



REPORT
Project: 135856-6.04.01

ENVIRONMENTAL NOISE IMPACT ASSESSMENT 4624 SPRATT ROAD - BLOCK 177 RIVERSIDE SOUTH COMMUNITY



Prepared for Claridge Homes
by IBI GROUP

December 2021

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1 Introduction

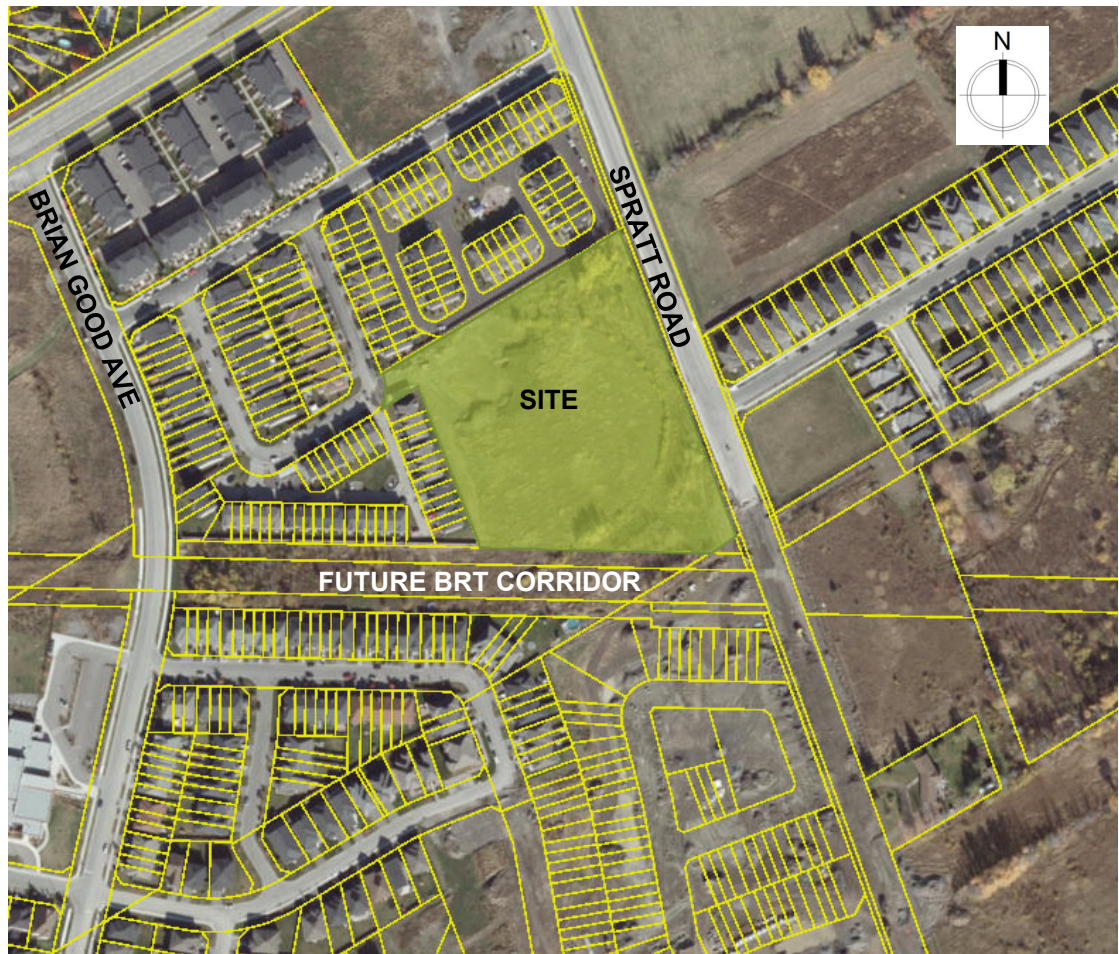
IBI was retained by Claridge Homes to conduct an Environmental Noise Impact Assessment in support of a Site Plan Control application for a mid-density residential development located at 4624 Spratt in the Riverside South Community of Ottawa, Ontario.

The proposed development consists of 120 residential dwelling units arranged in ten, three-storey blocks and is generally bound by Spratt Road to the east, the future Bus Rapid Transit (BRT) corridor to the south, as well as, low-rise residential to the north and west.

This study evaluated the transportation-related noise levels within the subject development and recommended warning clauses or noise abatement measures for the Purchase and Sale of each dwelling unit, as required. The analysis for this study was conducted in accordance with the City of Ottawa 2016 Environmental Noise Control (ENC) Guidelines, as well as the Ministry of the Environment Publication NPC-300 (August 2013).

The site location and its 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 Spratt Road, as well as the future Bus Rapid Transit (BRT) corridor. All other roads within 100 metres of subject development are identified as local roads and therefore were not analysed as part of this study.

The subject property is located within the limits of the Airport Vicinity Development Zone (AVDZ) for the Ottawa International Airport, as shown on Schedule C14 of the 2021 Official Plan. As such, aircraft noise will be considered in this study.

There are no rail lines within 500 metres of the site, therefore no consideration has been given to the noise impacts from rail traffic, in accordance with the City of Ottawa ENC Guidelines.

2.2 Sound Level Limits for Road Traffic

Sound level criteria for road traffic, as described in the following sub-sections, was extracted 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:

- Bedroom or Sleeping quarters – 23:00 to 07:00 – 40 dBA Leq (8 hours)
- Living/Dining/Den 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.

As discussed previously, the proposed development consists of 3-storey residential blocks, referred to herein as Buildings 'A' to 'K'. For the purpose of assessing noise levels at the building face, receptor locations were reviewed at 7.5 metres above ground level under both daytime and nighttime conditions to determine sound levels for the most exposed third-storey windows.

As per NPC-300 C7.1.2.1 and C7.1.2.2, when the outdoor noise levels at the living room window are greater than 55 dBA and less than or equal to 65 dBA and/or greater than 50 dBA and less than or equal to 60 dBA at the bedroom window, then a warning clause specifying the use of forced air heating and a provision for central air conditioning is required. Should the outdoor noise levels exceed 65 dBA at the living room and/or exceed 60 dBA at the bedroom, then central air conditioning is mandatory, building components (walls, windows etc.) must be designed in compliance with the Ontario Building Code to achieve the indoor sound level criteria and a warning clause is required.

2.2.2 Outdoor Sound Level Criterion

As per Table 2.2a of the ENC Guidelines, the outdoor living area (OLA) sound level criteria for the daytime period between 07:00 and 23:00 hours is 55 dBA Leq (16). Sound levels for the OLA are typically calculated 3 metres from the building face at the centre of the building 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 proponent may, with City approval, either provide a warning clause to prospective purchasers/tenants 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, then a warning clause is also required.

3 Roadway Noise

3.1 Traffic Volume Data

Based on the configuration of the collector and higher-order transportation network with respect to the proposed development, it is assumed that the major sources of transportation noise impacting the site will originate externally from Spratt Road to the west and the future BRT corridor to the south.

Borbridge Avenue is well separated from the subject site by at least 150 metres and screened existing street townhome units, therefore no consideration of this collector road is required in the noise analysis for this study.

Spratt Road

The majority of Spratt Road within the site's frontage presently exists as a two-lane, undivided major collector (2-UMCU) with the exception of the southernmost section which has retained its rural cross-section and 80 km/h speed limit. It is expected that this rural segment will be urbanized in accordance with the Spratt Road Roadway Modification Application (RMA-2019-TPD-034) by mid-2022 and well in advance of full build-out/occupancy of the subject development. A 26-metre right-of-way is being protected for the urbanization of Spratt Road adjacent to the site.

Bus Rapid Transit (BRT) Corridor

Right-of-way is being protected for a future at-grade BRT corridor that will extend from Barrhaven Centre to the Riverside South Community Core. A portion of this protected corridor is abutting the subject development to the south and is approximately 40 metres in width.

Traffic volume parameters for Spratt Road were extracted from Appendix B: Table B1 of the ENC Guidelines and are conservatively based on the capacity of this roadway type, while assumptions for the BRT line were determined through correspondence with City of Ottawa technical staff (see **Appendix A**).

Table 3.1 below summarizes the traffic and road parameters used in this report. These parameters were extracted from Appendix B: Table B1 of the ENC Guidelines, and are conservatively based on roadway capacity.

TABLE 3.1: TRAFFIC AND ROAD DATA SUMMARY

| | SPRATT ROAD (2-UMCU) | BUS RAPID TRANSIT (BRT) |
|-------------------------------------|-------------------------|-------------------------|
| Annual Average Daily Traffic (AADT) | 12,000 | 600 buses |
| Posted Speed Limit (km/h) | 60 | 80 |
| % Medium Trucks | 7% | - |
| % Heavy Trucks | 5% | - |
| % Daytime Traffic | 92% | 74% |

3.2 Calculation Methods

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

Unattenuated daytime and nighttime noise levels at the building face were calculated to determine indoor sound levels, the results of which are presented in **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. The traffic noise for the BRT corridor was modelled

using a custom noise source to remain consistent with other studies conducted within the Riverside South Community.

Locations of the indoor and outdoor receptors used for the noise calculations were selected to determine the limits of the noise criteria. For example, where dwelling units are flanking a major collector road, the limit of the Type 'C' warning clause for indoor noise is determined by calculating the closest dwelling unit that falls below 55 dBA threshold. If the arrangement of the block mirrors a scenario which has already been modelled, then it is not necessary to repeat the calculations to determine the limits of the noise levels as STAMSON will produce the same overall result.

As indicated on **Noise Plan – Drawing No. 135856-N1**, a park will abut the future Bus Rapid Transit (BRT) right-of-way protection between Buildings 'G' and 'K' and receive direct exposure to noise generated from this dedicated transit facility once it is constructed. It is understood that this park is defined as an outdoor living area in the ENC Guidelines, as it contributes to the required amenity space for this subject development and therefore was evaluated as part of this study. The results of the analysis for the outdoor amenity area are presented in **Table 3.3** below.

TABLE 3.2: UNATTENUATED NOISE LEVELS AT BUILDING FACE

| LOCATION | | ROADWAY | SOURCE - RECEIVER DISTANCE (m) | SEGMENT ANGLES | | INDOOR NOISE LEVELS (dBA) | |
|------------|------------------------|---------|--------------------------------|----------------|-------|---------------------------|-----------|
| LOT/BLOCK | DESCRIPTION | | | LEFT | RIGHT | DAYTIME | NIGHTTIME |
| Building B | units 10, 11 & 12 | Spratt | 65.5 | -10 | 20 | 51.74 | 44.14 |
| Building C | units 1, 2 & 3 | Spratt | 32.0 | -80 | -10 | 59.11 | 51.51 |
| Building C | units 7, 8 & 9 | Spratt | 28.0 | -10 | 80 | 61.29 | 53.69 |
| Building C | units 10, 11 & 12 | Spratt | 19.0 | -90 | 90 | 66.37 | 57.77 |
| Building D | units 1, 2 & 3 | Spratt | 32.0 | -60 | 0 | 58.97 | 51.37 |
| Building D | units 4 to 6, 10 to 12 | Spratt | 23.0 | -90 | 90 | 65.14 | 57.54 |
| Building E | units 10, 11 & 12 | Spratt | 74.5 | -10 | 5 | 54.34 | 49.80 |
| Building E | units 10, 11 & 12 | Spratt | 74.5 | 35 | 85 | | |
| Building E | units 10, 11 & 12 | BRT | 108.0 | -75 | -30 | | |
| Building F | units 10, 11 & 12 | BRT | 83.0 | -45 | -20 | 50.97 | 49.44 |
| Building G | units 1, 2 & 3 | BRT | 33.5 | -20 | 90 | 61.08 | 59.54 |
| Building G | units 4, 5 & 6 | BRT | 42.5 | -70 | -20 | 56.24 | 54.71 |
| Building G | units 7, 8 & 9 | BRT | 25.0 | -90 | 90 | 64.85 | 63.32 |
| Building G | units 10, 11 & 12 | BRT | 30.0 | -90 | 70 | 63.43 | 61.90 |
| Building H | units 1, 2 & 3 | BRT | 77.0 | -20 | 20 | 52.27 | 50.74 |
| Building H | units 4, 5 & 6 | Spratt | 81.0 | 5 | 70 | 55.32 | 51.17 |
| Building H | units 4, 5 & 6 | BRT | 84.0 | -90 | -35 | | |
| Building H | units 7, 8 & 9 | BRT | 66.0 | -30 | 30 | 54.95 | 53.42 |
| Building J | units 1, 2 & 3 | Spratt | 29.5 | -65 | 0 | 59.76 | 52.16 |
| Building J | units 7, 8 & 9 | Spratt | 29.5 | 0 | 90 | 60.53 | 52.93 |
| Building K | units 1, 2 & 3 | BRT | 37.0 | -20 | 85 | 60.39 | 58.86 |
| Building K | units 4, 5 & 6 | Spratt | 67.5 | -40 | 90 | 59.86 | 56.10 |
| Building K | units 4, 5 & 6 | BRT | 46.0 | -90 | -20 | | |
| Building K | units 10, 11 & 12 | BRT | 33.5 | -90 | 75 | 62.83 | 61.30 |

As indicated in **Table 3.2** above, there are numerous locations which exceed the 55 dBA daytime or 50 dBA nighttime noise criteria at the building face. Noise attenuation measures and warning clauses will therefore be considered in subsequent sections of the report.

TABLE 3.3: UNATTENUATED NOISE LEVELS AT OLA

| LOCATION | ROADWAY | SOURCE - RECEIVER DISTANCE (m) | SEGMENT ANGLES | | OUTDOOR NOISE LEVELS (dBA) |
|---------------------------------|---------|--------------------------------|----------------|-------|----------------------------|
| | | | LEFT | RIGHT | |
| Park (Shared Amenity Area) – P1 | BRT | 33.5 | -75 | 80 | 61.85 |

As presented in **Table 3.3** above, an analysis of the shared amenity area at the P1 receptor location identified on **Noise Plan Drawing No. 135856-N1** indicates that this location will experience noise levels slightly above the 55 dBA threshold. The need for noise attenuation measures will be therefore be considered in subsequent sections of this report.

4 Abatement Measures

4.1 Indoor Sound Levels

As indicated previously in noise analysis conducted at the building face and summarized in Section 3.2.1, dwelling units directly facing or flanking Spratt Road or the future BRT corridor will have daytime noise levels exceeding 65 dBA under daytime conditions or 60 dBA under nighttime conditions. As such, central air conditioning, a review of the building components and a Type 'D' warning clause are required for these units.

Select dwelling units Buildings 'C', 'D', 'G', 'H', 'J' and 'K' with partial screening of traffic noise from adjacent buildings will also require attenuation measures. For all of these 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.

The development of the southeastern portion of the subject site in the longer-term will provide additional screening of traffic noise for south-facing units in Building 'J', east-facing units in Building 'K', as well as additional units in Building 'H'. As a conservative measure, no screening from the potential build-out of this parcel was considered in the noise modelling conducted for this study.

4.2 Building Components

Based on the results of the indoor noise assessment presented previously in **Table 3.2**, an analysis of the required building components for dwelling units exceeding noise levels at the building face of 65 dBA during the daytime or 60 dBA at nighttime, 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. Architectural plans for both 'Small Block' and 'Large Block' Spratt Zen buildings were obtained for the STC evaluation and reviewed as part of this study. The den/dining area 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. The dimension of 'Bedroom 2' were used to calculate the STC ratings for both the 'Small Block' and 'Large Block' configurations, since these bedrooms will receive the maximum exposure to transportation-related noise sources.

The STC calculations were carried out to determine the required STC rating for exterior windows and glazed doors for building facades with the highest exposure to traffic noise, including the east façades of Building 'C', 'D' and 'J', as well as the southern façades of Buildings 'G' and 'K'. Exterior walls were assumed to have an STC rating of 40, which is a conservative value for a brick wall designed to accommodate Ottawa winters. With the exterior walls in place, the amount of sound energy absorbed by the windows was 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.

Sample architectural plans and STC calculations for dwelling units with direct exposure to either the future BRT corridor or Spratt Road are included in **Appendix C** and **Appendix D**, respectively.

TABLE 4.1: REQUIRED STC RATINGS

| DWELLING UNIT | LEVEL | ROOM TYPE | REQUIRED STC RATING |
|---|-----------------------|-------------|------------------------|
| | | | WINDOWS & GLAZED DOORS |
| Buildings 'C', 'D' & 'J' East Façade – 'Large Block' Units Facing Spratt Road | 3 rd Floor | Living Room | 35 |
| | | Bedroom | 35 |
| Buildings 'G' & 'K' South Façade – 'Small Block' Units Facing Future BRT Corridor | 3 rd Floor | Living Room | 29 |
| | | Bedroom | 35 |

As indicated in **Table 4.1** above, the required STC rating for windows and glazed doors with the highest exposure to traffic noise was calculated to be 35 under both daytime and nighttime conditions.

4.3 Outdoor Living Area (OLA)

With a 2.2-metre high noise barrier in place, as shown in **Noise Plan – Drawing No. 135856 – N1**, noise levels at Location 'P1' are reduced below 60 dBA but remain above 55 dBA.

