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4829 Abbott Street East, Ottawa
Block 123 – Trailview Subdivision

Noise Impact Assessment Report

4829 Abbott Street East, Ottawa, ON
Block 123 – Trailview Subdivision

Noise Impact Assessment Report

Prepared By:

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

Novatech File: 110037
Ref: R-2025-27

Submitted: June 13, 2025

NOVATECH
Engineers, Planners & Landscape Architects

June 13, 2025

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

Attention: **Nishant Dave, Planner I**

Reference: **4829 Abbott Street East, Ottawa, ON**
Block 123 – Trailview Subdivision
Noise Impact Assessment Report
Novatech File No.: 110037-05
City File No.: PC2024-0509

Please find enclosed the 'Noise Impact Assessment Report' for the above-noted development located at 4829 Abbott Street East in the City of Ottawa. This report is being submitted in support of a site plan 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

Alex McAuley, P.Eng.
Senior Project Manager | Land Development Engineering

cc: Pierre Bernier, SPB Developments

Table of Contents

Appendices

Tables

Figures

1.0 INTRODUCTION

Novatech has been retained to prepare a Noise Impact Assessment Report on behalf of SPB Developments Inc. (Developer) to assess the impact of noise from traffic for the proposed site at 4829 Abbott Street East within the City of Ottawa. This site is also known as Block 123 within the previously approved Trailview Subdivision. A Noise Impact Assessment Report (Novatech R-2018-007) was previously accepted by the City for the subdivision. The report is in support of a site plan application for the subject development and to predict and mitigate excess noise. **Figure 1 - Key Plan** below shows the site location.

Figure 1: Key Plan

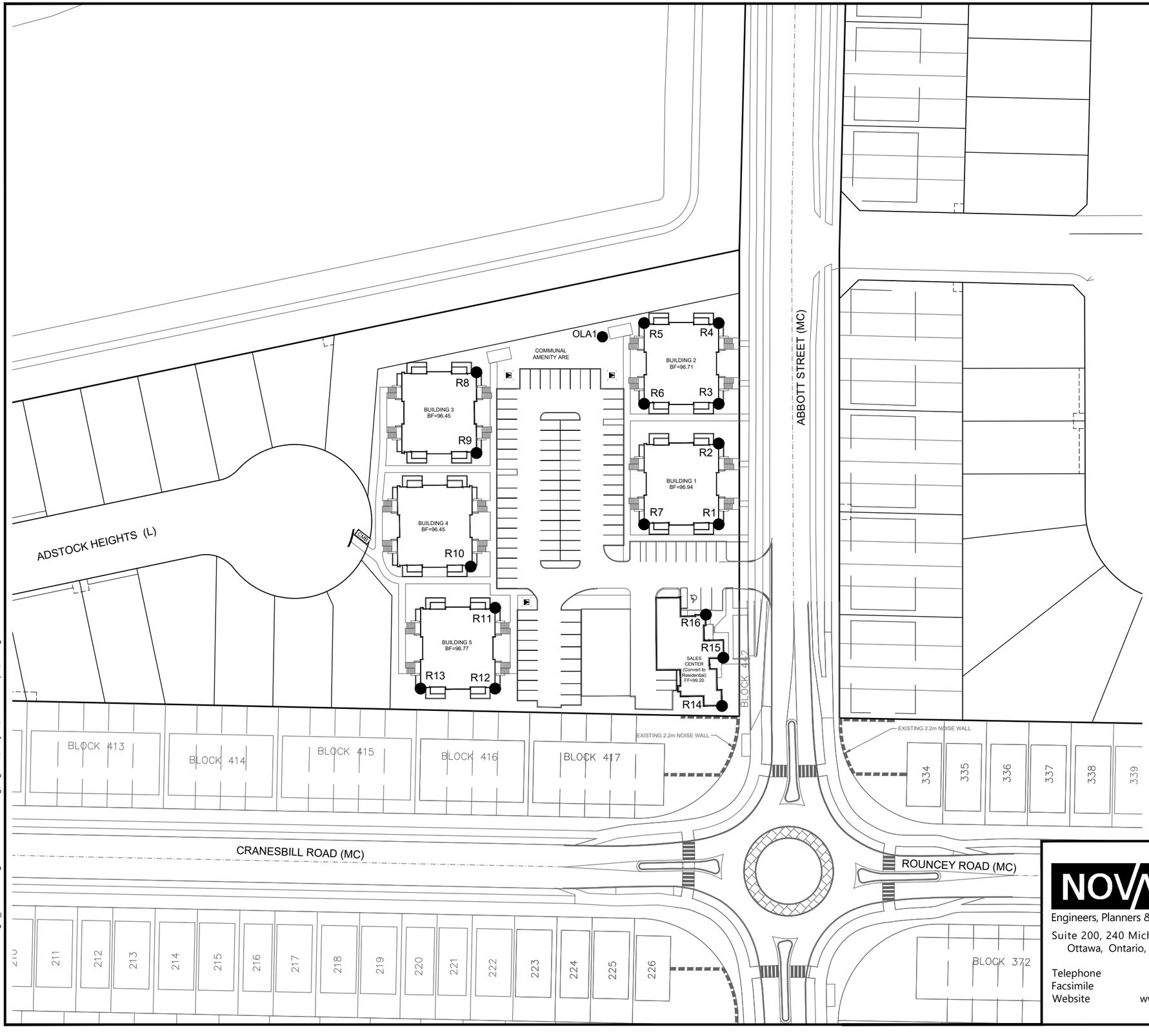
The Subject Site has an area of 0.81ha, and the proposed development will comprise of 5 apartment buildings, containing 12 units each (60 units total), with surface parking stalls and an amenity area. In the future, the existing sales center will be converted to a site management office and a dwelling unit. The site plan features and locations of all nodes used to confirm the noise levels are included in **Figure 2 – Receiver Location Plan**.

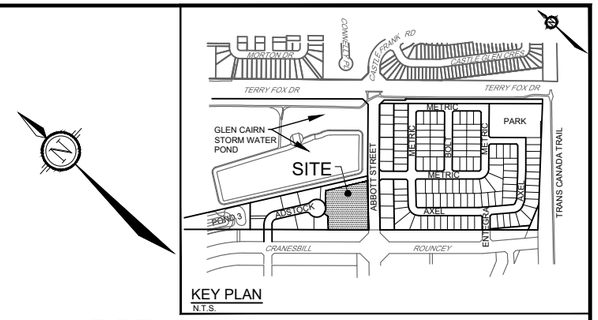
Each apartment building will consist of 4 units per floor / level, including the basement units which will be located partially below grade. For this report, the basement level is considered the first floor. Refer to Architects Plans located in **Appendix A.**

The Outdoor Living Area (OLA) noise level that needs to be considered is the designated private communal amenity area, selected 1.5m above finished grade. The balconies for each unit are less than 4m depth and are not considered OLAs per the City's guidelines (ENCG).

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

- First Floor for all Buildings, both daytime and nighttime are selected 1.5m above the first floor (FF) grade.
- Second Floor for all Buildings, both daytime and nighttime are selected 1.5m above the second-floor grade, which is 4.90m above FF total.





KEY PLAN
N.T.S.

LEGEND

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

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CITY OF OTTAWA
4829 ABBOTT STREET EAST
TRAILVIEW SUBDIVISION - BLOCK 123

RECEIVER LOCATION PLAN

SCALE 1 : 1000 (0, 10, 20, 30, 40)

DATE	JOB	FIGURE
MAY 2025	110037	FIG-2

SHT11X17.DWG - 279mmX432mm

M:\2010\110037\CAD\Design_Block123\Figures\110037-NC.dwg, Figure 2, May 23, 2025 - 1:45pm, mfang

- Third Floor for all Buildings, both daytime and nighttime are selected 1.5m above the third-floor grade, which is 8.30m above FF total
- Existing Sales Center converted to residential, both daytime and nighttime are selected 1.5m above the first floor (FF) grade.

This report follows recommendations of the City of Ottawa's Environmental Noise Control Guidelines (ENCG) 2016 and MOEE NPC-300 Environmental Noise Guideline.

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 outdoor and indoor living areas between 7am and 11pm are 55 dBA and 45 dBA, respectively. The maximum suggested sound levels for indoor bedrooms is 40 dBA between 11pm and 7am. For reference, **Tables 2.2a, 2.2b and 2.2c** of the **ENCG** are included in **Appendix B**.

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:**

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. This report considers noise from traffic on urban major collector Abbott Street, Cranesbill Road, and Rouncey Road. To simplify the Noise Analysis, Rouncey Road is considered the extension of Cranesbill Road. All other sources of noise are located beyond the limits of consideration as outlined in Section 2.1 of the **ENCG**. Refer to **Appendix B** for the excerpt from the Official Plan. **Table 2** below outlines the road noise sources for the site.

Table 2: Traffic and Roadway Parameters

	Abbott St.	**Cranesbill Rd / (Rouncey Rd).**
Roadway Classification	2-Lane Urban Major Collector	2-Lane Urban Major Collector
Annual Average Daily Traffic (AADT)	12,000 vehicles/day	12,000 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 sound levels are predicted to be approximately equal to or less than the maximum suggested levels in 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 2.2.3. 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.

2.2.1 Noise Barrier Requirements

Acoustic (noise) barriers are typically the most effective noise mitigation measure listed in Section 2.2. However, acoustic barriers are also typically visually unappealing and expensive to install and maintain. Acoustic barriers are typically only considered when all other noise mitigation techniques listed in Section 2.2 are not sufficient to reduce predicted noise levels below the maximum allowable. Only noise mitigation measures that are economically and administratively feasible will be considered.

Acoustic barriers, if required, must conform to Part 3 of the City of Ottawa's Environmental Noise Control Guidelines (2016), and include the following characteristics:

- Minimum height of 2.2m
- Maximum height of 2.5m, unless approved by the City
- Located 0.30m inside the private property line
- Have a surface mass density of not less than 20kg/sq.m
- Have no holes or gaps.

2.2.2 Ventilation Requirements

A forced air heating system with provision 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.

2.2.3 Warning Clauses

When predicted noise levels exceed the specified criteria, the City of Ottawa and the MOE recommend warning clauses be registered as a notice on title and incorporated into the lease/rental/sale agreements to warn potential purchaser/buyers/tenants of the possible elevated noise levels.

Typical warning clauses should be registered as shown below. Warning clauses are extracted from **Part 4, Appendix A the City of Ottawa ENCG** and excerpts have been provided in **Appendix B** of this report**.** As stated in the City of Ottawa ENCG, due to the variation of noise impacts for any given site, it may be necessary to amend the example warning clauses to recognize the site conditions in each development.

Type A

“Purchasers/tenants are advised that sound levels due to increasing road traffic may occasionally interfere with some outdoor activities as the sound levels may exceed the sound level limits of the City and Ministry of the Environment.”

“To help address the need for sound attenuation this development has been designed so as to provide an outdoor amenity area and indoor environment that is within provincial guidelines. Measures for sound attenuation include:

- An acoustic barrier

“To ensure that provincial sound level limits are not exceeded it is important to maintain sound attenuation features.”

“The acoustic barrier shall be maintained and kept in good repair by the property owner. Any maintenance, repair or replacement is the responsibility of the owner and shall be with the same material or to the same standards, having the same colour, appearance and function of the original.”

Additionally, if a tolerance of 5 dBA is being considered in some areas, it is recommended an additional noise clause be registered on title and incorporated into the agreement of purchase and sales:

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 traffic may, on occasion, interfere with some activities of the dwelling occupants as the sound levels exceed the sound level limits of the City and the Ministry of the Environment by up to 5 dBA."

"To help address the need for sound attenuation this development has been designed so as to provide an outdoor amenity area and indoor environment that is within provincial guidelines. Measures for sound attenuation include:

- An acoustic barrier

Type C

"Purchasers/tenants are advised that sound levels due to increasing road traffic may occasionally interfere with some outdoor activities as the sound levels may exceed the sound level limits of the City and Ministry of the Environment."

"To help address the need for sound attenuation this development has been designed so as to provide an outdoor amenity area and indoor environment that is within provincial guidelines. Measures for sound attenuation may include:

- Multi-pane glass
- Double brick veneer

"To ensure that provincial sound level limits are not exceeded it is important to maintain sound attenuation features."

"This dwelling unit has also been designed with the provision for adding central air conditioning at the occupant's discretion. Installation of central air conditioning will allow windows and exterior doors to remain closed, thereby ensuring that the indoor sound levels are within the sound level limits of the City and the Ministry of the Environment"

Type D

"Purchasers/tenants are advised that sound levels due to increasing road traffic may occasionally interfere with some outdoor activities as the sound levels may exceed the sound level limits of the City and Ministry of the Environment."

"To help address the need for sound attenuation this development has been designed so as to provide an outdoor amenity area and indoor environment that is within provincial guidelines. Measures for sound attenuation may include:

- Multi-pane glass
- Double brick veneer
- High sound transmission class walls

"To ensure that provincial sound level limits are not exceeded it is important to maintain sound attenuation features."

"This dwelling unit has also been supplied with a central air conditioning system and other measures 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 City and the Ministry of the Environment"

For units with multiple types of warning clauses, similar/identical wording can be combined as to not duplicate wording/information.

2.2.4 Building Component Assessment

When plane of window noise levels exceeds 65 dBA (daytime) or 60 dBA (nighttime) the exterior cladding system of the building envelope must be acoustically assessed to ensure indoor sound criteria are achieved. This includes analysis of the exterior wall, door, and/or glazing system specifications as appropriate.

The NRC research document entitled "*Acoustic Insulation Factor: A Rating for the Insulation of Buildings against Noise* (June 1980, JD Quirt)" is used to assess the building components and the required acoustic insulation factor (AIF). This method is recognized by the City of Ottawa.

The required AIF is based on the Outside L_{eq}, Indoor L_{eq} required, and the number of exterior façade components.

Minimum Required AIF = Outside L_{eq} – Indoor L_{eq} + 10 $\log_{10}$ (Number of Components) + 2dB

Where, N = Number of components (walls and windows)

L = Sound Level expressed on a common decibel scale.

2.3 Summary of Attenuation Requirements

Table 3 below summarizes the required noise attenuation measures and warning clauses should sound criteria be exceeded. Excerpts from the MOE NPC-300 and City of Ottawa ENCG documents are included in **Appendix B** 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 Bedroom 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 55dBA.
**Type B warning clause refers to units requiring a noise barrier but is technically or economically not feasible to reduce levels below 55dBA 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 are listed in **Table 4 and Table 5** bellow.

Table 4: Simulation Results – Outdoor Living Areas

Receiver Location*	Calculated Noise Level (dBa) 7:00-23:00		Outdoor Mitigation Method
	Un-attenuated	Attenuated	
OLA 1	53.48	-	N/A

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

From **Table 4**, Noise level of OLA1 is lower than 55dBA and therefore no attenuated measures are required. Refer to **Appendix D** for noise calculations.

Table 5: Simulation Results – Plane of Window (Indoor Living Area)

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 (1st Floor)	64.39	56.79	• Installation of Forced Heating with provision for Central Air Conditioning • Warning Clauses Type C
R1 (2nd Floor)	64.72	57.12	• Installation of Forced Heating with provision for Central Air Conditioning • Warning Clauses Type C
R1 (3rd Floor)	65.08	57.48	• Installation of Central Air Conditioning • Warning Clauses Type D • Building Façade Analysis
R2 (1st Floor)	64.36	56.76	• Installation of Forced Heating with provision for Central Air Conditioning • Warning Clauses Type C
R2 (3rd Floor)	64.98	57.38	• Installation of Forced Heating with provision for Central Air Conditioning • Warning Clauses Type C
R3 (1st Floor)	64.35	56.75	• Installation of Forced Heating with provision for Central Air Conditioning • Warning Clauses Type C
R3 (3rd Floor)	64.97	57.37	• Installation of Forced Heating with provision for Central Air Conditioning • Warning Clauses Type C
R4 (1st Floor)	64.35	56.75	• Installation of Forced Heating with provision for Central Air Conditioning • Warning Clauses Type C
R4 (3rd Floor)	64.97	57.37	• Installation of Forced Heating with provision for Central Air Conditioning • Warning Clauses Type C
R5 (1st Floor)	56.26	48.66	• Installation of Forced Heating with provision for Central Air Conditioning • Warning Clauses Type C
R5 (3rd Floor)	57.48	49.88	• Installation of Forced Heating with provision for Central Air Conditioning • Warning Clauses Type C
R6 (3rd Floor)	54.54	46.94	• None Required

Table 5 (Continued): Simulation Results – Plane of Window (Indoor Living Area)

Receiver Location*	Predicted Noise Level 7:00-23:00 (dBa)	Predicted Noise Level 23:00-7:00 (dBa)	Mitigation Method
	Un-attenuated	Un-attenuated	
R7 (1st Floor)	55.75	48.16	• Installation of Forced Heating with provision for Central Air Conditioning • Warning Clauses Type C
R7 (3rd Floor)	58.49	50.90	• Installation of Forced Heating with provision for Central Air Conditioning • Warning Clauses Type C
R8 (3rd Floor)	53.61	46.01	• None Required
R9 (3rd Floor)	54.07	46.48	• None Required
R10 (3rd Floor)	54.98	47.88	• None Required
R11 (2nd Floor)	53.89	46.29	• None Required
R11 (3rd Floor)	55.16	47.56	• Installation of Forced Heating with provision for Central Air Conditioning • Warning Clauses Type C
R12 (2nd Floor)	54.97	47.37	• None Required
R12 (3rd Floor)	60.23	52.63	• Installation of Forced Heating with provision for Central Air Conditioning • Warning Clauses Type C
R13 (2nd Floor)	52.53	44.94	• None Required
R13 (3rd Floor)	59.46	51.86	• Installation of Forced Heating with provision for Central Air Conditioning • Warning Clauses Type C
R14	64.37	56.77	• Installation of Forced Heating with provision for Central Air Conditioning • Warning Clauses Type C
R15	64.91	57.31	• Installation of Forced Heating with provision for Central Air Conditioning • Warning Clauses Type C
R16	62.53	54.93	• Installation of Forced Heating with provision for Central Air Conditioning • Warning Clauses Type C

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

Based on the results above in **Table 5**, we recommend:

- Installation of Central Air Conditioning and the inclusion of Noise Warning Clause Type D be registered as a notice on title and incorporated into the lease/rental/sale agreements of 1 unit, which is Building1D Third Floor. Building Façade Analysis is also required for it.
- Installation of Forced Air Heating with provision for Central Air Conditioning and the inclusion of Noise Warning Clause Type C be registered as a notice on title and incorporated into the lease/rental/sale agreements of 20 units, which includes:
  - Building 1: 1B&1C 6 units from first to third floor; 1D 2 units from first to second floor.
  - Building 2, 2A, 2B&2D 9 units from first to third floor.
  - Building 5, 5B, 5C&5D 3 units for third floor.
- Installation of Forced Air Heating with provision for Central Air Conditioning and the inclusion of Noise Warning Clause Type C be registered as a notice on title and incorporated into the lease/rental/sale agreements of existing Sales Center which will be converted to residential

Refer to **Figure 3 – Noise Attenuation Measures Plan** for all proposed noise mitigation measures. Refer to **Appendix D** for noise calculations.

4.0 BUILDING FAÇADE ANALYSIS

As outlined in Section 2.2.4, the City of Ottawa ENCG requires that the exterior cladding system of the building envelope be reviewed when noise levels exceed minimum requirements outlined in **Table 3.** Per **Table 5**, R1 third Floor is the only unit need to be assessed due to the Day-time noise exceeds the limits. The Acoustical Insulation Factor (AIF) method recognized by the City of Ottawa is used to assess the wall and window requirements.

The AIF is used as a measure of the reduction of outdoor noise provided by the elements of the outer surface of a building. The difference between the indoor noise criterion and the outdoor noise level establishes the acoustical insulation requirement for the exterior shell. The exterior shell is comprised of primarily two components; windows and walls (patio doors are treated as windows).

Mathematically, this AIF can be expressed as:

$$\text{Required AIF} = L_{eq}\,(\text{Outside}) - L_{eq}\,(\text{Inside}) + 10\log_{10}(N) + 2\text{dBA}$$

Where, N = Number of components;
L = Sound Level expressed on a common decibel scale.

The required AIF and building façade analysis R1 (Third Floor) are calculated as follows:

- $\text{AIF}_{\text{Residential(day)}} = 65.11\ \text{dBA} - 45\ \text{dBA} + 10\log(2)\ \text{dBA} + 2\text{dBA} = 25\ \text{dBA}$

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, National Research Council of Canada, June 1980 (J.D. Quirt) were used to assess the exterior facade against the required AIF. This reference material is included in **Appendix C**.

To assess the façade against the required AIF respective Leq values, the number of components in a wall, the calculated required AIF, percentage of window to room areas and exterior wall to room areas are required. Exterior facade analysis data is presented in **Tables 6.**

Table 6: Exterior Façade Analysis Data – R1 - Third Floor

Description	Residential Livingroom
Number and Type of Components Forming Building Envelope.	2 – Windows and Exterior Walls
Percentage of Window Area to Total Floor Area of Room.	**35%**
Percentage of Wall Area to Total Floor Area of Room.	**68%**

Architect floor and elevation plans were reviewed to calculate the window and wall to floor ratios (as seen above). The architect plans are included in **Appendix A.**

Using the percentage of window area to room area, and the required acoustical insulation factor (AIF), **Table 5** in **Appendix C** was used to identify the various window assemblies needed to satisfy the required AIF. Similarly, **Table 6.3** in **Appendix C** was used to select the typical wall assembly needed to satisfy the required AIF.

Table 7 below summarizes the results of the analysis requiring assemblies to mitigate the indoor noise levels.

Table 7: Selected Window and Wall Assemblies to Meet Maximum Attenuation Requirements

Description	AIF	Double Pane Window Assembly Options	Typical Wall Assembly
R1 (Building 1D) Third Floor	25	2 mm – 6 mm – 2 mm	EW1

Notes:

I. Refer to **Appendix C** for calculations for walls and windows.

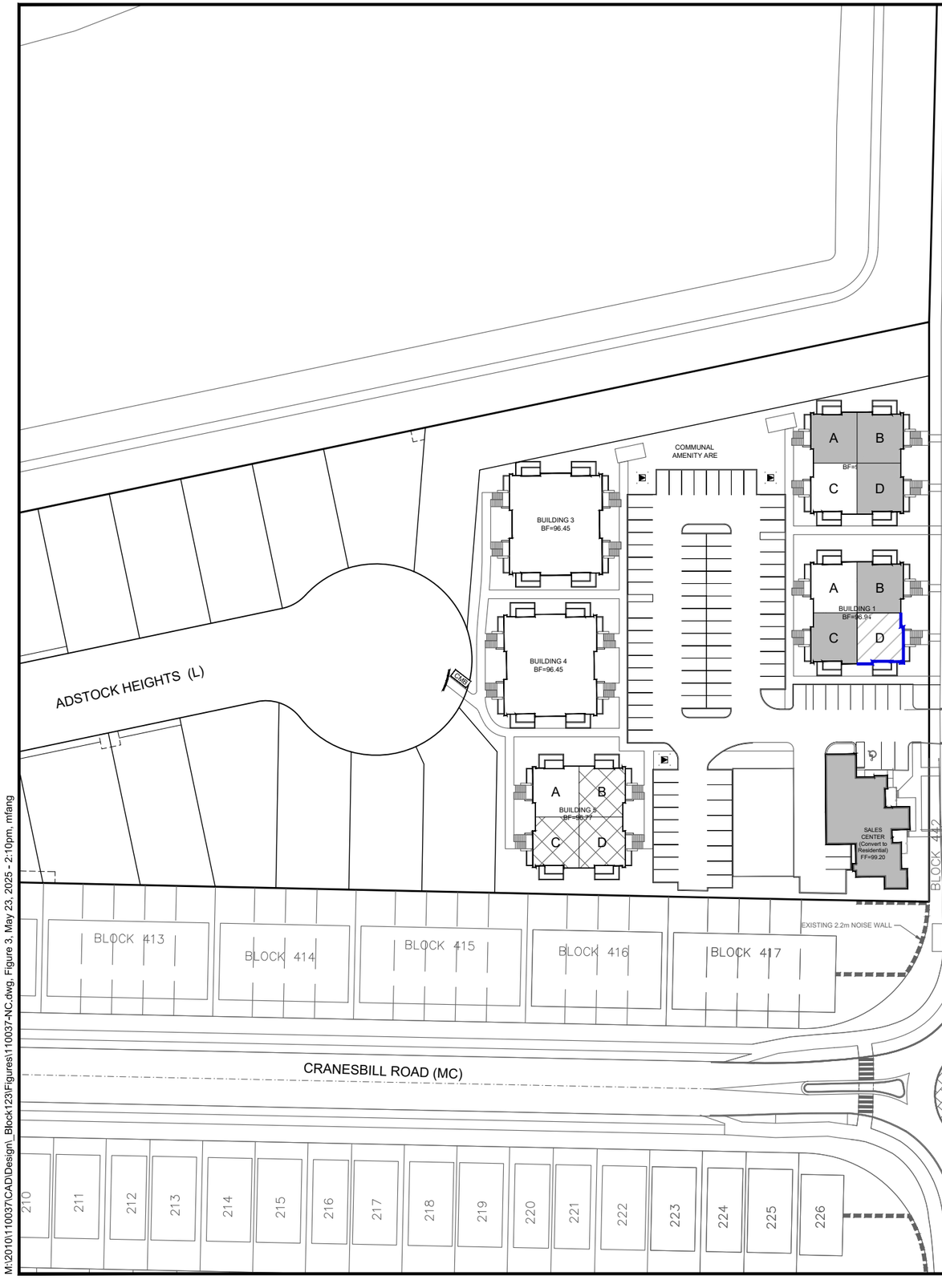
II. EW1 type wall consisting of 12.7mm gypsum board, vapour barrier, 38x89mm studs with 50mm (or thicker) mineral wool or glass fibre batts in inter-stud cavities.

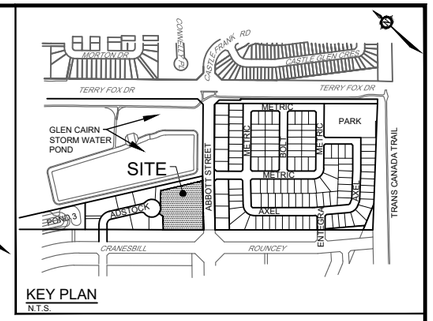
III. “2 mm – 6 mm – 2 mm” denotes 2 mm glass, 6 mm air space and 2 mm glass

Table 11 and 12 in **Appendix C** were used to convert the AIF values to Sound Transmission Class (STC) values. The STC results for selected analyzed units are summarized in **Table 8** bellow. Window and wall assemblies should meet the STC values as a minimum.

Table 8: Equivalent Sound Transmission Class, STC Values

		Windows		Walls	
	AIF	Conversion	STC	Conversion	STC
R1 (Building 1D) Third Floor	25	STC-1 = AIF	26	STC-5= AIF	30





KEY PLAN
N.T.S.

LEGEND

MITIGATION METHODS INCLUDE:
- INSTALLATION OF FORCED AIR HEATING WITH PROVISION FOR CENTRAL AIR CONDITIONING
- WARNING CLAUSE TYPE C TO BE REGISTERED ON TITLE AND INCORPORATED INTO THE AGREEMENT OF LEASE/RENTAL/SALE
- THE UNITS INCLUDE BUILDING 1 B&C AND BUILDING 2 A,B&D ALL FROM FIRST FLOOR TO THIRD FLOOR. ALSO INCLUDE EXISTING SALES CENTER CONVERTED TO RESIDENTIAL

MITIGATION METHODS INCLUDE:
FOR FIRST AND SECOND FLOOR:
- INSTALLATION OF FORCED AIR HEATING WITH PROVISION FOR CENTRAL AIR CONDITIONING
- WARNING CLAUSE TYPE C TO BE REGISTERED ON TITLE AND INCORPORATED INTO THE AGREEMENT OF LEASE/RENTAL/SALE

FOR THIRD FLOOR:
- INSTALLATION OF CENTRAL AIR CONDITIONING
- WARNING CLAUSE TYPE D TO BE REGISTERED ON TITLE AND INCORPORATED INTO THE AGREEMENT OF PURCHASE AND SALES

THE UNITS INCLUDE BUILDING 1 D

STC REQUIREMENTS FOR BUILDING 1 D THIRD FLOOR:
- EXTERIOR WALL 30
- WINDOW (LIVING ROOM) 26

MITIGATION METHODS INCLUDE:
- INSTALLATION OF FORCED AIR HEATING WITH PROVISION FOR CENTRAL AIR CONDITIONING
- WARNING CLAUSE TYPE C TO BE REGISTERED ON TITLE AND INCORPORATED INTO THE AGREEMENT OF LEASE/RENTAL/SALE
- THE UNITS INCLUDE BUILDING 5 B,C&D THIRD FLOOR ONLY

(A) ARTERIAL ROAD CLASSIFICATION

(MC) MAJOR COLLECTOR ROAD CLASSIFICATION

(L) LOCAL ROAD CLASSIFICATION

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CITY OF OTTAWA
4829 ABBOTT STREET EAST
TRAILVIEW SUBDIVISION - BLOCK 123

NOISE MITIGATION PLAN

SCALE 1 : 1000 (0, 10, 20, 30, 40)
DATE MAY 2025
JOB 110037
FIGURE FIG-3

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5.0 CONCLUSION

This report recommends are depicted on **Figure 3 – Noise Attenuation Measures Plan:**

- Building 1, all 1B and 1C first to third floor 6 Units, and first and second floor for 1D 2 Units; Building 2, all 2A, 2B, and 2D first to third floor 9 Units; Building 5, all third floor for 5B, 5C, and 5D 3 Units
  - The inclusion of Forced Air Heating with provision for Central Air Conditioning
  - Warning Clause Type C to be registered as a notice on title and incorporated into the lease/rental/sale agreements.

- Existing Sales Center converted to residential:
  - The inclusion of Forced Air Heating with provision for Central Air Conditioning
  - Warning Clause Type C to be registered as a notice on title and incorporated into the lease/rental/sale agreements.

- Building 1, Third Floor of 1D:
  - The inclusion of Central Air Conditioning
  - Warning Clause Type D to be registered as a notice on title and incorporated into the lease/rental/sale agreements
  - Minimum requirement acoustically selected exterior wall (EW1) and meet a sound transmission rating, STC of 30
  - Minimum requirement acoustically selected double pane (2mm-6mm-2mm) windows and meet a sound transmission rating, STC of 26.

- Building components compliant with the Ontario Building Code will be sufficient for the remaining exterior walls and windows within the subject site except that were specified above.

NOVATECH

Report By:

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

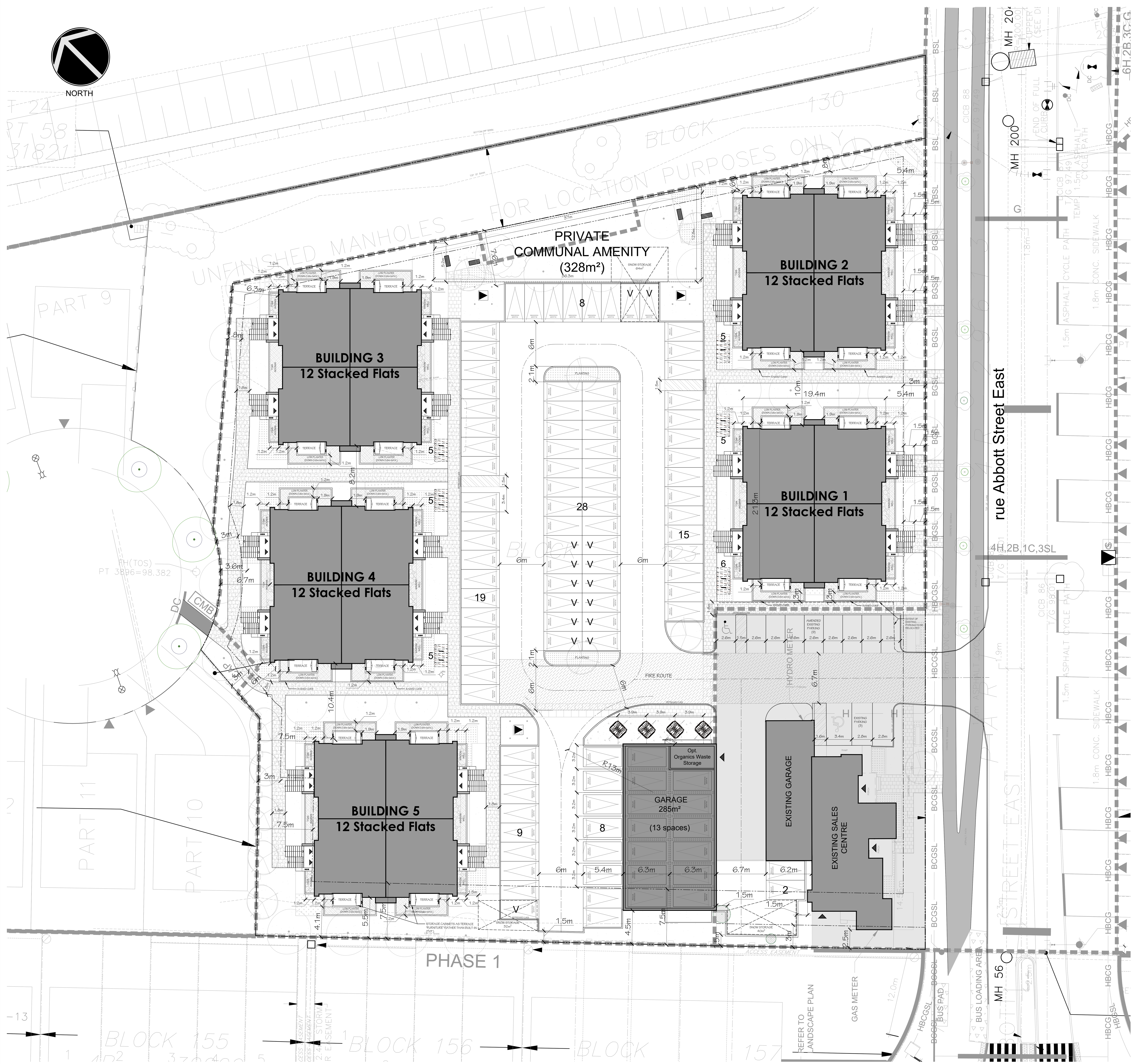
Reviewed By:

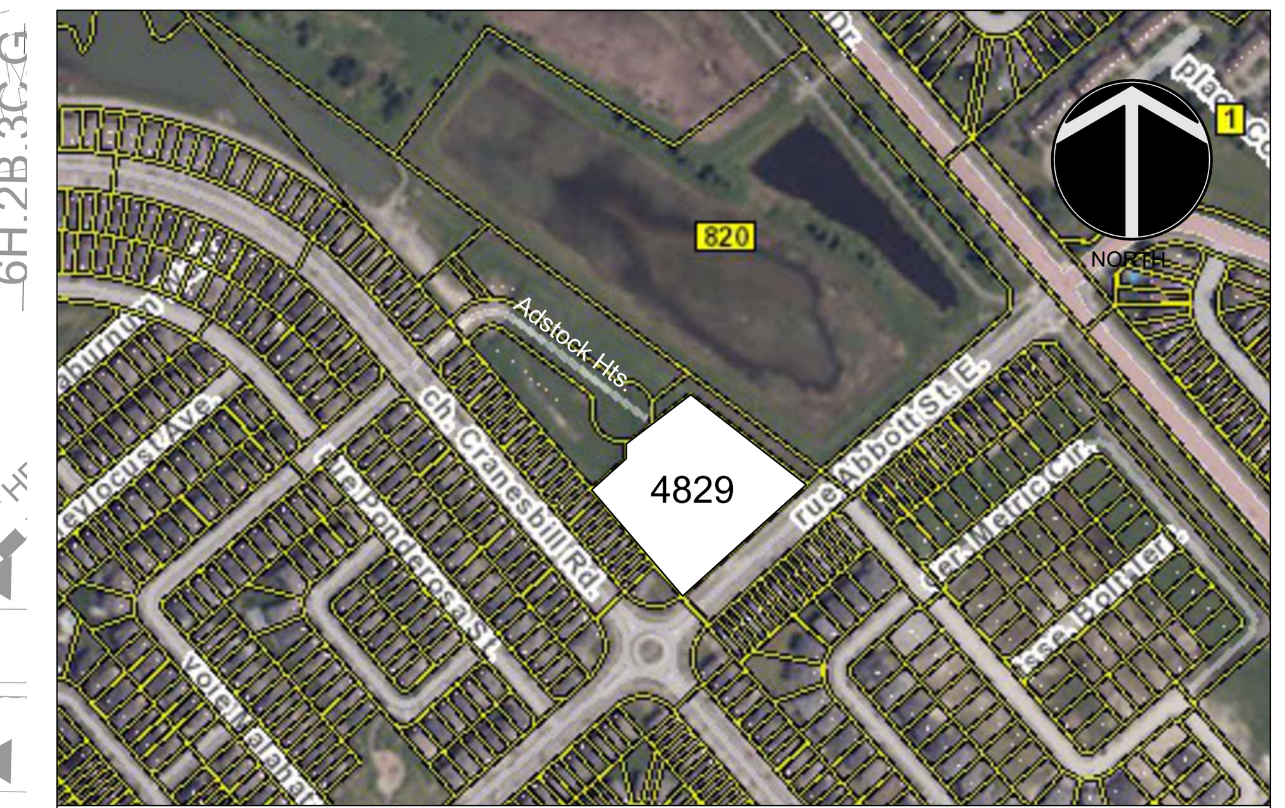
LICENSED PROFESSIONAL ENGINEER
A.R. MCAULEY
100141256
June 13, 2023
PROVINCE OF ONTARIO

