MINTO PROPERTIES INC.

NOISE CONTROL STUDY

239 CRAIG HENRY DRIVE

CITY OF OTTAWA

NOVEMBER 2013

ATREL Engineering Ltd Ltée
Engineers - Ingénieurs

MINTO PROPERTIES INC.

NOISE CONTROL STUDY

239 CRAIG HENRY DRIVE

CITY OF OTTAWA

Prepared by:

ATREL ENGINEERING LTD.

380 Laurier Street
Rockland, Ontario
K4K 1G2

PROJECT NO. 130101

NOVEMBER 2013

ENVIRONMENTAL NOISE IMPACT ASSESSMENT

MINTO PROPERTIES INC.

239 CRAIG HENRY DRIVE

CITY OF OTTAWA

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1.0 INTRODUCTION

On behalf of our client, Minto Properties Inc., a study has been conducted to determine the noise impact resulting from roadway traffic and railroad traffic at the proposed site located at 239 Craig Henry Drive. (see Sketch 1, Appendix 'A').

The attached drawings 130101-N1 in Appendix 'D' describes the type of development, the location and the topography.

2.0 SOUND LEVEL CRITERIA

2.1 Sound Level Criterion for Outdoor Living Areas

The Ontario Ministry of the Environment (MOE) recommended outdoor area noise levels is:

16 hr, 07:00 to 23:00, 55 dBA L_{eq}

Leq is defined as the energy equivalent sound level during an hour.

If the L_{eq} sound level limits are met, then no further action is required of the developer. If the sound levels are over the criteria, the developer normally has two recommended options:

a) physical attenuation, and/or
b) include a noise warning clause on the deeds of the lots concerned.

2.2 Indoor Sound Level Criteria

The recommended indoors sound level limits for dwellings given by the City of Ottawa / MOE's Noise Control Guidelines are as follows:

Type of Space	Equivalent Sound Level (Leq), dBA
General offices, reception areas, retails stores, etc. (Time period: 16 hr, 07:00 - 23:00)	50
Living/dining areas of residences, hospitals, schools, nursing/retirement homes, day-care centres, theatres, places of worship, libraries, individual or semi-private offices, conference rooms, reading rooms, etc. (Time period: 16 hr, 07:00 - 23:00)	45
Sleeping quarters of hotels/motels (Time period: 8 hr, 23:00 - 07:00)	45
Sleeping quarters of residences, hospitals, nursing/retirement homes, etc. (Time period: 8 hr, 23:00 - 07:00)	40

2.3 Building Component Requirements

Assessment Location		Sound Level (time as noted)	Building Component Requirements
PLANE OF LIVING ROOM WINDOW	ROAD	Leq 16 hr Less than or equal to 65 dBA	Building compliant with the Ontario Building Code
		Leq 16 hr Greater than 65 dBA	Building components (walls, windows, etc.) must be designed to achieve indoor sound level criteria
	RAIL	Leq 16 hr Less than or equal to 60 dBA	Building compliant with the Ontario Building Code
		Leq 16 hr Greater than 60 dBA	Building components (walls, windows, etc.) must be designed to achieve indoor sound level criteria
PLANE OF BEDROOM WINDOW	ROAD	Leq 16 hr Less than or equal to 60 dBA	Building compliant with the Ontario Building Code
		Leq 16 hr Greater than 60 dBA	Building components (walls, windows, etc.) must be designed to achieve indoor sound level criteria
	RAIL	Leq 16 hr Less than or equal to 55 dBA	Building compliant with the Ontario Building Code
		Leq 16 hr Greater than 55 dBA	Building components (walls, windows, etc.) must be designed to achieve indoor sound level criteria

2.4 Facade Material Requirement for Rail Noise Only

Assessment Location	Distance To Railway (m)	Sound Level	Façade Material Requirement
PLANE OF BEDROOM WINDOW	Less than 100 m	Leq 24 hr Less than or equal to 60 dBA	No additional requirement
		Leq 24 hr Greater than 60 dBA	Brick veneer or acoustically equivalent
	Greater than 100 m	Leq 24 hr Less than or equal to 60 dBA	No additional requirement
		Leq 24 hr Greater than 60 dBA	No additional requirement

2.5 Outdoor, Ventilation and Warning Clause Requirements

Assessment Location	L_{eq} (8 or 16 hrs as noted) (dBA)	Ventilation Requirements	Outdoor Control Measures	Warning Clause
OUTDOOR LIVING AREA (OLA)	$Leq_{16\ hr}$ Less than or equal to 55 dBA	N/A	None required	Not required
	$Leq_{16\ hr}$ Greater than 55 dBA to less than or equal to 60 dBA	N/A	Control measures (barriers) may not be required but should be considered	Required if resultant L_{eq} exceeds 55 dBA Type A
	$Leq_{16\ hr}$ Greater than 60 dBA	N/A	Control measures (barriers) required to reduce the L_{eq} to below 60 dBA and as close to 55 dBA as technically, economically and administratively feasible	Required if resultant L_{eq} exceeds 55 dBA Type B
PLANE OF LIVING ROOM WINDOW	$Leq_{16\ hr}$ Less than or equal to 55 dBA	None required	N/A	Not required
	$Leq_{16\ hr}$ Greater than 55 dBA to less than or equal to 65 dBA	Forced air heating with provision for central air conditioning	N/A	Required Type C
	$Leq_{16\ hr}$ Greater than 65 dBA	Central air Conditioning	N/A	Required Type D
PLANE OF BEDROOM WINDOW	$Leq_{8\ hr}$ Greater than 50 dBA to less than or equal to 60 dBA	Forced air heating with provision for central air conditioning	N/A	Required Type C
	$Leq_{8\ hr}$ Greater than 60 dBA	Central air conditioning	N/A	Required Type D

2.6 Relevant Warning Clauses

TYPE	WARNING CLAUSE
Type A	"Purchasers/tenants are advised that sound levels due to increasing (road) (Transitway) (rail) (air) traffic may occasionally interfere with some activities of the dwelling occupants as the sound levels exceed the City's and the Ministry of the Environment's noise criteria."
Type B	"Purchasers/tenants are advised that despite the inclusion of noise control features in the development and within the building units, sound levels due to increasing (road) (Transitway) (rail) (air) traffic may on occasions interfere with some activities of the dwelling occupants as the sound levels exceed the City's and the Ministry of the Environment's noise criteria."
Type C	"This dwelling unit has been fitted with a forced air heating system and the ducting, etc. was sized to accommodate central air conditioning. Installation of central air conditioning by the occupant will allow windows and exterior doors to remain closed, thereby ensuring that the indoor sound levels are within the City's and the Ministry of the Environment's noise criteria. (Note: The location and installation of the outdoor air conditioning device should be done so as to comply with noise criteria of MOE Publication NPC-216, Residential Air Conditioning Devices and thus minimize the noise impacts both on and in the immediate vicinity of the subject property."
Type D	"This dwelling unit has been supplied with a central air conditioning system which will allow windows and exterior doors to remain closed, thereby ensuring that the indoor sound levels are within the City's and the Ministry of the Environment's noise criteria."

3.0 ANALYSIS

The only significant known sources of noise in the proximity of this project will be the traffic travelling along Craig Henry Drive and the Railroad.

The forecast traffic volume (see Table 1, Appendix 'B') for Craig Henry Drive is 12,000 vehicles per day as per the City of Ottawa environmental noise control guidelines. The posted speed limit on Craig Henry Drive is 40km/hr and the road gradient is less than 0.5%.

The existing traffic volume on the railroad was obtained from Via Rail's web site and Canadian National Railway. The railroad's existing traffic volume is 1 freight train per day. The posted speed limit on the railroad is 40 km/hr. Since the Transportation Master Plan Draft November 2008 doesn't mention any train traffic growth, we have used the projected transit growth of 33%. Therefore, the train's projected traffic volume in year 2031 is 2 freight trains per 16 hour period and 1 freight train at night (see Table 2, Appendix 'B').

The noise analysis was undertaken using the Stamson (version 5.03) program as supplied by the Ontario Ministry of the Environment.

Table 3 (Appendix 'B') summarizes the noise impact of Craig Henry Drive and the Railroad at various points along the site. Sample noise calculations are included in Appendix 'C'.

4.0 NOISE CONTROL MEASURES

The control measures for the building where the noise level during the daytime exceeds 65dBA or/and where the nighttime noise level is more than 60dBA will be central air conditioning, proper building component construction and warning clauses.

The control measures for the subject development other than the building components will simply be warning clauses and air conditioning as summarized in this report.

5.0 SUMMARY AND CONCLUSION

5.1 Terraces TE-1 and TE-2

"This dwelling unit has been fitted with a forced air heating system and the ducting, etc. was sized to accommodate central air conditioning. Installation of central air conditioning by the occupant will allow windows and exterior doors to remain closed, thereby ensuring that the indoor sound levels are within the City's and the Ministry of the Environment's noise criteria. (Note: The location and installation of the outdoor air conditioning device should be done so as to comply with noise criteria of MOE Publication NPC-216, Residential Air Conditioning Devices and thus minimize the noise impacts both on and in the immediate vicinity of the subject property."

The Transferee covenants with the Transferor that the above clause, verbatim, shall be included in all subsequent Agreements of Purchase and Sale and Deeds conveying the lands described herein, which covenant shall run with the said lands and is for the benefit of the subsequent owners of the said lands and the owner of the adjacent road."

In addition to the above clause, we are recommending to the builder to choose the windows, walls and doors in such a way as to meet the provincial noise standards.

