CLARIDGE HOMES

REPORT
Project: 126715-6.04

ENVIRONMENTAL NOISE IMPACT ASSESSMENT
CRT PHASE 1 - BLOCK 324
FERNBANK COMMUNITY

IBI

Prepared for Claridge Homes (Westwood) Inc.
by IBI GROUP

JANUARY 2021

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1 INTRODUCTION

This report has been prepared to determine transportation-related noise impacts for Phase 1, Block 324 of the CRT Lands subdivision in the Fernbank community of Ottawa, Ontario. The report analyses the expected noise levels within the development and recommends any warning clauses and associated noise abatement measures required in the Agreement of Purchase and Sale of each dwelling unit.

The proposed development consists of approximately 112 back-to-back townhomes and is generally bound by the Hydro corridor to the north, Robert Grant Avenue to the east, future residential lands to the south, and Putney Crescent to the west.

The site location and it surrounding context are shown in **Figure 1** below.

Figure 1 – Site Location

2 BACKGROUND

2.1 Noise Sources

The proposed development will be primarily subjected to roadway noise from Robert Grant Avenue.

The subject site is not located within Airport Vicinity Development Zone (AVDZ), as shown on Annex 10 and Schedule K of the 2013 Official Plan. Aircraft noise from the Ottawa International Airport is, therefore, not included in the analysis for this study.

There are no rail lines within 500 metres of the site. As such, no consideration has been given to the noise impacts from rail traffic in accordance with the City of *Ottawa Environmental Noise Control Guidelines (January 2016)*, hereafter referred to as the ENC Guidelines.

2.2 Sound Level Limits for Road Traffic

Sound level criteria for road traffic are taken from the ENC Guidelines and the *Ministry of the Environment Publication NPC-300 (August 2013)*. Noise levels are expressed in the form Leq (T), which refers to a weighted level of a steady sound carrying the same total energy in the time period T (in hours) as the observed fluctuation sound.

2.2.1 Indoor Sound Level Criterion

The recommended indoor sound level criteria from Table 2.2b of the ENC Guidelines are as follows:

- Bedrooms – 23:00 to 07:00 – 40 dBA Leq (8 hours)
- Other areas – 07:00 to 23:00 – 45 dBA Leq (16 hours)

The sound levels are based on the windows and doors to an indoor space being closed.

The proposed development consists of three-storey, back-to-back townhome units. For the purpose of assessing the critical indoor noise in this study, the outdoor noise levels are observed at 4.5 metres above the ground for the plane of the living room for daytime noise and 7.8 metres above the plane of the bedroom windows to assess nighttime noise. This height was determined by reviewing the living room and bedroom window locations on the architectural drawings and shall be used to determine noise impacts for units directly facing or flanking Robert Grant Avenue.

As per NPC-300 C7.1.3, if the daytime outdoor sound levels exceed 65 dBA at the living room window or if the nighttime sound levels exceed 60 dBA at the bedroom window, then the building must be compliant with the Ontario Building Code. Should the outdoor sound levels exceed this criteria, then the building component (walls, windows, etc.) must be designed to achieve indoor sound level criteria.

As per NPC-300 C7.1.2.1 and C7.1.2.2, when the outdoor noise levels are greater than 55 dBA and less than or equal to 65 dBA at the living room window and/or greater than 50 dBA and less than or equal to 60 dBA at the bedroom window, then a warning clause is compulsory. This warning clause specifies that forced air heating with a provision for central air conditioning is required. Should the outdoor sound levels exceed the criteria, central air conditioning is mandatory and a warning clause is required.

2.2.2 Outdoor Sound Level Criterion

As per Table 2.2a of NPC-300, the sound level criteria for the outdoor living area (OLA) during the daytime period between 07:00 and 23:00 hours is 55 dBA Leq (16). Sound levels for the OLA are

calculated 3 metres from the building face at the centre of the unit or within the centre of the OLA at a height of 1.5 metres above the ground.

If the Leq sound level is less than or equal to the above criteria, then no further action is required by the developer. If the sound level exceeds the criteria by less than 5 dBA then the developer may, with City approval, either provide a warning clause to prospective purchasers or install physical attenuation. For sound levels greater than 5 dBA above the criteria control measures are required to reduce the noise levels as close to 55 dBA as technically, economically and administratively possible. Should the sound levels with the barrier in place exceed 55 dBA, a warning clause is also required.

2.2.3 Indoor Sound Level Criterion – Building Components

As per NPC-300 C7.1.3, when the outdoor sound levels are less than or equal to 65 dBA at the living room window and/or less than or equal to 60 dBA at the bedroom level, then the building must be compliant with the Ontario Building Code. Should the outdoor sound levels exceed this criteria then the building component (walls, windows etc.) must be designed to achieve indoor sound level criteria.

3 ROADWAY NOISE

3.1 Traffic Volume Data

As mentioned previously, the major sources of road noise impacting the site are expected to originate from the traffic flows on Robert Grant Avenue.

Robert Grant Avenue

Robert Grant Avenue (also referred to as the North-South Arterial) is presently a two-lane urban arterial road with a posted speed limit of 60 km/h. The Fernbank Community Design Plan (CDP) indicates that this road will be eventually reconstructed to accommodate centre-median bus lanes, while also maintaining a single mixed traffic lane in each direction. For the purposes of this study, however, Robert Grant Avenue will be modelled as a four-lane divided arterial road (4-UAD), providing a more conservative assessment of noise impacts on the proposed development.

Table 3.1 below summarizes the traffic and road parameters used in this report.

TABLE 3.1: TRAFFIC AND ROAD DATA SUMMARY

	ROBERT GRANT AVENUE (4-UAD)
Annual Average Daily Traffic (AADT)	35,000
Posted Speed Limit (km/h)	60
% Medium Trucks	7%
% Heavy Trucks	5%
% Daytime Traffic	92%

The remaining roads within the transportation network adjacent to the site are classified as local roads and are therefore expected to contribute minimal noise impacts to the proposed development.

Bobolink Ridge and Abbott Street East are located at least 140 metres from the nearest proposed dwelling units and are therefore unlikely to contribute to any significant noise impacts within the subject site.

3.2 Calculation Methods

Roadway noise is calculated using the STAMSON 5.04 computer program from the Ontario Ministry of the Environment (MOE).

There are no outdoor living areas (OLAs) associated with the proposed development, as defined in the ENC Guidelines, therefore these noise calculations are not included for this study.

Unattenuated daytime and nighttime noise levels at the building face calculated to determine indoor sound levels are shown on **Table 3.2** below. Parameters used for calculating the noise levels, including the perpendicular distance from source to receiver and the roadway segment angles are also indicated. Since Robert Grant Avenue is modelled with its ultimate configuration as an arterial, four-lane divided road, the noise levels are calculated separately for the northbound and southbound lanes and then combined.

The noise parameters input into the STAMSON program, including source-receiver distances, noise angles, as well as source/ receiver locations are presented in **Drawing No. 126715-N1**, while the STAMSON noise calculations completed for this study are included in **Appendix A**.

TABLE 3.2: UNATTENUATED NOISE LEVELS AT BUILDING FACE

LOCATION		ROADWAY	SOURCE - RECEIVER DISTANCE (m)	SEGMENT ANGLES		INDOOR NOISE LEVELS (dBA)	
Lot / Block	UNIT		NB/ SB LANES	LEFT	RIGHT	DAYTIME	NIGHTTIME
Block 1	1	Robert Grant Avenue	44.0/ 32.0	-90	80	66.18	59.12
Block 1	3	Robert Grant Avenue	51.0/ 39.0	-90	10	62.63	55.65
Block 2	1 & 2	Robert Grant Avenue	46.0/ 34.0	-80	75	65.66	58.60
Block 2	4	Robert Grant Avenue	42.5/ 54.5	10	35	57.02	49.95
Block 3	1 & 2	Robert Grant Avenue	49.0/ 37.0	-80	60	64.83	57.79
Block 3	4	Robert Grant Avenue	56.0/ 44.0	10	40	57.54	50.49
Block 4	1	Robert Grant Avenue	33.0/ 21.0	-90	90	68.81	61.60
Block 4	3	Robert Grant Avenue	38.0/ 26.0	-90	10	65.12	57.97
Block 4	4	Robert Grant Avenue	39.0/ 27.0	5	90	63.94	56.85
Block 5	4	Robert Grant Avenue	40.0/ 28.0	-5	90	64.37	57.27
Block 6	1	Robert Grant Avenue	48.0/ 36.0	-90	10	64.00	56.94
Block 7	1 & 2	Robert Grant Avenue	50.0/ 38.0	-60	60	64.26	57.18
Block 7	3	Robert Grant Avenue	53.0/ 41.0	-45	5	60.23	53.15
Block 9	1	Robert Grant Avenue	48.0/ 36.0	-70	85	65.27	58.24
Block 10	4	Robert Grant Avenue	65.0/ 53.0	5	55	58.42	51.47
Block 11	3	Robert Grant Avenue	66.0/ 54.0	-30	5	57.10	50.11
Block 12	4	Robert Grant Avenue	66.0/ 54.0	-5	45	58.51	51.54
Block 13	2	Robert Grant Avenue	53.0/ 41.0	-5	90	62.03	55.08
Block 14	1	Robert Grant Avenue	66.0/ 54.0	-35	-5	56.35	49.37
Block 14	3	Robert Grant Avenue	71.0/ 59.0	-30	-5	53.86	46.99
Block 15	1	Robert Grant Avenue	81.0/ 69.0	-30	5	55.55	48.65
Block 15	2	Robert Grant Avenue	82.5/ 70.5	5	35	54.66	47.78
Block 15	3	Robert Grant Avenue	85.0/ 73.0	-25	5	54.55	47.67
Block 16	1	Robert Grant Avenue	83.0/ 71.0	-20	5	53.96	47.07
Block 17	2	Robert Grant Avenue	83.5/ 71.5	-5	25	54.68	47.79
Block 26	4	Robert Grant Avenue	112.0/ 100.0	-5	90	56.37	49.78
Block 27	3	Robert Grant Avenue	87.0 75.0	-90	-10	57.30	50.54
Block 29	1	Robert Grant Avenue	84.0/ 72.0	10	30	52.78	45.91

As indicated in **Table 3.2** above, there are numerous locations which exceed the noise criteria at the building face.

Since the dwelling units directly facing or flanking Robert Grant Avenue are consistently above the 65 dBA threshold, a review of building components has been conducted and presented in Section 4.2.

The timeline for the construction of the future residential block to the south is currently unknown, therefore no allowance has been made for these buildings in this study. It is expected that once this development is complete, then the noise levels for the dwelling units adjacent to this parcel will drop significantly.

4 ABATEMENT MEASURES

4.1 Indoor Sound Levels

For dwelling units facing or flanking onto Robert Grant Avenue, the daytime noise levels at the building face are shown to exceed 65 dBA, requiring mandatory central air conditioning, a review of the building components and a Type 'D' warning clause.

As discussed previously, all units within adjacent to the future residential block to the south will be temporarily subjected to noise levels above the 55 dBA threshold during the daytime. Once this development is built out, it is anticipated that sound levels at the building face are expected to drop to below 55 dBA.

Select units in Block 3 and Block 6 will also experience noise levels in excess of 55 dBA. For all of the above dwelling units, an alternative means of ventilation is required as well as a Type 'C' warning clause in the Agreement of Purchase and Sale. Alternative means of ventilation usually consist of a forced air heating system with ducts sized for future installation of central air conditioning.

4.2 Building Components

Based on the results of the indoor noise assessment in **Table 3.2**, an analysis of the required building components for dwelling units expected to experience noise levels at the building face exceeding 65 dBA has been conducted following the Sound Transmission Class (STC) Method. This method was developed by the National Research Council (NRC), and involves a review of architectural plans to determine appropriate design assumptions (i.e. window/floor area ratios) in order to calculate the STC rating for windows and glazed doors. In this particular circumstance, since architectural plans specific to the development were not available at the time of this study, a sample 'Taylor' model block townhouse end unit was used. The kitchen floor area dining room/ den was included in the 'living room' calculation during the daytime, as the architectural plans indicate that any interior partitioning between these living spaces may be optional. 'Bedroom #2' was used to calculate the STC rating during the nighttime, as this bedroom has the highest potential exposure from outdoor noise on Robert Grant Avenue, with two exterior walls.

The STC calculations were carried out to determine the required STC rating for exterior windows for both the side and front-facing walls for the 'Taylor' model back-to-back townhome units. Exterior walls were assumed to have an STC rating of 40, which is a conservative value for an insulated wood frame construction wall designed to accommodate Ottawa winters. With the exterior walls in place, the amount of sound energy absorbed by the windows is calculated and the STC rating required to meet the sound criteria was determined. All rooms were assumed to have an intermediate absorptive interior rather than a hard or very absorptive interior, as would be expected for a residential unit. The required STC ratings for the windows and glazed doors are summarized in **Table 4.1** below. The highest required STC rating for front-facing windows and glazed doors was calculated to be 27, while the highest required STC rating for these components on the side wall was determined to be 22.

STC calculations and sample architectural plans for Blocks 1 or 2 are included in **Appendix B** and **Appendix C**, respectively.

TABLE 3.1: TRAFFIC AND ROAD DATA SUMMARY

DWELLING UNIT	LEVEL	ROOM TYPE	REQUIRED STC RATING
			WINDOWS & GLAZED DOORS
Blocks 1, 2, 4 ,5 & 9 (Front Wall)	2nd Floor	Living Room	27
Blocks 1, 2, 4 ,5 & 9 (Side Wall)		Living Room	22
Blocks 1, 2, 4 ,5 & 9 (Front Wall)	3rd Floor	Bedroom	25
Blocks 1, 2, 4 ,5 & 9 (Side Wall)		Bedroom	N/A[1]

Notes: [1] Side walls do not include any bedroom windows

5 SUMMARY OF ATTENUATION MEASURES

5.1 Warning Clauses

A clause regarding noise must appear on the Agreement of Purchase and Sale on the title of the lots and townhouse units indicated on **Drawing No. 126715-N1**, as listed below:

Type 'C' Block 1 – Units 3 & 4
Block 2 – Units 3 & 4
Block 3 – All Units
Block 4 – Unit 4
Block 5 – Unit 4
Blocks 6 to 8, 10 to 13 – All Units
Block 14 – Units 1, 2 & 4
Block 15 – Unit 1
Block 18 – Units 2 & 4
Block 22 – Units 2 & 4
Block 26 – Units 2 & 4
Block 27 – Units 1 & 3

Type 'D' Block 1 – Units 1 & 2
Block 2 – Units 1 & 2
Block 4 – Units 1 to 3
Block 5 – Units 1 to 3
Block 9 – Units 1 & 2

The following warning clauses are taken from Section C8.1 of NPC 300:

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."

5.2 Ventilation Requirements and Building Components

All dwelling units requiring a Type ‘C’ warning clause listed in Section 5.1 shall have a forced air heating system sized to accommodate a central air conditioning system.

All dwelling units requiring a Type ‘D’ warning clause shall have mandatory central air conditioning and acoustical review of building components.

6 CONCLUSION

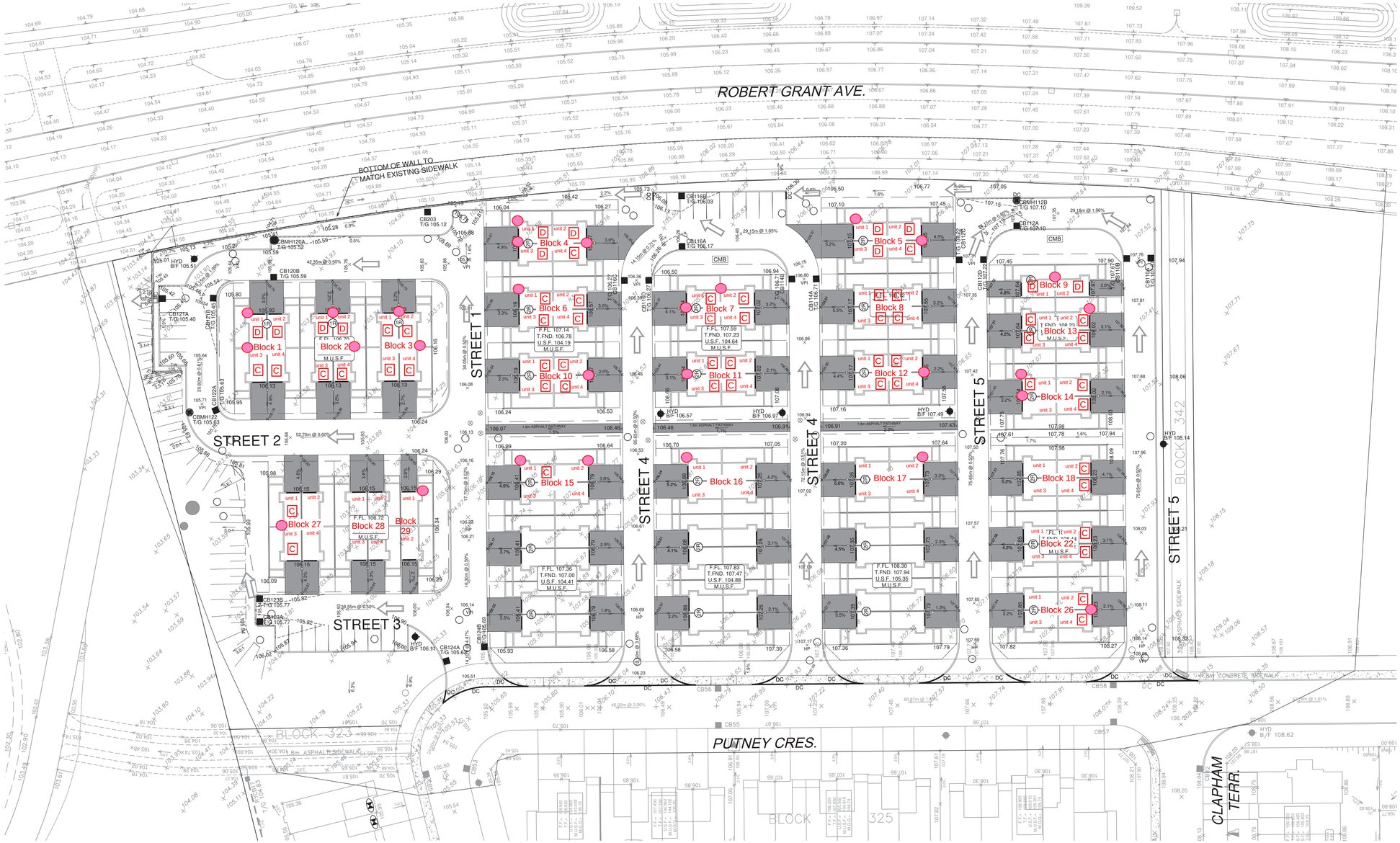
This report outlines the impact of roadway noise on the proposed CRT Phase 1, Block 324 development, located within the Fernbank community of Ottawa, Ontario. As indicated through the analysis conducted for this study, it is anticipated that noise levels will remain within the standards established by the City of Ottawa and Ministry of the Environment (MOE) with the exception of select units as indicated on **Drawing No. 126715-N1**. For these dwelling units, appropriate warning clauses and associated noise abatement measures must be provided on the Agreement of Purchase and Sale. Sound Transmission Class (STC) ratings for windows and glazed doors are provided for dwelling units with the highest exposure to Robert Grant Avenue.