Alex McAuley, P. Eng.
Senior Manager
Land Development Engineering

APPENDIX A:

ARCHITECTS PLANS





KEY PLAN 1:5000

SITE DATA - BLOCK 123

SITE STATISTICS *(# OF UNITS & GROSS BUILDING FOOTPRINT AREA)*

BLOCK 1	12 UNITS	394m²
BLOCK 2	12 UNITS	394m²
BLOCK 3	12 UNITS	394m²
BLOCK 4	12 UNITS	394m²
BLOCK 5	12 UNITS	394m²
ACCESSORY GARAGE		285m²
EXISTING OFFICE		319m²
TOTAL	60 UNITS	2,574m²

LOT COVERAGE

TOTAL LOT AREA:	8,155m²
TOTAL BUILDING FOOTPRINT AREA:	2,574m²
TOTAL LOT COVERAGE	31.6%
TOTAL HARD SURFACE AREA:	2,722m²
TOTAL LOT COVERAGE	33.4%
TOTAL LANDSCAPE AREA:	2,899m²
TOTAL LOT COVERAGE	35.5%

AMENITY AREA

TOTAL REQUIRED	PROVIDED
6m² per dwelling unit 60 UNITS x 6m² = 360m²	PRIVATE AMENITY AREA (BALCONIES) 60 UNITS x 7.4m² 444m²
COMMUNAL AMENITY AREA: 50% of total required amenity area 360(0.5) = 180m²	COMMUNAL AMENITY AREA 328m²
	TOTAL PROVIDED: 772m²

ZONING STATISTICS

ZONING: R4S[2351] - RESIDENTIAL FOURTH DENSITY ZONE

DWELLING TYPE: PUD - 60 STACKED FLATS

PARKING REQUIREMENTS - RESIDENTS

(PARKING PROVISIONS 2008-250 SECTION 101, 106, 111)

RESIDENTS REQUIRE	PROVIDED
72 RESIDENT SPACES [60 X 1.2]	74 RESIDENT SPACES @ 2.6mx5.2m 13 GARAGE
12 VISITORS [60 X 0.2]	15 VISITORS @ 2.6mx5.2m
84 SPACES TOTAL	102 TOTAL
BICYCLE 0.5 x 60 UNITS = 31 SPACES	BICYCLE 31 @ 0.6mx1.8m

PROJECT TEAM

Owner / Applicant

SPB DEVELOPMENTS INC (Project Owner)
METRIC HOMES (Project Builder)
4829 Abbott Street East
Kanata, ON, K2V 0L4

Contact:
Shawn Bernier, Owner, VP – Operations, Metric Homes
phone: (613) 301-7792 email: Shawn@MetricHomes.com

Chris Bernier, Owner, VP – Construction
phone: (613) 302-0727 email: Christopher@MetricHomes.com

Architect

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Ottawa, ON K1S 3K7

Contact:
Todd Duckworth
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web: www.hobinarc.com

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email: k.watson@novatech-eng.com

CIVIL

Novatech
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Contact:
Alex McAuley
phone: (613) 254-9643 x292
email: a.mcauley@novatech-eng.com

Surveyor

no.	date	revision
5	2025-05-26	REVIEW & COORDINATION
4	2025-04-30	REVIEW & COORDINATION
3	2025-03-20	REVIEW & COORDINATION
2	2024-10-17	ISSUED FOR REVIEW
1	2024-09-26	ISSUED FOR REVIEW

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F: 613-235-2005
E: mail@hobinarc.com
hobinarc.com
HOBIN ARCHITECTURE

project title
TRAIL VIEW VILLAGE
LOW-RISE STACKED DWELLINGS
4829 ABBOTT STREET E, STITTSVILLE, ONTARIO

drawing title
BLOCK 123 SITE PLAN

drawn	date	scale
TD	AUG 2024	1:250

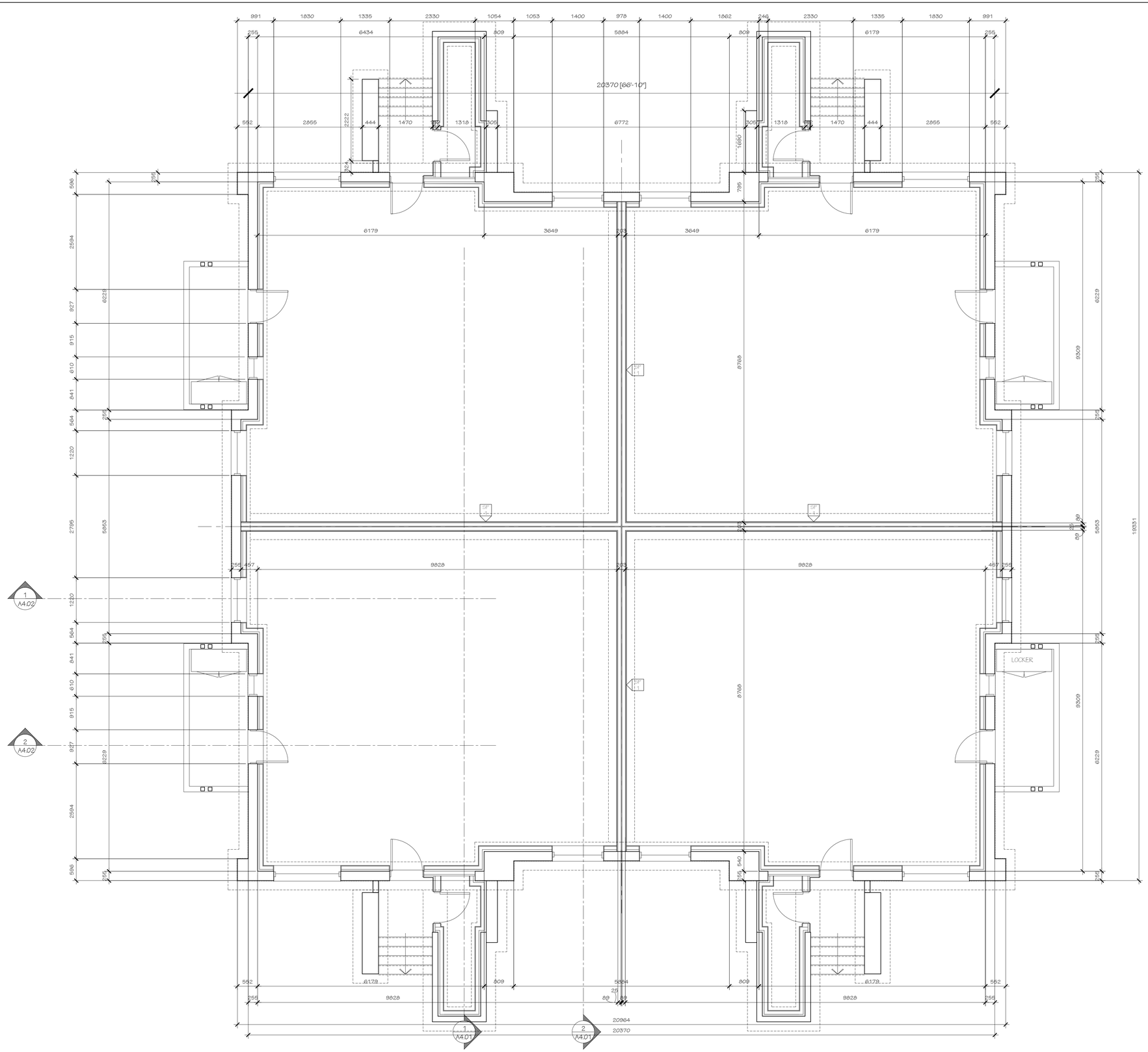
project: 2223

drawing no.: SP-1

revision no.

PC2024-0509

#XX XXX



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no.	date	revision
1	XXXX/2024	ISSUED FOR BUILDING PERMIT

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

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

DO NOT SCALE DRAWINGS.

THIS DRAWING MAY NOT BE USED FOR CONSTRUCTION UNTIL SIGNED.

METRIC HOMES

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hobinarc.com

HOBIN ARCHITECTURE

PROJECT/LOCATION:
TRAILVIEW VILLAGE
BLOCK 1

DRAWING TITLE:
FOUNDATION PLAN

DRAWN BY:	DATE:	SCALE:
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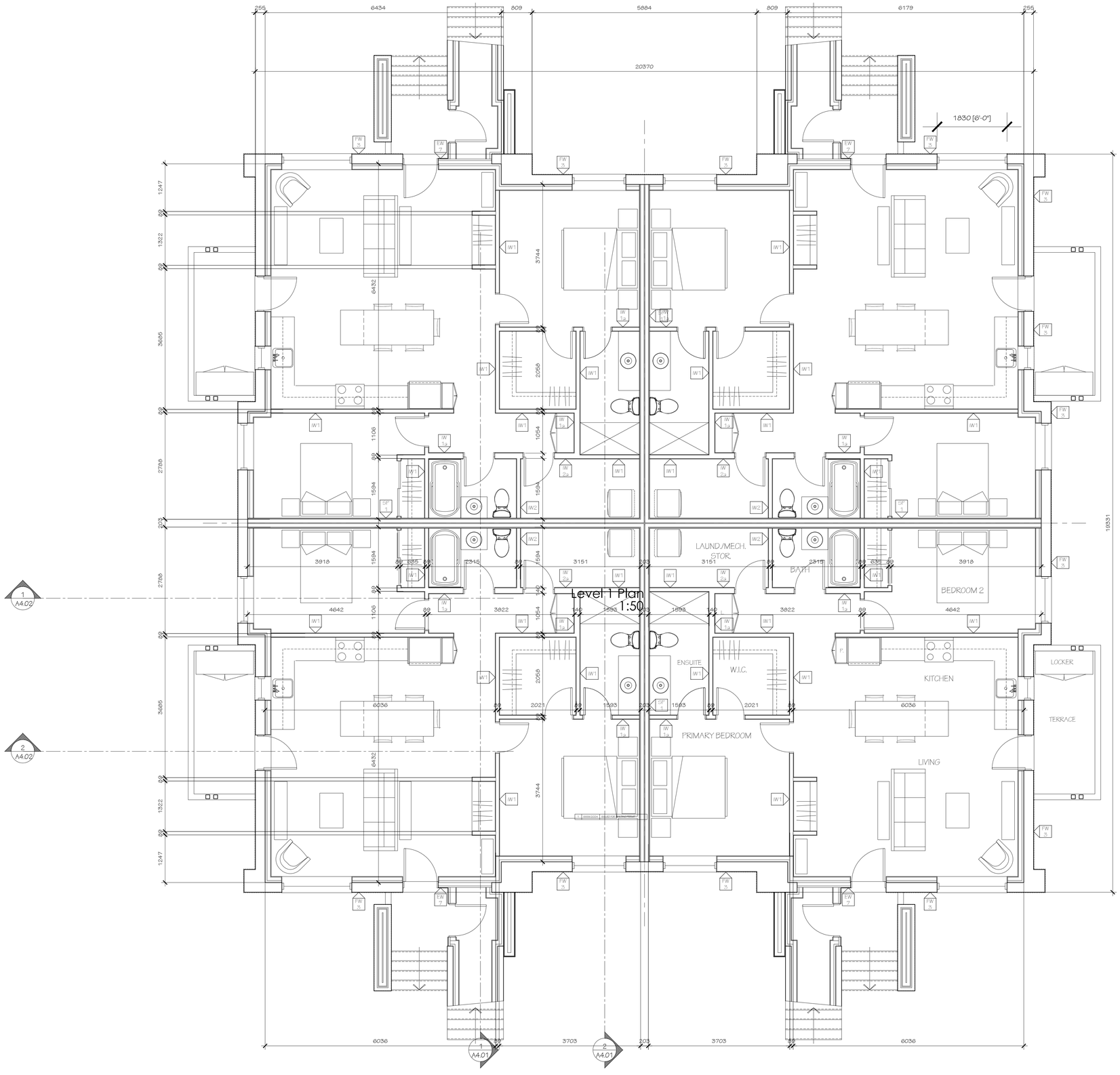
PROJECT: 2223

DRAWING NO.: A2.01

REVISION NO.:



no.	date	revision
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HOBIN ARCHITECTURE

PROJECT/LOCATION:
TRAILVIEW VILLAGE
BLOCK 1

DRAWING TITLE:
LEVEL 1 PLAN

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PROJECT: 2223

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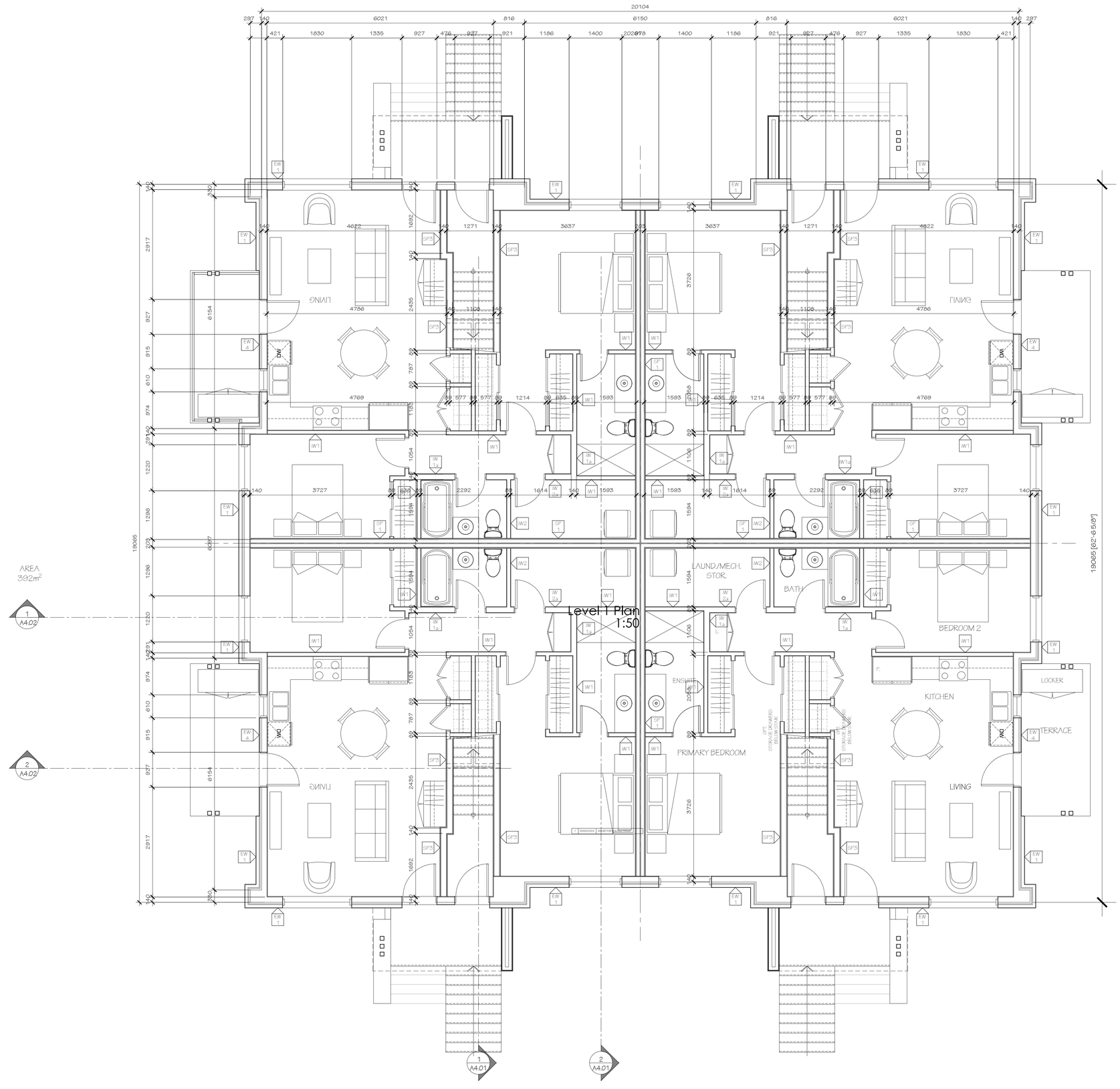

no.	date	revision
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hobinarc.com

HOBIN ARCHITECTURE

PROJECT/LOCATION:
TRAILVIEW VILLAGE
BLOCK 1

DRAWING TITLE:
LEVEL 2 PLAN

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PROJECT: 2223

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REVISION NO.:

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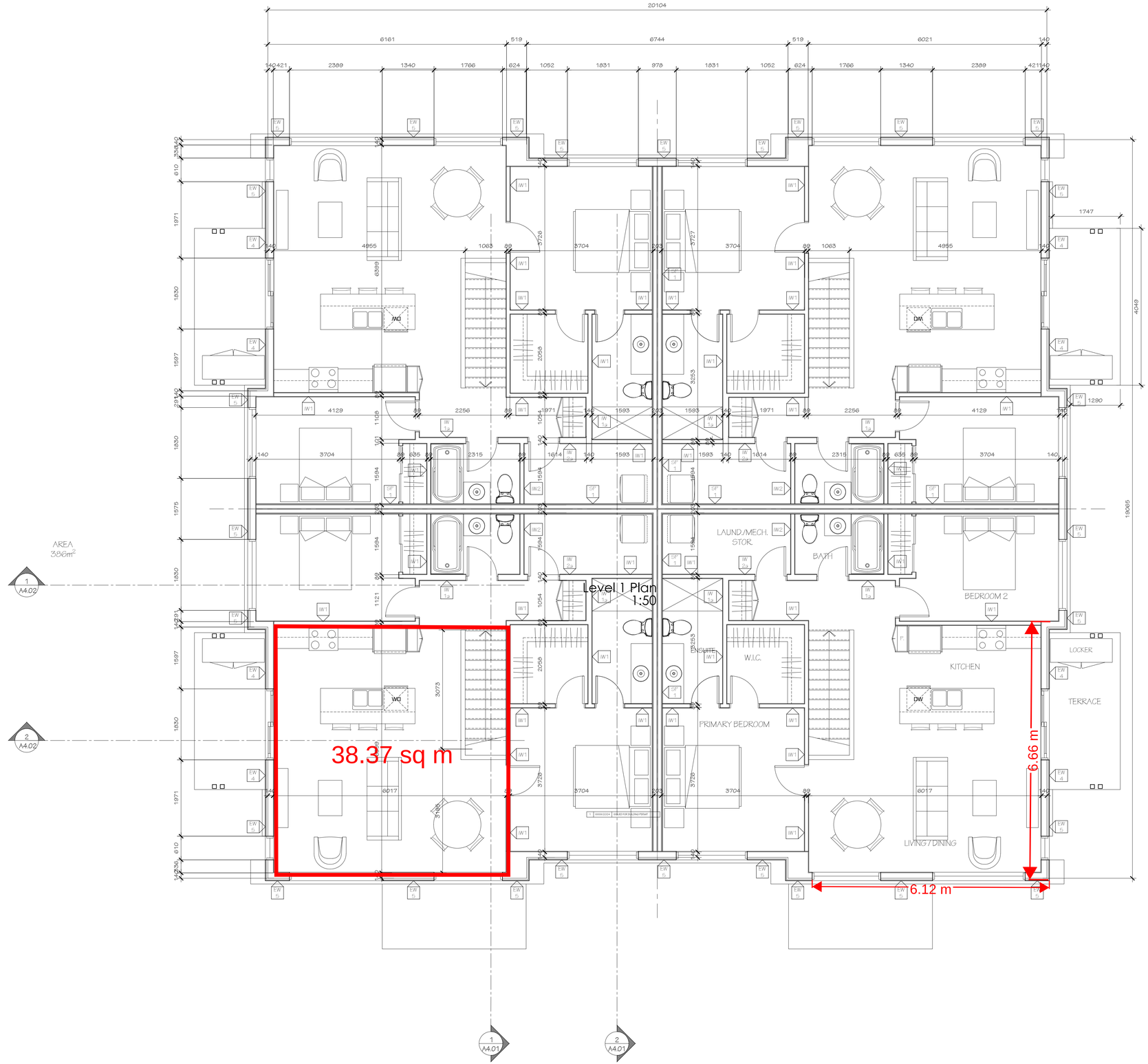

no.	date	revision
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HOBIN ARCHITECTURE

PROJECT/LOCATION:
TRAILVIEW VILLAGE
BLOCK 1

DRAWING TITLE:
LEVEL 3 PLAN

DRAWN BY:	DATE:	SCALE:
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PROJECT: 2223

DRAWING NO.: A2.01

REVISION NO.:

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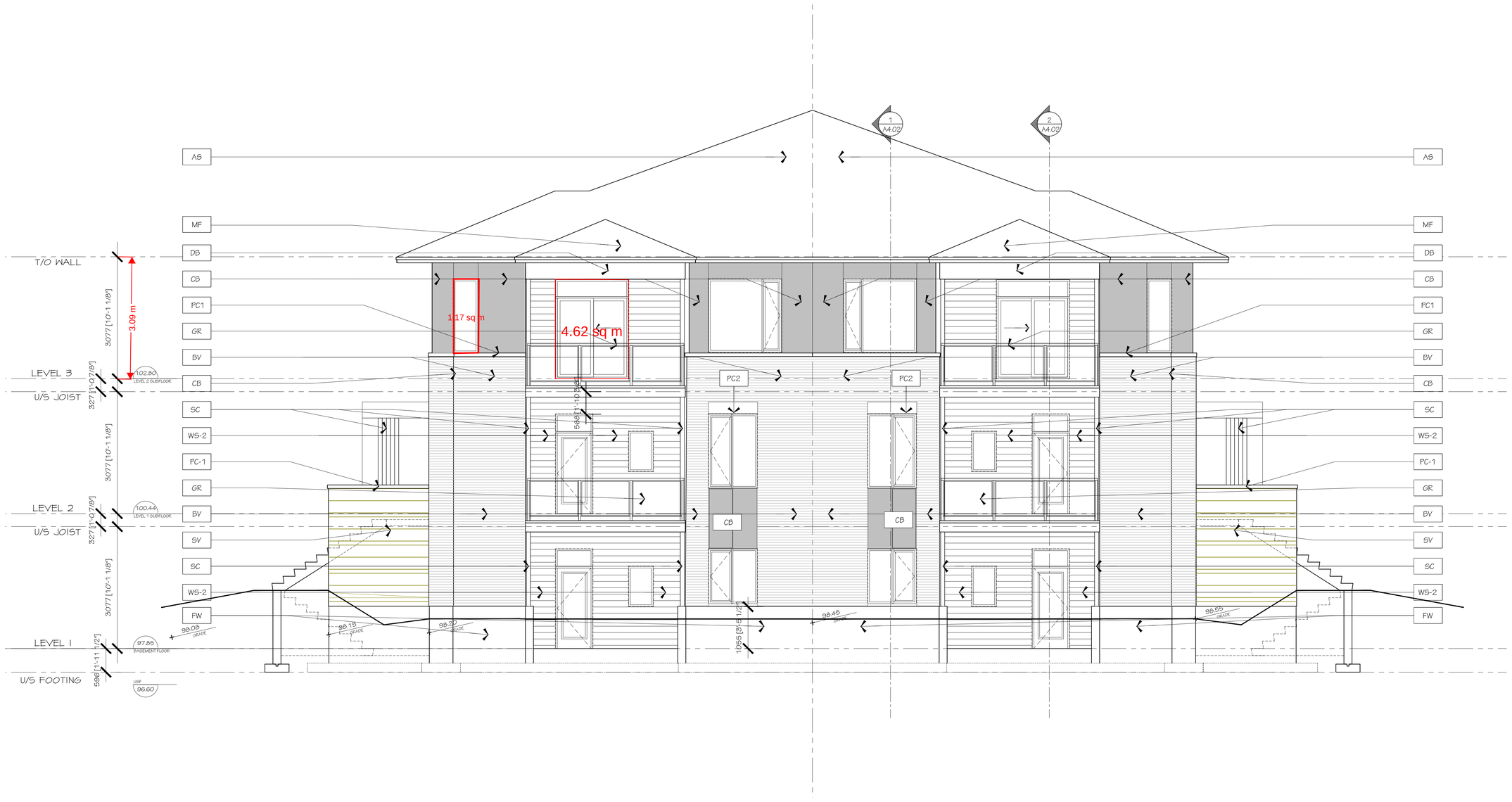

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HOBIN ARCHITECTURE

PROJECT/LOCATION:
TRAILVIEW VILLAGE
BLOCK 1

DRAWING TITLE:
ELEVATIONS

DRAWN BY:	DATE:	SCALE:
KG	01-29-2025	1:50

PROJECT: 2223

DRAWING NO.: A3.01

REVISION NO.:

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no.	date	revision
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HOBIN ARCHITECTURE

PROJECT/LOCATION:
TRAILVIEW VILLAGE
BLOCK 1

DRAWING TITLE:
ELEVATIONS

DRAWN BY:	DATE:	SCALE:
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PROJECT: 2223

DRAWING NO.: A3.02

REVISION NO.:

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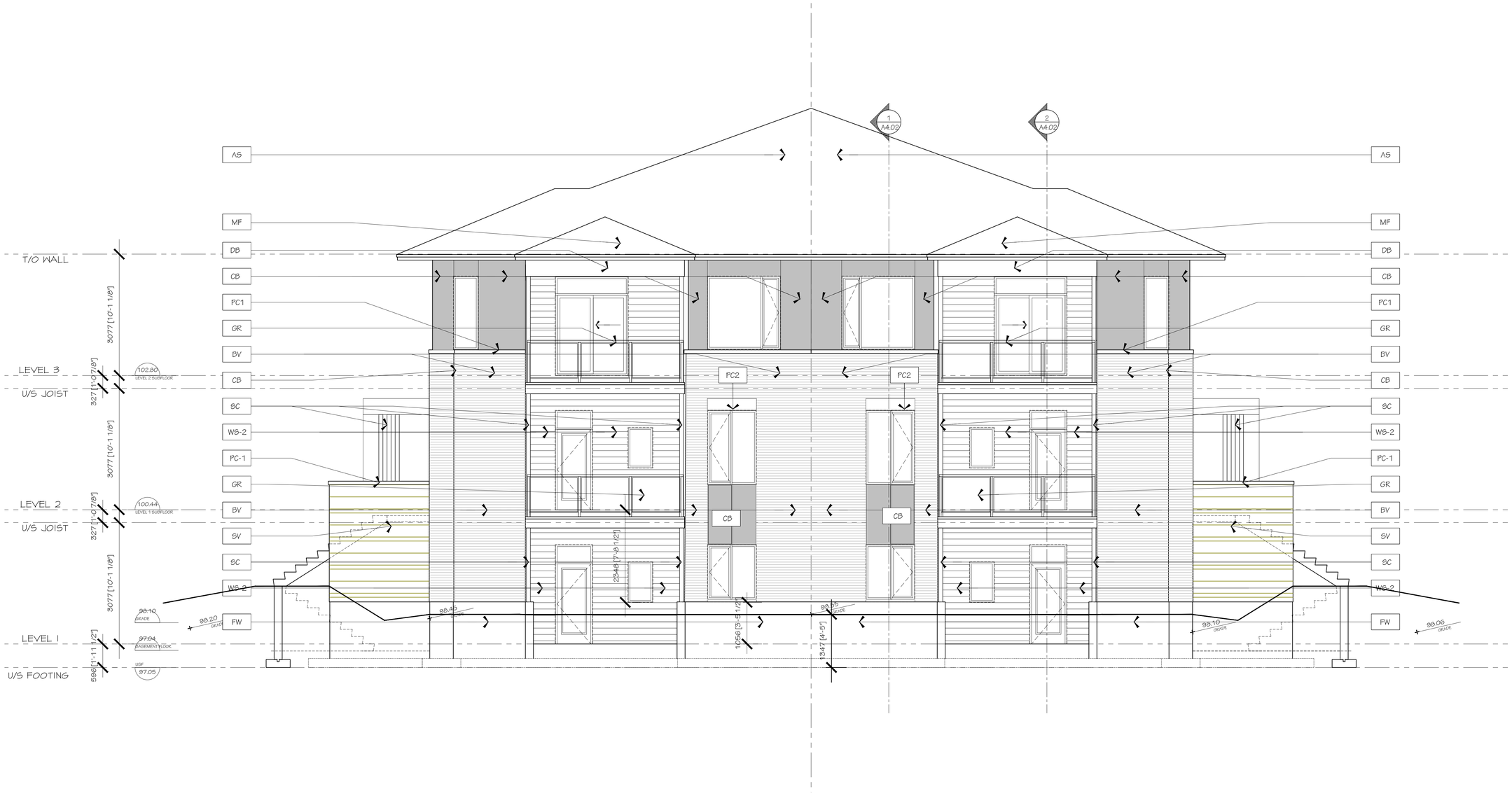

no.	date	revision
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HOBIN ARCHITECTURE

PROJECT/LOCATION:
TRAILVIEW VILLAGE
BLOCK 1

DRAWING TITLE:
ELEVATIONS

DRAWN BY:	DATE:	SCALE:
KG	01-29-2025	1:50

PROJECT: 2223

DRAWING NO.: A3.03

REVISION NO.:

None
None

no.	date	revision
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HOBIN ARCHITECTURE

PROJECT/LOCATION:
TRAILVIEW VILLAGE
BLOCK 1

DRAWING TITLE:
ELEVATIONS

DRAWN BY:	DATE:	SCALE:
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PROJECT: 2223

DRAWING NO.: A3.04

REVISION NO.:

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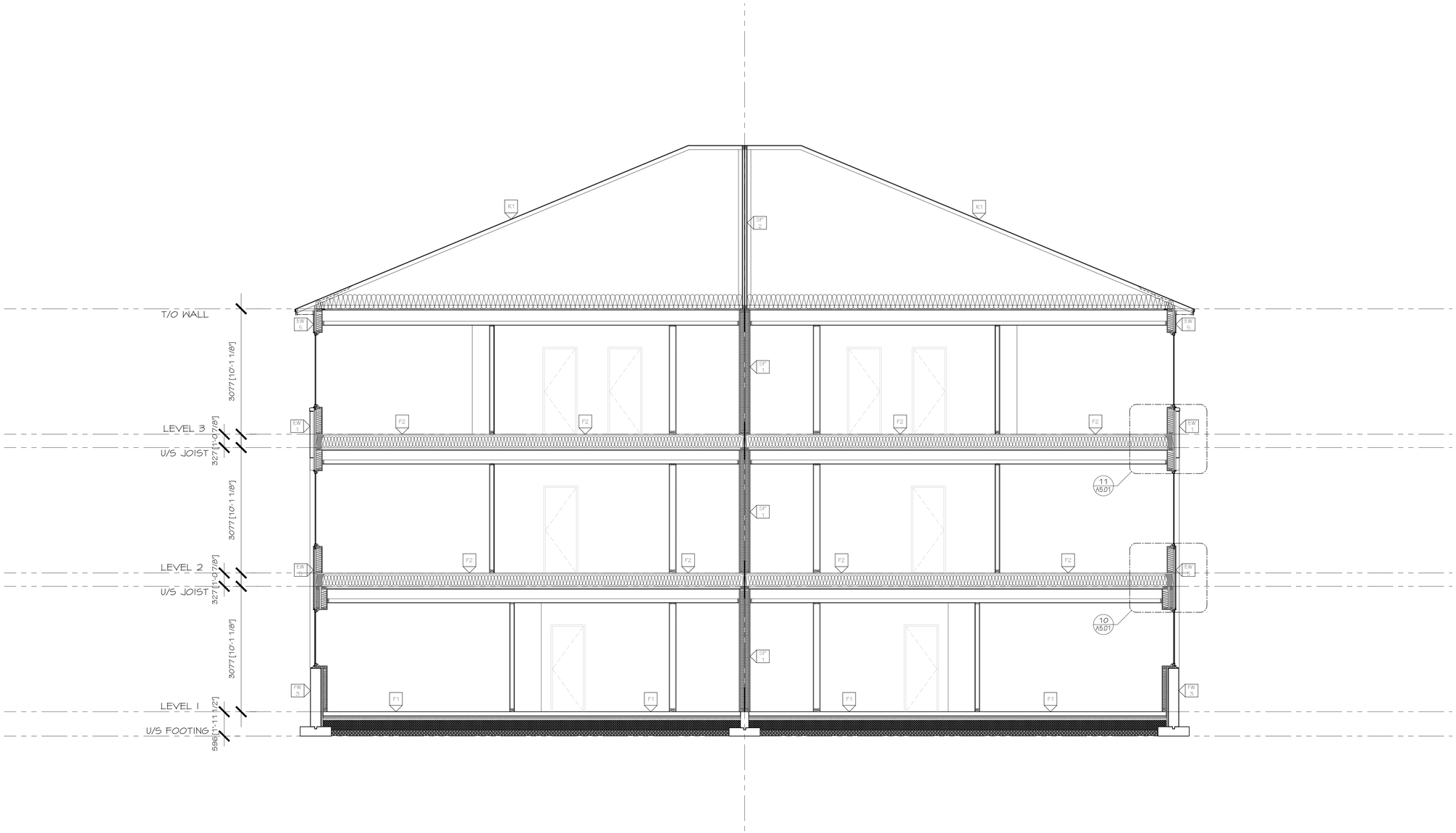

no.	date	revision
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HOBIN ARCHITECTURE

PROJECT/LOCATION:
TRAILVIEW VILLAGE
BLOCK 1

DRAWING TITLE:
BUILDING SECTIONS

DRAWN BY:	DATE:	SCALE:
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PROJECT: 2223

DRAWING NO.: A4.02

REVISION NO.:

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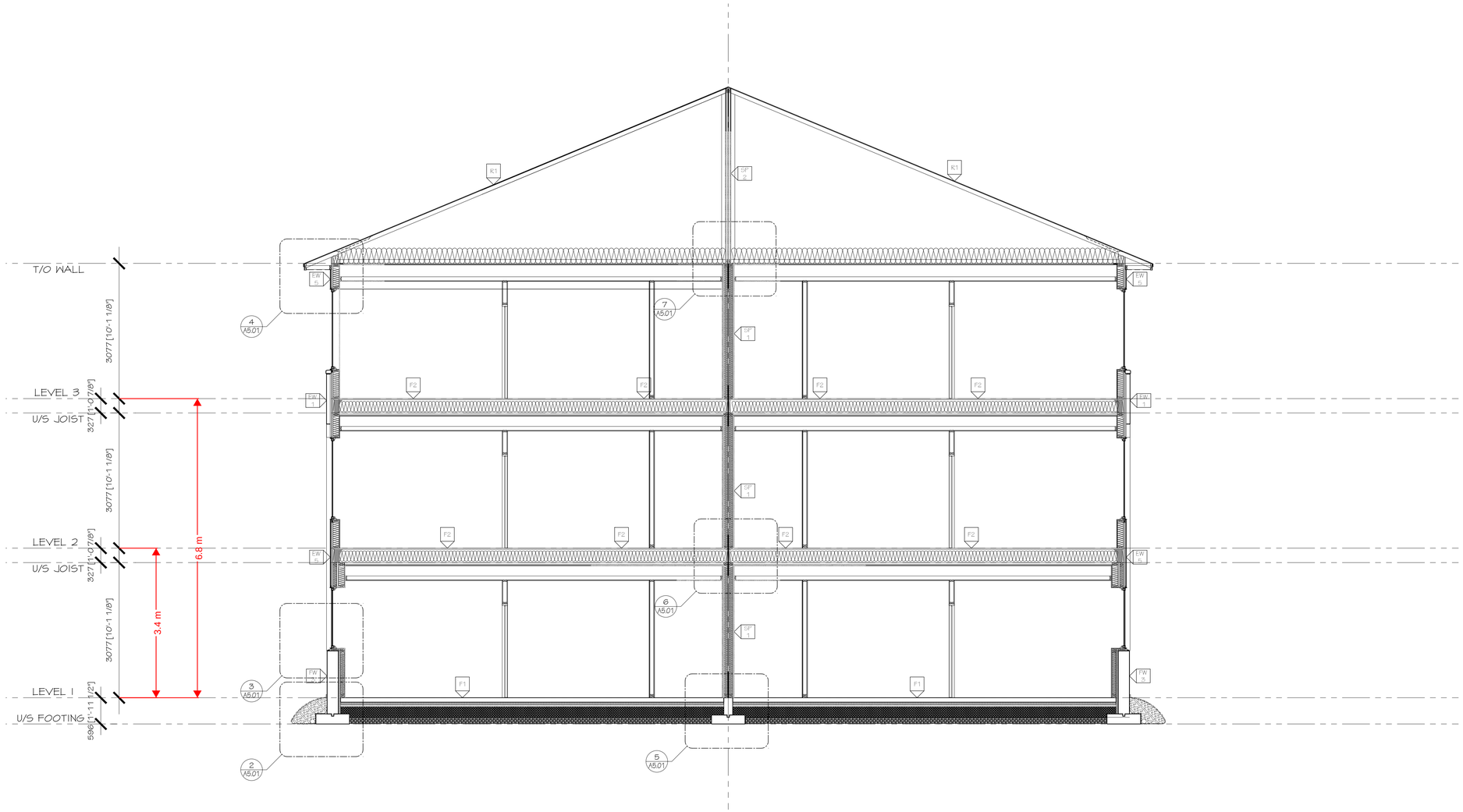

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HOBIN ARCHITECTURE

PROJECT/LOCATION:
TRAILVIEW VILLAGE
BLOCK 1

DRAWING TITLE:
BUILDING SECTIONS

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PROJECT: 2223

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REVISION NO.:

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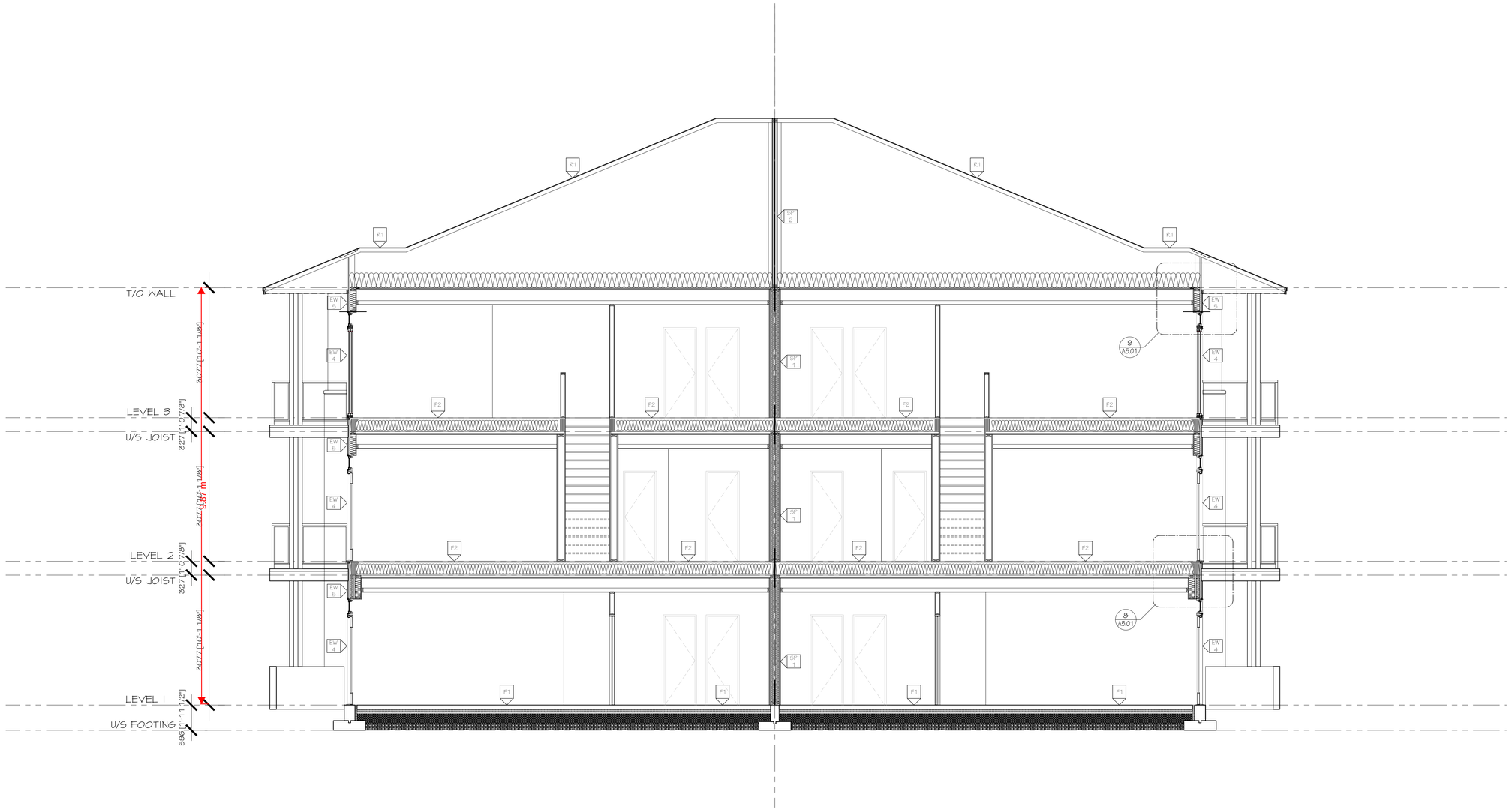

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HOBIN ARCHITECTURE

PROJECT/LOCATION:
TRAILVIEW VILLAGE
BLOCK 1

DRAWING TITLE:
BUILDING SECTIONS

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PROJECT: 2223

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REVISION NO.:

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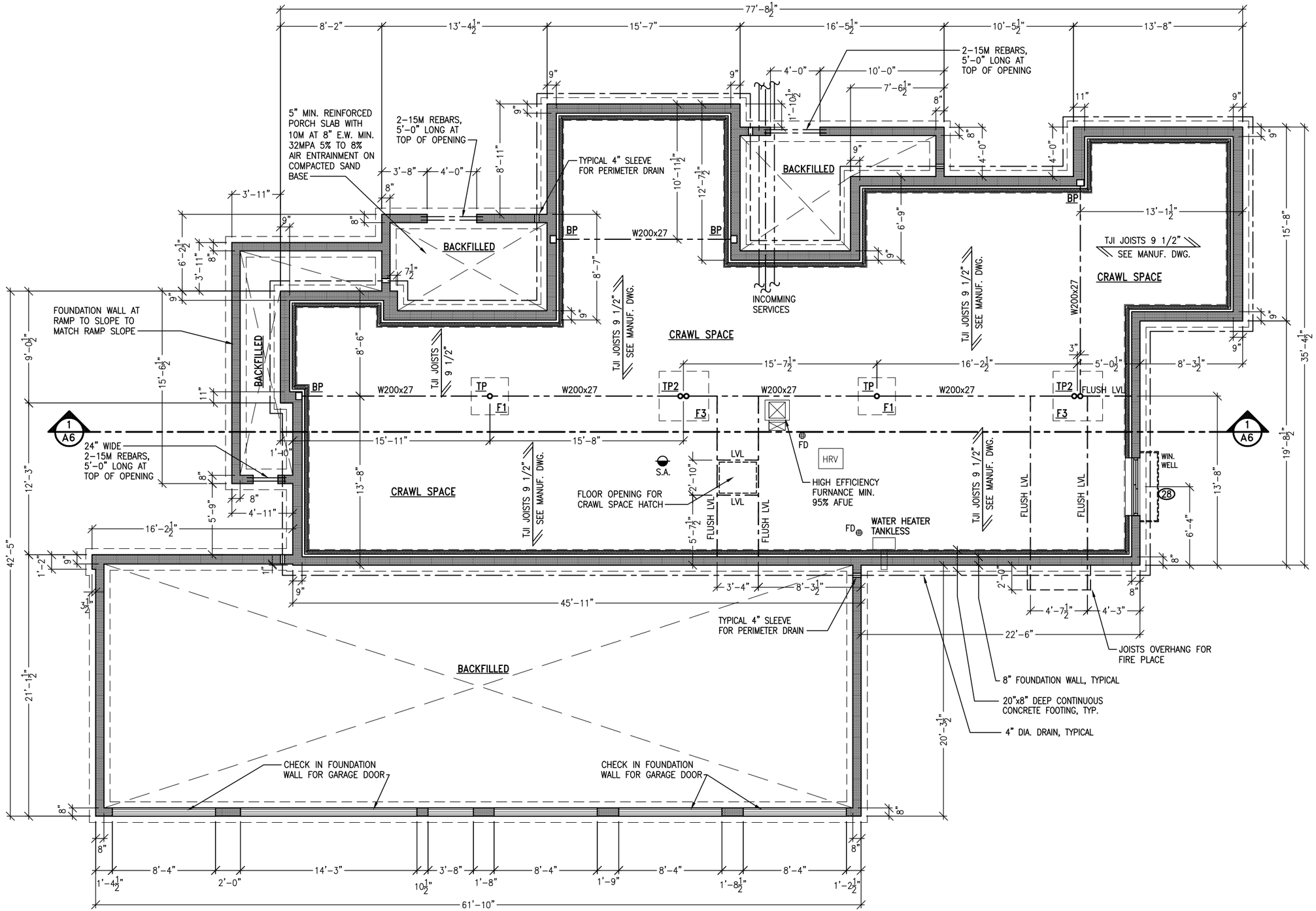


TYPICAL BEAM POCKET:

B.P. = 8"W x 6"H x 5"D

ENERGY STAR PACKAGE
VERSION #12.6

METRIC HOMES
www.metrichomes.com

Drawing Title:
BASEMENT FLOOR PLAN
STRUCTURE / DIMENSIONS

Client:
METRIC HOMES

Model & Elev:
TERRY FOX SALES OFFICE

Lot# & Project::
Lot --, Plan ----
Abbott Street, Kanata, ON

Rev#	Revisions	Date
4	ISSUED FOR REVIEW #4	06-Apr-2017
3	ISSUED FOR REVIEW #3	05-Apr-2017
2	ISSUED FOR REVIEW #2	31-Mar-2017
1	ISSUED FOR REVIEW	29-Mar-2017

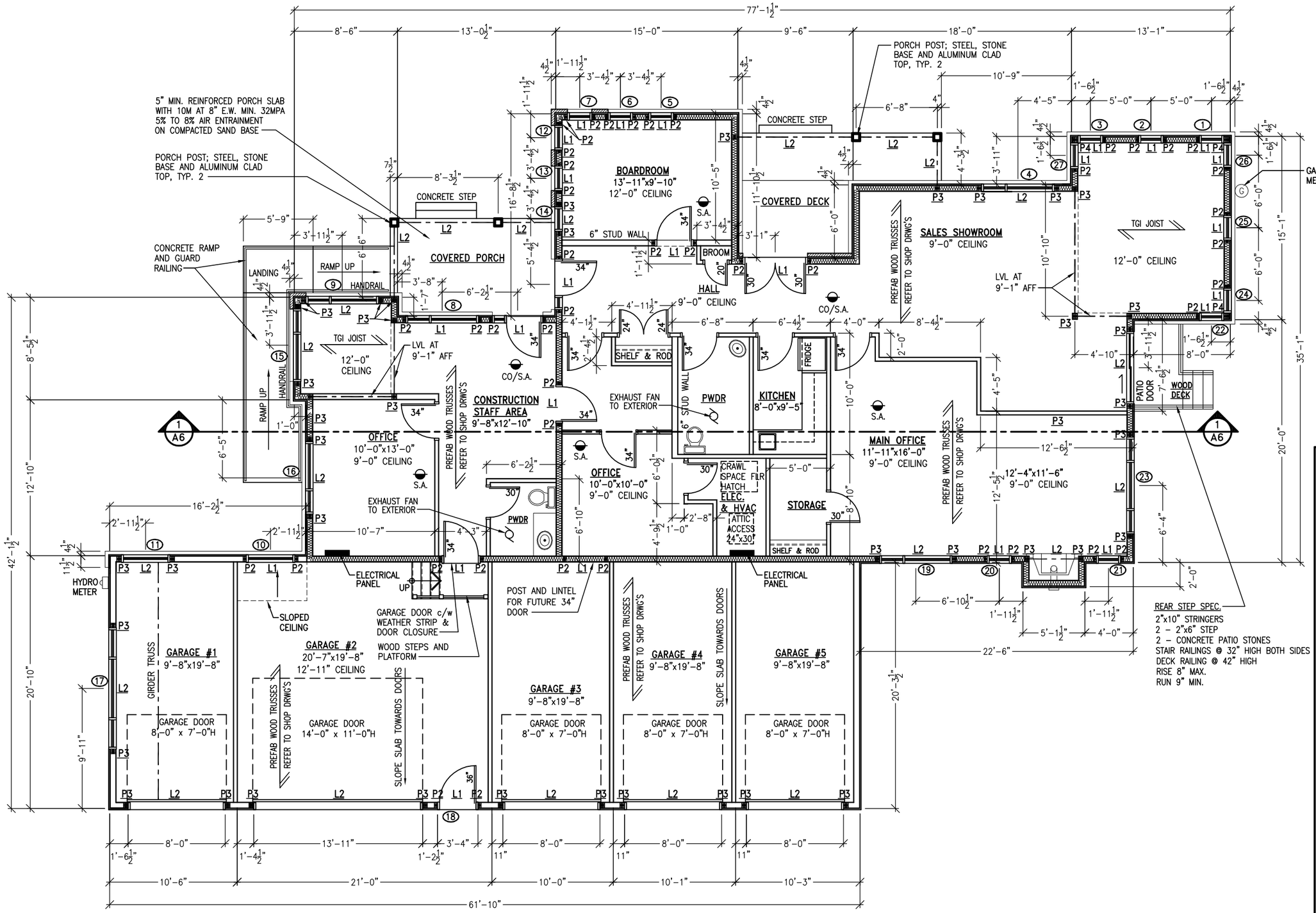
File#: METRIC HOMES

Drawn by:

Date: MARCH 2017

Dwg# A1

Scale: 1/8" = 1'-0"



ENERGY STAR PACKAGE
VERSION #12.6

METRIC HOMES
www.metrichomes.com

Drawing Title: MAIN FLOOR PLAN

Client: METRIC HOMES

Model & Elev: TERRY FOX SALES OFFICE

Lot# & Project:: Lot --, Plan ----
Abbott Street, Kanata, ON

Rev#	Revisions	Date
4	ISSUED FOR REVIEW #4	06-Apr-2017
3	ISSUED FOR REVIEW #3	05-Apr-2017
2	ISSUED FOR REVIEW #2	31-Mar-2017
1	ISSUED FOR REVIEW	29-Mar-2017

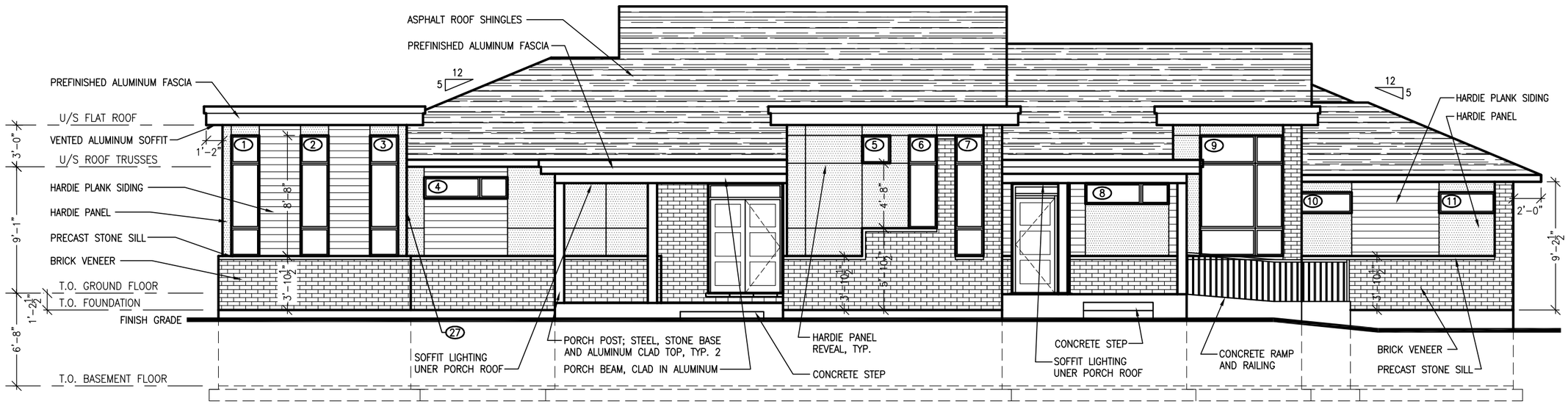
File#: METRIC HOMES

Drawn by:

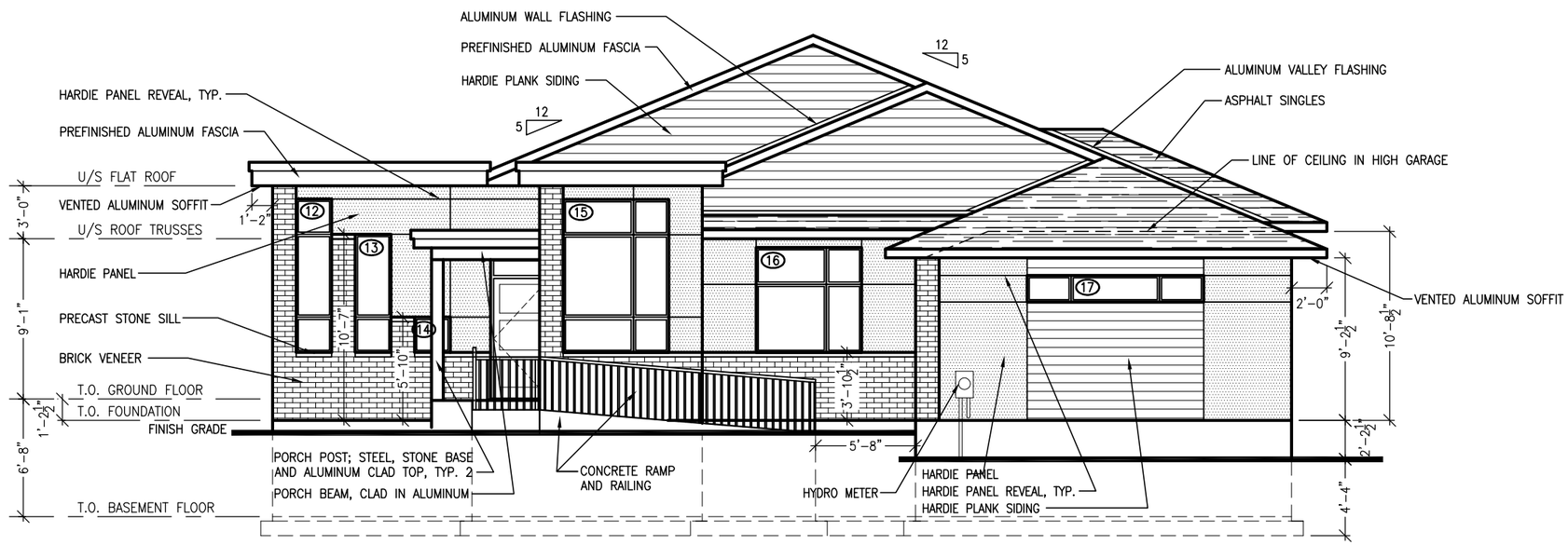
Date: MARCH 2017

Scale: 1/8" = 1'-0"

Dwg# A2



FRONT ELEVATION



RIGHT SIDE ELEVATION

NOTES:

A) FOUNDATION TO EXTEND A MINIMUM OF 5 7/8" ABOVE FINISHED GRADE

B) GRADE SLOPES AWAY FROM DWELLING UNIT, TYPICAL ALL SIDES.

WINDOW SCHEDULE

WINDOW #	WIDTH	HEIGHT
1	24"	104"
2	24"	104"
3	24"	104"
4	72"	18"
5	24"	24"
6	24"	80"
7	36"	104"
8	72"	18"
9	72"	104"
10	48"	18"
11	48"	18"
12	24"	104"
13	24"	80"
14	24"	24"
15	72"	104"
16	72"	70"
17	120"	18"

ENERGY STAR PACKAGE
VERSION #12.6

METRIC HOMES
www.metrichomes.com

Drawing Title:
FRONT AND RIGHT SIDE ELEVATIONS

Client:
METRIC HOMES

Model & Elev:
TERRY FOX SALES OFFICE

Lot# & Project::
Lot --, Plan ----
Abbott Street, Kanata, ON

Rev#	Revisions	Date
4	ISSUED FOR REVIEW #4	06-Apr-2017
3	ISSUED FOR REVIEW #3	05-Apr-2017
2	ISSUED FOR REVIEW #2	31-Mar-2017
1	ISSUED FOR REVIEW	29-Mar-2017

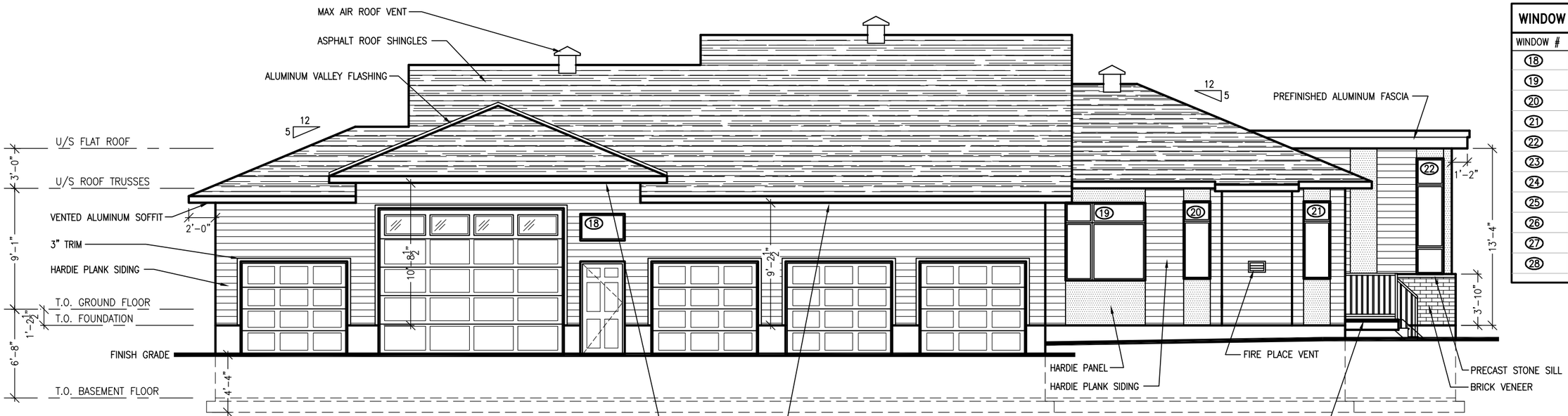
File#: METRIC HOMES

Drawn by:

Date: MARCH 2017

Scale: 1/8" = 1'-0"

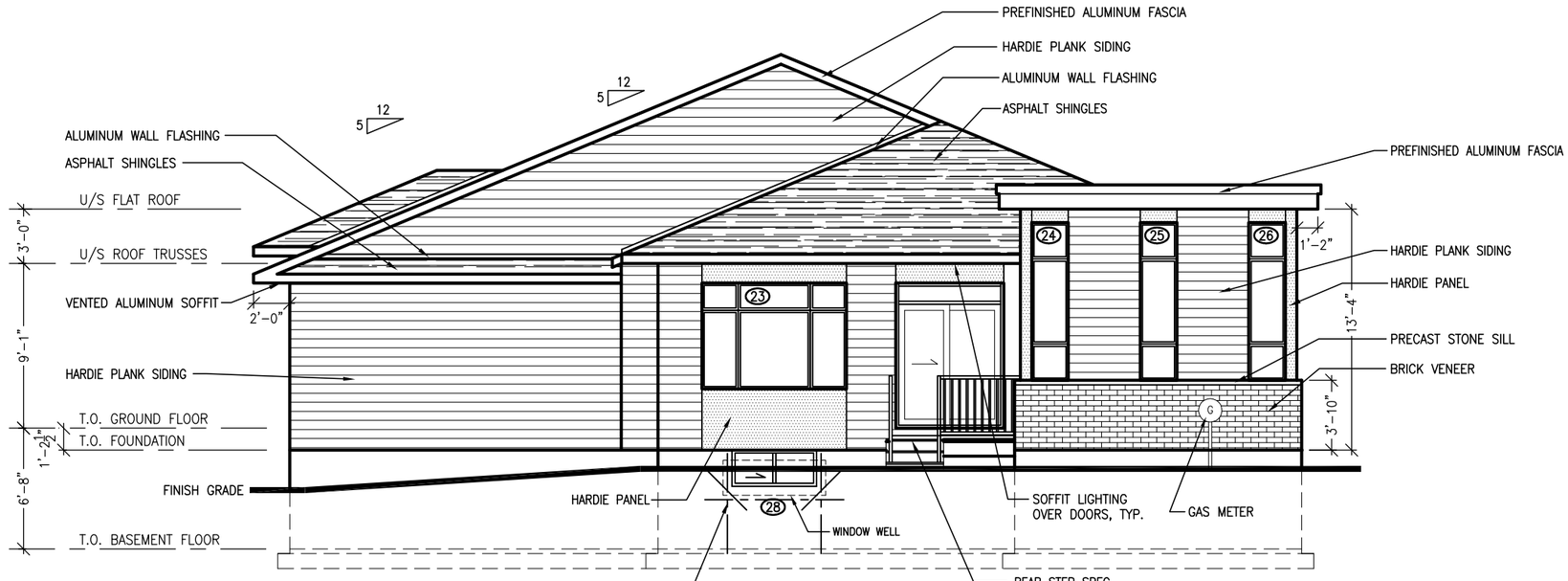
Dwg# A4



REAR ELEVATION

WINDOW SCHEDULE		
WINDOW #	WIDTH	HEIGHT
18	40"	24"
19	72"	70"
20	24"	72"
21	24"	72"
22	24"	104"
23	96"	72"
24	24"	104"
25	24"	104"
26	24"	104"
27	24"	104"
28	56"	24"

ENERGY STAR PACKAGE
VERSION #12.6



LEFT SIDE ELEVATION

NOTES:

A) FOUNDATION TO EXTEND A MINIMUM OF 5 7/8" ABOVE FINISHED GRADE

B) GRADE SLOPES AWAY FROM DWELLING UNIT, TYPICAL ALL SIDES.

METRIC HOMES
www.metrichomes.com

Drawing Title:
REAR AND LEFT SIDE ELEVATIONS

Client:
METRIC HOMES

Model & Elev:
TERRY FOX SALES OFFICE

Lot# & Project::
Lot --, Plan ----
Abbott Street, Kanata, ON

Rev#	Revisions	Date
4	ISSUED FOR REVIEW #4	06-Apr-2017
3	ISSUED FOR REVIEW #3	05-Apr-2017
2	ISSUED FOR REVIEW #2	31-Mar-2017
1	ISSUED FOR REVIEW	29-Mar-2017

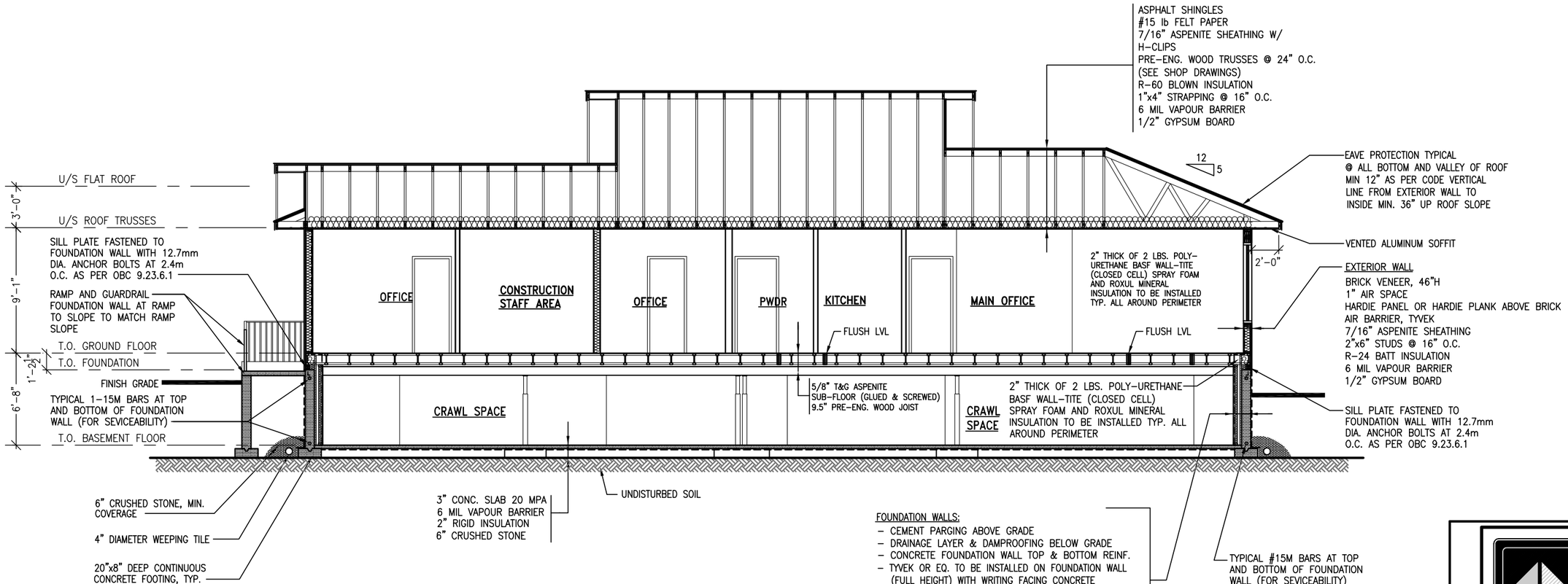
File#: METRIC HOMES

Drawn by:

Date: MARCH 2017

Scale: 1/8" = 1'-0"

Dwg# A5



SCHEDULES

NOTES:

A) ALL BEAMS TO HAVE A MINIMUM END BEARING OF 3 1/2"

B) ALL POINT LOADS TO BE CARRIED DOWN TO THE FOUNDATION OR SUPPORING MEMBER.

WOOD POST SCHEDULE

TAG	DESCRIPTION
P2	2 -2"x4" OR 2"x6" STUDS
P3	3 -2"x4" OR 2"x6" STUDS
P4	4 -2"x4" OR 2"x6" STUDS
P5	5 -2"x4" OR 2"x6" STUDS

STEEL TELEPOST SCHEDULE

TAG	DESCRIPTION
TP	3" DIA. ADJUSTABLE STEEL TELEPOST CAN/CGSB 7.2
TP2	2 -3" DIA. ADJUSTABLE STEEL TELEPOST CAN/CGSB 7.2
TP3	3 -3" DIA. ADJUSTABLE STEEL TELEPOST CAN/CGSB 7.2
TP4	3" SQUARE. x 3/16" STEEL HSS POST

WOOD LINTEL SCHEDULE

TAG	DESCRIPTION
L1	2 -2"x10"
L2	3 -2"x10"
L3	3 -2"x8"
L4	2 -1 3/4"x11 7/8" LVL, 1.8E
L5	3 -1 3/4"x11 7/8" LVL, 1.8E

NOTE: INSTALL TYPICAL L1 ABOVE ALL WINDOWS UNLESS OTHERWISE NOTED

PAD FOOTING SCHEDULE

TAG	DESCRIPTION
F1	36"x36" x8" CONCRETE PAD W/ 4-15M REBARS EACH WAY
F2	36"x48" x8" CONCRETE PAD W/ 5-15M REBARS SHORT WAY W/ 4-15M REBARS LONG WAY
F3	48"x48" x8" CONCRETE PAD W/ 5-15M REBARS EACH WAY
F4	60"x36" x8" CONCRETE PAD W/ 6-15M REBARS SHORT WAY W/ 4-15M REBARS LONG WAY
F5	24"x24" x8" CONCRETE PAD W/ 3-15M REBARS EACH WAY

STEEL BRICK LINTEL SCHEDULE

TAG	DESCRIPTION
BL1	4" x 3-1/2" x 5/16"
BL2	5" x 3-1/2" x 5/16"
BL3	4" x 3-1/2" x 3/8"
BL4	5" x 3-1/2" x 3/8"
BL5	6" x 4" x 3/8"

NOTE:

- PROVIDE MINIMUM 5 7/8" END BEARING FOR STEEL LINTELS
- INSTALL TYPICAL 3½"x 3½"x ¼" STEEL ANGLE TO SUPPORT MASONRY VENEER OVER ALL OPENINGS UNLESS OTHERWISE NOTED.

DRAWING NOTES:

- PLANS AND SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE. E.&O.E.
- ALL MEASUREMENTS ARE APPROXIMATE. ACTUAL USABLE FLOOR SPACE MAY VARY FROM STATED FLOOR AREA.

GENERAL NOTES:

- THE CONTRACTOR MUST OBTAIN A CONSTRUCTION PERMIT BEFORE STARTING ANY WORK.
- TRADES ARE RESPONSIBLE FOR VERIFYING ALL DIMENSIONS AND REPORT ALL DISCREPANCIES TO THE GENERAL CONTRACTOR.
- DO NOT SCALE DRAWINGS.
- ALL WORK SHALL COMPLY TO THE LOCAL AND THE ONTARIO BUILDING CODE.
- ALL DIMENSIONS ARE FROM FACE OF WOOD STUDS
- ALL CONCRETE (EXCEPT GARAGE SLAB AND PORCH SLAB) IS TO HAVE A MINIMUM COMPRESSIVE STRENGTH OF 2900 PSI (20 MPA) AFTER 28 DAYS. GARAGE AND PORCH SLABS TO HAVE A MINIMUM COMPRESSIVE STRENGTH OF 4650 PSI (32 MPA) COMPLETE WITH 5% - 8% AIR ENTRAINMENT.
- ROOF TRUSSES SHALL BE PRE-ENGINEERED AND PREFABRICATED TO SUPPORT 1.74 KPA (36 PSF) SNOW LOAD AND APPROPRIATE DEAD LOAD.
- ALL GUARDS ARE TO BE CONSTRUCTED IN ACCORDANCE WITH 9.8.8, SB-7, 900mm (2'-11") IF LESS THAN 1800mm (5' -11") ABOVE THE ADJACENT GRADE OR 1070mm (3' -6") FOR ALL OTHERS.
- SMOKE AND CO ALARMS ARE TO BE INSTALLED AS PER OBC 9.10.19.3 & 9.33.4.2. SMOKES ARE TO BE INTERCONNECTED AS PER OBC 9.10.19.5.

TYPICAL INTERIOR PARTITION WALL ASSEMBLY:

- 1/2" GYPSUM BOARD SHEATHING
- 2"x4" WOOD STUD WALL AT 16" O.C.
- 1/2" GYPSUM BOARD SHEATHING

GARAGE NOTES:

- DOOR TO HOUSE TO BE INSULATED METAL c/w SELF CLOSER, POSITIVE LATCHING & WEATHERSTRIPED
- WALLS BETWEEN GARAGE & DWELLING SPACE TO HAVE FIRE RETARDANT GYPSUM BOARD c/w TAPED JOINTS AND PERIMETER CAULKING FOR A TIGHT AIR AND GAS FUME SEAL
- 4" POURED CONCRETE FLOOR @32 Mpa w/ 5% AIR ENTRAPMENT ON 6" SAND FILL ON UNDISTURBED SOIL. SLOPE FLOOR 2% TO O.H. DOOR.
- STEEL BEAM & ANGLES TO BE PRIME PAINTED

MAIN BATHROOM:

REINFORCE WALLS ADJACENT TO TOILET AND TUB FOR FUTURE INSTALLATION OF GRAB BARS AS PER OBC 9.5.2.3.