Respectfully submitted by:

ATREL ENGINEERING LTD

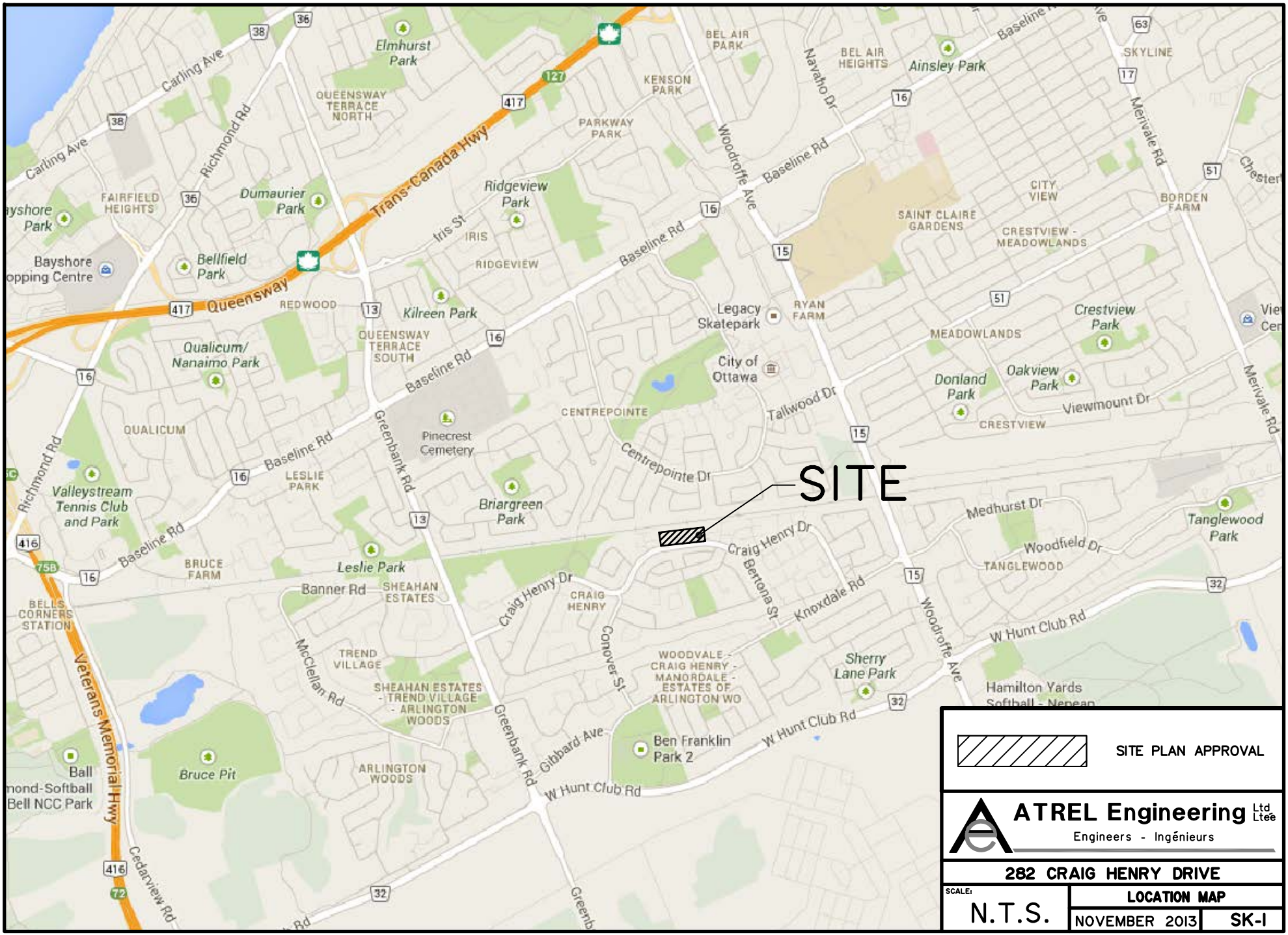
André Sauvé, P.Eng.

ATREL ENGINEERING LTD

Jean Décoeur, P. Eng.
President

APPENDIX 'A'

Sketch 1 – Location Map


SITE
Trans-Canada Hwy
Queensway
Baseline Rd
Carling Ave
Richmond Rd
Woodroffe Ave
Merivale Rd
Greenbank Rd
Craig Henry Dr
Centrepointe Dr
Tallwood Dr
Viewmount Dr
Medhurst Dr
Woodfield Dr
Knoxdale Rd
W Hunt Club Rd
Gibbard Ave
Conover St
McClellan Rd
Veterans Memorial Hwy
Cedarview Rd
Iris St
Banner Rd
Bertona St
Elmhurst Park
Dumaurier Park
Ridgeview Park
Bellfield Park
Kilreen Park
Qualicum/ Nanaimo Park
Valleystream Tennis Club and Park
Leslie Park
Briargreen Park
Pinecrest Cemetery
Ainsley Park
Legacy Skatepark
City of Ottawa
Crestview Park
Donland Park
Oakview Park
Tanglewood Park
Sherry Lane Park
Ben Franklin Park 2
Bruce Pit
Ball mond-Softball Bell NCC Park
Hamilton Yards Softball - Nepean
Bayshore Shopping Centre
QUEENSWAY TERRACE NORTH
QUEENSWAY TERRACE SOUTH
PARKWAY PARK
KENSON PARK
BEL AIR PARK
BEL AIR HEIGHTS
SKYLINE
SAINT CLAIRE GARDENS
CITY VIEW
BORDEN FARM
CRESTVIEW - MEADOWLANDS
MEADOWLANDS
CRESTVIEW
RYAN FARM
IRIS
RIDGEVIEW
REDWOOD
FAIRFIELD HEIGHTS
QUALICUM
CENTREPOINTE
LESLIE PARK
BRUCE FARM
SHEAHAN ESTATES
CRAIG HENRY
TANGLEWOOD
TREND VILLAGE
SHEAHAN ESTATES - TREND VILLAGE - ARLINGTON WOODS
WOODVALE - CRAIG HENRY - MANORDALE - ESTATES OF ARLINGTON WO
ARLINGTON WOODS
BELLS CORNERS STATION
SITE PLAN APPROVAL
ATREL Engineering Ltd Ltée
Engineers - Ingénieurs
282 CRAIG HENRY DRIVE
SCALE: N.T.S.
LOCATION MAP
NOVEMBER 2013
SK-1

APPENDIX 'B'

Table 1 - Forecast Traffic Volume

Table 2 - Forecast Train Traffic Volume

Table 3 - Noise Level Calculations

Forecast Traffic Volume

TABLE 1

ROAD : Craig Henry Drive
TOTAL AADT : 12,000

CALCULATION OF AADT (DAY / NIGHT)

	DAY		NIGHT
TOTAL TRAFFIC:	**11040**	TOTAL TRAFFIC:	**960**
CAR:	**9715**	CAR:	**845**
MEDIUM TRUCK:	**773**	MEDIUM TRUCK:	**67**
HEAVY TRUCK:	**552**	HEAVY TRUCK:	**48**
Total	11040		960

Forecast Train Traffic Volume

TABLE 2

RAIL : CN

	DAY			NIGHT		
TRAIN TYPE:	**FREIGHT**	**PASSENGER**	**TRANSFER**	**FREIGHT**	**PASSENGER**	**TRANSFER**
NUMBER OF TRAINS:	2	0	0	1	0	0
NUMBER OF LOCOMOTIVES PER TRAIN	1	0	0	1	0	0
NUMBER OF CARS PER TRAIN:	4	0	0	4	0	0
TRAIN SPEED (Km/h):	40	0	0	40	0	0
WHISTLE (Y/N) AT PROJECT:	N	N/A	N/A	N	N/A	N/A

PROJECT NUMBER: 130101 **DATE:** Nov-13 **TABLE 3A**

PROJECT NAME: 239 CRAIG HENRY DRIVE - NOISE STUDY **(TERRACES - LOWER UNITS)**

No.	RECEIVER SOURCE Outdoor	RECEIVER SOURCE Living/Night	RECEIVER BARRIER Outdoor	RECEIVER BARRIER Living/Night	ELEV 'e'	ELEVATIONS SOURCE	ELEVATIONS RECEIVER Outdoor	ELEVATIONS RECEIVER Living/ Night	ELEVATIONS BARRIER	ROAD ANGLE Outdoor FROM	ROAD ANGLE Outdoor TO	ROAD ANGLE Living room / Night FROM	ROAD ANGLE Living room / Night TO	NO BARRIER DAY Outdoor 1.5 m dBA	NO BARRIER DAY Living room 3.0 m dBA	NO BARRIER NIGHT Bedroom 0.5 m dBA	NO BARRIER CLAUSE OUTDOOR	NO BARRIER CLAUSE LIVING	NO BARRIER CLAUSE BEDROOM	NO BARRIER Governing Clause	WITH BARRIER BARRIER HEIGHT m	WITH BARRIER ANGLE Outdoor FROM	WITH BARRIER ANGLE Outdoor TO	WITH BARRIER ANGLE Living room/Night FROM	WITH BARRIER ANGLE Living room/Night TO	WITH BARRIER DAY Outdoor 1.5 m dBA	WITH BARRIER DAY Bright Zone	WITH BARRIER DAY Living room 3.0 m dBA	WITH BARRIER DAY Bright Zone	WITH BARRIER NIGHT Bedroom 0.5 m dBA	WITH BARRIER NIGHT Bright Zone	WITH BARRIER Clause OUTDOOR	WITH BARRIER Clause LIVING	WITH BARRIER Clause BEDROOM	WITH BARRIER Governing Clause
TRAIN (AADT= 3)																																			
A	-----	89.5	-----	-----	-----	89.17	-----	88.59	-----	-----	-----	43	54	-----	31.62	31.62	-----	OK	OK	**OK**	-----	-----	-----	-----	-----	-----		-----		-----		-----	-----	-----	-----
D	-----	89.5	-----	-----	-----	89.18	-----	88.59	-----	-----	-----	-12	36	-----	38.02	38.02	-----	OK	OK	**OK**	-----	-----	-----	-----	-----	-----		-----		-----		-----	-----	-----	-----
E	-----	95.0	-----	-----	-----	89.19	-----	88.59	-----	-----	-----	0	30	-----	59.60	52.08	-----	Type C	Type C	**Type C**	-----	-----	-----	-----	-----	-----		-----		-----		-----	-----	-----	-----
F	-----	89.5	-----	-----	-----	89.20	-----	88.79	-----	-----	-----	-41	7	-----	38.02	38.02	-----	OK	OK	**OK**	-----	-----	-----	-----	-----	-----		-----		-----		-----	-----	-----	-----
G	-----	95.0	-----	-----	-----	89.20	-----	88.79	-----	-----	-----	-36	0	-----	59.54	52.04	-----	Type C	Type C	**Type C**	-----	-----	-----	-----	-----	-----		-----		-----		-----	-----	-----	-----
H	-----	89.5	-----	-----	-----	89.22	-----	88.79	-----	-----	-----	-58	-43	-----	32.97	32.97	-----	OK	OK	**OK**	-----	-----	-----	-----	-----	-----		-----		-----		-----	-----	-----	-----
K	-----	86.5	-----	-----	-----	89.17	-----	88.40	-----	-----	-----	47	59	53.19	-----	-----	OK	-----	-----	**OK**	-----	-----	-----	-----	-----	-----		-----		-----		-----	-----	-----	-----
L	-----	86.5	-----	-----	-----	89.18	-----	88.40	-----	-----	-----	-12	43	53.31	-----	-----	OK	-----	-----	**OK**	-----	-----	-----	-----	-----	-----		-----		-----		-----	-----	-----	-----
M	-----	86.5	-----	-----	-----	89.20	-----	88.60	-----	-----	-----	-43	12	53.31	-----	-----	OK	-----	-----	**OK**	-----	-----	-----	-----	-----	-----		-----		-----		-----	-----	-----	-----
N	-----	86.5	-----	-----	-----	89.22	-----	88.60	-----	-----	-----	-59	-46	53.40	-----	-----	OK	-----	-----	**OK**	-----	-----	-----	-----	-----	-----		-----		-----		-----	-----	-----	-----
CRAIG HENRY DRIVE (AADT= 12,000)																																			
B	-----	25.0	-----	-----	-----	87.94	-----	88.59	-----	-----	-----	0	72	-----	59.52	51.92	-----	Type C	Type C	**Type C**	-----	-----	-----	-----	-----	-----		-----		-----		-----	-----	-----	-----
C	-----	17.0	-----	-----	-----	87.94	-----	88.59	-----	-----	-----	-83	77	-----	64.66	57.06	-----	Type C	Type C	**Type C**	-----	-----	-----	-----	-----	-----		-----		-----		-----	-----	-----	-----
E	-----	25.0	-----	-----	-----	88.04	-----	88.59	-----	-----	-----	-73	0	-----	59.60	52.08	-----	Type C	Type C	**Type C**	-----	-----	-----	-----	-----	-----		-----		-----		-----	-----	-----	-----
G	-----	25.0	-----	-----	-----	88.16	-----	88.79	-----	-----	-----	0	72	-----	59.54	52.04	-----	Type C	Type C	**Type C**	-----	-----	-----	-----	-----	-----		-----		-----		-----	-----	-----	-----
I	-----	25.0	-----	-----	-----	88.34	-----	88.79	-----	-----	-----	-72	0	-----	59.52	51.92	-----	Type C	Type C	**Type C**	-----	-----	-----	-----	-----	-----		-----		-----		-----	-----	-----	-----
J	-----	17.0	-----	-----	-----	88.34	-----	88.79	-----	-----	-----	-75	84	-----	64.63	57.04	-----	Type C	Type C	**Type C**	-----	-----	-----	-----	-----	-----		-----		-----		-----	-----	-----	-----
K	-----	33.0	-----	-----	-----	97.94	-----	88.40	-----	-----	-----	39	61	53.19	-----	-----	OK	-----	-----	**OK**	-----	-----	-----	-----	-----	-----		-----		-----		-----	-----	-----	-----
L	-----	33.0	-----	-----	-----	88.03	-----	88.40	-----	-----	-----	-61	-39	53.31	-----	-----	OK	-----	-----	**OK**	-----	-----	-----	-----	-----	-----		-----		-----		-----	-----	-----	-----
M	-----	33.0	-----	-----	-----	88.19	-----	88.60	-----	-----	-----	39	61	53.31	-----	-----	OK	-----	-----	**OK**	-----	-----	-----	-----	-----	-----		-----		-----		-----	-----	-----	-----
N	-----	33.0	-----	-----	-----	88.34	-----	88.60	-----	-----	-----	-62	-39	53.40	-----	-----	OK	-----	-----	**OK**	-----	-----	-----	-----	-----	-----		-----		-----		-----	-----	-----	-----