7 PROFESSIONAL AUTHORIZATION

Prepared by:

Ben Pascolo-Neveu, P.Eng.

"C:\Users\Ben.Pascolo-Neveu\IBI Group\126715 CRT Ph 1 - Block 324 – Internal Documents\6.0_Technical\6.04_Civil\01_Brief_Noise\CTR_noise_impact_assessment_crt_block_324_2021-01-20.docx"



CLIENT

CLARIDGE HOMES

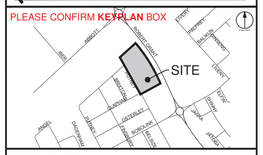
ISSUES

No.	DESCRIPTION	DATE
1	ISSUED TO CITY FOR REVIEW	2021.01.22

NOT FOR CONSTRUCTION

SEE DRAWING NOTES, LEGEND, CB TABLE, STREET SECTIONS AND DETAILS
BENCHMARK TO BE OBTAINED FROM LEGAL SURVEYOR AOV.

PLEASE CONFIRM **KEYPLAN** BOX



CONSULTANTS

LEGEND:

C — NOISE RECEIVER LOCATION WARNING CLAUSE

LOCATION OF INDOOR NOISE RECEPTOR

1:400 0 4 12 20m

SEAL

LICENSED PROFESSIONAL ENGINEER
B. PASCOLO-NEVEU
100209797
2021-01-22
PROVINCE OF ONTARIO

IBI GROUP
400 – 333 Preston Street
Ottawa ON K1S 5N4 Canada
tel 613 225 1311 fax 613 225 9868
ibigroup.com

PROJECT

CRT

BLOCK 324

PROJECT NO: 126715	
DRAWN BY: **D.D. E.H.**	CHECKED BY: **DGY**
PROJECT MGR: **DGY**	APPROVED BY: **DGY**

SHEET TITLE

NOISE PLAN
DRAWING NO. 126715-N1

SHEET NUMBER	ISSUE
200	1

SCALE CHECK 50mm 1 in

File Location: J:\126715_CRT_Block\24\7.0_Production\7.03_Design\04_Civil\Sheets\200 GRADING PLAN.dwg Last Saved: January 14, 2021 by Eherrie Plotted: Friday, January 15, 2021 4:23:58 PM by Eric Herrie

CITY FILE No. D07-#### CITY PLAN No. ####

APPENDIX A
NOISE CALCULATIONS (STAMSON)

STAMSON 5.0 NORMAL REPORT Date: 21-01-2021 12:31:06
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: crt324.te Time Period: Day/Night 16/8 hours
Description: Block 1, Unit 1 Indoor

Road data, segment # 1: RG N (day/night)

Car traffic volume : 14168/1232 veh/TimePeriod *
Medium truck volume : 1127/98 veh/TimePeriod *
Heavy truck volume : 805/70 veh/TimePeriod *
Posted speed limit : 60 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

24 hr Traffic Volume (AADT or SADT): 17500
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

Data for Segment # 1: RG N (day/night)

Angle1 Angle2 : -90.00 deg 80.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 44.00 / 44.00 m
Receiver height : 4.50 / 7.80 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

↟
Road data, segment # 2: RG S (day/night)

Car traffic volume : 14168/1232 veh/TimePeriod *
Medium truck volume : 1127/98 veh/TimePeriod *
Heavy truck volume : 805/70 veh/TimePeriod *
Posted speed limit : 60 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

24 hr Traffic Volume (AADT or SADT): 17500
Percentage of Annual Growth : 0.00

```
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 2: RG S (day/night)
------------------------------------
Angle1   Angle2           : -90.00 deg   80.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  32.00 / 32.00  m
Receiver height           :   4.50 / 7.80   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

🠝
Results segment # 1: RG N (day)
-------------------------------

Source height = 1.50 m

ROAD (0.00 + 61.95 + 0.00) = 61.95 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     80   0.57  70.67   0.00  -7.34  -1.38   0.00   0.00   0.00  61.95
-------------------------------------------------------------------------------

Segment Leq : 61.95 dBA

🠝
Results segment # 2: RG S (day)
-------------------------------

Source height = 1.50 m

ROAD (0.00 + 64.12 + 0.00) = 64.12 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     80   0.57  70.67   0.00  -5.17  -1.38   0.00   0.00   0.00  64.12
-------------------------------------------------------------------------------

Segment Leq : 64.12 dBA

Total Leq All Segments: 66.18 dBA

🠝
Results segment # 1: RG N (night)
---------------------------------
```

Source height = 1.50 m

ROAD (0.00 + 54.98 + 0.00) = 54.98 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	80	0.47	63.07	0.00	-6.88	-1.22	0.00	0.00	0.00	54.98

Segment Leq : 54.98 dBA

Results segment # 2: RG S (night)

Source height = 1.50 m

ROAD (0.00 + 57.01 + 0.00) = 57.01 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	80	0.47	63.07	0.00	-4.84	-1.22	0.00	0.00	0.00	57.01

Segment Leq : 57.01 dBA

Total Leq All Segments: 59.12 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 66.18
(NIGHT): 59.12

STAMSON 5.0 NORMAL REPORT Date: 21-01-2021 15:24:25
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: crt324.te Time Period: Day/Night 16/8 hours
Description: Block 2, Unit 4 Indoor

Road data, segment # 1: RG N (day/night)

Car traffic volume : 14168/1232 veh/TimePeriod *
Medium truck volume : 1127/98 veh/TimePeriod *
Heavy truck volume : 805/70 veh/TimePeriod *
Posted speed limit : 60 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

24 hr Traffic Volume (AADT or SADT): 17500
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

Data for Segment # 1: RG N (day/night)

Angle1 Angle2 : 10.00 deg 35.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 54.50 / 54.50 m
Receiver height : 4.50 / 7.80 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Road data, segment # 2: RG S (day/night)

Car traffic volume : 14168/1232 veh/TimePeriod *
Medium truck volume : 1127/98 veh/TimePeriod *
Heavy truck volume : 805/70 veh/TimePeriod *
Posted speed limit : 60 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

24 hr Traffic Volume (AADT or SADT): 17500
Percentage of Annual Growth : 0.00

```
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 2: RG S (day/night)
------------------------------------
Angle1   Angle2           :  10.00 deg   35.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  42.50 / 42.50  m
Receiver height           :   4.50 / 7.80   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

🠝
Results segment # 1: RG N (day)
-------------------------------

Source height = 1.50 m

ROAD (0.00 + 53.08 + 0.00) = 53.08 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
    10     35   0.57  70.67   0.00  -8.80  -8.79   0.00   0.00   0.00  53.08
-------------------------------------------------------------------------------

Segment Leq : 53.08 dBA

🠝
Results segment # 2: RG S (day)
-------------------------------

Source height = 1.50 m

ROAD (0.00 + 54.77 + 0.00) = 54.77 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
    10     35   0.57  70.67   0.00  -7.10  -8.79   0.00   0.00   0.00  54.77
-------------------------------------------------------------------------------

Segment Leq : 54.77 dBA

Total Leq All Segments: 57.02 dBA

🠝
Results segment # 1: RG N (night)
---------------------------------
```

Source height = 1.50 m

ROAD (0.00 + 46.07 + 0.00) = 46.07 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
10	35	0.47	63.07	0.00	-8.24	-8.75	0.00	0.00	0.00	46.07

Segment Leq : 46.07 dBA

Results segment # 2: RG S (night)

Source height = 1.50 m

ROAD (0.00 + 47.66 + 0.00) = 47.66 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
10	35	0.47	63.07	0.00	-6.65	-8.75	0.00	0.00	0.00	47.66

Segment Leq : 47.66 dBA

Total Leq All Segments: 49.95 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 57.02
(NIGHT): 49.95

STAMSON 5.0 NORMAL REPORT Date: 21-01-2021 12:41:27
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: crt324.te Time Period: Day/Night 16/8 hours
Description: Block 2, Unit 1 & 2 Indoor

Road data, segment # 1: RG N (day/night)

Car traffic volume : 14168/1232 veh/TimePeriod *
Medium truck volume : 1127/98 veh/TimePeriod *
Heavy truck volume : 805/70 veh/TimePeriod *
Posted speed limit : 60 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

24 hr Traffic Volume (AADT or SADT): 17500
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

Data for Segment # 1: RG N (day/night)

Angle1 Angle2 : -80.00 deg 75.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 46.00 / 46.00 m
Receiver height : 4.50 / 7.80 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

↟
Road data, segment # 2: RG S (day/night)

Car traffic volume : 14168/1232 veh/TimePeriod *
Medium truck volume : 1127/98 veh/TimePeriod *
Heavy truck volume : 805/70 veh/TimePeriod *
Posted speed limit : 60 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

24 hr Traffic Volume (AADT or SADT): 17500
Percentage of Annual Growth : 0.00

```
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 2: RG S (day/night)
------------------------------------
Angle1   Angle2           : -80.00 deg   75.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  34.00 / 34.00  m
Receiver height           :   4.50 / 7.80   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

🠝
Results segment # 1: RG N (day)
-------------------------------

Source height = 1.50 m

ROAD (0.00 + 61.49 + 0.00) = 61.49 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -80     75   0.57  70.67   0.00  -7.64  -1.53   0.00   0.00   0.00  61.49
-------------------------------------------------------------------------------

Segment Leq : 61.49 dBA

🠝
Results segment # 2: RG S (day)
-------------------------------

Source height = 1.50 m

ROAD (0.00 + 63.56 + 0.00) = 63.56 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -80     75   0.57  70.67   0.00  -5.58  -1.53   0.00   0.00   0.00  63.56
-------------------------------------------------------------------------------

Segment Leq : 63.56 dBA

Total Leq All Segments: 65.66 dBA

🠝
Results segment # 1: RG N (night)
---------------------------------
```

Source height = 1.50 m

ROAD (0.00 + 54.52 + 0.00) = 54.52 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-80	75	0.47	63.07	0.00	-7.16	-1.39	0.00	0.00	0.00	54.52

Segment Leq : 54.52 dBA

Results segment # 2: RG S (night)

Source height = 1.50 m

ROAD (0.00 + 56.45 + 0.00) = 56.45 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-80	75	0.47	63.07	0.00	-5.23	-1.39	0.00	0.00	0.00	56.45

Segment Leq : 56.45 dBA

Total Leq All Segments: 58.60 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 65.66
(NIGHT): 58.60

STAMSON 5.0 NORMAL REPORT Date: 21-01-2021 12:34:43
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: crt324.te Time Period: Day/Night 16/8 hours
Description: Block 3, Unit 1 & 2 Indoor

Road data, segment # 1: RG N (day/night)

Car traffic volume : 14168/1232 veh/TimePeriod *
Medium truck volume : 1127/98 veh/TimePeriod *
Heavy truck volume : 805/70 veh/TimePeriod *
Posted speed limit : 60 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

24 hr Traffic Volume (AADT or SADT): 17500
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

Data for Segment # 1: RG N (day/night)

Angle1 Angle2 : -80.00 deg 60.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 49.00 / 49.00 m
Receiver height : 4.50 / 7.80 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

↟
Road data, segment # 2: RG S (day/night)

Car traffic volume : 14168/1232 veh/TimePeriod *
Medium truck volume : 1127/98 veh/TimePeriod *
Heavy truck volume : 805/70 veh/TimePeriod *
Posted speed limit : 60 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

24 hr Traffic Volume (AADT or SADT): 17500
Percentage of Annual Growth : 0.00

```
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 2: RG S (day/night)
------------------------------------
Angle1   Angle2           : -80.00 deg   60.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  37.00 / 37.00  m
Receiver height           :   4.50 / 7.80   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

🠝
Results segment # 1: RG N (day)
-------------------------------

Source height = 1.50 m

ROAD (0.00 + 60.76 + 0.00) = 60.76 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -80     60   0.57  70.67   0.00  -8.07  -1.84   0.00   0.00   0.00  60.76
-------------------------------------------------------------------------------

Segment Leq : 60.76 dBA

🠝
Results segment # 2: RG S (day)
-------------------------------

Source height = 1.50 m

ROAD (0.00 + 62.67 + 0.00) = 62.67 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -80     60   0.57  70.67   0.00  -6.16  -1.84   0.00   0.00   0.00  62.67
-------------------------------------------------------------------------------

Segment Leq : 62.67 dBA

Total Leq All Segments: 64.83 dBA

🠝
Results segment # 1: RG N (night)
---------------------------------
```

Source height = 1.50 m

ROAD (0.00 + 53.79 + 0.00) = 53.79 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-80	60	0.47	63.07	0.00	-7.56	-1.72	0.00	0.00	0.00	53.79

Segment Leq : 53.79 dBA

Results segment # 2: RG S (night)

Source height = 1.50 m

ROAD (0.00 + 55.58 + 0.00) = 55.58 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-80	60	0.47	63.07	0.00	-5.77	-1.72	0.00	0.00	0.00	55.58

Segment Leq : 55.58 dBA

Total Leq All Segments: 57.79 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 64.83
(NIGHT): 57.79

STAMSON 5.0 NORMAL REPORT Date: 21-01-2021 35:38:07
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: crt324.te Time Period: Day/Night 16/8 hours
Description: Block 3, Unit 4 Indoor

Road data, segment # 1: RG N (day/night)

Car traffic volume : 14168/1232 veh/TimePeriod *
Medium truck volume : 1127/98 veh/TimePeriod *
Heavy truck volume : 805/70 veh/TimePeriod *
Posted speed limit : 60 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

24 hr Traffic Volume (AADT or SADT): 17500
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

Data for Segment # 1: RG N (day/night)

Angle1 Angle2 : 10.00 deg 40.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 56.00 / 56.00 m
Receiver height : 4.50 / 7.80 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

↟
Road data, segment # 2: RG S (day/night)

Car traffic volume : 14168/1232 veh/TimePeriod *
Medium truck volume : 1127/98 veh/TimePeriod *
Heavy truck volume : 805/70 veh/TimePeriod *
Posted speed limit : 60 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

24 hr Traffic Volume (AADT or SADT): 17500
Percentage of Annual Growth : 0.00

```
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 2: RG S (day/night)
------------------------------------
Angle1   Angle2           :  10.00 deg   40.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  44.00 / 44.00  m
Receiver height           :   4.50 / 7.80   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

🠝
Results segment # 1: RG N (day)
-------------------------------

Source height = 1.50 m

ROAD (0.00 + 53.63 + 0.00) = 53.63 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
    10     40   0.57  70.67   0.00  -8.98  -8.06   0.00   0.00   0.00  53.63
-------------------------------------------------------------------------------

Segment Leq : 53.63 dBA

🠝
Results segment # 2: RG S (day)
-------------------------------

Source height = 1.50 m

ROAD (0.00 + 55.27 + 0.00) = 55.27 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
    10     40   0.57  70.67   0.00  -7.34  -8.06   0.00   0.00   0.00  55.27
-------------------------------------------------------------------------------

Segment Leq : 55.27 dBA

Total Leq All Segments: 57.54 dBA

🠝
Results segment # 1: RG N (night)
---------------------------------
```

Source height = 1.50 m

ROAD (0.00 + 46.64 + 0.00) = 46.64 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
10	40	0.47	63.07	0.00	-8.42	-8.01	0.00	0.00	0.00	46.64

