is an example of a NSA. The assessment is done at the outdoor amenity area (“Outdoor Living Area” – OLA) (typically backyard) of each NSA. The provision of noise mitigation is to be investigated should the future noise level with the proposed improvements result in a greater than 5 dBA increase over the future noise level without the proposed improvements. If noise mitigation is provided, the objective is a minimum 5 dBA reduction. Mitigation will attempt to achieve levels as close to, or lower than, the objective level as is technically, economically and administratively feasible.



## 2.2 REGION OF HALTON

The Region of Halton *Noise Abatement Policy for Regional Roads* indicates that for local improvement or retrofit noise walls, a daytime sound exposure of 60 dBA is the objective for OLA's. As per the MOE/MTO protocol, any sound barriers must be shown to provide at least 5 dBA of attenuation.

## 3.0 NOISE SENSITIVE AREAS (NSA's)

Land uses designated as noise sensitive by the MOE/MTO consist of residential developments, hospitals, nursing/retirement homes, etc.

Figures 2 to 9 identify the receptor locations which were analysed in detail. These residential dwellings are representative of the NSA's within the study area. Other dwellings with similar setback and orientation to the noise source will receive similar sound exposures and noise impacts. Dwellings further removed from the roadway will receive lower sound exposures due to increased distance attenuation.

Receptor locations were identified on drawings provided by Delcan. The receptor locations were confirmed during a site visit to the study area.

It should be noted that any future new residential subdivision developments along the Britannia Road corridor will have to carry out noise analyses in accordance with MOE requirements as part of the application process under the Planning Act. These studies would recommend indoor and outdoor noise mitigation measures and the inclusion of noise warning clauses on title of affected properties. These are outside the scope of this study.

## 4.0 NOISE IMPACT ASSESSMENT

### 4.1 TRAFFIC DATA

Existing (year 2010) and future (year 2031) traffic information for Britannia Road was provided by Delcan.

The percentages of heavy and medium trucks were determined from the information provided by Delcan. The road traffic data is summarized in Table 1 and in Appendix A.

### 4.2 PROCEDURE

Sound exposures were calculated using STAMSON V5.04-ORNAMENT, the computerized road traffic noise prediction model of the MOE. This is an accepted approach by the MTO, as outlined in their *Environmental Guide for Noise*.

Using the road traffic data, the daytime ( $L_{eq Day}$ ) sound exposure in the rear yard OLA was calculated at each receptor location. To assess the noise impact, the predicted existing sound exposures (year 2010) were compared to the future (year 2031) sound exposures with the proposed road improvements. This is a conservative approach since the MTO/MOE Noise Protocol requires that the future "do nothing" sound exposures be compared with the future sound

exposures with the proposed road improvements. Thus, the noise impact analysis for Britannia Road not only includes the potential noise impact due to the proposed road improvements, but also includes the noise impact due to the growth in traffic that occurs between 2010 and 2031.

Since the ambient sound environment in the vicinity of the NSA's is generally dominated by road traffic on Britannia Road, noise sources other than Britannia Road were not considered in the analysis. This is a conservative approach since, in the noise impact assessment, these secondary noise sources would tend to reduce the significance of sound exposure changes (i.e., impact) due to the improvement of Britannia Road.

### **4.3 RESULTS**

Table 2 shows, for each receptor, the existing sound exposures, the future sound exposures with the proposed road improvements and the resulting noise impact (i.e., change between the existing and future with improvements scenarios).

The results presented in Table 2 indicate that the potential noise impacts along most of the transportation corridor are 5 dBA or less. However, there are a few receptors (i.e., R1 to R8, R11 to R15, R20, R24 and R25) where noise impacts of greater than 5 dBA are predicted. Thus, the requirement to provide noise mitigation for these receptors has been investigated.

Receptors R1, R2 and R3 are located between Tremaine Road and Regional Road 25 where the existing traffic volume is low. These receptors are setback from Britannia Road. Thus, the future predicted sound exposures are predicted to be low (i.e., below 50 dBA). Based on the predicted sound exposures, mitigation is not required.

Receptors R4, R5, R6, R7 and R8 are located between Regional Road 25 and Thompson Road. The future sound exposures at these receptors are predicted to be in between 52 and 60 dBA. The predicted noise impact is due to the predicted traffic growth.

Receptors R11 to R15 are located between Thompson Road and Fourth Line. The future sound exposures at these receptors are predicted to be in between 49 and 59 dBA. The predicted noise impact is due to the predicted traffic growth.

Receptors R20, R24 and R25 are between Thompson Road and Fourth Line. The predicted noise impact at these receptors is due to a combination of the growth in traffic and the relocation of Britannia Road to by pass the community of Omagh.

Noise mitigation measures were considered and determined to not be warranted at most of the above receptor locations since:

- The method used to calculate the noise impact of comparing the existing sound exposures with the future sound exposures with the proposed improvements is very conservative. The MTO/MOE Noise Protocol requires that the impact be determined by comparing the future do nothing sound exposures with the future with proposed improvement sound exposures. The method used to complete this assessment includes the impact from the growth in traffic. If this traffic growth were excluded from the calculation of noise impact, the predicted impacts would typically be 5 dBA or less.

- The predicted future daytime sound exposures with the proposed improvements comply with the 60 dBA limit outlined in the Region of Halton Noise Abatement Policy.
- Any lands associated with future new residential subdivision developments along the Britannia Road corridor will have to carry out noise analyses in accordance with MOE requirements as part of the application process under the Planning Act. These studies would recommend indoor and outdoor noise mitigation measures and the inclusion of noise warning clauses on title of affected properties. These are outside the scope of this study.