STAIR SPECIFICATIONS:

- INTERIOR STEPS SHALL CONFORM TO O.B.C. 9.8
- MAX RISE = 7 7/8"
- MIN. RUN = 8 1/2"
- MIN. TREAD = 9 1/4"
- RAIL AT 34" FROM VERTICAL LINE OF STAIRS
- GUARDS @ 36" HEIGHT OF LANDING
- MIN. 6'-5" HEADROOM

BASEMENT NOTES:

- MIN. SOIL BEARING CAPACITY TO BE 75 KPa TO BE CONFIRMED ON SITE

FLOOR:

- 3" POURED CONC. 20MPa ON
- 0.15mm POLY. V.B. ON
- 8" CRUSHED STONE FILL ON UNDISTURBED SOIL

FOUNDATION WALLS:

- CEMENT PARGING ABOVE GRADE
- DRAINAGE LAYER & DAMPROOFING BELOW GRADE
- CONCRETE FOUNDATION WALL TOP & BOTTOM REINF.
- TYVEK TO BE INSTALLED ON FOUNDATION WALL (FULL HEIGHT) WITH WRITING FACING CONCRETE
- 2"x4" WOOD STUDS @ 24" O/C.
- R-20 BATT INSULATION TO 6" OFF FLOOR SLAB
- 0.15mm POLY. V.B. (6 mil), (STAPLE ONLY)

MASONRY VENEER WALLS:

- TIES ARE TO HAVE A MAXIMUM VERTICAL SPACING OF 500mm (19 3/4") AND A MAXIMUM HORIZONTAL SPACING OF 600mm (23 5/8")
- THRU-WALL FLASHINGS ARE TO BE AT THE BASE OF ALL WALLS.
- WEEP HOLES AT A MAXIMUM SPACING OF 800mm (2'-7") APART AND AT THE BOTTOM OF EVERY CAVITY.

ENERGY STAR PACKAGE
VERSION #12.6

METRIC HOMES
www.metrichomes.com

Drawing Title: SECTION, NOTES & SCHEDULES

Client: METRIC HOMES

Model & Elev: TERRY FOX SALES OFFICE

Lot# & Project:: Lot --, Plan ---- Abbott Street, Kanata, ON

Rev#	Revisions	Date
4	ISSUED FOR REVIEW #4	06-Apr-2017
3	ISSUED FOR REVIEW #3	05-Apr-2017
2	ISSUED FOR REVIEW #2	31-Mar-2017
1	ISSUED FOR REVIEW	29-Mar-2017

File#: METRIC HOMES

Drawn by:

Date: MARCH 2017

Scale: 1/8" = 1'-0"

Dwg# A6

APPENDIX B:

EXCERPTS FROM THE CITY OF OTTAWA ENVIRONMENTAL NOISE CONTROL GUIDELINES; THE MOE'S NPC-300; THE CITY OF OTTAWA'S OFFICIAL PLAN

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."

Appendix A: Warning Clauses

Under the Official Plan and this guideline warning clauses may be required to be incorporated into development through development agreements, registration on title and inclusion in Agreements of Purchase and Sale. This requirement may be included in any development, regardless of whether it is considered a noise sensitive land use.

A warning clause provides recognition for the City, Province landowner or tenants that noise may be a concern, that noise may be audible at times or even quite loud, and, depending on the type of development, provincial guidelines for noise may be exceeded. Warning clauses also recognize that environmental noise is a potential health hazard that does impact people and neighbourhoods. It is for this reason that, unless a non-noise sensitive land use is established, a warning clause should also include noise mitigation.

A warning clause is not considered a form of noise mitigation. It is not acceptable therefore to use warning clauses in place of physical noise control measures to identify an excess over the MOE or City noise limits. The reason for a warning clause on all development is twofold. Firstly, it is important to note that a land use that although the development may not be considered noise sensitive it may include employees or tenants that are personally sensitive to noise. A warning clause provides protection against complaints to the ministry of Environment should provincial guidelines be exceeded. Secondly, a warning clause on title could obviate the need for a new noise study in the future. In a redevelopment scenario the warning clause would provide recognition of the extent noise conditions.

Given the variation in potential intensity and impact of noise it will often be necessary to amend warning clauses to recognize the site specific conditions in each development. Final wording of any warning clause is to be approved by the City.

The following subsections provide example text to be adapted into warning clauses.

Surface Transportation Warning Clauses

Table A1 Surface Transportation Warning Clauses

Type	Example	Notes
Generic	*Purchasers/tenants are advised that sound levels due to increasing road/rail/Light Rail/transitway traffic may occasionally interfere with some outdoor activities as the sound levels may exceed the sound level limits of the City and the Ministry of the Environment.* *To help address the need for sound attenuation this development has been designed so as to provide an outdoor amenity area that is within provincial guidelines. Measures for sound attenuation include:* • *A setback of buildings from the noise source and* • *An acoustic barrier.* *To ensure that provincial sound level limits are not exceeded it is important to maintain sound attenuation features.* *The acoustic barrier shall be maintained and kept in good repair by the property owner. Any maintenance, repair or replacement is the responsibility of the owner and shall be with the same material or to the same standards, having the same colour, appearance and function of the original.* *Additionally this development includes trees and shrubs to screen the source of noise from occupants.*	The generic warning clause outlines that MOE sound levels may be exceeded but the indoor environment and outdoor amenity areas are within guidelines. Mitigation measures are described including urban design features. Mention is also made of landscaping to screen the development visually from the source of noise.
Extensive mitigation of indoor and	*"Purchasers/tenants are advised that despite the inclusion of noise control features in the development and within the building units,*	The warning clause makes reference to MOE sound levels

Table A1 Surface Transportation Warning Clauses

Type	Example	Notes
outdoor amenity area	*sound levels due to increasing road/rail/Light Rail/transitway traffic may, on occasion, interfere with some activities of the dwelling occupants as the sound levels exceed the sound level limits of the City and the Ministry of the Environment.* *To help address the need for sound attenuation this development includes:* • *multi-pane glass;* • *double brick veneer;* • *an earth berm; and* • *an acoustic barrier.* *To ensure that provincial sound level limits are not exceeded it is important to maintain these sound attenuation features.* *The acoustic barrier shall be maintained and kept in good repair by the property owner. Any maintenance, repair or replacement is the responsibility of the owner and shall be with the same material or to the same standards, having the same colour, appearance and function of the original.* *This dwelling unit has also been designed with the provision for adding central air conditioning at the occupant's discretion. Installation of central air conditioning will allow windows and exterior doors to remain closed, thereby ensuring that the indoor sound levels are within the sound level limits of the City and the Ministry of the Environment.*	being exceeded from time to time and that there are sound attenuation features and landscaping within the development that should be maintained. An option for air conditioning is noted as well as landscaping to screen the source of noise.

Table A1 Surface Transportation Warning Clauses

Type	Example	Notes
	Additionally this development includes trees and shrubs to screen the source of noise from occupants.	
No outdoor amenity area	*Purchasers/tenants are advised that sound levels due to increasing road/rail/Light Rail/transitway traffic will interfere with outdoor activities as the sound levels exceed the sound level limits of the City and the Ministry of the Environment.* *To help address the need for sound attenuation this development includes:* • *multi-pane glass;* • *double brick veneer;* • *high sound transmission class walls.* *To ensure that provincial sound level limits are not exceeded it is important to maintain these sound attenuation features.* *This dwelling unit has been supplied with a central air conditioning system and other measures 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 City and the Ministry of the Environment*	This warning clause notes that only an indoor environment is being provided for.

Stationary Source Warning Clauses

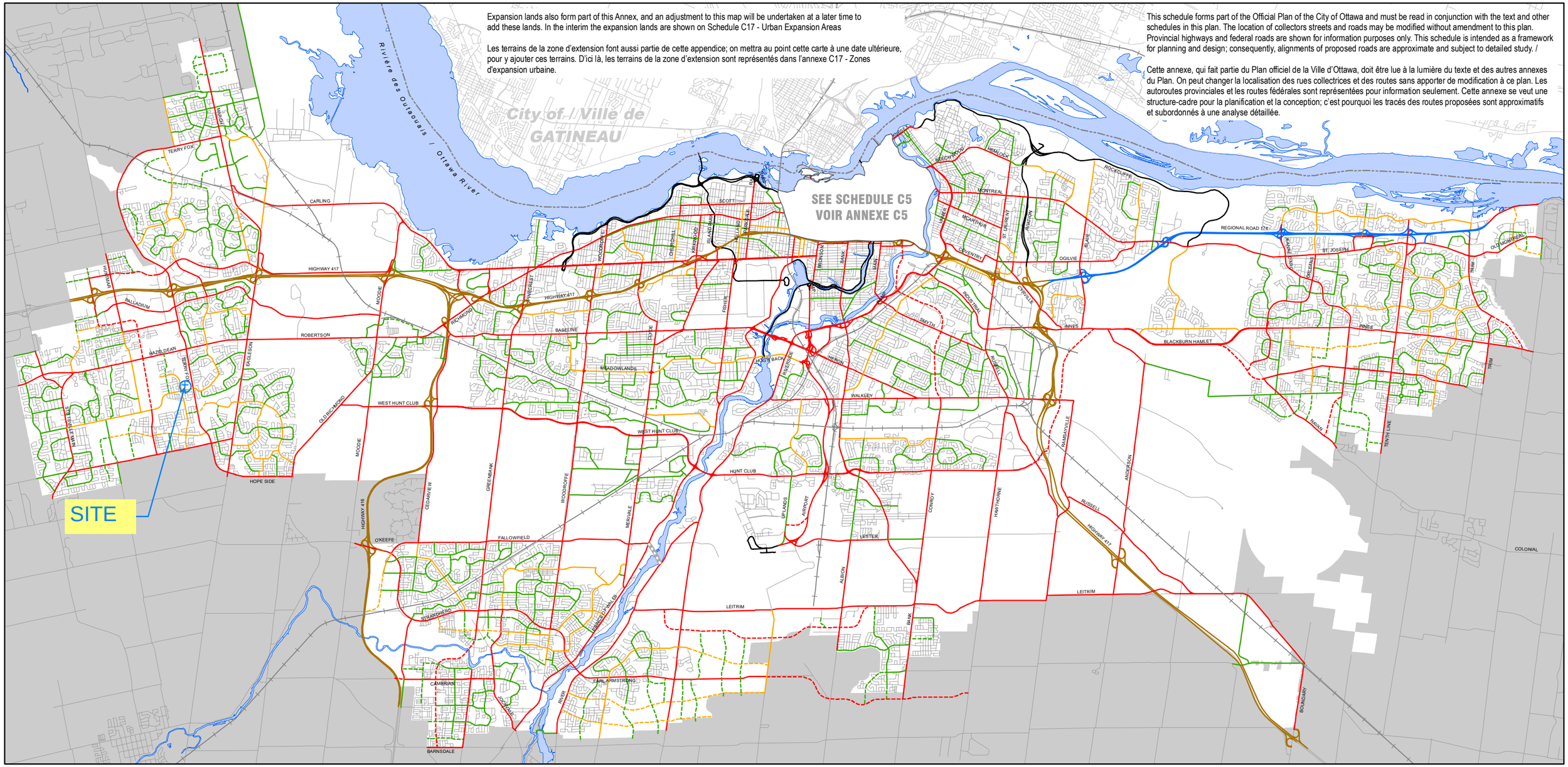
The Province notes that it is not acceptable to use warning clauses in place of physical noise control measures to identify an excess over the MOE sound level limits for stationary sources. The generic warning clause for stationary sources (called Type E in NPC-300) may identify a potential concern due to the proximity of the facility but it is not possible to justify exceeding the sound level limits.
The wording of the generic stationary noise warning clause may also be used as the basis for new development adjacent to areas licensed for mineral aggregate extraction.

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

Arterial - Future (alignment defined) — Artère - Future (alignement déterminée)

Major Collector - Existing — Grande collectrice - Établie

Major Collector - Future — Grande collectrice - Future

Collector - Existing — Collectrice - Établie

Collector - Future — Collectrice - Future

River Crossing (corridor undefined) — Traversée de rivière (couloir non défini)

Provincial Highway — Route provinciale

Federally Owned Road — Chemins de propriété fédéral

City Freeway — Autoroute municipale

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

APPENDIX C

Acoustic Insulation Factor Tables

R1- (Building 1D Third Floor) 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

25

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- (Building 1D Third Floor) 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+5= 25+1 = 30dBa

R1- (Building 1D Third Floor) 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					
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- (Building 1D Third Floor) 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= 25+1 = 26dBa

APPENDIX D

Sound Level Calculations

STAMSON 5.0 SUMMARY REPORT Date: 19-02-2025 14:40:35
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: ola1.te Time Period: Day/Night 16/8 hours
Description: Outdoor Amenity Area - OLA1

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

Car traffic volume : 9715/845 veh/TimePeriod *
Medium truck volume : 773/67 veh/TimePeriod *
Heavy truck volume : 552/48 veh/TimePeriod *
Posted speed limit : 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): 12000
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

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

Angle1 Angle2 : -79.00 deg 78.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 48.00 / 48.00 m
Receiver height : 1.50 / 1.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -18.00 deg Angle2 : 78.00 deg
Barrier height : 10.50 m
Barrier receiver distance : 10.00 / 10.00 m
Source elevation : 97.50 m
Receiver elevation : 97.80 m
Barrier elevation : 99.40 m
Reference angle : 0.00

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

Car traffic volume : 9715/845 veh/TimePeriod *
Medium truck volume : 773/67 veh/TimePeriod *
Heavy truck volume : 552/48 veh/TimePeriod *
Posted speed limit : 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):  12000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 2: Abbott (day/night)
----------------------------------------
Angle1   Angle2           :  78.00 deg   85.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      1 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  48.00 / 48.00  m
Receiver height           :   1.50 / 1.50   m
Topography                :      2       (Flat/gentle slope; with barrier)
Barrier angle1            :  81.00 deg   Angle2 : 85.00 deg
Barrier height            :   6.00 m
Barrier receiver distance :   3.00 / 3.00   m
Source elevation          :  97.50 m
Receiver elevation        :  97.80 m
Barrier elevation         :  99.13 m
Reference angle           :   0.00

♠
Road data, segment # 3: Cranesbill (day/night)
----------------------------------------------
Car traffic volume  :  9715/845   veh/TimePeriod  *
Medium truck volume :   773/67    veh/TimePeriod  *
Heavy truck volume  :   552/48    veh/TimePeriod  *
Posted speed limit  :    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):  12000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 3: Cranesbill (day/night)
--------------------------------------------
Angle1   Angle2           : -90.00 deg   -9.00 deg
```

```
Wood depth                :      0       (No woods.)
No of house rows          :      2 / 2
House density             :     20 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 137.00 / 137.00 m
Receiver height           :   1.50 / 1.50   m
Topography                :      2       (Flat/gentle slope; with barrier)
Barrier angle1            : -90.00 deg   Angle2 : -13.00 deg
Barrier height            :  10.50 m
Barrier receiver distance :   3.00 / 3.00   m
Source elevation          :  98.50 m
Receiver elevation        :  97.80 m
Barrier elevation         :  99.40 m
Reference angle           :   0.00
```

↟

```
Road data, segment # 4: Cranesbill (day/night)
-----------------------------------------------
Car traffic volume  :  9715/845   veh/TimePeriod  *
Medium truck volume :   773/67    veh/TimePeriod  *
Heavy truck volume  :   552/48    veh/TimePeriod  *
Posted speed limit  :    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):  12000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 4: Cranesbill (day/night)
-----------------------------------------------
Angle1   Angle2           :  -9.00 deg   16.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 137.00 / 137.00 m
Receiver height           :   1.50 / 1.50   m
Topography                :      2       (Flat/gentle slope; with barrier)
Barrier angle1            :  -9.00 deg   Angle2 : 16.00 deg
Barrier height            :   6.00 m
Barrier receiver distance : 105.00 / 105.00 m
Source elevation          :  98.50 m
Receiver elevation        :  97.80 m
Barrier elevation         :  99.08 m
Reference angle           :   0.00
```

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

Car traffic volume	9715/845	veh/TimePeriod *
Medium truck volume	773/67	veh/TimePeriod *
Heavy truck volume	552/48	veh/TimePeriod *
Posted speed limit	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)	12000
Percentage of Annual Growth	0.00
Number of Years of Growth	0.00
Medium Truck % of Total Volume	7.00
Heavy Truck % of Total Volume	5.00
Day (16 hrs) % of Total Volume	92.00

Data for Segment # 5: Cranesbill (day/night)

Angle1 Angle2	16.00 deg	65.00 deg
Wood depth	0	(No woods.)
No of house rows	1 / 1	
House density	20 %	
Surface	1	(Absorptive ground surface)
Receiver source distance	137.00 / 137.00 m	
Receiver height	1.50 / 1.50 m	
Topography	2	(Flat/gentle slope; with barrier)
Barrier angle1	16.00 deg	Angle2 : 65.00 deg
Barrier height	10.50 m	
Barrier receiver distance	3.00 / 3.00 m	
Source elevation	98.50 m	
Receiver elevation	97.80 m	
Barrier elevation	99.40 m	
Reference angle	0.00	

Result summary (day)
---

	source height (m)	Road Leq (dBA)	Total Leq (dBA)
1.Abbott	1.50	53.23	53.23
2.Abbott	1.50	36.16	36.16
3.Cranesbill	1.50	37.24	37.24
4.Cranesbill	1.50	31.35	31.35

5.Cranesbill	1.50	31.92	31.92
	Total		53.48 dBA

↟

Result summary (night)

	source height (m)	Road Leq (dBA)	Total Leq (dBA)
1.Abbott	1.50	45.63	45.63
2.Abbott	1.50	29.35	29.35
3.Cranesbill	1.50	29.64	29.64
4.Cranesbill	1.50	23.75	23.75
5.Cranesbill	1.50	24.32	24.32
	Total		45.89 dBA

↟

TOTAL Leq FROM ALL SOURCES (DAY): 53.48
(NIGHT): 45.89

↟
↟

STAMSON 5.0 SUMMARY REPORT Date: 31-03-2025 09:21:48
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: r11.te Time Period: Day/Night 16/8 hours
Description: R1 - First Floor

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

Car traffic volume : 9715/845 veh/TimePeriod *
Medium truck volume : 773/67 veh/TimePeriod *
Heavy truck volume : 552/48 veh/TimePeriod *
Posted speed limit : 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): 12000
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

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

Angle1 Angle2 : -83.00 deg 87.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 19.00 / 19.00 m
Receiver height : 1.50 / 1.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

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

Car traffic volume : 9715/845 veh/TimePeriod *
Medium truck volume : 773/67 veh/TimePeriod *
Heavy truck volume : 552/48 veh/TimePeriod *
Posted speed limit : 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): 12000
Percentage of Annual Growth : 0.00

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

Data for Segment # 2: Cranesbill (day/night)
--------------------------------------------
Angle1   Angle2           : -90.00 deg   -4.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      1 / 1
House density             :     20 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  90.00 / 90.00  m
Receiver height           :   1.50 / 1.50   m
Topography                :      2       (Flat/gentle slope; with barrier)
Barrier angle1            : -90.00 deg   Angle2 : -35.00 deg
Barrier height            :   6.00 m
Barrier receiver distance :   3.00 / 3.00   m
Source elevation          :  98.50 m
Receiver elevation        :  99.73 m
Barrier elevation         :  99.40 m
Reference angle           :   0.00

♠
Road data, segment # 3: Cranesbill (day/night)
----------------------------------------------
Car traffic volume  :  9715/845   veh/TimePeriod  *
Medium truck volume :   773/67    veh/TimePeriod  *
Heavy truck volume  :   552/48    veh/TimePeriod  *
Posted speed limit  :    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):  12000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 3: Cranesbill (day/night)
--------------------------------------------
Angle1   Angle2           :  -4.00 deg   10.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  90.00 / 90.00  m
Receiver height           :   1.50 / 1.50   m
```

```
Topography                :      2       (Flat/gentle slope; with barrier)
Barrier angle1            :  -4.00 deg   Angle2 : 10.00 deg
Barrier height            :   4.00 m
Barrier receiver distance :  23.00 / 23.00  m
Source elevation          :  98.50 m
Receiver elevation        :  99.73 m
Barrier elevation         :  99.20 m
Reference angle           :   0.00
```

↟

```
Road data, segment # 4: Cranesbill (day/night)
-----------------------------------------------
Car traffic volume  :  9715/845   veh/TimePeriod  *
Medium truck volume :   773/67    veh/TimePeriod  *
Heavy truck volume  :   552/48    veh/TimePeriod  *
Posted speed limit  :    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):  12000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 4: Cranesbill (day/night)
-----------------------------------------------
Angle1   Angle2           :  10.00 deg   52.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  90.00 / 90.00  m
Receiver height           :   1.50 / 1.50   m
Topography                :      2       (Flat/gentle slope; with barrier)
Barrier angle1            :  10.00 deg   Angle2 : 52.00 deg
Barrier height            :   6.00 m
Barrier receiver distance :  57.00 / 57.00  m
Source elevation          :  98.50 m
Receiver elevation        :  99.73 m
Barrier elevation         :  99.08 m
Reference angle           :   0.00
```

↟

```
Road data, segment # 5: Cranesbill (day/night)
-----------------------------------------------
Car traffic volume  :  9715/845   veh/TimePeriod  *
Medium truck volume :   773/67    veh/TimePeriod  *
```

```
Heavy truck volume  :   552/48    veh/TimePeriod  *
Posted speed limit  :    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):  12000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 5: Cranesbill (day/night)
--------------------------------------------
Angle1   Angle2           :  52.00 deg   74.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      1 / 1
House density             :     20 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  90.00 / 90.00  m
Receiver height           :   1.50 / 1.50   m
Topography                :      2       (Flat/gentle slope; with barrier)
Barrier angle1            :  52.00 deg   Angle2 : 74.00 deg
Barrier height            :  10.50 m
Barrier receiver distance :   3.00 / 3.00   m
Source elevation          :  98.50 m
Receiver elevation        :  99.73 m
Barrier elevation         :  99.55 m
Reference angle           :   0.00

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

                    !  source  !   Road   !  Total
                    !  height  !   Leq    !   Leq
                    !   (m)    !  (dBA)   !  (dBA)
--------------------+----------+----------+----------
 1.Abbott           !     1.50 !    64.31 !    64.31
 2.Cranesbill       !     1.50 !    46.29 !    46.29
 3.Cranesbill       !     1.50 !    35.30 !    35.30
 4.Cranesbill       !     1.50 !    36.90 !    36.90
 5.Cranesbill       !     1.50 !    30.26 !    30.26
--------------------+----------+----------+----------
                      Total                  64.39 dBA

Result summary (night)
```

---

	source height (m)	Road Leq (dBA)	Total Leq (dBA)
1.Abbott	1.50	56.71	56.71
2.Cranesbill	1.50	38.69	38.69
3.Cranesbill	1.50	27.70	27.70
4.Cranesbill	1.50	29.30	29.30
5.Cranesbill	1.50	22.66	22.66
Total			56.79 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 64.39
(NIGHT): 56.79

STAMSON 5.0 SUMMARY REPORT Date: 07-03-2025 14:38:06
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: r12.te Time Period: Day/Night 16/8 hours
Description: R1 - Second Floor

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

Car traffic volume : 9715/845 veh/TimePeriod *
Medium truck volume : 773/67 veh/TimePeriod *
Heavy truck volume : 552/48 veh/TimePeriod *
Posted speed limit : 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): 12000
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

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

Angle1 Angle2 : -83.00 deg 87.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 19.00 / 19.00 m
Receiver height : 4.90 / 4.90 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

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

Car traffic volume : 9715/845 veh/TimePeriod *
Medium truck volume : 773/67 veh/TimePeriod *
Heavy truck volume : 552/48 veh/TimePeriod *
Posted speed limit : 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): 12000
Percentage of Annual Growth : 0.00

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

Data for Segment # 2: Cranesbill (day/night)
--------------------------------------------
Angle1   Angle2           : -90.00 deg   10.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      1 / 1
House density             :     20 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  90.00 / 90.00  m
Receiver height           :   4.90 / 4.90   m
Topography                :      2       (Flat/gentle slope; with barrier)
Barrier angle1            : -90.00 deg   Angle2 : -35.00 deg
Barrier height            :   6.00 m
Barrier receiver distance :   3.00 / 3.00   m
Source elevation          :  98.50 m
Receiver elevation        :  99.40 m
Barrier elevation         :  99.40 m
Reference angle           :   0.00

♠
Road data, segment # 3: Cranesbill (day/night)
----------------------------------------------
Car traffic volume  :  9715/845   veh/TimePeriod  *
Medium truck volume :   773/67    veh/TimePeriod  *
Heavy truck volume  :   552/48    veh/TimePeriod  *
Posted speed limit  :    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):  12000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 3: Cranesbill (day/night)
--------------------------------------------
Angle1   Angle2           :  10.00 deg   52.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  90.00 / 90.00  m
Receiver height           :   4.90 / 4.90   m
```

```
Topography                :      2       (Flat/gentle slope; with barrier)
Barrier angle1            :  10.00 deg   Angle2 : 52.00 deg
Barrier height            :   6.00 m
Barrier receiver distance :  57.00 / 57.00  m
Source elevation          :  98.50 m
Receiver elevation        :  99.40 m
Barrier elevation         :  99.08 m
Reference angle           :   0.00
```

↟

```
Road data, segment # 4: Cranesbill (day/night)
-----------------------------------------------
Car traffic volume  :  9715/845   veh/TimePeriod  *
Medium truck volume :   773/67    veh/TimePeriod  *
Heavy truck volume  :   552/48    veh/TimePeriod  *
Posted speed limit  :    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):  12000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 4: Cranesbill (day/night)
---------------------------------------------
Angle1   Angle2           :  52.00 deg   74.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      1 / 1
House density             :     20 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  90.00 / 90.00  m
Receiver height           :   4.90 / 4.90   m
Topography                :      2       (Flat/gentle slope; with barrier)
Barrier angle1            :  52.00 deg   Angle2 : 74.00 deg
Barrier height            :  10.50 m
Barrier receiver distance :   3.00 / 3.00   m
Source elevation          :  98.50 m
Receiver elevation        :  99.40 m
Barrier elevation         :  99.40 m
Reference angle           :   0.00
```

↟

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

	source height (m)	Road Leq (dBA)	Total Leq (dBA)
1.Abbott	1.50	64.57	64.57
2.Cranesbill	1.50	49.60	49.60
3.Cranesbill	1.50	40.00	40.00
4.Cranesbill	1.50	31.14	31.14
Total			64.72 dBA

Result summary (night)

	source height (m)	Road Leq (dBA)	Total Leq (dBA)
1.Abbott	1.50	56.97	56.97
2.Cranesbill	1.50	42.00	42.00
3.Cranesbill	1.50	32.40	32.40
4.Cranesbill	1.50	23.54	23.54
Total			57.12 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 64.72
(NIGHT): 57.12

STAMSON 5.0 SUMMARY REPORT Date: 22-05-2025 11:30:40
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: r1.te Time Period: Day/Night 16/8 hours
Description: R1 - Third Floor

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

Car traffic volume : 9715/845 veh/TimePeriod *
Medium truck volume : 773/67 veh/TimePeriod *
Heavy truck volume : 552/48 veh/TimePeriod *
Posted speed limit : 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): 12000
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

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

Angle1 Angle2 : -83.00 deg 87.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 19.00 / 19.00 m
Receiver height : 8.30 / 8.30 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

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

Car traffic volume : 9715/845 veh/TimePeriod *
Medium truck volume : 773/67 veh/TimePeriod *
Heavy truck volume : 552/48 veh/TimePeriod *
Posted speed limit : 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): 12000
Percentage of Annual Growth : 0.00

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

Data for Segment # 2: Cranesbill (day/night)
--------------------------------------------
Angle1   Angle2           : -90.00 deg   -4.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      1 / 1
House density             :     20 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  90.00 / 90.00  m
Receiver height           :   8.30 / 8.30   m
Topography                :      2       (Flat/gentle slope; with barrier)
Barrier angle1            : -90.00 deg   Angle2 : -35.00 deg
Barrier height            :   6.00 m
Barrier receiver distance :   3.00 / 3.00   m
Source elevation          :  98.50 m
Receiver elevation        :  96.94 m
Barrier elevation         :  99.40 m
Reference angle           :   0.00

♠
Road data, segment # 3: Cranesbill (day/night)
----------------------------------------------
Car traffic volume  :  9715/845   veh/TimePeriod  *
Medium truck volume :   773/67    veh/TimePeriod  *
Heavy truck volume  :   552/48    veh/TimePeriod  *
Posted speed limit  :    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):  12000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 3: Cranesbill (day/night)
--------------------------------------------
Angle1   Angle2           :  -4.00 deg   10.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  90.00 / 90.00  m
Receiver height           :   8.30 / 8.30   m
```

```
Topography                :      2       (Flat/gentle slope; with barrier)
Barrier angle1            :  -4.00 deg   Angle2 : 10.00 deg
Barrier height            :   4.00 m
Barrier receiver distance :  23.00 / 23.00  m
Source elevation          :  98.50 m
Receiver elevation        :  96.94 m
Barrier elevation         :  99.20 m
Reference angle           :   0.00
```

↟

```
Road data, segment # 4: Cranesbill (day/night)
-----------------------------------------------
Car traffic volume  :  9715/845   veh/TimePeriod  *
Medium truck volume :   773/67    veh/TimePeriod  *
Heavy truck volume  :   552/48    veh/TimePeriod  *
Posted speed limit  :    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):  12000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 4: Cranesbill (day/night)
-----------------------------------------------
Angle1   Angle2           :  10.00 deg   52.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  90.00 / 90.00  m
Receiver height           :   8.30 / 8.30   m
Topography                :      2       (Flat/gentle slope; with barrier)
Barrier angle1            :  10.00 deg   Angle2 : 52.00 deg
Barrier height            :   6.00 m
Barrier receiver distance :  57.00 / 57.00  m
Source elevation          :  98.50 m
Receiver elevation        :  96.94 m
Barrier elevation         :  99.08 m
Reference angle           :   0.00
```

↟

```
Road data, segment # 5: Cranesbill (day/night)
-----------------------------------------------
Car traffic volume  :  9715/845   veh/TimePeriod  *
Medium truck volume :   773/67    veh/TimePeriod  *
```

```
Heavy truck volume  :   552/48    veh/TimePeriod  *
Posted speed limit  :    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):  12000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 5: Cranesbill (day/night)
--------------------------------------------
Angle1   Angle2           :  52.00 deg   74.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      1 / 1
House density             :     20 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  90.00 / 90.00  m
Receiver height           :   8.30 / 8.30   m
Topography                :      2       (Flat/gentle slope; with barrier)
Barrier angle1            :  52.00 deg   Angle2 : 74.00 deg
Barrier height            :  10.50 m
Barrier receiver distance :   3.00 / 3.00   m
Source elevation          :  98.50 m
Receiver elevation        :  96.94 m
Barrier elevation         :  99.55 m
Reference angle           :   0.00

↟
Result summary (day)
--------------------

                    !  source  !   Road   !  Total
                    !  height  !   Leq    !   Leq
                    !   (m)    !  (dBA)   !  (dBA)
--------------------+----------+----------+----------
 1.Abbott           !     1.50 !    64.85 !    64.85
 2.Cranesbill       !     1.50 !    50.75 !    50.75
 3.Cranesbill       !     1.50 !    45.08 !    45.08 *
 4.Cranesbill       !     1.50 !    41.64 !    41.64
 5.Cranesbill       !     1.50 !    31.78 !    31.78
--------------------+----------+----------+----------
                      Total                   65.08 dBA

↟
Result summary (night)
```

---

	source height (m)	Road Leq (dBA)	Total Leq (dBA)	
1.Abbott	1.50	57.25	57.25	
2.Cranesbill	1.50	43.15	43.15	
3.Cranesbill	1.50	37.48	37.48	*
4.Cranesbill	1.50	34.04	34.04	
5.Cranesbill	1.50	24.18	24.18	
Total			57.48	dBA

TOTAL Leq FROM ALL SOURCES (DAY): 65.08
(NIGHT): 57.48

STAMSON 5.0 SUMMARY REPORT Date: 07-03-2025 13:41:55
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: r21.te Time Period: Day/Night 16/8 hours
Description: R2 - First Floor

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

Car traffic volume : 9715/845 veh/TimePeriod *
Medium truck volume : 773/67 veh/TimePeriod *
Heavy truck volume : 552/48 veh/TimePeriod *
Posted speed limit : 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): 12000
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

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

Angle1 Angle2 : -83.00 deg 87.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 19.00 / 19.00 m
Receiver height : 1.50 / 1.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

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

Car traffic volume : 9715/845 veh/TimePeriod *
Medium truck volume : 773/67 veh/TimePeriod *
Heavy truck volume : 552/48 veh/TimePeriod *
Posted speed limit : 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): 12000
Percentage of Annual Growth : 0.00

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

Data for Segment # 2: Cranesbill (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                   :      1       (Absorptive ground surface)
Receiver source distance  : 110.00 / 110.00 m
Receiver height           :   1.50 / 1.50   m
Topography                :      2       (Flat/gentle slope; with barrier)
Barrier angle1            : -90.00 deg   Angle2 : -29.00 deg
Barrier height            :   6.00 m
Barrier receiver distance :   3.00 / 3.00   m
Source elevation          :  98.50 m
Receiver elevation        :  99.40 m
Barrier elevation         :  99.40 m
Reference angle           :   0.00
```

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

                    !  source  !   Road   !  Total
                    !  height  !   Leq    !   Leq
                    !   (m)    !  (dBA)   !  (dBA)
--------------------+----------+----------+----------
 1.Abbott           !     1.50 !    64.31 !    64.31
 2.Cranesbill       !     1.50 !    44.54 !    44.54
--------------------+----------+----------+----------
                      Total                   64.36 dBA
```

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

                    !  source  !   Road   !  Total
                    !  height  !   Leq    !   Leq
                    !   (m)    !  (dBA)   !  (dBA)
--------------------+----------+----------+----------
 1.Abbott           !     1.50 !    56.71 !    56.71
 2.Cranesbill       !     1.50 !    36.94 !    36.94
--------------------+----------+----------+----------
                      Total                   56.76 dBA
```

TOTAL Leq FROM ALL SOURCES (DAY): 64.36
(NIGHT): 56.76

STAMSON 5.0 SUMMARY REPORT Date: 22-05-2025 12:25:19
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: r2.te Time Period: Day/Night 16/8 hours
Description: R2 - Third Floor

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

Car traffic volume : 9715/845 veh/TimePeriod *
Medium truck volume : 773/67 veh/TimePeriod *
Heavy truck volume : 552/48 veh/TimePeriod *
Posted speed limit : 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): 12000
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

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

Angle1 Angle2 : -83.00 deg 87.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 19.00 / 19.00 m
Receiver height : 8.30 / 8.30 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

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

Car traffic volume : 9715/845 veh/TimePeriod *
Medium truck volume : 773/67 veh/TimePeriod *
Heavy truck volume : 552/48 veh/TimePeriod *
Posted speed limit : 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): 12000
Percentage of Annual Growth : 0.00

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

Data for Segment # 2: Cranesbill (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                   :      1       (Absorptive ground surface)
Receiver source distance  : 110.00 / 110.00 m
Receiver height           :   8.30 / 8.30   m
Topography                :      2       (Flat/gentle slope; with barrier)
Barrier angle1            : -90.00 deg   Angle2 : -29.00 deg
Barrier height            :   6.00 m
Barrier receiver distance :   3.00 / 3.00   m
Source elevation          :  98.50 m
Receiver elevation        :  96.94 m
Barrier elevation         :  99.40 m
Reference angle           :   0.00
```

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

                    !  source  !   Road   !  Total
                    !  height  !   Leq    !   Leq
                    !   (m)    !  (dBA)   !  (dBA)
--------------------+----------+----------+----------
 1.Abbott           !     1.50 !    64.85 !    64.85
 2.Cranesbill       !     1.50 !    49.79 !    49.79
--------------------+----------+----------+----------
                      Total                   64.98 dBA
```

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

                    !  source  !   Road   !  Total
                    !  height  !   Leq    !   Leq
                    !   (m)    !  (dBA)   !  (dBA)
--------------------+----------+----------+----------
 1.Abbott           !     1.50 !    57.25 !    57.25
 2.Cranesbill       !     1.50 !    42.19 !    42.19
--------------------+----------+----------+----------
                      Total                   57.38 dBA
```