The results of this analysis are summarized in **Table 4.2** below.

TABLE 4.2: ATTENUATED NOISE LEVELS AT OLA

| LOCATION | ROADWAY | BARRIER - RECEIVER DISTANCE (m) | BARRIER ANGLES | | OUTDOOR NOISE LEVELS (dBA) |
|---------------------------------|---------|---------------------------------|----------------|-------|----------------------------|
| | | | LEFT | RIGHT | |
| Park (Shared Amenity Area) – P1 | BRT | 13.5 | -45 | 30 | 59.49 |

The use of noise barriers in excess of 4 metres in height would have been required to reduce outdoor noise receptors within closest proximity to the BRT corridor, Spratt Road or Borbridge Avenue to below 55 dBA, which is not recommended in the ENC Guidelines. Due to the shared nature of the amenity space, a warning clause Type 'B' is required on all dwelling units within the site.

4.4 Aircraft Sound Levels

As stated in Section 2.1, the subject lands are entirely located within the Airport Vicinity Development Zone (AVDZ). The site is, however, outside of the 25 NEF/NEP contour line so the building components and ventilation requirements of Part 6: Prescribed Measures for Aircraft Noise of the ENC Guidelines do not apply. A warning clause is required for the residential units inside the AVDZ, which in this case applies to all dwelling units proposed within the 4624 Spratt Road development.

Warning clause for aircraft noise is as follows:

“Purchasers/tenants are advised that due to the proximity of the Ottawa Macdonald-Cartier International Airport, noise from the airport and individual aircraft may at times interfere with outdoor or indoor activities”.

5 Summary of Attenuation Measures

5.1 Warning Clauses

A clause regarding noise must appear on the Agreement of Purchase and Sale for the impacted units, as indicated on **Noise Plan – Drawing No. 135856-N1** and listed below:

Type ‘B’ Park (Shared Amenity Space) – All Units

Type ‘C’ Building ‘C’ – Units 1 to 3, 7 to 9

Building ‘D’ – Units 1 to 3, 7 to 9

Building ‘G’ – Units 1 to 6

Building ‘H’ – All Units

Building ‘J’ – Units 1 to 3, 7 to 9

Building ‘K’ – Units 1 to 6

Type ‘D’ Building ‘C’ – Units 4 to 6, 10 to 12

Building ‘D’ – Units 4 to 6, 10 to 12

Building ‘G’ – Units 7 to 12

Building ‘J’ – Units 4 to 6, 10 to 12

Building ‘K’ – Units 7 to 12

Aircraft Warning Applicable to all dwelling units within the 4624 Spratt Road development

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

| | |
|----------|--|
| Type ‘B’ | “Purchasers/tenants are advised that despite the inclusion of noise control features in the development and within the building units, sound levels due to increasing Spratt Road, and future BRT traffic may occasionally interfere with some activities of the dwelling occupants as the sound levels exceed the sound level limits of the Municipality and the Ministry of the Environment.” |
| 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.” |

The aircraft warning clause was provided previously in Section 4.3.

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, as identified in Section 5.1, shall have mandatory central air conditioning and acoustical review of building components.

5.3 Noise Barrier

A noise barrier constructed to current City of Ottawa and Ministry of Environment (MOE) standards is required at the location shown on the **Noise Plan Drawing No. 135856-N1**. This barrier shall be located at least 0.3 metres inside the property boundary for the proposed development, as specified in the ENC Guidelines.

6 Conclusion

This Environmental Noise Impact Assessment evaluated the impact of roadway noise on the proposed mid-density residential development, located within the Riverside South Community at 4624 Spratt, Ottawa. 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 identified on **Noise Plan – Drawing No. 135856-N1**. For these dwelling units, appropriate warning clauses and associated noise abatement measures must be provided on the Agreement of Purchase and Sale for each unit. A 2.2-metre high noise barrier is required to between the proposed park and the future BRT corridor which abuts this shared outdoor amenity area to the south. Since the subject site is located entirely within the Airport Vicinity Development Zone (AVDZ), a warning clause will be required in the Agreement of Purchase and Sale for each dwelling unit as well.

7 Professional Authorization

Prepared by:



Ben Pascolo-Neveu, P.Eng.



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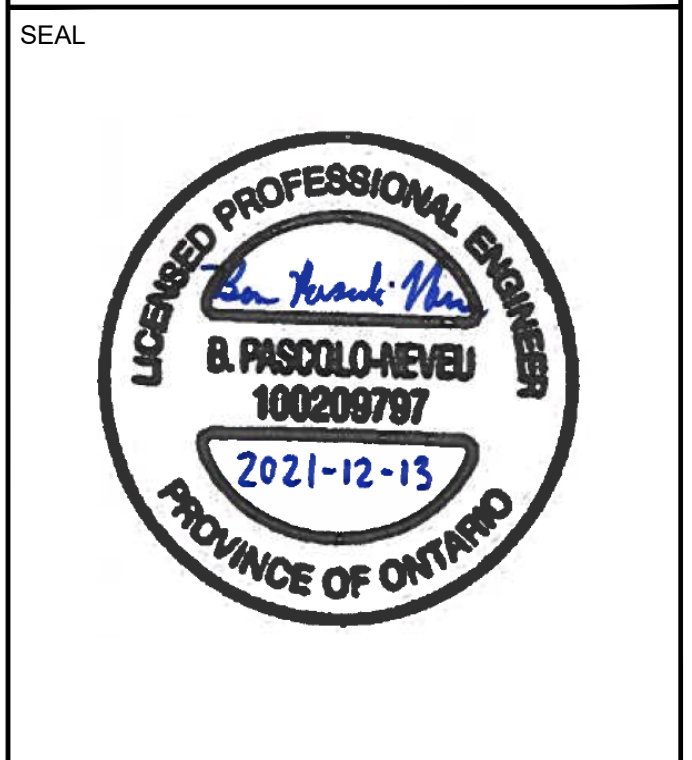
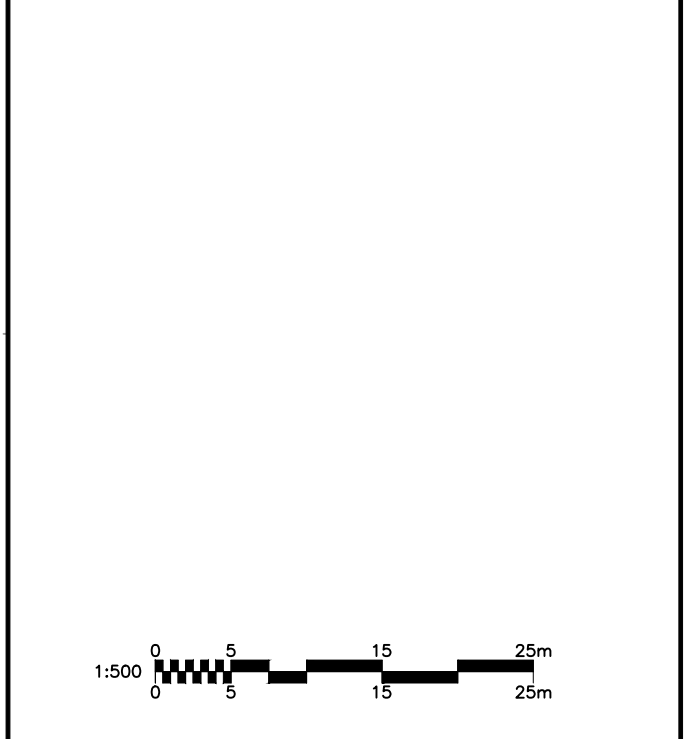
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ISSUES

| No. | DESCRIPTION | DATE |
|-----|-------------|------------|
| 1 | XX | 2021-12-xx |



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PROJECT
ZENS - 4624 SPRATT

PROJECT NO:
 135856
 DRAWN BY:
 D.D.S.G.
 PROJECT MGR:
 R.M.

CHECKED BY:
 B. P.-N.
 APPROVED BY:

SHEET TITLE
NOISE PLAN

SHEET NUMBER
N-1

ISSUE
1

- LEGEND:
- C D NOISE RECEIVER LOCATION
 - C D WARNING CLAUSE
 - LOCATION OF INDOOR NOISE RECEPTOR
 - ▲ LOCATION OF OUTDOOR NOISE RECEPTOR
 - NOISE FENCE
- PROPERTY LINE
-
- NOISE BARRIER TO BE LOCATED ON PRIVATE PROPERTY BARRIER TO HAVE A MINIMUM SURFACE DENSITY OF 20kg/m² AND SHALL HAVE NO HOLES OR GAPS
 3:1 TERRACING TO EXISTING GROUND

CITY FILE No. D07-xx-xx-xxxx
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Appendix A

BRT Study Parameters

Lance Erion

From: Yousfani, Asad <Asad.Yousfani@ottawa.ca>
Sent: Monday, April 04, 2016 10:08 AM
To: Lance Erion
Cc: Kaufman, Cathlyn; Jim Burghout; Terry Brule
Subject: FW: BRRT

Hi Lance,

I've received the following information from Frank for you to update the noise study.

Thanks,

Asad

From: McKinney, Frank
Sent: Monday, April 04, 2016 9:39 AM
To: Yousfani, Asad
Subject: FW: BRRT

Hi Asad, as requested by IBI at Friday's meeting:

As per p. 5 of Appendix F, the vehicle type, volume and speed assumptions were as follows:

"The ENCG accepts noise models based on the Ontario Road Noise Analysis Method for Environment and Transportation (ORNAMENT), including the computerized version, STAMSON (MOE 1996). These models have built-in sound power data for road vehicles; however, they do not specify values specifically for buses. Based on ENCG section 2.4.1, transitway buses should be classified as "medium trucks" for modeling purposes using STAMSON. However, the buses operating on the BRT are 60 foot articulating buses, with three axles and a weight over 18,000 kg. Based on the MOE "STAMSON Version 4.1 User's Guide", a vehicle with three or more axles and a weight greater than 12,000 kg should be considered as a "heavy truck" for modelling. Therefore, the proposed BRT buses were modelled as "heavy trucks". A summary of the model inputs is presented below in Table 3.

Table 3: Traffic Inputs for Surface Transportation Corridor Modelling

| | Dedicated BRT Sections of Project | Transit Street without Proposed BRT | Transit Street with Median BRT |
|-------------------------------------|--|--|---------------------------------------|
| AADT | 600 | 14000 | 14600 |
| Speed Limit | 80 km/h | 60 km/h | 60 km/h |
| Day / Night Split | 74% / 26% | 92% / 8% | 91% / 9% |
| % Medium / % Heavy of Total Traffic | 0% / 100% | 7% / 5% | 7% / 8% |

Frank

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Appendix B

STAMSON Noise Calculations

Noise Calculations - Indoor

Filename: bbul0t12.te Time Period: Day/Night 16/8 hours
 Description: building b units 10 to 12 indoor

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

```
-----
Car traffic volume   : 9715/845   veh/TimePeriod *
Medium truck volume  : 773/67    veh/TimePeriod *
Heavy truck volume   : 552/48    veh/TimePeriod *
Posted speed limit   : 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): 12000
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: spratt (day/night)

```
-----
Angle1  Angle2      : -10.00 deg  20.00 deg
Wood depth          : 0          (No woods.)
No of house rows    : 0 / 0
Surface             : 1          (Absorptive ground surface)
Receiver source distance : 65.50 / 65.50 m
Receiver height     : 7.50 / 7.50 m
Topography          : 1          (Flat/gentle slope; no barrier)
Reference angle     : 0.00
```



Results segment # 1: spratt (day)

Source height = 1.50 m

ROAD (0.00 + 51.74 + 0.00) = 51.74 dBA

| Angle1 | Angle2 | Alpha | RefLeq | P.Adj | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|--------|--------|-------|--------|-------|-------|-------|-------|-------|-------|--------|
| -10 | 20 | 0.48 | 69.03 | 0.00 | -9.48 | -7.81 | 0.00 | 0.00 | 0.00 | 51.74 |

Segment Leq : 51.74 dBA

Total Leq All Segments: 51.74 dBA



Results segment # 1: spratt (night)

Source height = 1.50 m

ROAD (0.00 + 44.14 + 0.00) = 44.14 dBA

| Angle1 | Angle2 | Alpha | RefLeq | P.Adj | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|--------|--------|-------|--------|-------|-------|-------|-------|-------|-------|--------|
| -10 | 20 | 0.48 | 61.43 | 0.00 | -9.48 | -7.81 | 0.00 | 0.00 | 0.00 | 44.14 |

Segment Leq : 44.14 dBA

Total Leq All Segments: 44.14 dBA



TOTAL Leq FROM ALL SOURCES (DAY): 51.74
(NIGHT): 44.14



Filename: bcult3.te Time Period: Day/Night 16/8 hours
 Description: building c units 1 to 3 indoor

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

```
-----
Car traffic volume   : 9715/845   veh/TimePeriod *
Medium truck volume  : 773/67    veh/TimePeriod *
Heavy truck volume   : 552/48    veh/TimePeriod *
Posted speed limit   : 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): 12000
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: spratt (day/night)

```
-----
Angle1  Angle2      : -80.00 deg  -10.00 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     : 7.50 / 7.50 m
Topography         : 1          (Flat/gentle slope; no barrier)
Reference angle     : 0.00
```



Results segment # 1: spratt (day)

Source height = 1.50 m

ROAD (0.00 + 59.11 + 0.00) = 59.11 dBA

| Angle1 | Angle2 | Alpha | RefLeq | P.Adj | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|--------|--------|-------|--------|-------|-------|-------|-------|-------|-------|--------|
| -80 | -10 | 0.48 | 69.03 | 0.00 | -4.87 | -5.04 | 0.00 | 0.00 | 0.00 | 59.11 |

Segment Leq : 59.11 dBA

Total Leq All Segments: 59.11 dBA



Results segment # 1: spratt (night)

Source height = 1.50 m

ROAD (0.00 + 51.51 + 0.00) = 51.51 dBA

| Angle1 | Angle2 | Alpha | RefLeq | P.Adj | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|--------|--------|-------|--------|-------|-------|-------|-------|-------|-------|--------|
| -80 | -10 | 0.48 | 61.43 | 0.00 | -4.87 | -5.04 | 0.00 | 0.00 | 0.00 | 51.51 |

Segment Leq : 51.51 dBA

Total Leq All Segments: 51.51 dBA



TOTAL Leq FROM ALL SOURCES (DAY): 59.11
(NIGHT): 51.51



Filename: bcu7t9.te Time Period: Day/Night 16/8 hours
 Description: building c units 7 to 9 indoor

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

```
-----
Car traffic volume : 9715/845   veh/TimePeriod *
Medium truck volume : 773/67   veh/TimePeriod *
Heavy truck volume : 552/48   veh/TimePeriod *
Posted speed limit : 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): 12000
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: spratt (day/night)

```
-----
Angle1  Angle2      : -10.00 deg  80.00 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 : 7.50 / 7.50 m
Topography     : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00
```



Results segment # 1: spratt (day)

Source height = 1.50 m

ROAD (0.00 + 61.29 + 0.00) = 61.29 dBA

| Angle1 | Angle2 | Alpha | RefLeq | P.Adj | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|--------|--------|-------|--------|-------|-------|-------|-------|-------|-------|--------|
| -10 | 80 | 0.48 | 69.03 | 0.00 | -4.01 | -3.73 | 0.00 | 0.00 | 0.00 | 61.29 |

Segment Leq : 61.29 dBA

Total Leq All Segments: 61.29 dBA



Results segment # 1: spratt (night)

Source height = 1.50 m

ROAD (0.00 + 53.69 + 0.00) = 53.69 dBA

| Angle1 | Angle2 | Alpha | RefLeq | P.Adj | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|--------|--------|-------|--------|-------|-------|-------|-------|-------|-------|--------|
| -10 | 80 | 0.48 | 61.43 | 0.00 | -4.01 | -3.73 | 0.00 | 0.00 | 0.00 | 53.69 |

Segment Leq : 53.69 dBA

Total Leq All Segments: 53.69 dBA



TOTAL Leq FROM ALL SOURCES (DAY): 61.29
(NIGHT): 53.69



Filename: bcu10t12.te Time Period: Day/Night 16/8 hours
 Description: building c units 10 to 12 indoor

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

```
-----
Car traffic volume   : 9715/845   veh/TimePeriod *
Medium truck volume  : 773/67    veh/TimePeriod *
Heavy truck volume   : 552/48    veh/TimePeriod *
Posted speed limit   : 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): 12000
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: spratt (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 : 19.00 / 19.00 m
Receiver height     : 7.50 / 7.50 m
Topography          : 1          (Flat/gentle slope; no barrier)
Reference angle     : 0.00
```



Results segment # 1: spratt (day)

Source height = 1.50 m

ROAD (0.00 + 66.37 + 0.00) = 66.37 dBA

| Angle1 | Angle2 | Alpha | RefLeq | P.Adj | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|--------|--------|-------|--------|-------|-------|-------|-------|-------|-------|--------|
| -90 | 90 | 0.48 | 69.03 | 0.00 | -1.52 | -1.14 | 0.00 | 0.00 | 0.00 | 66.37 |

Segment Leq : 66.37 dBA

Total Leq All Segments: 66.37 dBA



Results segment # 1: spratt (night)

Source height = 1.50 m

ROAD (0.00 + 58.77 + 0.00) = 58.77 dBA

| Angle1 | Angle2 | Alpha | RefLeq | P.Adj | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|--------|--------|-------|--------|-------|-------|-------|-------|-------|-------|--------|
| -90 | 90 | 0.48 | 61.43 | 0.00 | -1.52 | -1.14 | 0.00 | 0.00 | 0.00 | 58.77 |

Segment Leq : 58.77 dBA

Total Leq All Segments: 58.77 dBA



TOTAL Leq FROM ALL SOURCES (DAY): 66.37
(NIGHT): 58.77



Filename: bdult3.te Time Period: Day/Night 16/8 hours
 Description: buliding d units 1 to 3 indoor

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

