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1883 Stittsville Main Street, Ottawa

Noise Impact Feasibility Report

STITTSVILLE SOUTH SUBDIVISION

Block 349

1883 Stittsville Main Street

City of Ottawa

Noise Impact Feasibility Report

Prepared By:

NOVATECH
Suite 200, 240 Michael Cowpland Drive
Ottawa, Ontario
K2M 1P6

Novatech File: 124097
Ref: R-2024-109

November 13, 2024

November 13, 2024

City of Ottawa
Planning, Development and Building Services Department
Development Review – West
110 Laurier Street West, 4th Floor
Ottawa, ON, K1P 1J1

Attention: **Mike Giampa, P.Eng.**
Project Manager, Infrastructure Approvals

Reference: **Stittsville South Subdivision – Block 349 / 1883 Stittsville Main Street**
Noise Impact Feasibility Report
Novatech File No.: 124097

Please find enclosed the 'Noise Impact Feasibility Report' for the above-noted development located at 1883 Stittsville Main Street in the City of Ottawa. This report is being submitted in support of a site plan control application for the proposed development.

This report evaluates the environmental impact of noise from traffic and assesses the feasibility of mitigation measures to attenuate noise to acceptable levels.

Please contact the undersigned should you have any questions or comments on this report.

Yours truly,

NOVATECH

Ben Sweet, P. Eng.
Project Manager I Land Development Engineering

cc: Sam Bahia, Novatech
Olivia Hughes / Lina Ramirez, Mattamy Homes (Monarch) Ltd.

Table of Contents

Appendices

Tables

Figures

1.0 INTRODUCTION

Novatech has been retained to prepare a Noise Impact Feasibility Report on behalf of Mattamy Homes (Monarch) Ltd. to assess the impact of traffic noise for the proposed site plan at Block 349 within the Stittsville South Subdivision, located at 1883 Stittsville Main Street within the City of Ottawa. The report is in support of a site plan application for the subject development. **Figure 1 - Key Plan** shows an aerial image of the site location.

Figure 1: Key Plan – 1883 Stittsville Main Street

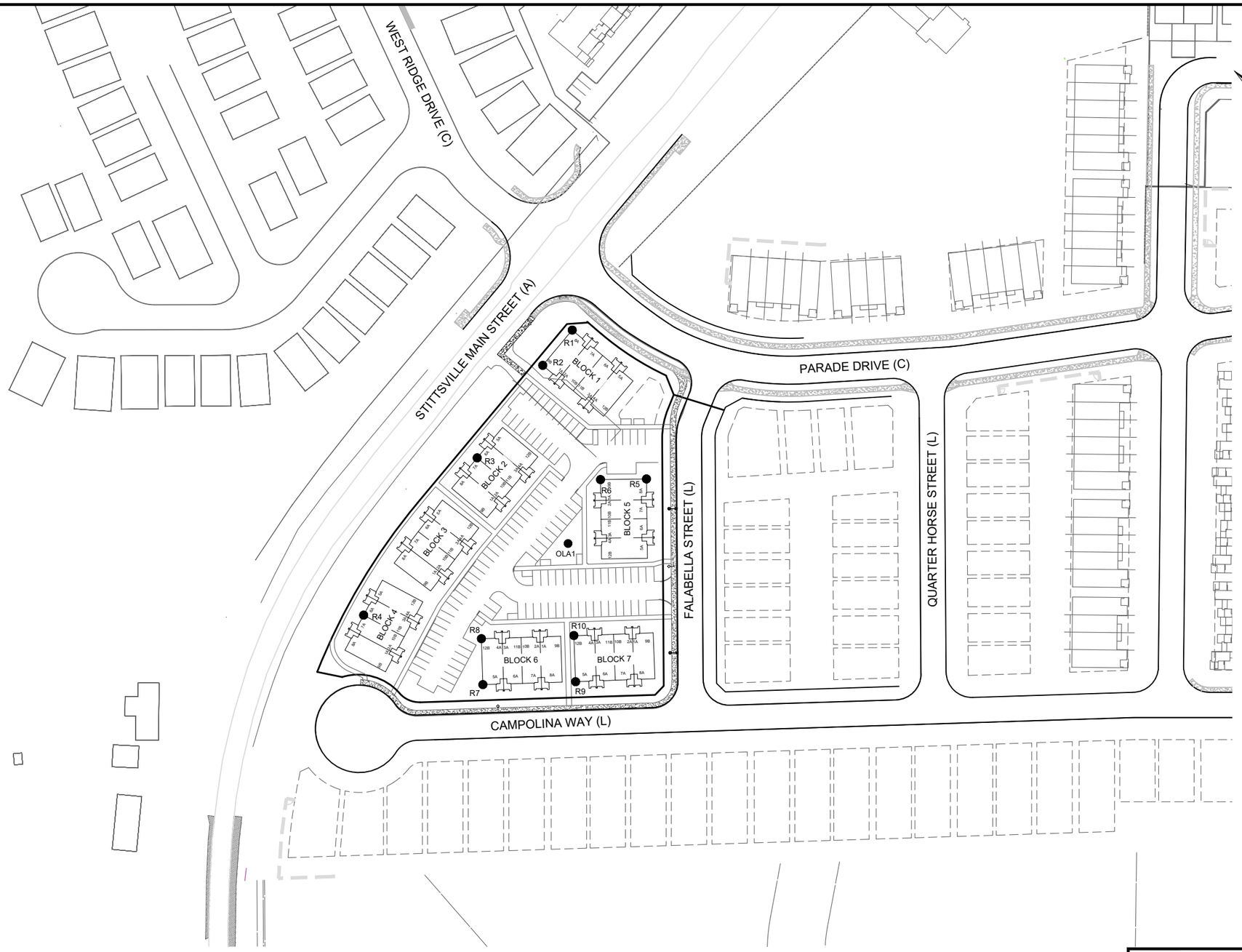
The proposed 1.05 ha development includes 7 stacked townhomes with a total of 84 units, 109 surface parking stalls, and an amenity area. The locations of all nodes used to determine the predicted noise levels are included in **Figure 2 – Receiver Location Plan.**

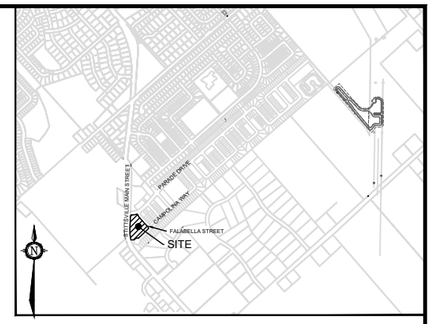
The only Outdoor Living Area (OLA) noise levels that needs to be considered is the designated amenity area, selected 1.5m above finished grade.

The following Indoor Living Areas (ILE's) noise levels are considered:

- Units 9B-12B for all Blocks, both daytime and nighttime are selected 1.5m above the first-floor grade.
- Units 1A-8A for all Blocks, daytime is selected 1.5m above the second-floor grade, which is 4.65m total, and nighttime is selected 1.5m above the third-floor grade, which is 7.80m total.

This report follows recommendations of the City of Ottawa's Environmental Nosie Control Guidelines (ENCG) and the MOE NPC-300 Environmental Noise Guideline.





LEGEND

(A)	ARTERIAL ROAD CLASSIFICATION
(C)	COLLECTOR ROAD CLASSIFICATION
(L)	LOCAL ROAD CLASSIFICATION
R1	RECEPTOR NODE LOCATION WITH NUMBER
OLA1	OLA NODE LOCATION WITH NODE NUMBER

NOVATECH
Engineers, Planners & Landscape Architects
Suite 200, 240 Michael Cowpland Drive
Ottawa, Ontario, Canada K2M 1P6
Telephone (613) 254-9643
Facsimile (613) 254-5867
Website www.novatech-eng.com

CITY OF OTTAWA
1883 STITTSVILLE MAIN STREET

RECEIVER LOCATION PLAN

SCALE 1 : 1500 (0, 15, 30, 45, 60)
DATE OCT 2024
JOB 124097
FIGURE FIGURE 2

SHT11X17.DWG - 279mmX432mm

M:\2024\124097\CAD\Civil\Figures\Noise\124097 - NC.dwg, Figure 2, Oct 07, 2024 - 10:54am, mfang

2.0 NOISE CRITERIA, NOISE SOURCES AND NOISE ATTENATION METHODS

The City of Ottawa criteria for noise from aircraft, roads, transitways, and railways is outlined in **Tables 2.2a: Sound Level Limit for Outdoor Living Areas – Road and Rail, Table 2.2b: Sound Level Limit for Indoor Living Areas Road and Rail,** and **Table 2.2c: Supplementary Sound Level Limits for Indoor Spaces – Road and Rail** of the ENCG. The maximum suggested sound levels for OLAs and ILE's between 7am and 11pm are 55 dBA and 45 dBA, respectively. The maximum suggested sound level for sleeping quarters is 40 dBA between 11pm and 7am. For reference, **Tables 2.2a, 2.2b and 2.2c** of the ENCG are included in **Appendix A**.

OLA and ILE receivers are defined as:

- **OLA**: The outdoor living area is provided for the quiet enjoyment of the outdoor environment during the day-time period. These amenity areas are typically backyards, gardens, shared terraces and patios of a substantial size.
- **ILE**: The indoor living area is provided for the quiet enjoyment of the living/ dining and sleeping quarters within a dwelling, during both the day-time and night-time periods.

The noise level criteria are summarized in **Table 1** below.

Table 1: Noise Level Criteria

Time Period	Receiver Location	Noise Level Criteria (Leq)
Daytime (07:00 – 23:00)	OLA	55 dBA
Daytime (07:00 – 23:00)	ILE - living/ dining rooms	45 dBA
Nighttime (23:00 – 07:00)	ILE - sleeping quarters	40 dBA

For modelling purposes, predicted noise levels for ILE's are taken at the Plane of Window (POW) with noise attenuation being provided by the building envelope. This will be discussed further in the following sections of this report.

2.1 Noise Sources

The City of Ottawa Official Plan stipulates that a noise study shall be prepared when a new development is proposed within 100 metres of an arterial, major collector or collector roadway, or a rapid-transit corridor. There are no railway, airport, or stationary noise sources that affect this site.

Stittsville Main Street is intended to be classified as 4-Lane Urban Arterial – Divided (4-UAD) roadway in the future, as a 37.5m ROW allowance has been allocated for this roadway. Parade Drive can be considered as extension of West Ridge Drive (classified as Urban Collector in City of Ottawa Official Plan) is an Urban Collector (2-UCU) for the purpose of this report. Refer to **Appendix A** for the excerpt from the Official Plan. **Table 2** outlines the road noise sources for the site.

Table 2: Traffic and Roadway Parameters

	Stittsville Main St.	Parade Dr. (West Ridge Dr.)
Roadway Classification	4-Lane Arterial Undivided	2-Lane Urban Collector Undivided
Annual Average Daily Traffic (AADT)	35,000 vehicles/day	8,000 vehicles/day
Day/Night Split (%)	92/8	92/8
Medium Trucks (%)	7	7
Heavy Trucks (%)	5	5
Posted Speed	50 km/hr	50 km/hr

2.2 Methods for Noise Attenuation

When OLA or ILE predicted sound levels are approximately equal to or less than the maximum suggested levels in the ENCG (Table 1), attenuation measures are not required. If the predicted noise levels are found to exceed the limits, noise mitigation and/ or warning clauses are required. Warning clauses are discussed in section 2.5. The City of Ottawa's preferred noise mitigation methods are:

- Increasing the amount of soft ground between the noise sources and noise receptor;
- Inserting noise insensitive land between the noise source and the noise receptor;
- Orientate the building to provide shelter to noise sensitive areas;
- Install acoustic (noise) barriers;
- Install air conditioning and forced air ventilation; and
- Enhance construction techniques and construction quality.

2.3 Ventilation Requirements

A forced air heating system with provisions for a central air conditioning system is required if the POW daytime noise level is between 55 dBA and 65 dBA and/ or the nighttime noise level is between 50 dBA and 60 dBA.

The installation of a central air conditioning system is required when the daytime noise level exceeds 65 dBA and/ or the nighttime noise level exceeds 60 dBA.

2.4 Building Components

When POW noise levels exceed 65 dBA (day-time) or 60 dBA (night-time) the exterior cladding system of the building envelope must be acoustically assessed to ensure indoor sound criteria are achieved. In practice, the exterior shell is comprised of primarily two to four components; exterior walls, windows and patio doors, roofs and ceilings, and exterior doors.

2.5 Warning Clauses

If predicted noise levels are expected to exceed the applicable sound level criteria, the City of Ottawa and the MOE recommends a warning clause(s) be registered on title and incorporated

into the development agreement and the lease/ rental/ sale agreements. The warning clause serves to alert potential purchaser/ buyers/ tenants of the possible noise condition and of any limitations that may exist on his/ her property rights.

Generic warning clauses from the ENCG for surface transportation are listed below.

Warning Clause Type 'A'

"Purchasers/ tenants are advised that sound levels due to increasing road traffic may occasionally interfere with some activities of the dwelling occupants as the sound levels exceed the City's and the Ministry of the Environment's noise criteria."

Warning Clause Type 'B'

"Purchasers/ tenants are advised that despite the inclusion of noise control features in the development and within the building units, sound levels due to increasing road and transitway traffic may on occasion interfere with some activities of the dwelling occupants as the sound levels exceed the City's and the Ministry of the Environment's noise criteria."

Warning Clause 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.)"

Warning Clause 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."

2.6 Summary of Attenuation Requirements

Table 3 summarizes the required noise attenuation measures and warning clauses should sound criteria be exceeded. Excerpts from the ENCG and MOE documents are included in **Appendix A** for reference.

Table 3: Noise Attenuation Measure Requirements

Assessment Location	L_{eq} (dBA)	Outdoor Control Measures	Indoor Control Measures		Warning Clause
			Ventilation Requirements	Building Components	
Outdoor Living Area (OLA)	Less than 55	None required	N/A	N/A	None required
	Between 55 and 60	Control measures (barriers) may not be required but should be considered	N/A	N/A	Required if resultant L_{eq} exceeds 55 dBA Type A* or Type B**
	More than 60	Barriers required	N/A	N/A	Required if resultant L_{eq} exceeds 55 dBA Type A* or Type B*
Plane of Living Room Window (POW)	Less than 55	N/A	None Required	None Required	None Required
	Between 55 and 65	N/A	Forced air heating with provision for central air conditioning	None Required	Required Type C
	More Than 65	N/A	Central Air Conditioning	Acoustical performance of the windows and walls should be specified	Required Type D
Plane of Sleeping Quarters Window (POW)	Less than 50	N/A	None Required	None Required	None Required
	Between 50 and 60	N/A	Forced air heating with provision for central air conditioning	None Required	Required Type C
	More than 60	N/A	Central Air Conditioning	Acoustical performance of the windows and walls should be specified	Required Type D

*Type A warning clause refers to units requiring a noise barrier that mitigates noise below 55 dBA.
**Type B warning clause refers to units requiring a noise barrier but is technically or economically not feasible to reduce levels below 55 dBA and a tolerance of up to 5dBA can be granted by the City.

3.0 PREDICTED NOISE LEVELS

Noise levels were analyzed using Version 5.03 of the STAMSON computer program. The predicted noise levels for the OLA and ILE's are provided in **Table 4** and **Table 5**, respectively.

Table 4: Simulation Results – Outdoor Living Area

Receiver Location*	Calculated Noise Level (dBa) 7:00-23:00		Outdoor Mitigation Method
	Un-attenuated	Attenuated	
OLA 1	51.49	-	N/A

*Locations found on **Figure 2 – Receiver Location Plan**

From **Table 4**, the predicted noise levels of OLA 1 are lower than 55 dBA and therefore no attenuated measures are required. Refer to **Appendix B** for noise calculations.

Table 5: Simulation Results – Plane of Window

Receiver Location*	Predicted Noise Level 7:00-23:00 (dBa)	Predicted Noise Level 23:00-7:00 (dBa)	Mitigation Method
	Un-attenuated	Un-attenuated	
R1 (Block1 8A)	71.49	63.89	• Installation of Central Air Conditioning • Warning Clauses Type D • Building Component Assessment
R1 (Block1 9B)	71.49	63.89	• Installation of Central Air Conditioning • Warning Clauses Type D • Building Component Assessment
R2 (Block1 1A)	70.76	63.16	• Installation of Central Air Conditioning • Warning Clauses Type D • Building Component Assessment
R3 (Block2 6A)	70.19	62.65	• Installation of Central Air Conditioning • Warning Clauses Type D • Building Component Assessment
R3 (Block2 10B)	70.19	62.59	• Installation of Central Air Conditioning • Warning Clauses Type D Building Component Assessment
R4 (Block4 6A)	69.96	62.40	• Installation of Central Air Conditioning • Warning Clauses Type D • Building Component Assessment
R4 (Block4 10B)	69.95	62.35	• Installation of Central Air Conditioning • Warning Clauses Type D • Building Component Assessment
R5 (Block5 8A)	61.94	55.01	• Installation of Forced Heating with provisions for Central Air Conditioning • Warning Clauses Type C

Table 5: Simulation Results – Plane of Window

Receiver Location*	Predicted Noise Level 7:00-23:00 (dBa)	Predicted Noise Level 23:00-7:00 (dBa)	Mitigation Method
	Un-attenuated	Un-attenuated	
R5 (Block5 9B)	61.88	54.29	• Installation of Forced Heating with provision for Central Air Conditioning • Warning Clauses Type C
R6 (Block5 1A)	62.17	55.12	• Installation of Forced Heating with provision for Central Air Conditioning • Warning Clauses Type C
R7 (Block6 5A)	58.91	53.76	• Installation of Forced Heating with provision for Central Air Conditioning • Warning Clauses Type C
R7 (Block6 12B)	58.65	51.06	• Installation of Forced Heating with provision for Central Air Conditioning • Warning Clauses Type C
R8 (Block6 4A)	55.77	52.31	• Installation of Forced Heating with provision for Central Air Conditioning • Warning Clauses Type C
R9 (Block7 5A)	54.86	51.03	• Installation of Forced Heating with provision for Central Air Conditioning • Warning Clauses Type C
R9 (Block7 12B)	54.58	46.99	• None Required
R10 (Block7 4A)	47.58	44.47	• None Required

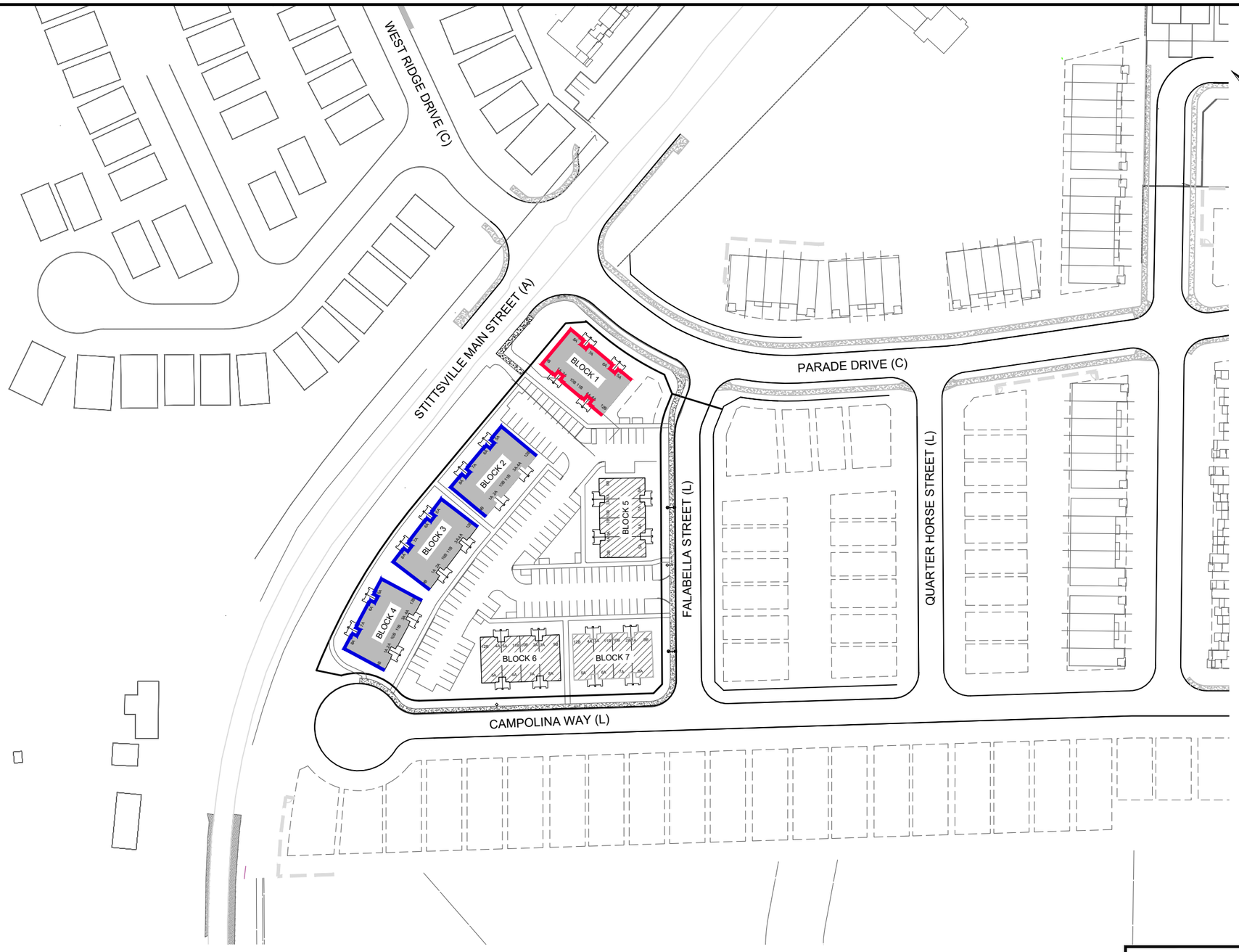
*Locations found on **Figure 2 – Receiver Location Plan**

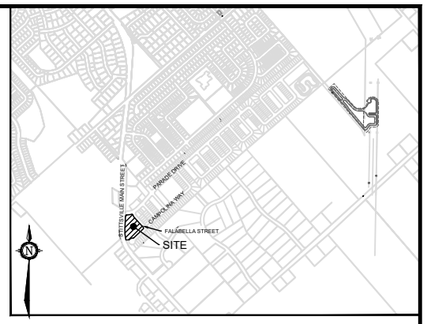
From **Table 5**, the predicted noise levels at the POW's are expected to exceed the sound level criteria. As such, the following is recommended:

- Installation of Central Air Conditioning and the inclusion of warning clause Type D to be registered on title and incorporated into the development agreement and the lease/ rental/ sale agreements of all units in Blocks 1, 2, 3 and 4. Further building component assessment is required for these specific blocks.
- Installation of Forced Air Heating with provision for Central Air Conditioning and the inclusion of warning clause Type C to be registered on title and incorporated into the development agreement and the lease/ rental/ sale agreements of all units in Blocks 5, 6 and 7.

Refer to **Appendix B** for noise calculations.

Refer to **Figure 3 – Noise Attenuation Measures Plan** for all proposed noise attenuation measures.





LEGEND

MITIGATION METHODS INCLUDE:
- INSTALLATION OF CENTRAL AIR CONDITIONING
- WARNING CLAUSE TYPE D TO BE REGISTERED ON TITLE AND INCORPORATED INTO THE AGREEMENT OF PURCHASE AND SALES

MITIGATION METHODS INCLUDE:
- INSTALLATION OF FORCED AIR HEATING WITH PROVISION TO CENTRAL AIR CONDITIONING
- WARNING CLAUSE TYPE C TO BE REGISTERED ON TITLE AND INCORPORATED INTO THE AGREEMENT OF PURCHASE AND SALES

STC REQUIREMENTS:
- EXTERIOR WALL 38
- WINDOW (LIVING ROOM) 30
- WINDOW (SLEEPING QUARTER) 28

STC REQUIREMENTS:
- EXTERIOR WALL 37
- WINDOW (LIVING ROOM) 29
- WINDOW (SLEEPING QUARTER) 27

(A) ARTERIAL ROAD CLASSIFICATION

(C) COLLECTOR ROAD CLASSIFICATION

(L) LOCAL ROAD CLASSIFICATION

NOVATECH
Engineers, Planners & Landscape Architects
Suite 200, 240 Michael Cowpland Drive
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Telephone (613) 254-9643
Facsimile (613) 254-5867
Website www.novatech-eng.com

CITY OF OTTAWA
1883 STITTSVILLE MAIN STREET

NOISE ATTENUATION MEASURES PLAN

SCALE 1 : 1500 (0, 15, 30, 45, 60)

DATE OCT 2024 | JOB 124097 | FIGURE FIGURE 3

SHT11X17.DWG - 279mmX432mm

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4.0 BUILDING COMPONENT ASSESSMENT

As outlined in section 2.4, the ENCG requires that the exterior cladding system of the building envelope be assessed when the predicted noise levels at the POW exceed the minimum requirements outlined in **Table 3.**

Based on the results in **Table 5**, additional assessment of the exterior cladding system is warranted. To comply with the ENCG policies the building envelope will require a minimum Acoustic Insulation Factor (AIF) or Sound Transmission Class (STC) rating to provide the desired indoor noise levels.

AIF Method

The required AIF is based on the outdoor mitigated noise levels (Outdoor L_{eq}), ENCG indoor noise criterion indoor (Indoor L_{eq}), and the number of building components that make up the exterior shell. In practice, the exterior shell is comprised of primarily two to four components; comprised of exterior walls, windows and patio doors, roofs and ceilings, and exterior doors. The Canada Mortgage and Housing Corporation (CMHC) Standards[1] provide guidance on the desired AIF ratings for different exterior shell components, based on research completed by the National Research Council of Canada (NRC). Tables from the document entitled "Acoustic Insulation Factor: A Rating for the Insulation of Buildings Against Outdoor Noise", produced by the Division of Building Research, NRC, June 1980 (J.D. Quirt) were used to assess the building components against the required AIF. This reference material is included in **Appendix C**.

The required AIF is calculated as follows:

$$\text{Required AIF} = \text{Outdoor } L_{eq} - \text{Indoor } L_{eq} + \{10 \log_{10} (N)\} + 2$$

Where, N = Number of components (walls and windows).
L = Sound Level Equivalent expressed on a common decibel scale.

R1 (Worst Case Scenario) are calculated as follows:

- $AIF_{(day)} = 71.49 \text{ dBA} - 45 \text{ dBA} + \{10 \log_{10} (2)\} \text{ dBA} + 2\text{dBA} = 31$
- $AIF_{(night)} = 63.89 \text{ dBA} - 40 \text{ dBA} + \{10 \log_{10} (2)\} \text{ dBA} + 2\text{dBA} = 29$

Based on the above results and to comply with the ENCG policies, the building components will require a minimum AIF rating of 31 and 29 within living/ dining room and sleeping quarters, respectively, to provide the appropriate indoor noise levels.

Approximate STC Equivalent

The AIF can further be approximated to an STC equivalent, if building floor plans are available.

Architect Plans were provided for the subject site and reviewed to calculate the percentage of window to room area and exterior wall to room area for the living/ dining rooms and sleeping quarters for the various units. Architect Plans are included in **Appendix A.**

Table 11 of the referenced material was then used to determine the approximate STC equivalent based on the calculated percentages of window to room area and exterior wall to room areas for

[1] *New Housing and Airport Noise, CMHC, Ottawa, Canada. Publication NHA 5185 1/78 (1978)* and *Road and Rail Noise: Effects on Housing, CMHC, Ottawa, Canada. Publication NHA #5156 12/77 (1977).*

living/ dining room and sleeping quarters. The approximate STC equivalent for the exterior walls and windows are summarized below for the various units within the subject site (see Figure 3):

- Living/ Dining Room Windows
    - Living/ dining room windows of Block 1 (facing north, east and west) require a minimum STC of 30.
    - Living/ dining room windows of Blocks 2, 3, and 4 (facing north, east and west) require a minimum STC of 29.
    - All other living/ dining room windows are to satisfy Ontario Building Code requirements.
- Sleeping Quarter Windows
    - Sleeping quarter windows of Blocks 1 (facing north, east and west) require a minimum STC of 28.
    - Sleeping quarter windows of Blocks 2, 3, and 4 (facing north, east and west) require a minimum STC of 27.
    - All other living/ dining room windows are to satisfy Ontario Building Code requirements.
- Exterior Walls
    - Exterior wall components of Block 1 (facing north, east and west) will require a minimum STC of 38.
    - Exterior wall components of Blocks 2, 3, and 4 (facing north, east and west) require a minimum STC of 37.
    - All other exterior walls are to satisfy Ontario Building Code Requirements.

The AIF to STC approximate equivalency tables can also be found in **Appendix C**.

5.0 CONCLUSION

This study confirms the predicted noise levels from the adjacent Stittsville Main Street and Parade Drive are in excess of the City of Ottawa's required criteria. As such, the following mitigation measures are being proposed:

- Blocks 1, 2, 3 and 4
  - The inclusion of Central Air Conditioning.
  - For the aforementioned blocks, the inclusion of the warning clause below is recommended:

    "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."
- Blocks 5, 6 and 7
  - The inclusion of Forced Air Heating with provisions for Central Air Conditioning.
  - For the aforementioned blocks, the inclusion of the warning clause below is recommended:

    "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.)"
- Upgraded building components (exterior walls and windows) will be required where predicted noise levels exceed the sound level criteria for the indoor living environments as illustrated in Figure 3. Building components compliant with the Ontario Building Code will be sufficient for the remaining exterior walls and windows within the subject site.

NOVATECH

Report By:

Ming Fang, C.E.T., B.Eng
Design Technologist

Reviewed By:

Ben Sweet, P. Eng.
Project Manager I Land Development

APPENDIX A:

Excerpts from City of Ottawa Environmental Noise Control Guidelines, MOE NPC-300, City of Ottawa Transportation Master Plan and Official Plan, and Architect Plans

PLANNING AND GROWTH MANAGEMENT
URBANISME ET GESTION DE LA CROISSANCE

ENVIRONMENTAL NOISE CONTROL GUIDELINES: Introduction and Glossary

January 2016

Table 2.2a: Sound Level Limit for Outdoor Living Areas - Road and Rail

(from NPC-300, 2013 Table C-1)

Time Period	Required L_{eq} (16) (dBA)
16-hour, 07:00 – 23:00	55

Table 2.2b: Sound Level Limit for Indoor Living Areas Road and Rail

(from NPC-300, 2013 Table C-2)

		Required L_{eq} (dBA)	
Type of Space	**Time Period**	**Road**	**Rail**
Living/dining, den areas of residences, hospitals, nursing homes, schools, daycare centres, etc.	07:00 – 23:00	45	40
Living/dining, den areas of residences, hospitals, nursing homes, etc. (except schools or daycare centres)	23:00 – 07:00	45	40
Sleeping quarters	07:00 – 23:00	45	40
	23:00 – 07:00	40	35

The Province also provides for supplementary indoor sound level limits for land uses not generally considered noise sensitive (see Table 2.2c below). These good practice design objectives should be addressed in any noise study prepared for the City. These supplementary sound level limits are based on the windows and doors to an indoor space being closed.

Table 2.2c: Supplementary Sound Level Limits for Indoor Spaces - Road and Rail (adapted from NPC-300 Table C-9)

		Required L_{eq} (dBA)	
Type of Space	**Time Period**	**Road**	**Rail**
General offices, reception areas, retail stores, etc.	16 hours between 07:00 – 23:00	50	45
Theatres, places of worship, libraries, individual or semi- private offices, conference rooms, reading rooms, etc.	16 hours between 07:00 – 23:00	45	40
Sleeping quarters of hotels/motels	8 hours between 23:00 – 07:00	45	40
Sleeping quarters of residences, hospitals, nursing/retirement homes, etc.	8 hours between 23:00 – 07:00	40	35

Appendix B: Table of Traffic and Road Parameters To Be Used For Sound Level Predictions

Table B1 Traffic And Road Parameters To Be Used For Sound Level Predictions

Row Width (m)	Implied Roadway Class	AADT Vehicles/Day	Posted Speed Km/Hr	Day/Night Split %	Medium Trucks %	Heavy Trucks % [1]
NA [2]	Freeway, Queensway, Highway	18,333 per lane	100	92/8	7	5
37.5-44.5	6-Lane Urban Arterial-Divided (6 UAD)	50,000	50-80	92/8	7	5
34-37.5	4-Lane Urban Arterial-Divided (4-UAD)	35,000	50-80	92/8	7	5
23-34	4-Lane Urban Arterial-Undivided (4-UAU)	30,000	50-80	92/8	7	5
23-34	4-Lane Major Collector (4-UMCU)	24,000	40-60	92/8	7	5
30-35.5	2-Lane Rural Arterial (2-RAU)	15,000	50-80	92/8	7	5
20-30	2-Lane Urban Arterial (2-UAU)	15,000	50-80	92/8	7	5
20-30	2-Lane Major Collector (2-UMCU)	12,000	40-60	92/8	7	5
30-35.5	2-Lane Outer Rural Arterial (near the extremities of the City) (2-RAU)	10,000	50-80	92/8	7	5
20-30	2-Lane Urban Collector (2-UCU)	8,000	40-50	92/8	7	5

[1] The MOE Vehicle Classification definitions should be used to estimate automobiles, medium trucks and heavy trucks.