Thus, based on the above discussion, noise mitigation is not required with the exception of R24. It must be noted that providing noise mitigation for homes with direct frontage onto Britannia Road is not possible. Any sound barrier would need to be discontinuous at the driveways to retain access to the dwellings. These discontinuities would significantly impact the noise attenuation provided by any sound barrier.

R24 is predicted to experience a noise impact of 13.4 dBA. This impact is considered significant and is mainly due to the shift in the Britannia Road alignment to by-pass Omagh. Even though the future sound exposure with the proposed road improvements is below 60 dBA, to reduce the future noise impact, a minimum 2.8 m high sound barrier, as shown on Figure 10, is recommended. This sound barrier is predicted to reduce the daytime sound exposure at R24 to about 50 dBA.

## 5.0 CONSTRUCTION NOISE

Construction noise is temporary noise and depends on the type of work required. The impact of construction noise depends on the type of equipment used, number of pieces of equipment, time and duration of operation and the proximity to noise sensitive receivers in question.

### 5.1 APPLICABLE MUNICIPAL NOISE CONTROL BY-LAWS

Britannia Road, along the extent of the project, is located in the Town of Milton. Therefore, the noise control by-law for the Town of Milton (By-law No. 16-84) applies.

#### 5.1.1 Town of Milton Noise By-law

The following summarizes the applicable sections of the Town of Milton Noise Control By-law (No. 16-84) concerning construction noise:

*3 q) "Any noise that disturbs or is likely to disturb persons in any office, hospital or in any dwelling, hotel or other type of residence, or of any persons in the vicinity arising between the hours of 2100 hours of one day and 0700 hours of the next following day from an excavation, quarry or construction work whatsoever, including the erection, demolition, alteration or repair of any building."*

### 5.2 RECOMMENDATIONS

- The noise control by-law for the Town of Milton (By-law No. 16-84) will be obeyed. Exemptions, where required, will be applied for through the municipality and should be included in the construction contract documents.

- General noise control measures will be referred to, or placed into construction contract documents. The following constraints addressing construction equipment operation and maintenance should be included in the construction contract documents:

Equipment Maintenance: Equipment shall be maintained in an operating condition that prevents unnecessary noise, including but not limited to non-defective muffling systems, properly secured components and the lubrication of moving parts.

Equipment Operation: Idling of equipment shall be restricted to the minimum necessary to perform the specified work.

Additional noise constraints may be included at the discretion of the Environmental Planner. They could include, for example, the siting of the contractor's yard.

- Any initial complaint from the public will require verification that the general noise control measures agreed to are in effect, any noise concerns will be investigated, and the contractor warned of any problems.
- Notwithstanding compliance with the “general noise control measures”, a persistent complaint will require a contractor to comply with the MOE sound level criteria for construction equipment contained in the MOE Model Municipal Noise Control By-law. Subject to the results of field investigation, alternative noise control measures will be required, where these are reasonably available.

## 6.0 REFERENCES

1. “Environmental Noise Assessment, Britannia Road (Regional Road 6), Transportation Corridor Improvements, Tremaine Road (Regional Road 22) to Highway 407, Region of Halton”, Valcoustics Canada Ltd., Project: 110-160-100, May 1, 2013.
2. “Environmental Guide for Noise”, Ontario Ministry of Transportation, 2006.
3. PC STAMSON 5.04, “Computer Program for Road Traffic Noise Assessment”, Ontario Ministry of the Environment.
4. “Environmental Office Manual – Technical Areas – Noise”, Ontario Ministry of Transportation, 1992.

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**TABLE 1**  
**EXISTING AND FUTURE TRAFFIC VOLUME DATA**

<b>Britannia Road Section</b>	<b>Existing (2010) AADT<sup>(1)</sup></b>	<b>2031 AADT<sup>(1)</sup></b>	<b>Posted Speed Limit (kph)</b>
Tremaine Road to First Line	3,722	21,900	80
First Line to Regional Road 25	5,528	28,100	80
Regional Road 25 to Fourth Line	11,158	42,000	60 to 80
Fourth Line to James Snow Parkway	12,221	32,500	60
James Snow Parkway to Sixth Line	15,070	42,400	70 to 80
Sixth Line to Trafalgar Road	15,640	29,400	60 to 80
Trafalgar Road to Eighth Line	13,514	22,000	60 to 80
Eighth Line to Highway 407	13,342	19,200	80

Note:

(1) AADT – Annual Average Daily Traffic as derived from information provided by Delcan Corporation.

**TABLE 2**  
**NOISE ASSESSMENT RESULTS**

<b>Receptor</b>	<b>Existing (2010) L<sub>eq</sub> Day (dBA)</b>	<b>Future (2031) L<sub>eq</sub> Day (dBA)</b>	<b>Noise Impact<sup>(1)</sup> (dBA)</b>
R1	38	46	7.6
R2	41	49	7.7
R3	38	45	7.0
R4	54	60	5.8
R5	54	60	5.8
R6	54	59	5.8
R7	49	55	6.0
R8	46	52	5.7
R9	53	57	4.4
R10	54	58	4.0
R11	52	58	6.0
R12	43	49	5.8
R13	54	59	5.0
R14	51	56	5.3
R15	49	55	5.4
R16	50	53	3.5
R17	52	46	-5.6
R18	50	54	4.0
R19	54	46	-7.7
R20	48	53	5.1
R21	53	46	-6.6
R22	54	52	-1.3
R23	49	51	2.5
R24	42	56	13.4
R25	37	46	8.6