PROJECT NUMBER: 130101 **DATE:** Nov-13 **TABLE 3B**

PROJECT NAME: 239 CRAIG HENRY DRIVE - NOISE STUDY **(TERRACES - UPPER UNITS)**

No.	RECEIVER SOURCE		RECEIVER BARRIER		ELEV	SOURCE	ELEVATIONS RECEIVER		BARRIER	ROAD ANGLE				NO BARRIER DAY		NIGHT	CLAUSE			Governing Clause	WITH BARRIER HEIGHT	BARRIER ANGLE				DAY		DAY		NIGHT		Clause			Governing Clause
	Outdoor	Living/Night	Outdoor	Living/Night	'e'		Outdoor	Living/ Night		Outdoor FROM	Outdoor TO	Living room / Night FROM	Living room / Night TO	Outdoor 1.5 m dBA	Living room 6.0 m dBA	Bedroom 8.0 m dBA	OUTDOOR	LIVING	BEDROOM		m	Outdoor FROM	Outdoor TO	Living room/Night FROM	Living room/Night TO	Outdoor 1.5 m dBA	Bright Zone	Living room 3.0 m dBA	Bright Zone	Bedroom 0.5 m dBA	Bright Zone	OUTDOOR	LIVING	BEDROOM	
TRAIN (AADT= 3)																																			
A	-----	89.5	-----	-----	-----	89.17	-----	88.59	-----	-----	-----	43	58	-----	31.62	31.62	-----	OK	OK	**OK**	-----	-----	-----	-----	-----	-----		-----		-----		-----	-----	-----	-----
D	-----	89.5	-----	-----	-----	89.18	-----	88.59	-----	-----	-----	-11	41	-----	38.02	38.02	-----	OK	OK	**OK**	-----	-----	-----	-----	-----	-----		-----		-----		-----	-----	-----	-----
E	-----	95.0	-----	-----	-----	89.19	-----	88.59	-----	-----	-----	-15	35	-----	59.60	52.08	-----	Type C	Type C	**Type C**	-----	-----	-----	-----	-----	-----		-----		-----		-----	-----	-----	-----
F	-----	89.5	-----	-----	-----	89.20	-----	88.79	-----	-----	-----	-41	11	-----	38.02	38.02	-----	OK	OK	**OK**	-----	-----	-----	-----	-----	-----		-----		-----		-----	-----	-----	-----
G	-----	95.0	-----	-----	-----	89.20	-----	88.79	-----	-----	-----	-36	14	-----	59.54	52.04	-----	Type C	Type C	**Type C**	-----	-----	-----	-----	-----	-----		-----		-----		-----	-----	-----	-----
H	-----	89.5	-----	-----	-----	89.22	-----	88.79	-----	-----	-----	-58	-43	-----	32.97	32.97	-----	OK	OK	**OK**	-----	-----	-----	-----	-----	-----		-----		-----		-----	-----	-----	-----
CRAIG HENRY DRIVE (AADT= 12,000)																																			
B	-----	25.0	-----	-----	-----	87.94	-----	88.59	-----	-----	-----	0	72	-----	59.52	51.92	-----	Type C	Type C	**Type C**	-----	-----	-----	-----	-----	-----		-----		-----		-----	-----	-----	-----
C	-----	17.0	-----	-----	-----	87.94	-----	88.59	-----	-----	-----	-83	77	-----	64.66	57.06	-----	Type C	Type C	**Type C**	-----	-----	-----	-----	-----	-----		-----		-----		-----	-----	-----	-----
E	-----	25.0	-----	-----	-----	88.04	-----	88.59	-----	-----	-----	-73	0	-----	59.60	52.08	-----	Type C	Type C	**Type C**	-----	-----	-----	-----	-----	-----		-----		-----		-----	-----	-----	-----
G	-----	25.0	-----	-----	-----	88.16	-----	88.79	-----	-----	-----	0	72	-----	59.54	52.04	-----	Type C	Type C	**Type C**	-----	-----	-----	-----	-----	-----		-----		-----		-----	-----	-----	-----
I	-----	25.0	-----	-----	-----	88.34	-----	88.79	-----	-----	-----	-72	0	-----	59.52	51.92	-----	Type C	Type C	**Type C**	-----	-----	-----	-----	-----	-----		-----		-----		-----	-----	-----	-----
J	-----	17.0	-----	-----	-----	88.34	-----	88.79	-----	-----	-----	-75	84	-----	64.63	57.04	-----	Type C	Type C	**Type C**	-----	-----	-----	-----	-----	-----		-----		-----		-----	-----	-----	-----

APPENDIX 'C'

Sample Calculations

STAMSON 5.0 NORMAL REPORT Date: 26-11-2013 12:18:06
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: a.te Time Period: Day/Night 16/8 hours
Description:

POINT “A” (lower units)

Rail data, segment # 1: RAILWAY (day/night)

Train Type	Trains	Speed (km/h)	# loc /Train	# Cars /Train	Eng type	Cont weld
1.	2.0/1.0	40.0	1.0	4.0	Diesel	Yes

Data for Segment # 1: RAILWAY (day/night)

Angle1 Angle2	43.00 deg	54.00 deg
Wood depth	0	(No woods.)
No of house rows	0 / 0	
Surface	2	(Reflective ground surface)
Receiver source distance	89.50 / 89.50	m
Receiver height	3.00 / 0.50	m
Topography	1	(Flat/gentle slope; no barrier)
No Whistle		
Reference angle	0.00	

Results segment # 1: RAILWAY (day)

LOCOMOTIVE (0.00 + 31.30 + 0.00) = 31.30 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
43	54	0.00	51.20	-7.76	-12.14	0.00	0.00	0.00	31.30

WHEEL (0.00 + 20.12 + 0.00) = 20.12 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
43	54	0.00	40.01	-7.76	-12.14	0.00	0.00	0.00	20.12

Segment Leq : 31.62 dBA

Total Leq All Segments: 31.62 dBA

Results segment # 1: RAILWAY (night)

LOCOMOTIVE (0.00 + 31.30 + 0.00) = 31.30 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
43	54	0.00	51.20	-7.76	-12.14	0.00	0.00	0.00	31.30

WHEEL (0.00 + 20.12 + 0.00) = 20.12 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
43	54	0.00	40.01	-7.76	-12.14	0.00	0.00	0.00	20.12

Segment Leq : 31.62 dBA

Total Leq All Segments: 31.62 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 31.62
(NIGHT): 31.62

STAMSON 5.0 NORMAL REPORT Date: 26-11-2013 12:18:20
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: b.te Time Period: Day/Night 16/8 hours
Description:

POINT “B” (lower units)

Road data, segment # 1: CRAIG HENRY (day/night)

Car traffic volume : 9715/845 veh/TimePeriod
Medium truck volume : 773/67 veh/TimePeriod
Heavy truck volume : 552/48 veh/TimePeriod
Posted speed limit : 40 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 1: CRAIG HENRY (day/night)

Angle1 Angle2 : 0.00 deg 72.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 25.00 / 25.00 m
Receiver height : 3.00 / 0.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Results segment # 1: CRAIG HENRY (day)

Source height = 1.50 m

ROAD (0.00 + 59.52 + 0.00) = 59.52 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	72	0.00	65.72	0.00	-2.22	-3.98	0.00	0.00	0.00	59.52

Segment Leq : 59.52 dBA

Total Leq All Segments: 59.52 dBA

Results segment # 1: CRAIG HENRY (night)

Source height = 1.50 m

ROAD (0.00 + 51.92 + 0.00) = 51.92 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	72	0.00	58.12	0.00	-2.22	-3.98	0.00	0.00	0.00	51.92

Segment Leq : 51.92 dBA

Total Leq All Segments: 51.92 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 59.52
(NIGHT): 51.92

STAMSON 5.0 NORMAL REPORT Date: 26-11-2013 12:18:43
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: c.te Time Period: Day/Night 16/8 hours
Description:

POINT “C” (lower units)

Road data, segment # 1: CRAIG HENRY (day/night)