[2] The number of lanes is determined by the future mature state of the roadway.

Environmental Noise Guideline

Stationary and Transportation Sources – Approval and Planning

Publication NPC-300

Ontario

Table C-10
Supplementary Indoor Aircraft Noise Limits
(Applicable over 24-hour period)

Type of Space	Indoor NEF/NEP*
General offices, reception areas, retail stores, etc.	15
Individual or semi-private offices, conference rooms, etc.	10
Living/dining areas of residences, sleeping quarters of hotels/motels, theatres, libraries, schools, daycare centres, places of worship, etc.	5
Sleeping quarters of residences, hospitals, nursing/retirement homes, etc.	0

* The indoor NEF/NEP values listed in Table C-10 are not obtained from NEF/NEP contour maps. The values are representative of the indoor sound levels and are used as assessment criteria for the evaluation of acoustical insulation requirements.

C7 Noise Control Measures

The following sections provide MOE guidance for appropriate noise control measures. These sections constitute requirements that are applied to MOE approvals for stationary sources. This information is also provided as guidance which land use planning authorities may consider adopting.

The definition in Part A describes the various types and application of noise control measures. All the noise control measures described in the definition are appropriate to address the impact of noise of transportation sources (road, rail and aircraft) on planned sensitive land uses. Only some of the noise control measures described in the definition are appropriate to address the noise impact of stationary sources on planned sensitive land uses.

C7.1 Road Noise Control Measures

C7.1.1 Outdoor Living Areas

If the 16-Hour Equivalent Sound Level, L_{eq} (16) in the OLA is greater than 55 dBA and less than or equal to 60 dBA, noise control measures may be applied to reduce the sound level to 55 dBA. If measures are not provided, prospective purchasers or tenants should be informed of potential noise problems by a warning clause Type A.

If the 16-Hour Equivalent Sound Level, L_{eq} (16) in the OLA is greater than 60 dBA, noise control measures should be implemented to reduce the level to 55 dBA. Only in cases where the required noise control measures are not feasible for technical, economic or administrative reasons would an excess above the limit (55 dBA) be acceptable with a warning clause Type B. In the above situations, any excess above the limit will not be acceptable if it exceeds 5 dBA.

C7.1.2 Plane of a Window – Ventilation Requirements

C7.1.2.1 Daytime Period, 07:00 – 23:00 Hours

Noise control measures may not be required if the L_{eq} (16) daytime sound level in the plane of a bedroom or living/dining room window is less than or equal to 55 dBA. If the sound level in the plane of a bedroom or living/dining room window is greater than 55 dBA and less than or equal to 65 dBA, the dwelling should be designed with a provision for the installation of central air conditioning in the future, at the occupant's discretion. Warning clause Type C is also recommended.

If the daytime sound level in the plane of a bedroom or living/dining room window is greater than 65 dBA, installation of central air conditioning should be implemented with a warning clause Type D. In addition, building components including windows, walls and doors, where applicable, should be designed so that the indoor sound levels comply with the sound level limits in Table C-2. The location and installation of the outdoor air conditioning device should comply with sound level limits of Publication NPC-216, Reference [32], and guidelines contained in Environmental Noise Guidelines for Installation of Residential Air Conditioning Devices, Reference [6], or should comply with other criteria specified by the municipality.

C7.1.2.2 Nighttime Period, 23:00 – 07:00 Hours

Noise control measures may not be required if the L_{eq} (8) nighttime sound level in the plane of a bedroom or living/dining room window is less than or equal to 50 dBA. If the sound level in the plane of a bedroom or living/dining room window is greater than 50 dBA and less than or equal to 60 dBA, the dwelling should be designed with a provision for the installation of central air conditioning in the future, at the occupant's discretion. Warning clause Type C is also recommended.

If the nighttime sound level in the plane of a bedroom or living/dining room window is greater than 60 dBA, installation of central air conditioning should be implemented, with a warning clause Type D. In addition, building components including windows, walls and doors, where applicable, should be designed so that the indoor sound levels comply with the sound level limits in Table C-2. The location and installation of the outdoor air conditioning device should comply with sound level limits of Publication NPC-216, Reference [32], and guidelines contained in Environmental Noise Guidelines for Installation of Residential Air Conditioning Devices, Reference [6], or should comply with other criteria specified by the municipality.

C7.1.3 Indoor Living Areas – Building Components

If the nighttime sound level outside the bedroom or living/dining room windows exceeds 60 dBA or the daytime sound level outside the bedroom or living/dining area windows exceeds 65 dBA, building components including windows, walls and doors, where applicable, should be designed so that the indoor sound levels comply with the

sound level limits in Table C-2. The acoustical performance of the building components (windows, doors and walls) should be specified.

C7.2 Rail Noise Control Measures

C7.2.1 Outdoor Living Areas

Whistle noise is not included in the determination of the outdoor daytime sound level due to railway trains. All the provisions of Section C7.1.1 apply also to noise control requirements for rail noise.

C7.2.2 Plane of a Window – Ventilation Requirements

Whistle noise is not included in the determination of the sound level in the plane of a window. All the provisions of Section C7.1.2 apply also to noise control requirements for rail noise.

C7.2.3 Indoor Living Areas – Building Components

The sound level, L_{eq}, during the daytime (16-hour) and nighttime (8-hour) periods is determined using the prediction method STEAM, Reference [34], immediately outside the dwelling envelope. Whistle noise is included in the determination of the sound level.

If the nighttime sound level outside the bedroom or living/dining room windows exceeds 55 dBA or the daytime sound level outside the bedroom or living/dining area windows exceeds 60 dBA, building components including windows, walls and doors, where applicable, need to be designed so that the indoor sound levels comply with the sound level limits in Table C-2. The acoustical performance of the building components (windows, doors and walls) needs to be specified.

In addition, the exterior walls of the first row of dwellings next to railway tracks are to be built to a minimum of brick veneer or masonry equivalent construction, from the foundation to the rafters when the rail traffic L_{eq} (24-hour), estimated at a location of a nighttime receptor, is greater than 60 dBA, and when the first row of dwellings is within 100 metres of the tracks.

C7.3 Combination of Road and Rail Noise

The noise impact in the OLA and in the plane of a window, and the requirements for outdoor measures, ventilation measures and warning clauses, should be determined by combining road and rail traffic sound levels.

The assessment of the indoor sound levels and the resultant requirement for the acoustical descriptors of the building components should be done separately for road

In Class 4 areas, where windows for noise sensitive spaces are assumed to be closed, the use of central air conditioning may be acceptable if it forms an essential part of the overall building designs.

C7.9 Verification of Noise Control Measures

It is recommended that the implementation of noise control measures be verified by qualified individuals with experience in environmental acoustics.

C8 Warning Clauses

The use of warning clauses or easements in respect of noise are recommended when circumstances warrant. Noise warning clauses may be used to warn of potential annoyance due to an existing source of noise and/or to warn of excesses above the sound level limits. Direction on the use of warning clauses should be included in agreements that are registered on title to the lands in question. The warning clauses would be included in agreements of Offers of Purchase and Sale, lease/rental agreements and condominium declarations. Alternatively, the use of easements in respect of noise may be appropriate in some circumstances. Additional guidance on the use of noise warning clauses is provided in Section C7.1.1, Section C7.1.2.1, Section C7.1.2.2, Section C7.3 and Section C7.4.

C8.1 Transportation Sources

The following warning clauses may be used individually or in combination:

TYPE A: (see Section C7.1.1)

> "Purchasers/tenants are advised that sound levels due to increasing road traffic (rail traffic) (air 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 B: (see Section C7.1.1 and Section C7.4)

> "Purchasers/tenants are advised that despite the inclusion of noise control features in the development and within the building units, sound levels due to increasing road traffic (rail traffic) (air traffic) may on occasions 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: (see Section C7.1.2.1, Section C7.1.2.2 and Section C7.4)

> "This dwelling unit has been designed with the provision for adding central air conditioning at the occupant's discretion. Installation of

central air conditioning by the occupant in low and medium density developments will allow windows and exterior doors to remain closed, thereby ensuring that the indoor sound levels are within the sound level limits of the Municipality and the Ministry of the Environment."

TYPE D: (see Section C7.1.2.1, Section C7.1.2.2 and Section C7.4)

"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 sound level limits of the Municipality and the Ministry of the Environment."

C8.2 Stationary Sources

It is not acceptable to use warning clauses in place of physical noise control measures to identify an excess over the MOE sound level limits. Warning clause (Type E) for stationary sources may identify a potential concern due to the proximity of the facility but it is not acceptable to justify exceeding the sound level limits.

TYPE E: (see Section C7.6)

"Purchasers/tenants are advised that due to the proximity of the adjacent industry (facility) (utility), noise from the industry (facility) (utility) may at times be audible."

C8.3 Class 4 Area Notification

TYPE F: (see Section B9.2 and Section C4.4.2)

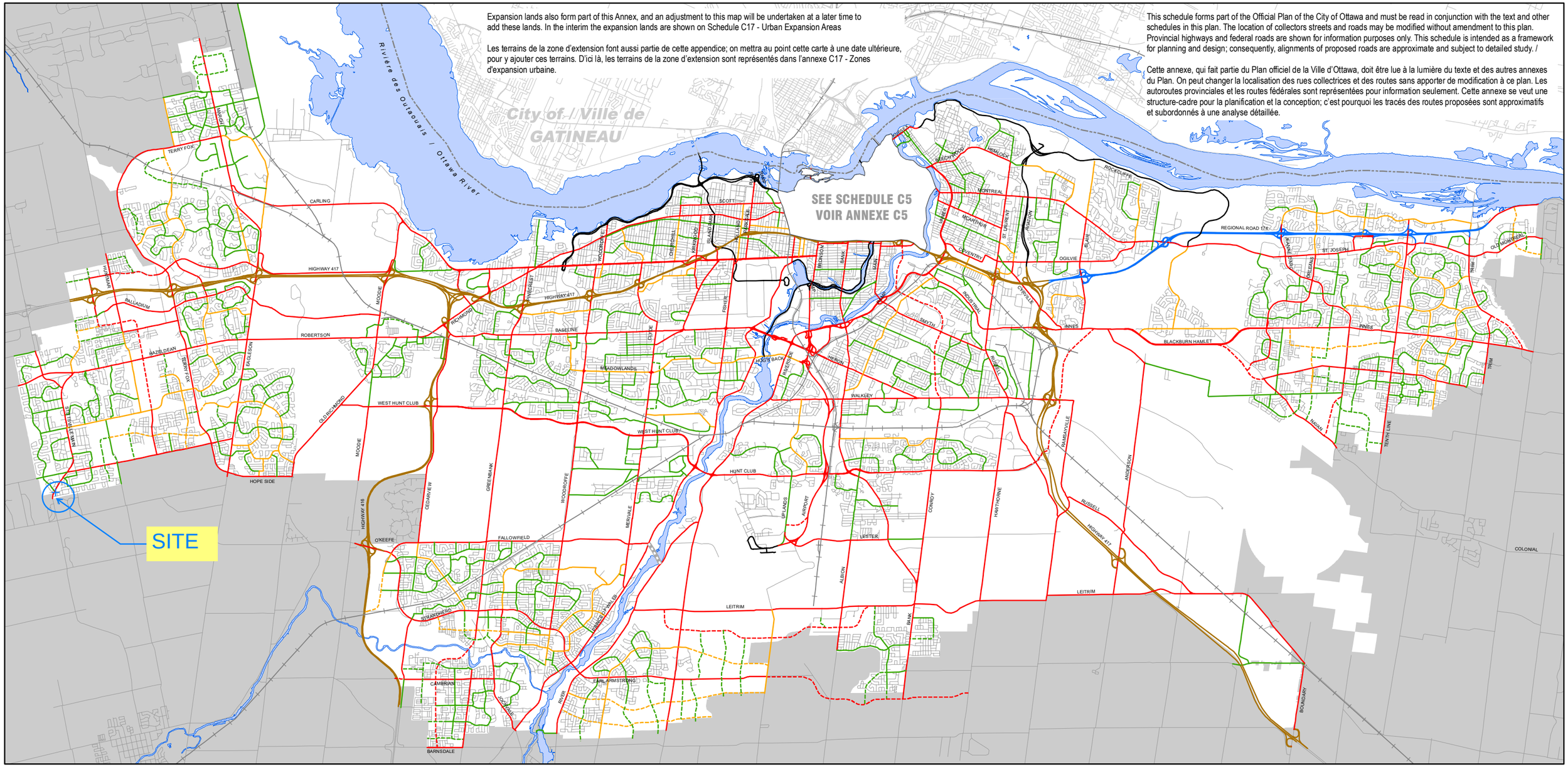
"Purchasers/tenants are advised that sound levels due to the adjacent industry (facility) (utility) are required to comply with sound level limits that are protective of indoor areas and are based on the assumption that windows and exterior doors are closed. This dwelling unit has been supplied with a ventilation/air conditioning system which will allow windows and exterior doors to remain closed."

Expansion lands also form part of this Annex, and an adjustment to this map will be undertaken at a later time to add these lands. In the interim the expansion lands are shown on Schedule C17 - Urban Expansion Areas

Les terrains de la zone d'extension font aussi partie de cette appendice; on mettra au point cette carte à une date ultérieure, pour y ajouter ces terrains. D'ici là, les terrains de la zone d'extension sont représentés dans l'annexe C17 - Zones d'expansion urbaine.

This schedule forms part of the Official Plan of the City of Ottawa and must be read in conjunction with the text and other schedules in this plan. The location of collectors streets and roads may be modified without amendment to this plan. Provincial highways and federal roads are shown for information purposes only. This schedule is intended as a framework for planning and design; consequently, alignments of proposed roads are approximate and subject to detailed study. /

Cette annexe, qui fait partie du Plan officiel de la Ville d'Ottawa, doit être lue à la lumière du texte et des autres annexes du Plan. On peut changer la localisation des rues collectrices et des routes sans apporter de modification à ce plan. Les autoroutes provinciales et les routes fédérales sont représentées pour information seulement. Cette annexe se veut une structure-cadre pour la planification et la conception; c'est pourquoi les tracés des routes proposées sont approximatifs et subordonnés à une analyse détaillée.



Arterial - Existing	Artère - Établie	Provincial Highway	Route provinciale
Arterial - Future (alignment defined)	Artère - Future (alignement déterminée)	Federally Owned Road	Chemins de propriété fédéral
Major Collector - Existing	Grande collectrice - Établie	City Freeway	Autoroute municipale
Major Collector - Future	Grande collectrice - Future		
Collector - Existing	Collectrice - Établie		
Collector - Future	Collectrice - Future		
River Crossing (corridor undefined)	Traversée de rivière (couloir non défini)		

Official Plan / Plan officiel

Schedule C4 - Urban Road Network
Annexe C4 Réseau routier urbain

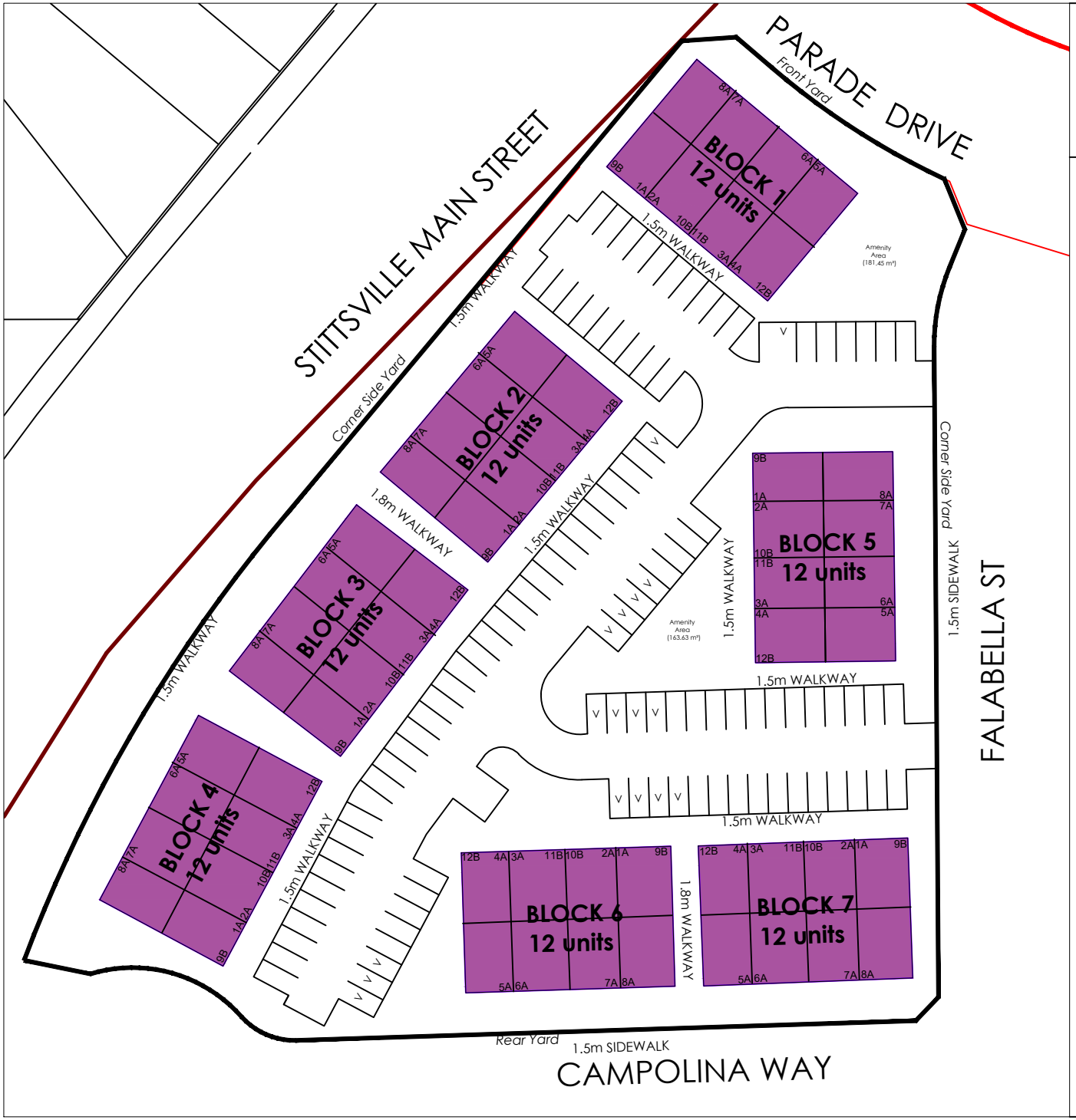
Approved on November 4, 2022
Approuvé le 4 novembre 2022

Consolidation and Amendments / Consolidation et amendements

0 0.5 1 2 3 4 5 km

Planning, Infrastructure and Economic Development Department, Geospatial Analytics, Technology and Solutions
Services de la planification, de l'infrastructure et du développement économique, Analyse géospatiale, technologie et solutions

Road	From	To	ROW to be Protected (m)	Classification	Sector
West Hunt Club	Old Richmond	Highway 416	44 Note: subject to the varying widening requirements of the Hope Side Road/Old Richmond Road Corridor (Terry Fox Drive to Highway 416) ESR	arterial	urban
West Hunt Club	Highway 416	Greenbelt boundary	G	arterial	urban
West Hunt Club	Greenbelt boundary	Cleopatra	44.5 Note: An additional 5.0 m on the Greenbelt side may be required to construct a rural cross-section.	arterial	urban
West Hunt Club	Cleopatra	Prince of Wales	44.5	arterial	urban
West Ridge	Hazeldean	Fernbank	24	collector	urban
Westcliffe	Robertson	Seyton	24	collector	urban
Whitby	Churchill	Winona	15 Note: North side	local	urban
Winston	Richmond	Dead end at Wilmont	15	local	urban
Withrow	Meadowlands	Merivale	24	collector	urban
Woodfield	Medhurst	Merivale	24	collector	urban
Woodridge	Bayshore	Bayshore	24	collector	urban



Stittsville - Traditions II Phase 1

Colour Plan

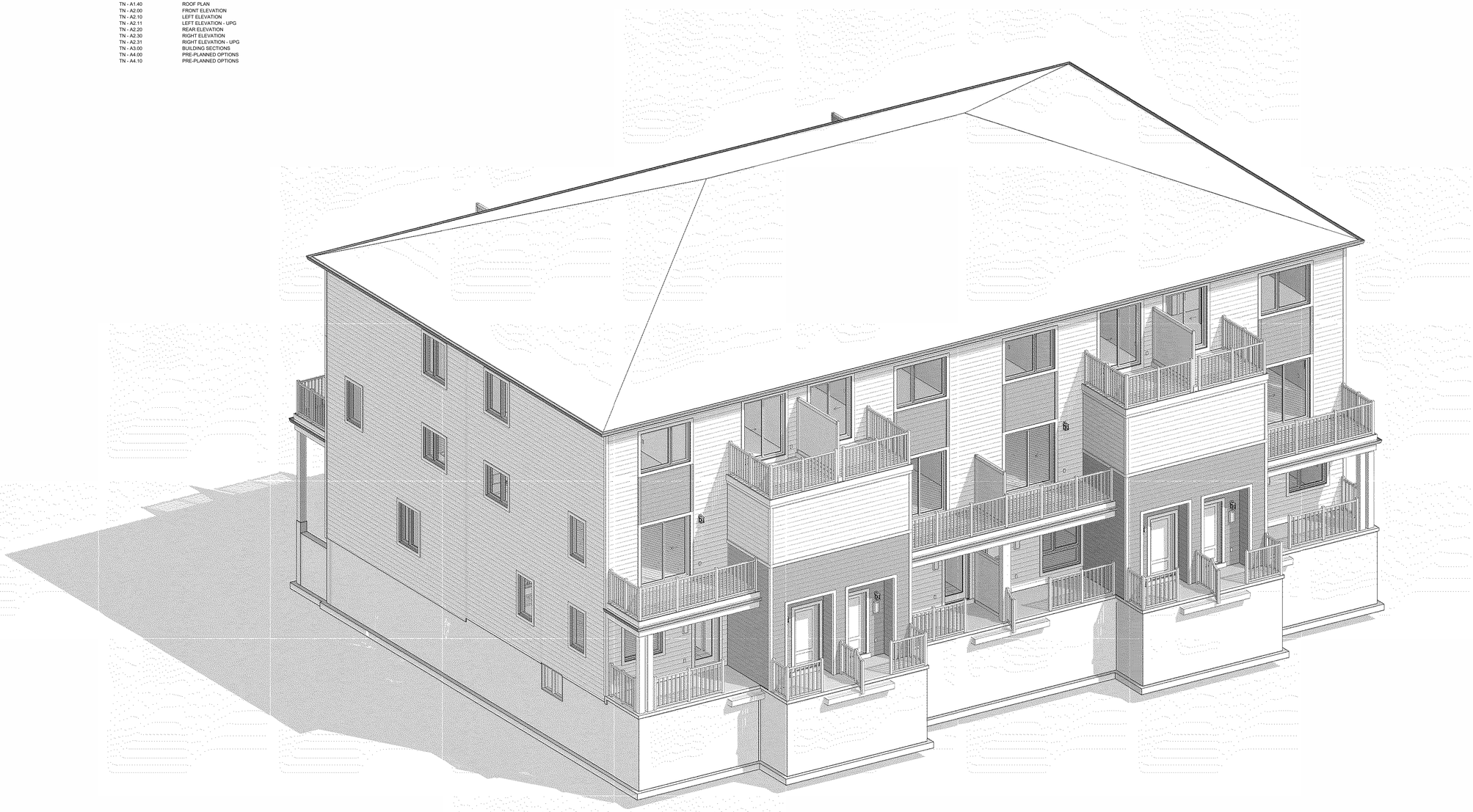
Legend

- Phase Boundary
- Stacked Towns
- ## Legal Lot Number

DECOEUR

TRANSITIONAL (TN)

DRAWING LIST



BIM STUDIO

636 KING ST W,
3RD FLOOR, TORONTO, ON,
M5V 1M7,
bim@bimstudio.ca

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architecture | interiors | design | research

7-145 BIRMINGHAM STREET,
ETOBICOKE, ON,
M8V3Z8
info@organicastudio.ca
T: 905 832 5758

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ISSUED / REVISION CHART

01	ISSUED FOR PERMIT	2022-08-30
02	ISSUED FOR PERMIT REVISION 01	2022-12-08
03	ISSUED FOR PERMIT REVISION 02	2023-03-02
04	ISSUED FOR PERMIT REVISION 03	2023-11-03

COVER SHEET

DECOEUR

TRANSITIONAL (TN)

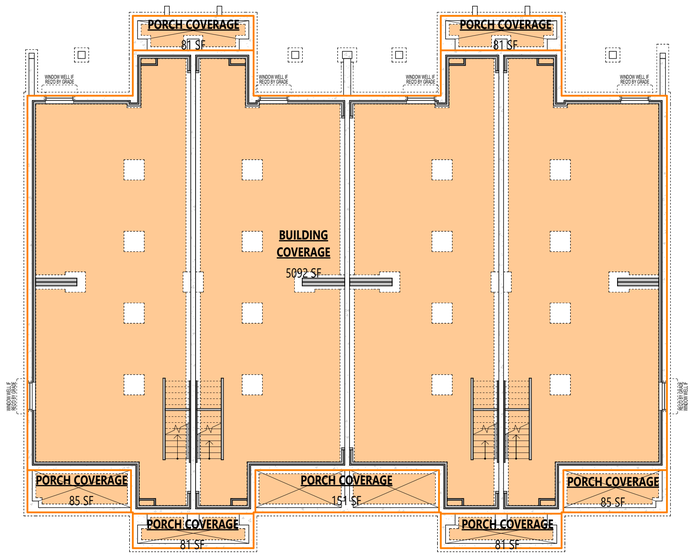
Orleans

2370 TENTH LINE RD
CITY OF OTTAWA

CITY PLAN NO. **18688**
CITY FILE NO. **D07-12-21-0224**

SHEET SIZE **24"x36"**
SCALE
ISSUE DATE **DEC 05, 2023**

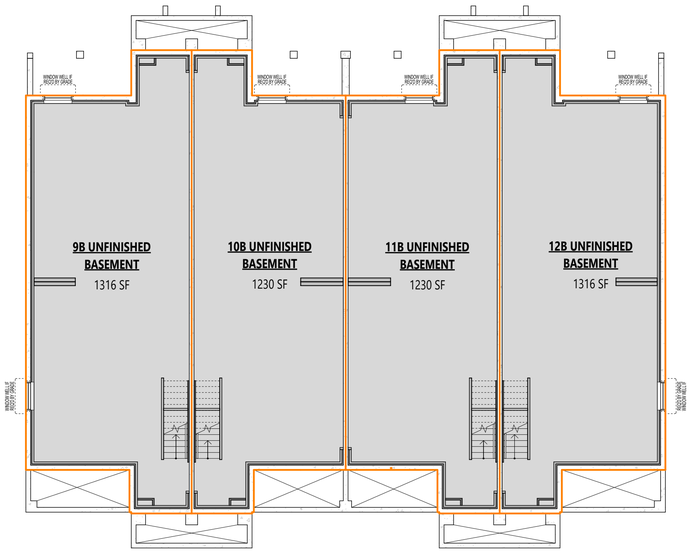
PAGE A0.00



COVERAGE

COVERAGE CALCULATIONS

BUILDING COVERAGE	5092 SF	473.10 m²
PORCH COVERAGE	647 SF	60.10 m²
TOTAL	5739 SF	533.20 m²

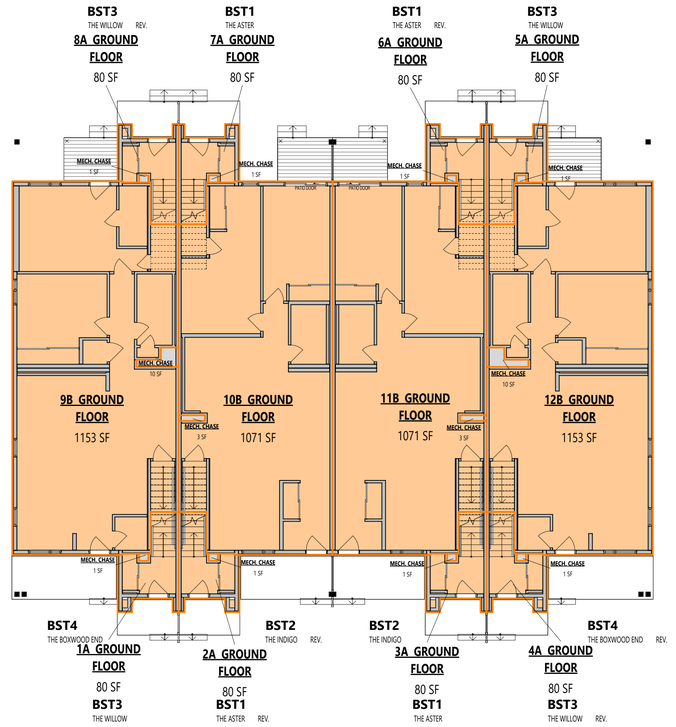


BST4 THE BOXWOOD END | BST2 THE INDIGO REV. | BST2 THE INDIGO | BST4 THE BOXWOOD END REV.