..../cont'd

**TABLE 2 (continued)**  
**NOISE ASSESSMENT RESULTS**

<b>Receptor</b>	<b>Existing (2010) L<sub>eq</sub> Day (dBA)</b>	<b>Future (2031) L<sub>eq</sub> Day (dBA)</b>	<b>Noise Impact<sup>(1)</sup> (dBA)</b>
R26	55	46	-9.0
R27	52	46	-6.8
R28	52	54	1.9
R29	51	47	-4.1
R30	50	48	-2.4
R31	51	49	-1.8
R32	52	55	4.5
R33	44	49	4.5
R34	45	49	4.5
R35	55	60	4.5
R36	56	60	4.5
R37	56	60	4.5
R38	54	59	4.5
R39	55	60	4.5
R40	56	60	4.5
R41	56	60	4.5
R42	56	60	4.5
R43	56	60	4.5
R44	56	60	4.5
R45	56	60	4.5
R46	56	60	3.9
R47	55	59	3.8
R48	55	59	3.9
R49	55	57	2.5
R50	50	53	3.0

..../cont'd

**TABLE 2 (continued)**  
**NOISE ASSESSMENT RESULTS**

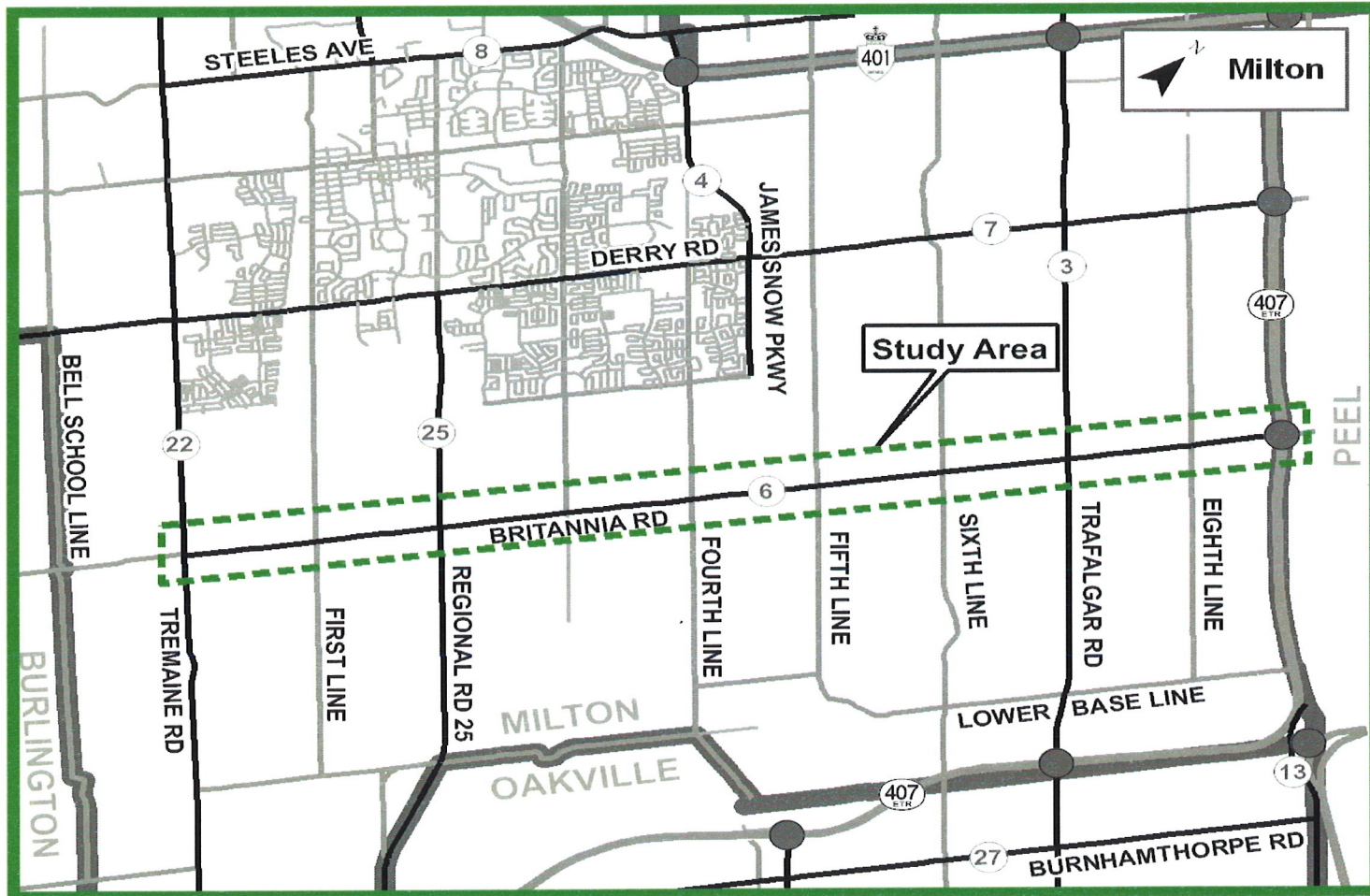
<b>Receptor</b>	<b>Existing (2010) L<sub>eq</sub> Day (dBA)</b>	<b>Future (2031) L<sub>eq</sub> Day (dBA)</b>	<b>Noise Impact<sup>(1)</sup> (dBA)</b>
R51	49	52	2.7
R52	52	54	2.1
R53	51	53	2.1
R54	51	53	2.1
R55	51	53	2.1
R56	51	53	2.1
R57	47	49	2.1
R58	45	47	2.1
R59	40	43	2.1
R60	50	52	2.7
R61	47	48	1.6
R62	55	56	1.6
R63	49	51	2.0