Car traffic volume : 9715/845 veh/TimePeriod
Medium truck volume : 773/67 veh/TimePeriod
Heavy truck volume : 552/48 veh/TimePeriod
Posted speed limit : 40 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 1: CRAIG HENRY (day/night)

Angle1 Angle2 : -83.00 deg 77.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 17.00 / 17.00 m
Receiver height : 3.00 / 0.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Results segment # 1: CRAIG HENRY (day)

Source height = 1.50 m

ROAD (0.00 + 64.66 + 0.00) = 64.66 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-83	77	0.00	65.72	0.00	-0.54	-0.51	0.00	0.00	0.00	64.66

Segment Leq : 64.66 dBA

Total Leq All Segments: 64.66 dBA

Results segment # 1: CRAIG HENRY (night)

Source height = 1.50 m

ROAD (0.00 + 57.06 + 0.00) = 57.06 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-83	77	0.00	58.12	0.00	-0.54	-0.51	0.00	0.00	0.00	57.06

Segment Leq : 57.06 dBA

Total Leq All Segments: 57.06 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 64.66
(NIGHT): 57.06

STAMSON 5.0 NORMAL REPORT Date: 26-11-2013 12:18:57
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: d.te Time Period: Day/Night 16/8 hours
Description:

POINT “D” (lower units)

Rail data, segment # 1: RAILWAY (day/night)

Train Type	Trains	Speed (km/h)	# loc /Train	# Cars /Train	Eng type	Cont weld
1.	2.0/1.0	40.0	1.0	4.0	Diesel	Yes

Data for Segment # 1: RAILWAY (day/night)

Angle1 Angle2	-12.00 deg	36.00 deg
Wood depth	0	(No woods.)
No of house rows	0 / 0	
Surface	2	(Reflective ground surface)
Receiver source distance	89.50 / 89.50	m
Receiver height	3.00 / 0.50	m
Topography	1	(Flat/gentle slope; no barrier)
No Whistle		
Reference angle	0.00	

Results segment # 1: RAILWAY (day)

LOCOMOTIVE (0.00 + 37.70 + 0.00) = 37.70 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-12	36	0.00	51.20	-7.76	-5.74	0.00	0.00	0.00	37.70

WHEEL (0.00 + 26.52 + 0.00) = 26.52 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-12	36	0.00	40.01	-7.76	-5.74	0.00	0.00	0.00	26.52

Segment Leq : 38.02 dBA

Total Leq All Segments: 38.02 dBA

Results segment # 1: RAILWAY (night)

LOCOMOTIVE (0.00 + 37.70 + 0.00) = 37.70 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-12	36	0.00	51.20	-7.76	-5.74	0.00	0.00	0.00	37.70

WHEEL (0.00 + 26.52 + 0.00) = 26.52 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-12	36	0.00	40.01	-7.76	-5.74	0.00	0.00	0.00	26.52

Segment Leq : 38.02 dBA

Total Leq All Segments: 38.02 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 38.02
(NIGHT): 38.02

STAMSON 5.0 NORMAL REPORT Date: 26-11-2013 12:19:12
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: e.te Time Period: Day/Night 16/8 hours
Description:

POINT “E” (lower units)

Rail data, segment # 1: RAILWAY (day/night)

Train Type	Trains	Speed (km/h)	# loc /Train	# Cars /Train	Eng type	Cont weld
1.	2.0/1.0	40.0	1.0	4.0	Diesel	Yes

Data for Segment # 1: RAILWAY (day/night)

Angle1 Angle2	0.00 deg	30.00 deg
Wood depth	0	(No woods.)
No of house rows	0 / 0	
Surface	2	(Reflective ground surface)
Receiver source distance	95.00 / 95.00	m
Receiver height	3.00 / 0.50	m
Topography	1	(Flat/gentle slope; no barrier)
No Whistle		
Reference angle	0.00	

Results segment # 1: RAILWAY (day)

LOCOMOTIVE (0.00 + 35.40 + 0.00) = 35.40 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	30	0.00	51.20	-8.02	-7.78	0.00	0.00	0.00	35.40

WHEEL (0.00 + 24.22 + 0.00) = 24.22 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	30	0.00	40.01	-8.02	-7.78	0.00	0.00	0.00	24.22

Segment Leq : 35.72 dBA

Total Leq All Segments: 35.72 dBA

Results segment # 1: RAILWAY (night)

LOCOMOTIVE (0.00 + 35.40 + 0.00) = 35.40 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	30	0.00	51.20	-8.02	-7.78	0.00	0.00	0.00	35.40

WHEEL (0.00 + 24.22 + 0.00) = 24.22 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	30	0.00	40.01	-8.02	-7.78	0.00	0.00	0.00	24.22

Segment Leq : 35.72 dBA

Total Leq All Segments: 35.72 dBA

Road data, segment # 1: CRAIG HENRY (day/night)

Car traffic volume : 9715/845 veh/TimePeriod
Medium truck volume : 773/67 veh/TimePeriod
Heavy truck volume : 552/48 veh/TimePeriod
Posted speed limit : 40 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 1: CRAIG HENRY (day/night)

Angle1 Angle2 : -73.00 deg 0.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 25.00 / 25.00 m
Receiver height : 3.00 / 0.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Results segment # 1: CRAIG HENRY (day)

Source height = 1.50 m

ROAD (0.00 + 59.58 + 0.00) = 59.58 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-73	0	0.00	65.72	0.00	-2.22	-3.92	0.00	0.00	0.00	59.58

Segment Leq : 59.58 dBA

Total Leq All Segments: 59.58 dBA

Results segment # 1: CRAIG HENRY (night)

Source height = 1.50 m

ROAD (0.00 + 51.98 + 0.00) = 51.98 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-73	0	0.00	58.12	0.00	-2.22	-3.92	0.00	0.00	0.00	51.98

Segment Leq : 51.98 dBA

Total Leq All Segments: 51.98 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 59.60
(NIGHT): 52.08

STAMSON 5.0 NORMAL REPORT Date: 26-11-2013 12:19:25
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: f.te Time Period: Day/Night 16/8 hours
Description:

POINT “F” (lower units)

Rail data, segment # 1: RAILWAY (day/night)

Train Type	Trains	Speed (km/h)	# loc /Train	# Cars /Train	Eng type	Cont weld
1.	2.0/1.0	40.0	1.0	4.0	Diesel	Yes

Data for Segment # 1: RAILWAY (day/night)

Angle1 Angle2	-41.00 deg	7.00 deg
Wood depth	0	(No woods.)
No of house rows	0 / 0	
Surface	2	(Reflective ground surface)
Receiver source distance	89.50 / 89.50	m
Receiver height	3.00 / 0.50	m
Topography	1	(Flat/gentle slope; no barrier)

No Whistle
Reference angle : 0.00

Results segment # 1: RAILWAY (day)

LOCOMOTIVE (0.00 + 37.70 + 0.00) = 37.70 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-41	7	0.00	51.20	-7.76	-5.74	0.00	0.00	0.00	37.70

WHEEL (0.00 + 26.52 + 0.00) = 26.52 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-41	7	0.00	40.01	-7.76	-5.74	0.00	0.00	0.00	26.52

Segment Leq : 38.02 dBA

Total Leq All Segments: 38.02 dBA

Results segment # 1: RAILWAY (night)

LOCOMOTIVE (0.00 + 37.70 + 0.00) = 37.70 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-41	7	0.00	51.20	-7.76	-5.74	0.00	0.00	0.00	37.70

WHEEL (0.00 + 26.52 + 0.00) = 26.52 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-41	7	0.00	40.01	-7.76	-5.74	0.00	0.00	0.00	26.52

Segment Leq : 38.02 dBA

Total Leq All Segments: 38.02 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 38.02
(NIGHT): 38.02

STAMSON 5.0 NORMAL REPORT Date: 26-11-2013 12:19:44
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: g.te Time Period: Day/Night 16/8 hours
Description:

POINT “G” (lower units)

Rail data, segment # 1: RAILWAY (day/night)

Train Type	Trains	Speed (km/h)	# loc /Train	# Cars /Train	Eng type	Cont weld
1.	2.0/1.0	40.0	1.0	4.0	Diesel	Yes

Data for Segment # 1: RAILWAY (day/night)

Angle1 Angle2	-36.00 deg	0.00 deg
Wood depth	0	(No woods.)
No of house rows	0 / 0	
Surface	2	(Reflective ground surface)
Receiver source distance	95.00 / 95.00	m
Receiver height	3.00 / 0.50	m
Topography	1	(Flat/gentle slope; no barrier)
No Whistle		
Reference angle	0.00	

Results segment # 1: RAILWAY (day)

LOCOMOTIVE (0.00 + 36.19 + 0.00) = 36.19 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-36	0	0.00	51.20	-8.02	-6.99	0.00	0.00	0.00	36.19

WHEEL (0.00 + 25.01 + 0.00) = 25.01 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-36	0	0.00	40.01	-8.02	-6.99	0.00	0.00	0.00	25.01

Segment Leq : 36.51 dBA

Total Leq All Segments: 36.51 dBA

Results segment # 1: RAILWAY (night)

LOCOMOTIVE (0.00 + 36.19 + 0.00) = 36.19 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-36	0	0.00	51.20	-8.02	-6.99	0.00	0.00	0.00	36.19

WHEEL (0.00 + 25.01 + 0.00) = 25.01 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-36	0	0.00	40.01	-8.02	-6.99	0.00	0.00	0.00	25.01

Segment Leq : 36.51 dBA

Total Leq All Segments: 36.51 dBA

Road data, segment # 1: CRAIG HENRY (day/night)

Car traffic volume	: 9715/845	veh/TimePeriod
Medium truck volume	: 773/67	veh/TimePeriod
Heavy truck volume	: 552/48	veh/TimePeriod
Posted speed limit	: 40	km/h
Road gradient	: 0	%
Road pavement	: 1	(Typical asphalt or concrete)

Data for Segment # 1: CRAIG HENRY (day/night)

Angle1 Angle2	: 0.00 deg	72.00 deg
Wood depth	: 0	(No woods.)
No of house rows	: 0 / 0	
Surface	: 2	(Reflective ground surface)
Receiver source distance	: 25.00 / 25.00	m
Receiver height	: 3.00 / 0.50	m
Topography	: 1	(Flat/gentle slope; no barrier)
Reference angle	: 0.00	

Results segment # 1: CRAIG HENRY (day)

Source height = 1.50 m

ROAD (0.00 + 59.52 + 0.00) = 59.52 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	72	0.00	65.72	0.00	-2.22	-3.98	0.00	0.00	0.00	59.52

Segment Leq : 59.52 dBA

Total Leq All Segments: 59.52 dBA

Results segment # 1: CRAIG HENRY (night)