Segment Leq : 46.64 dBA

Results segment # 2: RG S (night)

Source height = 1.50 m

ROAD (0.00 + 48.18 + 0.00) = 48.18 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
10	40	0.47	63.07	0.00	-6.88	-8.01	0.00	0.00	0.00	48.18

Segment Leq : 48.18 dBA

Total Leq All Segments: 50.49 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 57.54
(NIGHT): 50.49

STAMSON 5.0 NORMAL REPORT Date: 21-01-2021 12:47:46
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: crt324.te Time Period: Day/Night 16/8 hours
Description: Block 4, Unit 1 Indoor

Road data, segment # 1: RG N (day/night)

Car traffic volume : 14168/1232 veh/TimePeriod *
Medium truck volume : 1127/98 veh/TimePeriod *
Heavy truck volume : 805/70 veh/TimePeriod *
Posted speed limit : 60 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

24 hr Traffic Volume (AADT or SADT): 17500
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

Data for Segment # 1: RG N (day/night)

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 33.00 / 33.00 m
Receiver height : 4.50 / 7.80 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

↟
Road data, segment # 2: RG S (day/night)

Car traffic volume : 14168/1232 veh/TimePeriod *
Medium truck volume : 1127/98 veh/TimePeriod *
Heavy truck volume : 805/70 veh/TimePeriod *
Posted speed limit : 60 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

24 hr Traffic Volume (AADT or SADT): 17500
Percentage of Annual Growth : 0.00

```
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 2: RG S (day/night)
------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  21.00 / 21.00  m
Receiver height           :   4.50 / 7.80   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00
```

↟

```
Results segment # 1: RG N (day)
-------------------------------

Source height = 1.50 m

ROAD (0.00 + 63.99 + 0.00) = 63.99 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.57  70.67   0.00  -5.38  -1.30   0.00   0.00   0.00  63.99
-------------------------------------------------------------------------------

Segment Leq : 63.99 dBA
```

↟

```
Results segment # 2: RG S (day)
-------------------------------

Source height = 1.50 m

ROAD (0.00 + 67.07 + 0.00) = 67.07 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.57  70.67   0.00  -2.29  -1.30   0.00   0.00   0.00  67.07
-------------------------------------------------------------------------------

Segment Leq : 67.07 dBA

Total Leq All Segments: 68.81 dBA
```

↟

```
Results segment # 1: RG N (night)
---------------------------------
```

Source height = 1.50 m

ROAD (0.00 + 56.91 + 0.00) = 56.91 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.47	63.07	0.00	-5.04	-1.12	0.00	0.00	0.00	56.91

Segment Leq : 56.91 dBA

Results segment # 2: RG S (night)

Source height = 1.50 m

ROAD (0.00 + 59.80 + 0.00) = 59.80 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.47	63.07	0.00	-2.15	-1.12	0.00	0.00	0.00	59.80

Segment Leq : 59.80 dBA

Total Leq All Segments: 61.60 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 68.81
(NIGHT): 61.60

STAMSON 5.0 NORMAL REPORT Date: 21-01-2021 12:55:30
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: crt324.te Time Period: Day/Night 16/8 hours
Description: Block 4, Unit 1 Indoor

Road data, segment # 1: RG N (day/night)

Car traffic volume : 14168/1232 veh/TimePeriod *
Medium truck volume : 1127/98 veh/TimePeriod *
Heavy truck volume : 805/70 veh/TimePeriod *
Posted speed limit : 60 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

24 hr Traffic Volume (AADT or SADT): 17500
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

Data for Segment # 1: RG N (day/night)

Angle1 Angle2 : -90.00 deg 10.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 38.00 / 38.00 m
Receiver height : 4.50 / 7.80 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

↟
Road data, segment # 2: RG S (day/night)

Car traffic volume : 14168/1232 veh/TimePeriod *
Medium truck volume : 1127/98 veh/TimePeriod *
Heavy truck volume : 805/70 veh/TimePeriod *
Posted speed limit : 60 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

24 hr Traffic Volume (AADT or SADT): 17500
Percentage of Annual Growth : 0.00

```
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 2: RG S (day/night)
------------------------------------
Angle1   Angle2           : -90.00 deg   10.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  26.00 / 26.00  m
Receiver height           :   4.50 / 7.80   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

🠝
Results segment # 1: RG N (day)
-------------------------------

Source height = 1.50 m

ROAD (0.00 + 60.62 + 0.00) = 60.62 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     10   0.57  70.67   0.00  -6.34  -3.71   0.00   0.00   0.00  60.62
-------------------------------------------------------------------------------

Segment Leq : 60.62 dBA

🠝
Results segment # 2: RG S (day)
-------------------------------

Source height = 1.50 m

ROAD (0.00 + 63.21 + 0.00) = 63.21 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     10   0.57  70.67   0.00  -3.75  -3.71   0.00   0.00   0.00  63.21
-------------------------------------------------------------------------------

Segment Leq : 63.21 dBA

Total Leq All Segments: 65.12 dBA

🠝
Results segment # 1: RG N (night)
---------------------------------
```

Source height = 1.50 m

ROAD (0.00 + 53.58 + 0.00) = 53.58 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	10	0.47	63.07	0.00	-5.94	-3.55	0.00	0.00	0.00	53.58

Segment Leq : 53.58 dBA

Results segment # 2: RG S (night)

Source height = 1.50 m

ROAD (0.00 + 56.01 + 0.00) = 56.01 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	10	0.47	63.07	0.00	-3.51	-3.55	0.00	0.00	0.00	56.01

Segment Leq : 56.01 dBA

Total Leq All Segments: 57.97 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 65.12
(NIGHT): 57.97

STAMSON 5.0 NORMAL REPORT Date: 21-01-2021 13:12:02
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: crt324.te Time Period: Day/Night 16/8 hours
Description: Block 4, Unit 4 Indoor

Road data, segment # 1: RG N (day/night)

Car traffic volume : 14168/1232 veh/TimePeriod *
Medium truck volume : 1127/98 veh/TimePeriod *
Heavy truck volume : 805/70 veh/TimePeriod *
Posted speed limit : 60 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

24 hr Traffic Volume (AADT or SADT): 17500
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

Data for Segment # 1: RG N (day/night)

Angle1 Angle2 : 5.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 39.00 / 39.00 m
Receiver height : 4.50 / 7.80 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Road data, segment # 2: RG S (day/night)

Car traffic volume : 14168/1232 veh/TimePeriod *
Medium truck volume : 1127/98 veh/TimePeriod *
Heavy truck volume : 805/70 veh/TimePeriod *
Posted speed limit : 60 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

24 hr Traffic Volume (AADT or SADT): 17500
Percentage of Annual Growth : 0.00

```
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 2: RG S (day/night)
---------------------------------------
Angle1   Angle2           :   5.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  27.00 / 27.00  m
Receiver height           :   4.50 / 7.80   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

🠝
Results segment # 1: RG N (day)
-------------------------------

Source height = 1.50 m

ROAD (0.00 + 59.50 + 0.00) = 59.50 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
     5     90   0.57  70.67   0.00  -6.52  -4.65   0.00   0.00   0.00  59.50
-------------------------------------------------------------------------------

Segment Leq : 59.50 dBA

🠝
Results segment # 2: RG S (day)
-------------------------------

Source height = 1.50 m

ROAD (0.00 + 62.01 + 0.00) = 62.01 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
     5     90   0.57  70.67   0.00  -4.01  -4.65   0.00   0.00   0.00  62.01
-------------------------------------------------------------------------------

Segment Leq : 62.01 dBA

Total Leq All Segments: 63.94 dBA

🠝
Results segment # 1: RG N (night)
---------------------------------
```

Source height = 1.50 m

ROAD (0.00 + 52.51 + 0.00) = 52.51 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
5	90	0.47	63.07	0.00	-6.10	-4.46	0.00	0.00	0.00	52.51

Segment Leq : 52.51 dBA

Results segment # 2: RG S (night)

Source height = 1.50 m

ROAD (0.00 + 54.86 + 0.00) = 54.86 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
5	90	0.47	63.07	0.00	-3.76	-4.46	0.00	0.00	0.00	54.86

Segment Leq : 54.86 dBA

Total Leq All Segments: 56.85 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 63.94
(NIGHT): 56.85

STAMSON 5.0 NORMAL REPORT Date: 21-01-2021 35:39:32
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: crt324.te Time Period: Day/Night 16/8 hours
Description: Block 5, Unit 4 Indoor

Road data, segment # 1: RG N (day/night)

Car traffic volume : 14168/1232 veh/TimePeriod *
Medium truck volume : 1127/98 veh/TimePeriod *
Heavy truck volume : 805/70 veh/TimePeriod *
Posted speed limit : 60 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

24 hr Traffic Volume (AADT or SADT): 17500
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

Data for Segment # 1: RG N (day/night)

Angle1 Angle2 : -5.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 40.00 / 40.00 m
Receiver height : 4.50 / 7.80 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

↟
Road data, segment # 2: RG S (day/night)

Car traffic volume : 14168/1232 veh/TimePeriod *
Medium truck volume : 1127/98 veh/TimePeriod *
Heavy truck volume : 805/70 veh/TimePeriod *
Posted speed limit : 60 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

24 hr Traffic Volume (AADT or SADT): 17500
Percentage of Annual Growth : 0.00

```
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 2: RG S (day/night)
------------------------------------
Angle1   Angle2           :  -5.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  28.00 / 28.00  m
Receiver height           :   4.50 / 7.80   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

🠝
Results segment # 1: RG N (day)
-------------------------------

Source height = 1.50 m

ROAD (0.00 + 59.98 + 0.00) = 59.98 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
    -5     90   0.57  70.67   0.00  -6.69  -4.00   0.00   0.00   0.00  59.98
-------------------------------------------------------------------------------

Segment Leq : 59.98 dBA

🠝
Results segment # 2: RG S (day)
-------------------------------

Source height = 1.50 m

ROAD (0.00 + 62.41 + 0.00) = 62.41 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
    -5     90   0.57  70.67   0.00  -4.26  -4.00   0.00   0.00   0.00  62.41
-------------------------------------------------------------------------------

Segment Leq : 62.41 dBA

Total Leq All Segments: 64.37 dBA

🠝
Results segment # 1: RG N (night)
---------------------------------
```

Source height = 1.50 m

ROAD (0.00 + 52.97 + 0.00) = 52.97 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-5	90	0.47	63.07	0.00	-6.27	-3.83	0.00	0.00	0.00	52.97

Segment Leq : 52.97 dBA

Results segment # 2: RG S (night)

Source height = 1.50 m

ROAD (0.00 + 55.25 + 0.00) = 55.25 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-5	90	0.47	63.07	0.00	-3.99	-3.83	0.00	0.00	0.00	55.25

Segment Leq : 55.25 dBA

Total Leq All Segments: 57.27 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 64.37
(NIGHT): 57.27

STAMSON 5.0 NORMAL REPORT Date: 21-01-2021 12:57:33
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: crt324.te Time Period: Day/Night 16/8 hours
Description: Block 6, Unit 1 Indoor

Road data, segment # 1: RG N (day/night)

Car traffic volume : 14168/1232 veh/TimePeriod *
Medium truck volume : 1127/98 veh/TimePeriod *
Heavy truck volume : 805/70 veh/TimePeriod *
Posted speed limit : 60 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

24 hr Traffic Volume (AADT or SADT): 17500
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

Data for Segment # 1: RG N (day/night)

Angle1 Angle2 : -90.00 deg 10.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 36.00 / 36.00 m
Receiver height : 4.50 / 7.80 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Road data, segment # 2: RG S (day/night)

Car traffic volume : 14168/1232 veh/TimePeriod *
Medium truck volume : 1127/98 veh/TimePeriod *
Heavy truck volume : 805/70 veh/TimePeriod *
Posted speed limit : 60 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

24 hr Traffic Volume (AADT or SADT): 17500
Percentage of Annual Growth : 0.00

```
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 2: RG S (day/night)
------------------------------------
Angle1   Angle2           : -90.00 deg   10.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  36.00 / 36.00  m
Receiver height           :   4.50 / 7.80   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

🠝
Results segment # 1: RG N (day)
-------------------------------

Source height = 1.50 m

ROAD (0.00 + 60.99 + 0.00) = 60.99 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     10   0.57  70.67   0.00  -5.97  -3.71   0.00   0.00   0.00  60.99
-------------------------------------------------------------------------------

Segment Leq : 60.99 dBA

🠝
Results segment # 2: RG S (day)
-------------------------------

Source height = 1.50 m

ROAD (0.00 + 60.99 + 0.00) = 60.99 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     10   0.57  70.67   0.00  -5.97  -3.71   0.00   0.00   0.00  60.99
-------------------------------------------------------------------------------

Segment Leq : 60.99 dBA

Total Leq All Segments: 64.00 dBA

🠝
Results segment # 1: RG N (night)
---------------------------------
```

Source height = 1.50 m

ROAD (0.00 + 53.93 + 0.00) = 53.93 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	10	0.47	63.07	0.00	-5.59	-3.55	0.00	0.00	0.00	53.93

Segment Leq : 53.93 dBA

Results segment # 2: RG S (night)

Source height = 1.50 m

ROAD (0.00 + 53.93 + 0.00) = 53.93 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	10	0.47	63.07	0.00	-5.59	-3.55	0.00	0.00	0.00	53.93

Segment Leq : 53.93 dBA

Total Leq All Segments: 56.94

TOTAL Leq FROM ALL SOURCES (DAY): 64.00
(NIGHT): 56.94

STAMSON 5.0 NORMAL REPORT Date: 21-01-2021 13:02:44
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: crt324.te Time Period: Day/Night 16/8 hours
Description: Block 7, Unit 3 Indoor

Road data, segment # 1: RG N (day/night)

Car traffic volume : 14168/1232 veh/TimePeriod *
Medium truck volume : 1127/98 veh/TimePeriod *
Heavy truck volume : 805/70 veh/TimePeriod *
Posted speed limit : 60 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

24 hr Traffic Volume (AADT or SADT): 17500
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

Data for Segment # 1: RG N (day/night)

Angle1 Angle2 : -45.00 deg 5.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 53.00 / 53.00 m
Receiver height : 4.50 / 7.80 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Road data, segment # 2: RG S (day/night)

Car traffic volume : 14168/1232 veh/TimePeriod *
Medium truck volume : 1127/98 veh/TimePeriod *
Heavy truck volume : 805/70 veh/TimePeriod *
Posted speed limit : 60 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

24 hr Traffic Volume (AADT or SADT): 17500
Percentage of Annual Growth : 0.00

```
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 2: RG S (day/night)
------------------------------------
Angle1   Angle2           : -45.00 deg   5.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  41.00 / 41.00  m
Receiver height           :   4.50 / 7.80   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00
```

↟

```
Results segment # 1: RG N (day)
-------------------------------

Source height = 1.50 m

ROAD (0.00 + 56.26 + 0.00) = 56.26 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -45      5   0.57  70.67   0.00  -8.61  -5.80   0.00   0.00   0.00  56.26
-------------------------------------------------------------------------------

Segment Leq : 56.26 dBA
```

↟

```
Results segment # 2: RG S (day)
-------------------------------

Source height = 1.50 m

ROAD (0.00 + 58.01 + 0.00) = 58.01 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -45      5   0.57  70.67   0.00  -6.86  -5.80   0.00   0.00   0.00  58.01
-------------------------------------------------------------------------------

Segment Leq : 58.01 dBA

Total Leq All Segments: 60.23 dBA
```

↟

```
Results segment # 1: RG N (night)
---------------------------------
```

Source height = 1.50 m

ROAD (0.00 + 49.24 + 0.00) = 49.24 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-45	5	0.47	63.07	0.00	-8.06	-5.76	0.00	0.00	0.00	49.24

Segment Leq : 49.24 dBA

Results segment # 2: RG S (night)

Source height = 1.50 m

ROAD (0.00 + 50.88 + 0.00) = 50.88 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-45	5	0.47	63.07	0.00	-6.42	-5.76	0.00	0.00	0.00	50.88

Segment Leq : 50.88 dBA

Total Leq All Segments: 53.15 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 60.23
(NIGHT): 53.15

STAMSON 5.0 NORMAL REPORT Date: 21-01-2021 13:07:01
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: crt324.te Time Period: Day/Night 16/8 hours
Description: Block 7, Units 1 & 2 Indoor

Road data, segment # 1: RG N (day/night)

Car traffic volume : 14168/1232 veh/TimePeriod *
Medium truck volume : 1127/98 veh/TimePeriod *
Heavy truck volume : 805/70 veh/TimePeriod *
Posted speed limit : 60 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

24 hr Traffic Volume (AADT or SADT): 17500
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

Data for Segment # 1: RG N (day/night)

Angle1 Angle2 : -60.00 deg 60.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 50.00 / 50.00 m
Receiver height : 4.50 / 7.80 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Road data, segment # 2: RG S (day/night)

Car traffic volume : 14168/1232 veh/TimePeriod *
Medium truck volume : 1127/98 veh/TimePeriod *
Heavy truck volume : 805/70 veh/TimePeriod *
Posted speed limit : 60 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