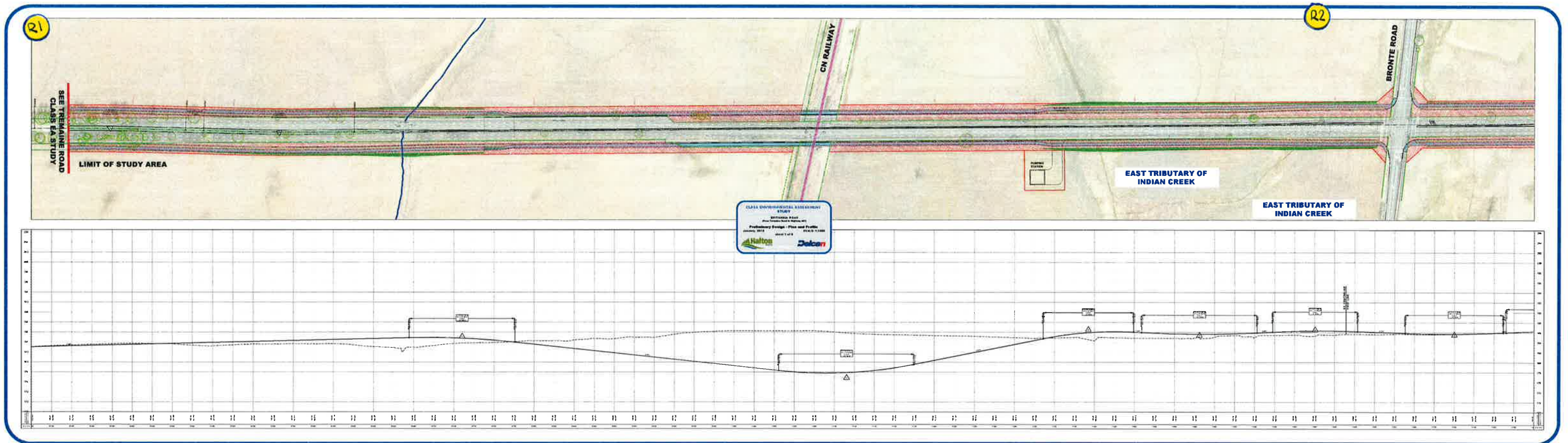
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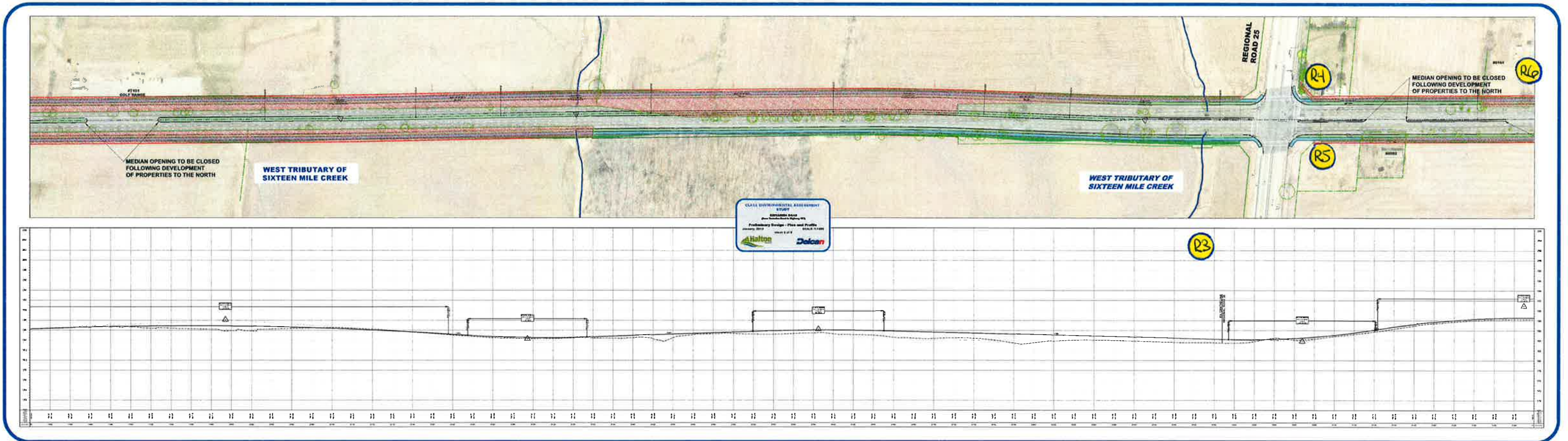
- (1) The predicted noise impact is the difference between the future and the existing scenarios. Where the noise impact is indicated as being negative, this means the sound exposure will be reduced due to the proposed road improvements.