```
-----
Car traffic volume   : 9715/845   veh/TimePeriod *
Medium truck volume : 773/67    veh/TimePeriod *
Heavy truck volume  : 552/48    veh/TimePeriod *
Posted speed limit  : 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): 12000
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: spratt (day/night)

```
-----
Angle1  Angle2      : -60.00 deg  0.00 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    : 7.50 / 7.50 m
Topography         : 1          (Flat/gentle slope; no barrier)
Reference angle    : 0.00
```



Results segment # 1: spratt (day)

Source height = 1.50 m

ROAD (0.00 + 58.97 + 0.00) = 58.97 dBA

| Angle1 | Angle2 | Alpha | RefLeq | P.Adj | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|--------|--------|-------|--------|-------|-------|-------|-------|-------|-------|--------|
| -60 | 0 | 0.48 | 69.03 | 0.00 | -4.87 | -5.19 | 0.00 | 0.00 | 0.00 | 58.97 |

Segment Leq : 58.97 dBA

Total Leq All Segments: 58.97 dBA



Results segment # 1: spratt (night)

Source height = 1.50 m

ROAD (0.00 + 51.37 + 0.00) = 51.37 dBA

| Angle1 | Angle2 | Alpha | RefLeq | P.Adj | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|--------|--------|-------|--------|-------|-------|-------|-------|-------|-------|--------|
| -60 | 0 | 0.48 | 61.43 | 0.00 | -4.87 | -5.19 | 0.00 | 0.00 | 0.00 | 51.37 |

Segment Leq : 51.37 dBA

Total Leq All Segments: 51.37 dBA



TOTAL Leq FROM ALL SOURCES (DAY): 58.97
(NIGHT): 51.37



Filename: bdu4t12.te Time Period: Day/Night 16/8 hours
 Description: building d units 4 to 12 indoor

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

```
-----
Car traffic volume   : 9715/845   veh/TimePeriod *
Medium truck volume  : 773/67    veh/TimePeriod *
Heavy truck volume   : 552/48    veh/TimePeriod *
Posted speed limit   : 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): 12000
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: spratt (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 : 23.00 / 23.00 m
Receiver height     : 7.50 / 7.50 m
Topography          : 1          (Flat/gentle slope; no barrier)
Reference angle     : 0.00
```



Results segment # 1: spratt (day)

Source height = 1.50 m

ROAD (0.00 + 65.14 + 0.00) = 65.14 dBA

| Angle1 | Angle2 | Alpha | RefLeq | P.Adj | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|--------|--------|-------|--------|-------|-------|-------|-------|-------|-------|--------|
| -90 | 90 | 0.48 | 69.03 | 0.00 | -2.75 | -1.14 | 0.00 | 0.00 | 0.00 | 65.14 |

Segment Leq : 65.14 dBA

Total Leq All Segments: 65.14 dBA



Results segment # 1: spratt (night)

Source height = 1.50 m

ROAD (0.00 + 57.54 + 0.00) = 57.54 dBA

| Angle1 | Angle2 | Alpha | RefLeq | P.Adj | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|--------|--------|-------|--------|-------|-------|-------|-------|-------|-------|--------|
| -90 | 90 | 0.48 | 61.43 | 0.00 | -2.75 | -1.14 | 0.00 | 0.00 | 0.00 | 57.54 |

Segment Leq : 57.54 dBA

Total Leq All Segments: 57.54 dBA



TOTAL Leq FROM ALL SOURCES (DAY): 65.14
(NIGHT): 57.54



Filename: beu4t6.te Time Period: Day/Night 16/8 hours
Description: building e units 10 to 12 indoor

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


Car traffic volume : 9715/845 veh/TimePeriod *
Medium truck volume : 773/67 veh/TimePeriod *
Heavy truck volume : 552/48 veh/TimePeriod *
Posted speed limit : 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): 12000
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: spratt (day/night)

Angle1 Angle2 : -10.00 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 : 7.50 / 7.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

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

Car traffic volume : 9715/845 veh/TimePeriod *
Medium truck volume : 773/67 veh/TimePeriod *
Heavy truck volume : 552/48 veh/TimePeriod *
Posted speed limit : 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): 12000
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: spratt (day/night)

Angle1 Angle2 : 35.00 deg 85.00 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 : 7.50 / 7.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

RF

Results segment # 1: spratt (day)

Source height = 1.50 m

ROAD (0.00 + 47.39 + 0.00) = 47.39 dBA

| Angle1 | Angle2 | Alpha | RefLeq | P.Adj | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|--------|--------|-------|--------|-------|--------|--------|-------|-------|-------|--------|
| -10 | 5 | 0.48 | 69.03 | 0.00 | -10.84 | -10.80 | 0.00 | 0.00 | 0.00 | 47.39 |

Segment Leq : 47.39 dBA

RF

Results segment # 2: spratt (day)

Source height = 1.50 m

ROAD (0.00 + 50.98 + 0.00) = 50.98 dBA

| Angle1 | Angle2 | Alpha | RefLeq | P.Adj | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|--------|--------|-------|--------|-------|--------|-------|-------|-------|-------|--------|
| 35 | 85 | 0.48 | 69.03 | 0.00 | -10.84 | -7.21 | 0.00 | 0.00 | 0.00 | 50.98 |

Segment Leq : 50.98 dBA

Total Leq All Segments: 52.56 dBA

RF

Results segment # 1: spratt (night)

Source height = 1.50 m

ROAD (0.00 + 39.79 + 0.00) = 39.79 dBA

| Angle1 | Angle2 | Alpha | RefLeq | P.Adj | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|--------|--------|-------|--------|-------|--------|--------|-------|-------|-------|--------|
| -10 | 5 | 0.48 | 61.43 | 0.00 | -10.84 | -10.80 | 0.00 | 0.00 | 0.00 | 39.79 |

Segment Leq : 39.79 dBA

RF

Results segment # 2: spratt (night)

Source height = 1.50 m

ROAD (0.00 + 43.38 + 0.00) = 43.38 dBA

| Angle1 | Angle2 | Alpha | RefLeq | P.Adj | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|--------|--------|-------|--------|-------|--------|-------|-------|-------|-------|--------|
| 35 | 85 | 0.48 | 61.43 | 0.00 | -10.84 | -7.21 | 0.00 | 0.00 | 0.00 | 43.38 |

Segment Leq : 43.38 dBA

Total Leq All Segments: 44.96 dBA

RF

RT/Custom data, segment # 1: BRT (day/night)

1 - Custom (87.0 dBA):
 Traffic volume : 444/156 veh/TimePeriod
 Speed : 80 km/h

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

Angle1 Angle2 : -75.00 deg -30.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 108.00 / 108.00 m
Receiver height : 7.50 / 7.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

■ ■

Results segment # 1: BRT (day)

Source height = 2.40 m

RT/Custom (0.00 + 49.60 + 0.00) = 49.60 dBA

| Angle1 | Angle2 | Alpha | RefLeq | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|--------|--------|-------|--------|--------|-------|-------|-------|-------|--------|
| -75 | -30 | 0.45 | 69.16 | -12.46 | -7.10 | 0.00 | 0.00 | 0.00 | 49.60 |

Segment Leq : 49.60 dBA

Total Leq All Segments: 49.60 dBA

■ ■

Results segment # 1: BRT (night)

Source height = 2.40 m

RT/Custom (0.00 + 48.07 + 0.00) = 48.07 dBA

| Angle1 | Angle2 | Alpha | RefLeq | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|--------|--------|-------|--------|--------|-------|-------|-------|-------|--------|
| -75 | -30 | 0.45 | 67.63 | -12.46 | -7.10 | 0.00 | 0.00 | 0.00 | 48.07 |

Segment Leq : 48.07 dBA

Total Leq All Segments: 48.07 dBA

■ ■

TOTAL Leq FROM ALL SOURCES (DAY): 54.34
(NIGHT): 49.80

■ ■

■ ■

Filename: bful0t12.te Time Period: Day/Night 16/8 hours
 Description: building f units 10 to 12 indoor

RT/Custom data, segment # 1: BRT (day/night)

 1 - Custom (87.0 dBA):
 Traffic volume : 444/156 veh/TimePeriod
 Speed : 80 km/h

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

 Angle1 Angle2 : -45.00 deg -20.00 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 : 7.50 / 7.50 m
 Topography : 1 (Flat/gentle slope; no barrier)
 Reference angle : 0.00

RT/Custom data, segment # 2: BRT (day/night)

 1 - Custom (87.0 dBA):
 Traffic volume : 444/156 veh/TimePeriod
 Speed : 80 km/h

Data for Segment # 2: BRT (day/night)

 Angle1 Angle2 : 15.00 deg 25.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 0 / 0
 Surface : 1 (Absorptive ground surface)
 Receiver source distance : 83.00 / 83.00 m
 Receiver height : 7.50 / 7.50 m
 Topography : 1 (Flat/gentle slope; no barrier)
 Reference angle : 0.00

Results segment # 1: BRT (day)

 Source height = 2.40 m

RT/Custom (0.00 + 49.44 + 0.00) = 49.44 dBA

| Angle1 | Angle2 | Alpha | RefLeq | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|--------|--------|-------|--------|--------|-------|-------|-------|-------|--------|
| -45 | -20 | 0.45 | 69.16 | -10.80 | -8.93 | 0.00 | 0.00 | 0.00 | 49.44 |

Segment Leq : 49.44 dBA

Results segment # 2: BRT (day)

 Source height = 2.40 m

RT/Custom (0.00 + 45.69 + 0.00) = 45.69 dBA

| Angle1 | Angle2 | Alpha | RefLeq | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|--------|--------|-------|--------|--------|--------|-------|-------|-------|--------|
| 15 | 25 | 0.45 | 69.16 | -10.80 | -12.68 | 0.00 | 0.00 | 0.00 | 45.69 |

Segment Leq : 45.69 dBA

Total Leq All Segments: 50.97 dBA



Results segment # 1: BRT (night)

Source height = 2.40 m

RT/Custom (0.00 + 47.91 + 0.00) = 47.91 dBA

| Angle1 | Angle2 | Alpha | RefLeq | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|--------|--------|-------|--------|--------|-------|-------|-------|-------|--------|
| -45 | -20 | 0.45 | 67.63 | -10.80 | -8.93 | 0.00 | 0.00 | 0.00 | 47.91 |

Segment Leq : 47.91 dBA



Results segment # 2: BRT (night)

Source height = 2.40 m

RT/Custom (0.00 + 44.16 + 0.00) = 44.16 dBA

| Angle1 | Angle2 | Alpha | RefLeq | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|--------|--------|-------|--------|--------|--------|-------|-------|-------|--------|
| 15 | 25 | 0.45 | 67.63 | -10.80 | -12.68 | 0.00 | 0.00 | 0.00 | 44.16 |

Segment Leq : 44.16 dBA

Total Leq All Segments: 49.44 dBA



TOTAL Leq FROM ALL SOURCES (DAY): 50.97
(NIGHT): 49.44



Filename: bgu7t9.te Time Period: Day/Night 16/8 hours
Description: block g units 7 to 9 indoor

RT/Custom data, segment # 1: BRT (day/night)

1 - Custom (87.0 dBA):
Traffic volume : 444/156 veh/TimePeriod
Speed : 80 km/h

Data for Segment # 1: BRT (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 : 25.00 / 25.00 m
Receiver height : 7.50 / 7.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Results segment # 1: BRT (day)

Source height = 2.40 m

RT/Custom (0.00 + 64.85 + 0.00) = 64.85 dBA
Angle1 Angle2 Alpha RefLeq D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq

-90 90 0.45 69.16 -3.22 -1.09 0.00 0.00 0.00 64.85

Segment Leq : 64.85 dBA

Total Leq All Segments: 64.85 dBA

Results segment # 1: BRT (night)

Source height = 2.40 m

RT/Custom (0.00 + 63.32 + 0.00) = 63.32 dBA
Angle1 Angle2 Alpha RefLeq D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq

-90 90 0.45 67.63 -3.22 -1.09 0.00 0.00 0.00 63.32

Segment Leq : 63.32 dBA

Total Leq All Segments: 63.32 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 64.85
(NIGHT): 63.32

Filename: bhult3.te Time Period: Day/Night 16/8 hours
Description: building h units 1 to 3 indoor

RT/Custom data, segment # 1: BRT (day/night)

1 - Custom (87.0 dBA):
Traffic volume : 444/156 veh/TimePeriod
Speed : 80 km/h

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

Angle1 Angle2 : -20.00 deg 20.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 77.00 / 77.00 m
Receiver height : 7.50 / 7.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Results segment # 1: BRT (day)

Source height = 2.40 m

RT/Custom (0.00 + 52.27 + 0.00) = 52.27 dBA
Angle1 Angle2 Alpha RefLeq D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq

-20 20 0.45 69.16 -10.32 -6.57 0.00 0.00 0.00 52.27

Segment Leq : 52.27 dBA

Total Leq All Segments: 52.27 dBA

Results segment # 1: BRT (night)

Source height = 2.40 m

RT/Custom (0.00 + 50.74 + 0.00) = 50.74 dBA
Angle1 Angle2 Alpha RefLeq D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq

-20 20 0.45 67.63 -10.32 -6.57 0.00 0.00 0.00 50.74

Segment Leq : 50.74 dBA

Total Leq All Segments: 50.74 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 52.27
(NIGHT): 50.74

Filename: bhu4t6.te Time Period: Day/Night 16/8 hours
 Description: building h units 4 to 6 indoor

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

```
-----
Car traffic volume   : 9715/845   veh/TimePeriod *
Medium truck volume  : 773/67    veh/TimePeriod *
Heavy truck volume   : 552/48    veh/TimePeriod *
Posted speed limit   : 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): 12000
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: spratt (day/night)

```
-----
Angle1  Angle2      : 5.00 deg  70.00 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     : 7.50 / 7.50 m
Topography          : 1          (Flat/gentle slope; no barrier)
Reference angle     : 0.00
```



Results segment # 1: spratt (day)

Source height = 1.50 m

ROAD (0.00 + 53.13 + 0.00) = 53.13 dBA

| Angle1 | Angle2 | Alpha | RefLeq | P.Adj | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|--------|--------|-------|--------|-------|--------|-------|-------|-------|-------|--------|
| 5 | 70 | 0.48 | 69.03 | 0.00 | -10.84 | -5.06 | 0.00 | 0.00 | 0.00 | 53.13 |

Segment Leq : 53.13 dBA

Total Leq All Segments: 53.13 dBA



Results segment # 1: spratt (night)

Source height = 1.50 m

ROAD (0.00 + 45.53 + 0.00) = 45.53 dBA

| Angle1 | Angle2 | Alpha | RefLeq | P.Adj | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|--------|--------|-------|--------|-------|--------|-------|-------|-------|-------|--------|
| 5 | 70 | 0.48 | 61.43 | 0.00 | -10.84 | -5.06 | 0.00 | 0.00 | 0.00 | 45.53 |

Segment Leq : 45.53 dBA

Total Leq All Segments: 45.53 dBA

RT/Custom data, segment # 1: BRT (day/night)

1 - Custom (87.0 dBA):
Traffic volume : 444/156 veh/TimePeriod
Speed : 80 km/h

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

Angle1 Angle2 : -90.00 deg -35.00 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 : 7.50 / 7.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Results segment # 1: BRT (day)

Source height = 2.40 m

RT/Custom (0.00 + 51.31 + 0.00) = 51.31 dBA

| Angle1 | Angle2 | Alpha | RefLeq | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|--------|--------|-------|--------|--------|-------|-------|-------|-------|--------|
| -90 | -35 | 0.45 | 69.16 | -10.87 | -6.98 | 0.00 | 0.00 | 0.00 | 51.31 |

Segment Leq : 51.31 dBA

Total Leq All Segments: 51.31 dBA

Results segment # 1: BRT (night)

Source height = 2.40 m

RT/Custom (0.00 + 49.78 + 0.00) = 49.78 dBA

| Angle1 | Angle2 | Alpha | RefLeq | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|--------|--------|-------|--------|--------|-------|-------|-------|-------|--------|
| -90 | -35 | 0.45 | 67.63 | -10.87 | -6.98 | 0.00 | 0.00 | 0.00 | 49.78 |

Segment Leq : 49.78 dBA

Total Leq All Segments: 49.78 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 55.32
(NIGHT): 51.17

Filename: bhu7t9.te Time Period: Day/Night 16/8 hours
Description: block h units 7 to 9 indoor

RT/Custom data, segment # 1: BRT (day/night)

1 - Custom (87.0 dBA):
Traffic volume : 444/156 veh/TimePeriod
Speed : 80 km/h

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

Angle1 Angle2 : -30.00 deg 30.00 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 : 7.50 / 7.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Results segment # 1: BRT (day)

Source height = 2.40 m

RT/Custom (0.00 + 54.95 + 0.00) = 54.95 dBA
Angle1 Angle2 Alpha RefLeq D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq

-30 30 0.45 69.16 -9.35 -4.86 0.00 0.00 0.00 54.95

Segment Leq : 54.95 dBA

Total Leq All Segments: 54.95 dBA

Results segment # 1: BRT (night)

Source height = 2.40 m

RT/Custom (0.00 + 53.42 + 0.00) = 53.42 dBA
Angle1 Angle2 Alpha RefLeq D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq

-30 30 0.45 67.63 -9.35 -4.86 0.00 0.00 0.00 53.42

Segment Leq : 53.42 dBA

Total Leq All Segments: 53.42 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 54.95
(NIGHT): 53.42

Filename: bjult3.te Time Period: Day/Night 16/8 hours
Description: building j units 1 to 3 indoor

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

Car traffic volume : 9715/845 veh/TimePeriod *
Medium truck volume : 773/67 veh/TimePeriod *
Heavy truck volume : 552/48 veh/TimePeriod *
Posted speed limit : 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): 12000
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: spratt (day/night)

Angle1 Angle2 : -65.00 deg 0.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 29.50 / 29.50 m
Receiver height : 7.50 / 7.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00



Results segment # 1: spratt (day)

Source height = 1.50 m

ROAD (0.00 + 59.76 + 0.00) = 59.76 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq

-65 0 0.48 69.03 0.00 -4.35 -4.92 0.00 0.00 0.00 59.76

Segment Leq : 59.76 dBA

Total Leq All Segments: 59.76 dBA



Results segment # 1: spratt (night)

Source height = 1.50 m

ROAD (0.00 + 52.16 + 0.00) = 52.16 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq

-65 0 0.48 61.43 0.00 -4.35 -4.92 0.00 0.00 0.00 52.16

Segment Leq : 52.16 dBA

Total Leq All Segments: 52.16 dBA



TOTAL Leq FROM ALL SOURCES (DAY): 59.76
(NIGHT): 52.16



Filename: bju7t9.te Time Period: Day/Night 16/8 hours
 Description: building j units 7 to 9 indoor

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