Source height = 1.50 m

ROAD (0.00 + 51.92 + 0.00) = 51.92 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	72	0.00	58.12	0.00	-2.22	-3.98	0.00	0.00	0.00	51.92

Segment Leq : 51.92 dBA

Total Leq All Segments: 51.92 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 59.54
(NIGHT): 52.04

STAMSON 5.0 NORMAL REPORT Date: 26-11-2013 08:54:18
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: h.te Time Period: Day/Night 16/8 hours
Description:

POINT “H” (lower units)

Rail data, segment # 1: RAILWAY (day/night)

Train Type	Trains	Speed (km/h)	# loc /Train	# Cars /Train	Eng type	Cont weld
1.	2.0/1.0	40.0	1.0	4.0	Diesel	Yes

Data for Segment # 1: RAILWAY (day/night)

Angle1 Angle2	-58.00 deg	-43.00 deg
Wood depth	0	(No woods.)
No of house rows	0 / 0	
Surface	2	(Reflective ground surface)
Receiver source distance	89.50 / 89.50	m
Receiver height	3.00 / 0.50	m
Topography	1	(Flat/gentle slope; no barrier)

No Whistle
Reference angle : 0.00

Results segment # 1: RAILWAY (day)

LOCOMOTIVE (0.00 + 32.65 + 0.00) = 32.65 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-58	-43	0.00	51.20	-7.76	-10.79	0.00	0.00	0.00	32.65

WHEEL (0.00 + 21.46 + 0.00) = 21.46 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-58	-43	0.00	40.01	-7.76	-10.79	0.00	0.00	0.00	21.46

Segment Leq : 32.97 dBA

Total Leq All Segments: 32.97 dBA

Results segment # 1: RAILWAY (night)

LOCOMOTIVE (0.00 + 32.65 + 0.00) = 32.65 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-58	-43	0.00	51.20	-7.76	-10.79	0.00	0.00	0.00	32.65

WHEEL (0.00 + 21.46 + 0.00) = 21.46 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-58	-43	0.00	40.01	-7.76	-10.79	0.00	0.00	0.00	21.46

Segment Leq : 32.97 dBA

Total Leq All Segments: 32.97 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 32.97
(NIGHT): 32.97

STAMSON 5.0 NORMAL REPORT Date: 26-11-2013 08:54:33
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: i.te Time Period: Day/Night 16/8 hours
Description:

POINT “I” (lower units)

Road data, segment # 1: CRAIG HENRY (day/night)

Car traffic volume : 9715/845 veh/TimePeriod
Medium truck volume : 773/67 veh/TimePeriod
Heavy truck volume : 552/48 veh/TimePeriod
Posted speed limit : 40 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 1: CRAIG HENRY (day/night)

Angle1 Angle2 : -72.00 deg 0.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 25.00 / 25.00 m
Receiver height : 3.00 / 0.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Results segment # 1: CRAIG HENRY (day)

Source height = 1.50 m

ROAD (0.00 + 59.52 + 0.00) = 59.52 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-72	0	0.00	65.72	0.00	-2.22	-3.98	0.00	0.00	0.00	59.52

Segment Leq : 59.52 dBA

Total Leq All Segments: 59.52 dBA

Results segment # 1: CRAIG HENRY (night)

Source height = 1.50 m

ROAD (0.00 + 51.92 + 0.00) = 51.92 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-72	0	0.00	58.12	0.00	-2.22	-3.98	0.00	0.00	0.00	51.92

Segment Leq : 51.92 dBA

Total Leq All Segments: 51.92 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 59.52
(NIGHT): 51.92

STAMSON 5.0 NORMAL REPORT Date: 26-11-2013 08:54:43
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: j.te Time Period: Day/Night 16/8 hours
Description:

POINT “J” (lower units)

Road data, segment # 1: CRAIG HENRY (day/night)

Car traffic volume : 9715/845 veh/TimePeriod
Medium truck volume : 773/67 veh/TimePeriod
Heavy truck volume : 552/48 veh/TimePeriod
Posted speed limit : 40 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 1: CRAIG HENRY (day/night)

Angle1 Angle2 : -75.00 deg 84.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 17.00 / 17.00 m
Receiver height : 3.00 / 0.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Results segment # 1: CRAIG HENRY (day)

Source height = 1.50 m

ROAD (0.00 + 64.63 + 0.00) = 64.63 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-75	84	0.00	65.72	0.00	-0.54	-0.54	0.00	0.00	0.00	64.63

Segment Leq : 64.63 dBA

Total Leq All Segments: 64.63 dBA

Results segment # 1: CRAIG HENRY (night)

Source height = 1.50 m

ROAD (0.00 + 57.04 + 0.00) = 57.04 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-75	84	0.00	58.12	0.00	-0.54	-0.54	0.00	0.00	0.00	57.04

Segment Leq : 57.04 dBA

Total Leq All Segments: 57.04 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 64.63
(NIGHT): 57.04

STAMSON 5.0 NORMAL REPORT Date: 26-11-2013 08:54:50
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: k.te Time Period: Day/~~Night~~ 16/~~8~~ hours
Description:

POINT “K” (lower units)

Rail data, segment # 1: RAILWAY (day/~~night~~)

Train Type	Trains	Speed (km/h)	# loc /Train	# Cars /Train	Eng type	Cont weld
1.	2.0/1.0	40.0	1.0	4.0	Diesel	Yes

Data for Segment # 1: RAILWAY (day/~~night~~)

Angle1 Angle2	47.00 deg	59.00 deg
Wood depth	0	(No woods.)
No of house rows	0 / ~~0~~	
Surface	2	(Reflective ground surface)
Receiver source distance	86.50 / ~~86.50~~	m
Receiver height	1.50 / ~~0.50~~	m
Topography	1	(Flat/gentle slope; no barrier)

No Whistle
Reference angle : 0.00

Results segment # 1: RAILWAY (day)

LOCOMOTIVE (0.00 + 31.83 + 0.00) = 31.83 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
47	59	0.00	51.20	-7.61	-11.76	0.00	0.00	0.00	31.83

WHEEL (0.00 + 20.64 + 0.00) = 20.64 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
47	59	0.00	40.01	-7.61	-11.76	0.00	0.00	0.00	20.64

Segment Leq : 32.15 dBA

Total Leq All Segments: 32.15 dBA

Results segment # 1: RAILWAY (night)

LOCOMOTIVE (0.00 + 31.83 + 0.00) = 31.83 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
47	59	0.00	51.20	-7.61	-11.76	0.00	0.00	0.00	31.83

WHEEL (0.00 + 20.64 + 0.00) = 20.64 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
47	59	0.00	40.01	-7.61	-11.76	0.00	0.00	0.00	20.64

Segment Leq : 32.15 dBA

Total Leq All Segments: 32.15 dBA

Road data, segment # 1: CRAIG HENRY (day/night)

Car traffic volume	: 9715/845	veh/TimePeriod
Medium truck volume	: 773/67	veh/TimePeriod
Heavy truck volume	: 552/48	veh/TimePeriod
Posted speed limit	: 40	km/h
Road gradient	: 0	%
Road pavement	: 1	(Typical asphalt or concrete)

Data for Segment # 1: CRAIG HENRY (day/night)

Angle1 Angle2	: 39.00 deg	61.00 deg
Wood depth	: 0	(No woods.)
No of house rows	: 0 / 0	
Surface	: 2	(Reflective ground surface)
Receiver source distance	: 33.00 / 33.00	m
Receiver height	: 1.50 / 0.50	m
Topography	: 1	(Flat/gentle slope; no barrier)
Reference angle	: 0.00	

Results segment # 1: CRAIG HENRY (day)

Source height = 1.50 m

ROAD (0.00 + 53.16 + 0.00) = 53.16 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
39	61	0.00	65.72	0.00	-3.42	-9.13	0.00	0.00	0.00	53.16

Segment Leq : 53.16 dBA

Total Leq All Segments: 53.16 dBA

Results segment # 1: CRAIG HENRY (night)

Source height = 1.50 m

ROAD (0.00 + 45.56 + 0.00) = 45.56 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
39	61	0.00	58.12	0.00	-3.42	-9.13	0.00	0.00	0.00	45.56

Segment Leq : 45.56 dBA

Total Leq All Segments: 45.56 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 53.19
(NIGHT): 45.75

STAMSON 5.0 NORMAL REPORT Date: 26-11-2013 08:54:59
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: l.te Time Period: Day/~~Night~~ 16/~~8~~ hours
Description:

POINT “L” (lower units)

Rail data, segment # 1: RAILWAY (day/~~night~~)

Train Type	Trains	Speed (km/h)	# loc /Train	# Cars /Train	Eng type	Cont weld
1.	2.0/1.0	40.0	1.0	4.0	Diesel	Yes

Data for Segment # 1: RAILWAY (day/~~night~~)

Angle1 Angle2	-12.00 deg	43.00 deg
Wood depth	0	(No woods.)
No of house rows	0 / ~~0~~	
Surface	2	(Reflective ground surface)
Receiver source distance	86.50 / ~~86.50~~	m
Receiver height	1.50 / ~~0.50~~	m
Topography	1	(Flat/gentle slope; no barrier)

No Whistle
Reference angle : 0.00

Results segment # 1: RAILWAY (day)

LOCOMOTIVE (0.00 + 38.44 + 0.00) = 38.44 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-12	43	0.00	51.20	-7.61	-5.15	0.00	0.00	0.00	38.44

WHEEL (0.00 + 27.25 + 0.00) = 27.25 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-12	43	0.00	40.01	-7.61	-5.15	0.00	0.00	0.00	27.25

Segment Leq : 38.76 dBA

Total Leq All Segments: 38.76 dBA

Results segment # 1: RAILWAY (night)

LOCOMOTIVE (0.00 + 38.44 + 0.00) = 38.44 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-12	43	0.00	51.20	-7.61	-5.15	0.00	0.00	0.00	38.44

WHEEL (0.00 + 27.25 + 0.00) = 27.25 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-12	43	0.00	40.01	-7.61	-5.15	0.00	0.00	0.00	27.25

Segment Leq : 38.76 dBA

Total Leq All Segments: 38.76 dBA

Road data, segment # 1: CRAIG HENRY (day/night)

Car traffic volume	: 9715/845	veh/TimePeriod
Medium truck volume	: 773/67	veh/TimePeriod
Heavy truck volume	: 552/48	veh/TimePeriod
Posted speed limit	: 40	km/h
Road gradient	: 0	%
Road pavement	: 1	(Typical asphalt or concrete)

Data for Segment # 1: CRAIG HENRY (day/night)

Angle1 Angle2	: -61.00 deg	-39.00 deg
Wood depth	: 0	(No woods.)
No of house rows	: 0 / 0	
Surface	: 2	(Reflective ground surface)
Receiver source distance	: 33.00 / 33.00	m
Receiver height	: 1.50 / 0.50	m
Topography	: 1	(Flat/gentle slope; no barrier)
Reference angle	: 0.00	