24 hr Traffic Volume (AADT or SADT): 17500
Percentage of Annual Growth : 0.00

```
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 2: RG S (day/night)
------------------------------------
Angle1   Angle2           : -60.00 deg   60.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  38.00 / 38.00  m
Receiver height           :   4.50 / 7.80   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

🠝
Results segment # 1: RG N (day)
-------------------------------

Source height = 1.50 m

ROAD (0.00 + 60.21 + 0.00) = 60.21 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -60     60   0.57  70.67   0.00  -8.21  -2.25   0.00   0.00   0.00  60.21
-------------------------------------------------------------------------------

Segment Leq : 60.21 dBA

🠝
Results segment # 2: RG S (day)
-------------------------------

Source height = 1.50 m

ROAD (0.00 + 62.08 + 0.00) = 62.08 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -60     60   0.57  70.67   0.00  -6.34  -2.25   0.00   0.00   0.00  62.08
-------------------------------------------------------------------------------

Segment Leq : 62.08 dBA

Total Leq All Segments: 64.26 dBA

🠝
Results segment # 1: RG N (night)
---------------------------------
```

Source height = 1.50 m

ROAD (0.00 + 53.21 + 0.00) = 53.21 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-60	60	0.47	63.07	0.00	-7.69	-2.17	0.00	0.00	0.00	53.21

Segment Leq : 53.21 dBA

Results segment # 2: RG S (night)

Source height = 1.50 m

ROAD (0.00 + 54.96 + 0.00) = 54.96 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-60	60	0.47	63.07	0.00	-5.94	-2.17	0.00	0.00	0.00	54.96

Segment Leq : 54.96 dBA

Total Leq All Segments: 57.18 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 64.26
(NIGHT): 57.18

STAMSON 5.0 NORMAL REPORT Date: 21-01-2021 14:22:16
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: crt324.te Time Period: Day/Night 16/8 hours
Description: Block 9, Unit 1 Indoor

Road data, segment # 1: RG N (day/night)

Car traffic volume : 14168/1232 veh/TimePeriod *
Medium truck volume : 1127/98 veh/TimePeriod *
Heavy truck volume : 805/70 veh/TimePeriod *
Posted speed limit : 60 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

24 hr Traffic Volume (AADT or SADT): 17500
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

Data for Segment # 1: RG N (day/night)

Angle1 Angle2 : -70.00 deg 85.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 48.00 / 48.00 m
Receiver height : 4.50 / 7.80 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Road data, segment # 2: RG S (day/night)

Car traffic volume : 14168/1232 veh/TimePeriod *
Medium truck volume : 1127/98 veh/TimePeriod *
Heavy truck volume : 805/70 veh/TimePeriod *
Posted speed limit : 60 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

24 hr Traffic Volume (AADT or SADT): 17500
Percentage of Annual Growth : 0.00

```
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 2: RG S (day/night)
------------------------------------
Angle1   Angle2           : -70.00 deg   85.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  36.00 / 36.00  m
Receiver height           :   4.50 / 7.80   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00
```

↟

```
Results segment # 1: RG N (day)
-------------------------------

Source height = 1.50 m

ROAD (0.00 + 61.17 + 0.00) = 61.17 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -70     85   0.57  70.67   0.00  -7.93  -1.56   0.00   0.00   0.00  61.17
-------------------------------------------------------------------------------

Segment Leq : 61.17 dBA
```

↟

```
Results segment # 2: RG S (day)
-------------------------------

Source height = 1.50 m

ROAD (0.00 + 63.13 + 0.00) = 63.13 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -70     85   0.57  70.67   0.00  -5.97  -1.56   0.00   0.00   0.00  63.13
-------------------------------------------------------------------------------

Segment Leq : 63.13 dBA

Total Leq All Segments: 65.27 dBA
```

↟

```
Results segment # 1: RG N (night)
---------------------------------
```

Source height = 1.50 m

ROAD (0.00 + 54.21 + 0.00) = 54.21 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-70	85	0.47	63.07	0.00	-7.43	-1.42	0.00	0.00	0.00	54.21

Segment Leq : 54.21 dBA

Results segment # 2: RG S (night)

Source height = 1.50 m

ROAD (0.00 + 56.05 + 0.00) = 56.05 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-70	85	0.47	63.07	0.00	-5.59	-1.42	0.00	0.00	0.00	56.05

Segment Leq : 56.05 dBA

Total Leq All Segments: 58.24 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 65.27
(NIGHT): 58.24

STAMSON 5.0 NORMAL REPORT Date: 21-01-2021 16:46:03
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: crt324.te Time Period: Day/Night 16/8 hours
Description: Block 10, Unit 4 Indoor

Road data, segment # 1: RG N (day/night)

Car traffic volume : 14168/1232 veh/TimePeriod *
Medium truck volume : 1127/98 veh/TimePeriod *
Heavy truck volume : 805/70 veh/TimePeriod *
Posted speed limit : 60 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

24 hr Traffic Volume (AADT or SADT): 17500
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

Data for Segment # 1: RG N (day/night)

Angle1 Angle2 : 5.00 deg 55.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 53.00 / 53.00 m
Receiver height : 4.50 / 7.80 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Road data, segment # 2: RG S (day/night)

Car traffic volume : 14168/1232 veh/TimePeriod *
Medium truck volume : 1127/98 veh/TimePeriod *
Heavy truck volume : 805/70 veh/TimePeriod *
Posted speed limit : 60 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

24 hr Traffic Volume (AADT or SADT): 17500
Percentage of Annual Growth : 0.00

```
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 2: RG S (day/night)
------------------------------------
Angle1   Angle2           :   5.00 deg   55.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  65.00 / 65.00  m
Receiver height           :   4.50 / 7.80   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

🠝
Results segment # 1: RG N (day)
-------------------------------

Source height = 1.50 m

ROAD (0.00 + 56.05 + 0.00) = 56.05 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
     5     55   0.57  70.67   0.00  -8.61  -6.01   0.00   0.00   0.00  56.05
-------------------------------------------------------------------------------

Segment Leq : 56.05 dBA

🠝
Results segment # 2: RG S (day)
-------------------------------

Source height = 1.50 m

ROAD (0.00 + 54.66 + 0.00) = 54.66 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
     5     55   0.57  70.67   0.00 -10.00  -6.01   0.00   0.00   0.00  54.66
-------------------------------------------------------------------------------

Segment Leq : 54.66 dBA

Total Leq All Segments: 58.42 dBA

🠝
Results segment # 1: RG N (night)
---------------------------------
```

Source height = 1.50 m

ROAD (0.00 + 49.07 + 0.00) = 49.07 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
5	55	0.47	63.07	0.00	-8.06	-5.94	0.00	0.00	0.00	49.07

Segment Leq : 49.07 dBA

Results segment # 2: RG S (night)

Source height = 1.50 m

ROAD (0.00 + 47.76 + 0.00) = 47.76 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
5	55	0.47	63.07	0.00	-9.37	-5.94	0.00	0.00	0.00	47.76

Segment Leq : 47.76 dBA

Total Leq All Segments: 51.47 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 58.42
(NIGHT): 51.47

STAMSON 5.0 NORMAL REPORT Date: 21-01-2021 16:33:33
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: crt324.te Time Period: Day/Night 16/8 hours
Description: Block 11, Unit 3 Indoor

Road data, segment # 1: RG N (day/night)

Car traffic volume : 14168/1232 veh/TimePeriod *
Medium truck volume : 1127/98 veh/TimePeriod *
Heavy truck volume : 805/70 veh/TimePeriod *
Posted speed limit : 60 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

24 hr Traffic Volume (AADT or SADT): 17500
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

Data for Segment # 1: RG N (day/night)

Angle1 Angle2 : -30.00 deg 5.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 66.00 / 66.00 m
Receiver height : 4.50 / 7.80 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Road data, segment # 2: RG S (day/night)

Car traffic volume : 14168/1232 veh/TimePeriod *
Medium truck volume : 1127/98 veh/TimePeriod *
Heavy truck volume : 805/70 veh/TimePeriod *
Posted speed limit : 60 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

24 hr Traffic Volume (AADT or SADT): 17500
Percentage of Annual Growth : 0.00

```
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 2: RG S (day/night)
---------------------------------------
Angle1   Angle2           : -30.00 deg   5.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  54.00 / 54.00  m
Receiver height           :   4.50 / 7.80   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

🠝
Results segment # 1: RG N (day)
-------------------------------

Source height = 1.50 m

ROAD (0.00 + 53.35 + 0.00) = 53.35 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -30      5   0.57  70.67   0.00 -10.10  -7.21   0.00   0.00   0.00  53.35
-------------------------------------------------------------------------------

Segment Leq : 53.35 dBA

🠝
Results segment # 2: RG S (day)
-------------------------------

Source height = 1.50 m

ROAD (0.00 + 54.72 + 0.00) = 54.72 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -30      5   0.57  70.67   0.00  -8.73  -7.21   0.00   0.00   0.00  54.72
-------------------------------------------------------------------------------

Segment Leq : 54.72 dBA

Total Leq All Segments: 57.10 dBA

🠝
Results segment # 1: RG N (night)
---------------------------------
```

Source height = 1.50 m

ROAD (0.00 + 46.41 + 0.00) = 46.41 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-30	5	0.47	63.07	0.00	-9.47	-7.19	0.00	0.00	0.00	46.41

Segment Leq : 46.41 dBA

Results segment # 2: RG S (night)

Source height = 1.50 m

ROAD (0.00 + 47.69 + 0.00) = 47.69 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-30	5	0.47	63.07	0.00	-8.18	-7.19	0.00	0.00	0.00	47.69

Segment Leq : 47.69 dBA

Total Leq All Segments: 50.11 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 57.10
(NIGHT): 50.11

STAMSON 5.0 NORMAL REPORT Date: 21-01-2021 16:57:29
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: crt324.te Time Period: Day/Night 16/8 hours
Description: Block 12, Unit 4 Indoor

Road data, segment # 1: RG N (day/night)

Car traffic volume : 14168/1232 veh/TimePeriod *
Medium truck volume : 1127/98 veh/TimePeriod *
Heavy truck volume : 805/70 veh/TimePeriod *
Posted speed limit : 60 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

24 hr Traffic Volume (AADT or SADT): 17500
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

Data for Segment # 1: RG N (day/night)

Angle1 Angle2 : -5.00 deg 45.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 66.00 / 66.00 m
Receiver height : 4.50 / 7.80 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Road data, segment # 2: RG S (day/night)

Car traffic volume : 14168/1232 veh/TimePeriod *
Medium truck volume : 1127/98 veh/TimePeriod *
Heavy truck volume : 805/70 veh/TimePeriod *
Posted speed limit : 60 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

24 hr Traffic Volume (AADT or SADT): 17500
Percentage of Annual Growth : 0.00

```
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 2: RG S (day/night)
------------------------------------
Angle1   Angle2           :  -5.00 deg   45.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  54.00 / 54.00  m
Receiver height           :   4.50 / 7.80   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

🠝
Results segment # 1: RG N (day)
-------------------------------

Source height = 1.50 m

ROAD (0.00 + 54.76 + 0.00) = 54.76 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
    -5     45   0.57  70.67   0.00 -10.10  -5.80   0.00   0.00   0.00  54.76
-------------------------------------------------------------------------------

Segment Leq : 54.76 dBA

🠝
Results segment # 2: RG S (day)
-------------------------------

Source height = 1.50 m

ROAD (0.00 + 56.13 + 0.00) = 56.13 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
    -5     45   0.57  70.67   0.00  -8.73  -5.80   0.00   0.00   0.00  56.13
-------------------------------------------------------------------------------

Segment Leq : 56.13 dBA

Total Leq All Segments: 58.51 dBA

🠝
Results segment # 1: RG N (night)
---------------------------------
```

Source height = 1.50 m

ROAD (0.00 + 47.84 + 0.00) = 47.84 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-5	45	0.47	63.07	0.00	-9.47	-5.76	0.00	0.00	0.00	47.84

Segment Leq : 47.84 dBA

Results segment # 2: RG S (night)

Source height = 1.50 m

ROAD (0.00 + 49.12 + 0.00) = 49.12 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-5	45	0.47	63.07	0.00	-8.18	-5.76	0.00	0.00	0.00	49.12

Segment Leq : 49.12 dBA

Total Leq All Segments: 51.54 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 58.51
(NIGHT): 51.54

STAMSON 5.0 NORMAL REPORT Date: 21-01-2021 14:46:55
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: crt324.te Time Period: Day/Night 16/8 hours
Description: Block 13, Unit 2 Indoor

Road data, segment # 1: RG N (day/night)

Car traffic volume : 14168/1232 veh/TimePeriod *
Medium truck volume : 1127/98 veh/TimePeriod *
Heavy truck volume : 805/70 veh/TimePeriod *
Posted speed limit : 60 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

24 hr Traffic Volume (AADT or SADT): 17500
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

Data for Segment # 1: RG N (day/night)

Angle1 Angle2 : -5.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 53.00 / 53.00 m
Receiver height : 4.50 / 7.80 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Road data, segment # 2: RG S (day/night)

Car traffic volume : 14168/1232 veh/TimePeriod *
Medium truck volume : 1127/98 veh/TimePeriod *
Heavy truck volume : 805/70 veh/TimePeriod *
Posted speed limit : 60 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

24 hr Traffic Volume (AADT or SADT): 17500
Percentage of Annual Growth : 0.00

```
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 2: RG S (day/night)
------------------------------------
Angle1   Angle2           :  -5.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  41.00 / 41.00  m
Receiver height           :   4.50 / 7.80   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00
```

↟

```
Results segment # 1: RG N (day)
-------------------------------

Source height = 1.50 m

ROAD (0.00 + 58.06 + 0.00) = 58.06 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
    -5     90   0.57  70.67   0.00  -8.61  -4.00   0.00   0.00   0.00  58.06
-------------------------------------------------------------------------------

Segment Leq : 58.06 dBA
```

↟

```
Results segment # 2: RG S (day)
-------------------------------

Source height = 1.50 m

ROAD (0.00 + 59.81 + 0.00) = 59.81 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
    -5     90   0.57  70.67   0.00  -6.86  -4.00   0.00   0.00   0.00  59.81
-------------------------------------------------------------------------------

Segment Leq : 59.81 dBA

Total Leq All Segments: 62.03 dBA
```

↟

```
Results segment # 1: RG N (night)
---------------------------------
```

Source height = 1.50 m

ROAD (0.00 + 51.17 + 0.00) = 51.17 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-5	90	0.47	63.07	0.00	-8.06	-3.83	0.00	0.00	0.00	51.17

Segment Leq : 51.17 dBA

Results segment # 2: RG S (night)

Source height = 1.50 m

ROAD (0.00 + 52.81 + 0.00) = 52.81 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-5	90	0.47	63.07	0.00	-6.42	-3.83	0.00	0.00	0.00	52.81

Segment Leq : 52.81 dBA

Total Leq All Segments: 55.08 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 62.03
(NIGHT): 55.08

STAMSON 5.0 NORMAL REPORT Date: 21-01-2021 14:52:22
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: crt324.te Time Period: Day/Night 16/8 hours
Description: Block 14, Unit 1 Indoor

Road data, segment # 1: RG N (day/night)

Car traffic volume : 14168/1232 veh/TimePeriod *
Medium truck volume : 1127/98 veh/TimePeriod *
Heavy truck volume : 805/70 veh/TimePeriod *
Posted speed limit : 60 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

24 hr Traffic Volume (AADT or SADT): 17500
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

Data for Segment # 1: RG N (day/night)

Angle1 Angle2 : -35.00 deg -5.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 66.00 / 66.00 m
Receiver height : 4.50 / 7.80 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Road data, segment # 2: RG S (day/night)

Car traffic volume : 14168/1232 veh/TimePeriod *
Medium truck volume : 1127/98 veh/TimePeriod *
Heavy truck volume : 805/70 veh/TimePeriod *
Posted speed limit : 60 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

24 hr Traffic Volume (AADT or SADT): 17500
Percentage of Annual Growth : 0.00

```
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 2: RG S (day/night)
---------------------------------------
Angle1   Angle2           : -35.00 deg   -5.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  54.00 / 54.00  m
Receiver height           :   4.50 / 7.80   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00
```

↟

```
Results segment # 1: RG N (day)
-------------------------------

Source height = 1.50 m

ROAD (0.00 + 52.60 + 0.00) = 52.60 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -35     -5   0.57  70.67   0.00 -10.10  -7.97   0.00   0.00   0.00  52.60
-------------------------------------------------------------------------------

Segment Leq : 52.60 dBA
```

↟

```
Results segment # 2: RG S (day)
-------------------------------

Source height = 1.50 m

ROAD (0.00 + 53.97 + 0.00) = 53.97 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -35     -5   0.57  70.67   0.00  -8.73  -7.97   0.00   0.00   0.00  53.97
-------------------------------------------------------------------------------

Segment Leq : 53.97 dBA

Total Leq All Segments: 56.35 dBA
```

↟

```
Results segment # 1: RG N (night)
---------------------------------
```

Source height = 1.50 m

ROAD (0.00 + 45.67 + 0.00) = 45.67 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-35	-5	0.47	63.07	0.00	-9.47	-7.93	0.00	0.00	0.00	45.67

Segment Leq : 45.67 dBA

Results segment # 2: RG S (night)

Source height = 1.50 m

ROAD (0.00 + 46.95 + 0.00) = 46.95 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-35	-5	0.47	63.07	0.00	-8.18	-7.93	0.00	0.00	0.00	46.95