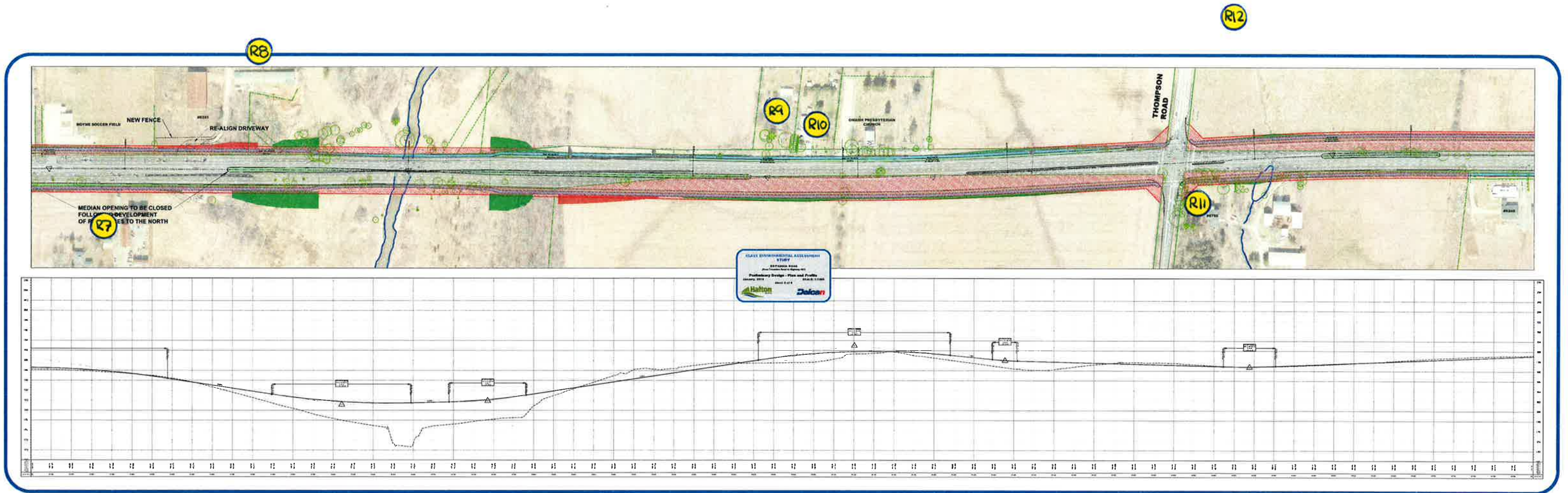


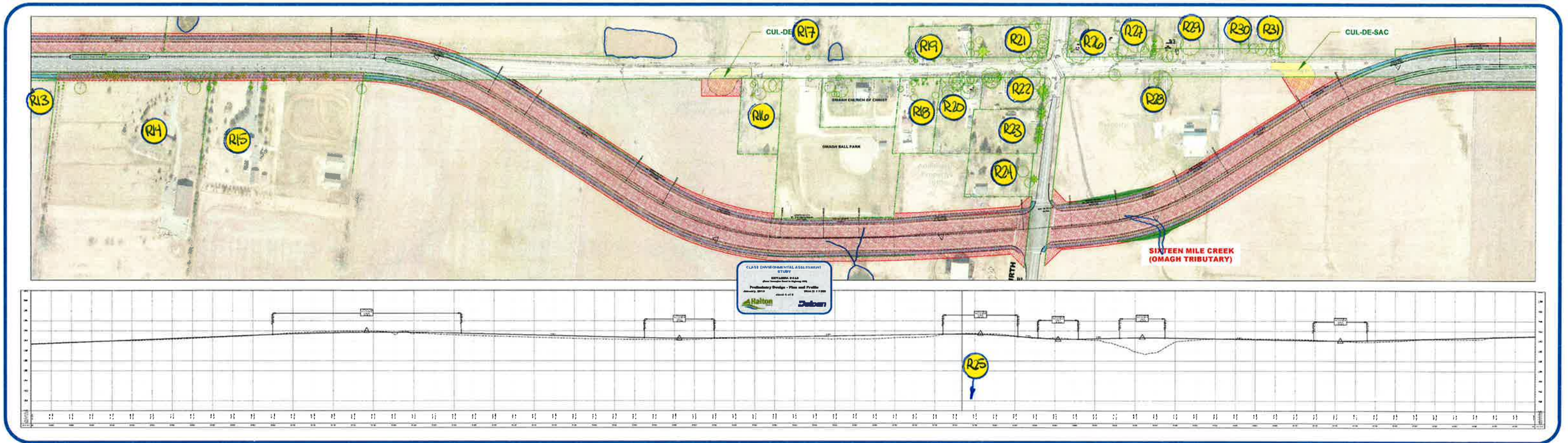
**Britannia Road Transportation Corridor Improvements  
Study Area Map**