BASEMENT

BASEMENT AREA CALCULATIONS

9B UNFINISHED BASEMENT	1316 SF	122.26 m²
10B UNFINISHED BASEMENT	1230 SF	114.29 m²
11B UNFINISHED BASEMENT	1230 SF	114.29 m²
12B UNFINISHED BASEMENT	1316 SF	122.26 m²
TOTAL	5092 SF	473.10 m²



GROUND FLOOR

GROUND FLOOR GFA CALCULATIONS

1A GROUND FLOOR	80 SF	7.42 m²
2A GROUND FLOOR	80 SF	7.42 m²
3A GROUND FLOOR	80 SF	7.42 m²
4A GROUND FLOOR	80 SF	7.42 m²
5A GROUND FLOOR	80 SF	7.42 m²
6A GROUND FLOOR	80 SF	7.42 m²
7A GROUND FLOOR	80 SF	7.42 m²
8A GROUND FLOOR	80 SF	7.42 m²
9B GROUND FLOOR	1153 SF	107.09 m²
10B GROUND FLOOR	1071 SF	99.47 m²
11B GROUND FLOOR	1071 SF	99.47 m²
12B GROUND FLOOR	1153 SF	107.09 m²
MECH. CHASE	36 SF	3.37 m²
TOTAL	5122 SF	475.82 m²

GFA CALCULATION - STD

01 Ground Floor	5122 SF	475.82 m²
02 Second Floor	5209 SF	483.89 m²
03 Third Floor	4665 SF	433.35 m²
TOTAL	14995 SF	1393.07 m²

AREA CALCULATIONS UNIT BST 1 (THE ASTER)

GROUND FLOOR AREA	80 SF	[7.43 m2]
SECOND FLOOR AREA	558 SF	[51.84 m2]
THIRD FLOOR AREA	561 SF	[52.12 m2]
TOTAL NET AREA	1199 SF	[111.39 m2]
COVERAGE W/OUT PORCH	629 SF	[58.44 m2]
COVERAGE W/ PORCH	657 SF	[61.04 m2]

AREA CALCULATIONS UNIT BST 2 (THE INDIGO)

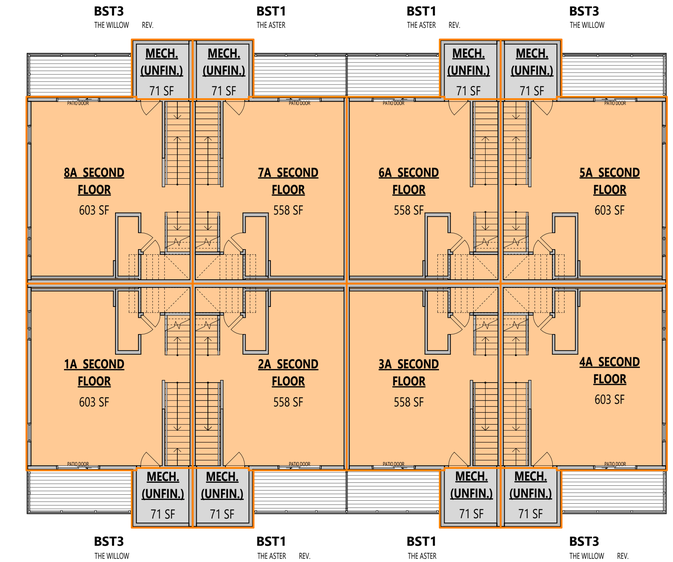
GROUND FLOOR AREA	1071 SF	[99.50 m2]
SECOND FLOOR AREA	0 SF	[0.00 m2]
THIRD FLOOR AREA	0 SF	[0.00 m2]
TOTAL NET AREA	1071 SF	[99.50 m2]
COVERAGE W/OUT PORCH	1074 SF	[99.78 m2]
COVERAGE W/ PORCH	1155 SF	[107.30 m2]

AREA CALCULATIONS UNIT BST 3 (THE WILLOW)

GROUND FLOOR AREA	80 SF	[7.43 m2]
SECOND FLOOR AREA	603 SF	[56.02 m2]
THIRD FLOOR AREA	605 SF	[56.21 m2]
TOTAL NET AREA	1288 SF	[119.66 m2]
COVERAGE W/OUT PORCH	674 SF	[62.62 m2]
COVERAGE W/ PORCH	702 SF	[65.22 m2]

AREA CALCULATIONS UNIT BST 4 (THE BOXWOOD END)

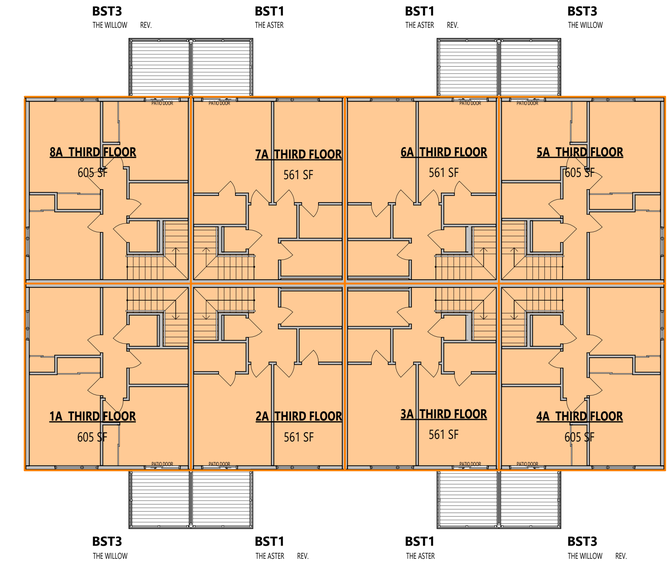
GROUND FLOOR AREA	1153 SF	[107.12 m2]
SECOND FLOOR AREA	0 SF	[0.00 m2]
THIRD FLOOR AREA	0 SF	[0.00 m2]
TOTAL NET AREA	1153 SF	[107.12 m2]
COVERAGE W/OUT PORCH	1163 SF	[108.05 m2]
COVERAGE W/ PORCH	1255 SF	[116.59 m2]



SECOND FLOOR

SECOND FLOOR GFA CALCULATIONS

1A SECOND FLOOR	603 SF	56.00 m²
2A SECOND FLOOR	558 SF	51.86 m²
3A SECOND FLOOR	558 SF	51.86 m²
4A SECOND FLOOR	603 SF	56.00 m²
5A SECOND FLOOR	603 SF	56.00 m²
6A SECOND FLOOR	558 SF	51.86 m²
7A SECOND FLOOR	558 SF	51.86 m²
8A SECOND FLOOR	603 SF	56.00 m²
MECH. (UNFIN.)	565 SF	52.45 m²
TOTAL	5209 SF	483.89 m²



THIRD FLOOR

THIRD FLOOR GFA CALCULATIONS

1A THIRD FLOOR	605 SF	56.24 m²
2A THIRD FLOOR	561 SF	52.10 m²
3A THIRD FLOOR	561 SF	52.10 m²
4A THIRD FLOOR	605 SF	56.24 m²
5A THIRD FLOOR	605 SF	56.24 m²
6A THIRD FLOOR	561 SF	52.10 m²
7A THIRD FLOOR	561 SF	52.10 m²
8A THIRD FLOOR	605 SF	56.24 m²
TOTAL	4665 SF	433.35 m²

STUDIO
636 KING ST W,
3RD FLOOR, TORONTO, ON,
M5V 1M7,
bim@bimstudio.ca

organica studio + inc.
architecture | interiors | design | research
7-145 BIRMINGHAM STREET,
ETOBICOKE, ON,
M8V3Z8
info@organicastudio.ca
T: 905 832 5758

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AREA CALCULATIONS

DECOEUR

TRANSITIONAL (TN)

Orleans

2370 TENTH LINE RD
CITY OF OTTAWA

CITY PLAN NO. **18688** | CITY FILE NO. **D07-12-21-0224**

SHEET SIZE **24"x36"**
SCALE **1" = 10'-0"**
ISSUE DATE **DEC 05, 2023**

FRONT ELEVATION

1A LIMITING DISTANCE CALCULATIONS

LIMITING DISTANCE	4.5M	
UNPROTECTED OPENINGS PERMITTED %	31%	
WALL AREA	537.47 sqft	[49.93 m2]
OPENINGS ALLOWED	166.62 sqft	[15.48 m2]
OPENINGS PROVIDED	122.17 sqft	[11.35 m2]
OPENINGS BALANCE	44.45 sqft	[4.13 m2]

2A LIMITING DISTANCE CALCULATIONS

LIMITING DISTANCE	4.5M	
UNPROTECTED OPENINGS PERMITTED %	31%	
WALL AREA	503.89 sqft	[46.81 m2]
OPENINGS ALLOWED	156.21 sqft	[14.51 m2]
OPENINGS PROVIDED	122.17 sqft	[11.35 m2]
OPENINGS BALANCE	34.04 sqft	[3.16 m2]

3A LIMITING DISTANCE CALCULATIONS

LIMITING DISTANCE	4.5M	
UNPROTECTED OPENINGS PERMITTED %	31%	
WALL AREA	503.89 sqft	[46.81 m2]
OPENINGS ALLOWED	156.21 sqft	[14.51 m2]
OPENINGS PROVIDED	122.17 sqft	[11.35 m2]
OPENINGS BALANCE	34.04 sqft	[3.16 m2]

4A LIMITING DISTANCE CALCULATIONS

LIMITING DISTANCE	4.5M	
UNPROTECTED OPENINGS PERMITTED %	31%	
WALL AREA	537.47 sqft	[49.93 m2]
OPENINGS ALLOWED	166.62 sqft	[15.48 m2]
OPENINGS PROVIDED	122.17 sqft	[11.35 m2]
OPENINGS BALANCE	44.45 sqft	[4.13 m2]

9B LIMITING DISTANCE CALCULATIONS

LIMITING DISTANCE	6.9M	
UNPROTECTED OPENINGS PERMITTED %	66%	
WALL AREA	170.19 sqft	[15.81 m2]
OPENINGS ALLOWED	112.33 sqft	[10.44 m2]
OPENINGS PROVIDED	40.74 sqft	[3.78 m2]
OPENINGS BALANCE	71.59 sqft	[6.65 m2]

10B LIMITING DISTANCE CALCULATIONS

LIMITING DISTANCE	6.9M	
UNPROTECTED OPENINGS PERMITTED %	66%	
WALL AREA	151.19 sqft	[14.05 m2]
OPENINGS ALLOWED	99.79 sqft	[9.27 m2]
OPENINGS PROVIDED	52.45 sqft	[4.87 m2]
OPENINGS BALANCE	47.34 sqft	[4.40 m2]

11B LIMITING DISTANCE CALCULATIONS

LIMITING DISTANCE	6.9M	
UNPROTECTED OPENINGS PERMITTED %	66%	
WALL AREA	151.19 sqft	[14.05 m2]
OPENINGS ALLOWED	99.79 sqft	[9.27 m2]
OPENINGS PROVIDED	52.45 sqft	[4.87 m2]
OPENINGS BALANCE	47.34 sqft	[4.40 m2]

12B LIMITING DISTANCE CALCULATIONS

LIMITING DISTANCE	6.9M	
UNPROTECTED OPENINGS PERMITTED %	66%	
WALL AREA	170.19 sqft	[15.81 m2]
OPENINGS ALLOWED	112.33 sqft	[10.44 m2]
OPENINGS PROVIDED	40.74 sqft	[3.78 m2]
OPENINGS BALANCE	71.59 sqft	[6.65 m2]

LEFT ELEVATION

8A LIMITING DISTANCE CALCULATIONS

LIMITING DISTANCE	2.5M	
UNPROTECTED OPENINGS PERMITTED %	13%	
WALL AREA	683.15 sqft	[63.47 m2]
OPENINGS ALLOWED	88.81 sqft	[8.25 m2]
OPENINGS PROVIDED	43.40 sqft	[4.03 m2]
OPENINGS BALANCE	45.41 sqft	[4.22 m2]

9B LIMITING DISTANCE CALCULATIONS

LIMITING DISTANCE	2.5M	
UNPROTECTED OPENINGS PERMITTED %	13%	
WALL AREA	584.71 sqft	[54.32 m2]
OPENINGS ALLOWED	76.01 sqft	[7.06 m2]
OPENINGS PROVIDED	42.54 sqft	[3.95 m2]
OPENINGS BALANCE	33.47 sqft	[3.11 m2]

1A LIMITING DISTANCE CALCULATIONS

LIMITING DISTANCE	2.5M	
UNPROTECTED OPENINGS PERMITTED %	13%	
WALL AREA	676.05 sqft	[62.81 m2]
OPENINGS ALLOWED	87.89 sqft	[8.16 m2]
OPENINGS PROVIDED	43.40 sqft	[4.03 m2]
OPENINGS BALANCE	44.49 sqft	[4.22 m2]

REAR ELEVATION

5A LIMITING DISTANCE CALCULATIONS

LIMITING DISTANCE	4.5M	
UNPROTECTED OPENINGS PERMITTED %	31%	
WALL AREA	537.47 sqft	[49.93 m2]
OPENINGS ALLOWED	166.62 sqft	[15.48 m2]
OPENINGS PROVIDED	122.17 sqft	[11.35 m2]
OPENINGS BALANCE	44.45 sqft	[4.13 m2]

6A LIMITING DISTANCE CALCULATIONS

LIMITING DISTANCE	4.5M	
UNPROTECTED OPENINGS PERMITTED %	31%	
WALL AREA	503.89 sqft	[46.81 m2]
OPENINGS ALLOWED	156.21 sqft	[14.51 m2]
OPENINGS PROVIDED	122.17 sqft	[11.35 m2]
OPENINGS BALANCE	34.04 sqft	[3.16 m2]

7A LIMITING DISTANCE CALCULATIONS

LIMITING DISTANCE	4.5M	
UNPROTECTED OPENINGS PERMITTED %	31%	
WALL AREA	503.89 sqft	[46.81 m2]
OPENINGS ALLOWED	156.21 sqft	[14.51 m2]
OPENINGS PROVIDED	122.17 sqft	[11.35 m2]
OPENINGS BALANCE	34.04 sqft	[3.16 m2]

8A LIMITING DISTANCE CALCULATIONS

LIMITING DISTANCE	4.5M	
UNPROTECTED OPENINGS PERMITTED %	31%	
WALL AREA	537.47 sqft	[49.93 m2]
OPENINGS ALLOWED	166.62 sqft	[15.48 m2]
OPENINGS PROVIDED	122.17 sqft	[11.35 m2]
OPENINGS BALANCE	44.45 sqft	[4.13 m2]

12B LIMITING DISTANCE CALCULATIONS

LIMITING DISTANCE	6.9M	
UNPROTECTED OPENINGS PERMITTED %	66%	
WALL AREA	186.15 sqft	[17.29 m2]
OPENINGS ALLOWED	122.86 sqft	[11.41 m2]
OPENINGS PROVIDED	43.35 sqft	[4.03 m2]
OPENINGS BALANCE	79.51 sqft	[7.39 m2]

11B LIMITING DISTANCE CALCULATIONS

LIMITING DISTANCE	6.9M	
UNPROTECTED OPENINGS PERMITTED %	66%	
WALL AREA	166.42 sqft	[15.46 m2]
OPENINGS ALLOWED	109.84 sqft	[10.20 m2]
OPENINGS PROVIDED	56.96 sqft	[5.29 m2]
OPENINGS BALANCE	52.88 sqft	[4.91 m2]

10B LIMITING DISTANCE CALCULATIONS

LIMITING DISTANCE	6.9M	
UNPROTECTED OPENINGS PERMITTED %	66%	
WALL AREA	166.42 sqft	[15.46 m2]
OPENINGS ALLOWED	109.84 sqft	[10.20 m2]
OPENINGS PROVIDED	56.96 sqft	[5.29 m2]
OPENINGS BALANCE	52.88 sqft	[4.91 m2]

9B LIMITING DISTANCE CALCULATIONS

LIMITING DISTANCE	6.9M	
UNPROTECTED OPENINGS PERMITTED %	66%	
WALL AREA	186.15 sqft	[17.29 m2]
OPENINGS ALLOWED	122.86 sqft	[11.41 m2]
OPENINGS PROVIDED	43.35 sqft	[4.03 m2]
OPENINGS BALANCE	79.51 sqft	[7.39 m2]

RIGHT ELEVATION

4A LIMITING DISTANCE CALCULATIONS

LIMITING DISTANCE	2.5M	
UNPROTECTED OPENINGS PERMITTED %	13%	
WALL AREA	676.05 sqft	[62.81 m2]
OPENINGS ALLOWED	87.89 sqft	[8.16 m2]
OPENINGS PROVIDED	43.40 sqft	[4.03 m2]
OPENINGS BALANCE	44.49 sqft	[4.13 m2]

12B LIMITING DISTANCE CALCULATIONS

LIMITING DISTANCE	2.5M	
UNPROTECTED OPENINGS PERMITTED %	13%	
WALL AREA	584.71 sqft	[54.32 m2]
OPENINGS ALLOWED	76.01 sqft	[7.06 m2]
OPENINGS PROVIDED	42.54 sqft	[3.95 m2]
OPENINGS BALANCE	33.47 sqft	[3.11 m2]

5A LIMITING DISTANCE CALCULATIONS

LIMITING DISTANCE	2.5M	
UNPROTECTED OPENINGS PERMITTED %	13%	
WALL AREA	683.15 sqft	[63.47 m2]
OPENINGS ALLOWED	88.81 sqft	[8.25 m2]
OPENINGS PROVIDED	43.40 sqft	[4.03 m2]
OPENINGS BALANCE	45.41 sqft	[4.22 m2]

OBC TABLE 9.10.14.4.

EXPOSING BUILDING FACE (EBF) (m2)	LIMITING DISTANCE (m)						
	2.0	2.5	4.0	4.5	6.0	6.9	8.0
50	10%	14%	28%	35%	57%	76%	100%
65	10%	**13%**	25%	**31%**	50%	**66%**	87%
100	9%	11%	18%	22%	34%	44%	56%

STUDIO
636 KING ST W,
3RD FLOOR, TORONTO, ON,
M5V 1M7,
bim@bimstudio.ca

organica studio + inc.
architecture | interiors | design | research
7-145 BIRMINGHAM STREET,
ETOBICOKE, ON,
M8V3Z8
info@organicastudio.ca
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LIMITING DISTANCE

DECOEUR

TRANSITIONAL (TN)

Orleans

2370 TENTH LINE RD
CITY OF OTTAWA

CITY PLAN NO. **18688** | CITY FILE NO. **D07-12-21-0224**

SHEET SIZE **24"x36"**
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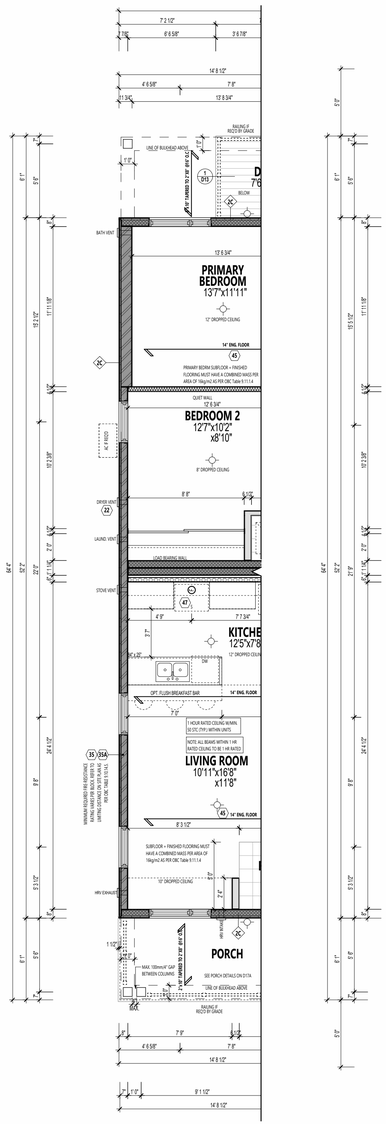
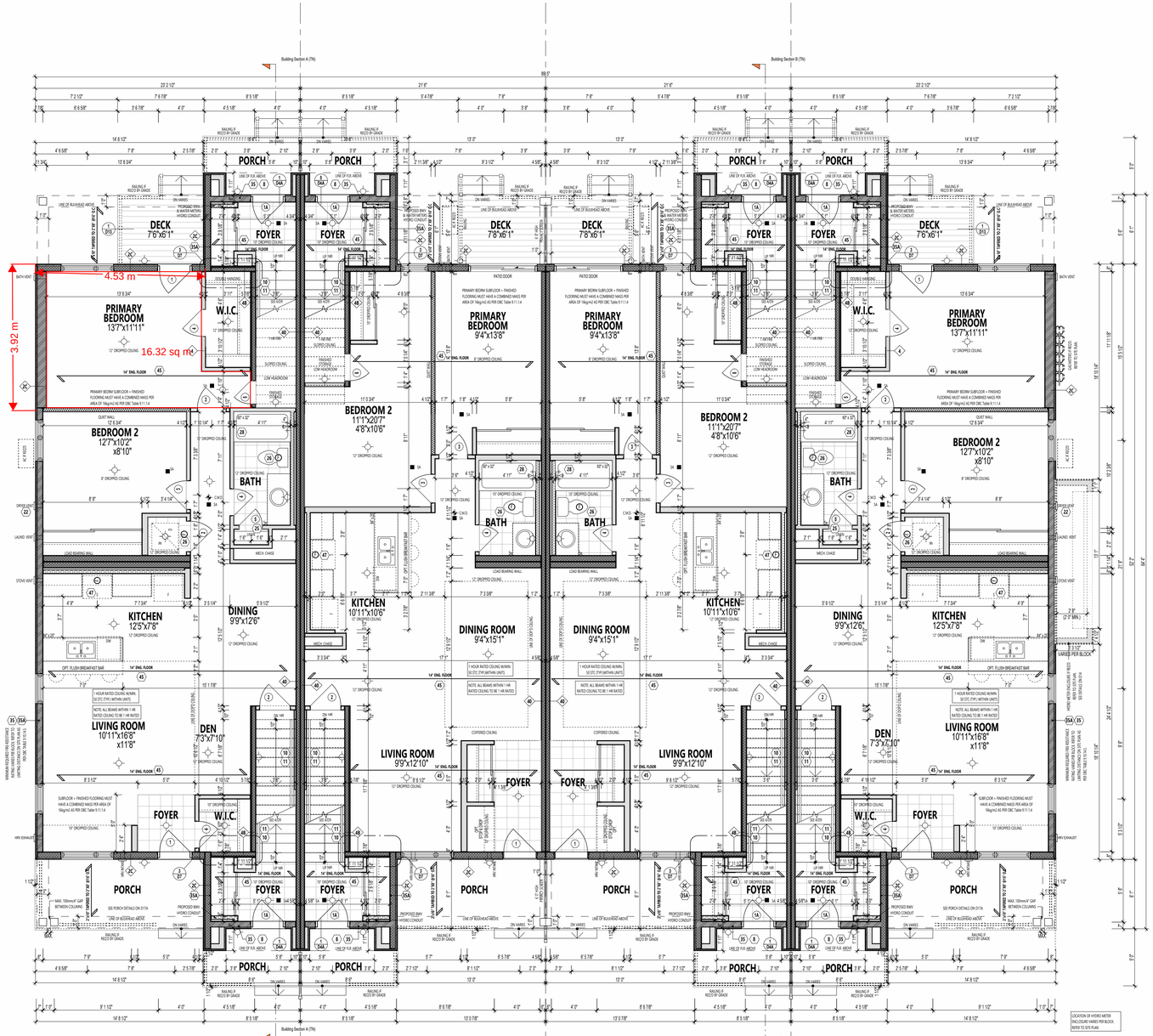


BST4 'TN' UPG.
THE BOXWOOD END

PARTIAL GROUND FLOOR PLAN (UPG OPTION)



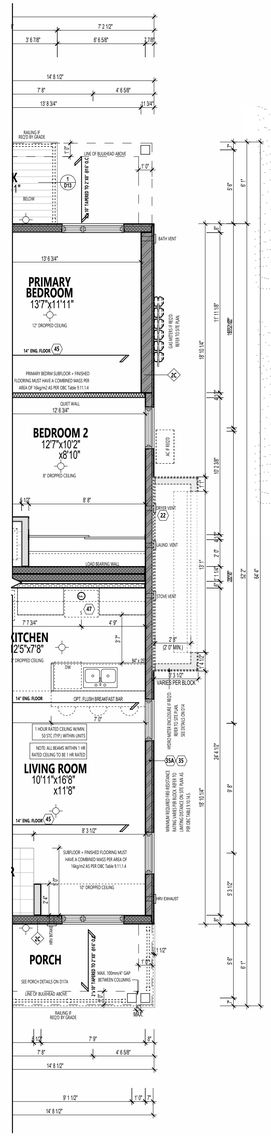
9B - BST4 'TN'
THE BOXWOOD END

10B - BST2 'TN'
THE INDIGO REV.

11B - BST2 'TN'
THE INDIGO

12B - BST4 'TN'
THE BOXWOOD END REV.

GROUND FLOOR PLAN - STANDARD



BST 4 'TN' UPG.
THE BOXWOOD END REV.

PARTIAL GROUND FLOOR PLAN (UPG OPTION)

PLAN NOTES:
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FLOOR TRUSSES:
FLOOR TRUSSES TO BE PROVIDED W/ 4" DIA. PRE-CUT HOLES @ 8' APART FOR FLEX. DUCTS PER HVAC DESIGN. (SEE HVAC DWGS FOR LOCATION & NUMBER OF HOLES REQ'D.) TYP.

FLOOR FRAMING:
FOR FLOOR FRAMING INFO REFER TO FLOOR JOIST MANUFACTURER'S SHOP DRAWINGS FOR ALL TRUSS JOIST INFORMATION AND DETAILS. UNLESS OTHERWISE NOTED

FRAMEWALL / SIDING CONSTUCTION: (S) (S5A)
45 MINUTE OR 1 HOUR FIRE RATED WALL
PROVIDE A CONTINUOUS LAYER OF 15.9mm (5/8") TYPE 'X' GYPSUM BOARD INTERIOR SIDE) INSTALLED SO THAT ALL EDGES ARE SUPPORTED, TAPED AND FILLED. SPACE BETWEEN WOOD STUDS TO BE FILLED WITH PREFORMED MINERAL FIBRE INSULATION WITH A MASS OF NOT LESS THAN 7.22 Kg/SQ.M. AND MUST FILL AT LEAST 90% OF THE CAVITY THICKNESS. THE TYPE 'X' & INSULATION MUST BE RUN CONTINUOUSLY BEHIND ALL INTERSECTING PARTITIONS, MECHANICAL CHASES, BATHTUBS, SHOWERS, ETC. ENSURE INSULATION IS TYPE 'X' IS INSTALLED IN GARAGE EXTERIOR WALLS.
(REFER TO SECTION 3B-2.3 OF SUPPLEMENTARY STANDARDS)
PROVIDE 7/16" EXTERIOR GRADE GYPSUM BOARD SHEATHING BEHIND SIDING.
(REFER TO B.M.E.C. 87-8-105)

BRICK VENEER CONSTRUCTION: (S) (S5A)
45 MINUTE OR 1 HOUR FIRE RATED WALL
PROVIDE A CONTINUOUS LAYER OF 15.9mm (5/8") TYPE 'X' GYPSUM BOARD INTERIOR SIDE) INSTALLED SO THAT ALL EDGES ARE SUPPORTED, TAPED AND FILLED. SPACE BETWEEN WOOD STUDS TO BE FILLED WITH PREFORMED MINERAL FIBRE INSULATION WITH A MASS OF NOT LESS THAN 7.22 Kg/SQ.M. AND MUST FILL AT LEAST 90% OF THE CAVITY THICKNESS. THE TYPE 'X' & INSULATION MUST BE RUN CONTINUOUSLY BEHIND ALL INTERSECTING PARTITIONS, MECHANICAL CHASES, BATHTUBS, SHOWERS, ETC. ENSURE INSULATION IS TYPE 'X' IS INSTALLED IN GARAGE EXTERIOR WALLS.
(REFER TO SECTION 3B-2.3 OF SUPPLEMENTARY STANDARDS)

HEADER / RIM JOIST LEVEL: (S) (S5A)
45 MINUTE OR 1 HOUR FIRE RATING @ HEADER
PROVIDE 15.9mm (5/8") TYPE 'X' GYPSUM BOARD BETWEEN FLOOR JOIST AT THE HEADER OR CONTINUOUSLY ALONG THE RIM JOIST WHEN FLOOR JOISTS ARE PARALLEL TO RIM JOIST TO MAINTAIN 45 MINUTE OR 1-HOUR FIRE RATING.

WALL LEGEND

- LOAD BEARING WALL
- MECHANICAL WALL
- 1 HR FIRE RATED ASSEMBLY
- 45 MIN. FIRE RATED ASSEMBLY

ENSURE THE PROTECTION OF LOAD BEARING ELEMENTS REQ. BY 9.10.8.3.(1) OF THE OBC2012 IS INSTALLED ENSURING THE CONTINUITY OF THE FIRE SEPARATION.

IF FIRE SEPARATIONS OR RESISTANCE RATINGS ARE OTHER THAN DETAILED, PROVIDE SPECS TO INSPECTOR ON SITE.

ENSURE MANUAL SWITCH FOR VENTILATION IS PROVIDED AS PER 9.32.3.4. OBC2012 PER UNIT.

THESE DRAWINGS MUST BE READ INCONJUCTION WITH - CONSTRUCTION DETAILS: D01TO D17

THESE DRAWINGS MUST BE READ IN CONJUSTION WITH STRUCTURAL DRAWINGS BY ATA ENGINEERING INC. - S-01 TO S-07

REFER TO HVAC DRAWINGS FOR LAYOUT OF MECHANICAL ROOMS, RUNS AND LOCATIONS.

STUDIO
636 KING ST W,
3RD FLOOR, TORONTO, ON,
M5V 1M7,
bim@bimstudio.ca

organica studio + inc.
architecture | interiors | design | research
7-145 BIRMINGHAM STREET,
ETOBICOKE, ON,
M8V3Z8
info@organicastudio.ca
T: 905 832 5758

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GROUND FLOOR PLAN

DECOEUR
TRANSITIONAL (TN)

Orleans
2370 TENTH LINE RD
CITY OF OTTAWA

CITY PLAN NO. **18688** | CITY FILE NO. **D07-12-21-0224**

SHEET SIZE **24"x36"**
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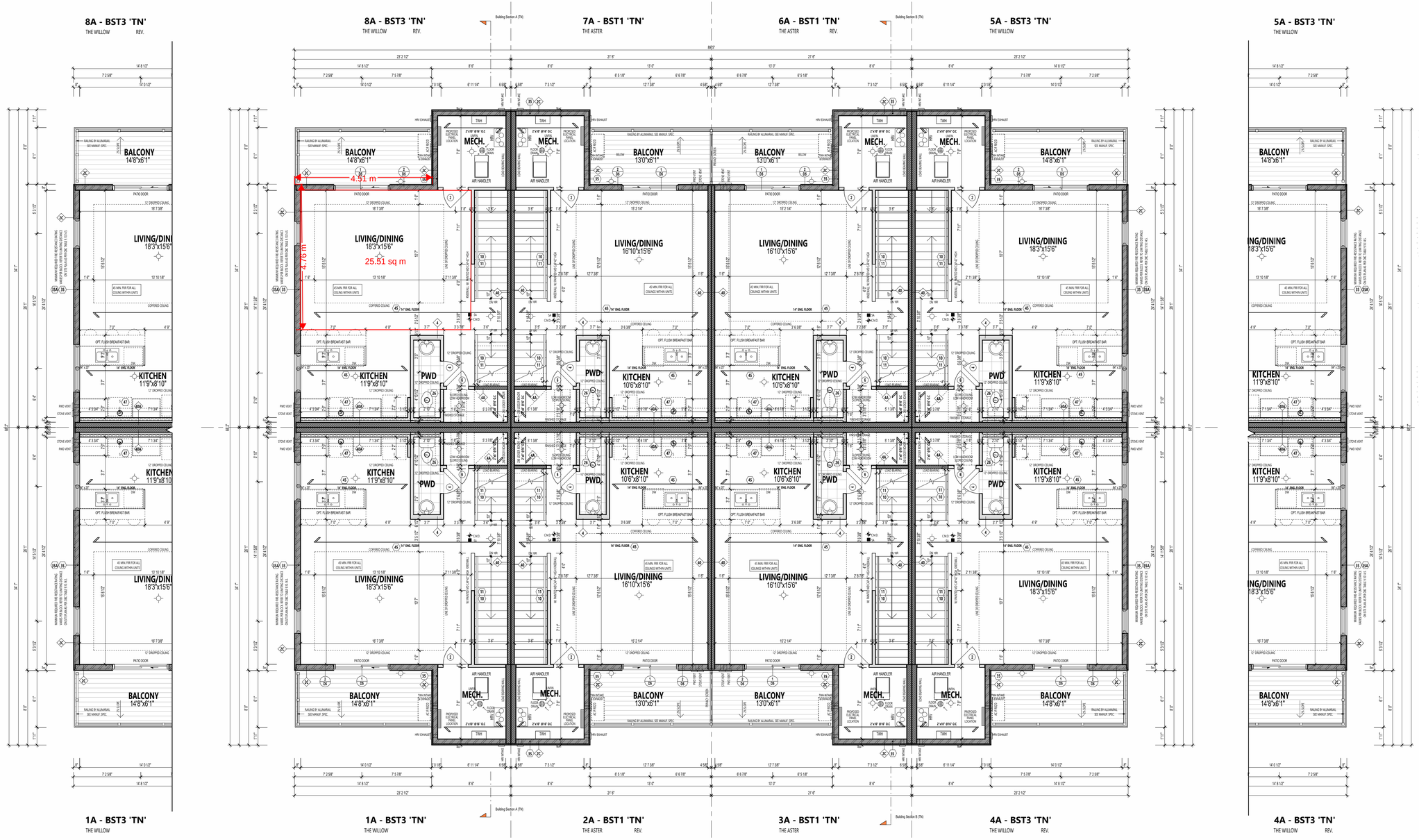

PARTIAL SECOND FLOOR PLAN (UPG OPTION)

SECOND FLOOR PLAN - STANDARD

PARTIAL SECOND FLOOR PLAN (UPG OPTION)

PLAN NOTES:
M & E SHOWN ON ARCHITECTURAL DRAWINGS IS PROPOSED LOCATION ONLY. MECHANICAL AND ELECTRICAL ENGINEERS ARE RESPONSIBLE FOR THE DESIGN AND LOCATION OF ALL MECHANICAL, VENTILATION, GAS FIRE, VENTS, HVAC, GAS METER, HYDROMETER, ELECTRICAL AND ANY MECHANICAL EQUIPMENT. BUILDER AND SUBCONTRACTOR TO ENSURE THE INSTALLATION ADHERES TO ALL APPLICABLE CODES AND LOCAL UTILITY AUTHORITIES.

FLOOR TRUSSES:
FLOOR TRUSSES TO BE PROVIDED W/ 4" DIA. PRE-CUT HOLES @ 8" APART FOR FLEX. DUCTS PER HVAC DESIGN. (SEE HVAC DWGS FOR LOCATION & NUMBER OF HOLES REQ'D.) TYP.