Segment Leq : 46.95 dBA

Total Leq All Segments: 49.37 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 56.35
(NIGHT): 49.37

STAMSON 5.0 NORMAL REPORT Date: 21-01-2021 16:20:10
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: crt324.te Time Period: Day/Night 16/8 hours
Description: Block 15, Unit 1 Indoor

Road data, segment # 1: RG N (day/night)

Car traffic volume : 14168/1232 veh/TimePeriod *
Medium truck volume : 1127/98 veh/TimePeriod *
Heavy truck volume : 805/70 veh/TimePeriod *
Posted speed limit : 60 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

24 hr Traffic Volume (AADT or SADT): 17500
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

Data for Segment # 1: RG N (day/night)

Angle1 Angle2 : -30.00 deg 5.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 81.00 / 81.00 m
Receiver height : 4.50 / 7.80 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Road data, segment # 2: RG S (day/night)

Car traffic volume : 14168/1232 veh/TimePeriod *
Medium truck volume : 1127/98 veh/TimePeriod *
Heavy truck volume : 805/70 veh/TimePeriod *
Posted speed limit : 60 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

24 hr Traffic Volume (AADT or SADT): 17500
Percentage of Annual Growth : 0.00

```
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 2: RG S (day/night)
------------------------------------
Angle1   Angle2           : -30.00 deg   5.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  69.00 / 69.00  m
Receiver height           :   4.50 / 7.80   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

🠝
Results segment # 1: RG N (day)
-------------------------------

Source height = 1.50 m

ROAD (0.00 + 51.96 + 0.00) = 51.96 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -30      5   0.57  70.67   0.00 -11.50  -7.21   0.00   0.00   0.00  51.96
-------------------------------------------------------------------------------

Segment Leq : 51.96 dBA

🠝
Results segment # 2: RG S (day)
-------------------------------

Source height = 1.50 m

ROAD (0.00 + 53.05 + 0.00) = 53.05 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -30      5   0.57  70.67   0.00 -10.41  -7.21   0.00   0.00   0.00  53.05
-------------------------------------------------------------------------------

Segment Leq : 53.05 dBA

Total Leq All Segments: 55.55 dBA

🠝
Results segment # 1: RG N (night)
---------------------------------
```

Source height = 1.50 m

ROAD (0.00 + 45.10 + 0.00) = 45.10 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-30	5	0.47	63.07	0.00	-10.77	-7.19	0.00	0.00	0.00	45.10

Segment Leq : 45.10 dBA

Results segment # 2: RG S (night)

Source height = 1.50 m

ROAD (0.00 + 46.12 + 0.00) = 46.12 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-30	5	0.47	63.07	0.00	-9.75	-7.19	0.00	0.00	0.00	46.12

Segment Leq : 46.12 dBA

Total Leq All Segments: 48.65 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 55.55
(NIGHT): 48.65

STAMSON 5.0 NORMAL REPORT Date: 21-01-2021 16:40:47
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: crt324.te Time Period: Day/Night 16/8 hours
Description: Block 15, Unit 2 Indoor

Road data, segment # 1: RG N (day/night)

Car traffic volume : 14168/1232 veh/TimePeriod *
Medium truck volume : 1127/98 veh/TimePeriod *
Heavy truck volume : 805/70 veh/TimePeriod *
Posted speed limit : 60 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

24 hr Traffic Volume (AADT or SADT): 17500
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

Data for Segment # 1: RG N (day/night)

Angle1 Angle2 : 5.00 deg 35.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 82.50 / 82.50 m
Receiver height : 4.50 / 7.80 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Road data, segment # 2: RG S (day/night)

Car traffic volume : 14168/1232 veh/TimePeriod *
Medium truck volume : 1127/98 veh/TimePeriod *
Heavy truck volume : 805/70 veh/TimePeriod *
Posted speed limit : 60 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

24 hr Traffic Volume (AADT or SADT): 17500
Percentage of Annual Growth : 0.00

```
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 2: RG S (day/night)
------------------------------------
Angle1   Angle2           :   5.00 deg   35.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  70.50 / 70.50  m
Receiver height           :   4.50 / 7.80   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

🠝
Results segment # 1: RG N (day)
-------------------------------

Source height = 1.50 m

ROAD (0.00 + 51.08 + 0.00) = 51.08 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
     5     35   0.57  70.67   0.00 -11.62  -7.97   0.00   0.00   0.00  51.08
-------------------------------------------------------------------------------

Segment Leq : 51.08 dBA

🠝
Results segment # 2: RG S (day)
-------------------------------

Source height = 1.50 m

ROAD (0.00 + 52.15 + 0.00) = 52.15 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
     5     35   0.57  70.67   0.00 -10.55  -7.97   0.00   0.00   0.00  52.15
-------------------------------------------------------------------------------

Segment Leq : 52.15 dBA

Total Leq All Segments: 54.66 dBA

🠝
Results segment # 1: RG N (night)
---------------------------------
```

Source height = 1.50 m

ROAD (0.00 + 44.24 + 0.00) = 44.24 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
5	35	0.47	63.07	0.00	-10.89	-7.93	0.00	0.00	0.00	44.24

Segment Leq : 44.24 dBA

Results segment # 2: RG S (night)

Source height = 1.50 m

ROAD (0.00 + 45.25 + 0.00) = 45.25 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
5	35	0.47	63.07	0.00	-9.89	-7.93	0.00	0.00	0.00	45.25

Segment Leq : 45.25 dBA

Total Leq All Segments: 47.78 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 54.66
(NIGHT): 47.78

STAMSON 5.0 NORMAL REPORT Date: 21-01-2021 16:23:07
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: crt324.te Time Period: Day/Night 16/8 hours
Description: Block 15, Unit 3 Indoor

Road data, segment # 1: RG N (day/night)

Car traffic volume : 14168/1232 veh/TimePeriod *
Medium truck volume : 1127/98 veh/TimePeriod *
Heavy truck volume : 805/70 veh/TimePeriod *
Posted speed limit : 60 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

24 hr Traffic Volume (AADT or SADT): 17500
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

Data for Segment # 1: RG N (day/night)

Angle1 Angle2 : -25.00 deg 5.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 85.00 / 85.00 m
Receiver height : 4.50 / 7.80 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Road data, segment # 2: RG S (day/night)

Car traffic volume : 14168/1232 veh/TimePeriod *
Medium truck volume : 1127/98 veh/TimePeriod *
Heavy truck volume : 805/70 veh/TimePeriod *
Posted speed limit : 60 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

24 hr Traffic Volume (AADT or SADT): 17500
Percentage of Annual Growth : 0.00

```
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 2: RG S (day/night)
------------------------------------
Angle1   Angle2           : -25.00 deg   5.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  73.00 / 73.00  m
Receiver height           :   4.50 / 7.80   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

🠝
Results segment # 1: RG N (day)
-------------------------------

Source height = 1.50 m

ROAD (0.00 + 50.99 + 0.00) = 50.99 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -25      5   0.57  70.67   0.00 -11.83  -7.85   0.00   0.00   0.00  50.99
-------------------------------------------------------------------------------

Segment Leq : 50.99 dBA

🠝
Results segment # 2: RG S (day)
-------------------------------

Source height = 1.50 m

ROAD (0.00 + 52.03 + 0.00) = 52.03 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -25      5   0.57  70.67   0.00 -10.79  -7.85   0.00   0.00   0.00  52.03
-------------------------------------------------------------------------------

Segment Leq : 52.03 dBA

Total Leq All Segments: 54.55 dBA

🠝
Results segment # 1: RG N (night)
---------------------------------
```

Source height = 1.50 m

ROAD (0.00 + 44.15 + 0.00) = 44.15 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-25	5	0.47	63.07	0.00	-11.08	-7.84	0.00	0.00	0.00	44.15

Segment Leq : 44.15 dBA

Results segment # 2: RG S (night)

Source height = 1.50 m

ROAD (0.00 + 45.12 + 0.00) = 45.12 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-25	5	0.47	63.07	0.00	-10.11	-7.84	0.00	0.00	0.00	45.12

Segment Leq : 45.12 dBA

Total Leq All Segments: 47.67 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 54.55
(NIGHT): 47.67

STAMSON 5.0 NORMAL REPORT Date: 21-01-2021 16:29:18
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: crt324.te Time Period: Day/Night 16/8 hours
Description: Block 16, Unit 1 Indoor

Road data, segment # 1: RG N (day/night)

Car traffic volume : 14168/1232 veh/TimePeriod *
Medium truck volume : 1127/98 veh/TimePeriod *
Heavy truck volume : 805/70 veh/TimePeriod *
Posted speed limit : 60 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

24 hr Traffic Volume (AADT or SADT): 17500
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

Data for Segment # 1: RG N (day/night)

Angle1 Angle2 : -20.00 deg 5.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 83.00 / 83.00 m
Receiver height : 4.50 / 7.80 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Road data, segment # 2: RG S (day/night)

Car traffic volume : 14168/1232 veh/TimePeriod *
Medium truck volume : 1127/98 veh/TimePeriod *
Heavy truck volume : 805/70 veh/TimePeriod *
Posted speed limit : 60 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

24 hr Traffic Volume (AADT or SADT): 17500
Percentage of Annual Growth : 0.00

```
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 2: RG S (day/night)
------------------------------------
Angle1   Angle2           : -20.00 deg   5.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  71.00 / 71.00  m
Receiver height           :   4.50 / 7.80   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

🠝
Results segment # 1: RG N (day)
-------------------------------

Source height = 1.50 m

ROAD (0.00 + 50.39 + 0.00) = 50.39 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -20      5   0.57  70.67   0.00 -11.67  -8.61   0.00   0.00   0.00  50.39
-------------------------------------------------------------------------------

Segment Leq : 50.39 dBA

🠝
Results segment # 2: RG S (day)
-------------------------------

Source height = 1.50 m

ROAD (0.00 + 51.45 + 0.00) = 51.45 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -20      5   0.57  70.67   0.00 -10.60  -8.61   0.00   0.00   0.00  51.45
-------------------------------------------------------------------------------

Segment Leq : 51.45 dBA

Total Leq All Segments: 53.96 dBA

🠝
Results segment # 1: RG N (night)
---------------------------------
```

Source height = 1.50 m

ROAD (0.00 + 43.53 + 0.00) = 43.53 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-20	5	0.47	63.07	0.00	-10.93	-8.61	0.00	0.00	0.00	43.53

Segment Leq : 43.53 dBA

Results segment # 2: RG S (night)

Source height = 1.50 m

ROAD (0.00 + 44.53 + 0.00) = 44.53 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-20	5	0.47	63.07	0.00	-9.93	-8.61	0.00	0.00	0.00	44.53

Segment Leq : 44.53 dBA

Total Leq All Segments: 47.07 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 53.96
(NIGHT): 47.07

STAMSON 5.0 NORMAL REPORT Date: 21-01-2021 17:02:57
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: crt324.te Time Period: Day/Night 16/8 hours
Description: Block 17, Unit 2 Indoor

Road data, segment # 1: RG N (day/night)

Car traffic volume : 14168/1232 veh/TimePeriod *
Medium truck volume : 1127/98 veh/TimePeriod *
Heavy truck volume : 805/70 veh/TimePeriod *
Posted speed limit : 60 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

24 hr Traffic Volume (AADT or SADT): 17500
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

Data for Segment # 1: RG N (day/night)

Angle1 Angle2 : -5.00 deg 25.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 83.50 / 83.50 m
Receiver height : 4.50 / 7.80 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Road data, segment # 2: RG S (day/night)

Car traffic volume : 14168/1232 veh/TimePeriod *
Medium truck volume : 1127/98 veh/TimePeriod *
Heavy truck volume : 805/70 veh/TimePeriod *
Posted speed limit : 60 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

24 hr Traffic Volume (AADT or SADT): 17500
Percentage of Annual Growth : 0.00

```
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 2: RG S (day/night)
------------------------------------
Angle1   Angle2           :  -5.00 deg   25.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  71.50 / 71.50  m
Receiver height           :   4.50 / 7.80   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00
```

↟

```
Results segment # 1: RG N (day)
-------------------------------

Source height = 1.50 m

ROAD (0.00 + 51.11 + 0.00) = 51.11 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
    -5     25   0.57  70.67   0.00 -11.71  -7.85   0.00   0.00   0.00  51.11
-------------------------------------------------------------------------------

Segment Leq : 51.11 dBA
```

↟

```
Results segment # 2: RG S (day)
-------------------------------

Source height = 1.50 m

ROAD (0.00 + 52.17 + 0.00) = 52.17 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
    -5     25   0.57  70.67   0.00 -10.65  -7.85   0.00   0.00   0.00  52.17
-------------------------------------------------------------------------------

Segment Leq : 52.17 dBA

Total Leq All Segments: 54.68 dBA
```

↟

```
Results segment # 1: RG N (night)
---------------------------------
```

Source height = 1.50 m

ROAD (0.00 + 44.26 + 0.00) = 44.26 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-5	25	0.47	63.07	0.00	-10.97	-7.84	0.00	0.00	0.00	44.26

Segment Leq : 44.26 dBA

Results segment # 2: RG S (night)

Source height = 1.50 m

ROAD (0.00 + 45.25 + 0.00) = 45.25 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-5	25	0.47	63.07	0.00	-9.98	-7.84	0.00	0.00	0.00	45.25

Segment Leq : 45.25 dBA

Total Leq All Segments: 47.79 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 54.68
(NIGHT): 47.79

STAMSON 5.0 NORMAL REPORT Date: 21-01-2021 15:00:32
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: crt324.te Time Period: Day/Night 16/8 hours
Description: Block 18, Unit 1 Indoor

Road data, segment # 1: RG N (day/night)

Car traffic volume : 14168/1232 veh/TimePeriod *
Medium truck volume : 1127/98 veh/TimePeriod *
Heavy truck volume : 805/70 veh/TimePeriod *
Posted speed limit : 60 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

24 hr Traffic Volume (AADT or SADT): 17500
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

Data for Segment # 1: RG N (day/night)

Angle1 Angle2 : -25.00 deg -5.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 83.00 / 83.00 m
Receiver height : 4.50 / 7.80 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Road data, segment # 2: RG S (day/night)

Car traffic volume : 14168/1232 veh/TimePeriod *
Medium truck volume : 1127/98 veh/TimePeriod *
Heavy truck volume : 805/70 veh/TimePeriod *
Posted speed limit : 60 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

24 hr Traffic Volume (AADT or SADT): 17500
Percentage of Annual Growth : 0.00

```
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 2: RG S (day/night)
------------------------------------
Angle1   Angle2           : -25.00 deg   -5.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  71.00 / 71.00  m
Receiver height           :   4.50 / 7.80   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

🠝
Results segment # 1: RG N (day)
-------------------------------

Source height = 1.50 m

ROAD (0.00 + 49.36 + 0.00) = 49.36 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -25     -5   0.57  70.67   0.00 -11.67  -9.64   0.00   0.00   0.00  49.36
-------------------------------------------------------------------------------

Segment Leq : 49.36 dBA

🠝
Results segment # 2: RG S (day)
-------------------------------

Source height = 1.50 m

ROAD (0.00 + 50.42 + 0.00) = 50.42 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -25     -5   0.57  70.67   0.00 -10.60  -9.64   0.00   0.00   0.00  50.42
-------------------------------------------------------------------------------

Segment Leq : 50.42 dBA

Total Leq All Segments: 52.93 dBA

🠝
Results segment # 1: RG N (night)
---------------------------------
```

Source height = 1.50 m

ROAD (0.00 + 42.51 + 0.00) = 42.51 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-25	-5	0.47	63.07	0.00	-10.93	-9.62	0.00	0.00	0.00	42.51

Segment Leq : 42.51 dBA

Results segment # 2: RG S (night)

Source height = 1.50 m

ROAD (0.00 + 43.51 + 0.00) = 43.51 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-25	-5	0.47	63.07	0.00	-9.93	-9.62	0.00	0.00	0.00	43.51

Segment Leq : 43.51 dBA

Total Leq All Segments: 46.05 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 52.93
(NIGHT): 46.05

STAMSON 5.0 NORMAL REPORT Date: 21-01-2021 14:44:25
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: crt324.te Time Period: Day/Night 16/8 hours
Description: Block 26, Unit 4 Indoor

Road data, segment # 1: RG N (day/night)

Car traffic volume : 14168/1232 veh/TimePeriod *
Medium truck volume : 1127/98 veh/TimePeriod *
Heavy truck volume : 805/70 veh/TimePeriod *
Posted speed limit : 60 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

24 hr Traffic Volume (AADT or SADT): 17500
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

Data for Segment # 1: RG N (day/night)

Angle1 Angle2 : -5.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 112.00 / 112.00 m
Receiver height : 4.50 / 7.80 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Road data, segment # 2: RG S (day/night)

Car traffic volume : 14168/1232 veh/TimePeriod *
Medium truck volume : 1127/98 veh/TimePeriod *
Heavy truck volume : 805/70 veh/TimePeriod *
Posted speed limit : 60 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