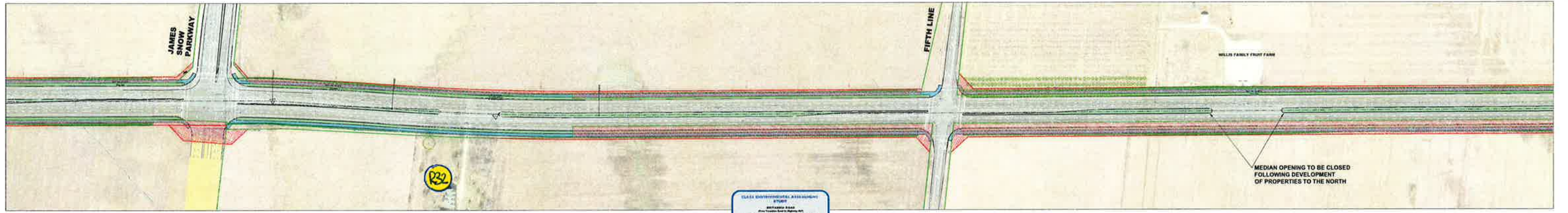




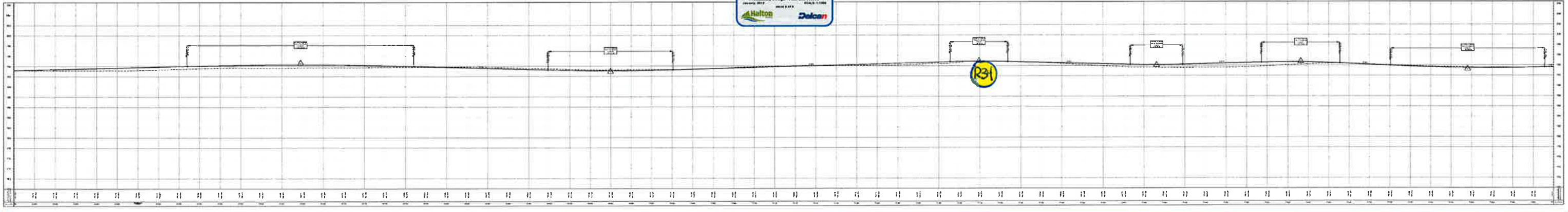


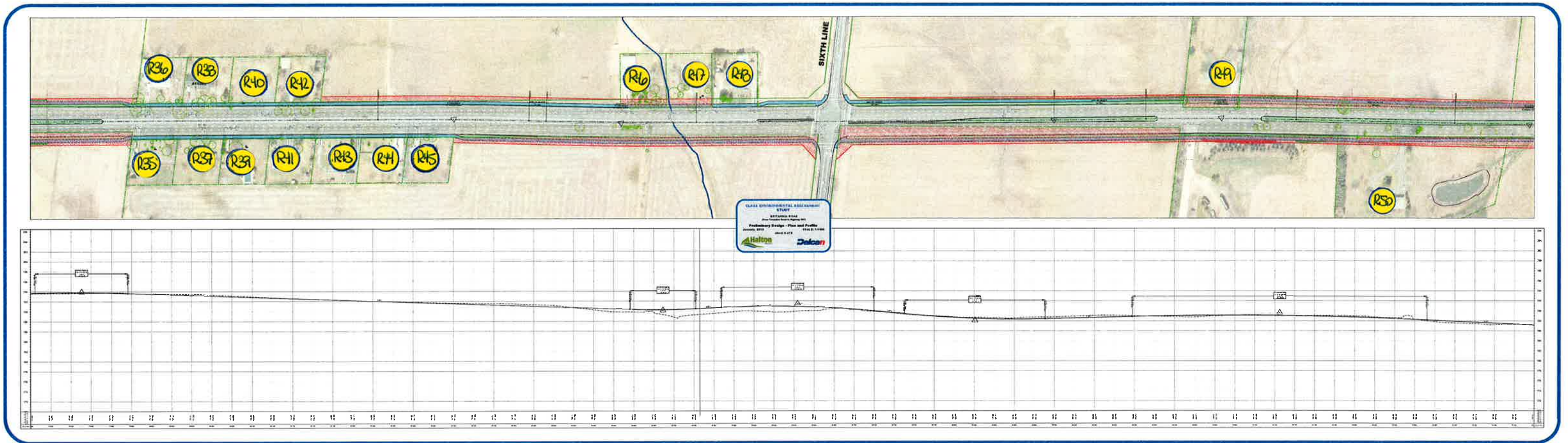


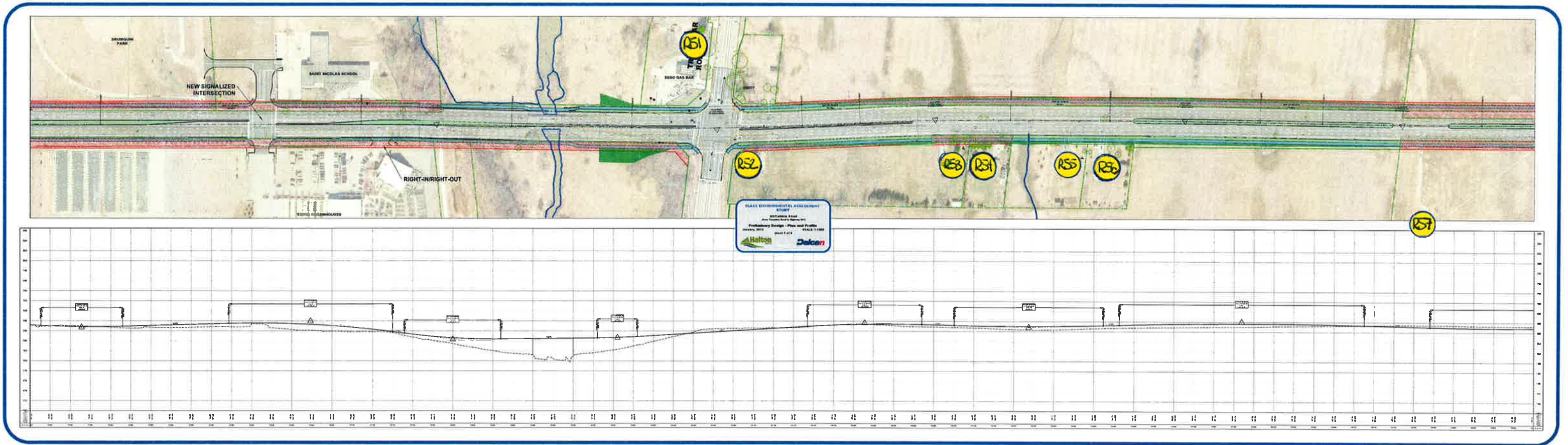
R23