```
-----
Car traffic volume   : 9715/845   veh/TimePeriod *
Medium truck volume  : 773/67    veh/TimePeriod *
Heavy truck volume   : 552/48    veh/TimePeriod *
Posted speed limit   : 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): 12000
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: spratt (day/night)

```
-----
Angle1  Angle2      : 0.00 deg  90.00 deg
Wood depth          : 0          (No woods.)
No of house rows    : 0 / 0
Surface             : 1          (Absorptive ground surface)
Receiver source distance : 29.50 / 29.50 m
Receiver height     : 7.50 / 7.50 m
Topography          : 1          (Flat/gentle slope; no barrier)
Reference angle     : 0.00
```



Results segment # 1: spratt (day)

Source height = 1.50 m

ROAD (0.00 + 60.53 + 0.00) = 60.53 dBA

| Angle1 | Angle2 | Alpha | RefLeq | P.Adj | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|--------|--------|-------|--------|-------|-------|-------|-------|-------|-------|--------|
| 0 | 90 | 0.48 | 69.03 | 0.00 | -4.35 | -4.15 | 0.00 | 0.00 | 0.00 | 60.53 |

Segment Leq : 60.53 dBA

Total Leq All Segments: 60.53 dBA



Results segment # 1: spratt (night)

Source height = 1.50 m

ROAD (0.00 + 52.93 + 0.00) = 52.93 dBA

| Angle1 | Angle2 | Alpha | RefLeq | P.Adj | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|--------|--------|-------|--------|-------|-------|-------|-------|-------|-------|--------|
| 0 | 90 | 0.48 | 61.43 | 0.00 | -4.35 | -4.15 | 0.00 | 0.00 | 0.00 | 52.93 |

Segment Leq : 52.93 dBA

Total Leq All Segments: 52.93 dBA



TOTAL Leq FROM ALL SOURCES (DAY): 60.53
(NIGHT): 52.93



Filename: bku4t6.te Time Period: Day/Night 16/8 hours
Description: building k units 4 to 6 indoor

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

Car traffic volume : 9715/845 veh/TimePeriod *
Medium truck volume : 773/67 veh/TimePeriod *
Heavy truck volume : 552/48 veh/TimePeriod *
Posted speed limit : 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): 12000
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: spratt (day/night)

Angle1 Angle2 : -40.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 67.50 / 67.50 m
Receiver height : 7.50 / 7.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00



Results segment # 1: spratt (day)

Source height = 1.50 m

ROAD (0.00 + 57.13 + 0.00) = 57.13 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq

-40 90 0.48 69.03 0.00 -9.67 -2.23 0.00 0.00 0.00 57.13

Segment Leq : 57.13 dBA

Total Leq All Segments: 57.13 dBA



Results segment # 1: spratt (night)

Source height = 1.50 m

ROAD (0.00 + 49.53 + 0.00) = 49.53 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq

-40 90 0.48 61.43 0.00 -9.67 -2.23 0.00 0.00 0.00 49.53

Segment Leq : 49.53 dBA

Total Leq All Segments: 49.53 dBA

RT/Custom data, segment # 1: BRT (day/night)

1 - Custom (87.0 dBA):
Traffic volume : 444/156 veh/TimePeriod
Speed : 80 km/h

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

Angle1 Angle2 : -90.00 deg -20.00 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 : 7.50 / 7.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Results segment # 1: BRT (day)

Source height = 2.40 m

RT/Custom (0.00 + 56.55 + 0.00) = 56.55 dBA

| Angle1 | Angle2 | Alpha | RefLeq | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|--------|--------|-------|--------|-------|-------|-------|-------|-------|--------|
| -90 | -20 | 0.45 | 69.16 | -7.07 | -5.54 | 0.00 | 0.00 | 0.00 | 56.55 |

Segment Leq : 56.55 dBA

Total Leq All Segments: 56.55 dBA

Results segment # 1: BRT (night)

Source height = 2.40 m

RT/Custom (0.00 + 55.02 + 0.00) = 55.02 dBA

| Angle1 | Angle2 | Alpha | RefLeq | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|--------|--------|-------|--------|-------|-------|-------|-------|-------|--------|
| -90 | -20 | 0.45 | 67.63 | -7.07 | -5.54 | 0.00 | 0.00 | 0.00 | 55.02 |

Segment Leq : 55.02 dBA

Total Leq All Segments: 55.02 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 59.86
(NIGHT): 56.10

Filename: bkul0t12.te Time Period: Day/Night 16/8 hours
Description: building k units 10 to 12 indoor

RT/Custom data, segment # 1: BRT (day/night)

1 - Custom (87.0 dBA):
Traffic volume : 444/156 veh/TimePeriod
Speed : 80 km/h

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

Angle1 Angle2 : -90.00 deg 75.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 33.50 / 33.50 m
Receiver height : 7.50 / 7.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Results segment # 1: BRT (day)

Source height = 2.40 m

RT/Custom (0.00 + 62.83 + 0.00) = 62.83 dBA

| Angle1 | Angle2 | Alpha | RefLeq | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|--------|--------|-------|--------|-------|-------|-------|-------|-------|--------|
| -90 | 75 | 0.45 | 69.16 | -5.07 | -1.26 | 0.00 | 0.00 | 0.00 | 62.83 |

Segment Leq : 62.83 dBA

Total Leq All Segments: 62.83 dBA

Results segment # 1: BRT (night)

Source height = 2.40 m

RT/Custom (0.00 + 61.30 + 0.00) = 61.30 dBA

| Angle1 | Angle2 | Alpha | RefLeq | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|--------|--------|-------|--------|-------|-------|-------|-------|-------|--------|
| -90 | 75 | 0.45 | 67.63 | -5.07 | -1.26 | 0.00 | 0.00 | 0.00 | 61.30 |

Segment Leq : 61.30 dBA

Total Leq All Segments: 61.30 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 62.83
(NIGHT): 61.30

Noise Calculations – Outdoor Living Area (OLA)

Filename: brt.te Time Period: Day/Night 16/8 hours
Description: park - p1 - ola no barrier

RT/Custom data, segment # 1: BRT (day/night)

1 - Custom (87.0 dBA):
Traffic volume : 444/156 veh/TimePeriod
Speed : 80 km/h

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

Angle1 Angle2 : -75.00 deg 80.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 33.50 / 33.50 m
Receiver height : 1.50 / 4.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Results segment # 1: BRT (day)

Source height = 2.40 m

RT/Custom (0.00 + 61.85 + 0.00) = 61.85 dBA

| Angle1 | Angle2 | Alpha | RefLeq | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|--------|--------|-------|--------|-------|-------|-------|-------|-------|--------|
| -75 | 80 | 0.63 | 69.16 | -5.70 | -1.62 | 0.00 | 0.00 | 0.00 | 61.85 |

Segment Leq : 61.85 dBA

Total Leq All Segments: 61.85 dBA

Results segment # 1: BRT (night)

Source height = 2.40 m

RT/Custom (0.00 + 60.75 + 0.00) = 60.75 dBA

| Angle1 | Angle2 | Alpha | RefLeq | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|--------|--------|-------|--------|-------|-------|-------|-------|-------|--------|
| -75 | 80 | 0.54 | 67.63 | -5.38 | -1.49 | 0.00 | 0.00 | 0.00 | 60.75 |

Segment Leq : 60.75 dBA

Total Leq All Segments: 60.75 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 61.85
(NIGHT): 60.75

Noise Calculations – Outdoor Living Area (OLA) with Noise Barrier

Filename: brt.te Time Period: Day/Night 16/8 hours
 Description: park - p1 - ola w barrier

RT/Custom data, segment # 1: BRT (day/night)

 1 - Custom (87.0 dBA):
 Traffic volume : 444/156 veh/TimePeriod
 Speed : 80 km/h

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

 Angle1 Angle2 : -75.00 deg 80.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 0 / 0
 Surface : 1 (Absorptive ground surface)
 Receiver source distance : 33.50 / 33.50 m
 Receiver height : 1.50 / 4.50 m
 Topography : 2 (Flat/gentle slope; with barrier)
 Barrier angle1 : -45.00 deg Angle2 : 30.00 deg
 Barrier height : 2.20 m
 Barrier receiver distance : 13.50 / 13.50 m
 Source elevation : 91.40 m
 Receiver elevation : 91.35 m
 Barrier elevation : 91.70 m
 Reference angle : 0.00

FF
 Results segment # 1: BRT (day)

 Source height = 2.40 m

Barrier height for grazing incidence

 Source ! Receiver ! Barrier ! Elevation of
 Height (m) ! Height (m) ! Height (m) ! Barrier Top (m)
 -----+-----+-----+-----
 2.40 ! 1.50 ! 1.53 ! 93.23

RT/Custom (53.71 + 53.73 + 56.21) = 59.49 dBA

| Angle1 | Angle2 | Alpha | RefLeq | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|--------|--------|-------|--------|-------|-------|-------|-------|-------|--------|
| -75 | -45 | 0.63 | 69.16 | -5.70 | -9.76 | 0.00 | 0.00 | 0.00 | 53.71 |
| -45 | 30 | 0.50 | 69.16 | -5.24 | -3.98 | 0.00 | 0.00 | -6.22 | 53.73 |
| 30 | 80 | 0.63 | 69.16 | -5.70 | -7.26 | 0.00 | 0.00 | 0.00 | 56.21 |

Segment Leq : 59.49 dBA

Total Leq All Segments: 59.49 dBA

FF
 Results segment # 1: BRT (night)

 Source height = 2.40 m

Barrier height for grazing incidence

 Source ! Receiver ! Barrier ! Elevation of

| Height (m) | Height (m) | Height (m) | Barrier Top (m) |
|------------|------------|------------|-----------------|
| 2.40 | 4.50 | 3.32 | 95.02 |

RT/Custom (52.76 + 58.25 + 55.21) = 60.75 dBA

| Angle1 | Angle2 | Alpha | RefLeq | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|--------|--------|-------|--------|-------|-------|-------|-------|-------|--------|
| -75 | -45 | 0.54 | 67.63 | -5.38 | -9.48 | 0.00 | 0.00 | 0.00 | 52.76 |
| -45 | 30 | 0.41 | 67.63 | -4.92 | -3.95 | 0.00 | 0.00 | -0.09 | 58.67* |
| -45 | 30 | 0.54 | 67.63 | -5.38 | -4.00 | 0.00 | 0.00 | 0.00 | 58.25 |
| 30 | 80 | 0.54 | 67.63 | -5.38 | -7.03 | 0.00 | 0.00 | 0.00 | 55.21 |

* Bright Zone !

Segment Leq : 60.75 dBA

Total Leq All Segments: 60.75 dBA

☐☐

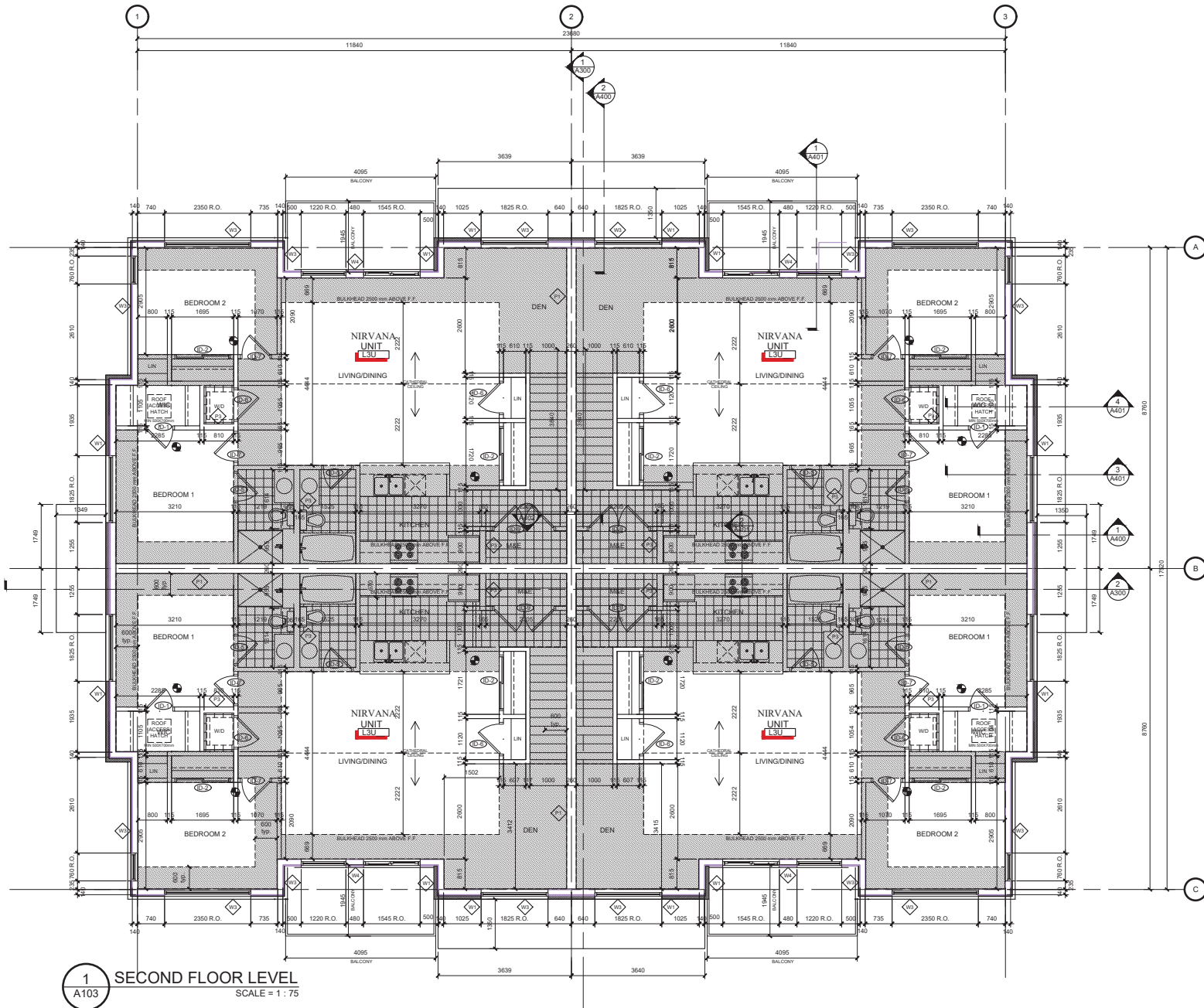
TOTAL Leq FROM ALL SOURCES (DAY): 59.49
 (NIGHT): 60.75

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☐☐

Appendix C

Architectural Drawings



1 SECOND FLOOR LEVEL
A103 SCALE = 1 : 75

GENERAL NOTES:

1. ALL ENTRY CLOSETS TO RECEIVE 1 ROD AND SHELF. ALL BEDROOM CLOSETS TO RECEIVE 2 RODS AND 1 SHELF. ALL LINENS TO RECEIVE 5 SHELVES.
2. STRUCTURE LOCATED IN FLOOR ASSEMBLY MAY VARY DUE TO FINAL TRUSS LAYOUT. FINAL LOCATION TO BE CONFIRMED ON FLOOR LAYOUT SHOP DWGS. TRUSS MANUFACTURERS TO INCLUDE REQUIRED TRUSS DETAILS IN SHOP DWGS.
3. ALL WINDOWS AND DOORS TO BE FOAMED IN PLACE WITH LOW-EXPANDING POLY URATHANE FOAM INSULATION.
4. STAIR STRINGER NOT TO BE FASTENED TO WALL ADJACENT TO UNIT. 15mm AIR SPACE REQUIRED. ADD ACOUSTICAL SEALANT TOP & BOTTOM OF SUPPORT MEMBER.
5. BRICK TO OVER HANG FOUNDATION WALL 15mm.
6. THROUGH WALL FLASHINGS TO RUN UNDER "TYVEK", JOINT TO BE TAPED.
7. ALL EXPOSED STEEL TO BE TREATED WITH CORROSION RESISTANT PAINT. COMPATIBLE PRIMER AND FINISH COAT.
8. SUPPLY AND INSTALL COMBINED CO2/STROBE TYPE SMOKE DETECTORS AS PER O.B.C. 9.10.19. REQUIREMENTS. SEE PLAN FOR GENERAL LOCATIONS. EXACT LOCATIONS TO BE CONFIRMED ON SITE.
 - COMBINED CO2: SMOKE
 - STROBE TYPE DETECTOR SYMBOL
9. ALL INTERIOR PARTITION WALLS TO BE WALL TYPE P4 UNLESS OTHERWISE NOTED.
10. ALL INTERIOR DIMENSIONS TAKEN FROM FACE OF STUDS OR CONCRETE.
11. ALL EXTERIOR DIMENSIONS TAKEN FROM FACE OF STUDS OR CONCRETE.
12. ALL GUARDS AND HANDRAILS TO BE INSTALLED IN ACCORDANCE WITH O.B.C. 9.8.7 AND 9.8.8. MANUFACTURER TO PROVIDE SHOP DWGS. C/W CONNECTION DETAILS TO ARCHITECT FOR REVIEW PRIOR TO FABRICATION.
13. FINISH FLOORING TO BE CARPET OR LAMINATE FLOORING IN ALL DRY LIVING SPACES. CERAMIC TILE IN ALL WET AREAS AND SHEET VINYL IN M&E CLOSETS.
14. ALL CLOTHES WASHING MACHINES TO BE C/W GALVANIZED METAL PAN AND DRAIN. WASHERS LOCATED AT BASEMENT LEVEL TO BE LOCATED ABOVE A FLOOR DRAIN.
15. ALL AIR BARRIERS TO BE CONTINUOUS AND RUN INTO DOOR & WINDOW OPENINGS.
16. PROVIDE DRAINAGE TILE AT PERIMETER OF FOUNDATION WALL AND UNDERSLAB DRAINAGE AS PER MECHANICAL DWGS.

NOTATION SYMBOLS:

- INDICATES DRAWING NOTES, LISTED ON EACH SHEET.
- INDICATES ASSEMBLY TYPE: REFER TO TYPICAL ASSEMBLIES SCHEDULE.
- INDICATES WINDOW TYPE: REFER TO WINDOW ELEVATIONS AND DETAILS ON A900 SERIES.
- INDICATES DOOR TYPE: REFER TO DOOR SCHEDULE AND DETAILS ON A900 SERIES.
- DETAIL NUMBER
- TITLE
- DETAIL REFERENCE PAGE

IT IS THE RESPONSIBILITY OF THE APPROPRIATE CONTRACTOR TO CHECK AND VERIFY ALL DIMENSIONS ON SITE AND TO REPORT ALL ERRORS AND/OR OMISSIONS TO THE ARCHITECT.

ALL CONTRACTORS MUST COMPLY WITH ALL PERTINENT CODES AND BY-LAWS.

THIS DRAWING MAY NOT BE USED FOR CONSTRUCTION UNTIL SIGNED BY THE ARCHITECT.

DO NOT SCALE DRAWINGS.

| | | |
|-----|-------------|------|
| 1 | ISSUED FOR | DATE |
| No. | DESCRIPTION | DATE |

ARCHITECT SEAL: _____

NORTH ARROW:

SEAL DATE: _____ STAMP DATE: _____

CLIENT: _____



ARCHITECT: rla/architecture
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OTTAWA ONTARIO

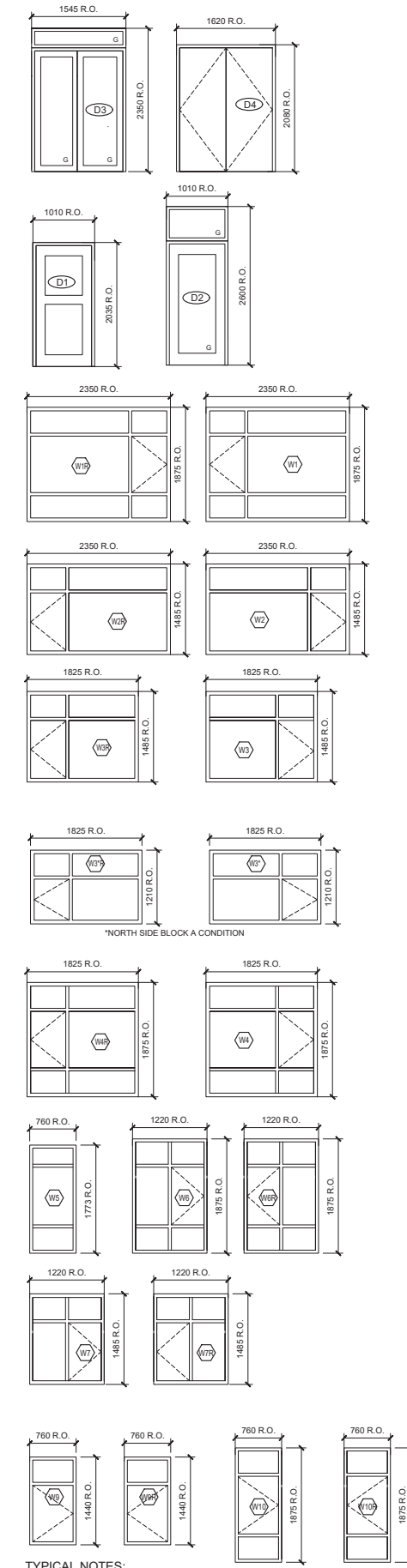
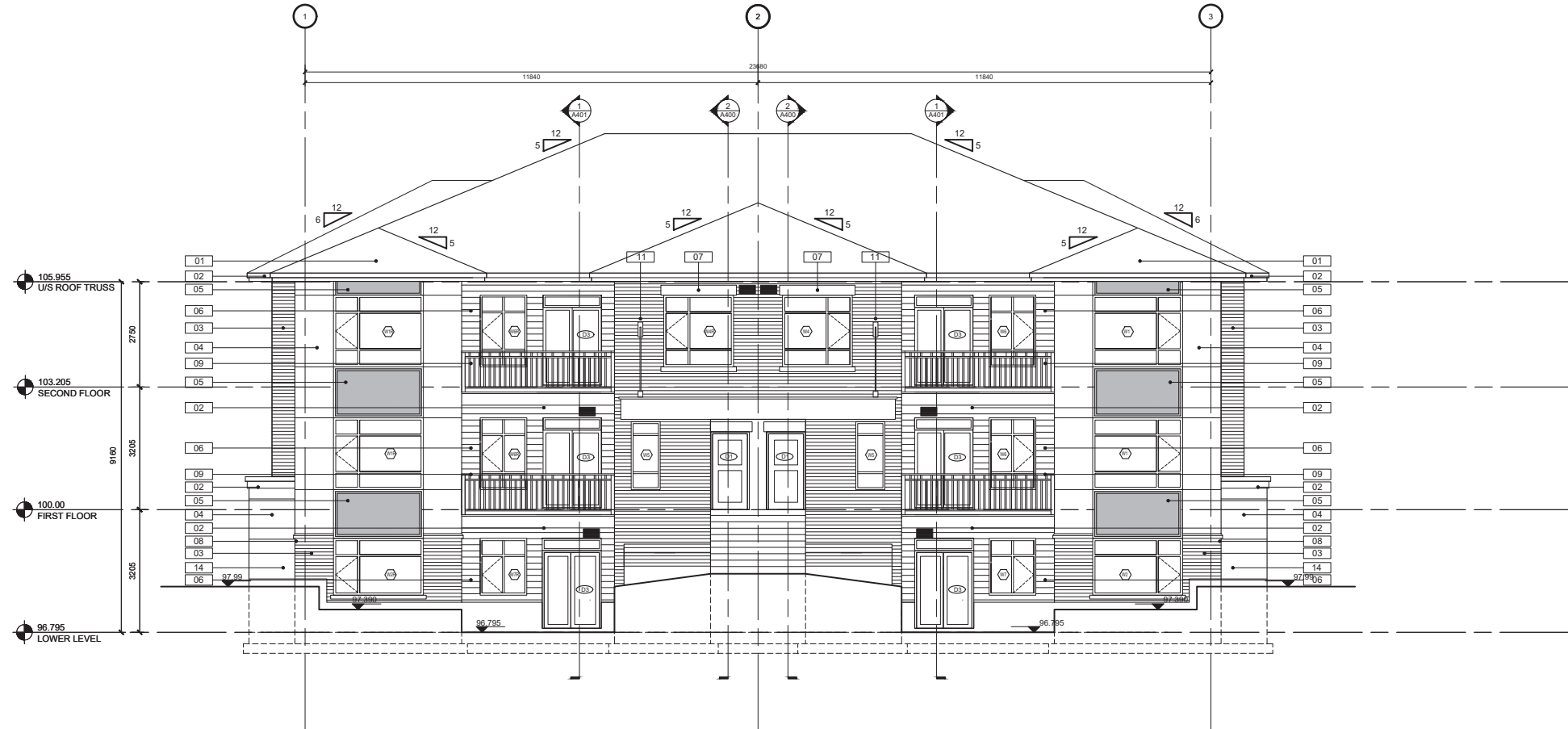
SECOND FLOOR PLAN & CONSTRUCTION ASSEMBLIES

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| DRAWN: CM | CHECKED: RLA |
| SCALE: 1:75 | SHEET No. A103 |
| PROJECT No. 2006 | |

CONSTRUCTION ASSEMBLIES

CONSTRUCT ALL ASSEMBLIES IN ACCORDANCE WITH THE REQUIREMENTS OF THE LABELING AGENCY, i.e. WH, UL, ULC etc.