Results segment # 1: CRAIG HENRY (day)

Source height = 1.50 m

ROAD (0.00 + 53.16 + 0.00) = 53.16 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-61	-39	0.00	65.72	0.00	-3.42	-9.13	0.00	0.00	0.00	53.16

Segment Leq : 53.16 dBA

Total Leq All Segments: 53.16 dBA

~~Results segment # 1: CRAIG HENRY (night)~~
~~---~~

~~Source height = 1.50 m~~

~~ROAD (0.00 + 45.56 + 0.00) = 45.56 dBA~~

~~Angle1~~	~~Angle2~~	~~Alpha~~	~~RefLeq~~	~~P.Adj~~	~~D.Adj~~	~~F.Adj~~	~~W.Adj~~	~~H.Adj~~	~~B.Adj~~	~~SubLeq~~
~~-61~~	~~-39~~	~~0.00~~	~~58.12~~	~~0.00~~	~~-3.42~~	~~-9.13~~	~~0.00~~	~~0.00~~	~~0.00~~	~~45.56~~

~~Segment Leq : 45.56 dBA~~

~~Total Leq All Segments: 45.56 dBA~~

TOTAL Leq FROM ALL SOURCES (DAY): 53.31
~~(NIGHT): 46.38~~

STAMSON 5.0 NORMAL REPORT Date: 26-11-2013 08:55:06
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: m.te Time Period: Day/~~Night~~ 16/~~8~~ hours
Description:

POINT “M” (lower units)

Rail data, segment # 1: RAILWAY (day/~~night~~)

Train Type	Trains	Speed (km/h)	# loc /Train	# Cars /Train	Eng type	Cont weld
1.	2.0/1.0	40.0	1.0	4.0	Diesel	Yes

Data for Segment # 1: RAILWAY (day/~~night~~)

Angle1 Angle2	-43.00 deg	12.00 deg
Wood depth	0	(No woods.)
No of house rows	0 / ~~0~~	
Surface	2	(Reflective ground surface)
Receiver source distance	86.50 / ~~86.50~~	m
Receiver height	1.50 / ~~0.50~~	m
Topography	1	(Flat/gentle slope; no barrier)

No Whistle
Reference angle : 0.00

Results segment # 1: RAILWAY (day)

LOCOMOTIVE (0.00 + 38.44 + 0.00) = 38.44 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-43	12	0.00	51.20	-7.61	-5.15	0.00	0.00	0.00	38.44

WHEEL (0.00 + 27.25 + 0.00) = 27.25 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-43	12	0.00	40.01	-7.61	-5.15	0.00	0.00	0.00	27.25

Segment Leq : 38.76 dBA

Total Leq All Segments: 38.76 dBA

Results segment # 1: RAILWAY (night)

LOCOMOTIVE (0.00 + 38.44 + 0.00) = 38.44 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-43	12	0.00	51.20	-7.61	-5.15	0.00	0.00	0.00	38.44

WHEEL (0.00 + 27.25 + 0.00) = 27.25 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-43	12	0.00	40.01	-7.61	-5.15	0.00	0.00	0.00	27.25

Segment Leq : 38.76 dBA

Total Leq All Segments: 38.76 dBA

Road data, segment # 1: CRAIG HENRY (day/night)

Car traffic volume : 9715/845 veh/TimePeriod
Medium truck volume : 773/67 veh/TimePeriod
Heavy truck volume : 552/48 veh/TimePeriod
Posted speed limit : 40 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 1: CRAIG HENRY (day/night)

Angle1 Angle2 : 39.00 deg 61.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 33.00 / 33.00 m
Receiver height : 1.50 / 0.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Results segment # 1: CRAIG HENRY (day)

Source height = 1.50 m

ROAD (0.00 + 53.16 + 0.00) = 53.16 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
39	61	0.00	65.72	0.00	-3.42	-9.13	0.00	0.00	0.00	53.16

Segment Leq : 53.16 dBA

Total Leq All Segments: 53.16 dBA

Results segment # 1: CRAIG HENRY (night)

Source height = 1.50 m

ROAD (0.00 + 45.56 + 0.00) = 45.56 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
39	61	0.00	58.12	0.00	-3.42	-9.13	0.00	0.00	0.00	45.56

Segment Leq : 45.56 dBA

Total Leq All Segments: 45.56 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 53.31
(NIGHT): 46.38

STAMSON 5.0 NORMAL REPORT Date: 26-11-2013 08:55:13
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: n.te Time Period: Day/~~Night~~ 16/~~8~~ hours
Description:

POINT “N” (lower units)

Rail data, segment # 1: RAILWAY (day/~~night~~)

Train Type	Trains	Speed (km/h)	# loc /Train	# Cars /Train	Eng type	Cont weld
1.	2.0/1.0	40.0	1.0	4.0	Diesel	Yes

Data for Segment # 1: RAILWAY (day/~~night~~)

Angle1 Angle2	: -59.00 deg	-46.00 deg
Wood depth	: 0	(No woods.)
No of house rows	: 0 / ~~0~~	
Surface	: 2	(Reflective ground surface)
Receiver source distance	: 86.50 / ~~86.50~~	m
Receiver height	: 1.50 / ~~0.50~~	m
Topography	: 1	(Flat/gentle slope; no barrier)

No Whistle
Reference angle : 0.00

Results segment # 1: RAILWAY (day)

LOCOMOTIVE (0.00 + 32.18 + 0.00) = 32.18 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-59	-46	0.00	51.20	-7.61	-11.41	0.00	0.00	0.00	32.18

WHEEL (0.00 + 20.99 + 0.00) = 20.99 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-59	-46	0.00	40.01	-7.61	-11.41	0.00	0.00	0.00	20.99

Segment Leq : 32.50 dBA

Total Leq All Segments: 32.50 dBA

Results segment # 1: RAILWAY (night)

LOCOMOTIVE (0.00 + 32.18 + 0.00) = 32.18 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-59	-46	0.00	51.20	-7.61	-11.41	0.00	0.00	0.00	32.18

WHEEL (0.00 + 20.99 + 0.00) = 20.99 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-59	-46	0.00	40.01	-7.61	-11.41	0.00	0.00	0.00	20.99

Segment Leq : 32.50 dBA

Total Leq All Segments: 32.50 dBA

Road data, segment # 1: CRAIG HENRY (day/night)

Car traffic volume : 9715/845 veh/TimePeriod
Medium truck volume : 773/67 veh/TimePeriod
Heavy truck volume : 552/48 veh/TimePeriod
Posted speed limit : 40 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 1: CRAIG HENRY (day/night)

Angle1 Angle2 : -62.00 deg -39.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 33.00 / 33.00 m
Receiver height : 1.50 / 0.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Results segment # 1: CRAIG HENRY (day)

Source height = 1.50 m

ROAD (0.00 + 53.36 + 0.00) = 53.36 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-62	-39	0.00	65.72	0.00	-3.42	-8.94	0.00	0.00	0.00	53.36

Segment Leq : 53.36 dBA

Total Leq All Segments: 53.36 dBA

Results segment # 1: CRAIG HENRY (night)

Source height = 1.50 m

ROAD (0.00 + 45.76 + 0.00) = 45.76 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-62	-39	0.00	58.12	0.00	-3.42	-8.94	0.00	0.00	0.00	45.76

Segment Leq : 45.76 dBA

Total Leq All Segments: 45.76 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 53.40
(NIGHT): 45.96

STAMSON 5.0 NORMAL REPORT Date: 26-11-2013 12:20:32
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: a.te Time Period: Day/Night 16/8 hours
Description:

POINT “A” (upper units)

Rail data, segment # 1: . (day/night)

Train Type	Trains	Speed (km/h)	# loc /Train	# Cars /Train	Eng type	Cont weld
1.	2.0/1.0	40.0	1.0	4.0	Diesel	Yes

Data for Segment # 1: . (day/night)

Angle1 Angle2	43.00 deg	54.00 deg
Wood depth	0	(No woods.)
No of house rows	0 / 0	
Surface	2	(Reflective ground surface)
Receiver source distance	89.50 / 89.50	m
Receiver height	6.00 / 8.00	m
Topography	1	(Flat/gentle slope; no barrier)
No Whistle		
Reference angle	0.00	

Results segment # 1: . (day)

LOCOMOTIVE (0.00 + 31.30 + 0.00) = 31.30 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
43	54	0.00	51.20	-7.76	-12.14	0.00	0.00	0.00	31.30

WHEEL (0.00 + 20.12 + 0.00) = 20.12 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
43	54	0.00	40.01	-7.76	-12.14	0.00	0.00	0.00	20.12

Segment Leq : 31.62 dBA

Total Leq All Segments: 31.62 dBA

Results segment # 1: . (night)

LOCOMOTIVE (0.00 + 31.30 + 0.00) = 31.30 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
43	54	0.00	51.20	-7.76	-12.14	0.00	0.00	0.00	31.30

WHEEL (0.00 + 20.12 + 0.00) = 20.12 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
43	54	0.00	40.01	-7.76	-12.14	0.00	0.00	0.00	20.12

Segment Leq : 31.62 dBA

Total Leq All Segments: 31.62 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 31.62
(NIGHT): 31.62

STAMSON 5.0 NORMAL REPORT Date: 26-11-2013 12:21:07
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: b.te Time Period: Day/Night 16/8 hours
Description:

POINT “B” (upper units)

Road data, segment # 1: CRAIG HENRY (day/night)

Car traffic volume : 9715/845 veh/TimePeriod
Medium truck volume : 773/67 veh/TimePeriod
Heavy truck volume : 552/48 veh/TimePeriod
Posted speed limit : 40 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 1: CRAIG HENRY (day/night)

Angle1 Angle2 : 0.00 deg 72.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 25.00 / 25.00 m
Receiver height : 6.00 / 8.00 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Results segment # 1: CRAIG HENRY (day)

Source height = 1.50 m

ROAD (0.00 + 59.52 + 0.00) = 59.52 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	72	0.00	65.72	0.00	-2.22	-3.98	0.00	0.00	0.00	59.52

Segment Leq : 59.52 dBA

Total Leq All Segments: 59.52 dBA

Results segment # 1: CRAIG HENRY (night)

Source height = 1.50 m

ROAD (0.00 + 51.92 + 0.00) = 51.92 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	72	0.00	58.12	0.00	-2.22	-3.98	0.00	0.00	0.00	51.92

Segment Leq : 51.92 dBA

Total Leq All Segments: 51.92 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 59.52
(NIGHT): 51.92

STAMSON 5.0 NORMAL REPORT Date: 26-11-2013 12:21:22
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: c.te Time Period: Day/Night 16/8 hours
Description:

POINT “C” (upper units)

Road data, segment # 1: CRAIG HENRY (day/night)

Car traffic volume : 9715/845 veh/TimePeriod
Medium truck volume : 773/67 veh/TimePeriod
Heavy truck volume : 552/48 veh/TimePeriod
Posted speed limit : 40 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 1: CRAIG HENRY (day/night)

Angle1 Angle2 : -83.00 deg 77.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 17.00 / 17.00 m
Receiver height : 6.00 / 8.00 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Results segment # 1: CRAIG HENRY (day)

Source height = 1.50 m

ROAD (0.00 + 64.66 + 0.00) = 64.66 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-83	77	0.00	65.72	0.00	-0.54	-0.51	0.00	0.00	0.00	64.66

Segment Leq : 64.66 dBA

Total Leq All Segments: 64.66 dBA

Results segment # 1: CRAIG HENRY (night)

Source height = 1.50 m

ROAD (0.00 + 57.06 + 0.00) = 57.06 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-83	77	0.00	58.12	0.00	-0.54	-0.51	0.00	0.00	0.00	57.06

Segment Leq : 57.06 dBA

Total Leq All Segments: 57.06 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 64.66
(NIGHT): 57.06

STAMSON 5.0 NORMAL REPORT Date: 26-11-2013 12:21:32
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: d.te Time Period: Day/Night 16/8 hours
Description:

POINT “D” (upper units)

Rail data, segment # 1: RAILWAY (day/night)

Train Type	Trains	Speed (km/h)	# loc /Train	# Cars /Train	Eng type	Cont weld
1.	2.0/1.0	40.0	1.0	4.0	Diesel	Yes

Data for Segment # 1: RAILWAY (day/night)

Angle1 Angle2	-12.00 deg	36.00 deg
Wood depth	0	(No woods.)
No of house rows	0 / 0	
Surface	2	(Reflective ground surface)
Receiver source distance	89.50 / 89.50	m
Receiver height	6.00 / 8.00	m
Topography	1	(Flat/gentle slope; no barrier)
No Whistle		
Reference angle	0.00	

Results segment # 1: RAILWAY (day)

LOCOMOTIVE (0.00 + 37.70 + 0.00) = 37.70 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-12	36	0.00	51.20	-7.76	-5.74	0.00	0.00	0.00	37.70

WHEEL (0.00 + 26.52 + 0.00) = 26.52 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-12	36	0.00	40.01	-7.76	-5.74	0.00	0.00	0.00	26.52

Segment Leq : 38.02 dBA

Total Leq All Segments: 38.02 dBA

Results segment # 1: RAILWAY (night)

LOCOMOTIVE (0.00 + 37.70 + 0.00) = 37.70 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-12	36	0.00	51.20	-7.76	-5.74	0.00	0.00	0.00	37.70

WHEEL (0.00 + 26.52 + 0.00) = 26.52 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-12	36	0.00	40.01	-7.76	-5.74	0.00	0.00	0.00	26.52

Segment Leq : 38.02 dBA

Total Leq All Segments: 38.02 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 38.02
(NIGHT): 38.02

STAMSON 5.0 NORMAL REPORT Date: 26-11-2013 12:21:43
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: e.te Time Period: Day/Night 16/8 hours
Description:

POINT “E” (upper units)

Rail data, segment # 1: RAILWAY (day/night)

Train Type	Trains	Speed (km/h)	# loc /Train	# Cars /Train	Eng type	Cont weld
1.	2.0/1.0	40.0	1.0	4.0	Diesel	Yes

Data for Segment # 1: RAILWAY (day/night)

Angle1 Angle2	0.00 deg	30.00 deg
Wood depth	0	(No woods.)
No of house rows	0 / 0	
Surface	2	(Reflective ground surface)
Receiver source distance	95.00 / 95.00	m
Receiver height	6.00 / 8.00	m
Topography	1	(Flat/gentle slope; no barrier)
No Whistle		
Reference angle	0.00	

Results segment # 1: RAILWAY (day)

LOCOMOTIVE (0.00 + 35.40 + 0.00) = 35.40 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	30	0.00	51.20	-8.02	-7.78	0.00	0.00	0.00	35.40

WHEEL (0.00 + 24.22 + 0.00) = 24.22 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	30	0.00	40.01	-8.02	-7.78	0.00	0.00	0.00	24.22

Segment Leq : 35.72 dBA

Total Leq All Segments: 35.72 dBA

Results segment # 1: RAILWAY (night)

LOCOMOTIVE (0.00 + 35.40 + 0.00) = 35.40 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	30	0.00	51.20	-8.02	-7.78	0.00	0.00	0.00	35.40

WHEEL (0.00 + 24.22 + 0.00) = 24.22 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	30	0.00	40.01	-8.02	-7.78	0.00	0.00	0.00	24.22

Segment Leq : 35.72 dBA

Total Leq All Segments: 35.72 dBA

Road data, segment # 1: CRAIG HENRY (day/night)

Car traffic volume : 9715/845 veh/TimePeriod
Medium truck volume : 773/67 veh/TimePeriod
Heavy truck volume : 552/48 veh/TimePeriod
Posted speed limit : 40 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 1: CRAIG HENRY (day/night)

Angle1 Angle2 : -73.00 deg 0.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 25.00 / 25.00 m
Receiver height : 6.00 / 8.00 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Results segment # 1: CRAIG HENRY (day)

Source height = 1.50 m

ROAD (0.00 + 59.58 + 0.00) = 59.58 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-73	0	0.00	65.72	0.00	-2.22	-3.92	0.00	0.00	0.00	59.58

Segment Leq : 59.58 dBA

Total Leq All Segments: 59.58 dBA

Results segment # 1: CRAIG HENRY (night)

Source height = 1.50 m

ROAD (0.00 + 51.98 + 0.00) = 51.98 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-73	0	0.00	58.12	0.00	-2.22	-3.92	0.00	0.00	0.00	51.98

Segment Leq : 51.98 dBA

Total Leq All Segments: 51.98 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 59.60
(NIGHT): 52.08

STAMSON 5.0 NORMAL REPORT Date: 26-11-2013 12:21:54
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: f.te Time Period: Day/Night 16/8 hours
Description:

POINT “F” (upper units)

Rail data, segment # 1: RAILWAY (day/night)

Train Type	Trains	Speed (km/h)	# loc /Train	# Cars /Train	Eng type	Cont weld
1.	2.0/1.0	40.0	1.0	4.0	Diesel	Yes

Data for Segment # 1: RAILWAY (day/night)

Angle1 Angle2	-41.00 deg	7.00 deg
Wood depth	0	(No woods.)
No of house rows	0 / 0	
Surface	2	(Reflective ground surface)
Receiver source distance	89.50 / 89.50	m
Receiver height	6.00 / 8.00	m
Topography	1	(Flat/gentle slope; no barrier)
No Whistle		
Reference angle	0.00	

Results segment # 1: RAILWAY (day)

LOCOMOTIVE (0.00 + 37.70 + 0.00) = 37.70 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-41	7	0.00	51.20	-7.76	-5.74	0.00	0.00	0.00	37.70

WHEEL (0.00 + 26.52 + 0.00) = 26.52 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-41	7	0.00	40.01	-7.76	-5.74	0.00	0.00	0.00	26.52

Segment Leq : 38.02 dBA

Total Leq All Segments: 38.02 dBA

Results segment # 1: RAILWAY (night)

LOCOMOTIVE (0.00 + 37.70 + 0.00) = 37.70 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-41	7	0.00	51.20	-7.76	-5.74	0.00	0.00	0.00	37.70

WHEEL (0.00 + 26.52 + 0.00) = 26.52 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-41	7	0.00	40.01	-7.76	-5.74	0.00	0.00	0.00	26.52

Segment Leq : 38.02 dBA

Total Leq All Segments: 38.02 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 38.02
(NIGHT): 38.02

STAMSON 5.0 NORMAL REPORT Date: 26-11-2013 13:46:37
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: g.te Time Period: Day/Night 16/8 hours
Description:

POINT “G” (upper units)

Rail data, segment # 1: RAILWAY (day/night)

Train Type	Trains	Speed (km/h)	# loc /Train	# Cars /Train	Eng type	Cont weld
1.	2.0/1.0	40.0	1.0	4.0	Diesel	Yes

Data for Segment # 1: RAILWAY (day/night)

Angle1 Angle2	-36.00 deg	0.00 deg
Wood depth	0	(No woods.)
No of house rows	0 / 0	
Surface	2	(Reflective ground surface)
Receiver source distance	95.00 / 95.00	m
Receiver height	6.00 / 8.00	m
Topography	1	(Flat/gentle slope; no barrier)
No Whistle		
Reference angle	0.00	

Results segment # 1: RAILWAY (day)

LOCOMOTIVE (0.00 + 36.19 + 0.00) = 36.19 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-36	0	0.00	51.20	-8.02	-6.99	0.00	0.00	0.00	36.19

WHEEL (0.00 + 25.01 + 0.00) = 25.01 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-36	0	0.00	40.01	-8.02	-6.99	0.00	0.00	0.00	25.01

Segment Leq : 36.51 dBA

Total Leq All Segments: 36.51 dBA

Results segment # 1: RAILWAY (night)

LOCOMOTIVE (0.00 + 36.19 + 0.00) = 36.19 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-36	0	0.00	51.20	-8.02	-6.99	0.00	0.00	0.00	36.19

WHEEL (0.00 + 25.01 + 0.00) = 25.01 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-36	0	0.00	40.01	-8.02	-6.99	0.00	0.00	0.00	25.01

Segment Leq : 36.51 dBA

Total Leq All Segments: 36.51 dBA

Road data, segment # 1: CRAIG HENRY (day/night)

Car traffic volume : 9715/845 veh/TimePeriod
Medium truck volume : 773/67 veh/TimePeriod
Heavy truck volume : 552/48 veh/TimePeriod
Posted speed limit : 40 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 1: CRAIG HENRY (day/night)

Angle1 Angle2 : 0.00 deg 72.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 25.00 / 25.00 m
Receiver height : 6.00 / 8.00 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Results segment # 1: CRAIG HENRY (day)

Source height = 1.50 m

ROAD (0.00 + 59.52 + 0.00) = 59.52 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	72	0.00	65.72	0.00	-2.22	-3.98	0.00	0.00	0.00	59.52

Segment Leq : 59.52 dBA

Total Leq All Segments: 59.52 dBA

Results segment # 1: CRAIG HENRY (night)

Source height = 1.50 m

ROAD (0.00 + 51.92 + 0.00) = 51.92 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	72	0.00	58.12	0.00	-2.22	-3.98	0.00	0.00	0.00	51.92

Segment Leq : 51.92 dBA

Total Leq All Segments: 51.92 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 59.54
(NIGHT): 52.04