TOTAL Leq FROM ALL SOURCES (DAY): 64.98
(NIGHT): 57.38

STAMSON 5.0 SUMMARY REPORT Date: 07-03-2025 13:52:03
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: r31.te Time Period: Day/Night 16/8 hours
Description: R3 - First Floor

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

Car traffic volume : 9715/845 veh/TimePeriod *
Medium truck volume : 773/67 veh/TimePeriod *
Heavy truck volume : 552/48 veh/TimePeriod *
Posted speed limit : 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): 12000
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

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

Angle1 Angle2 : -83.00 deg 87.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 19.00 / 19.00 m
Receiver height : 1.50 / 1.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

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

Car traffic volume : 9715/845 veh/TimePeriod *
Medium truck volume : 773/67 veh/TimePeriod *
Heavy truck volume : 552/48 veh/TimePeriod *
Posted speed limit : 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): 12000
Percentage of Annual Growth : 0.00

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

Data for Segment # 2: Cranesbill (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                   :      1       (Absorptive ground surface)
Receiver source distance  : 120.00 / 120.00 m
Receiver height           :   1.50 / 1.50   m
Topography                :      2       (Flat/gentle slope; with barrier)
Barrier angle1            : -90.00 deg   Angle2 : -26.00 deg
Barrier height            :   6.00 m
Barrier receiver distance :   3.00 / 3.00   m
Source elevation          :  98.50 m
Receiver elevation        :  99.40 m
Barrier elevation         :  99.40 m
Reference angle           :   0.00

♠
Road data, segment # 3: Cranesbill (day/night)
-------------------------------------------
Car traffic volume  :  9715/845   veh/TimePeriod  *
Medium truck volume :   773/67    veh/TimePeriod  *
Heavy truck volume  :   552/48    veh/TimePeriod  *
Posted speed limit  :    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):  12000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 3: Cranesbill (day/night)
-------------------------------------------
Angle1   Angle2           :  -1.00 deg   61.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      1 / 1
House density             :     20 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 120.00 / 120.00 m
```

```
Receiver height           :   1.50 / 1.50   m
Topography                :      2       (Flat/gentle slope; with barrier)
Barrier angle1            :  -1.00 deg   Angle2 : 61.00 deg
Barrier height            :  10.50 m
Barrier receiver distance :  10.00 / 10.00  m
Source elevation          :  98.50 m
Receiver elevation        :  99.40 m
Barrier elevation         :  99.40 m
Reference angle           :   0.00
```

↟

```
Road data, segment # 4: Cranesbill (day/night)
-----------------------------------------------
Car traffic volume  :  9715/845   veh/TimePeriod  *
Medium truck volume :   773/67    veh/TimePeriod  *
Heavy truck volume  :   552/48    veh/TimePeriod  *
Posted speed limit  :    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):  12000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 4: Cranesbill (day/night)
---------------------------------------------
Angle1   Angle2           :  61.00 deg   69.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      1 / 1
House density             :     20 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 120.00 / 120.00 m
Receiver height           :   1.50 / 1.50   m
Topography                :      2       (Flat/gentle slope; with barrier)
Barrier angle1            :  61.00 deg   Angle2 : 69.00 deg
Barrier height            :  10.50 m
Barrier receiver distance :  22.00 / 22.00  m
Source elevation          :  98.50 m
Receiver elevation        :  99.40 m
Barrier elevation         :  99.40 m
Reference angle           :   0.00
```

↟

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

	source height (m)	Road Leq (dBA)	Total Leq (dBA)
1.Abbott	1.50	64.31	64.31
2.Cranesbill	1.50	43.54	43.54
3.Cranesbill	1.50	33.55	33.55
4.Cranesbill	1.50	27.17	27.17
Total			64.35 dBA

Result summary (night)

	source height (m)	Road Leq (dBA)	Total Leq (dBA)
1.Abbott	1.50	56.71	56.71
2.Cranesbill	1.50	35.94	35.94
3.Cranesbill	1.50	25.95	25.95
4.Cranesbill	1.50	19.57	19.57
Total			56.75 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 64.35
(NIGHT): 56.75

STAMSON 5.0 SUMMARY REPORT Date: 22-05-2025 12:41:28
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: r3.te Time Period: Day/Night 16/8 hours
Description: R3 - Third Floor

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

Car traffic volume : 9715/845 veh/TimePeriod *
Medium truck volume : 773/67 veh/TimePeriod *
Heavy truck volume : 552/48 veh/TimePeriod *
Posted speed limit : 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): 12000
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

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

Angle1 Angle2 : -83.00 deg 87.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 19.00 / 19.00 m
Receiver height : 8.30 / 8.30 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

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

Car traffic volume : 9715/845 veh/TimePeriod *
Medium truck volume : 773/67 veh/TimePeriod *
Heavy truck volume : 552/48 veh/TimePeriod *
Posted speed limit : 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): 12000
Percentage of Annual Growth : 0.00

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

Data for Segment # 2: Cranesbill (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                   :      1       (Absorptive ground surface)
Receiver source distance  : 120.00 / 120.00 m
Receiver height           :   8.30 / 8.30   m
Topography                :      2       (Flat/gentle slope; with barrier)
Barrier angle1            : -90.00 deg   Angle2 : -26.00 deg
Barrier height            :   6.00 m
Barrier receiver distance :   3.00 / 3.00   m
Source elevation          :  98.50 m
Receiver elevation        :  96.71 m
Barrier elevation         :  99.40 m
Reference angle           :   0.00

♠
Road data, segment # 3: Cranesbill (day/night)
----------------------------------------------
Car traffic volume  :  9715/845   veh/TimePeriod  *
Medium truck volume :   773/67    veh/TimePeriod  *
Heavy truck volume  :   552/48    veh/TimePeriod  *
Posted speed limit  :    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):  12000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 3: Cranesbill (day/night)
--------------------------------------------
Angle1   Angle2           :  -1.00 deg   61.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      1 / 1
House density             :     20 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 120.00 / 120.00 m
```

```
Receiver height           :   8.30 / 8.30   m
Topography                :      2       (Flat/gentle slope; with barrier)
Barrier angle1            :  -1.00 deg   Angle2 : 61.00 deg
Barrier height            :  10.50 m
Barrier receiver distance :  10.00 / 10.00  m
Source elevation          :  98.50 m
Receiver elevation        :  96.71 m
Barrier elevation         :  99.40 m
Reference angle           :   0.00
```



```
Road data, segment # 4: Cranesbill (day/night)
-----------------------------------------------
Car traffic volume  :  9715/845   veh/TimePeriod  *
Medium truck volume :   773/67    veh/TimePeriod  *
Heavy truck volume  :   552/48    veh/TimePeriod  *
Posted speed limit  :    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):  12000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 4: Cranesbill (day/night)
---------------------------------------------
Angle1   Angle2           :  61.00 deg   69.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      1 / 1
House density             :     20 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 120.00 / 120.00 m
Receiver height           :   8.30 / 8.30   m
Topography                :      2       (Flat/gentle slope; with barrier)
Barrier angle1            :  61.00 deg   Angle2 : 69.00 deg
Barrier height            :  10.50 m
Barrier receiver distance :  22.00 / 22.00  m
Source elevation          :  98.50 m
Receiver elevation        :  96.71 m
Barrier elevation         :  99.40 m
Reference angle           :   0.00
```



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

	source height (m)	Road Leq (dBA)	Total Leq (dBA)
1.Abbott	1.50	64.85	64.85
2.Cranesbill	1.50	48.87	48.87
3.Cranesbill	1.50	35.57	35.57
4.Cranesbill	1.50	31.33	31.33
Total			64.97 dBA

Result summary (night)

	source height (m)	Road Leq (dBA)	Total Leq (dBA)
1.Abbott	1.50	57.25	57.25
2.Cranesbill	1.50	41.27	41.27
3.Cranesbill	1.50	27.97	27.97
4.Cranesbill	1.50	23.73	23.73
Total			57.37 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 64.97
(NIGHT): 57.37

STAMSON 5.0 SUMMARY REPORT Date: 25-02-2025 15:58:23
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: r41.te Time Period: Day/Night 16/8 hours
Description: R4 - First Floor

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

Car traffic volume : 9715/845 veh/TimePeriod *
Medium truck volume : 773/67 veh/TimePeriod *
Heavy truck volume : 552/48 veh/TimePeriod *
Posted speed limit : 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): 12000
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

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

Angle1 Angle2 : -85.00 deg 88.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 19.00 / 19.00 m
Receiver height : 1.50 / 1.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

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

Car traffic volume : 9715/845 veh/TimePeriod *
Medium truck volume : 773/67 veh/TimePeriod *
Heavy truck volume : 552/48 veh/TimePeriod *
Posted speed limit : 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): 12000
Percentage of Annual Growth : 0.00

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

Data for Segment # 2: Cranesbill (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                   :      1       (Absorptive ground surface)
Receiver source distance  : 142.00 / 142.00 m
Receiver height           :   1.50 / 1.50   m
Topography                :      2       (Flat/gentle slope; with barrier)
Barrier angle1            : -90.00 deg   Angle2 : -22.00 deg
Barrier height            :   6.00 m
Barrier receiver distance :   3.00 / 3.00   m
Source elevation          :  98.50 m
Receiver elevation        :  99.40 m
Barrier elevation         :  99.40 m
Reference angle           :   0.00
```

↟

Result summary (day)

	source height (m)	Road Leq (dBA)	Total Leq (dBA)
1.Abbott	1.50	64.33	64.33
2.Cranesbill	1.50	41.78	41.78
Total			64.35 dBA

↟

Result summary (night)

	source height (m)	Road Leq (dBA)	Total Leq (dBA)
1.Abbott	1.50	56.73	56.73
2.Cranesbill	1.50	34.18	34.18
Total			56.75 dBA

↟

TOTAL Leq FROM ALL SOURCES (DAY): 64.35
(NIGHT): 56.75

STAMSON 5.0 SUMMARY REPORT Date: 06-03-2025 10:31:00
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: r4.te Time Period: Day/Night 16/8 hours
Description: R4 - Third Floor

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

Car traffic volume : 9715/845 veh/TimePeriod *
Medium truck volume : 773/67 veh/TimePeriod *
Heavy truck volume : 552/48 veh/TimePeriod *
Posted speed limit : 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): 12000
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

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

Angle1 Angle2 : -85.00 deg 88.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 19.00 / 19.00 m
Receiver height : 8.30 / 8.30 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

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

Car traffic volume : 9715/845 veh/TimePeriod *
Medium truck volume : 773/67 veh/TimePeriod *
Heavy truck volume : 552/48 veh/TimePeriod *
Posted speed limit : 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): 12000
Percentage of Annual Growth : 0.00

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

Data for Segment # 2: Cranesbill (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                   :      1       (Absorptive ground surface)
Receiver source distance  : 142.00 / 142.00 m
Receiver height           :   8.30 / 8.30   m
Topography                :      2       (Flat/gentle slope; with barrier)
Barrier angle1            : -90.00 deg   Angle2 : -22.00 deg
Barrier height            :   6.00 m
Barrier receiver distance :   3.00 / 3.00   m
Source elevation          :  98.50 m
Receiver elevation        :  99.40 m
Barrier elevation         :  99.40 m
Reference angle           :   0.00
```

↟

Result summary (day)

	source height (m)	Road Leq (dBA)	Total Leq (dBA)
1.Abbott	1.50	64.88	64.88
2.Cranesbill	1.50	48.25	48.25 *
Total			64.97 dBA

* Bright Zone !

↟

Result summary (night)

	source height (m)	Road Leq (dBA)	Total Leq (dBA)
1.Abbott	1.50	57.28	57.28
2.Cranesbill	1.50	40.65	40.65 *
Total			57.37 dBA

  * Bright Zone !

TOTAL Leq FROM ALL SOURCES (DAY): 64.97
                           (NIGHT): 57.37

STAMSON 5.0 SUMMARY REPORT Date: 26-02-2025 10:42:35
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: r51.te Time Period: Day/Night 16/8 hours
Description: R5 - First Floor

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

Car traffic volume : 9715/845 veh/TimePeriod *
Medium truck volume : 773/67 veh/TimePeriod *
Heavy truck volume : 552/48 veh/TimePeriod *
Posted speed limit : 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): 12000
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

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

Angle1 Angle2 : -81.00 deg 0.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 38.00 / 38.00 m
Receiver height : 1.50 / 1.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

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

Car traffic volume : 9715/845 veh/TimePeriod *
Medium truck volume : 773/67 veh/TimePeriod *
Heavy truck volume : 552/48 veh/TimePeriod *
Posted speed limit : 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): 12000
Percentage of Annual Growth : 0.00

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

Data for Segment # 2: Cranesbill (day/night)
--------------------------------------------
Angle1   Angle2           :   0.00 deg   21.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 142.00 / 142.00 m
Receiver height           :   1.50 / 1.50   m
Topography                :      2       (Flat/gentle slope; with barrier)
Barrier angle1            :   0.00 deg   Angle2 : 21.00 deg
Barrier height            :   6.00 m
Barrier receiver distance : 109.00 / 109.00 m
Source elevation          :  98.50 m
Receiver elevation        :  99.40 m
Barrier elevation         :  99.08 m
Reference angle           :   0.00

♠
Road data, segment # 3: Cranesbill (day/night)
--------------------------------------------
Car traffic volume  :  9715/845   veh/TimePeriod  *
Medium truck volume :   773/67    veh/TimePeriod  *
Heavy truck volume  :   552/48    veh/TimePeriod  *
Posted speed limit  :    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):  12000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 3: Cranesbill (day/night)
--------------------------------------------
Angle1   Angle2           :  21.00 deg   65.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      1 / 1
House density             :     20 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 142.00 / 142.00 m
Receiver height           :   1.50 / 1.50   m
```

Topography   :   2   (Flat/gentle slope; with barrier)
Barrier angle1   : 21.00 deg   Angle2 : 65.00 deg
Barrier height   : 10.50 m
Barrier receiver distance : 17.00 / 17.00 m
Source elevation   : 98.50 m
Receiver elevation   : 99.40 m
Barrier elevation   : 99.40 m
Reference angle   :   0.00

Result summary (day)
---

	source height (m)	Road Leq (dBA)	Total Leq (dBA)
1.Abbott	1.50	56.23	56.23
2.Cranesbill	1.50	31.19	31.19
3.Cranesbill	1.50	31.64	31.64
Total			56.26 dBA

Result summary (night)
---

	source height (m)	Road Leq (dBA)	Total Leq (dBA)
1.Abbott	1.50	48.63	48.63
2.Cranesbill	1.50	23.59	23.59
3.Cranesbill	1.50	24.04	24.04
Total			48.66 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 56.26
(NIGHT): 48.66

STAMSON 5.0 SUMMARY REPORT Date: 06-03-2025 11:06:57
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: r5.te Time Period: Day/Night 16/8 hours
Description: R5 - Third Floor

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

Car traffic volume : 9715/845 veh/TimePeriod *
Medium truck volume : 773/67 veh/TimePeriod *
Heavy truck volume : 552/48 veh/TimePeriod *
Posted speed limit : 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): 12000
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

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

Angle1 Angle2 : -81.00 deg 0.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 38.00 / 38.00 m
Receiver height : 8.30 / 8.30 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

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

Car traffic volume : 9715/845 veh/TimePeriod *
Medium truck volume : 773/67 veh/TimePeriod *
Heavy truck volume : 552/48 veh/TimePeriod *
Posted speed limit : 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): 12000
Percentage of Annual Growth : 0.00

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

Data for Segment # 2: Cranesbill (day/night)
--------------------------------------------
Angle1   Angle2           :   0.00 deg   21.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 142.00 / 142.00 m
Receiver height           :   8.30 / 8.30   m
Topography                :      2       (Flat/gentle slope; with barrier)
Barrier angle1            :   0.00 deg   Angle2 : 21.00 deg
Barrier height            :   6.00 m
Barrier receiver distance : 109.00 / 109.00 m
Source elevation          :  98.50 m
Receiver elevation        :  99.40 m
Barrier elevation         :  99.08 m
Reference angle           :   0.00

♠
Road data, segment # 3: Cranesbill (day/night)
--------------------------------------------
Car traffic volume  :  9715/845   veh/TimePeriod  *
Medium truck volume :   773/67    veh/TimePeriod  *
Heavy truck volume  :   552/48    veh/TimePeriod  *
Posted speed limit  :    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):  12000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 3: Cranesbill (day/night)
--------------------------------------------
Angle1   Angle2           :  21.00 deg   65.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      1 / 1
House density             :     20 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 142.00 / 142.00 m
Receiver height           :   8.30 / 8.30   m
```

Topography   :   2   (Flat/gentle slope; with barrier)
Barrier angle1   : 21.00 deg   Angle2 : 65.00 deg
Barrier height   : 10.50 m
Barrier receiver distance : 17.00 / 17.00 m
Source elevation   : 98.50 m
Receiver elevation   : 99.40 m
Barrier elevation   : 99.40 m
Reference angle   :   0.00

Result summary (day)
---

	source height (m)	Road Leq (dBA)	Total Leq (dBA)
1.Abbott	1.50	57.36	57.36
2.Cranesbill	1.50	36.32	36.32
3.Cranesbill	1.50	40.22	40.22
Total			57.48 dBA

Result summary (night)
---

	source height (m)	Road Leq (dBA)	Total Leq (dBA)
1.Abbott	1.50	49.76	49.76
2.Cranesbill	1.50	28.73	28.73
3.Cranesbill	1.50	32.62	32.62
Total			49.88 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 57.48
(NIGHT): 49.88

STAMSON 5.0 SUMMARY REPORT Date: 06-03-2025 11:31:57
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: r6.te Time Period: Day/Night 16/8 hours
Description: R6 - Third Floor

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

Car traffic volume : 9715/845 veh/TimePeriod *
Medium truck volume : 773/67 veh/TimePeriod *
Heavy truck volume : 552/48 veh/TimePeriod *
Posted speed limit : 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): 12000
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

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

Angle1 Angle2 : 0.00 deg 86.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 39.00 / 39.00 m
Receiver height : 8.30 / 8.30 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : 28.00 deg Angle2 : 86.00 deg
Barrier height : 10.50 m
Barrier receiver distance : 3.00 / 3.00 m
Source elevation : 97.50 m
Receiver elevation : 99.40 m
Barrier elevation : 99.40 m
Reference angle : 0.00

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

Car traffic volume : 9715/845 veh/TimePeriod *
Medium truck volume : 773/67 veh/TimePeriod *
Heavy truck volume : 552/48 veh/TimePeriod *
Posted speed limit : 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):  12000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 2: Cranesbill (day/night)
--------------------------------------------
Angle1   Angle2           : -90.00 deg   -63.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      1 / 1
House density             :     20 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 120.00 / 120.00 m
Receiver height           :   8.30 / 8.30   m
Topography                :      2       (Flat/gentle slope; with barrier)
Barrier angle1            : -90.00 deg   Angle2 : -63.00 deg
Barrier height            :   6.00 m
Barrier receiver distance :   3.00 / 3.00   m
Source elevation          :  98.50 m
Receiver elevation        :  99.40 m
Barrier elevation         :  99.40 m
Reference angle           :   0.00

↟
Road data, segment # 3: Cranesbill (day/night)
----------------------------------------------
Car traffic volume  :  9715/845   veh/TimePeriod  *
Medium truck volume :   773/67    veh/TimePeriod  *
Heavy truck volume  :   552/48    veh/TimePeriod  *
Posted speed limit  :    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):  12000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 3: Cranesbill (day/night)
--------------------------------------------
```

```
Angle1   Angle2           : -63.00 deg   0.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      1 / 1
House density             :     20 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 120.00 / 120.00 m
Receiver height           :   8.30 / 8.30   m
Topography                :      2       (Flat/gentle slope; with barrier)
Barrier angle1            : -63.00 deg   Angle2 : 0.00 deg
Barrier height            :  10.50 m
Barrier receiver distance :  10.00 / 10.00  m
Source elevation          :  98.50 m
Receiver elevation        :  99.40 m
Barrier elevation         :  99.40 m
Reference angle           :   0.00
```



```
Road data, segment # 4: Cranesbill (day/night)
-----------------------------------------------
Car traffic volume  :  9715/845   veh/TimePeriod  *
Medium truck volume :   773/67    veh/TimePeriod  *
Heavy truck volume  :   552/48    veh/TimePeriod  *
Posted speed limit  :    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):  12000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 4: Cranesbill (day/night)
-----------------------------------------------
Angle1   Angle2           :   0.00 deg   26.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 120.00 / 120.00 m
Receiver height           :   8.30 / 8.30   m
Topography                :      2       (Flat/gentle slope; with barrier)
Barrier angle1            :   0.00 deg   Angle2 : 26.00 deg
Barrier height            :   6.00 m
Barrier receiver distance :  88.00 / 88.00  m
Source elevation          :  98.50 m
Receiver elevation        :  99.40 m
Barrier elevation         :  99.08 m
```

```
Reference angle           :   0.00
```

↟

```
Road data, segment # 5: Cranesbill (day/night)
-----------------------------------------------
Car traffic volume  :  9715/845   veh/TimePeriod  *
Medium truck volume :   773/67    veh/TimePeriod  *
Heavy truck volume  :   552/48    veh/TimePeriod  *
Posted speed limit  :    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):  12000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 5: Cranesbill (day/night)
---------------------------------------------
Angle1   Angle2           :  26.00 deg   68.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      1 / 1
House density             :     20 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 120.00 / 120.00 m
Receiver height           :   8.30 / 8.30   m
Topography                :      2       (Flat/gentle slope; with barrier)
Barrier angle1            :  26.00 deg   Angle2 : 68.00 deg
Barrier height            :  10.50 m
Barrier receiver distance :  17.00 / 17.00  m
Source elevation          :  98.50 m
Receiver elevation        :  99.40 m
Barrier elevation         :  99.40 m
Reference angle           :   0.00
```

↟

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

                    !  source  !   Road   !  Total
                    !  height  !   Leq    !   Leq
                    !   (m)    !  (dBA)   !  (dBA)
--------------------+----------+----------+----------
 1.Abbott           !     1.50 !    53.76 !    53.76
 2.Cranesbill       !     1.50 !    42.07 !    42.07 *
 3.Cranesbill       !     1.50 !    40.87 !    40.87
```

4.Cranesbill	1.50	38.43	38.43
5.Cranesbill	1.50	40.55	40.55
	Total		54.54 dBA

Result summary (night)

	source height (m)	Road Leq (dBA)	Total Leq (dBA)
1.Abbott	1.50	46.16	46.16
2.Cranesbill	1.50	34.47	34.47 *
3.Cranesbill	1.50	33.27	33.27
4.Cranesbill	1.50	30.83	30.83
5.Cranesbill	1.50	32.95	32.95
	Total		46.94 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 54.54
(NIGHT): 46.94

STAMSON 5.0 SUMMARY REPORT Date: 31-03-2025 10:39:49
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: r71.te Time Period: Day/Night 16/8 hours
Description: R7 - First Floor

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

Car traffic volume : 9715/845 veh/TimePeriod *
Medium truck volume : 773/67 veh/TimePeriod *
Heavy truck volume : 552/48 veh/TimePeriod *
Posted speed limit : 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): 12000
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

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

Angle1 Angle2 : 0.00 deg 78.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 39.00 / 39.00 m
Receiver height : 1.50 / 1.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : 56.00 deg Angle2 : 78.00 deg
Barrier height : 4.00 m
Barrier receiver distance : 7.00 / 7.00 m
Source elevation : 97.50 m
Receiver elevation : 99.73 m
Barrier elevation : 99.20 m
Reference angle : 0.00

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

Car traffic volume : 9715/845 veh/TimePeriod *
Medium truck volume : 773/67 veh/TimePeriod *
Heavy truck volume : 552/48 veh/TimePeriod *
Posted speed limit : 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):  12000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 2: Abbott (day/night)
----------------------------------------
Angle1   Angle2           :  78.00 deg   86.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  39.00 / 39.00  m
Receiver height           :   1.50 / 1.50   m
Topography                :      2       (Flat/gentle slope; with barrier)
Barrier angle1            :  81.00 deg   Angle2 : 86.00 deg
Barrier height            :   6.00 m
Barrier receiver distance :   3.00 / 3.00   m
Source elevation          :  98.50 m
Receiver elevation        :  99.73 m
Barrier elevation         :  99.08 m
Reference angle           :   0.00

♠
Road data, segment # 3: Cranesbill (day/night)
----------------------------------------------
Car traffic volume  :  9715/845   veh/TimePeriod  *
Medium truck volume :   773/67    veh/TimePeriod  *
Heavy truck volume  :   552/48    veh/TimePeriod  *
Posted speed limit  :    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):  12000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 3: Cranesbill (day/night)
--------------------------------------------
Angle1   Angle2           : -90.00 deg   -44.00 deg
```

```
Wood depth                :      0       (No woods.)
No of house rows          :      1 / 1
House density             :     20 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  90.00 / 90.00  m
Receiver height           :   1.50 / 1.50   m
Topography                :      2       (Flat/gentle slope; with barrier)
Barrier angle1            : -90.00 deg   Angle2 : -44.00 deg
Barrier height            :   6.00 m
Barrier receiver distance :   3.00 / 3.00   m
Source elevation          :  98.50 m
Receiver elevation        :  99.73 m
Barrier elevation         :  99.40 m
Reference angle           :   0.00
```



```
Road data, segment # 4: Cranesbill (day/night)
-----------------------------------------------
Car traffic volume  :  9715/845   veh/TimePeriod  *
Medium truck volume :   773/67    veh/TimePeriod  *
Heavy truck volume  :   552/48    veh/TimePeriod  *
Posted speed limit  :    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):  12000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 4: Cranesbill (day/night)
-----------------------------------------------
Angle1   Angle2           : -44.00 deg   -7.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  90.00 / 90.00  m
Receiver height           :   1.50 / 1.50   m
Topography                :      2       (Flat/gentle slope; with barrier)
Barrier angle1            : -36.00 deg   Angle2 : -13.00 deg
Barrier height            :   4.00 m
Barrier receiver distance :  25.00 / 25.00  m
Source elevation          :  98.50 m
Receiver elevation        :  99.73 m
Barrier elevation         :  99.20 m
Reference angle           :   0.00
```

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

Car traffic volume : 9715/845 veh/TimePeriod *
Medium truck volume : 773/67 veh/TimePeriod *
Heavy truck volume : 552/48 veh/TimePeriod *
Posted speed limit : 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): 12000
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

Data for Segment # 5: Cranesbill (day/night)

Angle1 Angle2 : -7.00 deg 41.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 90.00 / 90.00 m
Receiver height : 1.50 / 1.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -7.00 deg Angle2 : 41.00 deg
Barrier height : 6.00 m
Barrier receiver distance : 57.00 / 57.00 m
Source elevation : 98.50 m
Receiver elevation : 99.73 m
Barrier elevation : 99.08 m
Reference angle : 0.00

Road data, segment # 6: Cranesbill (day/night)

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

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

Data for Segment # 6: Cranesbill (day/night)
------------------------------------------
Angle1   Angle2           :  41.00 deg   73.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      1 / 1
House density             :     20 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  90.00 / 90.00  m
Receiver height           :   1.50 / 1.50   m
Topography                :      2       (Flat/gentle slope; with barrier)
Barrier angle1            :  41.00 deg   Angle2 : 73.00 deg
Barrier height            :  10.50 m
Barrier receiver distance :   3.00 / 3.00   m
Source elevation          :  98.50 m
Receiver elevation        :  99.73 m
Barrier elevation         :  99.55 m
Reference angle           :   0.00
```

Result summary (day)

	source height (m)	Road Leq (dBA)	Total Leq (dBA)
1.Abbott	1.50	55.20	55.20
2.Abbott	1.50	38.94	38.94
3.Cranesbill	1.50	35.71	35.71
4.Cranesbill	1.50	44.17	44.17
5.Cranesbill	1.50	37.14	37.14
6.Cranesbill	1.50	31.91	31.91
Total			55.75 dBA

Result summary (night)

	source height (m)	Road Leq (dBA)	Total Leq (dBA)
1.Abbott	1.50	47.61	47.61

2.Abbott	!	1.50 !	31.34 !	31.34
3.Cranesbill	!	1.50 !	28.11 !	28.11
4.Cranesbill	!	1.50 !	36.57 !	36.57
5.Cranesbill	!	1.50 !	29.54 !	29.54
6.Cranesbill	!	1.50 !	24.31 !	24.31
		Total		48.16 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 55.75
(NIGHT): 48.16

STAMSON 5.0 SUMMARY REPORT Date: 06-03-2025 11:36:53
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: r7.te Time Period: Day/Night 16/8 hours
Description: R7 - Third Floor

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

Car traffic volume : 9715/845 veh/TimePeriod *
Medium truck volume : 773/67 veh/TimePeriod *
Heavy truck volume : 552/48 veh/TimePeriod *
Posted speed limit : 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): 12000
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

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

Angle1 Angle2 : 0.00 deg 86.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 39.00 / 39.00 m
Receiver height : 8.30 / 8.30 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : 81.00 deg Angle2 : 86.00 deg
Barrier height : 6.00 m
Barrier receiver distance : 3.00 / 3.00 m
Source elevation : 97.50 m
Receiver elevation : 99.40 m
Barrier elevation : 99.08 m
Reference angle : 0.00

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

Car traffic volume : 9715/845 veh/TimePeriod *
Medium truck volume : 773/67 veh/TimePeriod *
Heavy truck volume : 552/48 veh/TimePeriod *
Posted speed limit : 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):  12000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 2: Cranesbill (day/night)
--------------------------------------------
Angle1   Angle2           : -90.00 deg   7.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      1 / 1
House density             :     20 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  90.00 / 90.00  m
Receiver height           :   8.30 / 8.30   m
Topography                :      2       (Flat/gentle slope; with barrier)
Barrier angle1            : -90.00 deg   Angle2 : -44.00 deg
Barrier height            :   6.00 m
Barrier receiver distance :   3.00 / 3.00   m
Source elevation          :  98.50 m
Receiver elevation        :  99.40 m
Barrier elevation         :  99.40 m
Reference angle           :   0.00

↟
Road data, segment # 3: Cranesbill (day/night)
----------------------------------------------
Car traffic volume  :  9715/845   veh/TimePeriod  *
Medium truck volume :   773/67    veh/TimePeriod  *
Heavy truck volume  :   552/48    veh/TimePeriod  *
Posted speed limit  :    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):  12000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 3: Cranesbill (day/night)
--------------------------------------------
```

```
Angle1   Angle2           :   7.00 deg   41.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  90.00 / 90.00  m
Receiver height           :   8.30 / 8.30   m
Topography                :      2       (Flat/gentle slope; with barrier)
Barrier angle1            :   7.00 deg   Angle2 : 41.00 deg
Barrier height            :   6.00 m
Barrier receiver distance :  57.00 / 57.00  m
Source elevation          :  98.50 m
Receiver elevation        :  99.40 m
Barrier elevation         :  99.08 m
Reference angle           :   0.00
```



```
Road data, segment # 4: Cranesbill (day/night)
-----------------------------------------------
Car traffic volume  :  9715/845   veh/TimePeriod  *
Medium truck volume :   773/67    veh/TimePeriod  *
Heavy truck volume  :   552/48    veh/TimePeriod  *
Posted speed limit  :    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):  12000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 4: Cranesbill (day/night)
-------------------------------------------
Angle1   Angle2           :  41.00 deg   73.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      1 / 1
House density             :     20 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  90.00 / 90.00  m
Receiver height           :   8.30 / 8.30   m
Topography                :      2       (Flat/gentle slope; with barrier)
Barrier angle1            :  41.00 deg   Angle2 : 73.00 deg
Barrier height            :  10.50 m
Barrier receiver distance :   3.00 / 3.00   m
Source elevation          :  98.50 m
Receiver elevation        :  99.40 m
Barrier elevation         :  99.40 m
```

Reference angle   :   0.00

↟
Result summary (day)
----

	source height (m)	Road Leq (dBA)	Total Leq (dBA)
1.Abbott	1.50	57.31	57.31 *
2.Cranesbill	1.50	51.59	51.59 *
3.Cranesbill	1.50	42.69	42.69
4.Cranesbill	1.50	37.74	37.74
Total			58.49 dBA

↟
Result summary (night)
----

	source height (m)	Road Leq (dBA)	Total Leq (dBA)
1.Abbott	1.50	49.72	49.72 *
2.Cranesbill	1.50	43.99	43.99 *
3.Cranesbill	1.50	35.09	35.09
4.Cranesbill	1.50	30.15	30.15
Total			50.90 dBA

↟

TOTAL Leq FROM ALL SOURCES (DAY): 58.49
                        (NIGHT): 50.90
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STAMSON 5.0 SUMMARY REPORT Date: 06-03-2025 12:54:17
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: r8.te Time Period: Day/Night 16/8 hours
Description: R8 - Third Floor

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

Car traffic volume : 9715/845 veh/TimePeriod *
Medium truck volume : 773/67 veh/TimePeriod *
Heavy truck volume : 552/48 veh/TimePeriod *
Posted speed limit : 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): 12000
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

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

Angle1 Angle2 : -73.00 deg 17.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 82.00 / 82.00 m
Receiver height : 8.30 / 8.30 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -16.00 deg Angle2 : 11.00 deg
Barrier height : 10.50 m
Barrier receiver distance : 44.00 / 44.00 m
Source elevation : 97.50 m
Receiver elevation : 99.40 m
Barrier elevation : 99.40 m
Reference angle : 0.00

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

Car traffic volume : 9715/845 veh/TimePeriod *
Medium truck volume : 773/67 veh/TimePeriod *
Heavy truck volume : 552/48 veh/TimePeriod *
Posted speed limit : 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):  12000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 2: Abbott (day/night)
----------------------------------------
Angle1   Angle2           :  17.00 deg   63.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  82.00 / 82.00  m
Receiver height           :   8.30 / 8.30   m
Topography                :      2       (Flat/gentle slope; with barrier)
Barrier angle1            :  17.00 deg   Angle2 : 43.00 deg
Barrier height            :  10.50 m
Barrier receiver distance :  44.00 / 44.00  m
Source elevation          :  97.50 m
Receiver elevation        :  99.40 m
Barrier elevation         :  99.40 m
Reference angle           :   0.00

♠
Road data, segment # 3: Abbott (day/night)
----------------------------------------
Car traffic volume  :  9715/845   veh/TimePeriod  *
Medium truck volume :   773/67    veh/TimePeriod  *
Heavy truck volume  :   552/48    veh/TimePeriod  *
Posted speed limit  :    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):  12000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 3: Abbott (day/night)
----------------------------------------
Angle1   Angle2           :  63.00 deg   82.00 deg
```

```
Wood depth                :      0       (No woods.)
No of house rows          :      3 / 3
House density             :     20 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  82.00 / 82.00  m
Receiver height           :   8.30 / 8.30   m
Topography                :      2       (Flat/gentle slope; with barrier)
Barrier angle1            :  63.00 deg   Angle2 : 82.00 deg
Barrier height            :   6.00 m
Barrier receiver distance :   3.00 / 3.00   m
Source elevation          :  97.50 m
Receiver elevation        :  99.40 m
Barrier elevation         :  99.08 m
Reference angle           :   0.00
```



```
Road data, segment # 4: Cranesbill (day/night)
-----------------------------------------------
Car traffic volume  :  9715/845   veh/TimePeriod  *
Medium truck volume :   773/67    veh/TimePeriod  *
Heavy truck volume  :   552/48    veh/TimePeriod  *
Posted speed limit  :    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):  12000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 4: Cranesbill (day/night)
-----------------------------------------------
Angle1   Angle2           : -90.00 deg   -28.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      2 / 2
House density             :     20 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 128.00 / 128.00 m
Receiver height           :   8.30 / 8.30   m
Topography                :      2       (Flat/gentle slope; with barrier)
Barrier angle1            : -90.00 deg   Angle2 : -46.00 deg
Barrier height            :  10.50 m
Barrier receiver distance :   3.00 / 3.00   m
Source elevation          :  98.50 m
Receiver elevation        :  99.40 m
Barrier elevation         :  99.40 m
```

```
Reference angle           :   0.00
```