24 hr Traffic Volume (AADT or SADT): 17500
Percentage of Annual Growth : 0.00

```
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 2: RG S (day/night)
------------------------------------
Angle1   Angle2           :  -5.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 100.00 / 100.00 m
Receiver height           :   4.50 / 7.80   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

🠝
Results segment # 1: RG N (day)
------------------------------

Source height = 1.50 m

ROAD (0.00 + 52.96 + 0.00) = 52.96 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
    -5     90   0.57  70.67   0.00 -13.71  -4.00   0.00   0.00   0.00  52.96
-------------------------------------------------------------------------------

Segment Leq : 52.96 dBA

🠝
Results segment # 2: RG S (day)
------------------------------

Source height = 1.50 m

ROAD (0.00 + 53.73 + 0.00) = 53.73 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
    -5     90   0.57  70.67   0.00 -12.94  -4.00   0.00   0.00   0.00  53.73
-------------------------------------------------------------------------------

Segment Leq : 53.73 dBA

Total Leq All Segments: 56.37 dBA

🠝
Results segment # 1: RG N (night)
--------------------------------
```

Source height = 1.50 m

ROAD (0.00 + 46.39 + 0.00) = 46.39 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-5	90	0.47	63.07	0.00	-12.84	-3.83	0.00	0.00	0.00	46.39

Segment Leq : 46.39 dBA

Results segment # 2: RG S (night)

Source height = 1.50 m

ROAD (0.00 + 47.12 + 0.00) = 47.12 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-5	90	0.47	63.07	0.00	-12.12	-3.83	0.00	0.00	0.00	47.12

Segment Leq : 47.12 dBA

Total Leq All Segments: 49.78 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 56.37
(NIGHT): 49.78

STAMSON 5.0 NORMAL REPORT Date: 21-01-2021 16:01:52
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: crt324.te Time Period: Day/Night 16/8 hours
Description: Block 27, Unit 3 Indoor

Road data, segment # 1: RG N (day/night)

Car traffic volume : 14168/1232 veh/TimePeriod *
Medium truck volume : 1127/98 veh/TimePeriod *
Heavy truck volume : 805/70 veh/TimePeriod *
Posted speed limit : 60 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

24 hr Traffic Volume (AADT or SADT): 17500
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

Data for Segment # 1: RG N (day/night)

Angle1 Angle2 : -90.00 deg -10.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 75.00 / 75.00 m
Receiver height : 4.50 / 7.80 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Road data, segment # 2: RG S (day/night)

Car traffic volume : 14168/1232 veh/TimePeriod *
Medium truck volume : 1127/98 veh/TimePeriod *
Heavy truck volume : 805/70 veh/TimePeriod *
Posted speed limit : 60 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

24 hr Traffic Volume (AADT or SADT): 17500
Percentage of Annual Growth : 0.00

```
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 2: RG S (day/night)
------------------------------------
Angle1   Angle2           : -90.00 deg   -10.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  87.00 / 87.00  m
Receiver height           :   4.50 / 7.80   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

🠝
Results segment # 1: RG N (day)
-------------------------------

Source height = 1.50 m

ROAD (0.00 + 54.67 + 0.00) = 54.67 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90    -10   0.57  70.67   0.00 -10.97  -5.02   0.00   0.00   0.00  54.67
-------------------------------------------------------------------------------

Segment Leq : 54.67 dBA

🠝
Results segment # 2: RG S (day)
-------------------------------

Source height = 1.50 m

ROAD (0.00 + 53.66 + 0.00) = 53.66 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90    -10   0.57  70.67   0.00 -11.99  -5.02   0.00   0.00   0.00  53.66
-------------------------------------------------------------------------------

Segment Leq : 53.66 dBA

Total Leq All Segments: 57.20 dBA

🠝
Results segment # 1: RG N (night)
---------------------------------
```

Source height = 1.50 m

ROAD (0.00 + 47.98 + 0.00) = 47.98 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	-10	0.47	63.07	0.00	-10.28	-4.80	0.00	0.00	0.00	47.98

Segment Leq : 47.98 dBA

Results segment # 2: RG S (night)

Source height = 1.50 m

ROAD (0.00 + 47.03 + 0.00) = 47.03 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	-10	0.47	63.07	0.00	-11.23	-4.80	0.00	0.00	0.00	47.03

Segment Leq : 47.03 dBA

Total Leq All Segments: 50.54 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 57.20
(NIGHT): 50.54

STAMSON 5.0 NORMAL REPORT Date: 21-01-2021 16:10:23
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: crt324.te Time Period: Day/Night 16/8 hours
Description: Block 29, Unit 1 Indoor

Road data, segment # 1: RG N (day/night)

Car traffic volume : 14168/1232 veh/TimePeriod *
Medium truck volume : 1127/98 veh/TimePeriod *
Heavy truck volume : 805/70 veh/TimePeriod *
Posted speed limit : 60 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

24 hr Traffic Volume (AADT or SADT): 17500
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

Data for Segment # 1: RG N (day/night)

Angle1 Angle2 : 10.00 deg 30.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 72.00 / 72.00 m
Receiver height : 4.50 / 7.80 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Road data, segment # 2: RG S (day/night)

Car traffic volume : 14168/1232 veh/TimePeriod *
Medium truck volume : 1127/98 veh/TimePeriod *
Heavy truck volume : 805/70 veh/TimePeriod *
Posted speed limit : 60 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

24 hr Traffic Volume (AADT or SADT): 17500
Percentage of Annual Growth : 0.00

```
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 2: RG S (day/night)
---------------------------------------
Angle1   Angle2           :  10.00 deg   30.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  84.00 / 84.00  m
Receiver height           :   4.50 / 7.80   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00
```

🠝

```
Results segment # 1: RG N (day)
-------------------------------

Source height = 1.50 m

ROAD (0.00 + 50.26 + 0.00) = 50.26 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
    10     30   0.57  70.67   0.00 -10.70  -9.71   0.00   0.00   0.00  50.26
-------------------------------------------------------------------------------

Segment Leq : 50.26 dBA
```

🠝

```
Results segment # 2: RG S (day)
-------------------------------

Source height = 1.50 m

ROAD (0.00 + 49.21 + 0.00) = 49.21 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
    10     30   0.57  70.67   0.00 -11.75  -9.71   0.00   0.00   0.00  49.21
-------------------------------------------------------------------------------

Segment Leq : 49.21 dBA

Total Leq All Segments: 52.78 dBA
```

🠝

```
Results segment # 1: RG N (night)
---------------------------------
```

Source height = 1.50 m

ROAD (0.00 + 43.37 + 0.00) = 43.37 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
10	30	0.47	63.07	0.00	-10.02	-9.68	0.00	0.00	0.00	43.37

Segment Leq : 43.37 dBA

Results segment # 2: RG S (night)

Source height = 1.50 m

ROAD (0.00 + 42.38 + 0.00) = 42.38 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
10	30	0.47	63.07	0.00	-11.01	-9.68	0.00	0.00	0.00	42.38

Segment Leq : 42.38 dBA

Total Leq All Segments: 45.91 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 52.78
(NIGHT): 45.91

APPENDIX B
SOUND TRANSMISSION CLASS (STC)
CALCULATIONS

Living/Dining Room - Front 2nd Floor

Reverse Evaluation of Sound Transmission Class (STC) for Building Components

1.0	Free field sound level		68.81	dBA	Noise source
	Correction for reflections		3	dBA	Road
	Outdoor sound level		71.81	dBA	Indoor Quarters
	Indoor sound level	(Daytime)	45	dBA	Living
	Required Noise Reduction (NR)		26.81	dB	Subtract indoor from outdoor sound level
2.0	Sound angle of insidence	0 to 90 degrees			C_1 Correction from Table 7.7 0 dB
					Sum 26.81 dB

	Component:	Wall		STC 40 dB
3.0	Noise spectrum type	D - Mixed Road Traffic, Distant Aircraft		C_4 from Table 7.10 7 dB
	Component category	d. Sealed thick window, or exterior wall, or roof/ceiling		Correction -7 dB
4.0	Room floor area	43.7 m^2	23.34096 % of floor area	
	Component Area	10.2 m^2		
	Room absorption category	Intermediate		C_3 from Table 7.9 -7 dB
				Correction 7 dB
5.0	Noise reduction if only this component transmits sound			40 dB
6.0	Required noise reduction (from Step 1)			27 dB
7.0	Term C_2: Subtract the Required NR from the Noise Reduction for this component			13 dB
8.0	Determine from Table 7.8 the corresponding value of total transmitted sound energy			5 %

	Component:	Window		After step 2 26.81 dB
9.0	Transmits	95 % of total sound energy		C_2 from Table 7.8 0 dB
10.0	Room floor area	43.7 m^2	18.39817 % of floor area	
	Component Area	8.04 m^2		
	Room absorption category	Intermediate		C_3 from Table 7.9 -7 dB
11.0	Noise spectrum type	D - Mixed Road Traffic, Distant Aircraft		
	Component category	d. Sealed thick window, or exterior wall, or roof/ceil		C_4 from Table 7.10 7 dB
			$STC=NR+C_1+C_2+C_3+C_4$	Required STC 27

Tables from Environmental Noise Assessment in Land Use Planning, dated 1999, published by the MOE

Living/Dining Room - Sidewall 2nd Floor

Reverse Evaluation of Sound Transmission Class (STC) for Building Components

1.0	Free field sound level		68.81	dBA	Noise source
	Correction for reflections		3	dBA	Road
	Outdoor sound level		71.81	dBA	Indoor Quarters
	Indoor sound level	(Daytime)	45	dBA	Living
	Required Noise Reduction (NR)		26.81	dB	Subtract indoor from outdoor sound level
2.0	Sound angle of insidence	0 to 90 degrees			C_1 Correction from Table 7.7 0 dB
					Sum 26.81 dB

	Component:	Wall		STC 40 dB
3.0	Noise spectrum type	D - Mixed Road Traffic, Distant Aircraft		C_4 from Table 7.10 7 dB
	Component category	d. Sealed thick window, or exterior wall, or roof/ceiling		Correction -7 dB
4.0	Room floor area	43.7 m^2	47.55149 % of floor area	
	Component Area	20.78 m^2		
	Room absorption category	Intermediate		C_3 from Table 7.9 -12 dB
				Correction 12 dB
5.0	Noise reduction if only this component transmits sound			45 dB
6.0	Required noise reduction (from Step 1)			27 dB
7.0	Term C_2: Subtract the Required NR from the Noise Reduction for this component			18 dB
8.0	Determine from Table 7.8 the corresponding value of total transmitted sound energy			5 %

	Component:	Window		After step 2 26.81 dB
9.0	Transmits	95 % of total sound energy		C_2 from Table 7.8 0 dB
10.0	Room floor area	43.7 m^2	5.034325 % of floor area	
	Component Area	2.2 m^2		
	Room absorption category	Intermediate		C_3 from Table 7.9 -12 dB
11.0	Noise spectrum type	D - Mixed Road Traffic, Distant Aircraft		
	Component category	d. Sealed thick window, or exterior wall, or roof/ceil		C_4 from Table 7.10 7 dB
			$STC=NR+C_1+C_2+C_3+C_4$	Required STC 22

Tables from Environmental Noise Assessment in Land Use Planning, dated 1999, published by the MOE

Bedroom 2 - Front 3rd Floor

Reverse Evaluation of Sound Transmission Class (STC) for Building Components

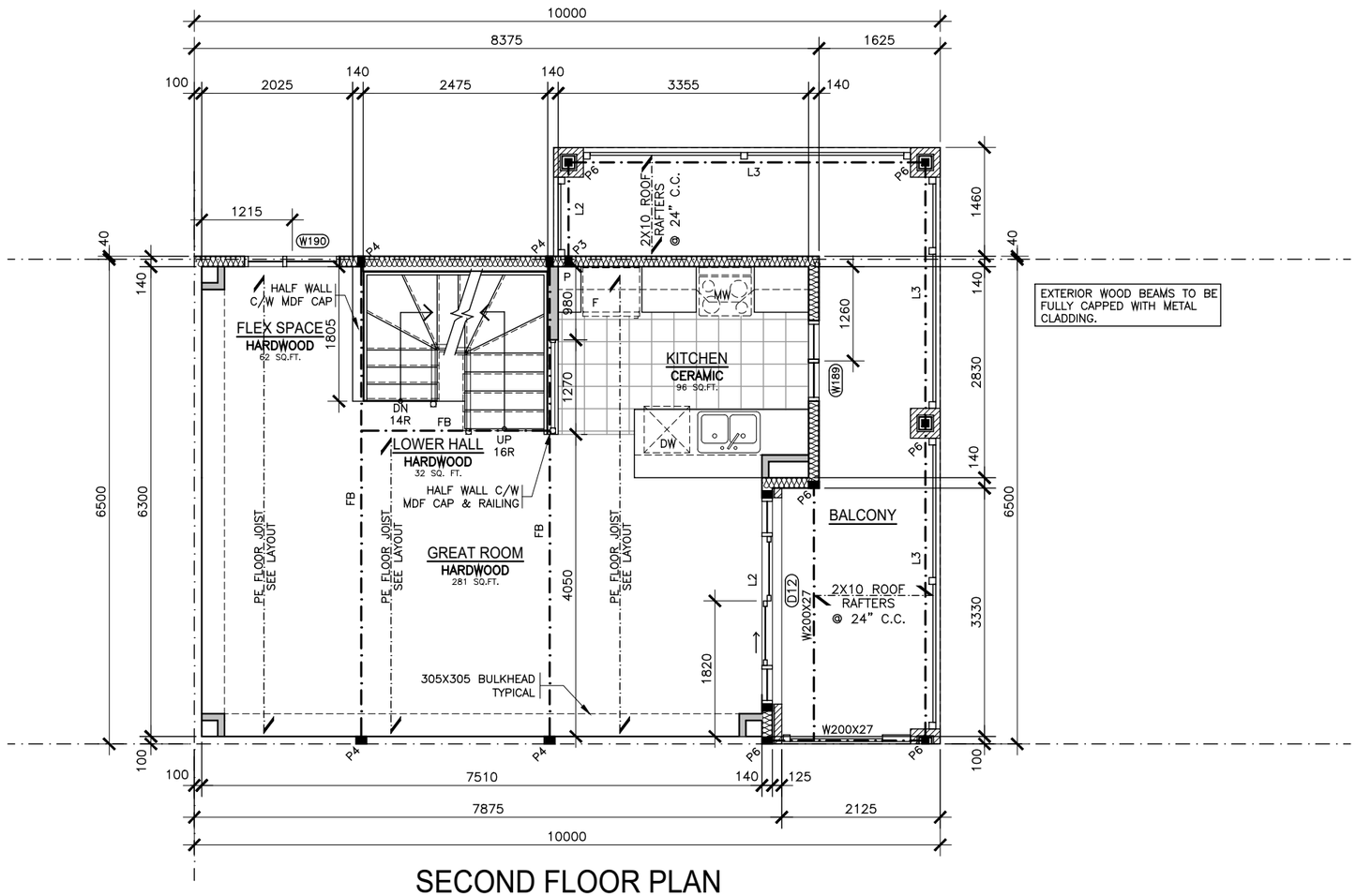
1.0	Free field sound level		61.6	dBA	Noise source
	Correction for reflections		3	dBA	Road
	Outdoor sound level		64.6	dBA	Indoor Quarters
	Indoor sound level	(Night time)	40	dBA	Sleeping
	Required Noise Reduction (NR)		24.6	dB	Subtract indoor from outdoor sound level
2.0	Sound angle of insidence	0 to 90 degrees			C_1 Correction from Table 7.7 0 dB
					Sum 24.6 dB

	Component:	Wall		STC 40 dB
3.0	Noise spectrum type	D - Mixed Road Traffic, Distant Aircraft		C_4 from Table 7.10 7 dB
	Component category	d. Sealed thick window, or exterior wall, or roof/ceiling		Correction -7 dB
4.0	Room floor area	11.3 m^2	58.40708 % of floor area	
	Component Area	6.6 m^2		
	Room absorption category	Intermediate		C_3 from Table 7.9 -7 dB
				Correction 7 dB
5.0	Noise reduction if only this component transmits sound			40 dB
6.0	Required noise reduction (from Step 1)			25 dB
7.0	Term C_2: Subtract the Required NR from the Noise Reduction for this component			15 dB
8.0	Determine from Table 7.8 the corresponding value of total transmitted sound energy			5 %

	Component:	Window		After step 2 24.6 dB
9.0	Transmits	95 % of total sound energy		C_2 from Table 7.8 0 dB
10.0	Room floor area	11.3 m^2	18.58407 % of floor area	
	Component Area	2.1 m^2		
	Room absorption category	Intermediate		C_3 from Table 7.9 -7 dB
11.0	Noise spectrum type	D - Mixed Road Traffic, Distant Aircraft		
	Component category	d. Sealed thick window, or exterior wall, or roof/ceil		C_4 from Table 7.10 7 dB
			$STC=NR+C_1+C_2+C_3+C_4$	Required STC 25

Tables from Environmental Noise Assessment in Land Use Planning, dated 1999, published by the MOE

APPENDIX C
SAMPLE ARCHITECTURAL DRAWINGS



EXTERIOR WOOD BEAMS TO BE FULLY CAPPED WITH METAL CLADDING.