FLOOR FRAMING:
FOR FLOOR FRAMING INFO REFER TO FLOOR JOIST MANUFACTURER'S SHOP DRAWINGS FOR ALL TRUSS JOIST INFORMATION AND DETAILS. UNLESS OTHERWISE NOTED

FRAMEWALL / SIDING CONSTUCTION: (35) (35A)
45 MINUTE OR 1 HOUR FIRE RATED WALL
PROVIDE A CONTINUOUS LAYER OF 15.9mm (5/8") TYPE 'X' GYPSUM BOARD INTERIOR SIDE) INSTALLED SO THAT ALL EDGES ARE SUPPORTED, TAPED AND FILLED. SPACE BETWEEN WOOD STUDS TO BE FILLED WITH PREFORMED MINERAL FIBRE INSULATION WITH A MASS OF NOT LESS THAN 7.22 Kg/SQ.M. AND MUST FILL AT LEAST 90% OF THE CAVITY THICKNESS. THE TYPE 'X' & INSULATION MUST BE RUN CONTINUOUSLY BEHIND ALL INTERSECTING PARTITIONS, MECHANICAL CHASES, BATHTUBS, SHOWERS, ETC. ENSURE INSULATION IS TYPE 'X' IS INSTALLED IN GARAGE EXTERIOR WALLS.
(REFER TO SECTION 9B-2.3 OF SUPPLEMENTARY STANDARDS)
PROVIDE 7/16" EXTERIOR GRADE GYPSUM BOARD SHEATHING BEHIND SIDING.
(REFER TO 8 M.E.C. 87-8-105)

BRICK VENEER CONSTRUCTION: (35) (35A)
45 MINUTE OR 1 HOUR FIRE RATED WALL
PROVIDE A CONTINUOUS LAYER OF 15.9mm (5/8") TYPE 'X' GYPSUM BOARD INTERIOR SIDE) INSTALLED SO THAT ALL EDGES ARE SUPPORTED, TAPED AND FILLED. SPACE BETWEEN WOOD STUDS TO BE FILLED WITH PREFORMED MINERAL FIBRE INSULATION WITH A MASS OF NOT LESS THAN 7.22 Kg/SQ.M. AND MUST FILL AT LEAST 90% OF THE CAVITY THICKNESS. THE TYPE 'X' & INSULATION MUST BE RUN CONTINUOUSLY BEHIND ALL INTERSECTING PARTITIONS, MECHANICAL CHASES, BATHTUBS, SHOWERS, ETC. ENSURE INSULATION IS TYPE 'X' IS INSTALLED IN GARAGE EXTERIOR WALLS.
(REFER TO SECTION 9B-2.3 OF SUPPLEMENTARY STANDARDS)

HEADER / RIM JOIST LEVEL: (35) (35A)
45 MINUTE OR 1 HOUR FIRE RATING @ HEADER
PROVIDE 15.9mm (5/8") TYPE 'X' GYPSUM BOARD BETWEEN FLOOR JOIST AT THE HEADER OR CONTINUOUSLY ALONG THE RIM JOIST WHEN FLOOR JOISTS ARE PARALLEL TO RIM JOIST TO MAINTAIN 45 MINUTE OR 1 HOUR FIRE RATING.

WALL LEGEND

- LOAD BEARING WALL
- MECHANICAL WALL
- 1 HR FIRE RATED ASSEMBLY
- 45 MIN. FIRE RATED ASSEMBLY

ENSURE THE PROTECTION OF LOAD BEARING ELEMENTS REQ. BY 9.10.8.3.(1) OF THE OBC2012 IS INSTALLED ENSURING THE CONTINUITY OF THE FIRE SEPARATION.

IF FIRE SEPARATIONS OR RESISTANCE RATINGS ARE OTHER THAN DETAILED, PROVIDE SPECS TO INSPECTOR ON SITE.

ENSURE MANUAL SWITCH FOR VENTILATION IS PROVIDED AS PER 9.32.3.4. OBC2012 PER UNIT.

THESE DRAWINGS MUST BE READ INCONJUCTION WITH - CONSTRUCTION DETAILS: DET10-D17

THESE DRAWINGS MUST BE READ IN CONJUCTION WITH STRUCTURAL DRAWINGS BY ATA ENGINEERING INC. - S-01 TO S-07

REFER TO HVAC DRAWINGS FOR LAYOUT OF MECHANICAL ROOMS, RUNS AND LOCATIONS.

STUDIO
636 KING ST W,
3RD FLOOR, TORONTO, ON,
M5V 1M7,
bim@bimstudio.ca

organica studio + inc
architecture | interiors | design | research
7-145 BIRMINGHAM STREET,
ETOBICOKE, ON,
M8V3Z8
info@organicastudio.ca
T: 905 832 5758

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SECOND FLOOR PLAN

DECOEUR
TRANSITIONAL (TN)

Orleans
2370 TENTH LINE RD
CITY OF OTTAWA

CITY PLAN NO. **18688** | CITY FILE NO. **D07-12-21-0224**

SHEET SIZE **24"x36"**
SCALE **3/16" = 1'-0"**
ISSUE DATE **DEC 05, 2023**

PARTIAL THIRD FLOOR PLAN (UPG OPTION)

THIRD FLOOR PLAN - STANDARD

PARTIAL THIRD FLOOR PLAN (UPG OPTION)

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FLOOR TRUSSES TO BE PROVIDED W/ 4" DIA. PRE-CUT HOLES @ 8' APART FOR FLEX. DUCTS PER HVAC DESIGN. (SEE HVAC DWGS FOR LOCATION & NUMBER OF HOLES REQ'D.) TYP.

FLOOR FRAMING:
FOR FLOOR FRAMING INFO REFER TO FLOOR JOIST MANUFACTURER'S SHOP DRAWINGS FOR ALL TRUSS JOIST INFORMATION AND DETAILS. UNLESS OTHERWISE NOTED

ROOF FRAMING :
ALL LAMINATED VENEER LUMBER (LVL) BEAMS, BUILT-UP BEAMS, GIRDER TRUSSES AND METAL HANGER CONNECTIONS SUPPORTING ROOF FRAMING TO BE DESIGNED AND CERTIFIED BY ROOF TRUSS MANUFACTURER. REFER TO ROOF TRUSS SHOP DRAWINGS FOR ALL ROOF FRAMING INFORMATION UNLESS OTHERWISE NOTED ON ARCHITECTURAL DRAWINGS.

FRAMEWALL / SIDING CONSTRUCTION: 35 /35A
45 MINUTE OR 1 HOUR FIRE RATED WALL
PROVIDE A CONTINUOUS LAYER OF 15.9mm (5/8") TYPE 'X' GYPSUM BOARD INTERIOR SIDE) INSTALLED SO THAT ALL EDGES ARE SUPPORTED, TAPED AND FILLED. SPACE BETWEEN WOOD STUDS TO BE FILLED WITH PREFORMED MINERAL FIBRE INSULATION WITH A MASS OF NOT LESS THAN 1.22 kg/SQ.M. AND MUST FILL AT LEAST 90% OF THE CAVITY THICKNESS. THE TYPE 'X' & INSULATION MUST BE RUN CONTINUOUSLY BEHIND ALL INTERSECTING PARTITIONS, MECHANICAL CHASES, BATHTUBS, SHOWERS, ETC. ENSURE INSULATION & TYPE 'X' IS INSTALLED IN GARAGE EXTERIOR WALLS.
(REFER TO SECTION 58-2-3 OF SUPPLEMENTARY STANDARDS)
PROVIDE 7/16" EXTERIOR GRADE GYPSUM BOARD SHEATHING BEHIND SIDING.
(REFER TO B.M.E.C. 87-8-105)

BRICK VENEER CONSTRUCTION: 35 /35A
45 MINUTE OR 1 HOUR FIRE RATED WALL
PROVIDE A CONTINUOUS LAYER OF 15.9mm (5/8") TYPE 'X' GYPSUM BOARD (INTERIOR SIDE) INSTALLED SO THAT ALL EDGES ARE SUPPORTED, TAPED AND FILLED. SPACE BETWEEN WOOD STUDS TO BE FILLED WITH PREFORMED MINERAL FIBRE INSULATION WITH A MASS OF NOT LESS THAN 1.22 kg/SQ.M. AND MUST FILL AT LEAST 90% OF THE CAVITY THICKNESS. THE TYPE 'X' & INSULATION MUST BE RUN CONTINUOUSLY BEHIND ALL INTERSECTING PARTITIONS, MECHANICAL CHASES, BATHTUBS, SHOWERS, ETC. ENSURE INSULATION & TYPE 'X' IS INSTALLED IN GARAGE EXTERIOR WALLS.
(REFER TO SECTION 58-2-3 OF SUPPLEMENTARY STANDARDS)

HEADER / RIM JOIST LEVEL: 35 /35A
45 MINUTE OR 1 HOUR FIRE RATING @ HEADER
PROVIDE 15.9mm (5/8") TYPE 'X' GYPSUM BOARD BETWEEN FLOOR JOIST AT THE HEADER OR CONTINUOUSLY ALONG THE RIM JOIST WHEN FLOOR JOISTS ARE PARALLEL TO RIM JOIST TO MAINTAIN 45 MINUTE OR 1 HOUR FIRE RATING.

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- 1 HR FIRE RATED ASSEMBLY
- 45 MIN. FIRE RATED ASSEMBLY

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7-145 BIRMINGHAM STREET,
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TRANSITIONAL (TN)

Orleans
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PAGE A1.30

APPENDIX B

Sound Level Calculations

STAMSON 5.0 SUMMARY REPORT Date: 28-08-2024 10:08:11
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: OLA1.te Time Period: Day/Night 16/8 hours
Description: Ourdoor Amenity

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

Car traffic volume : 28336/2464 veh/TimePeriod *
Medium truck volume : 2254/196 veh/TimePeriod *
Heavy truck volume : 1610/140 veh/TimePeriod *
Posted speed limit : 50 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): 35000
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: Stittsvile (day/night)

Angle1 Angle2 : -90.00 deg -86.00 deg
Wood depth : 0 (No woods.)
No of house rows : 1 / 1
House density : 20 %
Surface : 1 (Absorptive ground surface)
Receiver source distance : 68.00 / 68.00 m
Receiver height : 1.50 / 1.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -90.00 deg Angle2 : -86.00 deg
Barrier height : 10.57 m
Barrier receiver distance : 3.00 / 3.00 m
Source elevation : 124.30 m
Receiver elevation : 122.40 m
Barrier elevation : 123.60 m
Reference angle : 0.00

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

Car traffic volume : 28336/2464 veh/TimePeriod *
Medium truck volume : 2254/196 veh/TimePeriod *
Heavy truck volume : 1610/140 veh/TimePeriod *
Posted speed limit : 50 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):  35000
    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: Stittsville (day/night)
---------------------------------------------
Angle1   Angle2           : -86.00 deg   -74.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  68.00 / 68.00  m
Receiver height           :   1.50 / 1.50   m
Topography                :      2       (Flat/gentle slope; with barrier)
Barrier angle1            : -86.00 deg   Angle2 : -82.00 deg
Barrier height            :   7.00 m
Barrier receiver distance :   3.00 / 3.00   m
Source elevation          : 124.30 m
Receiver elevation        : 122.40 m
Barrier elevation         : 123.60 m
Reference angle           :   0.00

↟
Road data, segment # 3: Stittsvile (day/night)
---------------------------------------------
Car traffic volume  : 28336/2464  veh/TimePeriod  *
Medium truck volume :  2254/196   veh/TimePeriod  *
Heavy truck volume  :  1610/140   veh/TimePeriod  *
Posted speed limit  :    50 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):  35000
    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 # 3: Stittsvile (day/night)
---------------------------------------------
```

```
Angle1   Angle2           : -74.00 deg   44.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  68.00 / 68.00  m
Receiver height           :   1.50 / 1.50   m
Topography                :      2       (Flat/gentle slope; with barrier)
Barrier angle1            : -74.00 deg   Angle2 : 35.00 deg
Barrier height            :  10.57 m
Barrier receiver distance :  27.00 / 27.00  m
Source elevation          : 124.30 m
Receiver elevation        : 122.40 m
Barrier elevation         : 124.80 m
Reference angle           :   0.00
```



```
Road data, segment # 4: Stittsville (day/night)
-----------------------------------------------
Car traffic volume  : 28336/2464  veh/TimePeriod  *
Medium truck volume :  2254/196   veh/TimePeriod  *
Heavy truck volume  :  1610/140   veh/TimePeriod  *
Posted speed limit  :    50 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):  35000
    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 # 4: Stittsville (day/night)
---------------------------------------------
Angle1   Angle2           :  44.00 deg   74.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  68.00 / 68.00  m
Receiver height           :   1.50 / 1.50   m
Topography                :      2       (Flat/gentle slope; with barrier)
Barrier angle1            :  44.00 deg   Angle2 : 74.00 deg
Barrier height            :  10.57 m
Barrier receiver distance :  20.00 / 20.00  m
Source elevation          : 124.30 m
Receiver elevation        : 122.40 m
Barrier elevation         : 124.80 m
Reference angle           :   0.00
```

Road data, segment # 5: Stittsville (day/night)

Car traffic volume : 28336/2464 veh/TimePeriod *
Medium truck volume : 2254/196 veh/TimePeriod *
Heavy truck volume : 1610/140 veh/TimePeriod *
Posted speed limit : 50 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): 35000
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 # 5: Stittsville (day/night)

Angle1 Angle2 : 74.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 68.00 / 68.00 m
Receiver height : 1.50 / 1.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : 74.00 deg Angle2 : 90.00 deg
Barrier height : 10.57 m
Barrier receiver distance : 3.00 / 3.00 m
Source elevation : 124.30 m
Receiver elevation : 122.40 m
Barrier elevation : 123.30 m
Reference angle : 0.00

Road data, segment # 6: Parade Dr. (day/night)

Car traffic volume : 6477/563 veh/TimePeriod *
Medium truck volume : 515/45 veh/TimePeriod *
Heavy truck volume : 368/32 veh/TimePeriod *
Posted speed limit : 50 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): 8000

```
    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 # 6: Parade Dr. (day/night)
-------------------------------------------
Angle1   Angle2           : -90.00 deg   -34.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  78.00 / 78.00  m
Receiver height           :   1.50 / 1.50   m
Topography                :      2       (Flat/gentle slope; with barrier)
Barrier angle1            : -90.00 deg   Angle2 : -43.00 deg
Barrier height            :  10.57 m
Barrier receiver distance :   3.00 / 3.00   m
Source elevation          : 124.30 m
Receiver elevation        : 123.40 m
Barrier elevation         : 124.80 m
Reference angle           :   0.00

♠
Road data, segment # 7: Parade Dr. (day/night)
-----------------------------------------------
Car traffic volume  :  6477/563   veh/TimePeriod  *
Medium truck volume :   515/45    veh/TimePeriod  *
Heavy truck volume  :   368/32    veh/TimePeriod  *
Posted speed limit  :    50 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):   8000
    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 # 7: Parade Dr. (day/night)
-------------------------------------------
Angle1   Angle2           : -34.00 deg   0.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  78.00 / 78.00  m
Receiver height           :   1.50 / 1.50   m
```

```
Topography                :      2       (Flat/gentle slope; with barrier)
Barrier angle1            : -34.00 deg   Angle2 : -4.00 deg
Barrier height            :  10.57 m
Barrier receiver distance :  20.00 / 20.00  m
Source elevation          : 124.30 m
Receiver elevation        : 123.40 m
Barrier elevation         : 124.80 m
Reference angle           :   0.00
```

↟

```
Road data, segment # 8: Parade Dr. (day/night)
----------------------------------------------
Car traffic volume  :  6477/563   veh/TimePeriod  *
Medium truck volume :   515/45    veh/TimePeriod  *
Heavy truck volume  :   368/32    veh/TimePeriod  *
Posted speed limit  :    50 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):   8000
    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 # 8: Parade Dr. (day/night)
--------------------------------------------
Angle1   Angle2           :   0.00 deg   66.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  78.00 / 78.00  m
Receiver height           :   1.50 / 1.50   m
Topography                :      2       (Flat/gentle slope; with barrier)
Barrier angle1            :   0.00 deg   Angle2 : 66.00 deg
Barrier height            :  10.57 m
Barrier receiver distance :   3.00 / 3.00   m
Source elevation          : 124.30 m
Receiver elevation        : 123.40 m
Barrier elevation         : 123.30 m
Reference angle           :   0.00
```

↟

```
Result summary (day)
--------------------

                    !  source  !   Road   !  Total
```

	height (m)	Leq (dBA)	Leq (dBA)
1.Stittsvile	1.50	34.00	34.00
2.Stittsville	1.50	43.47	43.47
3.Stittsvile	1.50	48.93	48.93
4.Stittsville	1.50	37.89	37.89
5.Stittsville	1.50	39.78	39.78
6.Parade Dr.	1.50	41.25	41.25
7.Parade Dr.	1.50	38.17	38.17
8.Parade Dr.	1.50	34.02	34.02
Total			51.49 dBA

Result summary (night)

	source height (m)	Road Leq (dBA)	Total Leq (dBA)
1.Stittsvile	1.50	26.40	26.40
2.Stittsville	1.50	35.87	35.87
3.Stittsvile	1.50	41.34	41.34
4.Stittsville	1.50	30.30	30.30
5.Stittsville	1.50	32.18	32.18
6.Parade Dr.	1.50	33.66	33.66
7.Parade Dr.	1.50	30.58	30.58
8.Parade Dr.	1.50	26.42	26.42
Total			43.90 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 51.49
(NIGHT): 43.90

STAMSON 5.0 SUMMARY REPORT Date: 27-09-2024 11:30:26
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: R1 .te Time Period: Day/Night 16/8 hours
Description: R1 - Block 1-8A

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

Car traffic volume : 28336/2464 veh/TimePeriod *
Medium truck volume : 2254/196 veh/TimePeriod *
Heavy truck volume : 1610/140 veh/TimePeriod *
Posted speed limit : 50 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): 35000
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: Stittsvile (day/night)

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 22.00 / 22.00 m
Receiver height : 4.65 / 7.80 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

↟
Road data, segment # 2: Parade Dr. (day/night)

Car traffic volume : 6477/563 veh/TimePeriod *
Medium truck volume : 515/45 veh/TimePeriod *
Heavy truck volume : 368/32 veh/TimePeriod *
Posted speed limit : 50 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): 8000
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: Parade Dr. (day/night)
------------------------------------------
Angle1   Angle2           : -90.00 deg   66.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  17.00 / 17.00  m
Receiver height           :   4.65 / 7.80   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00
```

Result summary (day)

	source height (m)	Road Leq (dBA)	Total Leq (dBA)
1.Stittsvile	1.50	70.50	70.50
2.Parade Dr.	1.50	64.58	64.58
Total			71.49 dBA

Result summary (night)

	source height (m)	Road Leq (dBA)	Total Leq (dBA)
1.Stittsvile	1.50	62.90	62.90
2.Parade Dr.	1.50	56.99	56.99
Total			63.89 dBA

```
TOTAL Leq FROM ALL SOURCES (DAY): 71.49
                       (NIGHT): 63.89
```

STAMSON 5.0 SUMMARY REPORT Date: 27-09-2024 11:39:47
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: r1.te Time Period: Day/Night 16/8 hours
Description: R1 - Block 1-9B

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

Car traffic volume : 28336/2464 veh/TimePeriod *
Medium truck volume : 2254/196 veh/TimePeriod *
Heavy truck volume : 1610/140 veh/TimePeriod *
Posted speed limit : 50 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): 35000
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: Stittsvile (day/night)

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 22.00 / 22.00 m
Receiver height : 1.50 / 1.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Road data, segment # 2: Parade Dr. (day/night)

Car traffic volume : 6477/563 veh/TimePeriod *
Medium truck volume : 515/45 veh/TimePeriod *
Heavy truck volume : 368/32 veh/TimePeriod *
Posted speed limit : 50 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): 8000
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: Parade Dr. (day/night)
-----------------------------------------
Angle1   Angle2           : -90.00 deg   66.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  17.00 / 17.00  m
Receiver height           :   1.50 / 1.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00
```

Result summary (day)

	source height (m)	Road Leq (dBA)	Total Leq (dBA)
1.Stittsvile	1.50	70.50	70.50
2.Parade Dr.	1.50	64.58	64.58
Total			71.49 dBA

Result summary (night)

	source height (m)	Road Leq (dBA)	Total Leq (dBA)
1.Stittsvile	1.50	62.90	62.90
2.Parade Dr.	1.50	56.99	56.99
Total			63.89 dBA

```
TOTAL Leq FROM ALL SOURCES (DAY): 71.49
                       (NIGHT): 63.89
```

STAMSON 5.0 SUMMARY REPORT Date: 27-09-2024 12:50:24
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: r2.te Time Period: Day/Night 16/8 hours
Description: R2 - Block 1-1A

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

Car traffic volume : 28336/2464 veh/TimePeriod *
Medium truck volume : 2254/196 veh/TimePeriod *
Heavy truck volume : 1610/140 veh/TimePeriod *
Posted speed limit : 50 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): 35000
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: Stittsville (day/night)

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 22.00 / 22.00 m
Receiver height : 4.65 / 7.80 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Road data, segment # 2: Parade Dr. (day/night)

Car traffic volume : 6477/563 veh/TimePeriod *
Medium truck volume : 515/45 veh/TimePeriod *
Heavy truck volume : 368/32 veh/TimePeriod *
Posted speed limit : 50 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): 8000
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: Parade Dr. (day/night)
------------------------------------------
Angle1   Angle2           : -73.00 deg   0.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  33.00 / 33.00  m
Receiver height           :   4.65 / 7.80   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00
```

Result summary (day)

	source height (m)	Road Leq (dBA)	Total Leq (dBA)
1.Stittsville	1.50	70.50	70.50
2.Parade Dr.	1.50	58.41	58.41
Total			70.76 dBA

Result summary (night)

	source height (m)	Road Leq (dBA)	Total Leq (dBA)
1.Stittsville	1.50	62.90	62.90
2.Parade Dr.	1.50	50.81	50.81
Total			63.16 dBA

```
TOTAL Leq FROM ALL SOURCES (DAY): 70.76
                           (NIGHT): 63.16
```

STAMSON 5.0 SUMMARY REPORT Date: 17-09-2024 15:34:01
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: R3 .te Time Period: Day/Night 16/8 hours
Description: R3 - Block 2 - 6A

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

Car traffic volume : 28336/2464 veh/TimePeriod *
Medium truck volume : 2254/196 veh/TimePeriod *
Heavy truck volume : 1610/140 veh/TimePeriod *
Posted speed limit : 50 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): 35000
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: Stittsvile (day/night)

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 24.00 / 24.00 m
Receiver height : 4.65 / 7.80 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Road data, segment # 2: Parade Dr. (day/night)

Car traffic volume : 6477/563 veh/TimePeriod *
Medium truck volume : 515/45 veh/TimePeriod *
Heavy truck volume : 368/32 veh/TimePeriod *
Posted speed limit : 50 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): 8000
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: Parade Dr. (day/night)
------------------------------------------
Angle1   Angle2           : -90.00 deg   -1.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      1 / 1
House density             :     20 %
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  71.00 / 71.00  m
Receiver height           :   4.65 / 7.80   m
Topography                :      2       (Flat/gentle slope; with barrier)
Barrier angle1            : -90.00 deg   Angle2 : -46.00 deg
Barrier height            :   7.00 m
Barrier receiver distance :   3.00 / 3.00   m
Source elevation          : 124.30 m
Receiver elevation        : 124.02 m
Barrier elevation         : 124.40 m
Reference angle           :   0.00
```

Result summary (day)

	source height (m)	Road Leq (dBA)	Total Leq (dBA)
1.Stittsvile	1.50	70.12	70.12
2.Parade Dr.	1.50	52.38	52.38
Total			70.19 dBA

Result summary (night)

	source height (m)	Road Leq (dBA)	Total Leq (dBA)
1.Stittsvile	1.50	62.52	62.52
2.Parade Dr.	1.50	47.45	47.45 *
Total			62.65 dBA

* Bright Zone !

TOTAL Leq FROM ALL SOURCES (DAY): 70.19
(NIGHT): 62.65

STAMSON 5.0 SUMMARY REPORT Date: 18-09-2024 09:03:24
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: R3 .te Time Period: Day/Night 16/8 hours
Description: R3 - Block 2 10B

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

Car traffic volume : 28336/2464 veh/TimePeriod *
Medium truck volume : 2254/196 veh/TimePeriod *
Heavy truck volume : 1610/140 veh/TimePeriod *
Posted speed limit : 50 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): 35000
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: Stittsvile (day/night)

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 24.00 / 24.00 m
Receiver height : 1.50 / 1.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Road data, segment # 2: Parade Dr. (day/night)

Car traffic volume : 6477/563 veh/TimePeriod *
Medium truck volume : 515/45 veh/TimePeriod *
Heavy truck volume : 368/32 veh/TimePeriod *
Posted speed limit : 50 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): 8000
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: Parade Dr. (day/night)
------------------------------------------
Angle1   Angle2           : -90.00 deg   -1.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      1 / 1
House density             :     20 %
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  71.00 / 71.00  m
Receiver height           :   1.50 / 1.50   m
Topography                :      2       (Flat/gentle slope; with barrier)
Barrier angle1            : -90.00 deg   Angle2 : -46.00 deg
Barrier height            :   7.00 m
Barrier receiver distance :   3.00 / 3.00   m
Source elevation          : 124.30 m
Receiver elevation        : 124.02 m
Barrier elevation         : 124.40 m
Reference angle           :   0.00
```

```
Result summary (day)
--------------------

                    !  source  !   Road   !  Total
                    !  height  !   Leq    !   Leq
                    !   (m)    !  (dBA)   !  (dBA)
--------------------+----------+----------+----------
 1.Stittsvile       !     1.50 !    70.12 !    70.12
 2.Parade Dr.       !     1.50 !    52.22 !    52.22
--------------------+----------+----------+----------
                      Total                   70.19 dBA
```

```
Result summary (night)
----------------------

                    !  source  !   Road   !  Total
                    !  height  !   Leq    !   Leq
                    !   (m)    !  (dBA)   !  (dBA)
--------------------+----------+----------+----------
 1.Stittsvile       !     1.50 !    62.52 !    62.52
 2.Parade Dr.       !     1.50 !    44.62 !    44.62
--------------------+----------+----------+----------
                      Total                   62.59 dBA
```

TOTAL Leq FROM ALL SOURCES (DAY): 70.19
(NIGHT): 62.59

STAMSON 5.0 SUMMARY REPORT Date: 17-09-2024 14:53:00
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: R4 .te Time Period: Day/Night 16/8 hours
Description: R4 - Block 4 - 6A

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

Car traffic volume : 28336/2464 veh/TimePeriod *
Medium truck volume : 2254/196 veh/TimePeriod *
Heavy truck volume : 1610/140 veh/TimePeriod *
Posted speed limit : 50 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): 35000
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: Stittsvile (day/night)

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 25.00 / 25.00 m
Receiver height : 4.65 / 7.80 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Road data, segment # 2: Parade Dr. (day/night)

Car traffic volume : 6477/563 veh/TimePeriod *
Medium truck volume : 515/45 veh/TimePeriod *
Heavy truck volume : 368/32 veh/TimePeriod *
Posted speed limit : 50 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): 8000
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: Parade Dr. (day/night)
-----------------------------------------
Angle1   Angle2           : -90.00 deg   -13.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      1 / 1
House density             :     20 %
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 138.00 / 138.00 m
Receiver height           :   4.65 / 7.80   m
Topography                :      2       (Flat/gentle slope; with barrier)
Barrier angle1            : -90.00 deg   Angle2 : -27.00 deg
Barrier height            :   7.00 m
Barrier receiver distance :   3.00 / 3.00   m
Source elevation          : 124.30 m
Receiver elevation        : 124.52 m
Barrier elevation         : 124.50 m
Reference angle           :   0.00
```

Result summary (day)

	source height (m)	Road Leq (dBA)	Total Leq (dBA)
1.Stittsvile	1.50	69.94	69.94
2.Parade Dr.	1.50	45.39	45.39
Total			69.96 dBA

Result summary (night)

	source height (m)	Road Leq (dBA)	Total Leq (dBA)
1.Stittsvile	1.50	62.34	62.34
2.Parade Dr.	1.50	43.95	43.95 *
Total			62.40 dBA

* Bright Zone !

TOTAL Leq FROM ALL SOURCES (DAY): 69.96
(NIGHT): 62.40

STAMSON 5.0 SUMMARY REPORT Date: 17-09-2024 15:18:13
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: R4 .te Time Period: Day/Night 16/8 hours
Description: R4 - Block 4 10B

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

Car traffic volume : 28336/2464 veh/TimePeriod *
Medium truck volume : 2254/196 veh/TimePeriod *
Heavy truck volume : 1610/140 veh/TimePeriod *
Posted speed limit : 50 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): 35000
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: Stittsvile (day/night)

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 25.00 / 25.00 m
Receiver height : 1.50 / 1.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Road data, segment # 2: Parade Dr. (day/night)

Car traffic volume : 6477/563 veh/TimePeriod *
Medium truck volume : 515/45 veh/TimePeriod *
Heavy truck volume : 368/32 veh/TimePeriod *
Posted speed limit : 50 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): 8000
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: Parade Dr. (day/night)
------------------------------------------
Angle1   Angle2           : -90.00 deg   -13.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      1 / 1
House density             :     20 %
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 138.00 / 138.00 m
Receiver height           :   1.50 / 1.50   m
Topography                :      2       (Flat/gentle slope; with barrier)
Barrier angle1            : -90.00 deg   Angle2 : -27.00 deg
Barrier height            :   7.00 m
Barrier receiver distance :   3.00 / 3.00   m
Source elevation          : 124.30 m
Receiver elevation        : 124.52 m
Barrier elevation         : 124.50 m
Reference angle           :   0.00
```

↟

```
Result summary (day)
--------------------

                    !  source  !   Road   !  Total
                    !  height  !   Leq    !   Leq
                    !   (m)    !  (dBA)   !  (dBA)
--------------------+----------+----------+----------
 1.Stittsvile       !     1.50 !    69.94 !    69.94
 2.Parade Dr.       !     1.50 !    44.66 !    44.66
--------------------+----------+----------+----------
                      Total                   69.95 dBA
```

↟

```
Result summary (night)
----------------------

                    !  source  !   Road   !  Total
                    !  height  !   Leq    !   Leq
                    !   (m)    !  (dBA)   !  (dBA)
--------------------+----------+----------+----------
 1.Stittsvile       !     1.50 !    62.34 !    62.34
 2.Parade Dr.       !     1.50 !    37.07 !    37.07
--------------------+----------+----------+----------
                      Total                   62.35 dBA
```

↟

TOTAL Leq FROM ALL SOURCES (DAY): 69.95
(NIGHT): 62.35

STAMSON 5.0 SUMMARY REPORT Date: 27-09-2024 13:56:42
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: r5.te Time Period: Day/Night 16/8 hours
Description: R5 - Block 5-8A

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

Car traffic volume : 28336/2464 veh/TimePeriod *
Medium truck volume : 2254/196 veh/TimePeriod *
Heavy truck volume : 1610/140 veh/TimePeriod *
Posted speed limit : 50 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): 35000
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: Stittsvile (day/night)

Angle1 Angle2 : -40.00 deg 8.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 74.00 / 74.00 m
Receiver height : 4.65 / 7.80 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -40.00 deg Angle2 : -20.00 deg
Barrier height : 10.57 m
Barrier receiver distance : 47.00 / 47.00 m
Source elevation : 124.30 m
Receiver elevation : 123.60 m
Barrier elevation : 124.40 m
Reference angle : 0.00

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

Car traffic volume : 28336/2464 veh/TimePeriod *
Medium truck volume : 2254/196 veh/TimePeriod *
Heavy truck volume : 1610/140 veh/TimePeriod *
Posted speed limit : 50 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):  35000
    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: Stittsville (day/night)
---------------------------------------------
Angle1   Angle2           :   8.00 deg   71.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  74.00 / 74.00  m
Receiver height           :   4.65 / 7.80   m
Topography                :      2       (Flat/gentle slope; with barrier)
Barrier angle1            :   8.00 deg   Angle2 : 40.00 deg
Barrier height            :  10.57 m
Barrier receiver distance :  40.00 / 40.00  m
Source elevation          : 124.30 m
Receiver elevation        : 123.60 m
Barrier elevation         : 124.87 m
Reference angle           :   0.00