↟

```
Road data, segment # 5: Cranesbill (day/night)
-----------------------------------------------
Car traffic volume  :  9715/845   veh/TimePeriod  *
Medium truck volume :   773/67    veh/TimePeriod  *
Heavy truck volume  :   552/48    veh/TimePeriod  *
Posted speed limit  :    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):  12000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 5: Cranesbill (day/night)
-----------------------------------------------
Angle1   Angle2           : -28.00 deg   -6.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 128.00 / 128.00 m
Receiver height           :   8.30 / 8.30   m
Topography                :      2       (Flat/gentle slope; with barrier)
Barrier angle1            : -28.00 deg   Angle2 : -6.00 deg
Barrier height            :   6.00 m
Barrier receiver distance :  98.00 / 98.00  m
Source elevation          :  98.50 m
Receiver elevation        :  99.40 m
Barrier elevation         :  99.08 m
Reference angle           :   0.00
```

↟

```
Road data, segment # 6: Cranesbill (day/night)
-----------------------------------------------
Car traffic volume  :  9715/845   veh/TimePeriod  *
Medium truck volume :   773/67    veh/TimePeriod  *
Heavy truck volume  :   552/48    veh/TimePeriod  *
Posted speed limit  :    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):  12000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 6: Cranesbill (day/night)
--------------------------------------------
Angle1   Angle2           :  -6.00 deg   0.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      1 / 1
House density             :     20 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 128.00 / 128.00 m
Receiver height           :   8.30 / 8.30   m
Topography                :      2       (Flat/gentle slope; with barrier)
Barrier angle1            :  -6.00 deg   Angle2 : 0.00 deg
Barrier height            :  10.50 m
Barrier receiver distance :  62.00 / 62.00  m
Source elevation          :  98.50 m
Receiver elevation        :  99.40 m
Barrier elevation         :  99.40 m
Reference angle           :   0.00
```



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

                    !  source  !   Road   !  Total
                    !  height  !   Leq    !   Leq
                    !   (m)    !  (dBA)   !  (dBA)
--------------------+----------+----------+----------
 1.Abbott           !     1.50 !    51.56 !    51.56
 2.Abbott           !     1.50 !    46.47 !    46.47
 3.Abbott           !     1.50 !    40.66 !    40.66 *
 4.Cranesbill       !     1.50 !    44.01 !    44.01
 5.Cranesbill       !     1.50 !    36.80 !    36.80
 6.Cranesbill       !     1.50 !    28.40 !    28.40
--------------------+----------+----------+----------
                      Total                  53.61 dBA
```



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

                    !  source  !   Road   !  Total
                    !  height  !   Leq    !   Leq
                    !   (m)    !  (dBA)   !  (dBA)
--------------------+----------+----------+----------
```

1.Abbott	!	1.50 !	43.96 !	43.96
2.Abbott	!	1.50 !	38.87 !	38.87
3.Abbott	!	1.50 !	33.06 !	33.06 *
4.Cranesbill	!	1.50 !	36.41 !	36.41
5.Cranesbill	!	1.50 !	29.20 !	29.20
6.Cranesbill	!	1.50 !	20.80 !	20.80
Total				46.01 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 53.61
(NIGHT): 46.01

STAMSON 5.0 SUMMARY REPORT Date: 06-03-2025 13:12:08
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: r9.te Time Period: Day/Night 16/8 hours
Description: R9 - Third Floor

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

Car traffic volume : 9715/845 veh/TimePeriod *
Medium truck volume : 773/67 veh/TimePeriod *
Heavy truck volume : 552/48 veh/TimePeriod *
Posted speed limit : 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): 12000
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

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

Angle1 Angle2 : -74.00 deg -2.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 82.00 / 82.00 m
Receiver height : 8.30 / 8.30 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -38.00 deg Angle2 : -11.00 deg
Barrier height : 10.50 m
Barrier receiver distance : 44.00 / 44.00 m
Source elevation : 97.50 m
Receiver elevation : 99.40 m
Barrier elevation : 99.40 m
Reference angle : 0.00

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

Car traffic volume : 9715/845 veh/TimePeriod *
Medium truck volume : 773/67 veh/TimePeriod *
Heavy truck volume : 552/48 veh/TimePeriod *
Posted speed limit : 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):  12000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 2: Abbott (day/night)
----------------------------------------
Angle1   Angle2           :  -2.00 deg   57.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  82.00 / 82.00  m
Receiver height           :   8.30 / 8.30   m
Topography                :      2       (Flat/gentle slope; with barrier)
Barrier angle1            :  -2.00 deg   Angle2 : 23.00 deg
Barrier height            :  10.50 m
Barrier receiver distance :  44.00 / 44.00  m
Source elevation          :  97.50 m
Receiver elevation        :  99.40 m
Barrier elevation         :  99.40 m
Reference angle           :   0.00

♠
Road data, segment # 3: Abbott (day/night)
------------------------------------------
Car traffic volume  :  9715/845   veh/TimePeriod  *
Medium truck volume :   773/67    veh/TimePeriod  *
Heavy truck volume  :   552/48    veh/TimePeriod  *
Posted speed limit  :    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):  12000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 3: Abbott (day/night)
----------------------------------------
Angle1   Angle2           :  57.00 deg   82.00 deg
```

```
Wood depth                :      0       (No woods.)
No of house rows          :      3 / 3
House density             :     20 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  82.00 / 82.00  m
Receiver height           :   8.30 / 8.30   m
Topography                :      2       (Flat/gentle slope; with barrier)
Barrier angle1            :  57.00 deg   Angle2 : 82.00 deg
Barrier height            :   6.00 m
Barrier receiver distance :   3.00 / 3.00   m
Source elevation          :  97.50 m
Receiver elevation        :  99.40 m
Barrier elevation         :  99.08 m
Reference angle           :   0.00
```



```
Road data, segment # 4: Cranesbill (day/night)
-----------------------------------------------
Car traffic volume  :  9715/845   veh/TimePeriod  *
Medium truck volume :   773/67    veh/TimePeriod  *
Heavy truck volume  :   552/48    veh/TimePeriod  *
Posted speed limit  :    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):  12000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 4: Cranesbill (day/night)
-----------------------------------------------
Angle1   Angle2           : -90.00 deg   -68.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      2 / 2
House density             :     20 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 107.00 / 107.00 m
Receiver height           :   8.30 / 8.30   m
Topography                :      2       (Flat/gentle slope; with barrier)
Barrier angle1            : -90.00 deg   Angle2 : -68.00 deg
Barrier height            :  10.50 m
Barrier receiver distance :   3.00 / 3.00   m
Source elevation          :  98.50 m
Receiver elevation        :  99.40 m
Barrier elevation         :  99.40 m
```

```
Reference angle           :   0.00
```

↟

```
Road data, segment # 5: Cranesbill (day/night)
-----------------------------------------------
Car traffic volume  :  9715/845   veh/TimePeriod  *
Medium truck volume :   773/67    veh/TimePeriod  *
Heavy truck volume  :   552/48    veh/TimePeriod  *
Posted speed limit  :    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):  12000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 5: Cranesbill (day/night)
-----------------------------------------------
Angle1   Angle2           : -68.00 deg   -34.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      1 / 1
House density             :     20 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 107.00 / 107.00 m
Receiver height           :   8.30 / 8.30   m
Topography                :      2       (Flat/gentle slope; with barrier)
Barrier angle1            : -68.00 deg   Angle2 : -51.00 deg
Barrier height            :   6.00 m
Barrier receiver distance :  16.00 / 16.00  m
Source elevation          :  98.50 m
Receiver elevation        :  99.40 m
Barrier elevation         :  99.08 m
Reference angle           :   0.00
```

↟

```
Road data, segment # 6: Cranesbill (day/night)
-----------------------------------------------
Car traffic volume  :  9715/845   veh/TimePeriod  *
Medium truck volume :   773/67    veh/TimePeriod  *
Heavy truck volume  :   552/48    veh/TimePeriod  *
Posted speed limit  :    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):  12000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 6: Cranesbill (day/night)
--------------------------------------------
Angle1   Angle2           : -34.00 deg   -8.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 1
House density             :     20 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 107.00 / 107.00 m
Receiver height           :   8.30 / 8.30   m
Topography                :      2       (Flat/gentle slope; with barrier)
Barrier angle1            : -34.00 deg   Angle2 : -8.00 deg
Barrier height            :   6.00 m
Barrier receiver distance :  74.00 / 74.00  m
Source elevation          :  98.50 m
Receiver elevation        :  99.40 m
Barrier elevation         :  99.08 m
Reference angle           :   0.00

♠
Road data, segment # 7: Cranesbill (day/night)
----------------------------------------------
Car traffic volume  :  9715/845   veh/TimePeriod  *
Medium truck volume :   773/67    veh/TimePeriod  *
Heavy truck volume  :   552/48    veh/TimePeriod  *
Posted speed limit  :    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):  12000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 7: Cranesbill (day/night)
--------------------------------------------
Angle1   Angle2           :  -8.00 deg   0.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      1 / 1
```

```
House density             :     20 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 107.00 / 107.00 m
Receiver height           :   8.30 / 8.30   m
Topography                :      2       (Flat/gentle slope; with barrier)
Barrier angle1            :  -8.00 deg   Angle2 : 0.00 deg
Barrier height            :  10.50 m
Barrier receiver distance :  40.00 / 40.00  m
Source elevation          :  98.50 m
Receiver elevation        :  99.40 m
Barrier elevation         :  99.40 m
Reference angle           :   0.00
```

↟

Result summary (day)

	source height (m)	Road Leq (dBA)	Total Leq (dBA)	
1.Abbott	1.50	49.91	49.91	
2.Abbott	1.50	49.08	49.08	
3.Abbott	1.50	42.13	42.13	*
4.Cranesbill	1.50	40.01	40.01	
5.Cranesbill	1.50	45.98	45.98	*
6.Cranesbill	1.50	39.78	39.78	
7.Cranesbill	1.50	30.71	30.71	
Total			54.07 dBA	

↟

Result summary (night)

	source height (m)	Road Leq (dBA)	Total Leq (dBA)	
1.Abbott	1.50	42.31	42.31	
2.Abbott	1.50	41.49	41.49	
3.Abbott	1.50	34.53	34.53	*
4.Cranesbill	1.50	32.41	32.41	
5.Cranesbill	1.50	38.38	38.38	*
6.Cranesbill	1.50	32.18	32.18	
7.Cranesbill	1.50	23.12	23.12	
Total			46.48 dBA	

↟

TOTAL Leq FROM ALL SOURCES (DAY): 54.07
(NIGHT): 46.48

STAMSON 5.0 SUMMARY REPORT Date: 07-03-2025 13:31:32
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: r10.te Time Period: Day/Night 16/8 hours
Description: R10 - Third Floor

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

Car traffic volume : 9715/845 veh/TimePeriod *
Medium truck volume : 773/67 veh/TimePeriod *
Heavy truck volume : 552/48 veh/TimePeriod *
Posted speed limit : 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): 12000
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

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

Angle1 Angle2 : -72.00 deg 43.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 84.00 / 84.00 m
Receiver height : 8.30 / 8.30 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -55.00 deg Angle2 : -9.00 deg
Barrier height : 10.50 m
Barrier receiver distance : 45.00 / 45.00 m
Source elevation : 97.50 m
Receiver elevation : 99.40 m
Barrier elevation : 99.40 m
Reference angle : 0.00

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

Car traffic volume : 9715/845 veh/TimePeriod *
Medium truck volume : 773/67 veh/TimePeriod *
Heavy truck volume : 552/48 veh/TimePeriod *
Posted speed limit : 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):  12000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 2: Abbott (day/night)
----------------------------------------
Angle1   Angle2           :  43.00 deg   79.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      3 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  84.00 / 84.00  m
Receiver height           :   8.30 / 8.30   m
Topography                :      2       (Flat/gentle slope; with barrier)
Barrier angle1            :  43.00 deg   Angle2 : 79.00 deg
Barrier height            :   6.00 m
Barrier receiver distance :   5.00 / 5.00   m
Source elevation          :  97.50 m
Receiver elevation        :  99.40 m
Barrier elevation         :  99.08 m
Reference angle           :   0.00

♠
Road data, segment # 3: Cranesbill (day/night)
----------------------------------------------
Car traffic volume  :  9715/845   veh/TimePeriod  *
Medium truck volume :   773/67    veh/TimePeriod  *
Heavy truck volume  :   552/48    veh/TimePeriod  *
Posted speed limit  :    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):  12000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 3: Cranesbill (day/night)
--------------------------------------------
Angle1   Angle2           : -90.00 deg   -49.00 deg
```

```
Wood depth                :      0       (No woods.)
No of house rows          :      1 / 1
House density             :     20 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  77.00 / 77.00  m
Receiver height           :   8.30 / 8.30   m
Topography                :      2       (Flat/gentle slope; with barrier)
Barrier angle1            : -90.00 deg   Angle2 : -62.00 deg
Barrier height            :   6.00 m
Barrier receiver distance :   3.00 / 3.00   m
Source elevation          :  98.50 m
Receiver elevation        :  99.40 m
Barrier elevation         :  99.40 m
Reference angle           :   0.00
```



```
Road data, segment # 4: Cranesbill (day/night)
-----------------------------------------------
Car traffic volume  :  9715/845   veh/TimePeriod  *
Medium truck volume :   773/67    veh/TimePeriod  *
Heavy truck volume  :   552/48    veh/TimePeriod  *
Posted speed limit  :    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):  12000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 4: Cranesbill (day/night)
-----------------------------------------------
Angle1   Angle2           : -49.00 deg   -32.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  77.00 / 77.00  m
Receiver height           :   8.30 / 8.30   m
Topography                :      2       (Flat/gentle slope; with barrier)
Barrier angle1            : -49.00 deg   Angle2 : -32.00 deg
Barrier height            :   6.00 m
Barrier receiver distance :  45.00 / 45.00  m
Source elevation          :  98.50 m
Receiver elevation        :  99.40 m
Barrier elevation         :  99.08 m
Reference angle           :   0.00
```

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

Car traffic volume	9715/845	veh/TimePeriod *
Medium truck volume	773/67	veh/TimePeriod *
Heavy truck volume	552/48	veh/TimePeriod *
Posted speed limit	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)	12000
Percentage of Annual Growth	0.00
Number of Years of Growth	0.00
Medium Truck % of Total Volume	7.00
Heavy Truck % of Total Volume	5.00
Day (16 hrs) % of Total Volume	92.00

Data for Segment # 5: Cranesbill (day/night)

Angle1 Angle2	-32.00 deg	73.00 deg
Wood depth	0	(No woods.)
No of house rows	1 / 1	
House density	20 %	
Surface	1	(Absorptive ground surface)
Receiver source distance	77.00 / 77.00	m
Receiver height	8.30 / 8.30	m
Topography	2	(Flat/gentle slope; with barrier)
Barrier angle1	-32.00 deg	Angle2 : 49.00 deg
Barrier height	10.50 m	
Barrier receiver distance	10.00 / 10.00	m
Source elevation	98.50 m	
Receiver elevation	99.40 m	
Barrier elevation	99.40 m	
Reference angle	0.00	

Result summary (day)
---

	source height (m)	Road Leq (dBA)	Total Leq (dBA)
1.Abbott	1.50	52.11	52.11
2.Abbott	1.50	44.19	44.19 *
3.Cranesbill	1.50	47.48	47.48 *
4.Cranesbill	1.50	41.46	41.46

5.Cranesbill	1.50	47.51	47.51
	Total		54.98 dBA

Result summary (night)

	source height (m)	Road Leq (dBA)	Total Leq (dBA)
1.Abbott	1.50	44.51	44.51
2.Abbott	1.50	40.50	40.50 *
3.Cranesbill	1.50	39.88	39.88 *
4.Cranesbill	1.50	33.86	33.86
5.Cranesbill	1.50	39.91	39.91
	Total		47.88 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 54.98
(NIGHT): 47.88

STAMSON 5.0 SUMMARY REPORT Date: 06-03-2025 13:50:52
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: r112.te Time Period: Day/Night 16/8 hours
Description: R11 - Second Floor

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

Car traffic volume : 9715/845 veh/TimePeriod *
Medium truck volume : 773/67 veh/TimePeriod *
Heavy truck volume : 552/48 veh/TimePeriod *
Posted speed limit : 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): 12000
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

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

Angle1 Angle2 : -77.00 deg 39.00 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 : 4.90 / 4.90 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -62.00 deg Angle2 : -20.00 deg
Barrier height : 10.50 m
Barrier receiver distance : 40.00 / 40.00 m
Source elevation : 97.50 m
Receiver elevation : 99.40 m
Barrier elevation : 99.40 m
Reference angle : 0.00

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

Car traffic volume : 9715/845 veh/TimePeriod *
Medium truck volume : 773/67 veh/TimePeriod *
Heavy truck volume : 552/48 veh/TimePeriod *
Posted speed limit : 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):  12000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 2: Abbott (day/night)
----------------------------------------
Angle1   Angle2           :  39.00 deg   82.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      3 / 3
House density             :     20 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  78.00 / 78.00  m
Receiver height           :   4.90 / 4.90   m
Topography                :      2       (Flat/gentle slope; with barrier)
Barrier angle1            :  39.00 deg   Angle2 : 82.00 deg
Barrier height            :   6.00 m
Barrier receiver distance :   5.00 / 5.00   m
Source elevation          :  97.50 m
Receiver elevation        :  99.40 m
Barrier elevation         :  99.08 m
Reference angle           :   0.00

↟
Road data, segment # 3: Cranesbill (day/night)
----------------------------------------------
Car traffic volume  :  9715/845   veh/TimePeriod  *
Medium truck volume :   773/67    veh/TimePeriod  *
Heavy truck volume  :   552/48    veh/TimePeriod  *
Posted speed limit  :    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):  12000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 3: Cranesbill (day/night)
----------------------------------------
```

```
Angle1   Angle2           : -90.00 deg   -52.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      1 / 1
House density             :     20 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  67.00 / 67.00  m
Receiver height           :   4.90 / 4.90   m
Topography                :      2       (Flat/gentle slope; with barrier)
Barrier angle1            : -90.00 deg   Angle2 : -65.00 deg
Barrier height            :   6.00 m
Barrier receiver distance :   3.00 / 3.00   m
Source elevation          :  98.50 m
Receiver elevation        :  99.40 m
Barrier elevation         :  99.40 m
Reference angle           :   0.00
```



```
Road data, segment # 4: Cranesbill (day/night)
-----------------------------------------------
Car traffic volume  :  9715/845   veh/TimePeriod  *
Medium truck volume :   773/67    veh/TimePeriod  *
Heavy truck volume  :   552/48    veh/TimePeriod  *
Posted speed limit  :    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):  12000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 4: Cranesbill (day/night)
-----------------------------------------------
Angle1   Angle2           : -52.00 deg   0.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  77.00 / 77.00  m
Receiver height           :   4.90 / 4.90   m
Topography                :      2       (Flat/gentle slope; with barrier)
Barrier angle1            : -52.00 deg   Angle2 : 0.00 deg
Barrier height            :   6.00 m
Barrier receiver distance :  34.00 / 34.00  m
Source elevation          :  98.50 m
Receiver elevation        :  99.40 m
Barrier elevation         :  99.40 m
```

Reference angle : 0.00

↟

Result summary (day)

	source height (m)	Road Leq (dBA)	Total Leq (dBA)
1.Abbott	1.50	52.05	52.05
2.Abbott	1.50	44.37	44.37
3.Cranesbill	1.50	45.97	45.97
4.Cranesbill	1.50	42.43	42.43
Total			53.89 dBA

↟

Result summary (night)

	source height (m)	Road Leq (dBA)	Total Leq (dBA)
1.Abbott	1.50	44.45	44.45
2.Abbott	1.50	36.77	36.77
3.Cranesbill	1.50	38.37	38.37
4.Cranesbill	1.50	34.83	34.83
Total			46.29 dBA

↟

TOTAL Leq FROM ALL SOURCES (DAY): 53.89
(NIGHT): 46.29

↟

↟

STAMSON 5.0 SUMMARY REPORT Date: 06-03-2025 13:47:49
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: r11.te Time Period: Day/Night 16/8 hours
Description: R11 - Third Floor

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

Car traffic volume : 9715/845 veh/TimePeriod *
Medium truck volume : 773/67 veh/TimePeriod *
Heavy truck volume : 552/48 veh/TimePeriod *
Posted speed limit : 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): 12000
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

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

Angle1 Angle2 : -77.00 deg 39.00 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 : 8.30 / 8.30 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -62.00 deg Angle2 : -20.00 deg
Barrier height : 10.50 m
Barrier receiver distance : 40.00 / 40.00 m
Source elevation : 97.50 m
Receiver elevation : 99.40 m
Barrier elevation : 99.40 m
Reference angle : 0.00

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

Car traffic volume : 9715/845 veh/TimePeriod *
Medium truck volume : 773/67 veh/TimePeriod *
Heavy truck volume : 552/48 veh/TimePeriod *
Posted speed limit : 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):  12000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 2: Abbott (day/night)
----------------------------------------
Angle1   Angle2           :  39.00 deg   82.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      3 / 3
House density             :     20 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  78.00 / 78.00  m
Receiver height           :   8.30 / 8.30   m
Topography                :      2       (Flat/gentle slope; with barrier)
Barrier angle1            :  39.00 deg   Angle2 : 82.00 deg
Barrier height            :   6.00 m
Barrier receiver distance :   5.00 / 5.00   m
Source elevation          :  97.50 m
Receiver elevation        :  99.40 m
Barrier elevation         :  99.08 m
Reference angle           :   0.00

↟
Road data, segment # 3: Cranesbill (day/night)
----------------------------------------------
Car traffic volume  :  9715/845   veh/TimePeriod  *
Medium truck volume :   773/67    veh/TimePeriod  *
Heavy truck volume  :   552/48    veh/TimePeriod  *
Posted speed limit  :    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):  12000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 3: Cranesbill (day/night)
----------------------------------------
```

```
Angle1   Angle2           : -90.00 deg   -52.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      1 / 1
House density             :     20 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  67.00 / 67.00  m
Receiver height           :   8.30 / 8.30   m
Topography                :      2       (Flat/gentle slope; with barrier)
Barrier angle1            : -90.00 deg   Angle2 : -65.00 deg
Barrier height            :   6.00 m
Barrier receiver distance :   3.00 / 3.00   m
Source elevation          :  98.50 m
Receiver elevation        :  99.40 m
Barrier elevation         :  99.40 m
Reference angle           :   0.00
```



```
Road data, segment # 4: Cranesbill (day/night)
-----------------------------------------------
Car traffic volume  :  9715/845   veh/TimePeriod  *
Medium truck volume :   773/67    veh/TimePeriod  *
Heavy truck volume  :   552/48    veh/TimePeriod  *
Posted speed limit  :    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):  12000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 4: Cranesbill (day/night)
-----------------------------------------------
Angle1   Angle2           : -52.00 deg   0.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  77.00 / 77.00  m
Receiver height           :   8.30 / 8.30   m
Topography                :      2       (Flat/gentle slope; with barrier)
Barrier angle1            : -52.00 deg   Angle2 : 0.00 deg
Barrier height            :   6.00 m
Barrier receiver distance :  34.00 / 34.00  m
Source elevation          :  98.50 m
Receiver elevation        :  99.40 m
Barrier elevation         :  99.40 m
```

Reference angle : 0.00

↟

Result summary (day)

	source height (m)	Road Leq (dBA)	Total Leq (dBA)	
1.Abbott	1.50	52.90	52.90	
2.Abbott	1.50	45.42	45.42	*
3.Cranesbill	1.50	47.88	47.88	*
4.Cranesbill	1.50	47.97	47.97	
Total			55.49 dBA	

↟

Result summary (night)

	source height (m)	Road Leq (dBA)	Total Leq (dBA)	
1.Abbott	1.50	45.30	45.30	
2.Abbott	1.50	37.82	37.82	*
3.Cranesbill	1.50	40.29	40.29	*
4.Cranesbill	1.50	40.37	40.37	
Total			47.89 dBA	

↟

TOTAL Leq FROM ALL SOURCES (DAY): 55.49
(NIGHT): 47.89

↟

↟

STAMSON 5.0 SUMMARY REPORT Date: 06-03-2025 14:00:25
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: r122.te Time Period: Day/Night 16/8 hours
Description: R12 - Second Floor

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

Car traffic volume : 9715/845 veh/TimePeriod *
Medium truck volume : 773/67 veh/TimePeriod *
Heavy truck volume : 552/48 veh/TimePeriod *
Posted speed limit : 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): 12000
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

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

Angle1 Angle2 : -77.00 deg 18.00 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 : 4.90 / 4.90 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -68.00 deg Angle2 : -36.00 deg
Barrier height : 10.50 m
Barrier receiver distance : 44.00 / 44.00 m
Source elevation : 97.50 m
Receiver elevation : 99.40 m
Barrier elevation : 99.40 m
Reference angle : 0.00

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

Car traffic volume : 9715/845 veh/TimePeriod *
Medium truck volume : 773/67 veh/TimePeriod *
Heavy truck volume : 552/48 veh/TimePeriod *
Posted speed limit : 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):  12000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 2: Abbott (day/night)
----------------------------------------
Angle1   Angle2           :  18.00 deg   82.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      3 / 3
House density             :     20 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  78.00 / 78.00  m
Receiver height           :   4.90 / 4.90   m
Topography                :      2       (Flat/gentle slope; with barrier)
Barrier angle1            :  18.00 deg   Angle2 : 82.00 deg
Barrier height            :   6.00 m
Barrier receiver distance :   5.00 / 5.00   m
Source elevation          :  97.50 m
Receiver elevation        :  99.40 m
Barrier elevation         :  99.08 m
Reference angle           :   0.00

↟
Road data, segment # 3: Cranesbill (day/night)
----------------------------------------------
Car traffic volume  :  9715/845   veh/TimePeriod  *
Medium truck volume :   773/67    veh/TimePeriod  *
Heavy truck volume  :   552/48    veh/TimePeriod  *
Posted speed limit  :    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):  12000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 3: Cranesbill (day/night)
----------------------------------------
```

```
Angle1   Angle2           : -90.00 deg   -74.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      1 / 1
House density             :     20 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  46.00 / 46.00  m
Receiver height           :   4.90 / 4.90   m
Topography                :      2       (Flat/gentle slope; with barrier)
Barrier angle1            : -90.00 deg   Angle2 : -74.00 deg
Barrier height            :   6.00 m
Barrier receiver distance :   3.00 / 3.00   m
Source elevation          :  98.50 m
Receiver elevation        :  99.40 m
Barrier elevation         :  99.40 m
Reference angle           :   0.00
```



```
Road data, segment # 4: Cranesbill (day/night)
-----------------------------------------------
Car traffic volume  :  9715/845   veh/TimePeriod  *
Medium truck volume :   773/67    veh/TimePeriod  *
Heavy truck volume  :   552/48    veh/TimePeriod  *
Posted speed limit  :    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):  12000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 4: Cranesbill (day/night)
-----------------------------------------------
Angle1   Angle2           : -74.00 deg   79.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  46.00 / 46.00  m
Receiver height           :   4.90 / 4.90   m
Topography                :      2       (Flat/gentle slope; with barrier)
Barrier angle1            : -74.00 deg   Angle2 : 79.00 deg
Barrier height            :   6.00 m
Barrier receiver distance :  14.00 / 14.00  m
Source elevation          :  98.50 m
Receiver elevation        :  99.40 m
Barrier elevation         :  99.08 m
```

Reference angle : 0.00

↟

Result summary (day)

	source height (m)	Road Leq (dBA)	Total Leq (dBA)
1.Abbott	1.50	51.46	51.46
2.Abbott	1.50	45.92	45.92
3.Cranesbill	1.50	42.44	42.44
4.Cranesbill	1.50	50.69	50.69
Total			54.97 dBA

↟

Result summary (night)

	source height (m)	Road Leq (dBA)	Total Leq (dBA)
1.Abbott	1.50	43.86	43.86
2.Abbott	1.50	38.32	38.32
3.Cranesbill	1.50	34.84	34.84
4.Cranesbill	1.50	43.09	43.09
Total			47.37 dBA

↟

TOTAL Leq FROM ALL SOURCES (DAY): 54.97
(NIGHT): 47.37

↟

↟

STAMSON 5.0 SUMMARY REPORT Date: 06-03-2025 13:56:56
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: r12.te Time Period: Day/Night 16/8 hours
Description: R12 - Third Floor

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

Car traffic volume : 9715/845 veh/TimePeriod *
Medium truck volume : 773/67 veh/TimePeriod *
Heavy truck volume : 552/48 veh/TimePeriod *
Posted speed limit : 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): 12000
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

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

Angle1 Angle2 : -77.00 deg 18.00 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 : 8.30 / 8.30 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -68.00 deg Angle2 : -36.00 deg
Barrier height : 10.50 m
Barrier receiver distance : 44.00 / 44.00 m
Source elevation : 97.50 m
Receiver elevation : 99.40 m
Barrier elevation : 99.40 m
Reference angle : 0.00

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

Car traffic volume : 9715/845 veh/TimePeriod *
Medium truck volume : 773/67 veh/TimePeriod *
Heavy truck volume : 552/48 veh/TimePeriod *
Posted speed limit : 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):  12000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 2: Abbott (day/night)
----------------------------------------
Angle1   Angle2           :  18.00 deg   82.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      3 / 3
House density             :     20 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  78.00 / 78.00  m
Receiver height           :   8.30 / 8.30   m
Topography                :      2       (Flat/gentle slope; with barrier)
Barrier angle1            :  18.00 deg   Angle2 : 82.00 deg
Barrier height            :   6.00 m
Barrier receiver distance :   5.00 / 5.00   m
Source elevation          :  97.50 m
Receiver elevation        :  99.40 m
Barrier elevation         :  99.08 m
Reference angle           :   0.00

↟
Road data, segment # 3: Cranesbill (day/night)
----------------------------------------------
Car traffic volume  :  9715/845   veh/TimePeriod  *
Medium truck volume :   773/67    veh/TimePeriod  *
Heavy truck volume  :   552/48    veh/TimePeriod  *
Posted speed limit  :    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):  12000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 3: Cranesbill (day/night)
----------------------------------------
```

```
Angle1   Angle2           : -90.00 deg   -74.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      1 / 1
House density             :     20 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  46.00 / 46.00  m
Receiver height           :   8.30 / 8.30   m
Topography                :      2       (Flat/gentle slope; with barrier)
Barrier angle1            : -90.00 deg   Angle2 : -74.00 deg
Barrier height            :   6.00 m
Barrier receiver distance :   3.00 / 3.00   m
Source elevation          :  98.50 m
Receiver elevation        :  99.40 m
Barrier elevation         :  99.40 m
Reference angle           :   0.00
```



```
Road data, segment # 4: Cranesbill (day/night)
-----------------------------------------------
Car traffic volume  :  9715/845   veh/TimePeriod  *
Medium truck volume :   773/67    veh/TimePeriod  *
Heavy truck volume  :   552/48    veh/TimePeriod  *
Posted speed limit  :    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):  12000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 4: Cranesbill (day/night)
-----------------------------------------------
Angle1   Angle2           : -74.00 deg   79.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  46.00 / 46.00  m
Receiver height           :   8.30 / 8.30   m
Topography                :      2       (Flat/gentle slope; with barrier)
Barrier angle1            : -74.00 deg   Angle2 : 79.00 deg
Barrier height            :   6.00 m
Barrier receiver distance :  14.00 / 14.00  m
Source elevation          :  98.50 m
Receiver elevation        :  99.40 m
Barrier elevation         :  99.08 m
```

Reference angle   :   0.00

Result summary (day)
---

	source height (m)	Road Leq (dBA)	Total Leq (dBA)	
1.Abbott	1.50	52.28	52.28	
2.Abbott	1.50	47.61	47.61	*
3.Cranesbill	1.50	44.84	44.84	*
4.Cranesbill	1.50	59.02	59.02	*
Total			60.23 dBA	

* Bright Zone !

Result summary (night)
---

	source height (m)	Road Leq (dBA)	Total Leq (dBA)	
1.Abbott	1.50	44.68	44.68	
2.Abbott	1.50	40.01	40.01	*
3.Cranesbill	1.50	37.24	37.24	*
4.Cranesbill	1.50	51.42	51.42	*
Total			52.63 dBA	

* Bright Zone !