SECOND FLOOR PLAN

STREET END UNIT

AREA: 52.80 SQM = 568 SQF
OPEN TO BELOW: 0.26 SQM = 3 SQF

DRAWING NOTES				
REFER TO ELECTRICAL PLANS FOR BATHROOM VENTS, SMOKE ALARMS, AND CARBON MONOXIDE DETECTORS.	FB: FLUSH BEAM FL: FLUSH LINTEL L1: 2-38 X 235 (TYP. UNLESS NOTED) L2: 3-38 X 235 L3: 2-1 3/4" X 9 1/2" LVL LVL SIZE: 1.75" X 9.5" (1.8E) UNLESS NOTED. SEE JOIST LAYOUT	NOTE: INSTALL BLOCKING EVERY 36" UNDER PARTITIONS THAT RUN PARALLEL TO THE FLOOR JOISTS. TYPICAL DETAILS: SEE PAGE D-1,2	TRANSFER ALL BEARING POINTS ALL THE WAY TO FOUNDATION OR TO A BEAM OR POST BELOW, PROVIDE FULL BEARING AT SUB-FLOOR. HARDWOOD FLOOR TO RUN PERPENDICULAR TO FLOOR JOISTS.	**THE CONTRACTOR IS RESPONSIBLE FOR CHECKING AND VERIFYING ALL DIMENSIONS, ANY DISCREPANCY MUST BE REPORTED TO THE DESIGNER.** **DO NOT SCALE DRAWINGS.**

NOTE:

1 REFER TO DRAWINGS A8, A9 FOR GENERAL NOTES, TABLES SCHEDULES, CONSTRUCTION ASSEMBLY NOTES APPLICABLE TO ALL DRAWINGS AND LEGENDS APPLICABLE TO ALL DRAWINGS.

2 ALL CLOSET TO HAVE DROPPED HEADERS.

3 ALL VENTILATION FANS TO EXHAUST TO THE EXTERIOR. 6" SMOOTH DUCT, 7" FLEX DUCT.

4 BASEMENT: PROVIDE ONE LINE OF PASSAGE FROM UTILITY ROOM TO EXTERIOR WITH ALL DOORWAYS BEING A MINIMUM OF 32" IN WIDTH.

5 CERAMIC TILE TO BE INSTALLED AS PER 9.30.6 OF O.B.C, REQUIRES 5/8" UNDERLAY

6 FIRE PROTECTION FOR GAS AND ELECTRIC RANGES AS PER 9.10.21 OF O.B.C.

7 BATHROOMS: PROVIDE WATERPROOF WALL FINISH AS PER 9.29.2 OF O.B.C.

8 PROVIDE STUD WALL REINFORCING IN MAIN BATHROOM FOR FUTURE GRAB BARS, AS PER 9.5.2.3. SEE DWG D1

9 TOILET PAPER DISPENSER HEIGHT 660 AFF. TOWEL BAR HEIGHT 762 TO 1220 AFF.

10 ATTIC HATCH SHALL BE LOCATED SO AS TO PROVIDE UNOBSTRUCTED ACCES TO ATTIC SPACE

11 PROVIDE WARM AIR SUPPLY GRILLE IN W.I.C. WHEN ADJACENT TO UNHEATED SPACE, EXTERIOR AIR, OR EXTERIOR SOIL

12 SMOKE ALARMS LOCATION AND POWER SUPPLY IN DWELLING UNITS WILL COMPLY WITH 9.10.19.3 AND 9.10.19.4. (1).

13 INSTALLATION HEIGHT OF CARBON MONOXIDE DETECTORS WILL COMPLY WITH 9.33.4.2.

14 THE HEIGHT OF HANDRAILS ON STAIRS AND RAMPS SHALL BE NOT LESS THAN 865 AND NOT MORE THAN 965, AS PER 9.8.7.4. (2).

No.	REVISION	DATE
3	STRUCTURAL REVIEW	MAR.23.20
2	DESIGN REVIEW	OCT.15.19
1	STRUCTURAL REVIEW	AUG.22.19

CLARIDGE HOMES

Model Title:
TAYLOR 2019
FLOOR AREA: 1452 SQ.FT = 134.91 SQ.M
BSMT: 0 SQ.FT = 0 SQ.M
OTB: 6 SQ.FT = 0.52 SQ.M

Project:
PROJECT NAME
BLOCK # UNIT #

Title:
SECOND FLOOR PLAN
STREET END

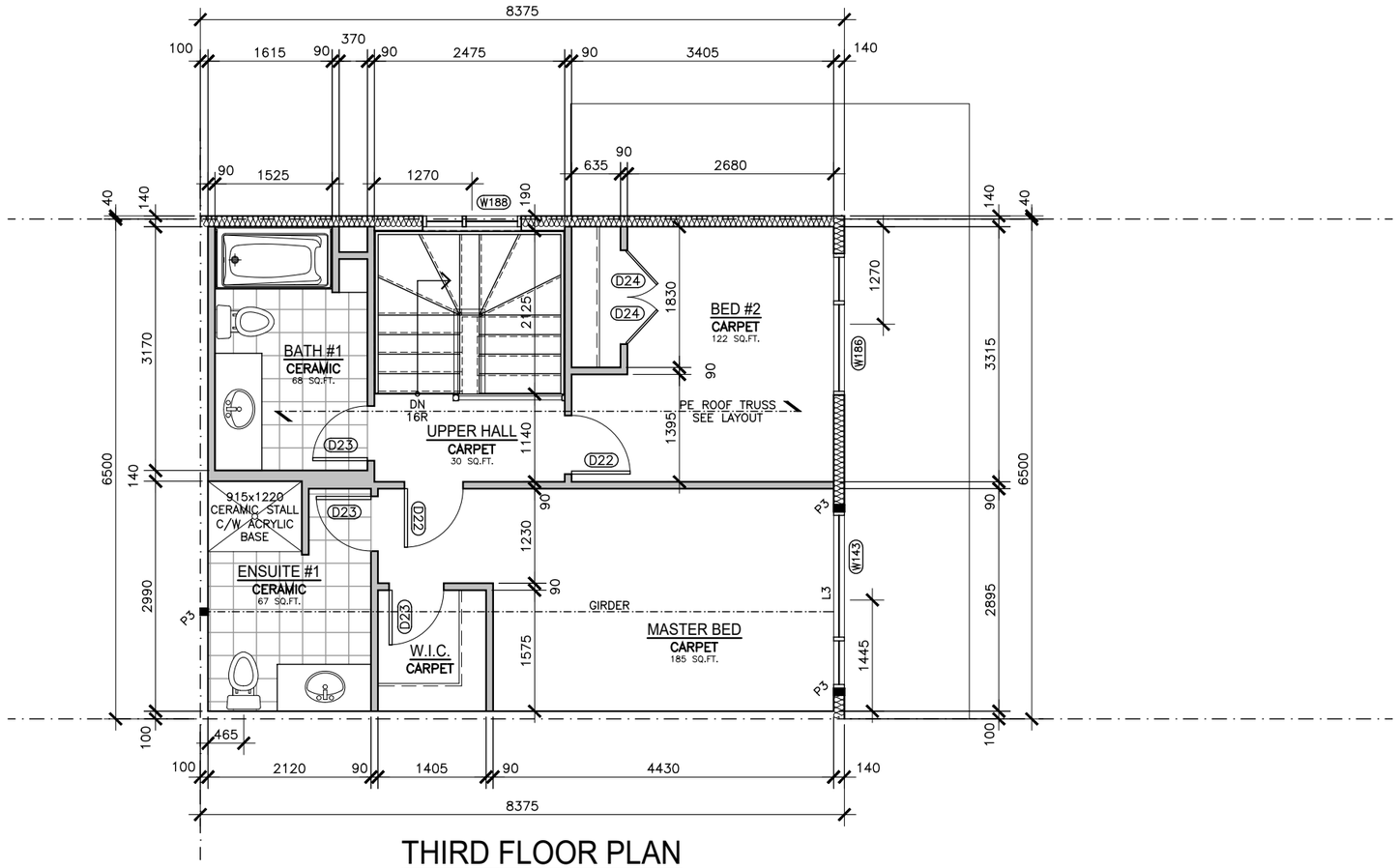
AS-BUILT RELEASE
No. X DATE

BROCHURE DATE
XX

Scale: 1:75

Drawing No.
A-3

Drawn by: SO



THIRD FLOOR PLAN

STREET END UNIT

AREA: 54.51 SQM = 587 SQF
OPEN TO BELOW: 0.26 SQM = 3 SQF

DRAWING NOTES				
REFER TO ELECTRICAL PLANS FOR BATHROOM VENTS, SMOKE ALARMS, AND CARBON MONOXIDE DETECTORS.	FB: FLUSH BEAM FL: FLUSH LINTEL L1: 2–38 X 235 (TYP. UNLESS NOTED) L2: 3–38 X 235 L3: 2–1 3/4" X 9 1/2" LVL LVL SIZE: 1.75" X 9.5" (1.8E) UNLESS NOTED. SEE JOIST LAYOUT	NOTE: INSTALL BLOCKING EVERY 36" UNDER PARTITIONS THAT RUN PARALLEL TO THE FLOOR JOISTS. TYPICAL DETAILS: SEE PAGE D–1,2	TRANSFER ALL BEARING POINTS ALL THE WAY TO FOUNDATION OR TO A BEAM OR POST BELOW, PROVIDE FULL BEARING AT SUB–FLOOR. HARDWOOD FLOOR TO RUN PERPENDICULAR TO FLOOR JOISTS.	**THE CONTRACTOR IS RESPONSIBLE FOR CHECKING AND VERIFYING ALL DIMENSIONS, ANY DISCREPANCY MUST BE REPORTED TO THE DESIGNER.** **DO NOT SCALE DRAWINGS.**

NOTE:

1 REFER TO DRAWINGS A8, A9 FOR GENERAL NOTES, TABLES SCHEDULES, CONSTRUCTION ASSEMBLY NOTES APPLICABLE TO ALL DRAWINGS AND LEGENDS APPLICABLE TO ALL DRAWINGS.

2 ALL CLOSET TO HAVE DROPPED HEADERS.

3 ALL VENTILATION FANS TO EXHAUST TO THE EXTERIOR. 6" SMOOTH DUCT, 7" FLEX DUCT.

4 BASEMENT: PROVIDE ONE LINE OF PASSAGE FROM UTILITY ROOM TO EXTERIOR WITH ALL DOORWAYS BEING A MINIMUM OF 32" IN WIDTH.

5 CERAMIC TILE TO BE INSTALLED AS PER 9.30.6 OF O.B.C, REQUIRES 5/8" UNDERLAY

6 FIRE PROTECTION FOR GAS AND ELECTRIC RANGES AS PER 9.10.21 OF O.B.C.

7 BATHROOMS: PROVIDE WATERPROOF WALL FINISH AS PER 9.29.2 OF O.B.C.

8 PROVIDE STUD WALL REINFORCING IN MAIN BATHROOM FOR FUTURE GRAB BARS, AS PER 9.5.2.3. SEE DWG D1

9 TOILET PAPER DISPENSER HEIGHT 660 AFF. TOWEL BAR HEIGHT 762 TO 1220 AFF.

10 ATTIC HATCH SHALL BE LOCATED SO AS TO PROVIDE UNOBSTRUCTED ACCES TO ATTIC SPACE

11 PROVIDE WARM AIR SUPPLY GRILLE IN W.I.C. WHEN ADJACENT TO UNHEATED SPACE, EXTERIOR AIR, OR EXTERIOR SOIL

12 SMOKE ALARMS LOCATION AND POWER SUPPLY IN DWELLING UNITS WILL COMPLY WITH 9.10.19.3 AND 9.10.19.4. (1).

13 INSTALLATION HEIGHT OF CARBON MONOXIDE DETECTORS WILL COMPLY WITH 9.33.4.2.

14 THE HEIGHT OF HANDRAILS ON STAIRS AND RAMPS SHALL BE NOT LESS THAN 865 AND NOT MORE THAN 965, AS PER 9.8.7.4. (2).

No.	REVISION	DATE
3	STRUCTURAL REVIEW	MAR.23.20
2	DESIGN REVIEW	OCT.15.19
1	STRUCTURAL REVIEW	AUG.22.19

CLARIDGE HOMES

Model Title:
TAYLOR 2019
FLOOR AREA: 1452 SQ.FT = 134.91 SQ.M
BSMT: 0 SQ.FT = 0 SQ.M
OTB: 6 SQ.FT = 0.52 SQ.M

Project:
PROJECT NAME
BLOCK # UNIT #

Title:
THIRD FLOOR PLAN
STREET END

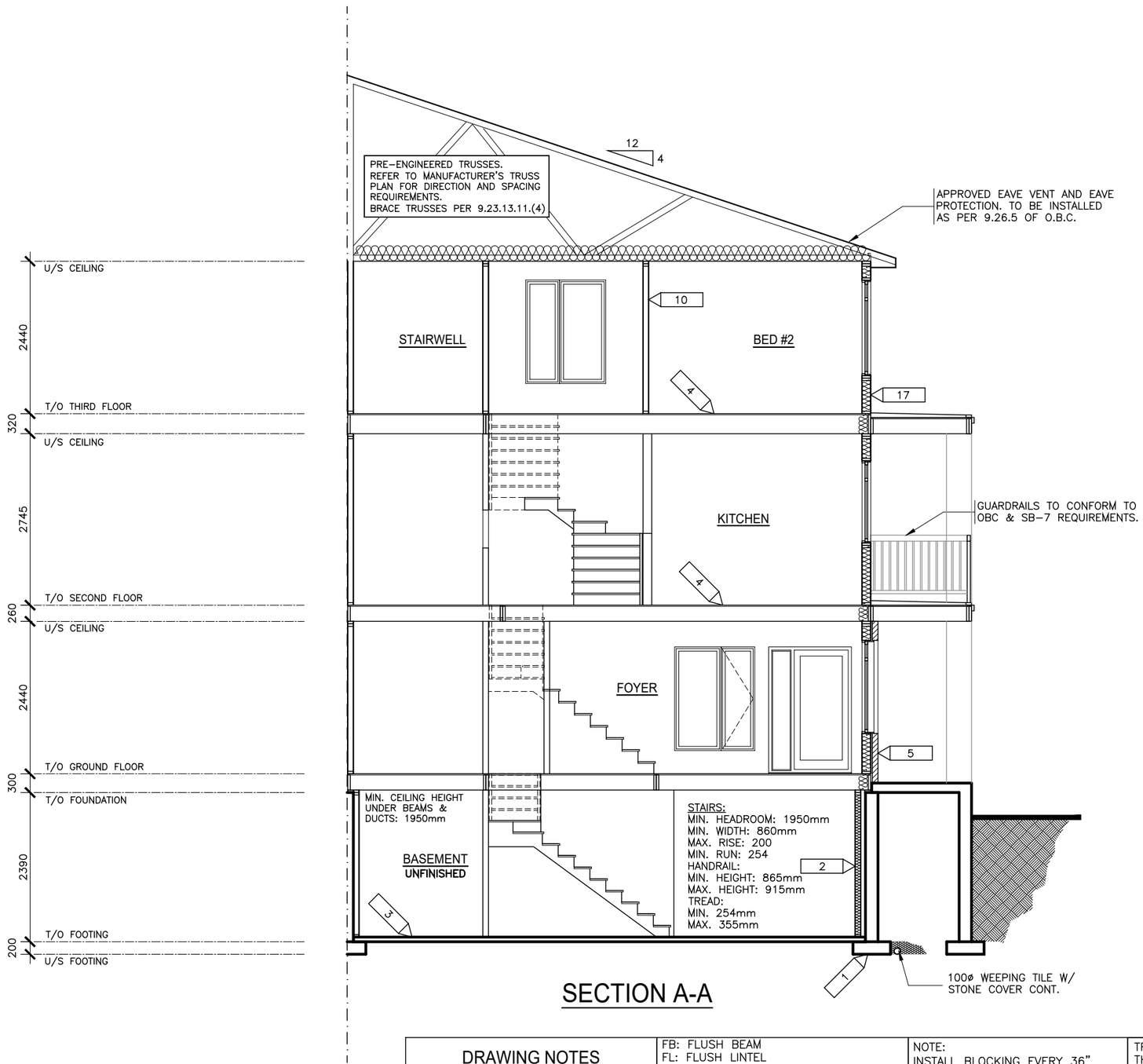
AS–BUILT RELEASE
No. X DATE

BROCHURE DATE
XX

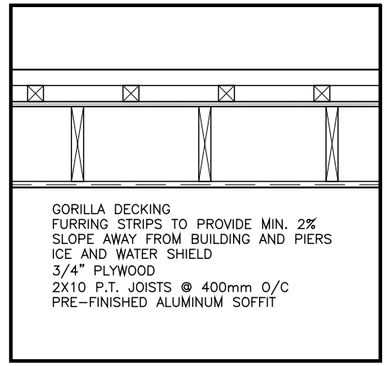
Scale: 1:75

Drawing No.
A-4

Drawn by: SO



SECTION A-A



BALCONY DETAIL

N.T.S.

DRAWING NOTES

REFER TO ELECTRICAL PLANS FOR BATHROOM VENTS, SMOKE ALARMS, AND CARBON MONOXIDE DETECTORS.

FB: FLUSH BEAM
FL: FLUSH LINTEL
L1: 2-38 X 235 (TYP. UNLESS NOTED)
L2: 3-38 X 235
L3: 2-1 3/4" X 9 1/2" LVL
LVL SIZE: 1.75" X 9.5" (1.8E) UNLESS NOTED. SEE JOIST LAYOUT

NOTE:
INSTALL BLOCKING EVERY 36" UNDER PARTITIONS THAT RUN PARALLEL TO THE FLOOR JOISTS.