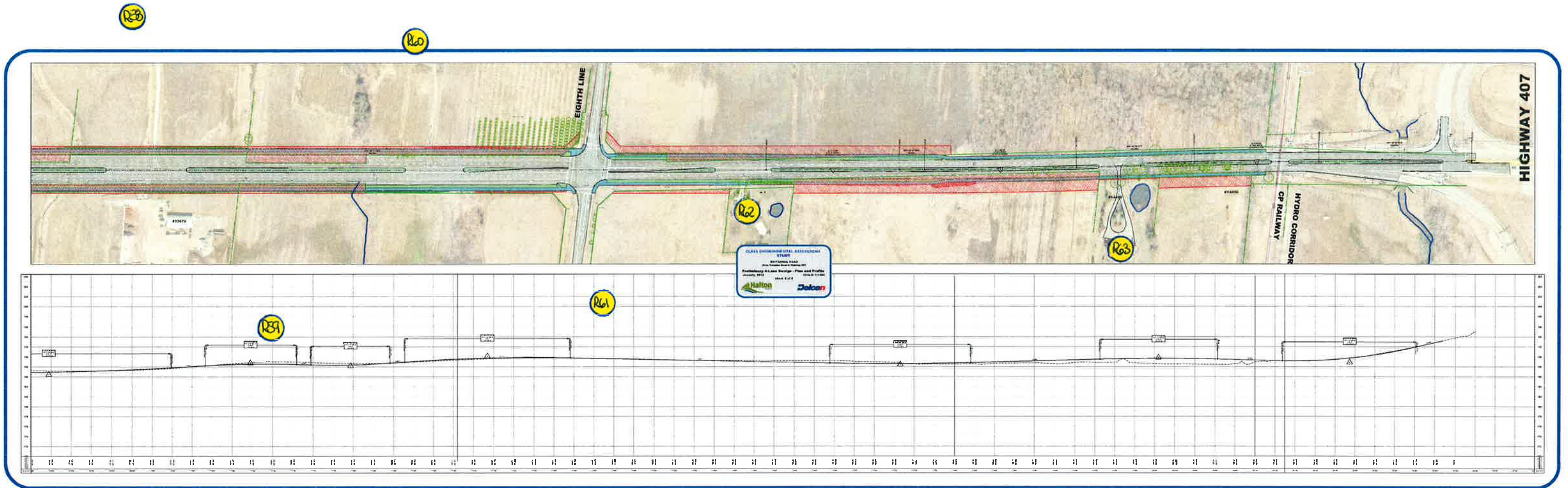
CLASS ENVIRONMENTAL ASSESSMENT STUDY  
BENTLEY ROAD  
PROVISIONAL DESIGN - PLAN AND PROFILE  
MAY 2017 SCALE 1:1000  
Halton Delcon