STAMSON 5.0 NORMAL REPORT Date: 26-11-2013 08:57:32
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: h.te Time Period: Day/Night 16/8 hours
Description:

POINT “H” (upper units)

Rail data, segment # 1: RAILWAY (day/night)

Train Type	Trains	Speed (km/h)	# loc /Train	# Cars /Train	Eng type	Cont weld
1.	2.0/1.0	40.0	1.0	4.0	Diesel	Yes

Data for Segment # 1: RAILWAY (day/night)

Angle1 Angle2	-58.00 deg	-43.00 deg
Wood depth	0	(No woods.)
No of house rows	0 / 0	
Surface	2	(Reflective ground surface)
Receiver source distance	89.50 / 89.50	m
Receiver height	6.00 / 8.00	m
Topography	1	(Flat/gentle slope; no barrier)
No Whistle		
Reference angle	0.00	

Results segment # 1: RAILWAY (day)

LOCOMOTIVE (0.00 + 32.65 + 0.00) = 32.65 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-58	-43	0.00	51.20	-7.76	-10.79	0.00	0.00	0.00	32.65

WHEEL (0.00 + 21.46 + 0.00) = 21.46 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-58	-43	0.00	40.01	-7.76	-10.79	0.00	0.00	0.00	21.46

Segment Leq : 32.97 dBA

Total Leq All Segments: 32.97 dBA

Results segment # 1: RAILWAY (night)

LOCOMOTIVE (0.00 + 32.65 + 0.00) = 32.65 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-58	-43	0.00	51.20	-7.76	-10.79	0.00	0.00	0.00	32.65

WHEEL (0.00 + 21.46 + 0.00) = 21.46 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-58	-43	0.00	40.01	-7.76	-10.79	0.00	0.00	0.00	21.46

Segment Leq : 32.97 dBA

Total Leq All Segments: 32.97 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 32.97
(NIGHT): 32.97

STAMSON 5.0 NORMAL REPORT Date: 26-11-2013 08:57:38
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: i.te Time Period: Day/Night 16/8 hours
Description:

POINT “I” (upper units)

Road data, segment # 1: CRAIG HENRY (day/night)

Car traffic volume : 9715/845 veh/TimePeriod
Medium truck volume : 773/67 veh/TimePeriod
Heavy truck volume : 552/48 veh/TimePeriod
Posted speed limit : 40 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 1: CRAIG HENRY (day/night)

Angle1 Angle2 : -72.00 deg 0.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 25.00 / 25.00 m
Receiver height : 6.00 / 8.00 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Results segment # 1: CRAIG HENRY (day)

Source height = 1.50 m

ROAD (0.00 + 59.52 + 0.00) = 59.52 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-72	0	0.00	65.72	0.00	-2.22	-3.98	0.00	0.00	0.00	59.52

Segment Leq : 59.52 dBA

Total Leq All Segments: 59.52 dBA

Results segment # 1: CRAIG HENRY (night)

Source height = 1.50 m

ROAD (0.00 + 51.92 + 0.00) = 51.92 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-72	0	0.00	58.12	0.00	-2.22	-3.98	0.00	0.00	0.00	51.92

Segment Leq : 51.92 dBA

Total Leq All Segments: 51.92 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 59.52
(NIGHT): 51.92

STAMSON 5.0 NORMAL REPORT Date: 26-11-2013 08:57:44
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: j.te Time Period: Day/Night 16/8 hours
Description:

POINT “J” (upper units)

Road data, segment # 1: CRAIG HENRY (day/night)

Car traffic volume : 9715/845 veh/TimePeriod
Medium truck volume : 773/67 veh/TimePeriod
Heavy truck volume : 552/48 veh/TimePeriod
Posted speed limit : 40 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 1: CRAIG HENRY (day/night)

Angle1 Angle2 : -75.00 deg 84.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 17.00 / 17.00 m
Receiver height : 6.00 / 8.00 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Results segment # 1: CRAIG HENRY (day)

Source height = 1.50 m

ROAD (0.00 + 64.63 + 0.00) = 64.63 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-75	84	0.00	65.72	0.00	-0.54	-0.54	0.00	0.00	0.00	64.63

Segment Leq : 64.63 dBA

Total Leq All Segments: 64.63 dBA

Results segment # 1: CRAIG HENRY (night)

Source height = 1.50 m

ROAD (0.00 + 57.04 + 0.00) = 57.04 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-75	84	0.00	58.12	0.00	-0.54	-0.54	0.00	0.00	0.00	57.04

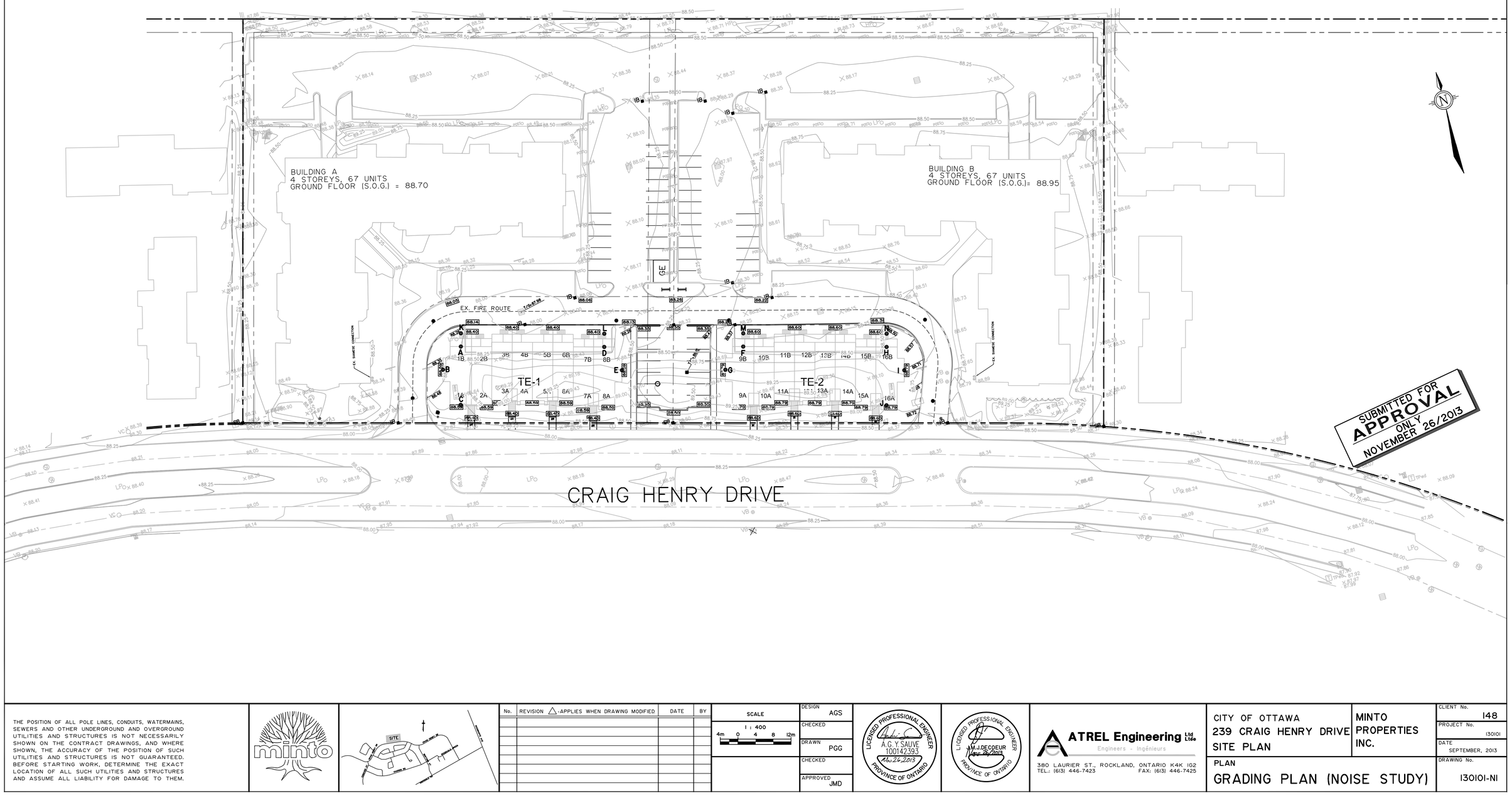
Segment Leq : 57.04 dBA

Total Leq All Segments: 57.04 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 64.63
(NIGHT): 57.04

APPENDIX 'D'

Noise Study Plan – 130101-N1



LEGEND

- CONTOURS AT 0.25m INTERVAL
- EXISTING SPOT ELEVATION
- EXISTING GRADE
- PROPOSED ELEVATION
- PROPOSED ELEVATION
- PROPOSED ELEVATION
- PROPOSED VPI ELEVATION
- PROPOSED SWALE ELEVATION
- PROPOSED TOP OF GRATE ELEVATION / PROPOSED INVERT ELEVATION
- PROPOSED TOP OF WALL ELEVATION / PROPOSED BOT OF WALL ELEVATION
- PROPOSED CATCHBASIN
- STUDY POINT (POINT A)

THE POSITION OF ALL POLE LINES, CONDUITS, WATERMAINS, SEWERS AND OTHER UNDERGROUND AND OVERGROUND UTILITIES AND STRUCTURES IS NOT NECESSARILY SHOWN ON THE CONTRACT DRAWINGS, AND WHERE SHOWN, THE ACCURACY OF THE POSITION OF SUCH UTILITIES AND STRUCTURES IS NOT GUARANTEED. BEFORE STARTING WORK, DETERMINE THE EXACT LOCATION OF ALL SUCH UTILITIES AND STRUCTURES AND ASSUME ALL LIABILITY FOR DAMAGE TO THEM.

No.	REVISION △-APPLIES WHEN DRAWING MODIFIED	DATE	BY

SCALE 1 : 400 (4m 0 4 8 12m)

DESIGN AGS
CHECKED
DRAWN PGG
CHECKED
APPROVED JMD

LICENSED PROFESSIONAL ENGINEER A.G.Y. SAUVE 100142393 Nov. 26/2013 PROVINCE OF ONTARIO

LICENSED PROFESSIONAL ENGINEER M.J. DECOEUR Nov. 26/2013 PROVINCE OF ONTARIO

ATREL Engineering Ltd Ltée
Engineers - Ingénieurs
380 LAURIER ST., ROCKLAND, ONTARIO K4K 1G2
TEL.: (613) 446-7423 FAX: (613) 446-7425

CITY OF OTTAWA
239 CRAIG HENRY DRIVE
SITE PLAN

MINTO PROPERTIES INC.

PLAN
GRADING PLAN (NOISE STUDY)

CLIENT No. 148
PROJECT No. 130101
DATE SEPTEMBER, 2013
DRAWING No. 130101-NI