TYPICAL DETAILS:
SEE PAGE D-1,2

TRANSFER ALL BEARING POINTS ALL THE WAY TO FOUNDATION OR TO A BEAM OR POST BELOW, PROVIDE FULL BEARING AT SUB-FLOOR.

HARDWOOD FLOOR TO RUN PERPENDICULAR TO FLOOR JOISTS.

THE CONTRACTOR IS RESPONSIBLE FOR CHECKING AND VERIFYING ALL DIMENSIONS, ANY DISCREPANCY MUST BE REPORTED TO THE DESIGNER.

DO NOT SCALE DRAWINGS.

NOTE:

1 REFER TO DRAWINGS A8, A9 FOR GENERAL NOTES, TABLES SCHEDULES, CONSTRUCTION ASSEMBLY NOTES APPLICABLE TO ALL DRAWINGS AND LEGENDS APPLICABLE TO ALL DRAWINGS.

2 ALL CLOSET TO HAVE DROPPED HEADERS.

3 ALL VENTILATION FANS TO EXHAUST TO THE EXTERIOR. 6" SMOOTH DUCT, 7" FLEX DUCT.

4 BASEMENT: PROVIDE ONE LINE OF PASSAGE FROM UTILITY ROOM TO EXTERIOR WITH ALL DOORWAYS BEING A MINIMUM OF 32" IN WIDTH.

5 CERAMIC TILE TO BE INSTALLED AS PER 9.30.6 OF O.B.C, REQUIRES 5/8" UNDERLAY

6 FIRE PROTECTION FOR GAS AND ELECTRIC RANGES AS PER 9.10.21 OF O.B.C.

7 BATHROOMS: PROVIDE WATERPROOF WALL FINISH AS PER 9.29.2 OF O.B.C.

8 PROVIDE STUD WALL REINFORCING IN MAIN BATHROOM FOR FUTURE GRAB BARS, AS PER 9.5.2.3. SEE DWG D1

9 TOILET PAPER DISPENSER HEIGHT 660 AFF. TOWEL BAR HEIGHT 762 TO 1220 AFF.

10 ATTIC HATCH SHALL BE LOCATED SO AS TO PROVIDE UNOBSTRUCTED ACCES TO ATTIC SPACE

11 PROVIDE WARM AIR SUPPLY GRILLE IN W.I.C. WHEN ADJACENT TO UNHEATED SPACE, EXTERIOR AIR, OR EXTERIOR SOIL

12 SMOKE ALARMS LOCATION AND POWER SUPPLY IN DWELLING UNITS WILL COMPLY WITH 9.10.19.3 AND 9.10.19.4. (1).

13 INSTALLATION HEIGHT OF CARBON MONOXIDE DETECTORS WILL COMPLY WITH 9.33.4.2.

14 THE HEIGHT OF HANDRAILS ON STAIRS AND RAMPS SHALL BE NOT LESS THAN 865 AND NOT MORE THAN 965, AS PER 9.8.7.4. (2).

No.	REVISION	DATE
3	STRUCTURAL REVIEW	MAR.23.20
2	DESIGN REVIEW	OCT.15.19
1	STRUCTURAL REVIEW	AUG.22.19

CLARIDGE HOMES

Model Title:
TAYLOR 2019
FLOOR AREA: 1452 SQ.FT = 134.91 SQ.M
BSMT: 0 SQ.FT = 0 SQ.M
OTB: 6 SQ.FT = 0.52 SQ.M

Project:
PROJECT NAME
BLOCK # UNIT #

Title:
CROSS SECTION A-A

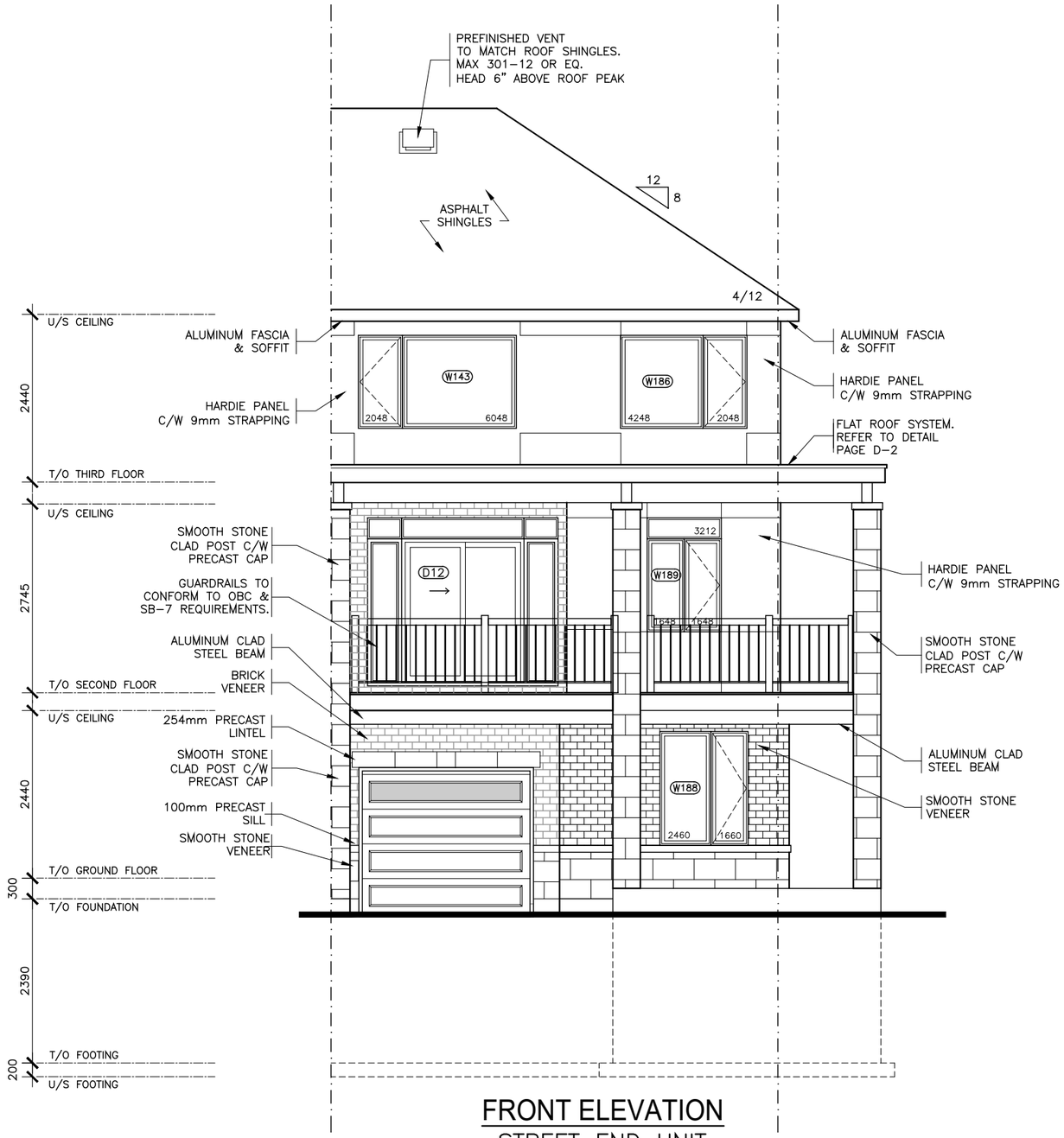
AS-BUILT RELEASE No. X DATE

BROCHURE DATE XX

Scale: 1:75

Drawn by: SO

Drawing No. A-5



FRONT ELEVATION
STREET END UNIT

NOTE:

1 REFER TO DRAWINGS A8, A9 FOR GENERAL NOTES, TABLES SCHEDULES, CONSTRUCTION ASSEMBLY NOTES APPLICABLE TO ALL DRAWINGS AND LEGENDS APPLICABLE TO ALL DRAWINGS.

2 ALL CLOSET TO HAVE DROPPED HEADERS.

3 ALL VENTILATION FANS TO EXHAUST TO THE EXTERIOR. 6" SMOOTH DUCT, 7" FLEX DUCT.

4 BASEMENT: PROVIDE ONE LINE OF PASSAGE FROM UTILITY ROOM TO EXTERIOR WITH ALL DOORWAYS BEING A MINIMUM OF 32" IN WIDTH.

5 CERAMIC TILE TO BE INSTALLED AS PER 9.30.6 OF O.B.C, REQUIRES 5/8" UNDERLAY

6 FIRE PROTECTION FOR GAS AND ELECTRIC RANGES AS PER 9.10.21 OF O.B.C.

7 BATHROOMS: PROVIDE WATERPROOF WALL FINISH AS PER 9.29.2 OF O.B.C.

8 PROVIDE STUD WALL REINFORCING IN MAIN BATHROOM FOR FUTURE GRAB BARS, AS PER 9.5.2.3. SEE DWG D1

9 TOILET PAPER DISPENSER HEIGHT 660 AFF. TOWEL BAR HEIGHT 762 TO 1220 AFF.

10 ATTIC HATCH SHALL BE LOCATED SO AS TO PROVIDE UNOBSTRUCTED ACCES TO ATTIC SPACE

11 PROVIDE WARM AIR SUPPLY GRILLE IN W.I.C. WHEN ADJACENT TO UNHEATED SPACE, EXTERIOR AIR, OR EXTERIOR SOIL

12 SMOKE ALARMS LOCATION AND POWER SUPPLY IN DWELLING UNITS WILL COMPLY WITH 9.10.19.3 AND 9.10.19.4. (1).

13 INSTALLATION HEIGHT OF CARBON MONOXIDE DETECTORS WILL COMPLY WITH 9.33.4.2.

14 THE HEIGHT OF HANDRAILS ON STAIRS AND RAMPS SHALL BE NOT LESS THAN 865 AND NOT MORE THAN 965, AS PER 9.8.7.4. (2).

No.	REVISION	DATE
3	STRUCTURAL REVIEW	MAR.23.20
2	DESIGN REVIEW	OCT.15.19
1	STRUCTURAL REVIEW	AUG.22.19

CLARIDGE HOMES

Model Title:
TAYLOR 2019
FLOOR AREA: 1452 SQ.FT = 134.91 SQ.M
BSMT: 0 SQ.FT = 0 SQ.M
OTB: 6 SQ.FT = 0.52 SQ.M

Project:
PROJECT NAME
BLOCK # UNIT #

Title:
FRONT ELEVATION
STREET END

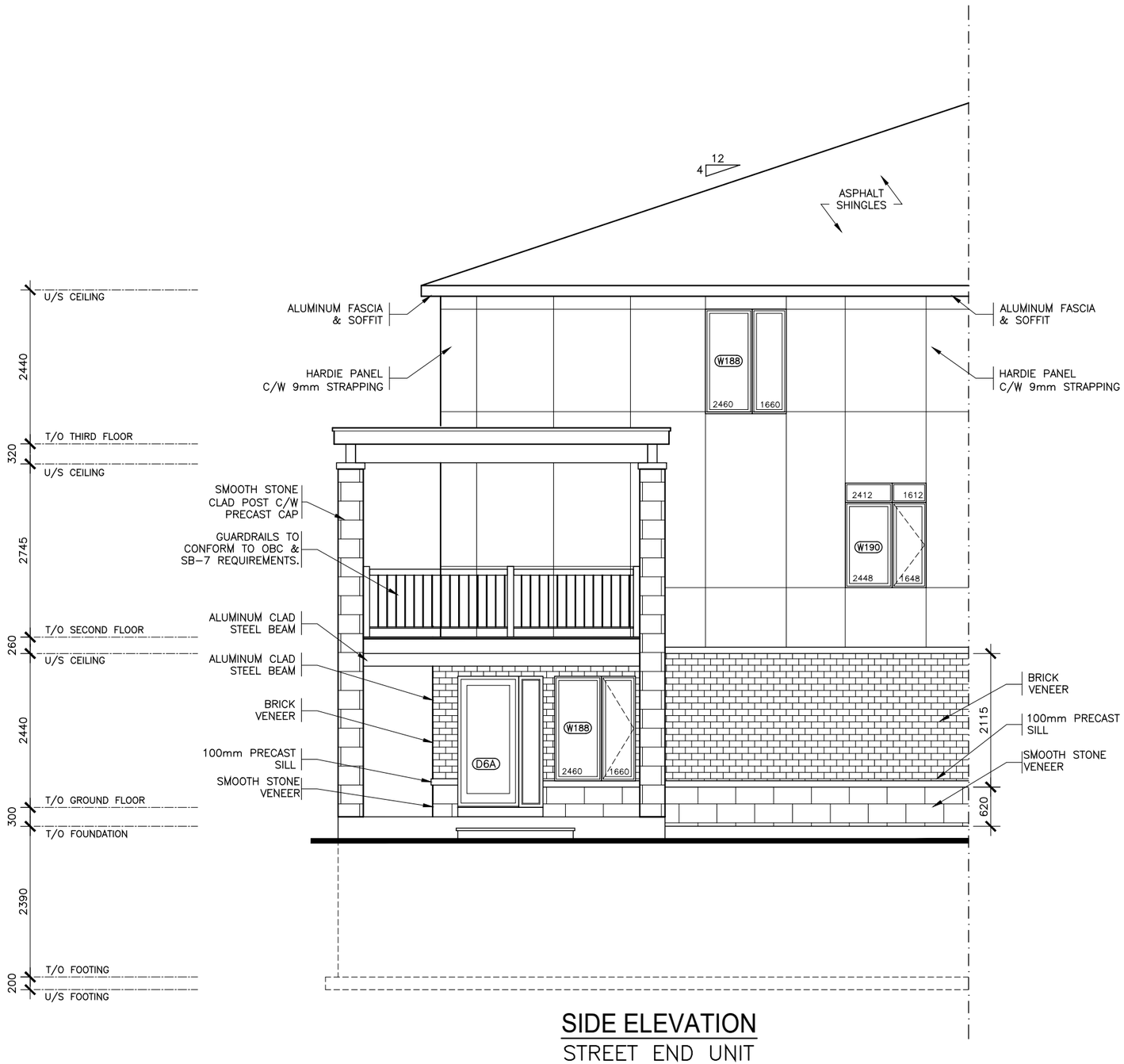
AS-BUILT RELEASE
No. X DATE

BROCHURE DATE
XX

Scale: 1:75

Drawing No.
A-6

Drawn by:
SO



SIDE ELEVATION
STREET END UNIT

NOTE:

1 REFER TO DRAWINGS A8, A9 FOR GENERAL NOTES, TABLES SCHEDULES, CONSTRUCTION ASSEMBLY NOTES APPLICABLE TO ALL DRAWINGS AND LEGENDS APPLICABLE TO ALL DRAWINGS.

2 ALL CLOSET TO HAVE DROPPED HEADERS.

3 ALL VENTILATION FANS TO EXHAUST TO THE EXTERIOR. 6" SMOOTH DUCT, 7" FLEX DUCT.

4 BASEMENT: PROVIDE ONE LINE OF PASSAGE FROM UTILITY ROOM TO EXTERIOR WITH ALL DOORWAYS BEING A MINIMUM OF 32" IN WIDTH.

5 CERAMIC TILE TO BE INSTALLED AS PER 9.30.6 OF O.B.C, REQUIRES 5/8" UNDERLAY

6 FIRE PROTECTION FOR GAS AND ELECTRIC RANGES AS PER 9.10.21 OF O.B.C.

7 BATHROOMS: PROVIDE WATERPROOF WALL FINISH AS PER 9.29.2 OF O.B.C.

8 PROVIDE STUD WALL REINFORCING IN MAIN BATHROOM FOR FUTURE GRAB BARS, AS PER 9.5.2.3. SEE DWG D1

9 TOILET PAPER DISPENSER HEIGHT 660 AFF. TOWEL BAR HEIGHT 762 TO 1220 AFF.

10 ATTIC HATCH SHALL BE LOCATED SO AS TO PROVIDE UNOBSTRUCTED ACCES TO ATTIC SPACE

11 PROVIDE WARM AIR SUPPLY GRILLE IN W.I.C. WHEN ADJACENT TO UNHEATED SPACE, EXTERIOR AIR, OR EXTERIOR SOIL

12 SMOKE ALARMS LOCATION AND POWER SUPPLY IN DWELLING UNITS WILL COMPLY WITH 9.10.19.3 AND 9.10.19.4. (1).

13 INSTALLATION HEIGHT OF CARBON MONOXIDE DETECTORS WILL COMPLY WITH 9.33.4.2.

14 THE HEIGHT OF HANDRAILS ON STAIRS AND RAMPS SHALL BE NOT LESS THAN 865 AND NOT MORE THAN 965, AS PER 9.8.7.4. (2).

No.	REVISION	DATE
3	STRUCTURAL REVIEW	MAR.23.20
2	DESIGN REVIEW	OCT.15.19
1	STRUCTURAL REVIEW	AUG.22.19

CLARIDGE HOMES

Model Title:
TAYLOR 2019
FLOOR AREA: 1452 SQ.FT = 134.91 SQ.M
BSMT: 0 SQ.FT = 0 SQ.M
OTB: 6 SQ.FT = 0.52 SQ.M

Project:
PROJECT NAME
BLOCK # UNIT #

Title:
SIDE ELEVATION
STREET END

AS-BUILT RELEASE No. X DATE

BROCHURE DATE XX

Scale: 1:75

Drawing No. A-7

Drawn by: SO