↟
Road data, segment # 3: Stittsville (day/night)
-----------------------------------------------
Car traffic volume  : 28336/2464  veh/TimePeriod  *
Medium truck volume :  2254/196   veh/TimePeriod  *
Heavy truck volume  :  1610/140   veh/TimePeriod  *
Posted speed limit  :    50 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):  35000
    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 # 3: Stittsville (day/night)
---------------------------------------------
Angle1   Angle2           :  71.00 deg   90.00 deg
```

```
Wood depth                 :      0       (No woods.)
No of house rows           :      0 / 0
Surface                    :      2       (Reflective ground surface)
Receiver source distance   :  74.00 / 74.00  m
Receiver height            :   4.65 / 7.80   m
Topography                 :      2       (Flat/gentle slope; with barrier)
Barrier angle1             :  71.00 deg   Angle2 : 90.00 deg
Barrier height             :   7.00 m
Barrier receiver distance  :   3.00 / 3.00   m
Source elevation           : 124.30 m
Receiver elevation         : 123.60 m
Barrier elevation          : 124.20 m
Reference angle            :   0.00
```



```
Road data, segment # 4: Parade Dr. (day/night)
-----------------------------------------------
Car traffic volume  :  6477/563   veh/TimePeriod  *
Medium truck volume :   515/45    veh/TimePeriod  *
Heavy truck volume  :   368/32    veh/TimePeriod  *
Posted speed limit  :    50 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):   8000
    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 # 4: Parade Dr. (day/night)
--------------------------------------------
Angle1   Angle2            : -64.00 deg   31.00 deg
Wood depth                 :      0       (No woods.)
No of house rows           :      0 / 0
Surface                    :      2       (Reflective ground surface)
Receiver source distance   :  47.00 / 47.00  m
Receiver height            :   4.65 / 7.80   m
Topography                 :      2       (Flat/gentle slope; with barrier)
Barrier angle1             : -64.00 deg   Angle2 : -32.00 deg
Barrier height             :  10.57 m
Barrier receiver distance  :   3.00 / 3.00   m
Source elevation           : 124.30 m
Receiver elevation         : 123.60 m
Barrier elevation          : 124.87 m
Reference angle            :   0.00
```

Road data, segment # 5: Parade Dr. (day/night)

Car traffic volume : 6477/563 veh/TimePeriod *
Medium truck volume : 515/45 veh/TimePeriod *
Heavy truck volume : 368/32 veh/TimePeriod *
Posted speed limit : 50 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): 8000
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 # 5: Parade Dr. (day/night)

Angle1 Angle2 : 31.00 deg 65.00 deg
Wood depth : 0 (No woods.)
No of house rows : 1 / 1
House density : 20 %
Surface : 2 (Reflective ground surface)
Receiver source distance : 47.00 / 47.00 m
Receiver height : 4.65 / 7.80 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : 31.00 deg Angle2 : 65.00 deg
Barrier height : 7.00 m
Barrier receiver distance : 3.00 / 3.00 m
Source elevation : 124.30 m
Receiver elevation : 123.60 m
Barrier elevation : 124.03 m
Reference angle : 0.00

Result summary (day)
---

	source height (m)	Road Leq (dBA)	Total Leq (dBA)
1.Stittsvile	1.50	57.18	57.18
2.Stittsville	1.50	57.64	57.64
3.Stittsville	1.50	45.32	45.32
4.Parade Dr.	1.50	56.25	56.25
5.Parade Dr.	1.50	36.64	36.64

	Total		61.94 dBA

Result summary (night)

	source height (m)	Road Leq (dBA)	Total Leq (dBA)	
1.Stittsvile	1.50	49.59	49.59	
2.Stittsville	1.50	50.06	50.06	
3.Stittsville	1.50	42.87	42.87	
4.Parade Dr.	1.50	48.66	48.66	
5.Parade Dr.	1.50	45.06	45.06	*
	Total		55.01 dBA	

* Bright Zone !

TOTAL Leq FROM ALL SOURCES (DAY): 61.94
(NIGHT): 55.01

STAMSON 5.0 SUMMARY REPORT Date: 27-09-2024 14:12:25
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: r5b.te Time Period: Day/Night 16/8 hours
Description: R5 - Block 5-9B

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

Car traffic volume : 28336/2464 veh/TimePeriod *
Medium truck volume : 2254/196 veh/TimePeriod *
Heavy truck volume : 1610/140 veh/TimePeriod *
Posted speed limit : 50 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): 35000
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: Stittsvile (day/night)

Angle1 Angle2 : -40.00 deg 8.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 74.00 / 74.00 m
Receiver height : 1.50 / 1.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -40.00 deg Angle2 : -20.00 deg
Barrier height : 10.57 m
Barrier receiver distance : 47.00 / 47.00 m
Source elevation : 124.30 m
Receiver elevation : 123.60 m
Barrier elevation : 124.40 m
Reference angle : 0.00

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

Car traffic volume : 28336/2464 veh/TimePeriod *
Medium truck volume : 2254/196 veh/TimePeriod *
Heavy truck volume : 1610/140 veh/TimePeriod *
Posted speed limit : 50 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):  35000
    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: Stittsville (day/night)
---------------------------------------------
Angle1   Angle2           :   8.00 deg   71.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  74.00 / 74.00  m
Receiver height           :   1.50 / 1.50   m
Topography                :      2       (Flat/gentle slope; with barrier)
Barrier angle1            :   8.00 deg   Angle2 : 40.00 deg
Barrier height            :  10.57 m
Barrier receiver distance :  40.00 / 40.00  m
Source elevation          : 124.30 m
Receiver elevation        : 123.60 m
Barrier elevation         : 124.87 m
Reference angle           :   0.00

↟
Road data, segment # 3: Stittsville (day/night)
---------------------------------------------
Car traffic volume  : 28336/2464  veh/TimePeriod  *
Medium truck volume :  2254/196   veh/TimePeriod  *
Heavy truck volume  :  1610/140   veh/TimePeriod  *
Posted speed limit  :    50 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):  35000
    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 # 3: Stittsville (day/night)
---------------------------------------------
Angle1   Angle2           :  71.00 deg   90.00 deg
```

```
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  74.00 / 74.00  m
Receiver height           :   1.50 / 1.50   m
Topography                :      2       (Flat/gentle slope; with barrier)
Barrier angle1            :  71.00 deg   Angle2 : 90.00 deg
Barrier height            :   7.00 m
Barrier receiver distance :   3.00 / 3.00   m
Source elevation          : 124.30 m
Receiver elevation        : 123.60 m
Barrier elevation         : 124.20 m
Reference angle           :   0.00
```



```
Road data, segment # 4: Parade Dr. (day/night)
-----------------------------------------------
Car traffic volume  :  6477/563   veh/TimePeriod  *
Medium truck volume :   515/45    veh/TimePeriod  *
Heavy truck volume  :   368/32    veh/TimePeriod  *
Posted speed limit  :    50 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):   8000
    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 # 4: Parade Dr. (day/night)
--------------------------------------------
Angle1   Angle2           : -64.00 deg   31.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  47.00 / 47.00  m
Receiver height           :   1.50 / 1.50   m
Topography                :      2       (Flat/gentle slope; with barrier)
Barrier angle1            : -64.00 deg   Angle2 : -32.00 deg
Barrier height            :  10.57 m
Barrier receiver distance :   3.00 / 3.00   m
Source elevation          : 124.30 m
Receiver elevation        : 123.60 m
Barrier elevation         : 124.87 m
Reference angle           :   0.00
```

Road data, segment # 5: Parade Dr. (day/night)

Car traffic volume : 6477/563 veh/TimePeriod *
Medium truck volume : 515/45 veh/TimePeriod *
Heavy truck volume : 368/32 veh/TimePeriod *
Posted speed limit : 50 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): 8000
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 # 5: Parade Dr. (day/night)

Angle1 Angle2 : 31.00 deg 65.00 deg
Wood depth : 0 (No woods.)
No of house rows : 1 / 1
House density : 20 %
Surface : 2 (Reflective ground surface)
Receiver source distance : 47.00 / 47.00 m
Receiver height : 1.50 / 1.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : 31.00 deg Angle2 : 65.00 deg
Barrier height : 7.00 m
Barrier receiver distance : 3.00 / 3.00 m
Source elevation : 124.30 m
Receiver elevation : 123.60 m
Barrier elevation : 124.03 m
Reference angle : 0.00

Result summary (day)
---

	source height (m)	Road Leq (dBA)	Total Leq (dBA)
1.Stittsvile	1.50	57.18	57.18
2.Stittsville	1.50	57.63	57.63
3.Stittsville	1.50	42.19	42.19
4.Parade Dr.	1.50	56.25	56.25
5.Parade Dr.	1.50	33.55	33.55

	Total		61.88 dBA

Result summary (night)

	source height (m)	Road Leq (dBA)	Total Leq (dBA)
1.Stittsvile	1.50	49.58	49.58
2.Stittsville	1.50	50.04	50.04
3.Stittsville	1.50	34.60	34.60
4.Parade Dr.	1.50	48.66	48.66
5.Parade Dr.	1.50	25.96	25.96
	Total		54.29 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 61.88
(NIGHT): 54.29

STAMSON 5.0 SUMMARY REPORT Date: 30-09-2024 09:03:13
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: r6.te Time Period: Day/Night 16/8 hours
Description: R6 - Block 5 1A

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

Car traffic volume : 28336/2464 veh/TimePeriod *
Medium truck volume : 2254/196 veh/TimePeriod *
Heavy truck volume : 1610/140 veh/TimePeriod *
Posted speed limit : 50 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): 35000
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: Stittsvile (day/night)

Angle1 Angle2 : -90.00 deg -82.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 62.00 / 62.00 m
Receiver height : 4.65 / 7.80 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -90.00 deg Angle2 : -85.00 deg
Barrier height : 7.00 m
Barrier receiver distance : 3.00 / 3.00 m
Source elevation : 124.30 m
Receiver elevation : 123.60 m
Barrier elevation : 124.00 m
Reference angle : 0.00

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

Car traffic volume : 28336/2464 veh/TimePeriod *
Medium truck volume : 2254/196 veh/TimePeriod *
Heavy truck volume : 1610/140 veh/TimePeriod *
Posted speed limit : 50 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):  35000
    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: Stittsville (day/night)
---------------------------------------------
Angle1   Angle2           : -82.00 deg   23.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  62.00 / 62.00  m
Receiver height           :   4.65 / 7.80   m
Topography                :      2       (Flat/gentle slope; with barrier)
Barrier angle1            : -82.00 deg   Angle2 : -11.00 deg
Barrier height            :  10.57 m
Barrier receiver distance :  20.00 / 20.00  m
Source elevation          : 124.30 m
Receiver elevation        : 123.60 m
Barrier elevation         : 124.60 m
Reference angle           :   0.00

↟
Road data, segment # 3: Stittsville (day/night)
-----------------------------------------------
Car traffic volume  : 28336/2464  veh/TimePeriod  *
Medium truck volume :  2254/196   veh/TimePeriod  *
Heavy truck volume  :  1610/140   veh/TimePeriod  *
Posted speed limit  :    50 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):  35000
    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 # 3: Stittsville (day/night)
---------------------------------------------
Angle1   Angle2           :  23.00 deg   90.00 deg
```

```
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  62.00 / 62.00  m
Receiver height           :   4.65 / 7.80   m
Topography                :      2       (Flat/gentle slope; with barrier)
Barrier angle1            :  23.00 deg   Angle2 : 67.00 deg
Barrier height            :  10.57 m
Barrier receiver distance :   3.00 / 3.00   m
Source elevation          : 124.30 m
Receiver elevation        : 123.60 m
Barrier elevation         : 124.87 m
Reference angle           :   0.00
```



```
Road data, segment # 4: Parade Dr. (day/night)
-----------------------------------------------
Car traffic volume  :  6477/563   veh/TimePeriod  *
Medium truck volume :   515/45    veh/TimePeriod  *
Heavy truck volume  :   368/32    veh/TimePeriod  *
Posted speed limit  :    50 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):   8000
    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 # 4: Parade Dr. (day/night)
--------------------------------------------
Angle1   Angle2           : -60.00 deg   36.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  54.00 / 54.00  m
Receiver height           :   4.65 / 7.80   m
Topography                :      2       (Flat/gentle slope; with barrier)
Barrier angle1            : -60.00 deg   Angle2 : -9.00 deg
Barrier height            :  10.57 m
Barrier receiver distance :  20.00 / 20.00  m
Source elevation          : 124.30 m
Receiver elevation        : 123.60 m
Barrier elevation         : 124.87 m
Reference angle           :   0.00
```

Road data, segment # 5: Parade Dr. (day/night)

Car traffic volume : 6477/563 veh/TimePeriod *
Medium truck volume : 515/45 veh/TimePeriod *
Heavy truck volume : 368/32 veh/TimePeriod *
Posted speed limit : 50 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): 8000
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 # 5: Parade Dr. (day/night)

Angle1 Angle2 : 36.00 deg 59.00 deg
Wood depth : 0 (No woods.)
No of house rows : 1 / 1
House density : 20 %
Surface : 2 (Reflective ground surface)
Receiver source distance : 54.00 / 54.00 m
Receiver height : 4.65 / 7.80 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : 36.00 deg Angle2 : 59.00 deg
Barrier height : 7.00 m
Barrier receiver distance : 3.00 / 3.00 m
Source elevation : 124.30 m
Receiver elevation : 123.60 m
Barrier elevation : 124.03 m
Reference angle : 0.00

Result summary (day)
---

	source height (m)	Road Leq (dBA)	Total Leq (dBA)
1.Stittsvile	1.50	49.44	49.44
2.Stittsville	1.50	58.90	58.90
3.Stittsville	1.50	57.14	57.14
4.Parade Dr.	1.50	54.22	54.22
5.Parade Dr.	1.50	34.27	34.27

	Total		62.17 dBA

Result summary (night)

	source height (m)	Road Leq (dBA)	Total Leq (dBA)
1.Stittsvile	1.50	44.88	44.88 *
2.Stittsville	1.50	51.42	51.42
3.Stittsville	1.50	49.56	49.56
4.Parade Dr.	1.50	46.65	46.65
5.Parade Dr.	1.50	42.76	42.76 *
	Total		55.12 dBA

* Bright Zone !

TOTAL Leq FROM ALL SOURCES (DAY): 62.17
(NIGHT): 55.12

STAMSON 5.0 SUMMARY REPORT Date: 30-09-2024 09:44:08
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: r7.te Time Period: Day/Night 16/8 hours
Description: R7 - Block 6 5A

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

Car traffic volume : 28336/2464 veh/TimePeriod *
Medium truck volume : 2254/196 veh/TimePeriod *
Heavy truck volume : 1610/140 veh/TimePeriod *
Posted speed limit : 50 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): 35000
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: Stittsvile (day/night)

Angle1 Angle2 : -90.00 deg -19.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 73.00 / 73.00 m
Receiver height : 4.65 / 7.80 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -90.00 deg Angle2 : -56.00 deg
Barrier height : 7.00 m
Barrier receiver distance : 3.00 / 3.00 m
Source elevation : 124.30 m
Receiver elevation : 124.37 m
Barrier elevation : 124.00 m
Reference angle : 0.00

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

Car traffic volume : 28336/2464 veh/TimePeriod *
Medium truck volume : 2254/196 veh/TimePeriod *
Heavy truck volume : 1610/140 veh/TimePeriod *
Posted speed limit : 50 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)	35000
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: Stittsvile (day/night)

Angle1 Angle2	: -19.00 deg	62.00 deg
Wood depth	: 0	(No woods.)
No of house rows	: 0 / 0	
Surface	: 2	(Reflective ground surface)
Receiver source distance	: 73.00 / 73.00	m
Receiver height	: 4.65 / 7.80	m
Topography	: 2	(Flat/gentle slope; with barrier)
Barrier angle1	: -19.00 deg	Angle2 : 62.00 deg
Barrier height	: 10.57	m
Barrier receiver distance	: 31.00 / 31.00	m
Source elevation	: 124.30	m
Receiver elevation	: 124.37	m
Barrier elevation	: 124.70	m
Reference angle	: 0.00	

Result summary (day)

	source height (m)	Road Leq (dBA)	Total Leq (dBA)
1.Stittsvile	1.50	58.80	58.80
2.Stittsvile	1.50	43.00	43.00
Total			58.91 dBA

Result summary (night)

	source height (m)	Road Leq (dBA)	Total Leq (dBA)
1.Stittsvile	1.50	53.65	53.65 *

2.Stittsvile	1.50	37.75	37.75
	Total		53.76 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 58.91
(NIGHT): 53.76

STAMSON 5.0 SUMMARY REPORT Date: 30-09-2024 10:07:17
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: r7b.te Time Period: Day/Night 16/8 hours
Description: R7 - Block 6 12B

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

Car traffic volume : 28336/2464 veh/TimePeriod *
Medium truck volume : 2254/196 veh/TimePeriod *
Heavy truck volume : 1610/140 veh/TimePeriod *
Posted speed limit : 50 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): 35000
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: Stittsvile (day/night)

Angle1 Angle2 : -90.00 deg -19.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 73.00 / 73.00 m
Receiver height : 1.50 / 1.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -90.00 deg Angle2 : -56.00 deg
Barrier height : 7.00 m
Barrier receiver distance : 3.00 / 3.00 m
Source elevation : 124.30 m
Receiver elevation : 124.37 m
Barrier elevation : 124.00 m
Reference angle : 0.00

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

Car traffic volume : 28336/2464 veh/TimePeriod *
Medium truck volume : 2254/196 veh/TimePeriod *
Heavy truck volume : 1610/140 veh/TimePeriod *
Posted speed limit : 50 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)	35000
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: Stittsvile (day/night)

Angle1 Angle2	: -19.00 deg	62.00 deg
Wood depth	: 0	(No woods.)
No of house rows	: 0 / 0	
Surface	: 2	(Reflective ground surface)
Receiver source distance	: 73.00 / 73.00	m
Receiver height	: 1.50 / 1.50	m
Topography	: 2	(Flat/gentle slope; with barrier)
Barrier angle1	: -19.00 deg	Angle2 : 62.00 deg
Barrier height	: 10.57	m
Barrier receiver distance	: 31.00 / 31.00	m
Source elevation	: 124.30	m
Receiver elevation	: 124.37	m
Barrier elevation	: 124.70	m
Reference angle	: 0.00	

Result summary (day)

	source height (m)	Road Leq (dBA)	Total Leq (dBA)
1.Stittsvile	1.50	58.56	58.56
2.Stittsvile	1.50	42.00	42.00
Total			58.65 dBA

Result summary (night)

	source height (m)	Road Leq (dBA)	Total Leq (dBA)
1.Stittsvile	1.50	50.96	50.96

2.Stittsvile	1.50	34.41	34.41
	Total		51.06 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 58.65
(NIGHT): 51.06

STAMSON 5.0 SUMMARY REPORT Date: 30-09-2024 10:54:11
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: r8.te Time Period: Day/Night 16/8 hours
Description: R8 - Block 6 4A

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

Car traffic volume : 28336/2464 veh/TimePeriod *
Medium truck volume : 2254/196 veh/TimePeriod *
Heavy truck volume : 1610/140 veh/TimePeriod *
Posted speed limit : 50 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): 35000
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: Stittsvile (day/night)

Angle1 Angle2 : -90.00 deg -52.00 deg
Wood depth : 0 (No woods.)
No of house rows : 2 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 64.00 / 64.00 m
Receiver height : 4.65 / 7.80 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -90.00 deg Angle2 : -72.00 deg
Barrier height : 7.00 m
Barrier receiver distance : 3.00 / 3.00 m
Source elevation : 124.30 m
Receiver elevation : 124.37 m
Barrier elevation : 124.00 m
Reference angle : 0.00

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

Car traffic volume : 28336/2464 veh/TimePeriod *
Medium truck volume : 2254/196 veh/TimePeriod *
Heavy truck volume : 1610/140 veh/TimePeriod *
Posted speed limit : 50 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):  35000
    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: Stittsvile (day/night)
--------------------------------------------
Angle1   Angle2           : -52.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      2 / 2
House density             :     20 %
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  64.00 / 64.00  m
Receiver height           :   4.65 / 7.80   m
Topography                :      2       (Flat/gentle slope; with barrier)
Barrier angle1            : -52.00 deg   Angle2 : 90.00 deg
Barrier height            :  10.57 m
Barrier receiver distance :  14.00 / 14.00  m
Source elevation          : 124.30 m
Receiver elevation        : 124.37 m
Barrier elevation         : 124.73 m
Reference angle           :   0.00

↟
Road data, segment # 3: Parade Dr. (day/night)
----------------------------------------------
Car traffic volume  :  6477/563   veh/TimePeriod  *
Medium truck volume :   515/45    veh/TimePeriod  *
Heavy truck volume  :   368/32    veh/TimePeriod  *
Posted speed limit  :    50 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):   8000
    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 # 3: Parade Dr. (day/night)
--------------------------------------------
```

```
Angle1   Angle2           : -60.00 deg   6.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      1 / 1
House density             :     20 %
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 121.00 / 121.00 m
Receiver height           :   4.65 / 7.80   m
Topography                :      2       (Flat/gentle slope; with barrier)
Barrier angle1            : -60.00 deg   Angle2 : 0.00 deg
Barrier height            :  10.57 m
Barrier receiver distance :   3.00 / 3.00   m
Source elevation          : 124.30 m
Receiver elevation        : 124.37 m
Barrier elevation         : 124.50 m
Reference angle           :   0.00
```



```
Road data, segment # 4: Parade Dr. (day/night)
-----------------------------------------------
Car traffic volume  :  6477/563   veh/TimePeriod  *
Medium truck volume :   515/45    veh/TimePeriod  *
Heavy truck volume  :   368/32    veh/TimePeriod  *
Posted speed limit  :    50 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):   8000
    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 # 4: Parade Dr. (day/night)
-----------------------------------------------
Angle1   Angle2           :   6.00 deg   34.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      1 / 1
House density             :     20 %
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 121.00 / 121.00 m
Receiver height           :   4.65 / 7.80   m
Topography                :      2       (Flat/gentle slope; with barrier)
Barrier angle1            :   6.00 deg   Angle2 : 34.00 deg
Barrier height            :  10.57 m
Barrier receiver distance :  30.00 / 30.00  m
Source elevation          : 124.30 m
Receiver elevation        : 124.37 m
```

```
Barrier elevation         : 123.60 m
Reference angle           :   0.00
```

↟

```
Road data, segment # 5: Parade Dr. (day/night)
-----------------------------------------------
Car traffic volume  :  6477/563   veh/TimePeriod  *
Medium truck volume :   515/45    veh/TimePeriod  *
Heavy truck volume  :   368/32    veh/TimePeriod  *
Posted speed limit  :    50 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):   8000
    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 # 5: Parade Dr. (day/night)
-----------------------------------------------
Angle1   Angle2           :  34.00 deg   54.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      2 / 2
House density             :     20 %
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 121.00 / 121.00 m
Receiver height           :   4.65 / 7.80   m
Topography                :      2       (Flat/gentle slope; with barrier)
Barrier angle1            :  34.00 deg   Angle2 : 54.00 deg
Barrier height            :   7.00 m
Barrier receiver distance :   3.00 / 3.00   m
Source elevation          : 124.30 m
Receiver elevation        : 124.37 m
Barrier elevation         : 124.03 m
Reference angle           :   0.00
```

↟

```
Result summary (day)
--------------------

                    !  source  !   Road   !  Total
                    !  height  !   Leq    !   Leq
                    !   (m)    !  (dBA)   !  (dBA)
--------------------+----------+----------+----------
 1.Stittsvile       !     1.50 !    54.78 !    54.78
 2.Stittsvile       !     1.50 !    47.75 !    47.75
```

3.Parade Dr.	1.50	41.52	41.52
4.Parade Dr.	1.50	32.36	32.36
5.Parade Dr.	1.50	32.61	32.61
Total			55.77 dBA

Result summary (night)

	source height (m)	Road Leq (dBA)	Total Leq (dBA)
1.Stittsvile	1.50	51.51	51.51 *
2.Stittsvile	1.50	42.98	42.98
3.Parade Dr.	1.50	34.19	34.19
4.Parade Dr.	1.50	28.97	28.97
5.Parade Dr.	1.50	37.15	37.15 *
Total			52.31 dBA

* Bright Zone !

TOTAL Leq FROM ALL SOURCES (DAY): 55.77
(NIGHT): 52.31

STAMSON 5.0 SUMMARY REPORT Date: 30-09-2024 12:55:04
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: r9.te Time Period: Day/Night 16/8 hours
Description: R9 - Block 7 - 5A

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

Car traffic volume : 28336/2464 veh/TimePeriod *
Medium truck volume : 2254/196 veh/TimePeriod *
Heavy truck volume : 1610/140 veh/TimePeriod *
Posted speed limit : 50 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): 35000
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: Stittsvile (day/night)

Angle1 Angle2 : -90.00 deg -38.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 100.00 / 100.00 m
Receiver height : 4.65 / 7.80 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -90.00 deg Angle2 : -57.00 deg
Barrier height : 7.00 m
Barrier receiver distance : 3.00 / 3.00 m
Source elevation : 124.30 m
Receiver elevation : 123.45 m
Barrier elevation : 124.00 m
Reference angle : 0.00

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

Car traffic volume : 28336/2464 veh/TimePeriod *
Medium truck volume : 2254/196 veh/TimePeriod *
Heavy truck volume : 1610/140 veh/TimePeriod *
Posted speed limit : 50 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):  35000
    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: Stittsvile (day/night)
--------------------------------------------
Angle1   Angle2           : -38.00 deg   35.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 100.00 / 100.00 m
Receiver height           :   4.65 / 7.80   m
Topography                :      2       (Flat/gentle slope; with barrier)
Barrier angle1            : -38.00 deg   Angle2 : 35.00 deg
Barrier height            :  10.57 m
Barrier receiver distance :   3.00 / 3.00   m
Source elevation          : 124.30 m
Receiver elevation        : 123.45 m
Barrier elevation         : 124.37 m
Reference angle           :   0.00

↟
Road data, segment # 3: Stittsvile (day/night)
----------------------------------------------
Car traffic volume  : 28336/2464  veh/TimePeriod  *
Medium truck volume :  2254/196   veh/TimePeriod  *
Heavy truck volume  :  1610/140   veh/TimePeriod  *
Posted speed limit  :    50 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):  35000
    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 # 3: Stittsvile (day/night)
--------------------------------------------
Angle1   Angle2           :  35.00 deg   51.00 deg
```

```
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 100.00 / 100.00 m
Receiver height           :   4.65 / 7.80   m
Topography                :      2       (Flat/gentle slope; with barrier)
Barrier angle1            :  35.00 deg   Angle2 : 51.00 deg
Barrier height            :  10.57 m
Barrier receiver distance :  40.00 / 40.00  m
Source elevation          : 124.30 m
Receiver elevation        : 123.45 m
Barrier elevation         : 124.70 m
Reference angle           :   0.00
```

Result summary (day)

	source height (m)	Road Leq (dBA)	Total Leq (dBA)
1.Stittsvile	1.50	54.66	54.66
2.Stittsvile	1.50	40.00	40.00
3.Stittsvile	1.50	35.86	35.86
Total			54.86 dBA

Result summary (night)

	source height (m)	Road Leq (dBA)	Total Leq (dBA)
1.Stittsvile	1.50	50.93	50.93 *
2.Stittsvile	1.50	32.42	32.42
3.Stittsvile	1.50	30.54	30.54
Total			51.03 dBA

```
TOTAL Leq FROM ALL SOURCES (DAY): 54.86
                           (NIGHT): 51.03
```

STAMSON 5.0 SUMMARY REPORT Date: 30-09-2024 13:00:00
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: r9b.te Time Period: Day/Night 16/8 hours
Description: R9 - Block 7 - 12B

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

Car traffic volume : 28336/2464 veh/TimePeriod *
Medium truck volume : 2254/196 veh/TimePeriod *
Heavy truck volume : 1610/140 veh/TimePeriod *
Posted speed limit : 50 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): 35000
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: Stittsvile (day/night)

Angle1 Angle2 : -90.00 deg -38.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 100.00 / 100.00 m
Receiver height : 1.50 / 1.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -90.00 deg Angle2 : -57.00 deg
Barrier height : 7.00 m
Barrier receiver distance : 3.00 / 3.00 m
Source elevation : 124.30 m
Receiver elevation : 123.45 m
Barrier elevation : 124.00 m
Reference angle : 0.00

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

Car traffic volume : 28336/2464 veh/TimePeriod *
Medium truck volume : 2254/196 veh/TimePeriod *
Heavy truck volume : 1610/140 veh/TimePeriod *
Posted speed limit : 50 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):  35000
    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: Stittsvile (day/night)
--------------------------------------------
Angle1   Angle2           : -38.00 deg   35.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 100.00 / 100.00 m
Receiver height           :   1.50 / 1.50   m
Topography                :      2       (Flat/gentle slope; with barrier)
Barrier angle1            : -38.00 deg   Angle2 : 35.00 deg
Barrier height            :  10.57 m
Barrier receiver distance :   3.00 / 3.00   m
Source elevation          : 124.30 m
Receiver elevation        : 123.45 m
Barrier elevation         : 124.37 m
Reference angle           :   0.00

↟
Road data, segment # 3: Stittsvile (day/night)
----------------------------------------------
Car traffic volume  : 28336/2464  veh/TimePeriod  *
Medium truck volume :  2254/196   veh/TimePeriod  *
Heavy truck volume  :  1610/140   veh/TimePeriod  *
Posted speed limit  :    50 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):  35000
    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 # 3: Stittsvile (day/night)
--------------------------------------------
Angle1   Angle2           :  35.00 deg   51.00 deg
```

```
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 100.00 / 100.00 m
Receiver height           :   1.50 / 1.50   m
Topography                :      2       (Flat/gentle slope; with barrier)
Barrier angle1            :  35.00 deg   Angle2 : 51.00 deg
Barrier height            :  10.57 m
Barrier receiver distance :  40.00 / 40.00  m
Source elevation          : 124.30 m
Receiver elevation        : 123.45 m
Barrier elevation         : 124.70 m
Reference angle           :   0.00
```

Result summary (day)

	source height (m)	Road Leq (dBA)	Total Leq (dBA)
1.Stittsvile	1.50	54.39	54.39
2.Stittsvile	1.50	40.00	40.00
3.Stittsvile	1.50	34.06	34.06
Total			54.58 dBA

Result summary (night)

	source height (m)	Road Leq (dBA)	Total Leq (dBA)
1.Stittsvile	1.50	46.80	46.80
2.Stittsvile	1.50	32.40	32.40
3.Stittsvile	1.50	26.46	26.46
Total			46.99 dBA

```
TOTAL Leq FROM ALL SOURCES (DAY): 54.58
                           (NIGHT): 46.99
```

STAMSON 5.0 SUMMARY REPORT Date: 30-09-2024 13:42:29
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: r10.te Time Period: Day/Night 16/8 hours
Description: R10 - Block 7 - 4A

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

Car traffic volume : 28336/2464 veh/TimePeriod *
Medium truck volume : 2254/196 veh/TimePeriod *
Heavy truck volume : 1610/140 veh/TimePeriod *
Posted speed limit : 50 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): 35000
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: Stittsvile (day/night)

Angle1 Angle2 : -90.00 deg -38.00 deg
Wood depth : 0 (No woods.)
No of house rows : 2 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 90.00 / 90.00 m
Receiver height : 4.65 / 7.80 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -90.00 deg Angle2 : -38.00 deg
Barrier height : 10.57 m
Barrier receiver distance : 3.00 / 3.00 m
Source elevation : 124.30 m
Receiver elevation : 123.45 m
Barrier elevation : 124.37 m
Reference angle : 0.00

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

Car traffic volume : 28336/2464 veh/TimePeriod *
Medium truck volume : 2254/196 veh/TimePeriod *
Heavy truck volume : 1610/140 veh/TimePeriod *
Posted speed limit : 50 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):  35000
    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: Stittsvile (day/night)
--------------------------------------------
Angle1   Angle2           : -38.00 deg   63.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  90.00 / 90.00  m
Receiver height           :   4.65 / 7.80   m
Topography                :      2       (Flat/gentle slope; with barrier)
Barrier angle1            : -38.00 deg   Angle2 : 63.00 deg
Barrier height            :  10.57 m
Barrier receiver distance :  40.00 / 40.00  m
Source elevation          : 124.30 m
Receiver elevation        : 123.45 m
Barrier elevation         : 124.73 m
Reference angle           :   0.00

↟
Road data, segment # 3: Stittsvile (day/night)
----------------------------------------------
Car traffic volume  : 28336/2464  veh/TimePeriod  *
Medium truck volume :  2254/196   veh/TimePeriod  *
Heavy truck volume  :  1610/140   veh/TimePeriod  *
Posted speed limit  :    50 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):  35000
    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 # 3: Stittsvile (day/night)
--------------------------------------------
Angle1   Angle2           :  63.00 deg   90.00 deg
```