| | | | | | | | | | | | |
|----------------|--|--|---|--|---|--|---|---|--|--|---|
| EXTERIOR WALLS | <p>WALL TYPE - W1 EXTERIOR BRICK WALL 1 HOUR F.R.R. AS PER CBC SB-3 EW1a R102 BEIGE BRICK, PORTLAND, MAX SIZE 100mm x 60mm x 40mm (4" x 2 1/2" x 1 1/2") w/ ADJUSTABLE UNIT TIES @ 400mm O.C. HOR. & 600mm O.C. VERT. 4 REINFORCING BARS @ 600mm O.C. @ BOTTOM. BLUE SKIN THROUGH WALL FLASHING MIN 150mm HIGH 25mm AIR SPACE TYVEK AIRWEATHER BARRIER - ALL JOINTS SEALED 100mm OSB SHEATHING 140mm WOOD STUDS @ 400mm O.C. 140mm R22 BATT INSULATION 6 mil POLY VAPOUR BARRIER 16mm TYPE 'X' GYPSUM BOARD, PRIME & PAINT FINISH</p> | <p>WALL TYPE - W1* MECHANICAL CLOSET WALL (INSIDE)</p> | <p>WALL TYPE - W2 TYPICAL FOUNDATION WALL (BACKLAPPED) EFFECTIVE RSI 0.36 PARING ABOVE GRADE EXTEND 150mm BELOW GRADE ONLY SIMPLE DRAINAGE BOARD CCAC APPROX. 100mm HIGH DAMPENING (TYPE II) EXTENDING DOWN AND OVER FOOTINGS CONCRETE FOUNDATION WALL 740mm PAPER 25mm AIR CONTINUOUS RIDG 140mm WOOD STUDS @ 610mm O.C. 140mm R22 BATT INSULATION 6 mil POLY VAPOUR BARRIER 16mm TYPE 'X' GYPSUM BOARD, PRIME & PAINT FINISH</p> | <p>WALL TYPE - W3 HARDBOARD PANEL SIDING 1 HOUR F.R.R. AS PER CBC SB-3 EW1a R102 HARDBOARD PANEL SIDING (REFER TO ELEVATIONS FOR COLOUR / PATTERN) 150mm WOOD STRAPPING TYVEK AIRWEATHER BARRIER - SHINGLED AND ALL JOINTS SEALED BLUE SKIN THROUGH WALL FLASHING MIN 150mm HIGH AT BASE OF ASSEMBLY 100mm OSB SHEATHING 140mm WOOD STUDS @ 400mm O.C. 140mm R22 BATT INSULATION 6 mil POLY VAPOUR BARRIER 16mm TYPE 'X' GYPSUM BOARD, PRIME & PAINT FINISH</p> | <p>WALL TYPE - W4 VINYL SIDING, COLOUR STORM (REFER TO ELEVATIONS FOR COLOUR / PATTERN) 150mm WOOD STRAPPING TYVEK AIRWEATHER BARRIER - SHINGLED AND ALL JOINTS SEALED BLUE SKIN THROUGH WALL FLASHING MIN 150mm HIGH AT BASE OF ASSEMBLY 100mm OSB SHEATHING 140mm WOOD STUDS @ 400mm O.C. 140mm R22 BATT INSULATION 6 mil POLY VAPOUR BARRIER 16mm TYPE 'X' GYPSUM BOARD, PRIME & PAINT FINISH</p> | <p>WALL TYPE - W5 TYPICAL FOUNDATION WALL (BACKLAPPED) DAMPENING (TYPE II) EXTENDING DOWN AND OVER FOOTINGS CONCRETE FOUNDATION WALL DAMPENING (TYPE II) EXTENDING DOWN AND OVER FOOTINGS</p> | <p>FLOOR TYPE - F1 TYPICAL FLOOR CONSTRUCTION 1 HR. F.R.R. STC 54 AS PER SB-3 F96 FLOOR FINISH AS NOTED ON FLOOR PLANS 300mm MAX. 20mm ORIENTATION FLOOR UNDERLAMENT 9mm POLY IMPACT ISOLATION BARRIER 150mm OSB SHEATHING (2000 x 900 x 18mm) ADJUSTABLE ENGINEERED FLOOR JOISTS @ 400 O.C. 200mm BATT INSULATION WITH JOIST SPACER 6 mil POLY VAPOUR BARRIER 3-16mm 'X' TYPE GYPSUM BOARD c/w PRIME & PAINT FINISH</p> | <p>FLOOR TYPE - F2 WARM FLOOR ABOVE FRONT ENTRY 1 HR. F.R.R. AS PER SB-3 F96 FLOOR FINISH AS NOTED ON FLOOR PLANS VARIES MAX. 20mm ORIENTATION FLOOR UNDERLAMENT (LEVELWOOD) 300mm MAX. 20mm ORIENTATION FLOOR UNDERLAMENT 9mm POLY IMPACT ISOLATION BARRIER 150mm OSB SHEATHING (2000 x 900 x 18mm) ADJUSTABLE ENGINEERED FLOOR JOISTS @ 400 O.C. 200mm BATT INSULATION WITH JOIST SPACER 6 mil POLY VAPOUR BARRIER 3-16mm 'X' TYPE GYPSUM BOARD c/w PRIME & PAINT FINISH</p> | <p>FLOOR TYPE - F3 UNDERSIDE OF STAIR CONSTRUCTION 1 HOUR F.R.R. WOOD STRINGERS 300mm MAX. 20mm ORIENTATION FLOOR UNDERLAMENT 9mm POLY IMPACT ISOLATION BARRIER 150mm OSB SHEATHING (2000 x 900 x 18mm) ADJUSTABLE ENGINEERED FLOOR JOISTS @ 400 O.C. 200mm BATT INSULATION WITH JOIST SPACER 6 mil POLY VAPOUR BARRIER 3-16mm 'X' TYPE GYPSUM BOARD c/w PRIME & PAINT FINISH</p> | <p>ROOF TYPE - R1 SHINGLED ROOF, R100 100 25 YEAR ASPHALT ROOFING SHINGLES, COLOUR DIRTWOOD 300mm MAX. 20mm ORIENTATION FLOOR UNDERLAMENT 9mm POLY IMPACT ISOLATION BARRIER 150mm OSB SHEATHING (2000 x 900 x 18mm) ADJUSTABLE ENGINEERED FLOOR JOISTS @ 400 O.C. 200mm BATT INSULATION WITH JOIST SPACER 6 mil POLY VAPOUR BARRIER 3-16mm 'X' TYPE GYPSUM BOARD c/w PRIME & PAINT FINISH</p> | |
| | <p>PARTITION TYPE - P1 DOUBLE STUD PARTY WALL 1 CONDENSING 1 HR F.R.R. STC 65 AS PER SB-3 W15a 2-16mm TYPE 'X' GYPSUM BOARD c/w PRIME & PAINT FINISH 80mm WOOD STUDS @ 400 mm MAX. (SEE STRUCT.) 800 PLATE 25mm SPACE 200mm SOUND BATT INSULATION 80mm WOOD STUDS @ 400 mm MAX. (SEE STRUCT.) 800 PLATE 2-16mm TYPE 'X' GYPSUM BOARD c/w PRIME & PAINT FINISH 140mm WOOD STUDS FROM LOWER LEVEL SLAB TO 151 LEVEL, ON GROUND FLOOR USE WATER RESISTANT GYPSUM BOARD IN WET AREAS</p> | <p>PARTITION TYPE - P2 PARTY WALL - STAIR WALL 1.5 HOUR F.R.R. STC 98 AS PER SB-3 W16 2-16mm TYPE 'X' GYPSUM BOARD c/w PRIME & PAINT FINISH 140 WOOD STUDS @ 400 mm O.C. 140mm RESILIENT CHANNELS @ 600 o/c 140mm BATT INSULATION 2-16mm TYPE 'X' GYPSUM BOARD c/w PRIME & PAINT FINISH NOTES: WHERE ELECTRICAL OUTLETS ARE REQUIRED ON THE UNIT SIDE ADD 150mm STUDS @ 400mm O.C. 13mm GYPSUM BOARD WHERE 12mm PLYWOOD IS REQUIRED FOR SHEAR BOTH LAYERS OF 16mm TYPE 'X' DRYWALL ARE STILL REQUIRED. PLYWOOD TO BE INSTALLED IN LIEU OF RESILIENT. SEE STRUCTURAL PLANS FOR REQUIRED LOCATIONS.</p> | <p>PARTITION TYPE - P3 TYPICAL INTERIOR PLUMBING WALL 16mm TYPE 'X' GYPSUM BOARD c/w PRIME & PAINT FINISH 140 WOOD STUDS @ 400 mm O.C. 140mm RESILIENT CHANNELS @ 600 o/c 140mm BATT INSULATION 2-16mm TYPE 'X' GYPSUM BOARD c/w PRIME & PAINT FINISH USE WATER RESISTANT GYPSUM BOARD IN WET AREAS.</p> | <p>PARTITION TYPE - P4 TYPICAL INTERIOR PARTITION 16mm GYPSUM BOARD TYPE 'X' c/w PRIME & PAINT FINISH 140 WOOD STUDS @ 400 mm O.C. 140mm RESILIENT CHANNELS @ 600 o/c 140mm BATT INSULATION 2-16mm TYPE 'X' GYPSUM BOARD c/w PRIME & PAINT FINISH USE WATER RESISTANT GYPSUM BOARD IN WET AREAS.</p> | <p>PARTITION TYPE - P5 ATTIC PARTITION IN PARALLEL W/ TRUSSES 16mm TYPE 'X' GYPSUM BOARD TAPES MID ALL JOINTS WOOD TRUSSES - GABLE (TYPE I) 16mm TYPE 'X' GYPSUM BOARD TAPES MID ALL JOINTS WOOD TRUSSES - GABLE (TYPE II) 16mm TYPE 'X' GYPSUM BOARD TAPES MID ALL JOINTS</p> | <p>PARTITION TYPE - P5a ATTIC PARTITION BETWEEN TRUSSES 16mm TYPE 'X' GYPSUM BOARD TAPES MID ALL JOINTS 8 X 89 mm @ 800 mm O.C. KNEE WALL 16 mm TYPE 'X' GYPSUM BOARD TAPES MID ALL JOINTS 8 X 89 mm @ 800 mm O.C. KNEE WALL 16 mm TYPE 'X' GYPSUM BOARD TAPES MID ALL JOINTS</p> | <p>FLOOR TYPE - F4 CONCRETE SLAB 1 HOUR F.R.R. STC 62 CALCULATIONS: STC 63 CARPETING 9mm POLY IMPACT ISOLATION BARRIER 150mm OSB SHEATHING (2000 x 900 x 18mm) ADJUSTABLE ENGINEERED FLOOR JOISTS @ 400 O.C. 200mm BATT INSULATION WITH JOIST SPACER 6 mil POLY VAPOUR BARRIER 3-16mm 'X' TYPE GYPSUM BOARD c/w PRIME & PAINT FINISH 150mm COMPACTED GRANULAR 'A' TO 50%</p> | <p>FLOOR TYPE - F5 EXTERIOR STRUCTURAL ENTRY SLAB REFLEX TRAVELLED ON WATERPROOFING COATING 2 PLY MODIFIED BITUMEN ROOFING SYSTEM 150mm CONCRETE SLAB ON 150mm FINISH AND SLOPED AWAY FROM BUILDING 150mm COMPACTED GRANULAR 'A' TO 50%</p> | <p>FLOOR TYPE - F6 BALCONY DECK GORILLA DECKING FURRING STRIPS (COUNTERLOADED) 2 PLY MODIFIED BITUMEN ROOFING SYSTEM 150mm CONCRETE SLAB ON 150mm FINISH AND SLOPED AWAY FROM BUILDING AND PIER 200mm F.T. GYPSUM BOARD c/w PRIME & PAINT FINISH PRE-FINISHED ALUMINUM SOFFIT (CHARCOAL)</p> | <p>FLOOR TYPE - F7 UNDERSIDE OF STAIR CONSTRUCTION BTW UNITS 1 HOUR F.R.R. STC 54 2-PLY MODIFIED BITUMEN ROOFING SYSTEM 150mm OSB c/w CLIPS BETWEEN JOISTS 200mm F.T. SLEEPERS @ 100 O.C. SLOPED TO SCULLPER (MIN 2%) 300mm WOOD FRAMING TYVEK PT BATT INSULATION @ 800 O.C. PRE-FINISHED ALUMINUM VENTED SOFFIT</p> | <p>ROOF TYPE - R2 FLAT ROOF 2-PLY MODIFIED BITUMEN ROOFING SYSTEM 150mm OSB c/w CLIPS BETWEEN JOISTS 200mm F.T. SLEEPERS @ 100 O.C. SLOPED TO SCULLPER (MIN 2%) 300mm WOOD FRAMING TYVEK PT BATT INSULATION @ 800 O.C. PRE-FINISHED ALUMINUM VENTED SOFFIT</p> |



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DO NOT SCALE DRAWINGS.

- NOTATION SYMBOLS:**
- (00) INDICATES DRAWING NOTES, LISTED ON EACH SHEET.
 - (00) INDICATES ASSEMBLY TYPE, REFER TO TYPICAL ASSEMBLY SCHEDULE.
 - (00) INDICATES WINDOW TYPE, REFER TO WINDOW ELEVATIONS AND DETAILS ON A900 SERIES.
 - (000) INDICATES DOOR TYPE, REFER TO DOOR SCHEDULE AND DETAILS ON A900 SERIES.
- DETAIL NUMBER
—TITLE
—DETAIL REFERENCE PAGE

- DRAWING NOTES:**
- (01) ASPHALT SHINGLES: WEATHERED WOOD
 - (02) PREFINISHED ALUMINUM FASCIA & VENTED SOFFIT (CHARCOAL)
 - (03) BEIGE BRICK: FORTERRA, MAX SIZE, RUTHERFORD
 - (04) HARDIE BOARD ACCENT PANEL C/W ALUMINUM TRIM PIECES (COBBLESTONE)
 - (05) HARDIE BOARD ACCENT PANEL C/W ALUMINUM TRIM PIECES (MIDNIGHT BLACK)
 - (06) VINYL SIDING; STORM
 - (07) PRECAST LINTELS & SILLS
 - (08) 125mm PRECAST CONCRETE ACCENT BAND
 - (09) ALUMINUM BALCONY RAILING c/w PICKETS @ 100mm o.c. MAX (BLACK) PROVIDE P.ENG SIGNED DETAILS TO SITE INSPECTOR PRIOR TO INSTALLATION
 - (10) PRE-FINISHED ALUMINUM FLASHING (CHARCOAL)
 - (11) ORNAMENTAL METAL RODS (CHARCOAL)
 - (12) CONCRETE STEPS
 - (13) STACKED PRECAST CONCRETE UNIT PLANTER WALL
 - (14) CONCRETE PARGING

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| 1 | ISSUED FOR | DATE |
| No. | DESCRIPTION | DATE |

REVISIONS:

ARCHITECT SEAL: _____ NORTH ARROW: _____

SEAL DATE: STAMP DATE _____

CLIENT:

ARCHITECT:

rla/architecture
roderick lahey architect inc.
56 beech street, ottawa, ontario K1S 3J6
t.613.724.9932 f.613.724.1209 rlaarchitecture.ca

PROJECT TITLE: (LARGE)
LILYTHORNE ZEN
BLOCK

OTTAWA ONTARIO

SHEET TITLE:

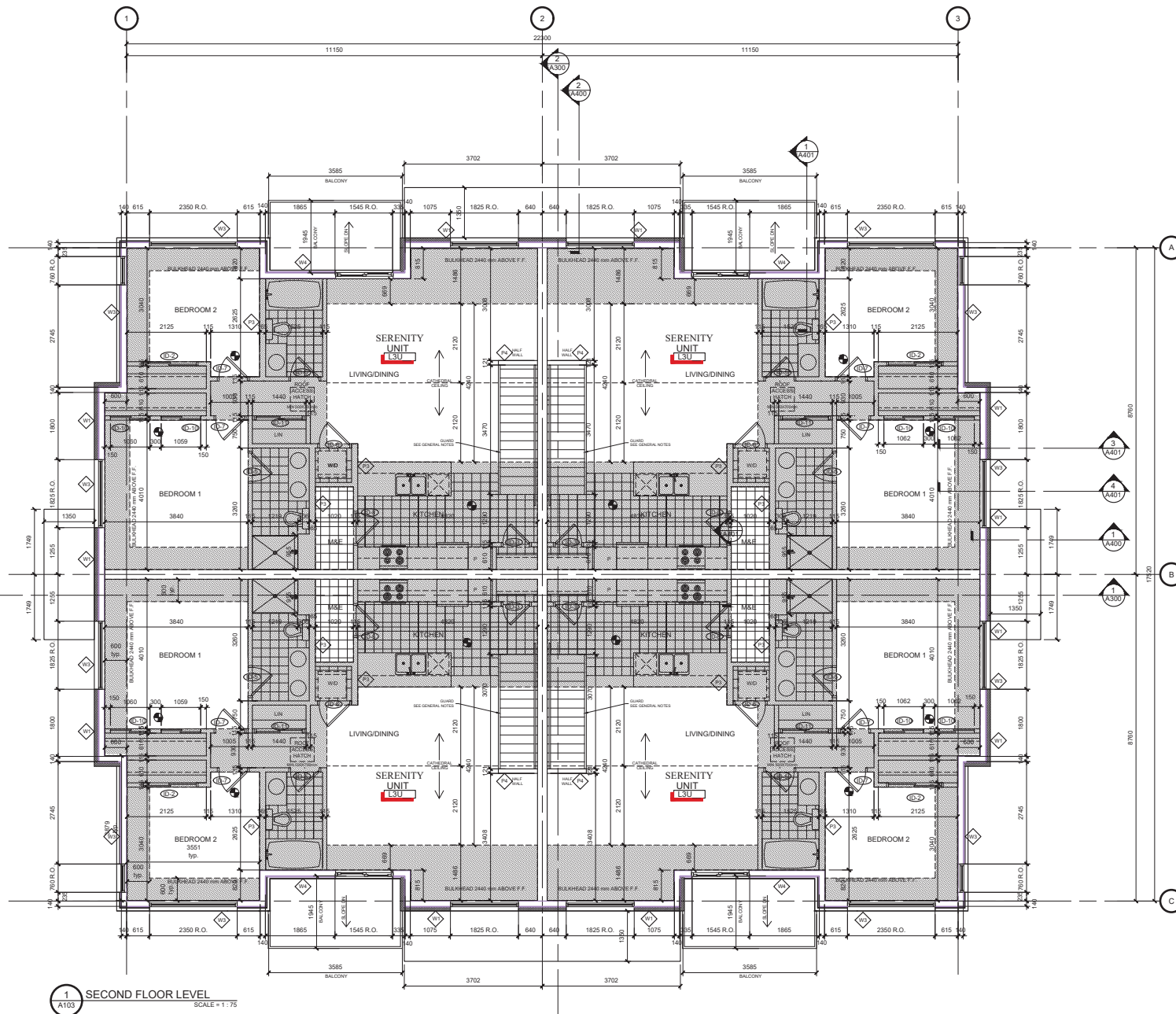
ELEVATIONS
WINDOW & DOOR
SCHEDULE

| | |
|---------------------|-------------------|
| DRAWN: CM | CHECKED: RLA |
| SCALE: 1:75 | SHEET No. A200 |
| PROJECT No. 2006 | |

TYPICAL NOTES:

WINDOWS TO CONFORM CANCSA-A440.1 AND CANCSA-A440
WINDOWS AND PATIO DOORS TO HAVE A MAX. U VALUE OF 1.8
EXTERIOR SWING DOORS TO COMPLY WITH ASTM E283
GLASS IN DOORS AND SIDE LIGHTS TO BE TEMPERED GLASS
CONFORMING TO CANCSA-12.1-M
BUILDING A & F REQUIRE WINDOWS WITH STC RATING NOT LESS THAN 31 IN ACCORDANCE WITH ASTM E90.

3 WINDOWS & EXTERIOR DOOR SCHEDULE
SCALE = NTS



GENERAL NOTES:

1. ALL ENTRY CLOSETS TO RECEIVE 1 ROD AND SHELF. ALL BEDROOM CLOSETS TO RECEIVE 2 RODS AND 1 SHELF. ALL LINENS TO RECEIVE 5 SHELVES.
2. STRUCTURE LOCATED IN FLOOR ASSEMBLY MAY VARY DUE TO FINAL TRUSS LAYOUT. FINAL LOCATION TO BE CONFIRMED ON FLOOR LAYOUT SHOP DWGS. TRUSS MANUFACTURERS TO INCLUDE REQUIRED TRUSS DETAILS IN SHOP DWGS.
3. ALL WINDOWS AND DOORS TO BE FOAMED IN PLACE WITH LOW-EXPANDING POLY URATHANE FOAM INSULATION.
4. STAIR STRINGER NOT TO BE FASTENED TO WALL ADJACENT TO UNIT. 15mm AIR SPACE REQUIRED. ADD ACOUSTICAL SEALANT TOP & BOTTOM OF SUPPORT MEMBER.
5. BRICK TO OVER HANG FOUNDATION WALL 15mm.
6. THROUGH WALL FLASHINGS TO RUN UNDER "TYVEK", JOINT TO BE TAPED.
7. ALL EXPOSED STEEL TO BE TREATED WITH CORROSION RESISTANT PAINT COMPATIBLE PRIMER AND FINISH COAT.
8. SUPPLY AND INSTALL COMBINED CO/ STROBE TYPE SMOKE ALARMS AS PER O.B.C. 9.10.19. & 9.33.4. REQUIREMENTS. SEE PLAN FOR GENERAL LOCATIONS; EXACT LOCATIONS TO BE CONFIRMED ON SITE. COMBINED CO/ SMOKE STROBE TYPE ALARM SYMBOL.
9. ALL INTERIOR PARTITION WALLS TO BE WALL TYPE P4 UNLESS OTHERWISE NOTED.
10. ALL INTERIOR DIMENSIONS TAKEN FROM FACE OF STUDS OR CONCRETE.
11. ALL EXTERIOR DIMENSIONS TAKEN FROM FACE OF STUDS OR CONCRETE.
12. ALL GUARDS AND HANDRAILS TO BE INSTALLED IN ACCORDANCE WITH O.B.C. 9.8.7 AND 9.8.8. MANUFACTURER TO PROVIDE SHOP DWGS. C/W CONNECTION DETAILS TO ARCHITECT FOR REVIEW PRIOR TO FABRICATION.
13. FINISH FLOORING TO BE CARPET OR LAMINATE FLOORING IN ALL DRY LIVING SPACES. CERAMIC TILE IN ALL WET AREAS AND SHEET VINYL IN M&E CLOSETS.
14. ALL CLOTHES WASHING MACHINES TO BE C/W GALVANIZED METAL PAN AND DRAIN. WASHERS LOCATED AT BASEMENT LEVEL TO BE LOCATED ABOVE A FLOOR DRAIN.
15. ALL AIR BARRIERS TO BE CONTINUOUS AND RUN INTO DOOR & WINDOW OPENINGS.
16. PROVIDE DRAINAGE TILE AT PERIMETER OF FOUNDATION WALL AND UNDERSLAB DRAINAGE AS PER MECHANICAL DWGS.