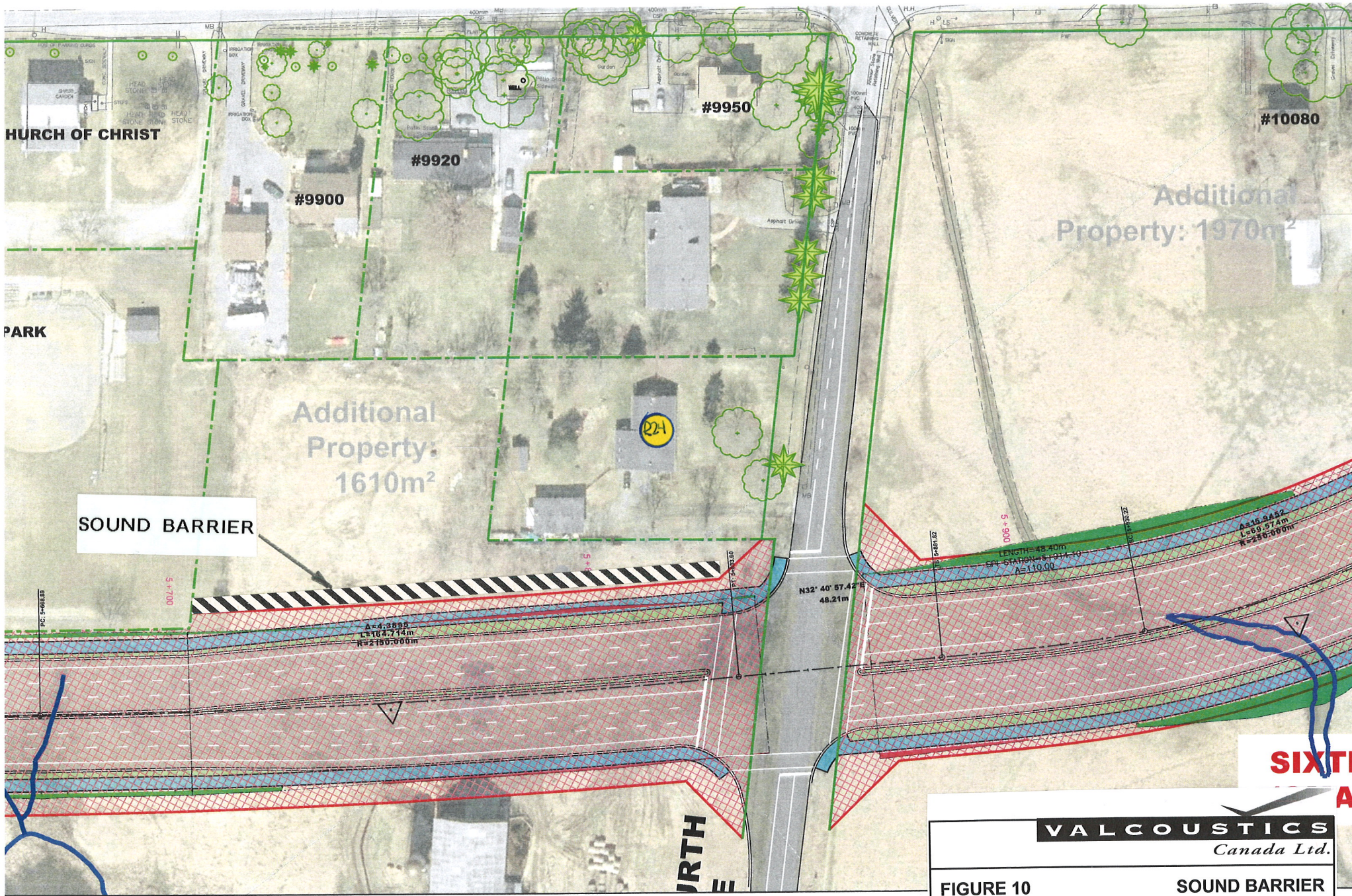












CHURCH OF CHRIST

PARK

Additional Property: 1610m<sup>2</sup>

Additional Property: 1970m<sup>2</sup>

SOUND BARRIER

Δ=4.3899  
L=164.714m  
R=2150.000m

LENGTH=48.40m

CH STATION=5+107.10

Δ=110.00

N32° 40' 57.42"

48.21m

#10080

#9950

#9920

#9900

224

**VALCOUSTICS**  
Canada Ltd.

**SIXTY**  
**A**

FIGURE 10

SOUND BARRIER

# **APPENDIX A**

## **ROAD TRAFFIC INFORMATION**

### 2010 ATR Data from Region

Description	Count date	total vol	ampk end	ampk vol	pm pk end	pkhr vol	%PM/ Total	posted speed (km)	50% speed (km)	avg (km)	85th %	exceeding (%)	%cars	%smal trk	% med trk/bus	% hvy trk
Britannia Road - between Eight Line and 407 ETR ramps	21-Apr-10	13,342	8:45	778	17:45	1,983	15%	60	70	84	105.58	93.60%	98.0%	0.9%	0.5%	0.6%
Britannia Road - between Eight Line and Trafalgar Road	21-Apr-10	13,514	8:45	1,515	18:00	1,605	12%	80	70	74	88.13	36.50%	98.8%	0.5%	0.4%	0.3%
Britannia Road - between Trafalgar Road and Sixth Line	21-Apr-10	15,640	8:45	1,446	18:00	1,557	10%	80	70	69	87.61	29.40%	98.3%	0.6%	0.6%	0.5%
Britannia Road - between Fourth Line and Fifth Line	8-Oct-10	15,070	8:15	1,451	18:00	1,449	10%	80	70	77	88.12	37.60%	97.6%	0.7%	0.9%	0.8%
Britannia Road - between Regional Road 25 and Third Line	21-Apr-10	11,158	8:30	1,192	17:45	1,151	10%	80	70	74	84.66	23.90%	97.8%	0.8%	0.9%	0.5%
Britannia Road - between First Line and Regional Road 25	21-Apr-10	5,528	8:30	637	17:45	656	12%	80	80	82	94.48	62.50%	98.5%	0.5%	0.7%	0.4%
Britannia Road - between Tremaine Road and First Line	21-Apr-10	3,722	8:30	499	17:30	482	13%	80	80	84	96.49	65.90%	98.2%	0.5%	0.7%	0.5%
Britannia Road - Between Fourth Line & James Snow Parkway	3-Dec-10	12,221	8:45	653	17:15	1,728	14%	60	70	72	87.53	83.80%	97.7%	1.1%	0.5%	0.7%

## John Emeljanow

---

**From:** Andrew McGregor <a.mcgregor@delcan.com>  
**Sent:** September-17-13 10:47 AM  
**To:** john@valcoustics.com  
**Cc:** n.palomba@delcan.com  
**Subject:** FW: Britannia Road Improvements - Tremaine Rd to Hwy 407, Halton Region - Environmental Noise/Our File: 110-160-100

Hi John,

We've come into a situation with Britannia Road where we've had to revise our traffic numbers to account for HOV Lanes throughout the project limits. Obviously, this renders our earlier traffic projections (the ones used in your assessment) incorrect. That said, we need your report revised to incorporate the updated volumes.

Sorry to throw this on you but we're behind schedule with this and were hoping you could help us out with this right away.

The following is the revised AADT forecasts including the HOV's

Section		New AADT with HOV'S	Increase from HOV's AADT
407 ETR	- Eighth Line	19200	4060
Eighth Line	- Trafalgar Rd	22000	5200
Trafalgar Rd	- Sixth Line	29400	8455
JW Parkway	- Sixth Line	42400	13020
Fourth Line	- JW Parkway	32500	9125
Fourth Line	- RR 25	42000	12385
RR 25	- First Line	28100	6315
First Line	- Tremaine Rd	21900	4565

I'll follow up this email with a call to discuss.

Kind regards,  
Andrew

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**From:** Stanley Pijl [<mailto:s.pijl@delcan.com>]  
**Sent:** Tuesday, September 17, 2013 10:17 AM  
**To:** Andrew McGregor  
**Subject:** FW: Britannia Road Improvements - Tremaine Rd to Hwy 407, Halton Region - Environmental Noise/Our File: 110-160-100

Andrew

Here is the last email we received from John. FYI his email is [john@valcoustics.com](mailto:john@valcoustics.com)

Stan