```
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  90.00 / 90.00  m
Receiver height           :   4.65 / 7.80   m
Topography                :      2       (Flat/gentle slope; with barrier)
Barrier angle1            :  63.00 deg   Angle2 : 90.00 deg
Barrier height            :  10.57 m
Barrier receiver distance :   3.00 / 3.00   m
Source elevation          : 124.30 m
Receiver elevation        : 123.45 m
Barrier elevation         : 123.60 m
Reference angle           :   0.00
```



```
Road data, segment # 4: Parade Dr. (day/night)
-----------------------------------------------
Car traffic volume  :  6477/563   veh/TimePeriod  *
Medium truck volume :   515/45    veh/TimePeriod  *
Heavy truck volume  :   368/32    veh/TimePeriod  *
Posted speed limit  :    50 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):   8000
    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 # 4: Parade Dr. (day/night)
--------------------------------------------
Angle1   Angle2           : -50.00 deg   -12.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      1 / 1
House density             :     20 %
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 106.00 / 106.00 m
Receiver height           :   4.65 / 7.80   m
Topography                :      2       (Flat/gentle slope; with barrier)
Barrier angle1            : -50.00 deg   Angle2 : -12.00 deg
Barrier height            :  10.57 m
Barrier receiver distance :   3.00 / 3.00   m
Source elevation          : 124.30 m
Receiver elevation        : 123.45 m
Barrier elevation         : 124.60 m
Reference angle           :   0.00
```

Road data, segment # 5: Parade Dr. (day/night)

Car traffic volume	6477/563	veh/TimePeriod *
Medium truck volume	515/45	veh/TimePeriod *
Heavy truck volume	368/32	veh/TimePeriod *
Posted speed limit	50 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)	8000
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 # 5: Parade Dr. (day/night)

Angle1 Angle2	-12.00 deg	21.00 deg
Wood depth	0	(No woods.)
No of house rows	1 / 1	
House density	20 %	
Surface	2	(Reflective ground surface)
Receiver source distance	106.00 / 106.00 m	
Receiver height	4.65 / 7.80 m	
Topography	2	(Flat/gentle slope; with barrier)
Barrier angle1	-12.00 deg	Angle2 : 21.00 deg
Barrier height	10.57 m	
Barrier receiver distance	28.00 / 28.00 m	
Source elevation	124.30 m	
Receiver elevation	123.45 m	
Barrier elevation	123.60 m	
Reference angle	0.00	

Road data, segment # 6: Parade Dr. (day/night)

Car traffic volume	6477/563	veh/TimePeriod *
Medium truck volume	515/45	veh/TimePeriod *
Heavy truck volume	368/32	veh/TimePeriod *
Posted speed limit	50 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):   8000
    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 # 6: Parade Dr. (day/night)
-------------------------------------------
Angle1   Angle2           :  21.00 deg   57.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      2 / 2
House density             :     20 %
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 106.00 / 106.00 m
Receiver height           :   4.65 / 7.80   m
Topography                :      2       (Flat/gentle slope; with barrier)
Barrier angle1            :  21.00 deg   Angle2 : 57.00 deg
Barrier height            :   7.00 m
Barrier receiver distance :   3.00 / 3.00   m
Source elevation          : 124.30 m
Receiver elevation        : 123.45 m
Barrier elevation         : 124.03 m
Reference angle           :   0.00
```

Result summary (day)

	source height (m)	Road Leq (dBA)	Total Leq (dBA)
1.Stittsvile	1.50	42.24	42.24
2.Stittsvile	1.50	43.30	43.30
3.Stittsvile	1.50	41.64	41.64
4.Parade Dr.	1.50	30.50	30.50
5.Parade Dr.	1.50	32.03	32.03
6.Parade Dr.	1.50	32.76	32.76
Total			47.58 dBA

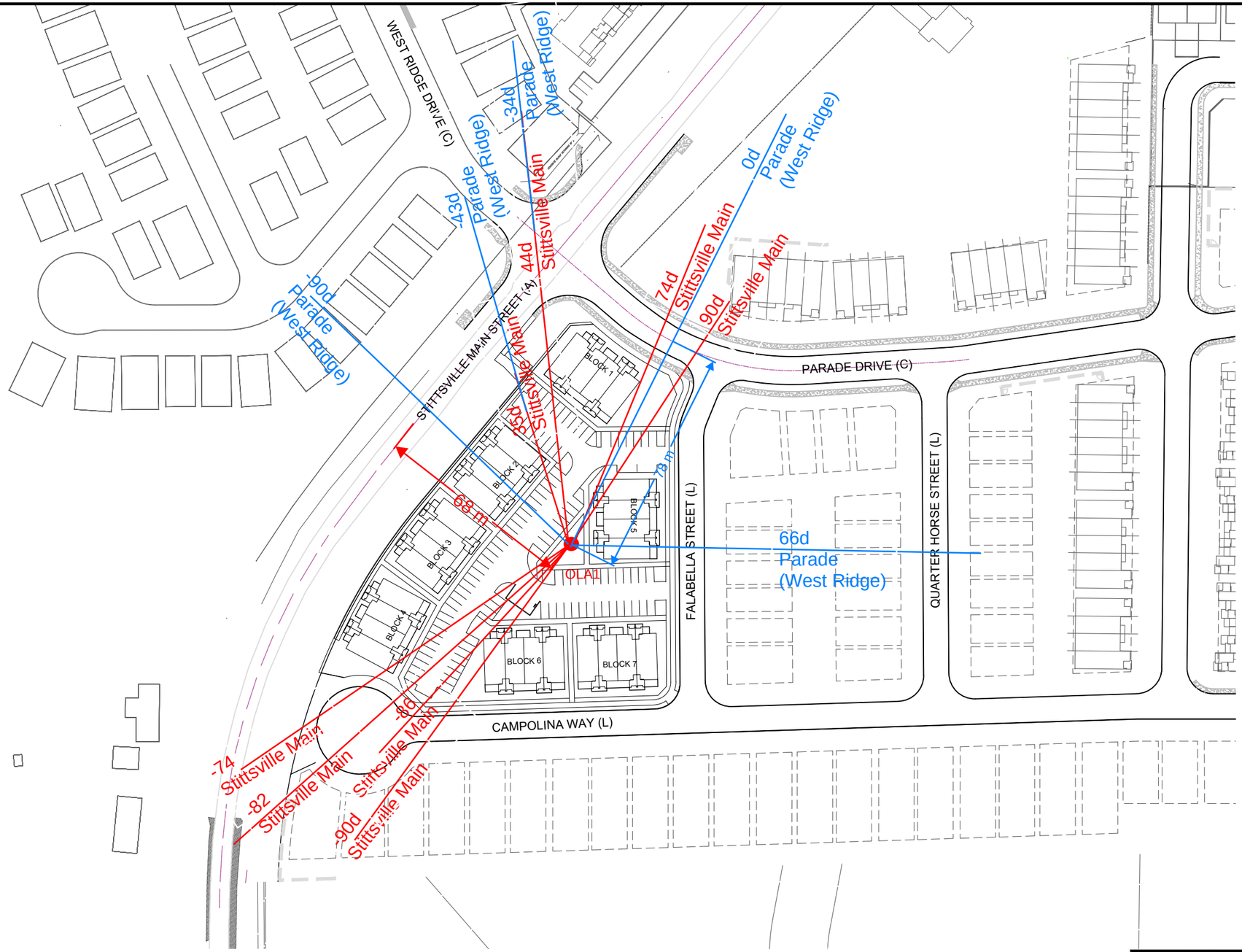
Result summary (night)

	source height (m)	Road Leq (dBA)	Total Leq (dBA)

1.Stittsvile	!	1.50 !	37.07 !	37.07
2.Stittsvile	!	1.50 !	37.77 !	37.77
3.Stittsvile	!	1.50 !	37.34 !	37.34
4.Parade Dr.	!	1.50 !	23.03 !	23.03
5.Parade Dr.	!	1.50 !	28.06 !	28.06
6.Parade Dr.	!	1.50 !	40.28 !	40.28 *
		Total		44.47 dBA

* Bright Zone !

TOTAL Leq FROM ALL SOURCES (DAY): 47.58
(NIGHT): 44.47



LEGEND

- OLA1

NOVATECH
Engineers, Planners & Landscape Architects
Suite 200, 240 Michael Cowpland Drive
Ottawa, Ontario, Canada K2M 1P6
Telephone (613) 254-9643
Facsimile (613) 254-5867
Website www.novatech-eng.com

CITY OF OTTAWA
1183 STITTSVILLE MAIN STREET

OLA1 ANGLES AND DISTANCES

SCALE 1 : 1500 (0, 15, 30, 45, 60)
DATE AUG 2024
JOB 124097
FIGURE OLA1

SHT11X17.DWG - 279mmX432mm

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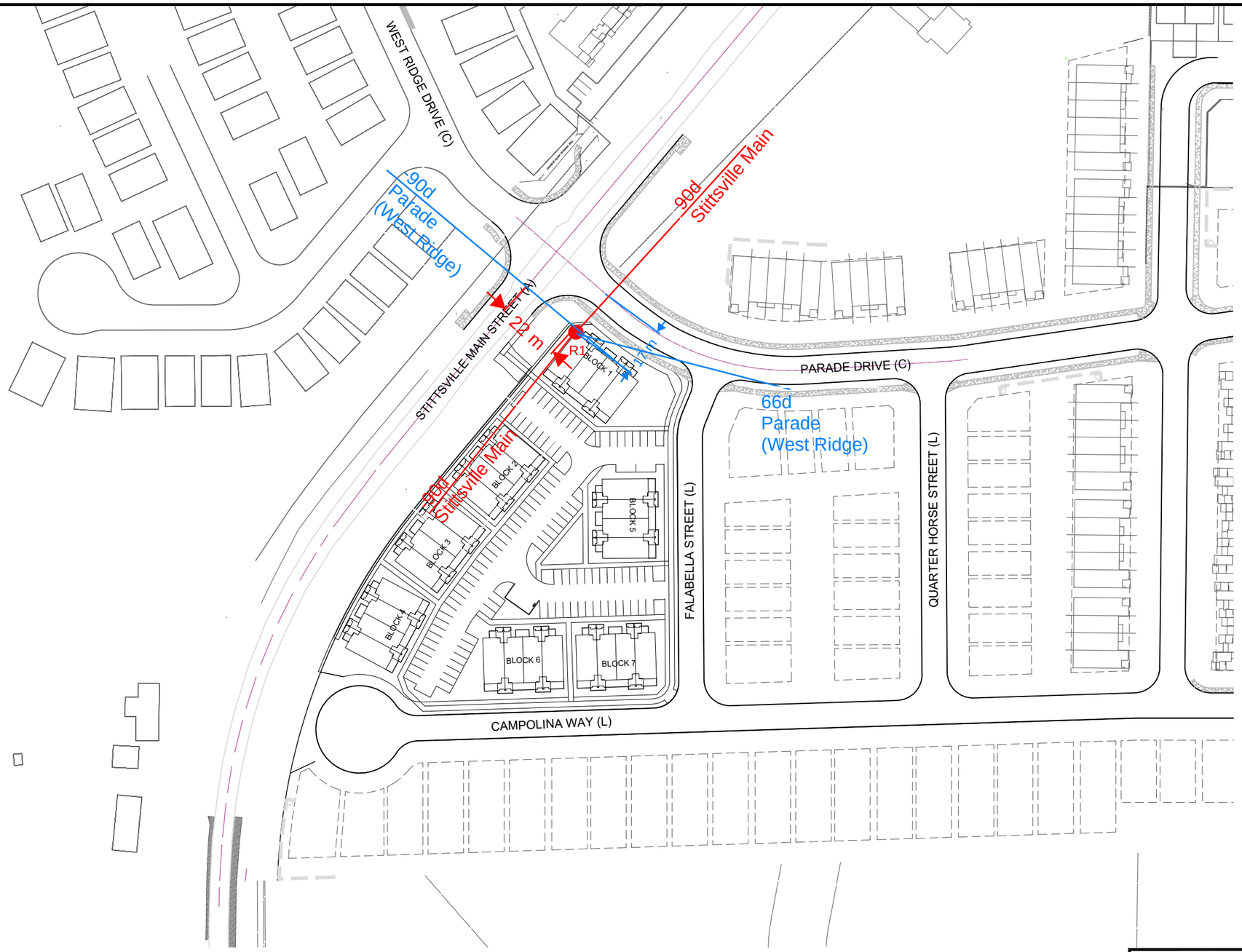

LEGEND

● R1 8A

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Engineers, Planners & Landscape Architects
Suite 200, 240 Michael Cowpland Drive
Ottawa, Ontario, Canada K2M 1P6
Telephone (613) 254-9643
Facsimile (613) 254-5867
Website www.novatech-eng.com

CITY OF OTTAWA
1183 STITTSVILLE MAIN STREET

R1 ANGLES AND DISTANCES

SCALE 1 : 1500 (0, 15, 30, 45, 60)

DATE	JOB	FIGURE
AUG 2024	124097	R1

SHT11X17.DWG - 279mmX432mm

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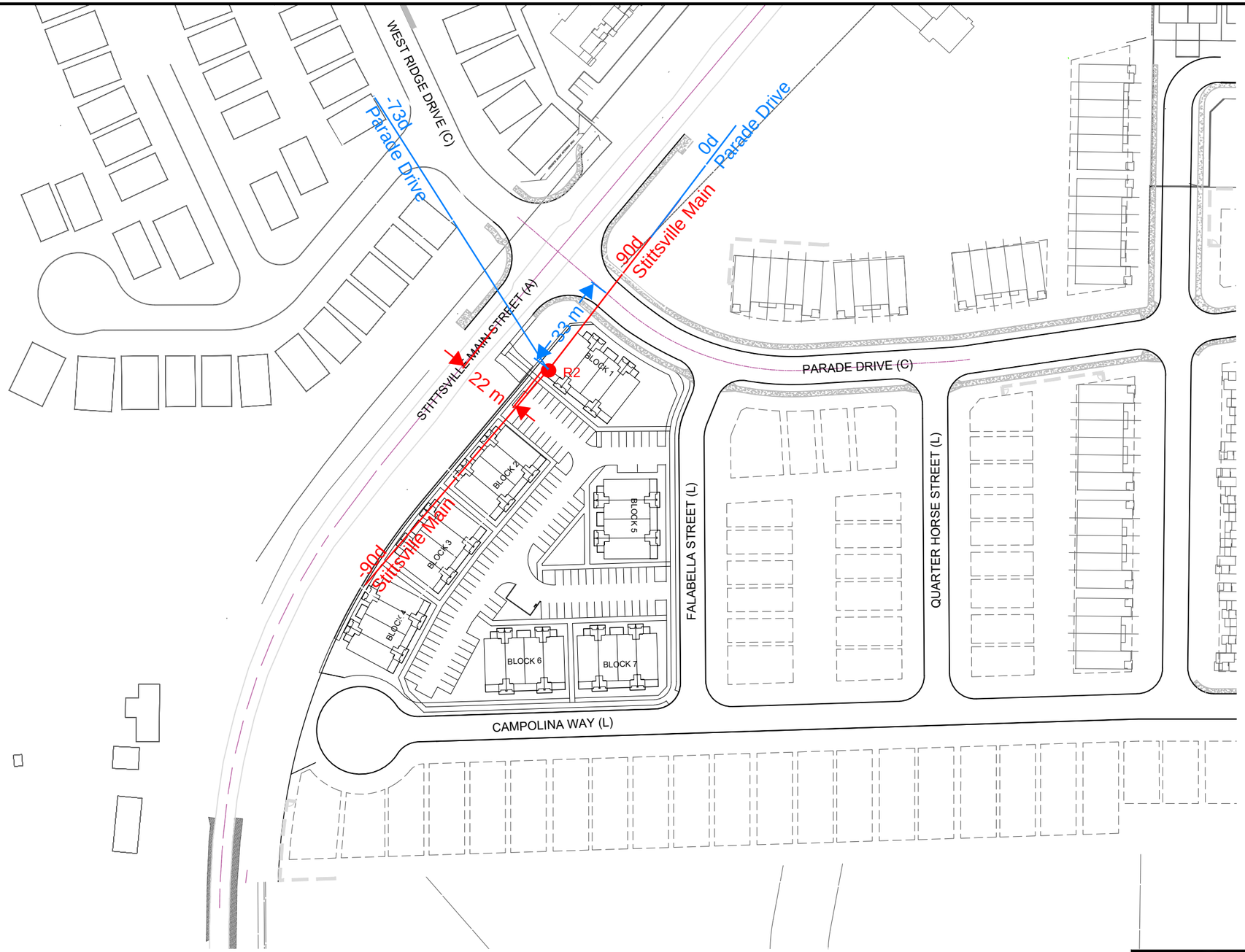

LEGEND

● R2 - 1A

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Engineers, Planners & Landscape Architects
Suite 200, 240 Michael Cowpland Drive
Ottawa, Ontario, Canada K2M 1P6
Telephone (613) 254-9643
Facsimile (613) 254-5867
Website www.novatech-eng.com

CITY OF OTTAWA
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R2 ANGLES AND DISTANCES

SCALE 1 : 1500 (0, 15, 30, 45, 60)
DATE AUG 2024
JOB 124097
FIGURE R2

SHT11X17.DWG - 279mmX432mm

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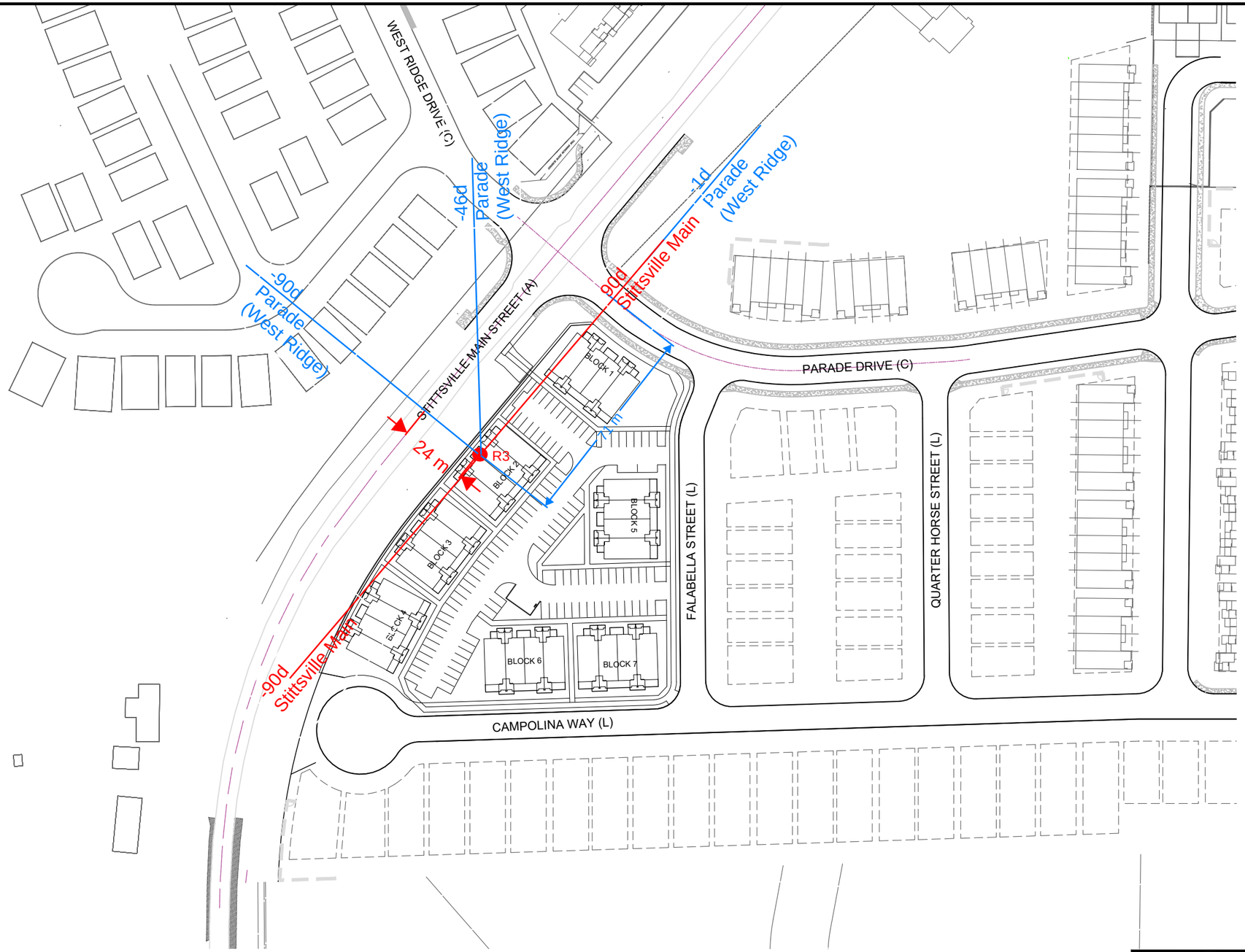

LEGEND

● R3

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Engineers, Planners & Landscape Architects
Suite 200, 240 Michael Cowpland Drive
Ottawa, Ontario, Canada K2M 1P6
Telephone (613) 254-9643
Facsimile (613) 254-5867
Website www.novatech-eng.com

CITY OF OTTAWA
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POW3 ANGLES AND DISTANCES

SCALE 1 : 1500 (0, 15, 30, 45, 60)
DATE AUG 2024
JOB 124097
FIGURE R3

SHT11X17.DWG - 279mmX432mm

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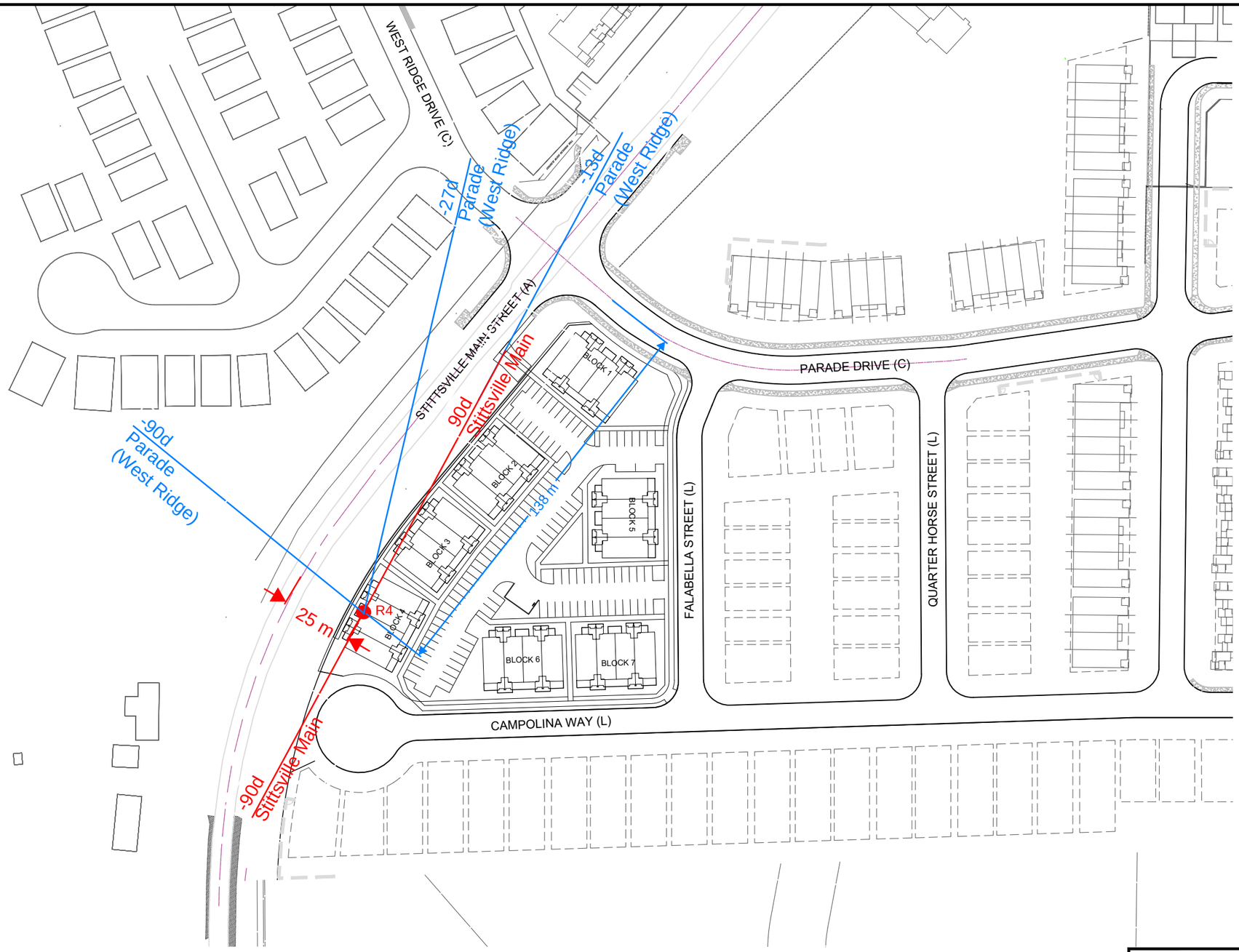

LEGEND

● R4

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Engineers, Planners & Landscape Architects
Suite 200, 240 Michael Cowpland Drive
Ottawa, Ontario, Canada K2M 1P6
Telephone (613) 254-9643
Facsimile (613) 254-5867
Website www.novatech-eng.com

CITY OF OTTAWA
1183 STITTSVILLE MAIN STREET

POW1 ANGLES AND DISTANCES

SCALE 1 : 1500 (0, 15, 30, 45, 60)
DATE AUG 2024
JOB 124097
FIGURE R4

SHT11X17.DWG - 279mmX432mm

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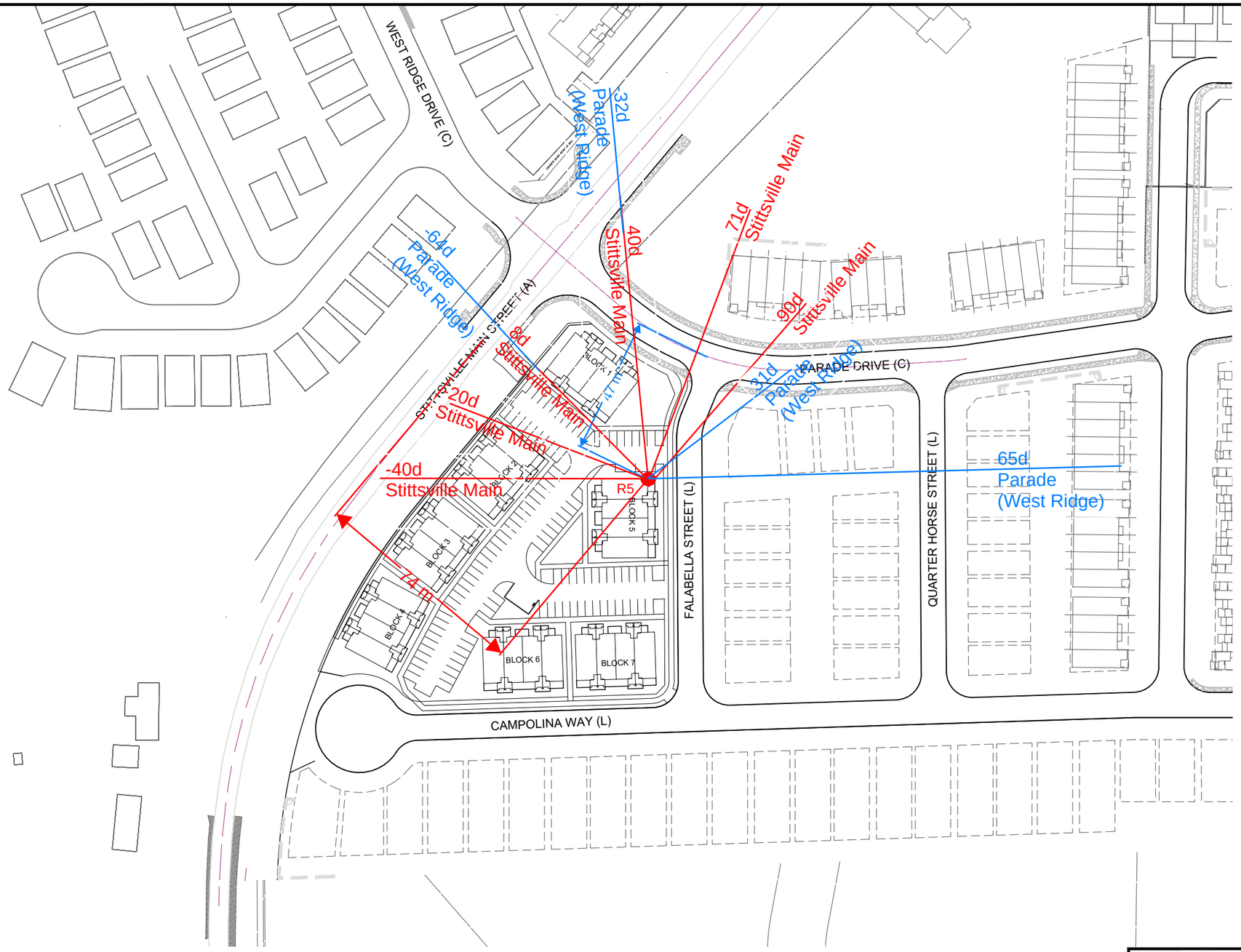

LEGEND

● R5

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Engineers, Planners & Landscape Architects
Suite 200, 240 Michael Cowpland Drive
Ottawa, Ontario, Canada K2M 1P6
Telephone (613) 254-9643
Facsimile (613) 254-5867
Website www.novatech-eng.com

CITY OF OTTAWA
1183 STITTSVILLE MAIN STREET

R5 ANGLES AND DISTANCES

SCALE 1 : 1500 (0, 15, 30, 45, 60)

DATE	JOB	FIGURE
AUG 2024	124097	R5

SHT11X17.DWG - 279mmX432mm

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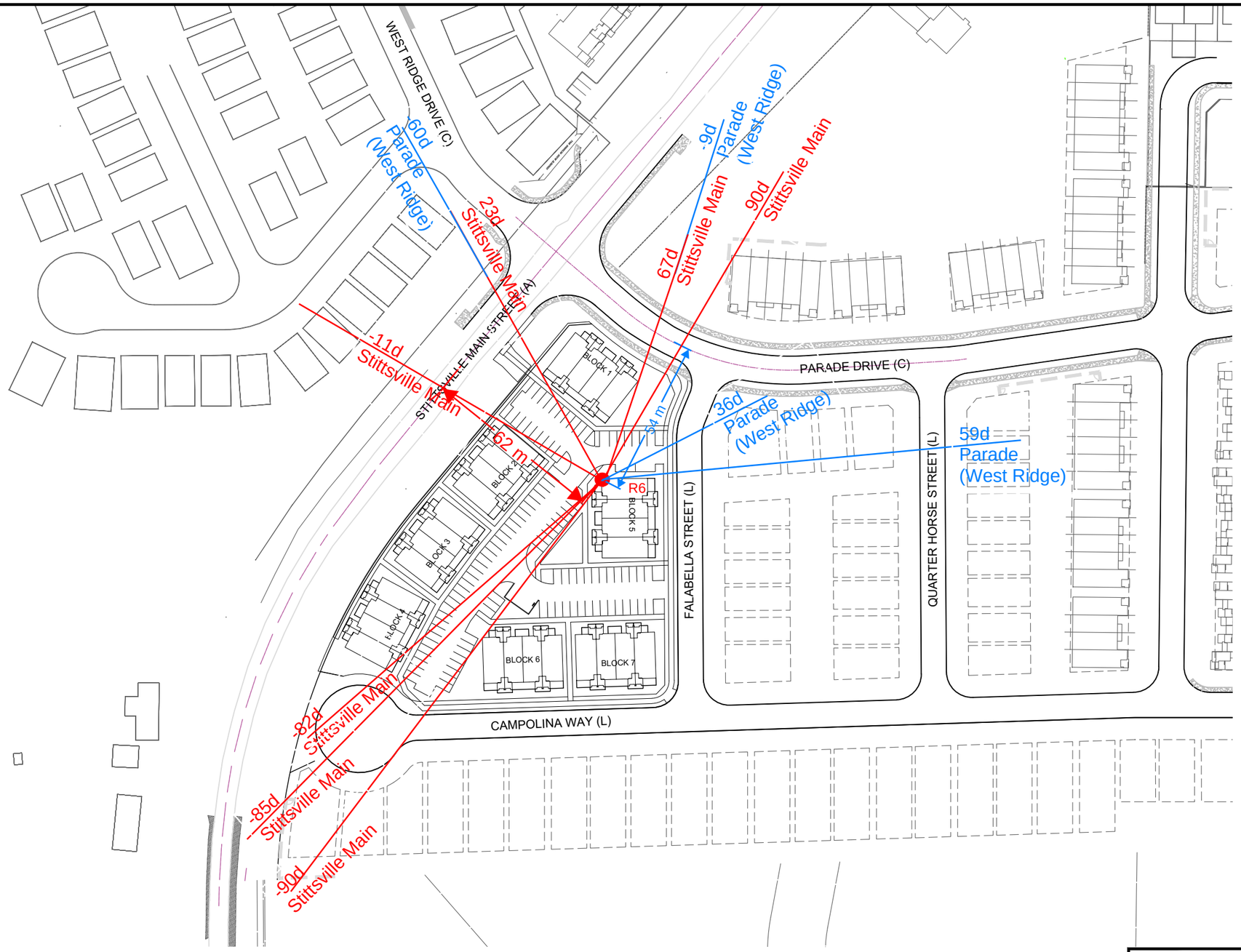