NOTATION SYMBOLS:

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| ARCHITECT SEAL: | | NORTH ARROW: |
| | | |
| SEAL DATE: STAMP DATE | | |
| CLIENT: | | |



ARCHITECT:
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PROJECT TITLE:
LILYTHORNE ZEN
BLOCK - OTTAWA - ONTARIO

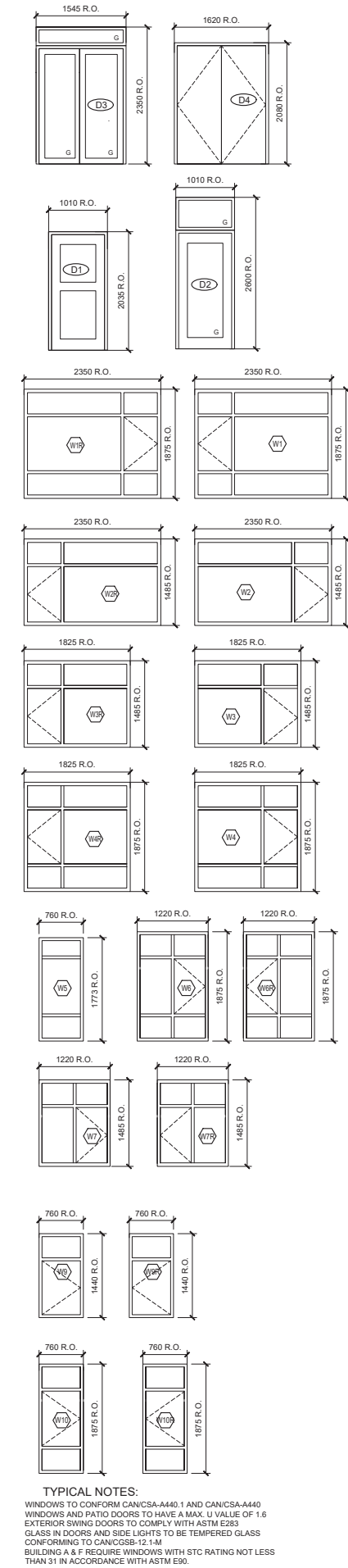
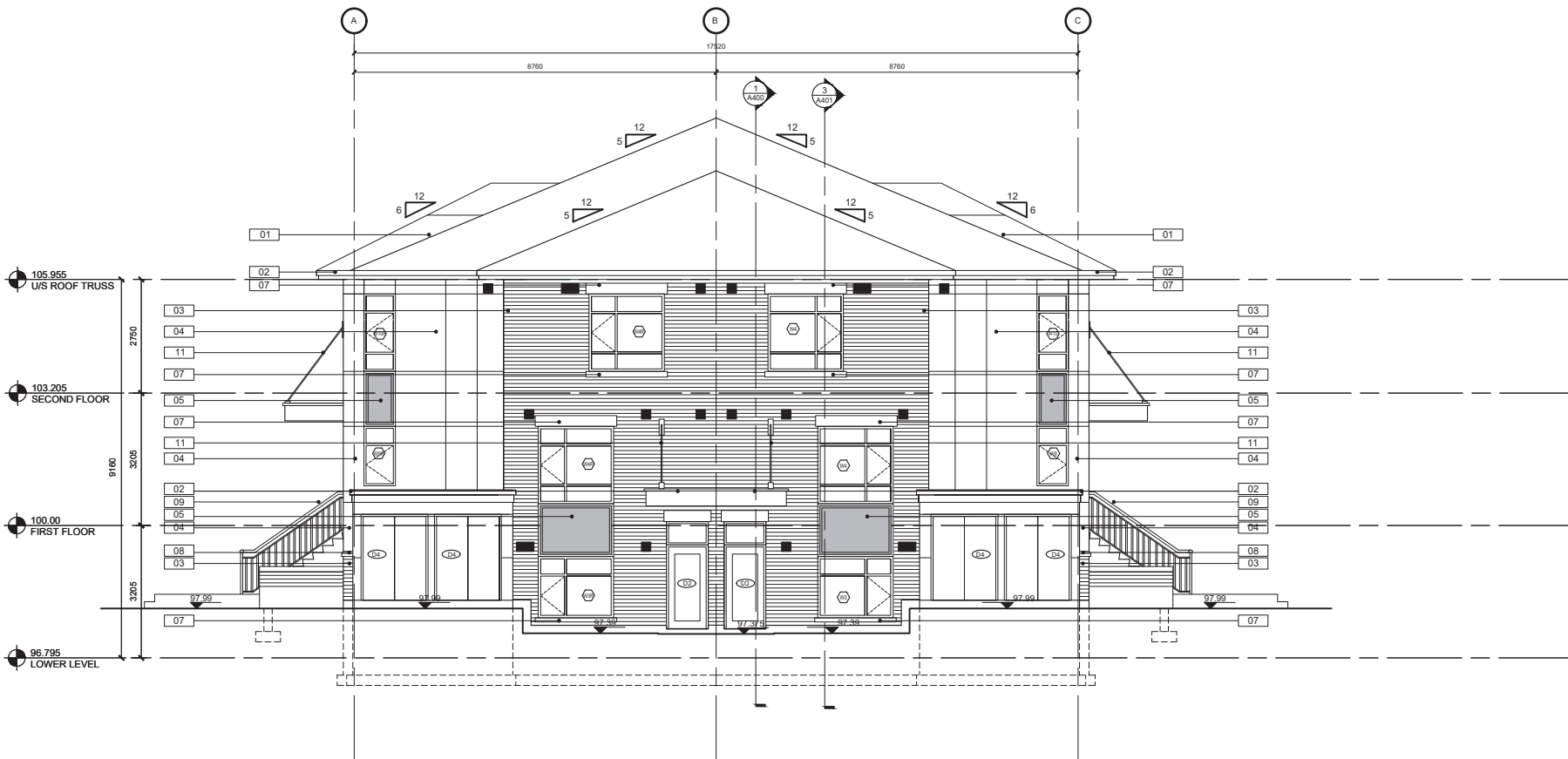
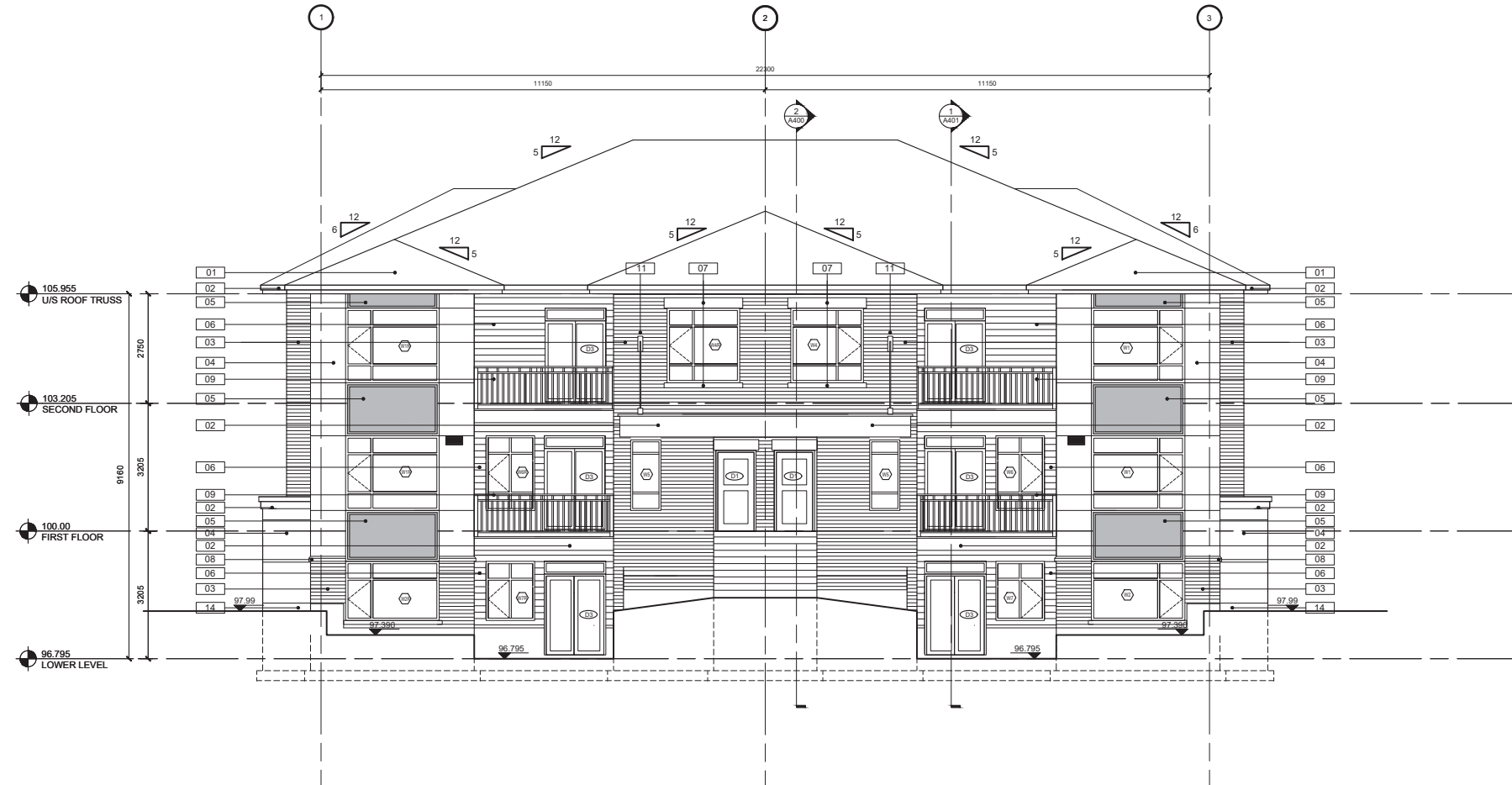
SECOND FLOOR PLAN & CONSTRUCTION ASSEMBLIES

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| DRAWN: CM | CHECKED: RLA |
| SCALE: 1:50 | SHEET No. A103 |
| PROJECT No. 2006 | |

CONSTRUCTION ASSEMBLIES

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|----------------|---|--|--|--|---|--|--|
| EXTERIOR WALLS | WALL TYPE - W1 EXTERIOR BRICK WALL 1 HOUR F.R.R. AS PER CBC SB-3 EW1a R102 BEGE BRICK PORTLAND CEMENT MORTAR (4" MIN. x 4" MIN. x 1" MIN.) 1/2" ADJUSTABLE UNIT TIES @ 400mm O.C. HOR. & 900mm O.C. VERT. 15mm POLY VAPOR BARRIER 15mm THROUGH WALL FLASHING MIN 150mm HIGH 25mm AIR SPACE TYVEK AIRWEATHER BARRIER - ALL JOINTS SEALED 100mm OSB SHEATHING 140mm WOOD STUDS @ 400mm O.C. 140mm R22 BATT INSULATION 6 mil POLY VAPOR BARRIER 16mm TYPE 'X' GYPSUM BOARD, PRIME & PAINT FINISH | WALL TYPE - W1* MECHANICAL CLOSET WALL (INSIDE) 15mm PLYWOOD BLUESKIN THROUGH WALL FLASHING MIN 150mm HIGH 15mm OSB SHEATHING 100mm WOOD STUDS @ 400mm O.C. 140mm R22 BATT INSULATION 6 mil POLY VAPOR BARRIER 16mm TYPE 'X' GYPSUM BOARD, PRIME & PAINT FINISH | WALL TYPE - W2 TYPICAL FOUNDATION WALL (BACKLIT) EFFECTIVE RSI 0.36 15mm PLYWOOD 15mm WOOD STRAPPING TYVEK AIRWEATHER BARRIER - SHINGLED AND ALL JOINTS SEALED BLUESKIN THROUGH WALL FLASHING MIN 150mm HIGH AT BASE OF ASSEMBLY 100mm OSB SHEATHING 140mm WOOD STUDS @ 400mm O.C. 140mm R22 BATT INSULATION 6 mil POLY VAPOR BARRIER 16mm TYPE 'X' GYPSUM BOARD, PRIME & PAINT FINISH | WALL TYPE - W3 HARDIE BOARD PANEL SIDING (REFER TO ELEVATIONS FOR COLOR / PATTERN) 15mm WOOD STRAPPING TYVEK AIRWEATHER BARRIER - SHINGLED AND ALL JOINTS SEALED BLUESKIN THROUGH WALL FLASHING MIN 150mm HIGH AT BASE OF ASSEMBLY 100mm OSB SHEATHING 140mm WOOD STUDS @ 400mm O.C. 140mm R22 BATT INSULATION 6 mil POLY VAPOR BARRIER 16mm TYPE 'X' GYPSUM BOARD, PRIME & PAINT FINISH | WALL TYPE - W4 VINYL SIDING, COLOUR STORM (REFER TO ELEVATIONS FOR COLOR / PATTERN) 15mm WOOD STRAPPING TYVEK AIRWEATHER BARRIER - SHINGLED AND ALL JOINTS SEALED BLUESKIN THROUGH WALL FLASHING MIN 150mm HIGH AT BASE OF ASSEMBLY 100mm OSB SHEATHING 140mm WOOD STUDS @ 400mm O.C. 140mm R22 BATT INSULATION 6 mil POLY VAPOR BARRIER 16mm TYPE 'X' GYPSUM BOARD, PRIME & PAINT FINISH | WALL TYPE - W5 TYPICAL FOUNDATION WALL (BACKLIT) DAMP-PROOFING (TYPE II) EXTENDING DOWN AND OVER FOOTINGS CONCRETE FOUNDATION WALL DAMP-PROOFING (TYPE II) EXTENDING DOWN AND OVER FOOTINGS | |
| | PARTITION TYPES | PARTITION TYPE - P1 DOUBLE PARTY WALL 1 HOUR F.R.R. STC 55 AS PER SB-3 W15a | PARTITION TYPE - P2 PARTY WALL - STAIR WALL 1.5 HOUR F.R.R. STC 58 AS PER SB-3 W15b | PARTITION TYPE - P3 TYPICAL INTERIOR PLUMBING WALL 16mm TYPE 'X' GYPSUM BOARD c/w PRIME & PAINT FINISH 140 WOOD STUDS @ 400 mm O.C. 16mm TYPE 'X' GYPSUM BOARD c/w PRIME & PAINT FINISH | PARTITION TYPE - P4 TYPICAL INTERIOR PARTITION 16mm TYPE 'X' GYPSUM BOARD c/w PRIME & PAINT FINISH 140 WOOD STUDS @ 400 mm O.C. 16mm TYPE 'X' GYPSUM BOARD c/w PRIME & PAINT FINISH | PARTITION TYPE - P5 ATTIC PARTITION IN PARALLEL W/ TRUSSES 16mm TYPE 'X' GYPSUM BOARD TAPEA MID ALL JOINTS WOOD TRUSSES - GABLE (TYPE) 16mm TYPE 'X' GYPSUM BOARD TAPEA MID ALL JOINTS WOOD TRUSSES - GABLE (TYPE) 16mm TYPE 'X' GYPSUM BOARD TAPEA MID ALL JOINTS | |
| | | FLOOR TYPE - F1 TYPICAL FLOOR CONSTRUCTION 1 HR. F.R.R. STC 53 AS PER SB-3 F1b | FLOOR TYPE - F2 WARM FLOOR ABOVE FRONT ENTRY 1 HR. F.R.R. AS PER SB-3 F2 | FLOOR TYPE - F3 UNDERSIDE OF STAIR CONSTRUCTION 1 HOUR F.R.R. | FLOOR TYPE - F4 CONCRETE SLAB 1 HOUR F.R.R. STC 62 CALCULATIONS: STC 63 CARPETING 15mm FOAM IMPACT ISOLATION BARRIER CONCRETE FOUNDATION WALL DAMP-PROOFING (TYPE II) EXTENDING DOWN AND OVER FOOTINGS 8 mil POLY VAPOR BARRIER 60mm R10 ROOF INSULATION AROUND EDGE WHEN FINISHED (GRADE IS LESS THAN 60mm) 150mm COMPACTED GRANULAR 'A' TO 50% | FLOOR TYPE - F5 EXTERIOR STRUCTURAL ENTRY SLAB REFLEX TRAVELLED ON WATERPROOFING COATING (MIN. 1.5mm MIN. 1.5mm MIN. 1.5mm) 2 PLY MODIFIED BITUMEN ROOFING SYSTEM 15mm CONCRETE SLAB ON BRICKWORK FINISH AND SLOPED AWAY FROM BUILDING 200 P.T. GUTTERS @ 90mm O.C. PRE-FINISHED ALUMINUM SOFFIT 'X' TO 50% | FLOOR TYPE - F6 BALCONY DECK GORILLA DECKING FURNING STRIPS (COLOR MATCHED) 2 PLY MODIFIED BITUMEN ROOFING SYSTEM FURNING STRIPS TO PROVIDE MIN. 2% SLOPE AWAY FROM BUILDING AND PIERIS 200 P.T. GUTTERS @ 90mm O.C. PRE-FINISHED ALUMINUM SOFFIT (CHARCOAL) |
| | | FLOOR TYPE - F7 1 HOUR F.R.R. (ULC W42) SYSTEM & USED IN HORIZONTAL APPLICATION UNDER: OBMIC AUTHORITY 885-1-118 | FLOOR TYPE - F8 25mm MINERAL FIBER INSULATION (WHEN ASSEMBLY SEPARATES STAIR WELL AND UNITS) | ROOF TYPE - R1 SHINGLED ROOF - R100 120 25 YEAR ASPHALT ROOFING SHINGLES, COLOUR DIRTWOOD CONTRYSIDE 15mm OSB SHEATHING (ULC W42) AND UNDERLAYER ADDITIONAL ENGINEERED LOG JOISTS @ 800 O.C. 200mm BATT INSULATION 6 mil POLY VAPOR BARRIER 30mm 'X' TYPE CERAMIC TILE ON 15mm FURNING STRIPS 15mm PT STRAPPING PRE-FINISHED ALUMINUM VENTED SOFFIT | ROOF TYPE - R2 FLAT ROOF 2-PLY MODIFIED BITUMEN ROOFING SYSTEM 15mm OSB c/w CLIPS BETWEEN JOISTS 200 P.T. SLEEPERS @ 75" O.C. SLOPED TO SCUPPER (MIN. 2%) 30mm 30mm WOOD FRAMING TYVEK PT WOOD STRAPPING @ 800 O.C. PRE-FINISHED ALUMINUM VENTED SOFFIT | ROOF TYPE - R3 FLAT ROOF w/ 1 HOUR F.R.R. (ULC W42) SYSTEM & USED IN HORIZONTAL APPLICATION UNDER: OBMIC AUTHORITY 885-1-118 SAME AS R20F TYPE - R2 BUT BETWEEN WOOD FRAMING AND TYVEK 25mm TYPE 'X' GYPSUM SHEATHING PANEL 60mm G4 STEEL STUDS 800 O.C. FULL ENTIRE CAVITY WITH MINERAL FIBER BATT INSULATION 2-16mm TYPE 'X' GYPSUM BOARD | |



IT IS THE RESPONSIBILITY OF THE APPROPRIATE CONTRACTOR TO CHECK AND VERIFY ALL DIMENSIONS ON SITE AND TO REPORT ALL ERRORS AND/OR OMISSIONS TO THE ARCHITECT.
ALL CONTRACTORS MUST COMPLY WITH ALL PERTINENT CODES AND BY-LAWS.
THIS DRAWING MAY NOT BE USED FOR CONSTRUCTION UNTIL SIGNED BY THE ARCHITECT.
DO NOT SCALE DRAWINGS.