TOTAL Leq FROM ALL SOURCES (DAY): 60.23
(NIGHT): 52.63

STAMSON 5.0 SUMMARY REPORT Date: 06-03-2025 14:08:06
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: r132.te Time Period: Day/Night 16/8 hours
Description: R13 - Second Floor

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

Car traffic volume : 9715/845 veh/TimePeriod *
Medium truck volume : 773/67 veh/TimePeriod *
Heavy truck volume : 552/48 veh/TimePeriod *
Posted speed limit : 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): 12000
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

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

Angle1 Angle2 : 0.00 deg 80.00 deg
Wood depth : 0 (No woods.)
No of house rows : 3 / 3
House density : 20 %
Surface : 1 (Absorptive ground surface)
Receiver source distance : 97.00 / 97.00 m
Receiver height : 4.90 / 4.90 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : 13.00 deg Angle2 : 80.00 deg
Barrier height : 6.00 m
Barrier receiver distance : 13.00 / 13.00 m
Source elevation : 97.50 m
Receiver elevation : 99.40 m
Barrier elevation : 99.08 m
Reference angle : 0.00

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

Car traffic volume : 9715/845 veh/TimePeriod *
Medium truck volume : 773/67 veh/TimePeriod *
Heavy truck volume : 552/48 veh/TimePeriod *
Posted speed limit : 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):  12000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 2: Cranesbill (day/night)
--------------------------------------------
Angle1   Angle2           : -90.00 deg   -78.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      1 / 1
House density             :     20 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  46.00 / 46.00  m
Receiver height           :   4.90 / 4.90   m
Topography                :      2       (Flat/gentle slope; with barrier)
Barrier angle1            : -90.00 deg   Angle2 : -78.00 deg
Barrier height            :   6.00 m
Barrier receiver distance :   3.00 / 3.00   m
Source elevation          :  98.50 m
Receiver elevation        :  99.40 m
Barrier elevation         :  99.40 m
Reference angle           :   0.00

↟
Road data, segment # 3: Cranesbill (day/night)
----------------------------------------------
Car traffic volume  :  9715/845   veh/TimePeriod  *
Medium truck volume :   773/67    veh/TimePeriod  *
Heavy truck volume  :   552/48    veh/TimePeriod  *
Posted speed limit  :    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):  12000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 3: Cranesbill (day/night)
```

```
-----------------------------------------
Angle1   Angle2           : -78.00 deg   78.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  46.00 / 46.00  m
Receiver height           :   4.90 / 4.90   m
Topography                :      2       (Flat/gentle slope; with barrier)
Barrier angle1            : -78.00 deg   Angle2 : 78.00 deg
Barrier height            :   6.00 m
Barrier receiver distance :  14.00 / 14.00  m
Source elevation          :  98.50 m
Receiver elevation        :  99.40 m
Barrier elevation         :  99.08 m
Reference angle           :   0.00
```

↟

Result summary (day)

---

	source height (m)	Road Leq (dBA)	Total Leq (dBA)
1.Abbott	1.50	46.50	46.50
2.Cranesbill	1.50	41.31	41.31
3.Cranesbill	1.50	50.83	50.83
Total			52.53 dBA

↟

Result summary (night)

---

	source height (m)	Road Leq (dBA)	Total Leq (dBA)
1.Abbott	1.50	38.90	38.90
2.Cranesbill	1.50	33.72	33.72
3.Cranesbill	1.50	43.23	43.23
Total			44.94 dBA

↟

```
TOTAL Leq FROM ALL SOURCES (DAY): 52.53
                           (NIGHT): 44.94
```

STAMSON 5.0 SUMMARY REPORT Date: 06-03-2025 14:05:24
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: r13.te Time Period: Day/Night 16/8 hours
Description: R13 - Third Floor

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

Car traffic volume : 9715/845 veh/TimePeriod *
Medium truck volume : 773/67 veh/TimePeriod *
Heavy truck volume : 552/48 veh/TimePeriod *
Posted speed limit : 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): 12000
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

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

Angle1 Angle2 : 0.00 deg 80.00 deg
Wood depth : 0 (No woods.)
No of house rows : 3 / 3
House density : 20 %
Surface : 1 (Absorptive ground surface)
Receiver source distance : 97.00 / 97.00 m
Receiver height : 8.30 / 8.30 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : 13.00 deg Angle2 : 80.00 deg
Barrier height : 6.00 m
Barrier receiver distance : 13.00 / 13.00 m
Source elevation : 97.50 m
Receiver elevation : 99.40 m
Barrier elevation : 99.08 m
Reference angle : 0.00

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

Car traffic volume : 9715/845 veh/TimePeriod *
Medium truck volume : 773/67 veh/TimePeriod *
Heavy truck volume : 552/48 veh/TimePeriod *
Posted speed limit : 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):  12000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 2: Cranesbill (day/night)
--------------------------------------------
Angle1   Angle2           : -90.00 deg   -78.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      1 / 1
House density             :     20 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  46.00 / 46.00  m
Receiver height           :   8.30 / 8.30   m
Topography                :      2       (Flat/gentle slope; with barrier)
Barrier angle1            : -90.00 deg   Angle2 : -78.00 deg
Barrier height            :   6.00 m
Barrier receiver distance :   3.00 / 3.00   m
Source elevation          :  98.50 m
Receiver elevation        :  99.40 m
Barrier elevation         :  99.40 m
Reference angle           :   0.00

↟
Road data, segment # 3: Cranesbill (day/night)
----------------------------------------------
Car traffic volume  :  9715/845   veh/TimePeriod  *
Medium truck volume :   773/67    veh/TimePeriod  *
Heavy truck volume  :   552/48    veh/TimePeriod  *
Posted speed limit  :    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):  12000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 3: Cranesbill (day/night)
```

```
-----------------------------------------
Angle1   Angle2           : -78.00 deg   78.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  46.00 / 46.00  m
Receiver height           :   8.30 / 8.30   m
Topography                :      2       (Flat/gentle slope; with barrier)
Barrier angle1            : -78.00 deg   Angle2 : 78.00 deg
Barrier height            :   6.00 m
Barrier receiver distance :  14.00 / 14.00  m
Source elevation          :  98.50 m
Receiver elevation        :  99.40 m
Barrier elevation         :  99.08 m
Reference angle           :   0.00
```

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

                    !  source  !   Road   !  Total
                    !  height  !   Leq    !   Leq
                    !   (m)    !  (dBA)   !  (dBA)
--------------------+----------+----------+----------
 1.Abbott           !     1.50 !    47.51 !    47.51 *
 2.Cranesbill       !     1.50 !    43.03 !    43.03 *
 3.Cranesbill       !     1.50 !    59.07 !    59.07 *
--------------------+----------+----------+----------
                      Total                   59.46 dBA

  * Bright Zone  !
```

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

                    !  source  !   Road   !  Total
                    !  height  !   Leq    !   Leq
                    !   (m)    !  (dBA)   !  (dBA)
--------------------+----------+----------+----------
 1.Abbott           !     1.50 !    39.91 !    39.91 *
 2.Cranesbill       !     1.50 !    35.43 !    35.43 *
 3.Cranesbill       !     1.50 !    51.47 !    51.47 *
--------------------+----------+----------+----------
                      Total                   51.86 dBA

  * Bright Zone  !
```

TOTAL Leq FROM ALL SOURCES (DAY): 59.46
(NIGHT): 51.86

STAMSON 5.0 SUMMARY REPORT Date: 27-03-2025 15:42:24
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: r14.te Time Period: Day/Night 16/8 hours
Description: R14 - Sales Center 1

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

Car traffic volume : 9715/845 veh/TimePeriod *
Medium truck volume : 773/67 veh/TimePeriod *
Heavy truck volume : 552/48 veh/TimePeriod *
Posted speed limit : 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): 12000
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

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

Angle1 Angle2 : -85.00 deg 87.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 19.00 / 19.00 m
Receiver height : 1.50 / 1.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

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

Car traffic volume : 9715/845 veh/TimePeriod *
Medium truck volume : 773/67 veh/TimePeriod *
Heavy truck volume : 552/48 veh/TimePeriod *
Posted speed limit : 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): 12000
Percentage of Annual Growth : 0.00

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

Data for Segment # 2: Cranesbill (day/night)
---------------------------------------------
Angle1   Angle2           : -90.00 deg   -63.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  41.00 / 41.00  m
Receiver height           :   1.50 / 1.50   m
Topography                :      2       (Flat/gentle slope; with barrier)
Barrier angle1            : -90.00 deg   Angle2 : -63.00 deg
Barrier height            :   6.00 m
Barrier receiver distance :   3.00 / 3.00   m
Source elevation          :  98.50 m
Receiver elevation        :  99.20 m
Barrier elevation         :  99.40 m
Reference angle           :   0.00

♠
Road data, segment # 3: Cranesbill (day/night)
---------------------------------------------
Car traffic volume  :  9715/845   veh/TimePeriod  *
Medium truck volume :   773/67    veh/TimePeriod  *
Heavy truck volume  :   552/48    veh/TimePeriod  *
Posted speed limit  :    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):  12000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 3: Cranesbill (day/night)
---------------------------------------------
Angle1   Angle2           : -63.00 deg   29.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  90.00 / 90.00  m
Receiver height           :   1.50 / 1.50   m
Topography                :      2       (Flat/gentle slope; with barrier)
```

```
Barrier angle1            : -63.00 deg   Angle2 : 29.00 deg
Barrier height            :   2.20 m
Barrier receiver distance :   3.00 / 3.00   m
Source elevation          :  98.50 m
Receiver elevation        :  99.20 m
Barrier elevation         :  99.40 m
Reference angle           :   0.00
```

↟

```
Road data, segment # 4: Cranesbill (day/night)
-----------------------------------------------
Car traffic volume  :  9715/845   veh/TimePeriod  *
Medium truck volume :   773/67    veh/TimePeriod  *
Heavy truck volume  :   552/48    veh/TimePeriod  *
Posted speed limit  :    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):  12000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 4: Cranesbill (day/night)
-----------------------------------------------
Angle1   Angle2           :  29.00 deg   81.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  90.00 / 90.00  m
Receiver height           :   1.50 / 1.50   m
Topography                :      2       (Flat/gentle slope; with barrier)
Barrier angle1            :  29.00 deg   Angle2 : 81.00 deg
Barrier height            :   6.00 m
Barrier receiver distance :  10.00 / 10.00  m
Source elevation          :  98.50 m
Receiver elevation        :  99.20 m
Barrier elevation         :  99.08 m
Reference angle           :   0.00
```

↟

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

                    !  source  !   Road   !  Total
                    !  height  !   Leq    !   Leq
```

	! (m)	! (dBA)	! (dBA)
1.Abbott	! 1.50	! 64.32	! 64.32
2.Cranesbill	! 1.50	! 38.04	! 38.04
3.Cranesbill	! 1.50	! 43.00	! 43.00
4.Cranesbill	! 1.50	! 36.55	! 36.55
Total			64.37 dBA

Result summary (night)

	! source height (m)	! Road Leq (dBA)	! Total Leq (dBA)
1.Abbott	! 1.50	! 56.72	! 56.72
2.Cranesbill	! 1.50	! 30.45	! 30.45
3.Cranesbill	! 1.50	! 35.40	! 35.40
4.Cranesbill	! 1.50	! 28.95	! 28.95
Total			56.77 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 64.37
(NIGHT): 56.77

STAMSON 5.0 SUMMARY REPORT Date: 28-03-2025 10:48:21
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: r15.te Time Period: Day/Night 16/8 hours
Description: R15 - Sales Center 2

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

Car traffic volume : 9715/845 veh/TimePeriod *
Medium truck volume : 773/67 veh/TimePeriod *
Heavy truck volume : 552/48 veh/TimePeriod *
Posted speed limit : 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): 12000
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

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

Angle1 Angle2 : -85.00 deg 87.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 18.00 / 18.00 m
Receiver height : 1.50 / 1.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

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

Car traffic volume : 9715/845 veh/TimePeriod *
Medium truck volume : 773/67 veh/TimePeriod *
Heavy truck volume : 552/48 veh/TimePeriod *
Posted speed limit : 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): 12000
Percentage of Annual Growth : 0.00

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

Data for Segment # 2: Cranesbill (day/night)
---------------------------------------------
Angle1   Angle2           : -90.00 deg   -52.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  55.00 / 55.00  m
Receiver height           :   1.50 / 1.50   m
Topography                :      2       (Flat/gentle slope; with barrier)
Barrier angle1            : -90.00 deg   Angle2 : -52.00 deg
Barrier height            :   6.00 m
Barrier receiver distance :   3.00 / 3.00   m
Source elevation          :  98.50 m
Receiver elevation        :  99.20 m
Barrier elevation         :  99.30 m
Reference angle           :   0.00

♠
Road data, segment # 3: Cranesbill (day/night)
---------------------------------------------
Car traffic volume  :  9715/845   veh/TimePeriod  *
Medium truck volume :   773/67    veh/TimePeriod  *
Heavy truck volume  :   552/48    veh/TimePeriod  *
Posted speed limit  :    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):  12000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 3: Cranesbill (day/night)
---------------------------------------------
Angle1   Angle2           : -52.00 deg   0.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  55.00 / 55.00  m
Receiver height           :   1.50 / 1.50   m
Topography                :      2       (Flat/gentle slope; with barrier)
```

Barrier angle1 : -16.00 deg Angle2 : 0.00 deg
Barrier height : 2.20 m
Barrier receiver distance : 3.00 / 3.00 m
Source elevation : 98.50 m
Receiver elevation : 99.20 m
Barrier elevation : 98.66 m
Reference angle : 0.00

Result summary (day)

	source height (m)	Road Leq (dBA)	Total Leq (dBA)
1.Abbott	1.50	64.71	64.71
2.Cranesbill	1.50	37.44	37.44
3.Cranesbill	1.50	51.26	51.26
Total			64.91 dBA

Result summary (night)

	source height (m)	Road Leq (dBA)	Total Leq (dBA)
1.Abbott	1.50	57.11	57.11
2.Cranesbill	1.50	29.84	29.84
3.Cranesbill	1.50	43.66	43.66
Total			57.31 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 64.91
(NIGHT): 57.31

STAMSON 5.0 SUMMARY REPORT Date: 28-03-2025 13:56:55
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: r16.te Time Period: Day/Night 16/8 hours
Description: R16 - Sales Center 3

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

Car traffic volume : 9715/845 veh/TimePeriod *
Medium truck volume : 773/67 veh/TimePeriod *
Heavy truck volume : 552/48 veh/TimePeriod *
Posted speed limit : 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): 12000
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

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

Angle1 Angle2 : -84.00 deg 87.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 23.00 / 23.00 m
Receiver height : 1.50 / 1.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : 56.00 deg Angle2 : 87.00 deg
Barrier height : 4.00 m
Barrier receiver distance : 3.00 / 3.00 m
Source elevation : 97.50 m
Receiver elevation : 99.20 m
Barrier elevation : 99.20 m
Reference angle : 0.00

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

Car traffic volume : 9715/845 veh/TimePeriod *
Medium truck volume : 773/67 veh/TimePeriod *
Heavy truck volume : 552/48 veh/TimePeriod *
Posted speed limit : 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):  12000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 2: Cranesbill (day/night)
--------------------------------------------
Angle1   Angle2           : -90.00 deg   -44.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  65.00 / 65.00  m
Receiver height           :   1.50 / 1.50   m
Topography                :      2       (Flat/gentle slope; with barrier)
Barrier angle1            : -90.00 deg   Angle2 : -44.00 deg
Barrier height            :   6.00 m
Barrier receiver distance :   3.00 / 3.00   m
Source elevation          :  98.50 m
Receiver elevation        :  99.20 m
Barrier elevation         :  99.40 m
Reference angle           :   0.00

♠
Road data, segment # 3: Cranesbill (day/night)
----------------------------------------------
Car traffic volume  :  9715/845   veh/TimePeriod  *
Medium truck volume :   773/67    veh/TimePeriod  *
Heavy truck volume  :   552/48    veh/TimePeriod  *
Posted speed limit  :    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):  12000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 3: Cranesbill (day/night)
--------------------------------------------
Angle1   Angle2           : -44.00 deg   -33.00 deg
```

```
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  65.00 / 65.00  m
Receiver height           :   1.50 / 1.50   m
Topography                :      2       (Flat/gentle slope; with barrier)
Barrier angle1            : -44.00 deg   Angle2 : -41.00 deg
Barrier height            :   2.20 m
Barrier receiver distance :   3.00 / 3.00   m
Source elevation          :  98.50 m
Receiver elevation        :  99.20 m
Barrier elevation         :  98.66 m
Reference angle           :   0.00
```

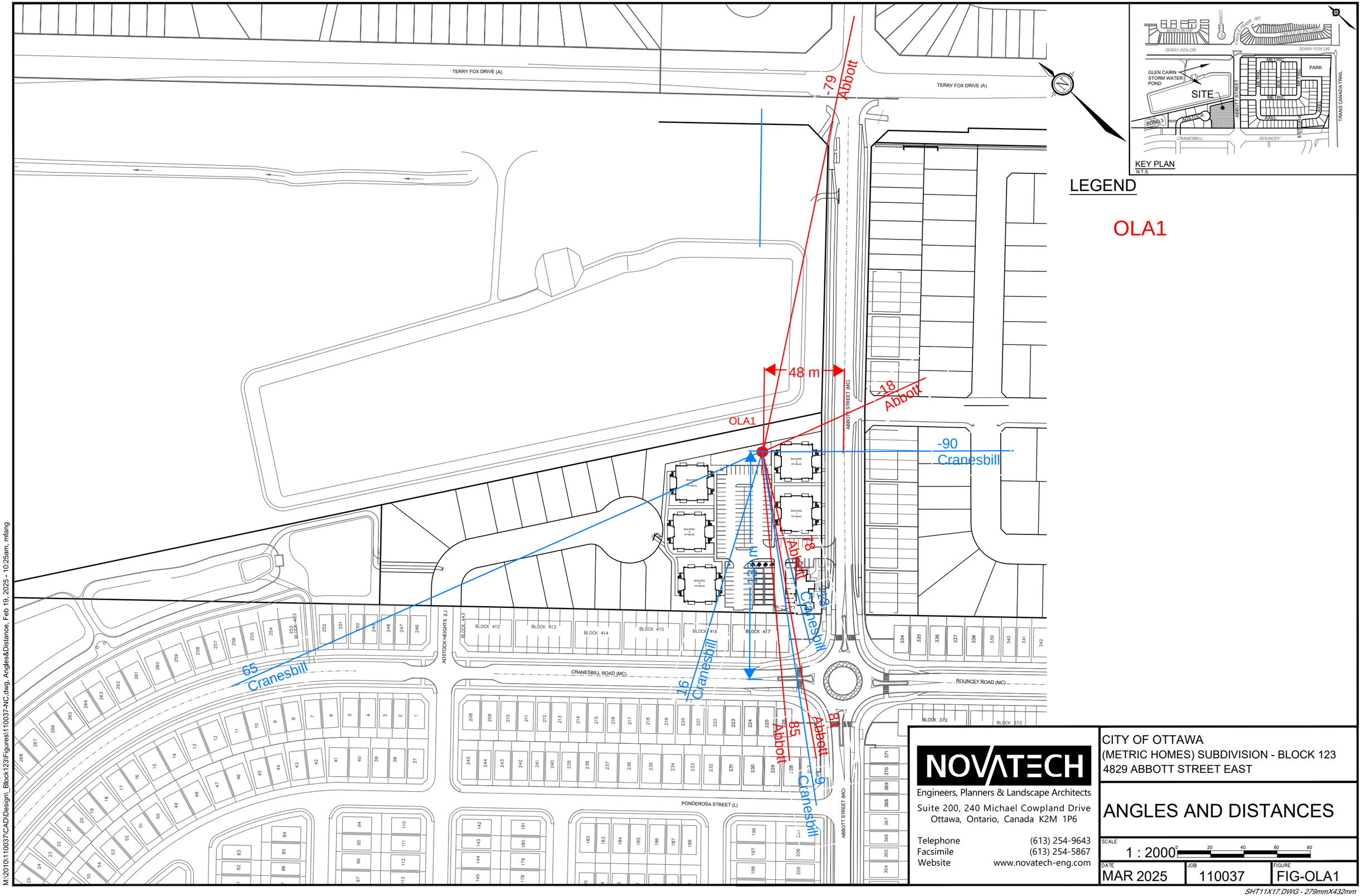
Result summary (day)

	source height (m)	Road Leq (dBA)	Total Leq (dBA)
1.Abbott	1.50	62.47	62.47
2.Cranesbill	1.50	36.91	36.91
3.Cranesbill	1.50	43.32	43.32
Total			62.53 dBA

Result summary (night)

	source height (m)	Road Leq (dBA)	Total Leq (dBA)
1.Abbott	1.50	54.87	54.87
2.Cranesbill	1.50	29.31	29.31
3.Cranesbill	1.50	35.72	35.72
Total			54.93 dBA

```
TOTAL Leq FROM ALL SOURCES (DAY): 62.53
                           (NIGHT): 54.93
```



LEGEND

OLA1

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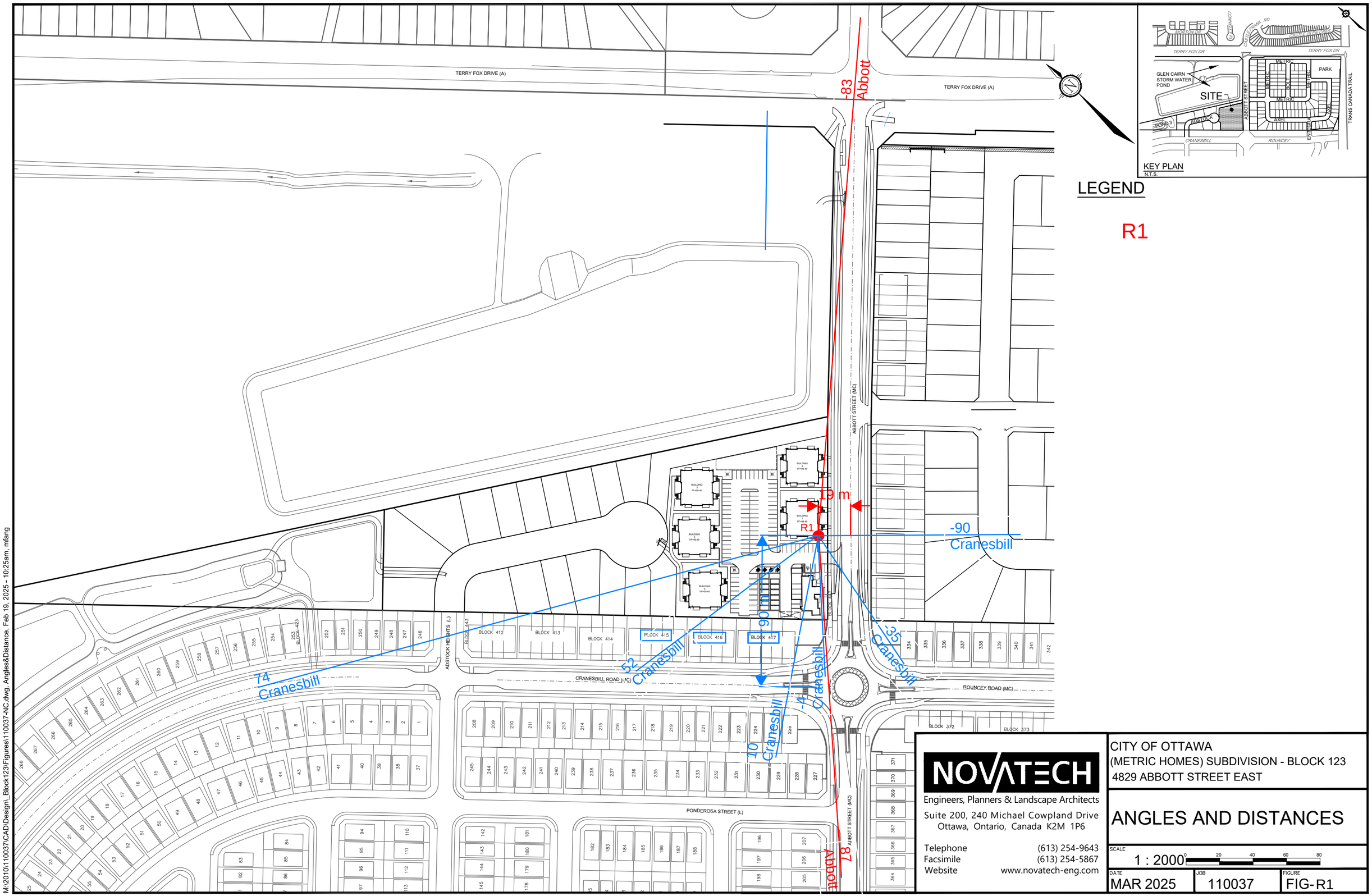
ANGLES AND DISTANCES

SCALE 1 : 2000 (0, 20, 40, 60, 80)
DATE MAR 2025
JOB 110037
FIGURE FIG-OLA1

SHT11X17.DWG - 279mmX432mm



KEY PLAN
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LEGEND

R1

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ANGLES AND DISTANCES

SCALE 1 : 2000 (0, 20, 40, 60, 80)
DATE MAR 2025
JOB 110037
FIGURE FIG-R1

SHT11X17.DWG - 279mmX432mm

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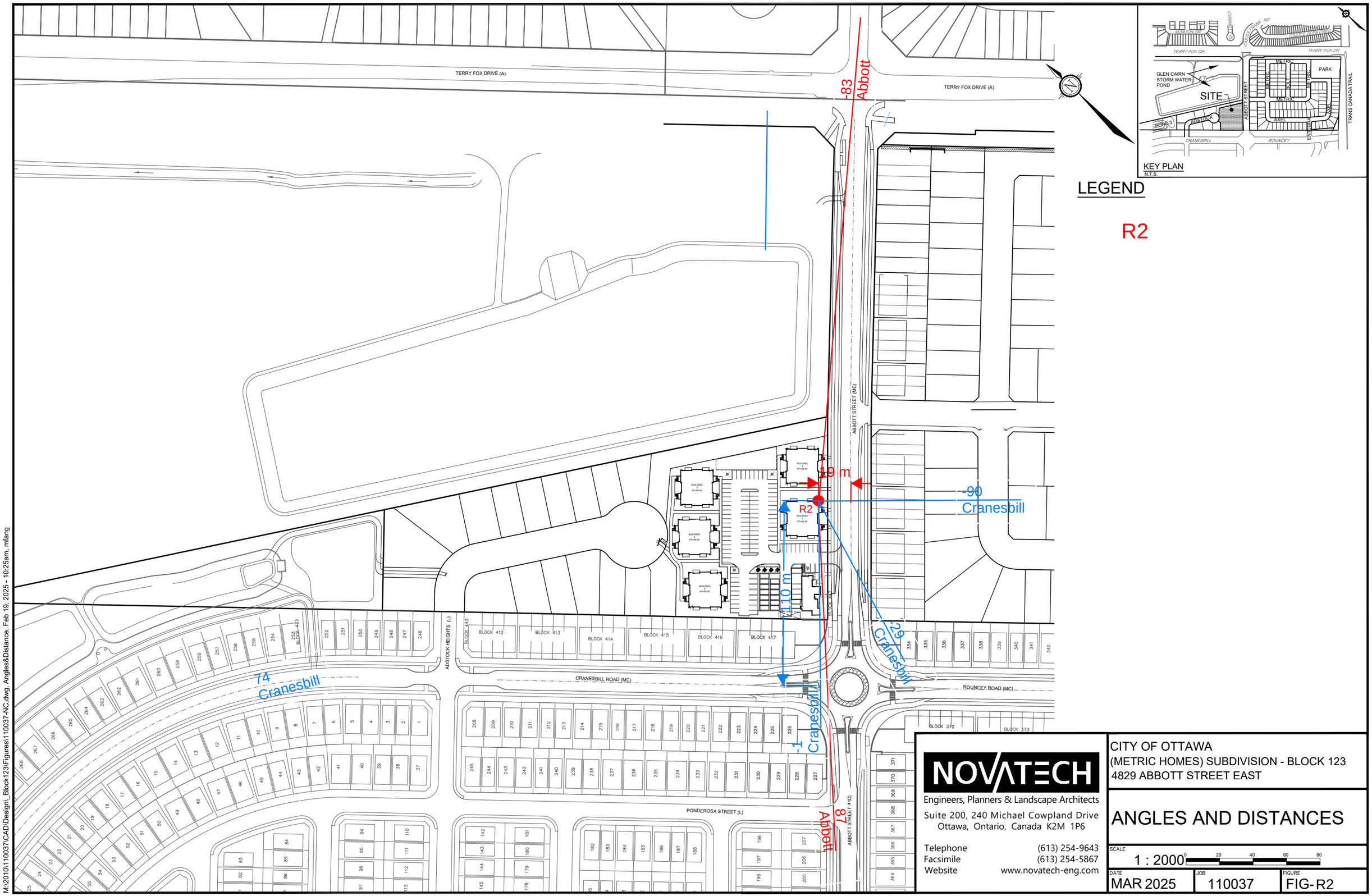

KEY PLAN
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LEGEND

R2

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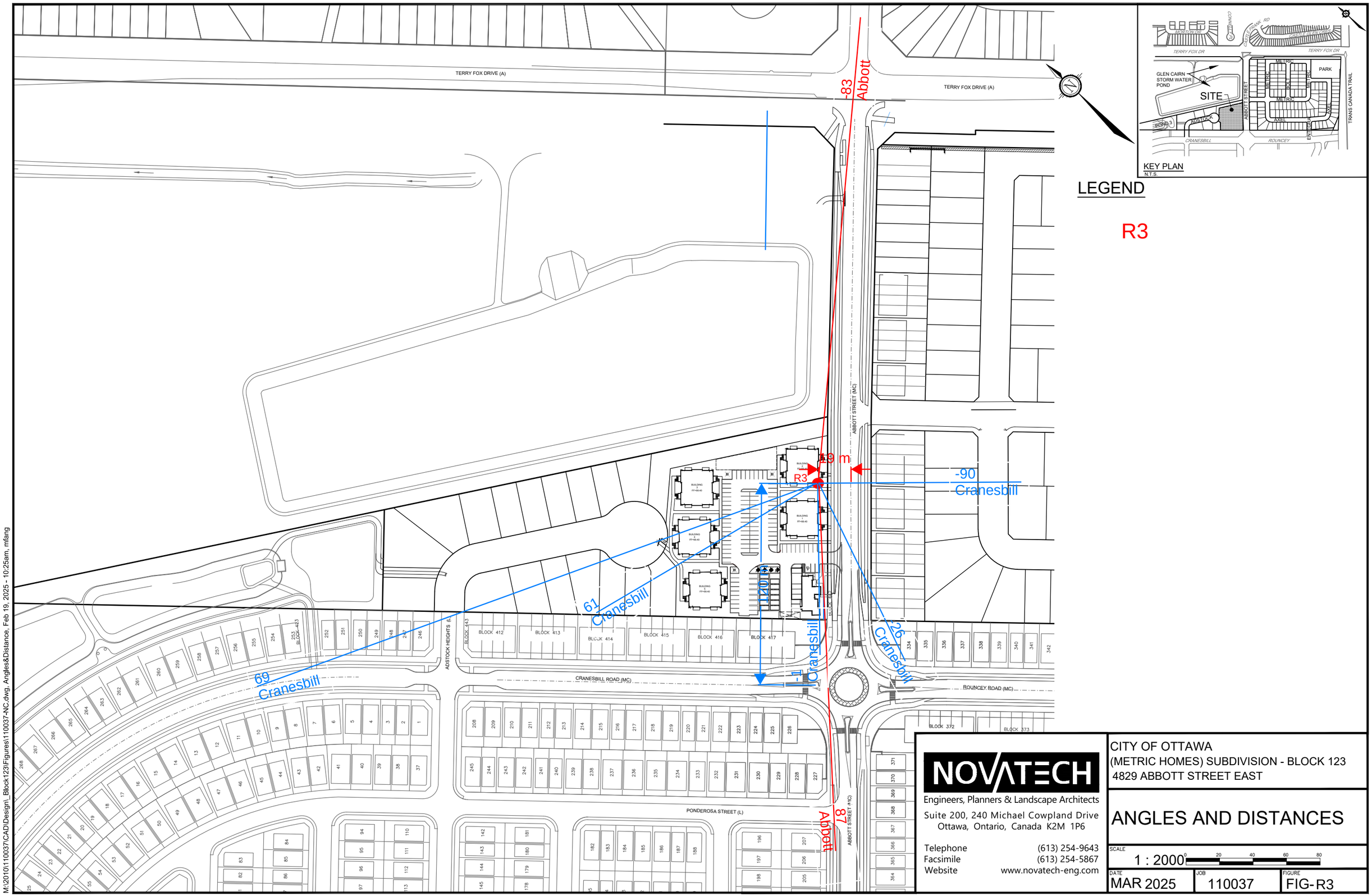
ANGLES AND DISTANCES

SCALE 1 : 2000 (0, 20, 40, 60, 80)
DATE MAR 2025
JOB 110037
FIGURE FIG-R2

SHT11X17.DWG - 279mmX432mm



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ANGLES AND DISTANCES

SCALE 1 : 2000 (0, 20, 40, 60, 80)
DATE MAR 2025
JOB 110037
FIGURE FIG-R3

SHT11X17.DWG - 279mmX432mm

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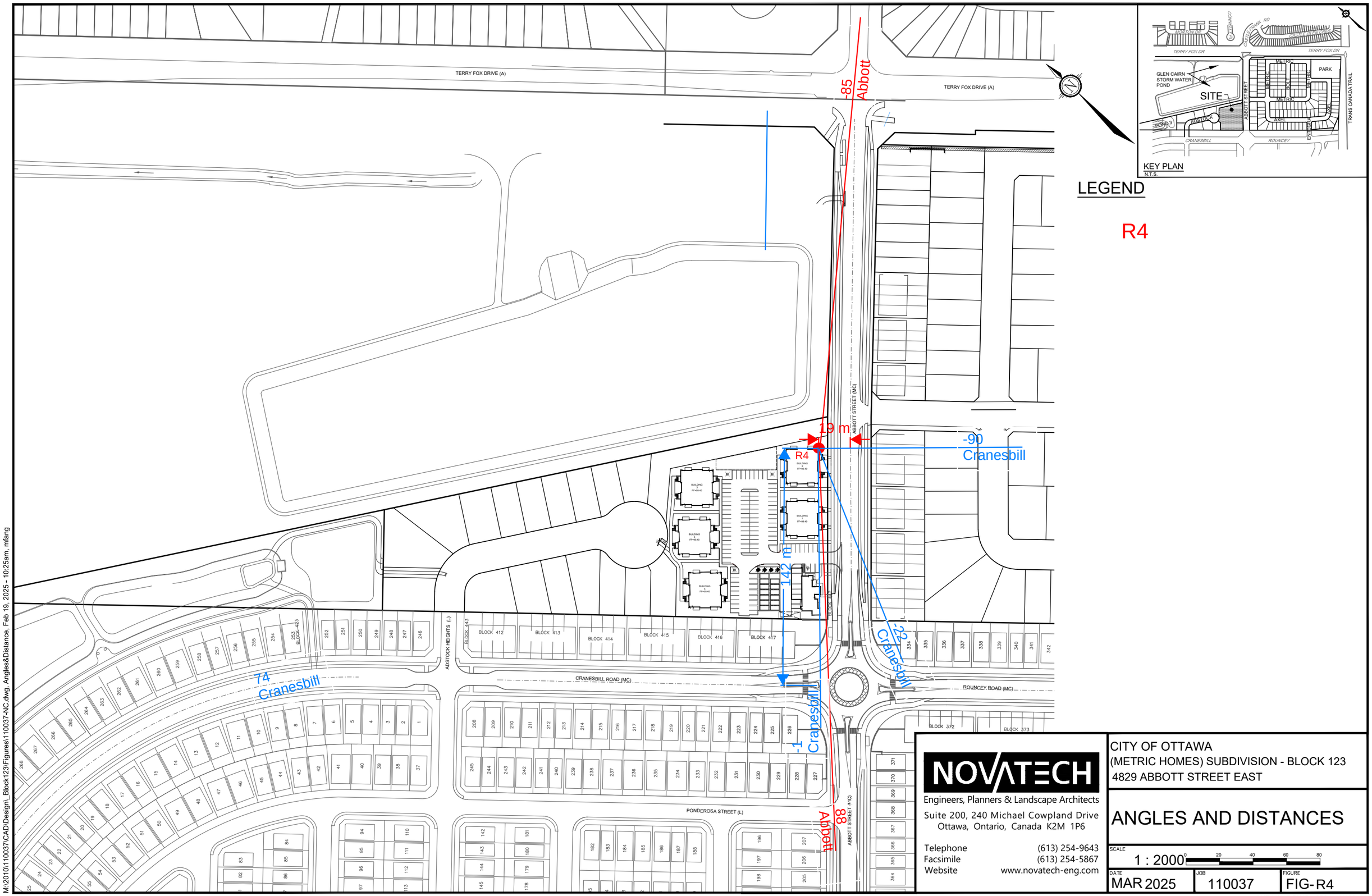

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ANGLES AND DISTANCES

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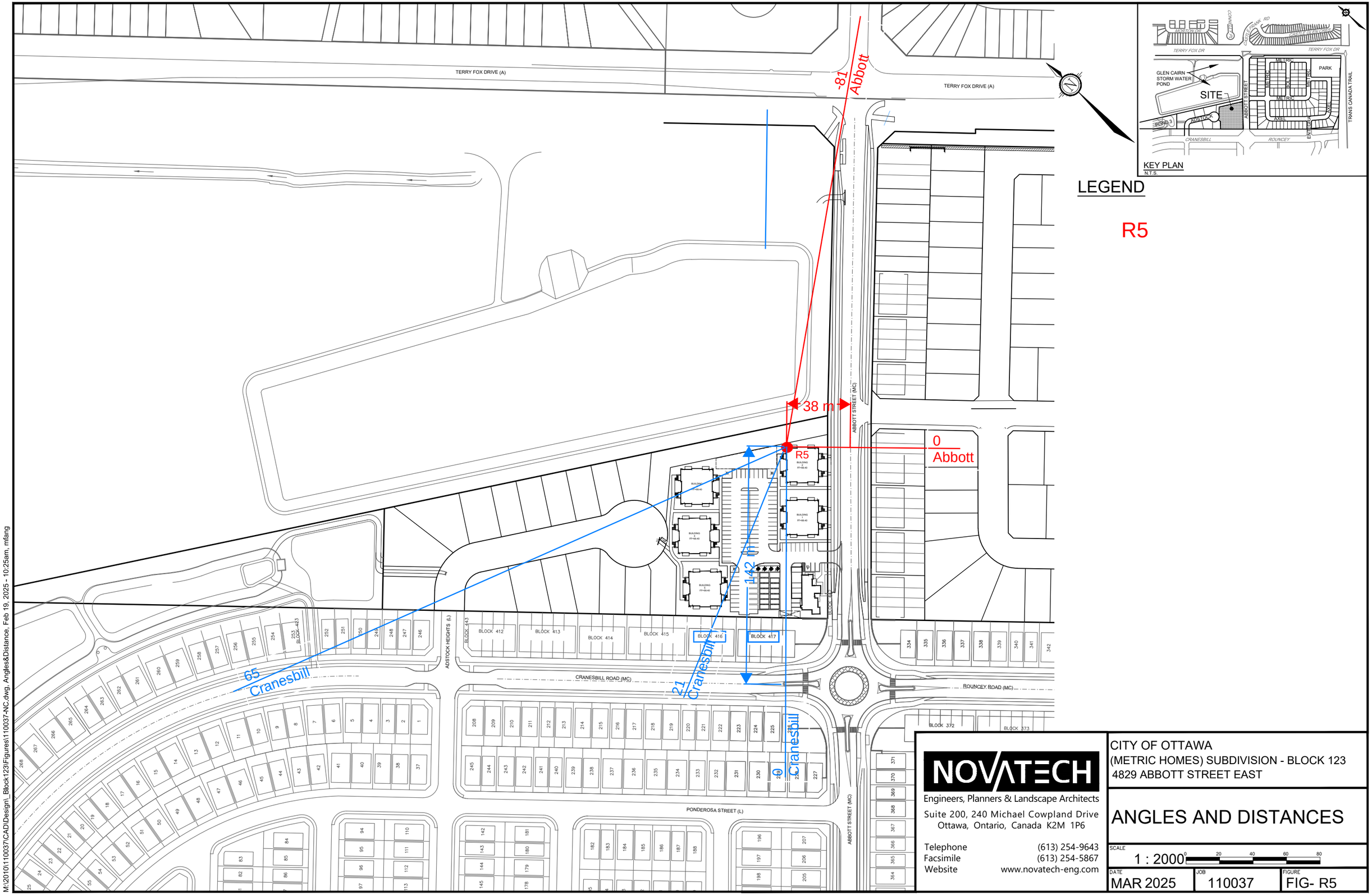
DATE MAR 2025
JOB 110037
FIGURE FIG- R4