LEGEND

● R6

NOVATECH
Engineers, Planners & Landscape Architects
Suite 200, 240 Michael Cowpland Drive
Ottawa, Ontario, Canada K2M 1P6
Telephone (613) 254-9643
Facsimile (613) 254-5867
Website www.novatech-eng.com

CITY OF OTTAWA
1183 STITTSVILLE MAIN STREET

R6 ANGLES AND DISTANCES

SCALE 1 : 1500 (0, 15, 30, 45, 60)

DATE	JOB	FIGURE
AUG 2024	124097	R6

SHT11X17.DWG - 279mmX432mm

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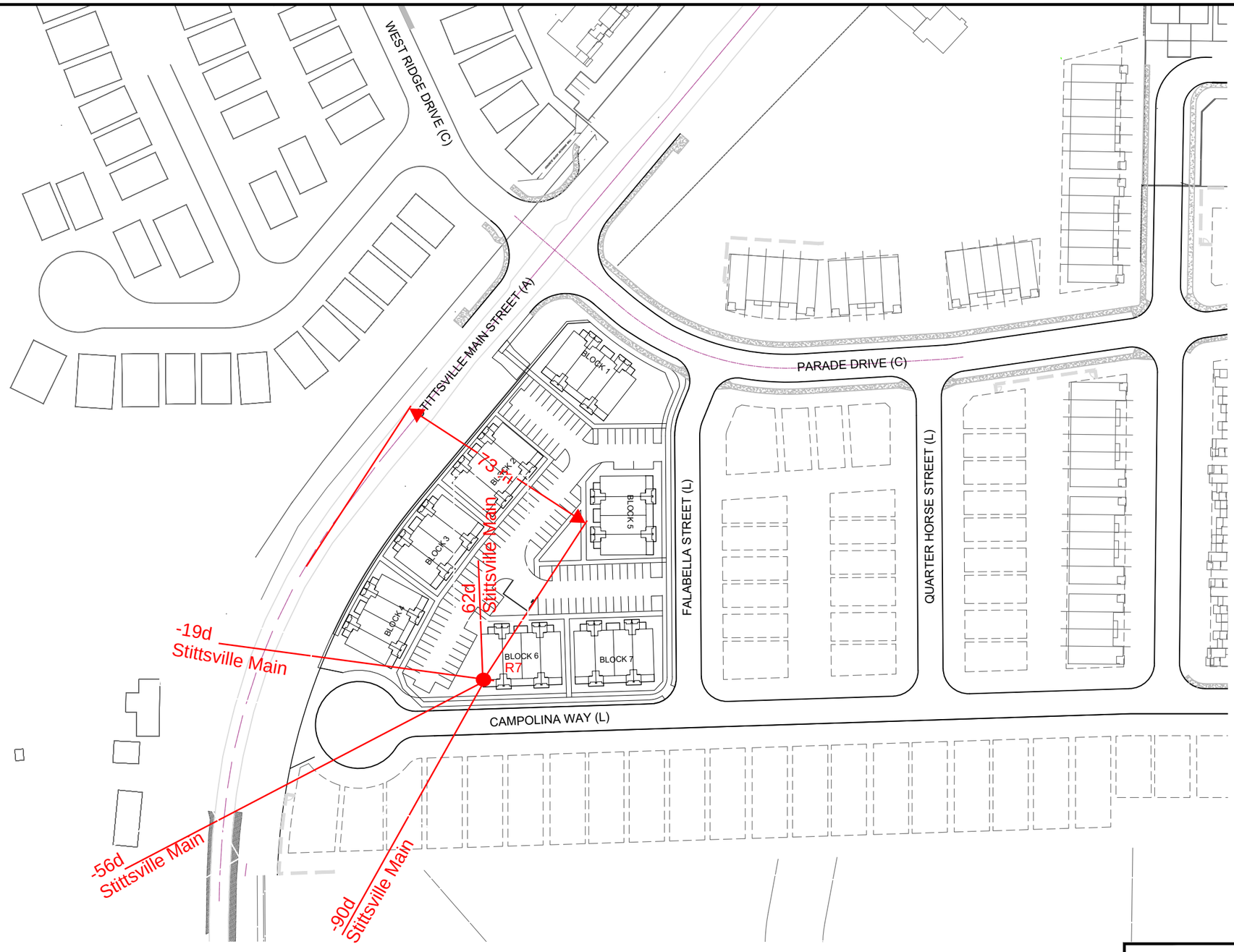

LEGEND

● R7

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Engineers, Planners & Landscape Architects
Suite 200, 240 Michael Cowpland Drive
Ottawa, Ontario, Canada K2M 1P6
Telephone (613) 254-9643
Facsimile (613) 254-5867
Website www.novatech-eng.com

CITY OF OTTAWA
1183 STITTSVILLE MAIN STREET

R7 ANGLES AND DISTANCES

SCALE 1 : 1500 (0, 15, 30, 45, 60)

DATE	JOB	FIGURE
AUG 2024	124097	R7

SHT11X17.DWG - 279mmX432mm

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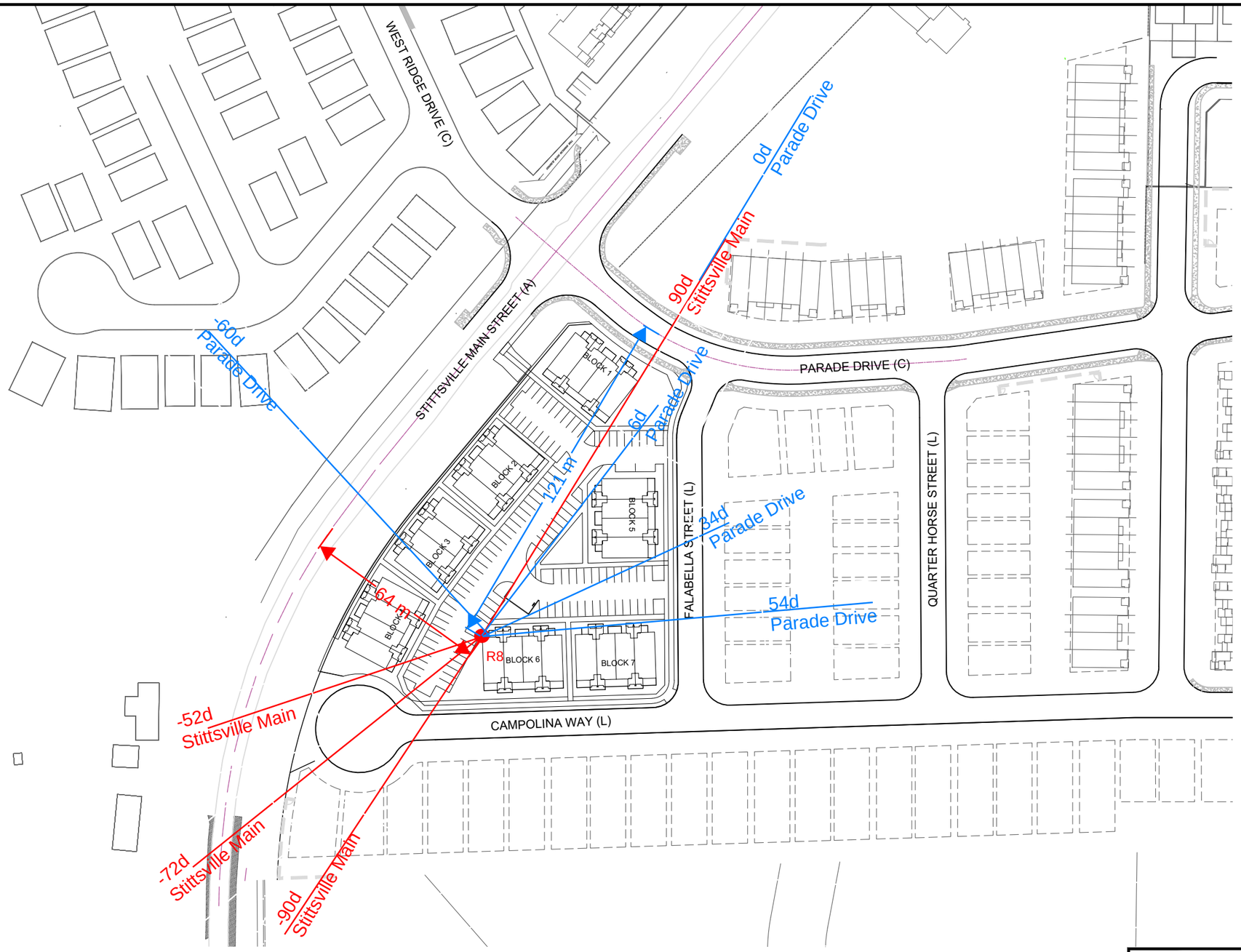

LEGEND

● R8

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Engineers, Planners & Landscape Architects
Suite 200, 240 Michael Cowpland Drive
Ottawa, Ontario, Canada K2M 1P6
Telephone (613) 254-9643
Facsimile (613) 254-5867
Website www.novatech-eng.com

CITY OF OTTAWA
1183 STITTSVILLE MAIN STREET

R8 ANGLES AND DISTANCES

SCALE 1 : 1500 (0, 15, 30, 45, 60)

DATE	JOB	FIGURE
AUG 2024	124097	R8

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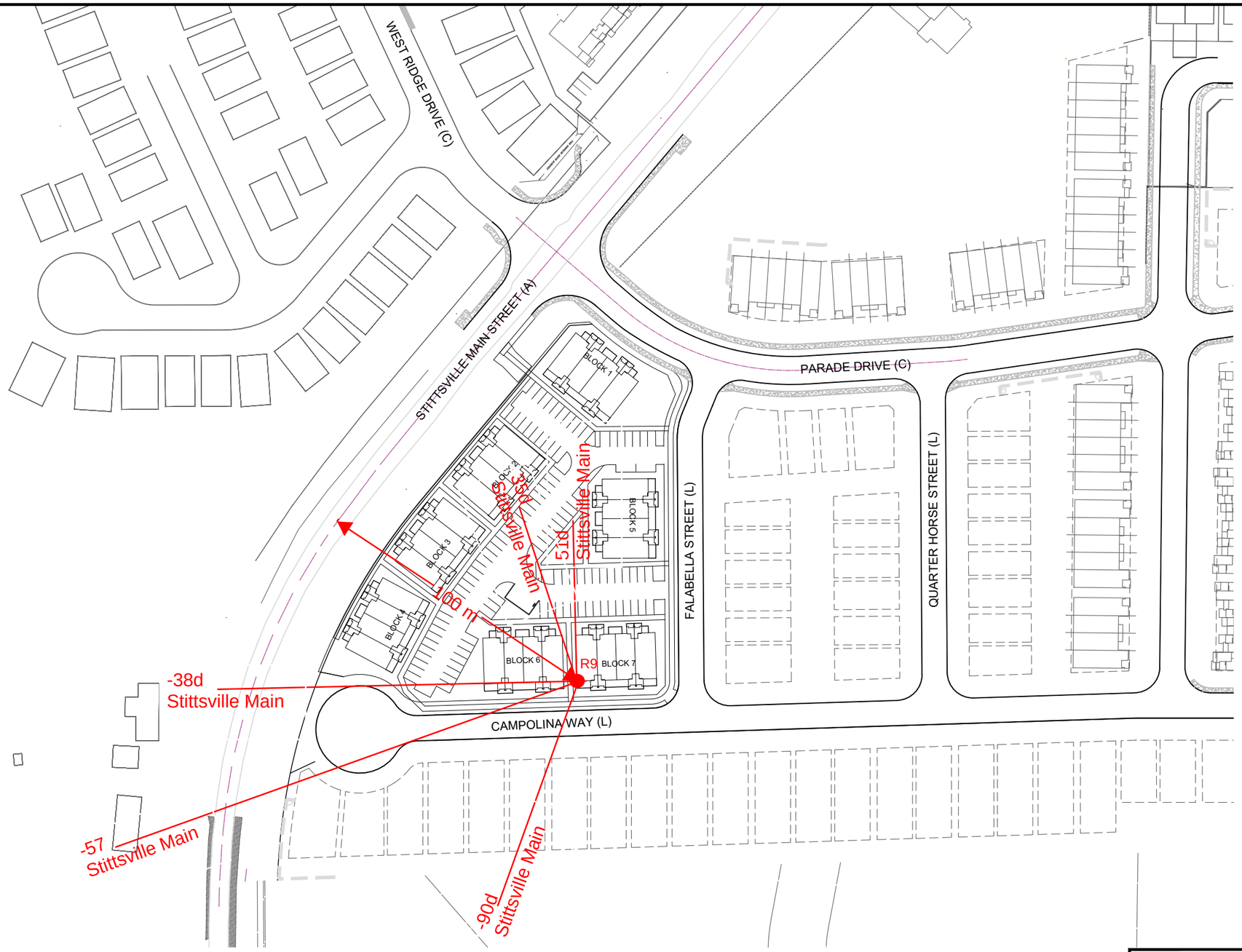

LEGEND

● R9

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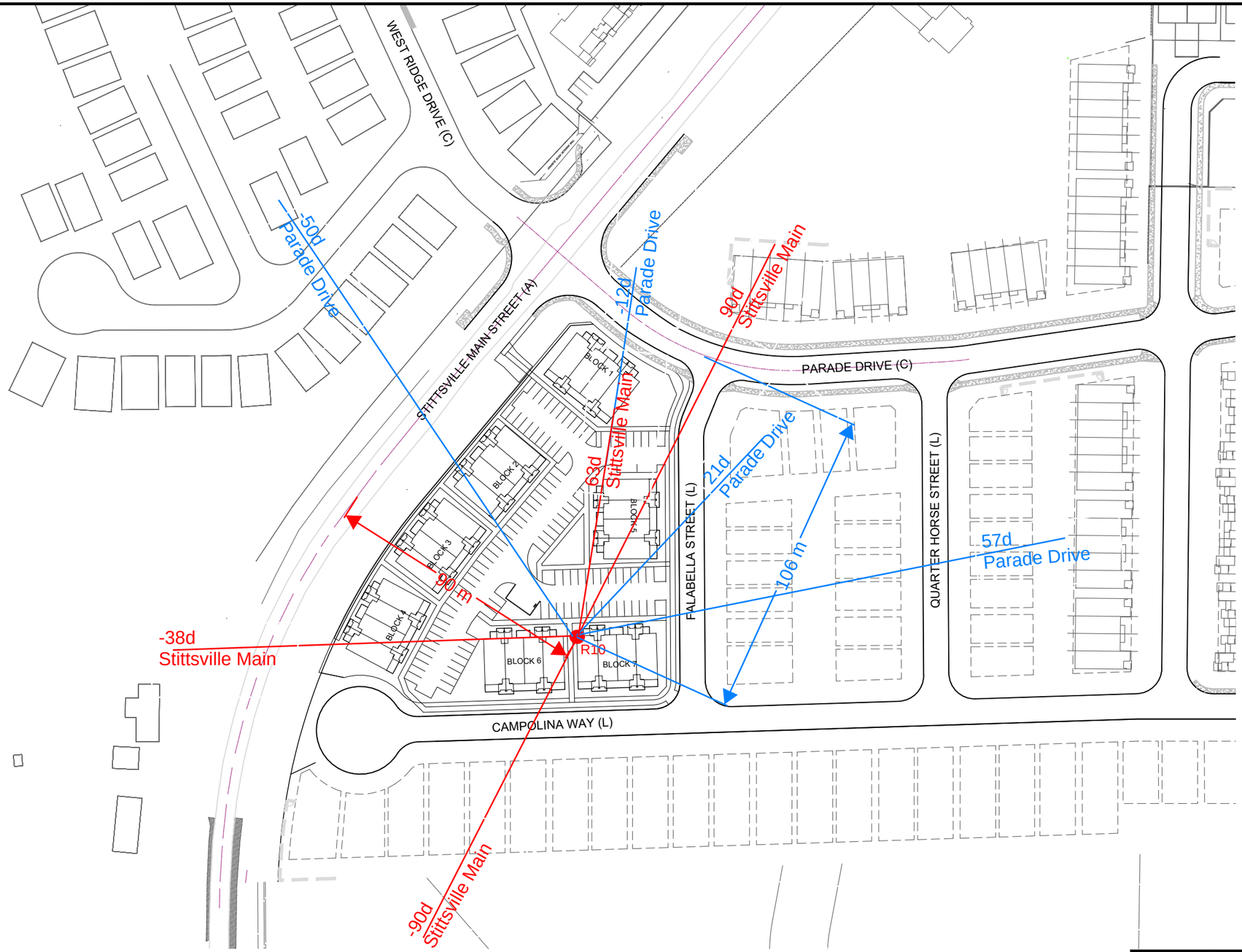
Engineers, Planners & Landscape Architects
Suite 200, 240 Michael Cowpland Drive
Ottawa, Ontario, Canada K2M 1P6
Telephone (613) 254-9643
Facsimile (613) 254-5867
Website www.novatech-eng.com

CITY OF OTTAWA
1183 STITTSVILLE MAIN STREET

R9 ANGLES AND DISTANCES

SCALE 1 : 1500 (0, 15, 30, 45, 60)
DATE AUG 2024
JOB 124097
FIGURE R9

SHT11X17.DWG - 279mmX432mm



LEGEND

● R10

NOVATECH
Engineers, Planners & Landscape Architects
Suite 200, 240 Michael Cowpland Drive
Ottawa, Ontario, Canada K2M 1P6
Telephone (613) 254-9643
Facsimile (613) 254-5867
Website www.novatech-eng.com

CITY OF OTTAWA
1183 STITTSVILLE MAIN STREET

R10 ANGLES AND DISTANCES

SCALE 1 : 1500 (0, 15, 30, 45, 60)
DATE AUG 2024
JOB 124097
FIGURE R10

SHT11X17.DWG - 279mmX432mm

M:\2024\124097\CAD\Civil\Figures\Noise\124097 - NC.dwg, Angles and Distances, Aug 27, 2024 - 9:20am, mfang

APPENDIX C

Acoustic Insulation Factor Tables

R1 (5A - 8A) Bedroom

Table 6.3 - Acoustic Insulation Factor for Various Types of Exterior Wall

Percentage of exterior wall area to total floor area of room											Type of Exterior Wall
	16	20	25	32	40	50	63	80	100	125	160	
Acoustic Insulation Factor	39	38	37	36	35	34	33	32	31	30	29	EW1
	41	40	39	38	37	36	35	34	33	32	31	EW2
	44	43	42	41	40	39	38	37	36	35	34	EW3
	47	46	45	44	43	42	41	40	39	38	37	EW4
	48	47	46	45	44	43	42	41	40	39	38	EW1R
	49	48	47	46	45	44	43	42	41	40	39	EW2R
	50	49	48	47	46	45	44	43	42	41	40	EW3R
	55	54	53	52	51	50	49	48	47	46	45	EW5
	56	55	54	53	52	51	50	49	48	47	46	EW4R
	58	57	56	55	54	53	52	51	50	49	48	EW6
	59	58	57	56	55	54	53	52	51	50	49	EW7 or EW5R
	63	62	61	60	59	58	57	56	55	54	53	EW8

Source : National Research Council, Division of Building Research, December 1980.

Explanatory Notes :

1) Where the calculated percentage wall area is not presented as a column heading, the nearest percentage column in the table should be used.
2) The common structure of walls EW1 to EW5 is composed of 12.7 mm gypsum board, vapour barrier, and 38 x 89 mm studs with 50 mm (or thicker) mineral wool or glass fibre batts in inter-stud cavities.
3) EW1 denotes exterior wall as in Note 2), plus sheathing, plus wood siding or metal siding and fibre backer board.
EW2 denotes exterior wall as in Note 2), plus rigid insulation (25-30 mm), and wood siding or metal siding and fibre backer board.
EW3 denotes simulated mansard with structure as in Note 2), plus sheathing, 28 x 89 mm framing, sheathing, and asphalt roofing material.
EW4 denotes exterior wall as in Note 2), plus sheathing and 20 mm stucco.
EW5 denotes exterior wall as in Note 2), plus sheathing, 25 mm air space, 100 mm brick veneer.
EW6 denotes exterior wall composed of 12.7 mm gypsum board, rigid insulation (25-50 mm), 100 mm back-up block, 100 mm face brick.
EW7 denotes exterior wall composed of 12.7 mm gypsum board, rigid insulation (25-50 mm), 140 mm back-up block, 100 mm face brick.
EW8 denotes exterior wall composed of 12.7 mm gypsum board, rigid insulation (25-50 mm), 200 mm concrete.
4) R signifies the mounting of the interior gypsum board on resilient clips.
5) An exterior wall conforming to rainscreen design principles and composed of 12.7 mm gypsum board, 100 mm concrete block, rigid insulation (25-50 mm), 25 mm air space, and 100 mm brick veneer has the same AIF as EW6.
6) An exterior wall described in EW1 with the addition of rigid insulation (25-50 mm) between the sheathing and the external finish has the same AIF as EW2.

R1 (5A-8A) Bedroom

TABLE 12: Approximate conversion from STC to AIF for exterior walls:

Exterior wall area expressed as percentage of room floor area	Acoustic Insulation Factor (AIF)
200	STC-10
160	STC-9
125	STC-8
100	STC-7
80	STC-6
63	STC-5
50	STC-4
40	STC-3
32	STC-2
25	STC-1
20	STC
16	STC+1
12.5	STC+2
10	STC+3
8	

Note: For area percentages not listed in the table use the nearest listed value.

Example: For a wall whose area = 120% of room floor area and STC = 48 the AIF is 48 - 8 = 40.

STC = AIF + 9 = 29 + 9 = 38 dBA

R1 (5A-8A) Bedroom

TABLE 5: Acoustic Insulation Factor for Various Types of Windows

Window area as a percentage of total floor area of room (1)													
4	5	6	8	10	13	16	20	25	32	40	50	63	80
Acoustic Insulation Factor (AIF) (2)													
35	34	33	32	31	30	29	28	27	26	25	24	23	22
36	35	34	33	32	31	30	29	28	27	26	25	24	23
37	36	35	34	33	32	31	30	29	28	27	26	25	24
38	37	36	35	34	33	32	31	30	29	28	27	26	25
39	38	37	36	35	34	33	32	31	30	29	28	27	26
40	39	38	37	36	35	34	33	32	31	30	29	28	27
41	40	39	38	37	36	35	34	33	32	31	30	29	28
42	41	40	39	38	37	36	35	34	33	32	31	30	29
43	42	41	40	39	38	37	36	35	34	33	32	31	30
44	43	42	41	40	39	38	37	36	35	34	33	32	31
45	44	43	42	41	40	39	38	37	36	35	34	33	32
46	45	44	43	42	41	40	39	38	37	36	35	34	33
47	46	45	44	43	42	41	40	39	38	37	36	35	34
48	47	46	45	44	43	42	41	40	39	38	37	36	35
49	48	47	46	45	44	43	42	41	40	39	38	37	36
50	49	48	47	46	45	44	43	42	41	40	39	38	37

Single glazing	Double glazing of indicated glass thickness					Triple Glazing	
	2mm and 2mm glass	3mm and 3mm glass	4mm and 4mm glass	3mm and 6mm glass	6mm and 6mm glass	3mm, 3mm and 3mm glass	3mm, 3mm and 6mm glass
Thickness	Interpane spacing in mm (3)					Interpane spacings in mm (5)	
2mm	6						
	13						
3mm	15	6					
4mm, 6mm	19	13	6				
	22	16	13	6	6	6,6	
9mm (4)	28	20	16	13	13	6,10	6,6
	35	25	20	16	16	6,15	6,10
12mm (4)	42	32	25	20	20	6,20	6,15
	50	40	32	25	24	6,30	6,20
	63	50	40	32	30	6,40	6,30
	80	63	50	40	37	6,50	6,40
	100	80	63	55	50	6,65	6,50
	125	100	80	75	70	6,80	6,65
	150	125	100	95	90	6,100	6,80
		150	125	110	100		6,100
			150	135	125		

Source: National Research Council, Division of Building Research, June 1980.

Explanatory Notes:

1) Where the calculated percentage window area is not presented as a column heading, the nearest percentage column in the table values should be used.
2) AIF data listed in the table are for well-fitted weatherstripped units that can be opened. The AIF values apply only when the windows are closed. For windows fixed and sealed to the frame, add three (3) to the AIF given in the table.
3) If the interpane spacing or glass thickness for a specific double-glazed window is not listed in the table, the nearest listed values should be used.
4) The AIF ratings for 9mm and 12mm glass are for laminated glass only; for solid glass subtract two (2) from the AIF values listed in the table.
5) If the interpane spacings for a specific triple-glazed window are not listed in the table, use the listed case whose combined spacings are nearest the actual combined spacing.
6) The AIF data listed in the table are for typical windows, but details of glass mounting, window seals, etc. may result in slightly different performance for some manufacturers' products. If laboratory sound transmission loss data (conforming to ASTM test method E-90) are available, these should be used to calculate the AIF.

R1 (5A-8A) Bedroom

TABLE 11: Approximate conversion from STC to AIF for windows and doors:

Window (or door) area expressed as percentage of room floor area	Acoustic Insulation Factor (AIF)
80	STC-5
63	STC-4
50	STC-3
40	STC-2
32	STC-1
25	STC
20	STC+1
16	STC+2
12.5	STC+3
10	STC+4
8	STC+5
6.3	STC+6
5	STC+7
4	STC+8

Note: For area percentages not listed in the table use the nearest listed value.

Examples: For a window whose area = 20% of the room floor area and STC = 32 the AIF is 32 + 1 = 33.

For a window whose area = 60% of the room floor area and STC = 29 the AIF is 29 - 4 = 25.

STC = AIF - 1 = 29 - 1 = 28 dBA

R1 (5A·8A) Livingroom

Table 6.3 – Acoustic Insulation Factor for Various Types of Exterior Wall

Percentage of exterior wall area to total floor area of room											Type of Exterior Wall
16	20	25	32	40	50	63	80	100	125	160	
Acoustic Insulation Factor											
39	38	37	36	35	34	33	32	31	30	29	EW1
41	40	39	38	37	36	35	34	33	32	31	EW2
44	43	42	41	40	39	38	37	36	35	34	EW3
47	46	45	44	43	42	41	40	39	38	37	EW4
48	47	46	45	44	43	42	41	40	39	38	EW1R
49	48	47	46	45	44	43	42	41	40	39	EW2R
50	49	48	47	46	45	44	43	42	41	40	EW3R
55	54	53	52	51	50	49	48	47	46	45	EW5
56	55	54	53	52	51	50	49	48	47	46	EW4R
58	57	56	55	54	53	52	51	50	49	48	EW6
59	58	57	56	55	54	53	52	51	50	49	EW7 or EW5R
63	62	61	60	59	58	57	56	55	54	53	EW8

Source : National Research Council, Division of Building Research, December 1980.

Explanatory Notes :

1) Where the calculated percentage wall area is not presented as a column heading, the nearest percentage column in the table should be used.
2) The common structure of walls EW1 to EW5 is composed of 12.7 mm gypsum board, vapour barrier, and 38 x 89 mm studs with 50 mm (or thicker) mineral wool or glass fibre batts in inter-stud cavities.
3) EW1 denotes exterior wall as in Note 2), plus sheathing, plus wood siding or metal siding and fibre backer board.
EW2 denotes exterior wall as in Note 2), plus rigid insulation (25-30 mm), and wood siding or metal siding and fibre backer board.
EW3 denotes simulated mansard with structure as in Note 2), plus sheathing, 28 x 89 mm framing, sheathing, and asphalt roofing material.
EW4 denotes exterior wall as in Note 2), plus sheathing and 20 mm stucco.
EW5 denotes exterior wall as in Note 2), plus sheathing, 25 mm air space, 100 mm brick veneer.
EW6 denotes exterior wall composed of 12.7 mm gypsum board, rigid insulation (25-50 mm), 100 mm back-up block, 100 mm face brick.
EW7 denotes exterior wall composed of 12.7 mm gypsum board, rigid insulation (25-50 mm), 140 mm back-up block, 100 mm face brick.
EW8 denotes exterior wall composed of 12.7 mm gypsum board, rigid insulation (25-50 mm), 200 mm concrete.
4) R signifies the mounting of the interior gypsum board on resilient clips.
5) An exterior wall conforming to rainscreen design principles and composed of 12.7 mm gypsum board, 100 mm concrete block, rigid insulation (25-50 mm), 25 mm air space, and 100 mm brick veneer has the same AIF as EW6.
6) An exterior wall described in EW1 with the addition of rigid insulation (25-50 mm) between the sheathing and the external finish has the same AIF as EW2.

R1 (5A-8A) Livingroom

TABLE 12: Approximate conversion from STC to AIF for exterior walls:

Exterior wall area expressed as percentage of room floor area	Acoustic Insulation Factor (AIF)
200	STC-10
160	STC-9
125	STC-8
100	STC-7
80	STC-6
63	STC-5
50	STC-4
40	STC-3
32	STC-2
25	STC-1
20	STC
16	STC+1
12.5	STC+2
10	STC+3
8	

Note: For area percentages not listed in the table use the nearest listed value.

Example: For a wall whose area = 120% of room floor area and STC = 48 the AIF is 48 - 8 = 40.

STC = AIF + 7 = 31 + 7 = 38 dBA

R1 (5A-8A) Living room

TABLE 5: Acoustic Insulation Factor for Various Types of Windows

Window area as a percentage of total floor area of room (1)													
4	5	6	8	10	13	16	20	25	32	40	50	63	80
Acoustic Insulation Factor (AIF) (2)													
35	34	33	32	31	30	29	28	27	26	25	24	23	22
36	35	34	33	32	31	30	29	28	27	26	25	24	23
37	36	35	34	33	32	31	30	29	28	27	26	25	24
38	37	36	35	34	33	32	31	30	29	28	27	26	25
39	38	37	36	35	34	33	32	31	30	29	28	27	26
40	39	38	37	36	35	34	33	32	31	30	29	28	27
41	40	39	38	37	36	35	34	33	32	31	30	29	28
42	41	40	39	38	37	36	35	34	33	32	31	30	29
43	42	41	40	39	38	37	36	35	34	33	32	31	30
44	43	42	41	40	39	38	37	36	35	34	33	32	31
45	44	43	42	41	40	39	38	37	36	35	34	33	32
46	45	44	43	42	41	40	39	38	37	36	35	34	33
47	46	45	44	43	42	41	40	39	38	37	36	35	34
48	47	46	45	44	43	42	41	40	39	38	37	36	35
49	48	47	46	45	44	43	42	41	40	39	38	37	36
50	49	48	47	46	45	44	43	42	41	40	39	38	37

Single glazing	Double glazing of indicated glass thickness					Triple Glazing	
	2mm and 2mm glass	3mm and 3mm glass	4mm and 4mm glass	3mm and 6mm glass	6mm and 6mm glass	3mm, 3mm and 3mm glass	3mm, 3mm and 6mm glass
Thickness	Interpane spacing in mm (3)					Interpane spacings in mm (5)	
2mm	6						
	13						
3mm	15	6					
3mm, 6mm	19	13	6				
	22	16	13	6	6	6,6	
9mm (4)	28	20	16	13	13	6,10	6,6
	35	25	20	16	16	6,15	6,10
12mm (4)	42	32	25	20	20	6,20	6,15
	50	40	32	25	24	6,30	6,20
	63	50	40	32	30	6,40	6,30
	80	63	50	40	37	6,50	6,40
	100	80	63	55	50	6,65	6,50
	125	100	80	75	70	6,80	6,65
	150	125	100	95	90	6,100	6,80
		150	125	110	100		6,100
			150	135	125		

Source: National Research Council, Division of Building Research, June 1980.