NOTATION SYMBOLS:

- 00 INDICATES DRAWING NOTES, LISTED ON EACH SHEET.
- 00 INDICATES ASSEMBLY TYPE, REFER TO TYPICAL ASSEMBLY SCHEDULE.
- 00 INDICATES WINDOW TYPE, REFER TO WINDOW ELEVATIONS AND DETAILS ON A900 SERIES.
- 000 INDICATES DOOR TYPE, REFER TO DOOR SCHEDULE AND DETAILS ON A900 SERIES.

DETAIL NUMBER
00 TITLE
A900 SCALE
DETAIL REFERENCE PAGE

DRAWING NOTES:

- 01 ASPHALT SHINGLES: WEATHERED WOOD
- 02 PREFINISHED ALUMINUM FASCIA & VENTED SOFFIT (CHARCOAL)
- 03 BEIGE BRICK: FORTERRA, MAX SIZE, RUTHERFORD
- 04 HARDIE BOARD ACCENT PANEL C/W ALUMINUM TRIM PIECES (COBBLESTONE)
- 05 HARDIE BOARD ACCENT PANEL C/W ALUMINUM TRIM PIECES (MIDNIGHT BLACK)
- 06 VINYL SIDING: STORM
- 07 PRECAST LINTELS & SILLS
- 08 125mm PRECAST CONCRETE ACCENT BAND
- 09 ALUMINUM BALCONY RAILING c/w PICKETS @ 100mm o.c. MAX. (BLACK) PROVIDE P.ENG. SIGNED DETAILS TO SITE INSPECTOR PRIOR TO INSTALLATION
- 10 PRE-FINISHED ALUMINUM FLASHING (CHARCOAL)
- 11 ORNAMENTAL METAL RODS (CHARCOAL)
- 12 CONCRETE STEPS
- 13 STACKED PRECAST CONCRETE UNIT PLANTER WALL
- 14 CONCRETE PAVING

| 1 | ISSUED FOR | DATE |
|-----|-------------|------|
| No. | DESCRIPTION | DATE |

REVISIONS:

ARCHITECT SEAL: _____ NORTH ARROW: _____

SEAL DATE: _____ STAMP DATE: _____



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PROJECT TITLE:
(SMALL)
LILYTHORNE ZEN
BLOCK - OTTAWA ONTARIO

SHEET TITLE:
ELEVATIONS
WINDOW & DOOR
SCHEDULE

| | |
|---------------------|-------------------|
| DRAWN: CM | CHECKED: RLA |
| SCALE: 1:75 | SHEET No. A200 |
| PROJECT No. 2006 | |

TYPICAL NOTES:
WINDOWS TO CONFORM CAN/CSA-A440.1 AND CAN/CSA-A440.2
WINDOWS AND PATIO DOORS TO HAVE A MAX. U VALUE OF 1.6
EXTERIOR SWING DOORS TO COMPLY WITH ASTM E289
GLASS IN DOORS AND SIDE LIGHTS TO BE TEMPERED GLASS
CONFORMING TO CAN/CSG-12.1-M
BUILDING A & F REQUIRE WINDOWS WITH STC RATING NOT LESS THAN 31 IN ACCORDANCE WITH ASTM E90.

3 WINDOWS & EXTERIOR DOOR SCHEDULE
SCALE = 1/8" = 1'-0"

Appendix D

STC Calculations

Living Room - Large Block - (3rd Floor) - Spratt Zens

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

| | | | | |
|------------|---------------------------------|-------------------|--|-----------------|
| 1.0 | Free field sound level | <u>66.37</u> dBA | Noise source | |
| | Correction for reflections | <u>3</u> dBA | Road | ▼ |
| | Outdoor sound level | <u>69.37</u> dBA | Indoor Quarters | |
| | Indoor sound level (Night time) | <u>35</u> dBA | Living | ▼ |
| | Required Noise Reduction (NR) | <u>34.37</u> dB | Subtract indoor from outdoor sound level | |
| 2.0 | Sound angle of incidence | 0 to 90 degrees ▼ | C ₁ Correction from Table 7.7 | <u>0</u> dB |
| | | | Sum | <u>34.37</u> dB |

| | | | | |
|------------|--|---|--------------------------------|---------------|
| | Component: | Wall ▼ | STC | <u>40</u> dB |
| 3.0 | Noise spectrum type | D - Mixed Road Traffic, Distant Aircraft ▼ | C ₄ from Table 7.10 | <u>7</u> dB |
| | Component category | d. Sealed thick window, or exterior wall, or roof/ceiling ▼ | Correction | <u>-7</u> dB |
| 4.0 | Room floor area | <u>45.3</u> m ² | 30.75055 % of floor area | |
| | Component Area | <u>13.93</u> m ² | | |
| | Room absorption category | Intermediate ▼ | C ₃ from Table 7.9 | <u>-7</u> dB |
| | | | Correction | <u>7</u> dB |
| 5.0 | Noise reduction if only this component transmits sound | | | <u>40</u> dB |
| 6.0 | Required noise reduction (from Step 1) | | | <u>34</u> dB |
| 7.0 | Term C ₂ : Subtract the Required NR from the Noise Reduction for this component | | | <u>5.6</u> dB |
| 8.0 | Determine from Table 7.8 the corresponding value of total transmitted sound energy | | | <u>25</u> % |

| | | | | |
|-------------|--------------------------|---|---|------------------------|
| | Component: | Window ▼ | After step 2 | <u>34.37</u> dB |
| 9.0 | Transmits | 75 % of total sound energy | C ₂ from Table 7.8 | <u>1</u> dB |
| 10.0 | Room floor area | <u>45.3</u> m ² | 17.94702 % of floor area | |
| | Component Area | <u>8.13</u> m ² | | |
| | Room absorption category | Intermediate ▼ | C ₃ from Table 7.9 | <u>-7</u> dB |
| 11.0 | Noise spectrum type | D - Mixed Road Traffic, Distant Aircraft ▼ | C ₄ from Table 7.10 | <u>7</u> dB |
| | Component category | d. Sealed thick window, or exterior wall, or roof/ceiling ▼ | | |
| | | | STC=NR+C ₁ +C ₂ +C ₃ +C ₄ | Required STC <u>35</u> |

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

Bedroom 2 - Large Block - Spratt Zens

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

| | | | | |
|------------|---------------------------------|-------------------|--|-----------------|
| 1.0 | Free field sound level | <u>63.32</u> dBA | Noise source | |
| | Correction for reflections | <u>3</u> dBA | Road | ▼ |
| | Outdoor sound level | <u>66.32</u> dBA | Indoor Quarters | |
| | Indoor sound level (Night time) | <u>35</u> dBA | Sleeping | ▼ |
| | Required Noise Reduction (NR) | <u>31.32</u> dB | Subtract indoor from outdoor sound level | |
| 2.0 | Sound angle of incidence | 0 to 90 degrees ▼ | C ₁ Correction from Table 7.7 | <u>0</u> dB |
| | | | Sum | <u>31.32</u> dB |

| | | | | |
|------------|--|---|--------------------------------|---------------|
| | Component: | Wall ▼ | STC | <u>40</u> dB |
| 3.0 | Noise spectrum type | D - Mixed Road Traffic, Distant Aircraft ▼ | C ₄ from Table 7.10 | <u>7</u> dB |
| | Component category | d. Sealed thick window, or exterior wall, or roof/ceiling ▼ | Correction | <u>-7</u> dB |
| 4.0 | Room floor area | <u>11.19</u> m ² | 92.76139 % of floor area | |
| | Component Area | <u>10.38</u> m ² | | |
| | Room absorption category | Intermediate ▼ | C ₃ from Table 7.9 | <u>-4</u> dB |
| | | | Correction | <u>4</u> dB |
| 5.0 | Noise reduction if only this component transmits sound | | | <u>37</u> dB |
| 6.0 | Required noise reduction (from Step 1) | | | <u>31</u> dB |
| 7.0 | Term C ₂ : Subtract the Required NR from the Noise Reduction for this component | | | <u>5.7</u> dB |
| 8.0 | Determine from Table 7.8 the corresponding value of total transmitted sound energy | | | <u>25</u> % |

| | | | | |
|-------------|--------------------------|---|--------------------------------|-----------------|
| | Component: | Window ▼ | After step 2 | <u>31.32</u> dB |
| 9.0 | Transmits | 75 % of total sound energy | C ₂ from Table 7.8 | <u>1</u> dB |
| 10.0 | Room floor area | <u>11.19</u> m ² | 34.94191 % of floor area | |
| | Component Area | <u>3.91</u> m ² | | |
| | Room absorption category | Intermediate ▼ | C ₃ from Table 7.9 | <u>-4</u> dB |
| 11.0 | Noise spectrum type | D - Mixed Road Traffic, Distant Aircraft ▼ | C ₄ from Table 7.10 | <u>7</u> dB |
| | Component category | d. Sealed thick window, or exterior wall, or roof/ceiling ▼ | | |
| | | STC=NR+C ₁ +C ₂ +C ₃ +C ₄ | Required STC | <u>35</u> |

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

Living Room - Small Block - (3rd Floor) - Spratt Zens

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

| | | | | |
|------------|-------------------------------|-------------------|--|-----------------|
| 1.0 | Free field sound level | <u>66.37</u> dBA | Noise source | |
| | Correction for reflections | <u>3</u> dBA | Road | ▼ |
| | Outdoor sound level | <u>69.37</u> dBA | Indoor Quarters | |
| | Indoor sound level (Daytime) | <u>40</u> dBA | Living | ▼ |
| | Required Noise Reduction (NR) | <u>29.37</u> dB | Subtract indoor from outdoor sound level | |
| 2.0 | Sound angle of incidence | 0 to 90 degrees ▼ | C ₁ Correction from Table 7.7 | <u>0</u> dB |
| | | | Sum | <u>29.37</u> dB |

| | | | | |
|------------|--|---|--------------------------------|--------------|
| | Component: | Wall ▼ | STC | <u>40</u> dB |
| 3.0 | Noise spectrum type | D - Mixed Road Traffic, Distant Aircraft ▼ | C ₄ from Table 7.10 | <u>7</u> dB |
| | Component category | d. Sealed thick window, or exterior wall, or roof/ceiling ▼ | Correction | <u>-7</u> dB |
| 4.0 | Room floor area | <u>35.5</u> m ² | 39.57746 % of floor area | |
| | Component Area | <u>14.05</u> m ² | | |
| | Room absorption category | Intermediate ▼ | C ₃ from Table 7.9 | <u>-7</u> dB |
| | | | Correction | <u>7</u> dB |
| 5.0 | Noise reduction if only this component transmits sound | | | <u>40</u> dB |
| 6.0 | Required noise reduction (from Step 1) | | | <u>29</u> dB |
| 7.0 | Term C ₂ : Subtract the Required NR from the Noise Reduction for this component | | | <u>11</u> dB |
| 8.0 | Determine from Table 7.8 the corresponding value of total transmitted sound energy | | | <u>8</u> % |

| | | | | |
|-------------|--------------------------|---|---|------------------------|
| | Component: | Window ▼ | After step 2 | <u>29.37</u> dB |
| 9.0 | Transmits | 92 % of total sound energy | C ₂ from Table 7.8 | <u>0</u> dB |
| 10.0 | Room floor area | <u>35.5</u> m ² | 17.21127 % of floor area | |
| | Component Area | <u>6.11</u> m ² | | |
| | Room absorption category | Intermediate ▼ | C ₃ from Table 7.9 | <u>-7</u> dB |
| 11.0 | Noise spectrum type | D - Mixed Road Traffic, Distant Aircraft ▼ | C ₄ from Table 7.10 | <u>7</u> dB |
| | Component category | d. Sealed thick window, or exterior wall, or roof/ceiling ▼ | | |
| | | | STC=NR+C ₁ +C ₂ +C ₃ +C ₄ | Required STC <u>29</u> |

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

Bedroom 2 - Small Block (3rd Floor) - Spratt Zens

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

| | | | | |
|------------|---------------------------------|-------------------|--|-----------------|
| 1.0 | Free field sound level | <u>63.32</u> dBA | Noise source | |
| | Correction for reflections | <u>3</u> dBA | Road | ▼ |
| | Outdoor sound level | <u>66.32</u> dBA | Indoor Quarters | |
| | Indoor sound level (Night time) | <u>35</u> dBA | Sleeping | ▼ |
| | Required Noise Reduction (NR) | <u>31.32</u> dB | Subtract indoor from outdoor sound level | |
| 2.0 | Sound angle of incidence | 0 to 90 degrees ▼ | C ₁ Correction from Table 7.7 | <u>0</u> dB |
| | | | Sum | <u>31.32</u> dB |

| | | | | |
|------------|--|---|--------------------------------|---------------|
| | Component: | Wall ▼ | STC | <u>40</u> dB |
| 3.0 | Noise spectrum type | D - Mixed Road Traffic, Distant Aircraft ▼ | C ₄ from Table 7.10 | <u>7</u> dB |
| | Component category | d. Sealed thick window, or exterior wall, or roof/ceiling ▼ | Correction | <u>-7</u> dB |
| 4.0 | Room floor area | <u>11.42</u> m ² | 79.24694 % of floor area | |
| | Component Area | <u>9.05</u> m ² | | |
| | Room absorption category | Intermediate ▼ | C ₃ from Table 7.9 | <u>-4</u> dB |
| | | | Correction | <u>4</u> dB |
| 5.0 | Noise reduction if only this component transmits sound | | | <u>37</u> dB |
| 6.0 | Required noise reduction (from Step 1) | | | <u>31</u> dB |
| 7.0 | Term C ₂ : Subtract the Required NR from the Noise Reduction for this component | | | <u>5.7</u> dB |
| 8.0 | Determine from Table 7.8 the corresponding value of total transmitted sound energy | | | <u>25</u> % |

| | | | | |
|-------------|--------------------------|---|---|------------------------|
| | Component: | Window ▼ | After step 2 | <u>31.32</u> dB |
| 9.0 | Transmits | 75 % of total sound energy | C ₂ from Table 7.8 | <u>1</u> dB |
| 10.0 | Room floor area | <u>11.42</u> m ² | 34.32574 % of floor area | |
| | Component Area | <u>3.92</u> m ² | | |
| | Room absorption category | Intermediate ▼ | C ₃ from Table 7.9 | <u>-4</u> dB |
| 11.0 | Noise spectrum type | D - Mixed Road Traffic, Distant Aircraft ▼ | C ₄ from Table 7.10 | <u>7</u> dB |
| | Component category | d. Sealed thick window, or exterior wall, or roof/ceiling ▼ | | |
| | | | STC=NR+C ₁ +C ₂ +C ₃ +C ₄ | Required STC <u>35</u> |

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