Explanatory Notes:

1) Where the calculated percentage window area is not presented as a column heading, the nearest percentage column in the table values should be used.
2) AIF data listed in the table are for well-fitted weatherstripped units that can be opened. The AIF values apply only when the windows are closed. For windows fixed and sealed to the frame, add three (3) to the AIF given in the table.
3) If the interpane spacing or glass thickness for a specific double-glazed window is not listed in the table, the nearest listed values should be used.
4) The AIF ratings for 9mm and 12mm glass are for laminated glass only; for solid glass subtract two (2) from the AIF values listed in the table.
5) If the interpane spacings for a specific triple-glazed window are not listed in the table, use the listed case whose combined spacings are nearest the actual combined spacing.
6) The AIF data listed in the table are for typical windows, but details of glass mounting, window seals, etc. may result in slightly different performance for some manufacturers' products. If laboratory sound transmission loss data (conforming to ASTM test method E-90) are available, these should be used to calculate the AIF.

R1 (5A-8A) Living room

TABLE 11: Approximate conversion from STC to AIF for windows and doors:

Window (or door) area expressed as percentage of room floor area	Acoustic Insulation Factor (AIF)
80	STC-5
63	STC-4
50	STC-3
40	STC-2
32	STC-1
25	STC
20	STC+1
16	STC+2
12.5	STC+3
10	STC+4
8	STC+5
6.3	STC+6
5	STC+7
4	STC+8

Note: For area percentages not listed in the table use the nearest listed value.

Examples: For a window whose area = 20% of the room floor area and STC = 32 the AIF is 32 + 1 = 33.

For a window whose area = 60% of the room floor area and STC = 29 the AIF is 29 - 4 = 25.

STC = AIF - 1 = 31 - 1 = 30 dBA

R1 (9B-12B) Bedroom

Table 6.3 - Acoustic Insulation Factor for Various Types of Exterior Wall

Percentage of exterior wall area to total floor area of room											Type of Exterior Wall
16	20	25	32	40	50	63	80	100	125	160	
Acoustic Insulation Factor											
39	38	37	36	35	34	33	32	31	30	29	EW1
41	40	39	38	37	36	35	34	33	32	31	EW2
44	43	42	41	40	39	38	37	36	35	34	EW3
47	46	45	44	43	42	41	40	39	38	37	EW4
48	47	46	45	44	43	42	41	40	39	38	EW1R
49	48	47	46	45	44	43	42	41	40	39	EW2R
50	49	48	47	46	45	44	43	42	41	40	EW3R
55	54	53	52	51	50	49	48	47	46	45	EW5
56	55	54	53	52	51	50	49	48	47	46	EW4R
58	57	56	55	54	53	52	51	50	49	48	EW6
59	58	57	56	55	54	53	52	51	50	49	EW7 or EW5R
63	62	61	60	59	58	57	56	55	54	53	EW8

Source : National Research Council, Division of Building Research, December 1980.

Explanatory Notes :

1) Where the calculated percentage wall area is not presented as a column heading, the nearest percentage column in the table should be used.
2) The common structure of walls EW1 to EW5 is composed of 12.7 mm gypsum board, vapour barrier, and 38 x 89 mm studs with 50 mm (or thicker) mineral wool or glass fibre batts in inter-stud cavities.
3) EW1 denotes exterior wall as in Note 2), plus sheathing, plus wood siding or metal siding and fibre backer board.
EW2 denotes exterior wall as in Note 2), plus rigid insulation (25-30 mm), and wood siding or metal siding and fibre backer board.
EW3 denotes simulated mansard with structure as in Note 2), plus sheathing, 28 x 89 mm framing, sheathing, and asphalt roofing material.
EW4 denotes exterior wall as in Note 2), plus sheathing and 20 mm stucco.
EW5 denotes exterior wall as in Note 2), plus sheathing, 25 mm air space, 100 mm brick veneer.
EW6 denotes exterior wall composed of 12.7 mm gypsum board, rigid insulation (25-50 mm), 100 mm back-up block, 100 mm face brick.
EW7 denotes exterior wall composed of 12.7 mm gypsum board, rigid insulation (25-50 mm), 140 mm back-up block, 100 mm face brick.
EW8 denotes exterior wall composed of 12.7 mm gypsum board, rigid insulation (25-50 mm), 200 mm concrete.
4) R signifies the mounting of the interior gypsum board on resilient clips.
5) An exterior wall conforming to rainscreen design principles and composed of 12.7 mm gypsum board, 100 mm concrete block, rigid insulation (25-50 mm), 25 mm air space, and 100 mm brick veneer has the same AIF as EW6.
6) An exterior wall described in EW1 with the addition of rigid insulation (25-50 mm) between the sheathing and the external finish has the same AIF as EW2.

R1 · (9B - 12B) Bedroom

TABLE 12: Approximate conversion from STC to AIF for exterior walls:

Exterior wall area expressed as percentage of room floor area	Acoustic Insulation Factor (AIF)
200	STC-10
160	STC-9
125	STC-8
100	STC-7
80	STC-6
63	STC-5
50	STC-4
40	STC-3
32	STC-2
25	STC-1
20	STC
16	STC+1
12.5	STC+2
10	STC+3
8	

Note: For area percentages not listed in the table use the nearest listed value.

Example: For a wall whose area = 120% of room floor area and STC = 48 the AIF is 48 - 8 = 40.

STC = AIF + 9 = 29 + 9 = 38 dBA

R1 (9B-12B) Bedroom

TABLE 5: Acoustic Insulation Factor for Various Types of Windows

Window area as a percentage of total floor area of room[1]													
4	5	6	8	10	13	16	20	25	32	40	50	63	80
Acoustic Insulation Factor (AIF)[2]													
35	34	33	32	31	30	29	28	27	26	25	24	23	22
36	35	34	33	32	31	30	29	28	27	26	25	24	23
37	36	35	34	33	32	31	30	29	28	27	26	25	24
38	37	36	35	34	33	32	31	30	29	28	27	26	25
39	38	37	36	35	34	33	32	31	30	29	28	27	26
40	39	38	37	36	35	34	33	32	31	30	29	28	27
41	40	39	38	37	36	35	34	33	32	31	30	29	28
42	41	40	39	38	37	36	35	34	33	32	31	30	29
43	42	41	40	39	38	37	36	35	34	33	32	31	30
44	43	42	41	40	39	38	37	36	35	34	33	32	31
45	44	43	42	41	40	39	38	37	36	35	34	33	32
46	45	44	43	42	41	40	39	38	37	36	35	34	33
47	46	45	44	43	42	41	40	39	38	37	36	35	34
48	47	46	45	44	43	42	41	40	39	38	37	36	35
49	48	47	46	45	44	43	42	41	40	39	38	37	36
50	49	48	47	46	45	44	43	42	41	40	39	38	37

Single glazing	Double glazing of indicated glass thickness					Triple Glazing	
	2mm and 2mm glass	3mm and 3mm glass	4mm and 4mm glass	3mm and 6mm glass	6mm and 6mm glass	3mm, 3mm and 3mm glass	3mm, 3mm and 6mm glass
Thickness	Interpane spacing in mm[3]					Interpane spacings in mm[5]	
2mm	6						
	13						
3mm	15	6					
3mm, 6mm	19	13	6				
	22	16	13	6	6	6,6	
9mm[4]	28	20	16	13	13	6,10	6,6
	35	25	20	16	16	6,15	6,10
12mm[4]	42	32	25	20	20	6,20	6,15
	50	40	32	25	24	6,30	6,20
	63	50	40	32	30	6,40	6,30
	80	63	50	40	37	6,50	6,40
	100	80	63	55	50	6,65	6,50
	125	100	80	75	70	6,80	6,65
	150	125	100	95	90	6,100	6,80
		150	125	110	100		6,100
			150	135	125		

Source: National Research Council, Division of Building Research, June 1980.

Explanatory Notes:

1) Where the calculated percentage window area is not presented as a column heading, the nearest percentage column in the table values should be used.
2) AIF data listed in the table are for well-fitted weatherstripped units that can be opened. The AIF values apply only when the windows are closed. For windows fixed and sealed to the frame, add three (3) to the AIF given in the table.
3) If the interpane spacing or glass thickness for a specific double glazed window is not listed in the table, the nearest listed values should be used.
4) The AIF ratings for 9mm and 12mm glass are for laminated glass only; for solid glass subtract two (2) from the AIF values listed in the table.
5) If the interpane spacings for a specific triple-glazed window are not listed in the table, use the listed case whose combined spacings are nearest the actual combined spacing.
6) The AIF data listed in the table are for typical windows, but details of glass mounting, window seals, etc. may result in slightly different performance for some manufacturers' products. If laboratory sound transmission loss data (conforming to ASTM test method E-90) are available, these should be used to calculate the AIF.

R1 (9B-12B) Bedroom

TABLE 11: Approximate conversion from STC to AIF for windows and doors:

Window (or door) area expressed as percentage of room floor area	Acoustic Insulation Factor (AIF)
80	STC-5
63	STC-4
50	STC-3
40	STC-2
32	STC-1
25	STC
20	STC+1
16	STC+2
12.5	STC+3
10	STC+4
8	STC+5
6.3	STC+6
5	STC+7
4	STC+8

Note: For area percentages not listed in the table use the nearest listed value.

Examples: For a window whose area = 20% of the room floor area and STC = 32 the AIF is 32 + 1 = 33.

For a window whose area = 60% of the room floor area and STC = 29 the AIF is 29 - 4 = 25.

STC = AIF - 3 = 29 - 3 = 26 dBA

R3 (5A-8A) Bedroom

Table 6.3 – Acoustic Insulation Factor for Various Types of Exterior Wall

Percentage of exterior wall area to total floor area of room											Type of Exterior Wall
16	20	25	32	40	50	63	80	100	125	160	
Acoustic Insulation Factor											
39	38	37	36	35	34	33	32	31	30	29 28	EW1
41	40	39	38	37	36	35	34	33	32	31	EW2
44	43	42	41	40	39	38	37	36	35	34	EW3
47	46	45	44	43	42	41	40	39	38	37	EW4
48	47	46	45	44	43	42	41	40	39	38	EW1R
49	48	47	46	45	44	43	42	41	40	39	EW2R
50	49	48	47	46	45	44	43	42	41	40	EW3R
55	54	53	52	51	50	49	48	47	46	45	EW5
56	55	54	53	52	51	50	49	48	47	46	EW4R
58	57	56	55	54	53	52	51	50	49	48	EW6
59	58	57	56	55	54	53	52	51	50	49	EW7 or EW5R
63	62	61	60	59	58	57	56	55	54	53	EW8

Source : National Research Council, Division of Building Research, December 1980.

Explanatory Notes :

1) Where the calculated percentage wall area is not presented as a column heading, the nearest percentage column in the table should be used.
2) The common structure of walls EW1 to EW5 is composed of 12.7 mm gypsum board, vapour barrier, and 38 x 89 mm studs with 50 mm (or thicker) mineral wool or glass fibre batts in inter-stud cavities.
3) EW1 denotes exterior wall as in Note 2), plus sheathing, plus wood siding or metal siding and fibre backer board.
EW2 denotes exterior wall as in Note 2), plus rigid insulation (25-30 mm), and wood siding or metal siding and fibre backer board.
EW3 denotes simulated mansard with structure as in Note 2), plus sheathing, 28 x 89 mm framing, sheathing, and asphalt roofing material.
EW4 denotes exterior wall as in Note 2), plus sheathing and 20 mm stucco.
EW5 denotes exterior wall as in Note 2), plus sheathing, 25 mm air space, 100 mm brick veneer.
EW6 denotes exterior wall composed of 12.7 mm gypsum board, rigid insulation (25-50 mm), 100 mm back-up block, 100 mm face brick.
EW7 denotes exterior wall composed of 12.7 mm gypsum board, rigid insulation (25-50 mm), 140 mm back-up block, 100 mm face brick.
EW8 denotes exterior wall composed of 12.7 mm gypsum board, rigid insulation (25-50 mm), 200 mm concrete.
4) R signifies the mounting of the interior gypsum board on resilient clips.
5) An exterior wall conforming to rainscreen design principles and composed of 12.7 mm gypsum board, 100 mm concrete block, rigid insulation (25-50 mm), 25 mm air space, and 100 mm brick veneer has the same AIF as EW6.
6) An exterior wall described in EW1 with the addition of rigid insulation (25-50 mm) between the sheathing and the external finish has the same AIF as EW2.

R 3. (5A-8A) Bedroom

TABLE 12: Approximate conversion from STC to AIF for exterior walls:

Exterior wall area expressed as percentage of room floor area	Acoustic Insulation Factor (AIF)
200	STC-10
160	STC-9
125	STC-8
100	STC-7
80	STC-6
63	STC-5
50	STC-4
40	STC-3
32	STC-2
25	STC-1
20	STC
16	STC+1
12.5	STC+2
10	STC+3
8	

Note: For area percentages not listed in the table use the nearest listed value.

Example: For a wall whose area = 120% of room floor area and STC = 48 the AIF is 48 - 8 = 40.

STC = AIF + 9 = 28 + 9 = 37 dBA

R3 (5A-8A) Bedroom

TABLE 5: Acoustic Insulation Factor for Various Types of Windows

Window area as a percentage of total floor area of room[1]													
4	5	6	8	10	13	16	20	25	32	40	50	63	80
Acoustic Insulation Factor (AIF)[2]													
35	34	33	32	31	30	29	28	27	26	25	24	23	22
36	35	34	33	32	31	30	29	28	27	26	25	24	23
37	36	35	34	33	32	31	30	29	28	27	26	25	24
38	37	36	35	34	33	32	31	30	29	28	27	26	25
39	38	37	36	35	34	33	32	31	30	29	28	27	26
40	39	38	37	36	35	34	33	32	31	30	29	28	27
41	40	39	38	37	36	35	34	33	32	31	30	29	28
42	41	40	39	38	37	36	35	34	33	32	31	30	29
43	42	41	40	39	38	37	36	35	34	33	32	31	30
44	43	42	41	40	39	38	37	36	35	34	33	32	31
45	44	43	42	41	40	39	38	37	36	35	34	33	32
46	45	44	43	42	41	40	39	38	37	36	35	34	33
47	46	45	44	43	42	41	40	39	38	37	36	35	34
48	47	46	45	44	43	42	41	40	39	38	37	36	35
49	48	47	46	45	44	43	42	41	40	39	38	37	36
50	49	48	47	46	45	44	43	42	41	40	39	38	37

Single glazing	Double glazing of indicated glass thickness					Triple Glazing	
	2mm and 2mm glass	3mm and 3mm glass	4mm and 4mm glass	3mm and 6mm glass	6mm and 6mm glass	3mm, 3mm and 3mm glass	3mm, 3mm and 6mm glass
Thickness	Interpane spacing in mm[3]					Interpane spacings in mm[5]	
2mm	6						
	13						
3mm	15	6					
3mm, 6mm	18	13	6				
	22	16	13	6	6	6,6	
9mm[4]	28	20	16	13	13	6,10	6,6
	35	25	20	16	16	6,15	6,10
12mm[4]	42	32	25	20	20	6,20	6,15
	50	40	32	25	24	6,30	6,20
	63	50	40	32	30	6,40	6,30
	80	63	50	40	37	6,50	6,40
	100	80	63	53	50	6,65	6,50
	125	100	80	75	70	6,80	6,65
	150	125	100	95	90	6,100	6,80
		150	125	110	100		6,100
			150	135	125		

Source: National Research Council, Division of Building Research, June 1980.

Explanatory Notes:

1) Where the calculated percentage window area is not presented as a column heading, the nearest percentage column in the table values should be used.
2) AIF data listed in the table are for well-fitted weatherstripped units that can be opened. The AIF values apply only when the windows are closed. For windows fixed and sealed to the frame, add three (3) to the AIF given in the table.
3) If the interpane spacing or glass thickness for a specific double glazed window is not listed in the table, the nearest listed values should be used.
4) The AIF ratings for 9mm and 12mm glass are for laminated glass only; for solid glass subtract two (2) from the AIF values listed in the table.
5) If the interpane spacings for a specific triple-glazed window are not listed in the table, use the listed case whose combined spacings are nearest the actual combined spacing.
6) The AIF data listed in the table are for typical windows, but details of glass mounting, window seals, etc. may result in slightly different performance for some manufacturers' products. If laboratory sound transmission loss data (conforming to ASTM test method E-90) are available, these should be used to calculate the AIF.

R3 (5A-8A) Bedroom

TABLE 11: Approximate conversion from STC to AIF for windows and doors:

Window (or door) area expressed as percentage of room floor area	Acoustic Insulation Factor (AIF)
80	STC-5
63	STC-4
50	STC-3
40	STC-2
32	STC-1
25	STC
20	STC+1
16	STC+2
12.5	STC+3
10	STC+4
8	STC+5
6.3	STC+6
5	STC+7
4	STC+8

Note: For area percentages not listed in the table use the nearest listed value.

Examples: For a window whose area = 20% of the room floor area and STC = 32 the AIF is 32 + 1 = 33.

For a window whose area = 60% of the room floor area and STC = 29 the AIF is 29 - 4 = 25.

STC = AIF - 1 = 28 - 1 = 27 dBA

R 3 (5A - 8A) Living room

Table 6.3 - Acoustic Insulation Factor for Various Types of Exterior Wall

Percentage of exterior wall area to total floor area of room												Type of Exterior Wall
	16	20	25	32	40	50	63	80	100	125	160	
Acoustic Insulation Factor	39	38	37	36	35	34	33	32	31	30	29	EW1
	41	40	39	38	37	36	35	34	33	32	31	EW2
	44	43	42	41	40	39	38	37	36	35	34	EW3
	47	46	45	44	43	42	41	40	39	38	37	EW4
	48	47	46	45	44	43	42	41	40	39	38	EW1R
	49	48	47	46	45	44	43	42	41	40	39	EW2R
	50	49	48	47	46	45	44	43	42	41	40	EW3R
	55	54	53	52	51	50	49	48	47	46	45	EW5
	56	55	54	53	52	51	50	49	48	47	46	EW4R
	58	57	56	55	54	53	52	51	50	49	48	EW6
	59	58	57	56	55	54	53	52	51	50	49	EW7 or EW5R
	63	62	61	60	59	58	57	56	55	54	53	EW8

Source : National Research Council, Division of Building Research, December 1980.

Explanatory Notes :

1) Where the calculated percentage wall area is not presented as a column heading, the nearest percentage column in the table should be used.
2) The common structure of walls EW1 to EW5 is composed of 12.7 mm gypsum board, vapour barrier, and 38 x 89 mm studs with 50 mm (or thicker) mineral wool or glass fibre batts in inter-stud cavities.
3) EW1 denotes exterior wall as in Note 2), plus sheathing, plus wood siding or metal siding and fibre backer board.
EW2 denotes exterior wall as in Note 2), plus rigid insulation (25-30 mm), and wood siding or metal siding and fibre backer board.
EW3 denotes simulated mansard with structure as in Note 2), plus sheathing, 28 x 89 mm framing, sheathing, and asphalt roofing material.
EW4 denotes exterior wall as in Note 2), plus sheathing and 20 mm stucco.
EW5 denotes exterior wall as in Note 2), plus sheathing, 25 mm air space, 100 mm brick veneer.
EW6 denotes exterior wall composed of 12.7 mm gypsum board, rigid insulation (25-50 mm), 100 mm back-up block, 100 mm face brick.
EW7 denotes exterior wall composed of 12.7 mm gypsum board, rigid insulation (25-50 mm), 140 mm back-up block, 100 mm face brick.
EW8 denotes exterior wall composed of 12.7 mm gypsum board, rigid insulation (25-50 mm), 200 mm concrete.
4) R signifies the mounting of the interior gypsum board on resilient clips.
5) An exterior wall conforming to rainscreen design principles and composed of 12.7 mm gypsum board, 100 mm concrete block, rigid insulation (25-50 mm), 25 mm air space, and 100 mm brick veneer has the same AIF as EW6.
6) An exterior wall described in EW1 with the addition of rigid insulation (25-50 mm) between the sheathing and the external finish has the same AIF as EW2.

R3 (5A-8A) Living room

TABLE 12: Approximate conversion from STC to AIF for exterior walls:

Exterior wall area expressed as percentage of room floor area	Acoustic Insulation Factor (AIF)
200	STC-10
160	STC-9
125	STC-8
100	STC-7
80	STC-6
63	STC-5
50	STC-4
40	STC-3
32	STC-2
25	STC-1
20	STC
16	STC+1
12.5	STC+2
10	STC+3
8	

Note: For area percentages not listed in the table use the nearest listed value.

Example: For a wall whose area = 120% of room floor area and STC = 48 the AIF is 48 - 8 = 40.

STC = AIF + 7 = 30 + 7 = 37 dBA

R3 (5A-8A) Livingroom

TABLE 5: Acoustic Insulation Factor for Various Types of Windows

Window area as a percentage of total floor area of room (1)														Single glazing	Double glazing of indicated glass thickness				Triple Glazing	
4	5	6	8	10	13	16	20	25	32	40	50	63	80		2mm and 2mm glass	3mm and 3mm glass	4mm and 4mm glass	3mm and 6mm glass	6mm and 6mm glass	3mm, 3mm and 3mm glass	3mm, 3mm and 6mm glass
Acoustic Insulation Factor (AIF) (2)														Thickness	Interpane spacing in mm (3)					Interpane spacings in mm (5)	
35	34	33	32	31	30	29	28	27	26	25	24	23	22	2mm	6						
36	35	34	33	32	31	30	29	28	27	26	25	24	23		13						
37	36	35	34	33	32	31	30	29	28	27	26	25	24	3mm	15	6					
38	37	36	35	34	33	32	31	30	29	28	27	26	25	4mm, 6mm	19	13	6				
39	38	37	36	35	34	33	32	31	30	29	28	27	26		22	16	13	8	6	6,6	
40	39	38	37	36	35	34	33	32	31	30	29	28	27	9mm (4)	28	20	16	13	13	6,10	6,6
41	40	39	38	37	36	35	34	33	32	31	30	29	28		35	25	20	16	16	6,15	6,10
42	41	40	39	38	37	36	35	34	33	32	31	30	29	12mm (4)	42	32	25	20	20	6,20	6,15
43	42	41	40	39	38	37	36	35	34	33	32	31	30		50	40	32	25	24	6,30	6,20
44	43	42	41	40	39	38	37	36	35	34	33	32	31		63	50	40	32	30	6,40	6,30
45	44	43	42	41	40	39	38	37	36	35	34	33	32		80	63	50	40	37	6,50	6,40
46	45	44	43	42	41	40	39	38	37	36	35	34	33		100	80	63	53	50	6,65	6,50
47	46	45	44	43	42	41	40	39	38	37	36	35	34		125	100	80	75	70	6,80	6,65
48	47	46	45	44	43	42	41	40	39	38	37	36	35		150	125	100	95	90	6,100	6,80
49	48	47	46	45	44	43	42	41	40	39	38	37	36			150	125	110	100		6,100
50	49	48	47	46	45	44	43	42	41	40	39	38	37				150	135	125		

Source: National Research Council, Division of Building Research, June 1980.

Explanatory Notes:

1) Where the calculated percentage window area is not presented as a column heading, the nearest percentage column in the table values should be used.
2) AIF data listed in the table are for well-fitted weatherstripped units that can be opened. The AIF values apply only when the windows are closed. For windows fixed and sealed to the frame, add three (3) to the AIF given in the table.
3) If the interpane spacing or glass thickness for a specific double glazed window is not listed in the table, the nearest listed values should be used.
4) The AIF ratings for 9mm and 12mm glass are for laminated glass only; for solid glass subtract two (2) from the AIF values listed in the table.
5) If the interpane spacings for a specific triple-glazed window are not listed in the table, use the listed case whose combined spacings are nearest the actual combined spacing.
6) The AIF data listed in the table are for typical windows, but details of glass mounting, window seals, etc. may result in slightly different performance for some manufacturers' products. If laboratory sound transmission loss data (conforming to ASTM test method E-90) are available, these should be used to calculate the AIF.

R3 (SA-8A) Livingroom

TABLE 11: Approximate conversion from STC to AIF for windows and doors:

Window (or door) area expressed as percentage of room floor area	Acoustic Insulation Factor (AIF)
80	STC-5
63	STC-4
50	STC-3
40	STC-2
32	STC-1
25	STC
20	STC+1
16	STC+2
12.5	STC+3
10	STC+4
8	STC+5
6.3	STC+6
5	STC+7
4	STC+8

Note: For area percentages not listed in the table use the nearest listed value.

Examples: For a window whose area = 20% of the room floor area and STC = 32 the AIF is 32 + 1 = 33.

For a window whose area = 60% of the room floor area and STC = 29 the AIF is 29 - 4 = 25.

STC = AIF -1 = 30 -1 = 29 dBA

R 3 (98-128) Bedroom

Table 6.3 - Acoustic Insulation Factor for Various Types of Exterior Wall

Percentage of exterior wall area to total floor area of room												Type of Exterior Wall
	16	20	25	32	40	50	63	80	100	125	160	
Acoustic Insulation Factor	39	38	37	36	35	34	33	32	31	30	29 28	EW1
	41	40	39	38	37	36	35	34	33	32	31	EW2
	44	43	42	41	40	39	38	37	36	35	34	EW3
	47	46	45	44	43	42	41	40	39	38	37	EW4
	48	47	46	45	44	43	42	41	40	39	38	EW1R
	49	48	47	46	45	44	43	42	41	40	39	EW2R
	50	49	48	47	46	45	44	43	42	41	40	EW3R
	55	54	53	52	51	50	49	48	47	46	45	EW5
	56	55	54	53	52	51	50	49	48	47	46	EW4R
	58	57	56	55	54	53	52	51	50	49	48	EW6
	59	58	57	56	55	54	53	52	51	50	49	EW7 or EW5R
	63	62	61	60	59	58	57	56	55	54	53	EW8

Source : National Research Council, Division of Building Research, December 1980.

Explanatory Notes :

1) Where the calculated percentage wall area is not presented as a column heading, the nearest percentage column in the table should be used.
2) The common structure of walls EW1 to EW5 is composed of 12.7 mm gypsum board, vapour barrier, and 38 x 89 mm studs with 50 mm (or thicker) mineral wool or glass fibre batts in inter-stud cavities.
3) EW1 denotes exterior wall as in Note 2), plus sheathing, plus wood siding or metal siding and fibre backer board.
EW2 denotes exterior wall as in Note 2), plus rigid insulation (25-30 mm), and wood siding or metal siding and fibre backer board.
EW3 denotes simulated mansard with structure as in Note 2), plus sheathing, 28 x 89 mm framing, sheathing, and asphalt roofing material.
EW4 denotes exterior wall as in Note 2), plus sheathing and 20 mm stucco.
EW5 denotes exterior wall as in Note 2), plus sheathing, 25 mm air space, 100 mm brick veneer.
EW6 denotes exterior wall composed of 12.7 mm gypsum board, rigid insulation (25-50 mm), 100 mm back-up block, 100 mm face brick.
EW7 denotes exterior wall composed of 12.7 mm gypsum board, rigid insulation (25-50 mm), 140 mm back-up block, 100 mm face brick.
EW8 denotes exterior wall composed of 12.7 mm gypsum board, rigid insulation (25-50 mm), 200 mm concrete.
4) R signifies the mounting of the interior gypsum board on resilient clips.
5) An exterior wall conforming to rainscreen design principles and composed of 12.7 mm gypsum board, 100 mm concrete block, rigid insulation (25-50 mm), 25 mm air space, and 100 mm brick veneer has the same AIF as EW6.
6) An exterior wall described in EW1 with the addition of rigid insulation (25-50 mm) between the sheathing and the external finish has the same AIF as EW2.

R3 (9B-12B) Bedroom

TABLE 12: Approximate conversion from STC to AIF for exterior walls:

Exterior wall area expressed as percentage of room floor area	Acoustic Insulation Factor (AIF)
200	STC-10
160	STC-9
125	STC-8
100	STC-7
80	STC-6
63	STC-5
50	STC-4
40	STC-3
32	STC-2
25	STC-1
20	STC
16	STC+1
12.5	STC+2
10	STC+3
8	

Note: For area percentages not listed in the table use the nearest listed value.

Example: For a wall whose area = 120% of room floor area and STC = 48 the AIF is 48 - 8 = 40.

STC = AIF + 9 = 28 + 9 = 37 dBA

R3 (9B-12B) Bedroom

TABLE 5: Acoustic Insulation Factor for Various Types of Windows

Window area as a percentage of total floor area of room (1)														Single glazing	Double glazing of indicated glass thickness					Triple Glazing	
4	5	6	8	10	13	16	20	25	32	40	50	63	80		2mm and 2mm glass	3mm and 3mm glass	4mm and 4mm glass	3mm and 6mm glass	6mm and 6mm glass	3mm, 3mm and 3mm glass	3mm, 3mm and 6mm glass
Acoustic Insulation Factor (AIF) (2)														Thickness	Interpane spacing in mm (3)					Interpane spacings in mm (5)	
35	34	33	32	31	30	29	28	27	26	25	24	23	22	2mm	6						
36	35	34	33	32	31	30	29	28	27	26	25	24	23		13						
37	36	35	34	33	32	31	30	29	28	27	26	25	24	3mm	15	6					
38	37	36	35	34	33	32	31	30	29	28	27	26	25	4mm, 6mm	19	13	6				
39	38	37	36	35	34	33	32	31	30	29	28	27	26		22	16	13	8	6	6,6	
40	39	38	37	36	35	34	33	32	31	30	29	28	27	9mm (4)	28	20	16	13	13	6,10	6,6
41	40	39	38	37	36	35	34	33	32	31	30	29	28		35	25	20	16	16	6,15	6,10
42	41	40	39	38	37	36	35	34	33	32	31	30	29	12mm (4)	42	32	25	20	20	6,20	6,15
43	42	41	40	39	38	37	36	35	34	33	32	31	30		50	40	32	25	24	6,30	6,20
44	43	42	41	40	39	38	37	36	35	34	33	32	31		63	50	40	32	30	6,40	6,30
45	44	43	42	41	40	39	38	37	36	35	34	33	32		80	63	50	40	37	6,50	6,40
46	45	44	43	42	41	40	39	38	37	36	35	34	33		100	80	63	55	50	6,65	6,50
47	46	45	44	43	42	41	40	39	38	37	36	35	34		125	100	80	75	70	6,80	6,65
48	47	46	45	44	43	42	41	40	39	38	37	36	35		150	125	100	95	90	6,100	6,80
49	48	47	46	45	44	43	42	41	40	39	38	37	36			150	125	110	100		6,100
50	49	48	47	46	45	44	43	42	41	40	39	38	37				150	135	125		

Source: National Research Council, Division of Building Research, June 1980.

Explanatory Notes:

1) Where the calculated percentage window area is not presented as a column heading, the nearest percentage column in the table values should be used.
2) AIF data listed in the table are for well-fitted weatherstripped units that can be opened. The AIF values apply only when the windows are closed. For windows fixed and sealed to the frame, add three (3) to the AIF given in the table.
3) If the interpane spacing or glass thickness for a specific double glazed window is not listed in the table, the nearest listed values should be used.
4) The AIF ratings for 9mm and 12mm glass are for laminated glass only; for solid glass subtract two (2) from the AIF values listed in the table.
5) If the interpane spacings for a specific triple-glazed window are not listed in the table, use the listed case whose combined spacings are nearest the actual combined spacing.
6) The AIF data listed in the table are for typical windows, but details of glass mounting, window seals, etc. may result in slightly different performance for some manufacturers' products. If laboratory sound transmission loss data (conforming to ASTM test method E-90) are available, these should be used to calculate the AIF.

R3 (9B-12B) Bedroom

TABLE 11: Approximate conversion from STC to AIF for windows and doors:

Window (or door) area expressed as percentage of room floor area	Acoustic Insulation Factor (AIF)
80	STC-5
63	STC-4
50	STC-3
40	STC-2
32	STC-1
25	STC
20	STC+1
16	STC+2
12.5	STC+3
10	STC+4
8	STC+5
6.3	STC+6
5	STC+7
4	STC+8

Note: For area percentages not listed in the table use the nearest listed value.

Examples: For a window whose area = 20% of the room floor area and STC = 32 the AIF is 32 + 1 = 33.

For a window whose area = 60% of the room floor area and STC = 29 the AIF is 29 - 4 = 25.

STC = AIF - 3 = 28 - 3 = 25 dBA