SHT11X17.DWG - 279mmX432mm



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ANGLES AND DISTANCES

SCALE 1 : 2000 (0 20 40 60 80)
DATE MAR 2025
JOB 110037
FIGURE FIG- R5

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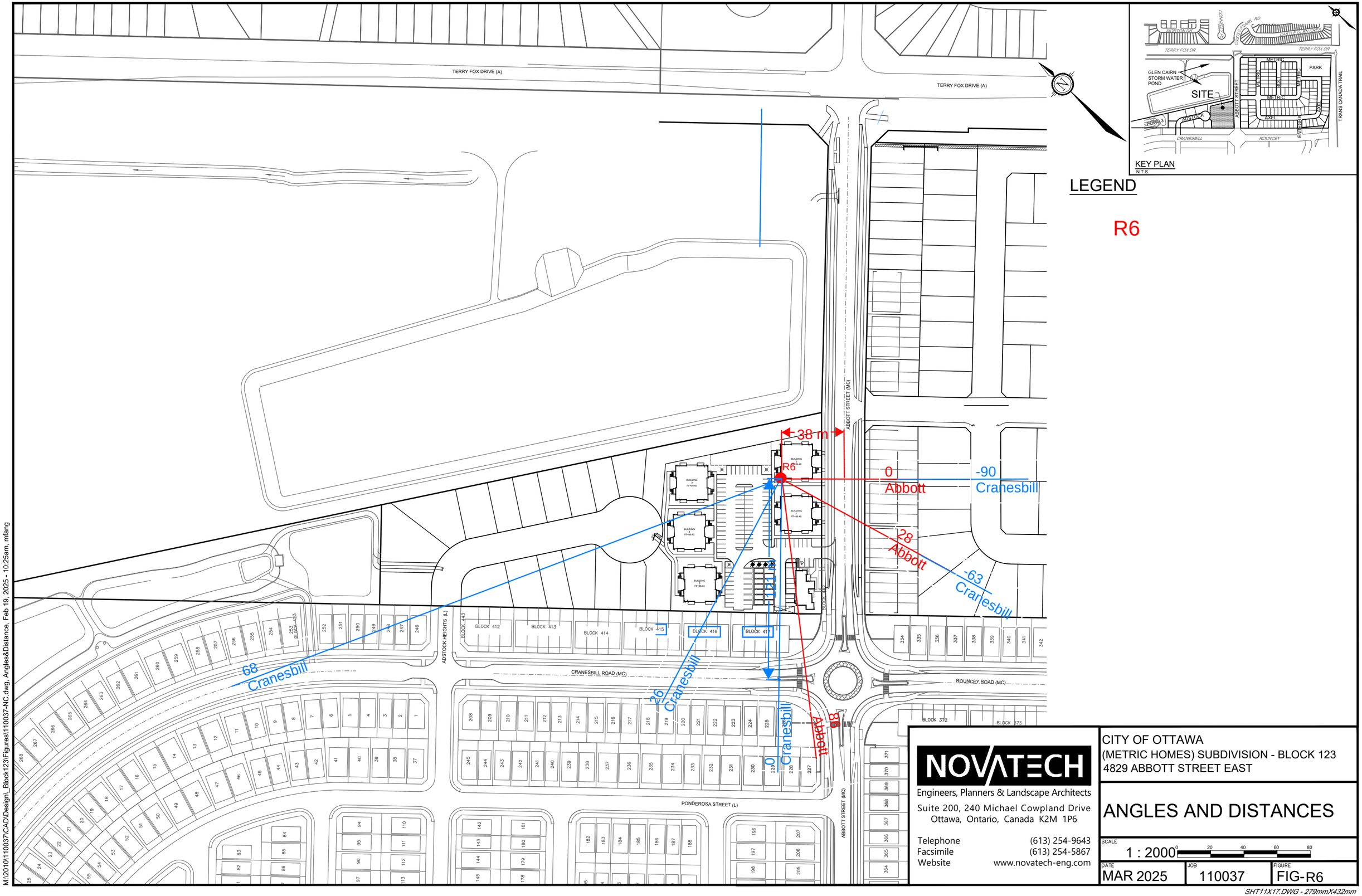
SHT11X17.DWG - 279mmX432mm



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ANGLES AND DISTANCES

SCALE 1 : 2000 (0, 20, 40, 60, 80)
DATE MAR 2025
JOB 110037
FIGURE FIG-R6

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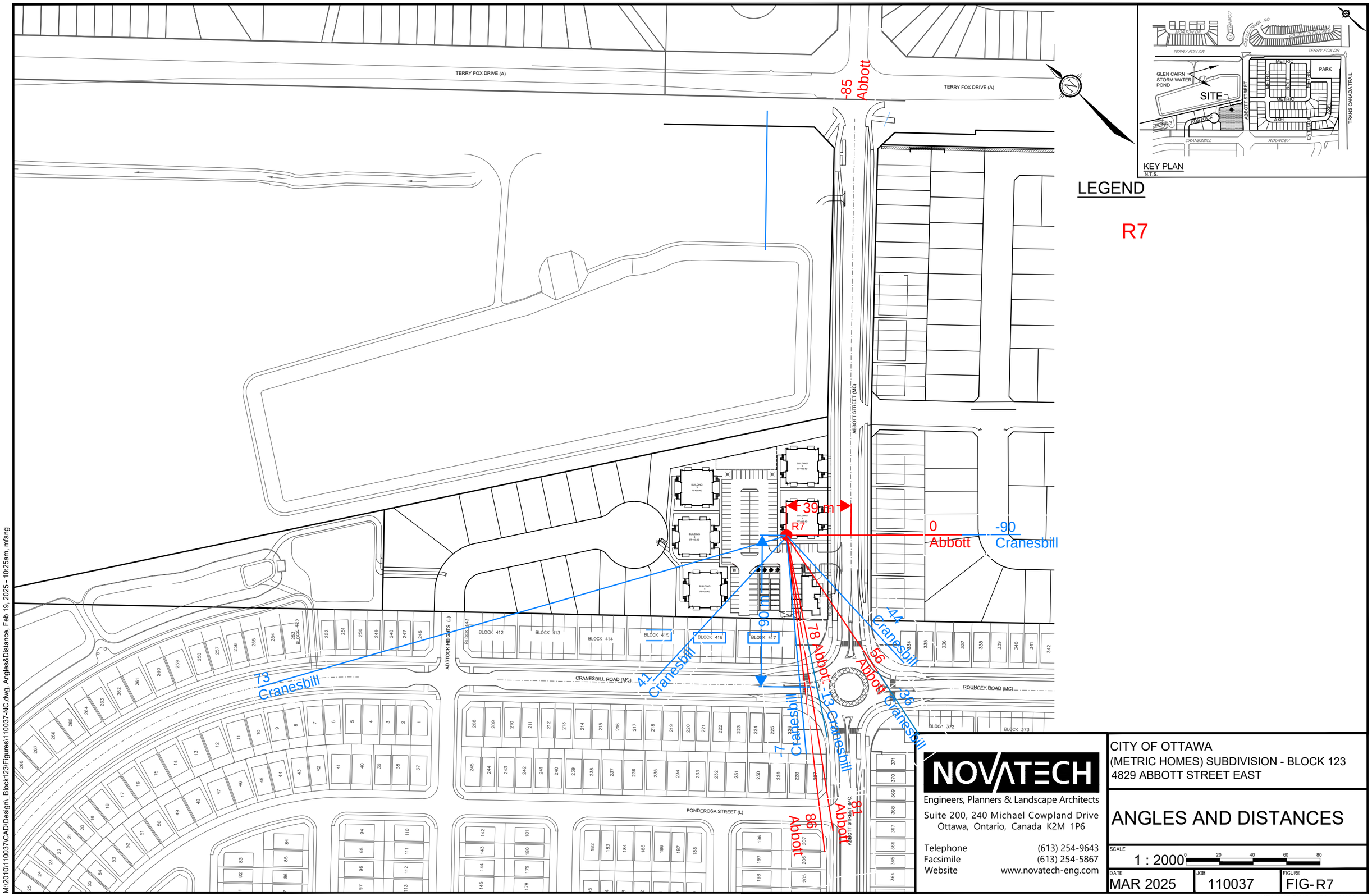
SHT11X17.DWG - 279mmX432mm



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ANGLES AND DISTANCES

SCALE 1 : 2000 (0, 20, 40, 60, 80)
DATE MAR 2025
JOB 110037
FIGURE FIG-R7

SHT11X17.DWG - 279mmX432mm

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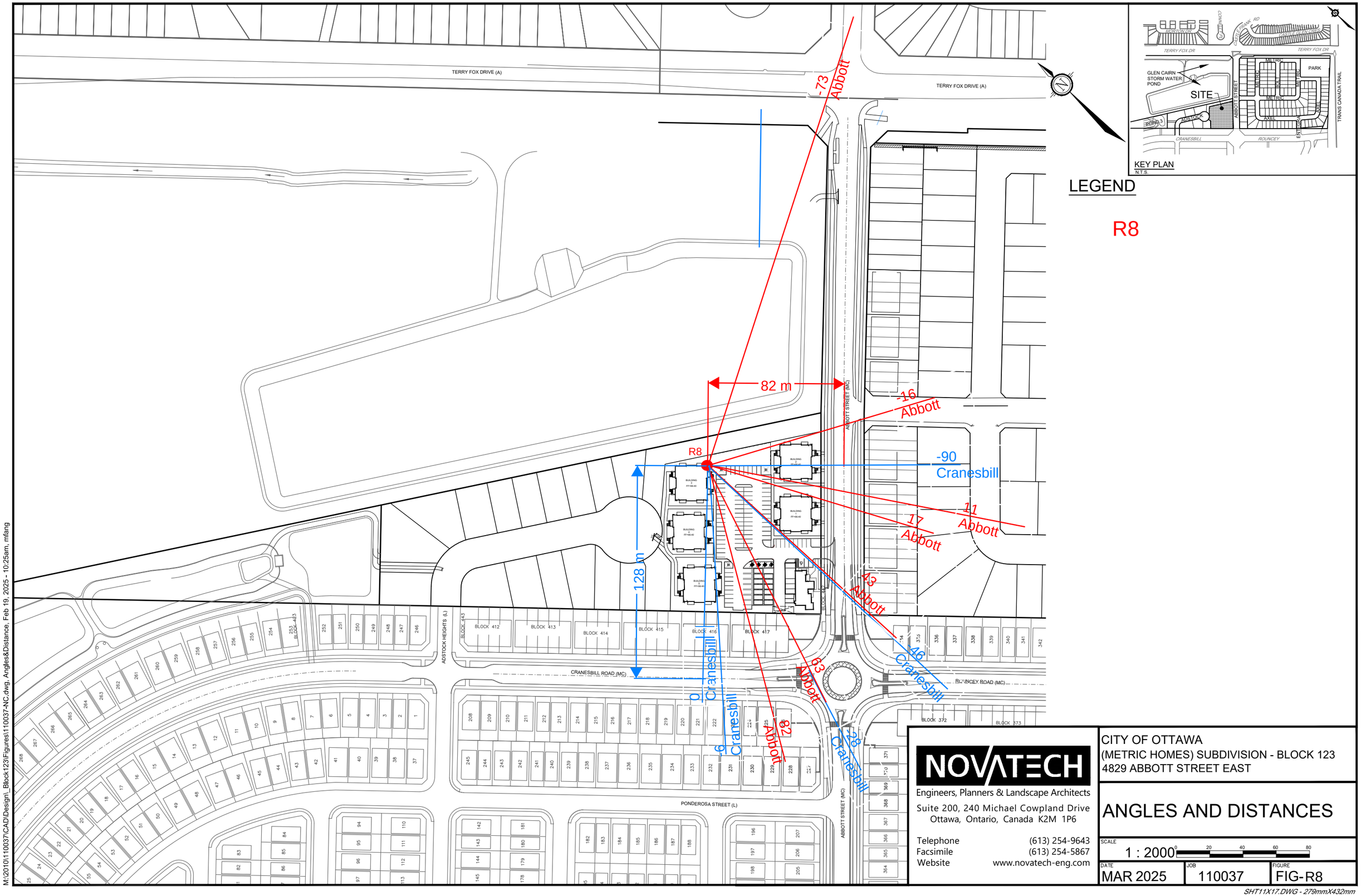

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ANGLES AND DISTANCES

SCALE 1 : 2000 (0 20 40 60 80)
DATE MAR 2025
JOB 110037
FIGURE FIG-R8

SHT11X17.DWG - 279mmX432mm

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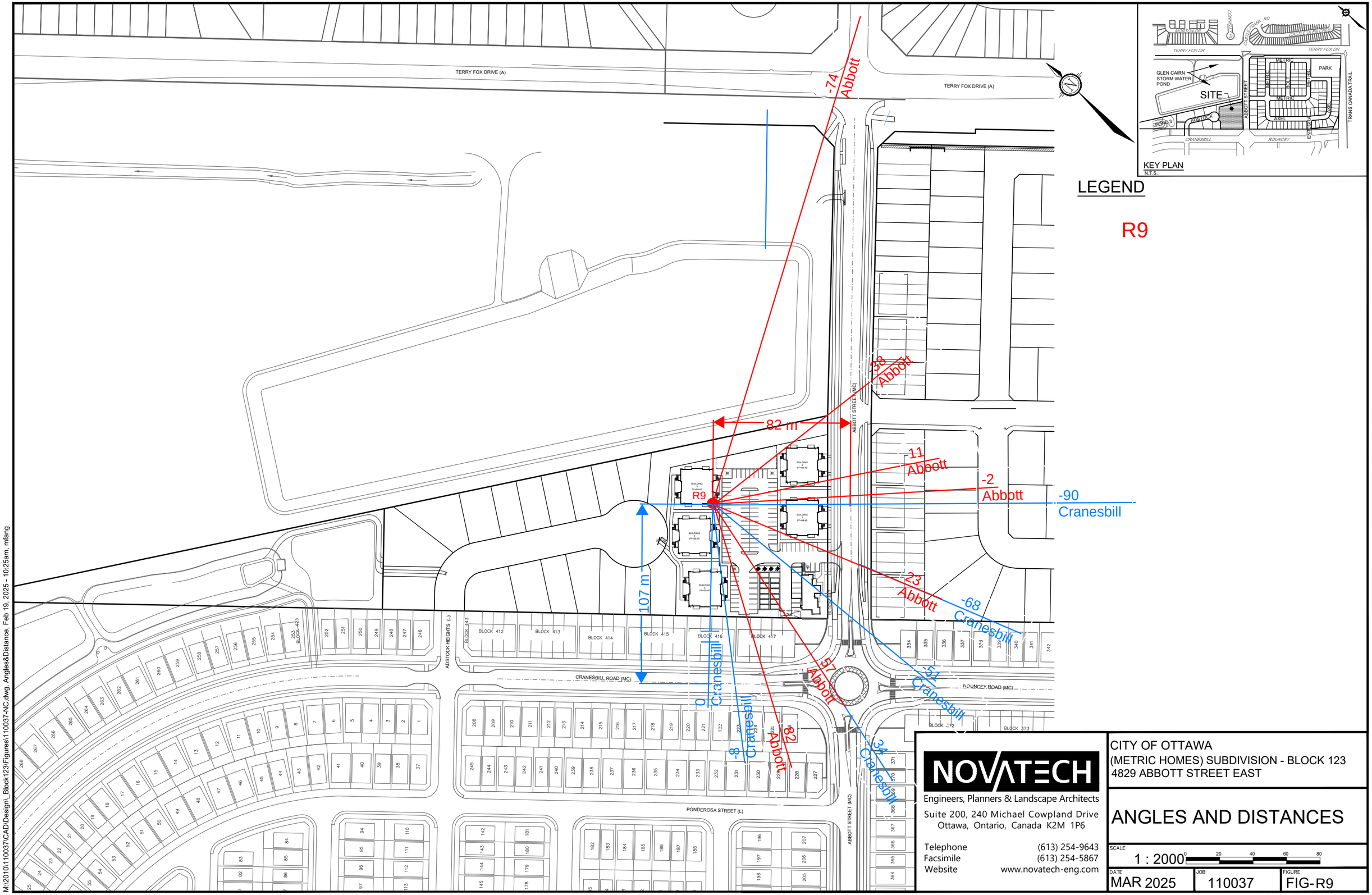

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ANGLES AND DISTANCES

SCALE 1 : 2000 (0, 20, 40, 60, 80)
DATE MAR 2025
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FIGURE FIG-R9

SHT11X17.DWG - 279mmX432mm

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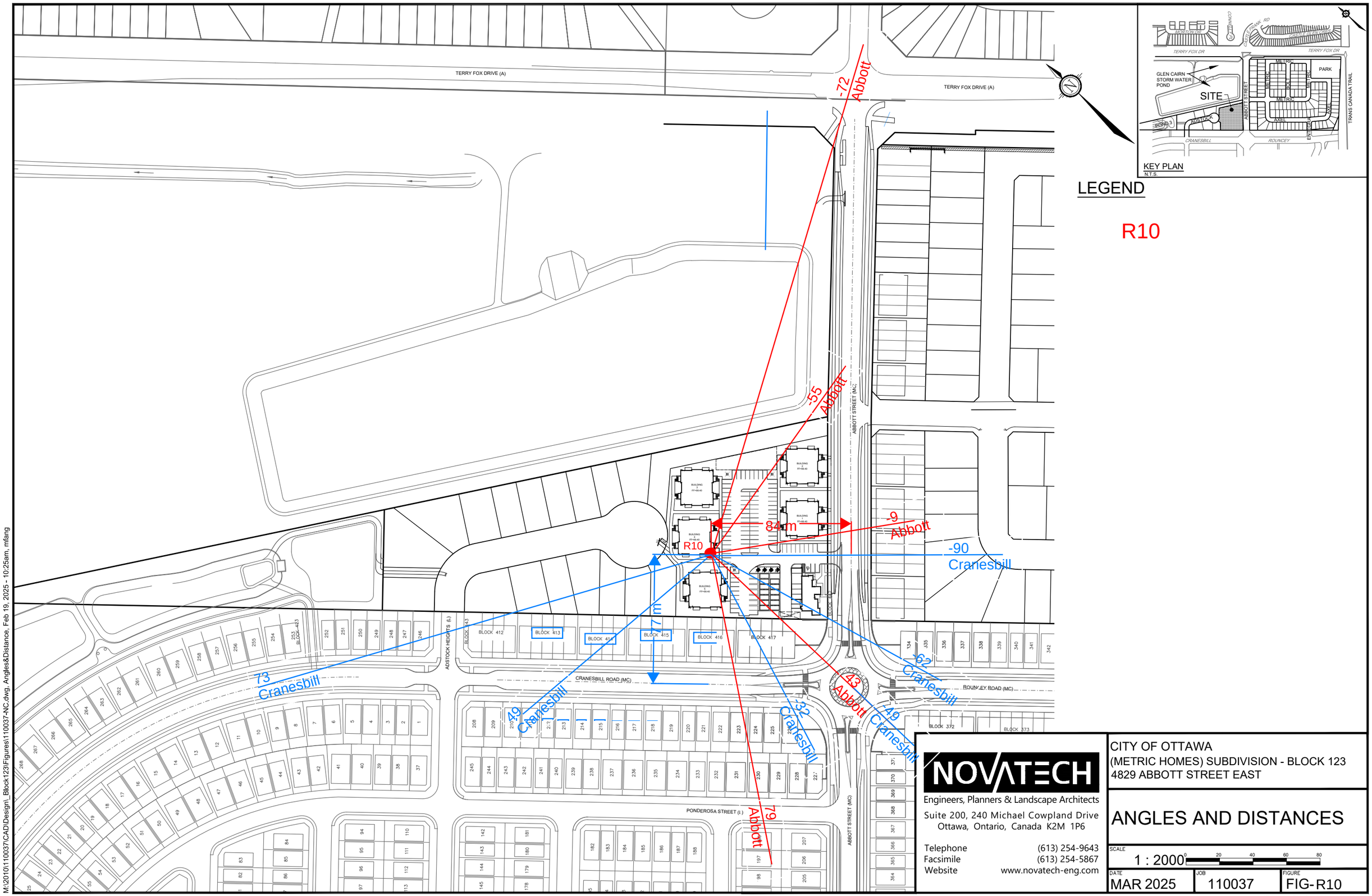

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ANGLES AND DISTANCES

SCALE 1 : 2000 (0, 20, 40, 60, 80)
DATE MAR 2025
JOB 110037
FIGURE FIG-R10

SHT11X17.DWG - 279mmX432mm

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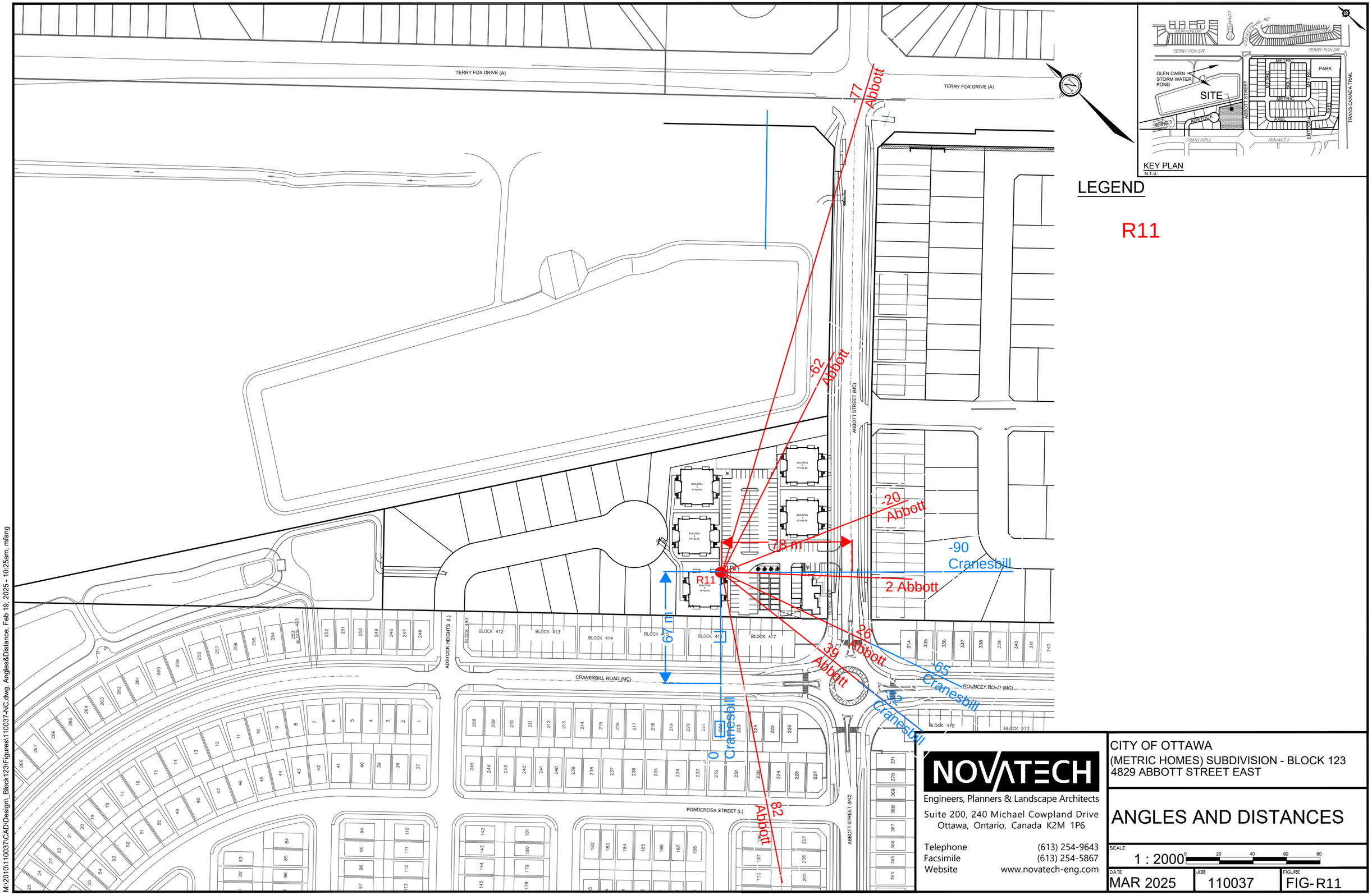

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ANGLES AND DISTANCES

SCALE 1 : 2000 (0 20 40 60 80)
DATE MAR 2025
JOB 110037
FIGURE FIG-R11

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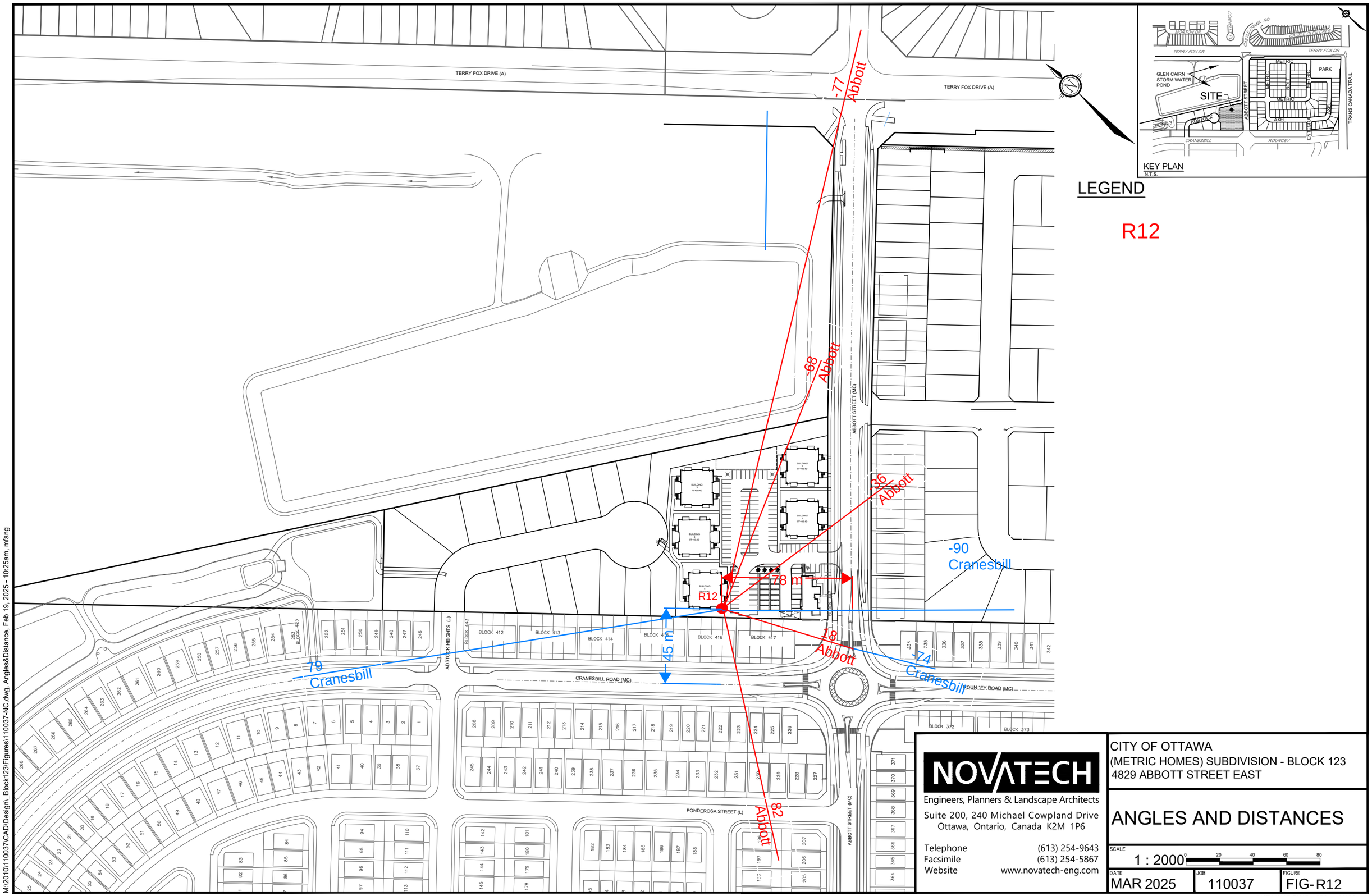
SHT11X17.DWG - 279mmX432mm



KEY PLAN
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LEGEND

R12

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ANGLES AND DISTANCES

SCALE 1 : 2000 (0, 20, 40, 60, 80)
DATE MAR 2025
JOB 110037
FIGURE FIG-R12

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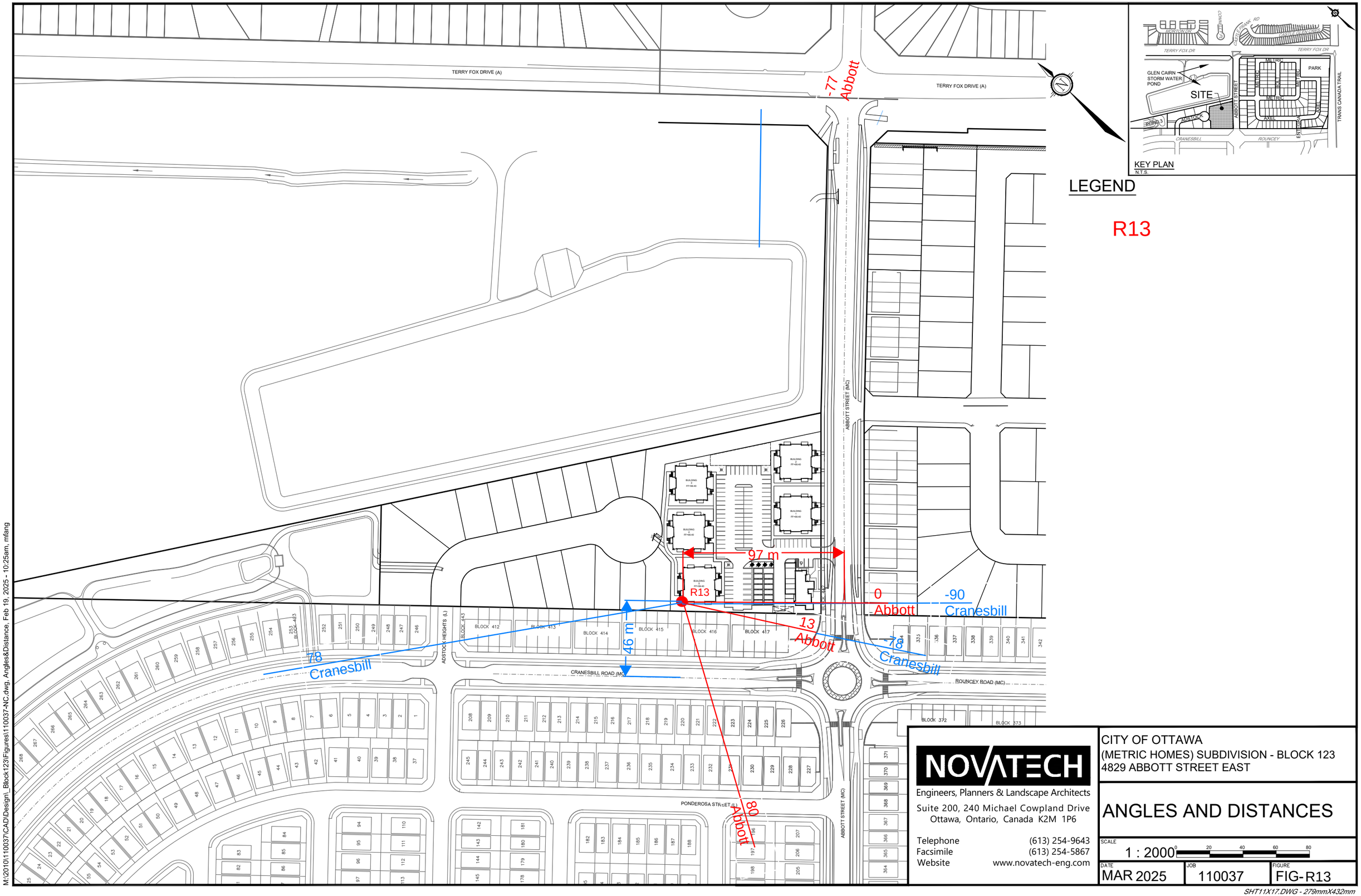
SHT11X17.DWG - 279mmX432mm



KEY PLAN
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LEGEND

R13

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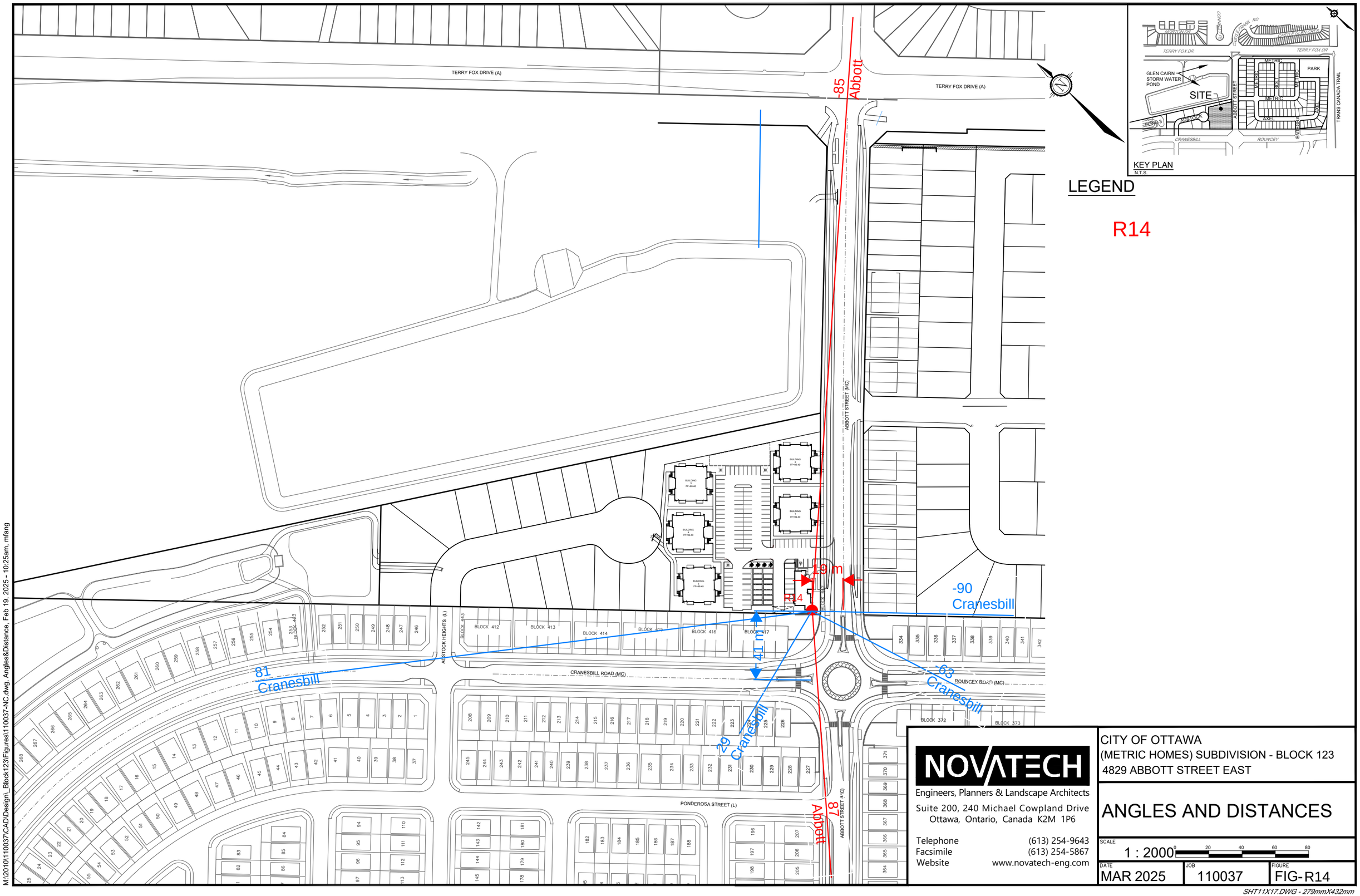
ANGLES AND DISTANCES

SCALE 1 : 2000 (0, 20, 40, 60, 80)
DATE MAR 2025
JOB 110037
FIGURE FIG-R13

SHT11X17.DWG - 279mmX432mm



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ANGLES AND DISTANCES

SCALE 1 : 2000 (0, 20, 40, 60, 80)
DATE MAR 2025
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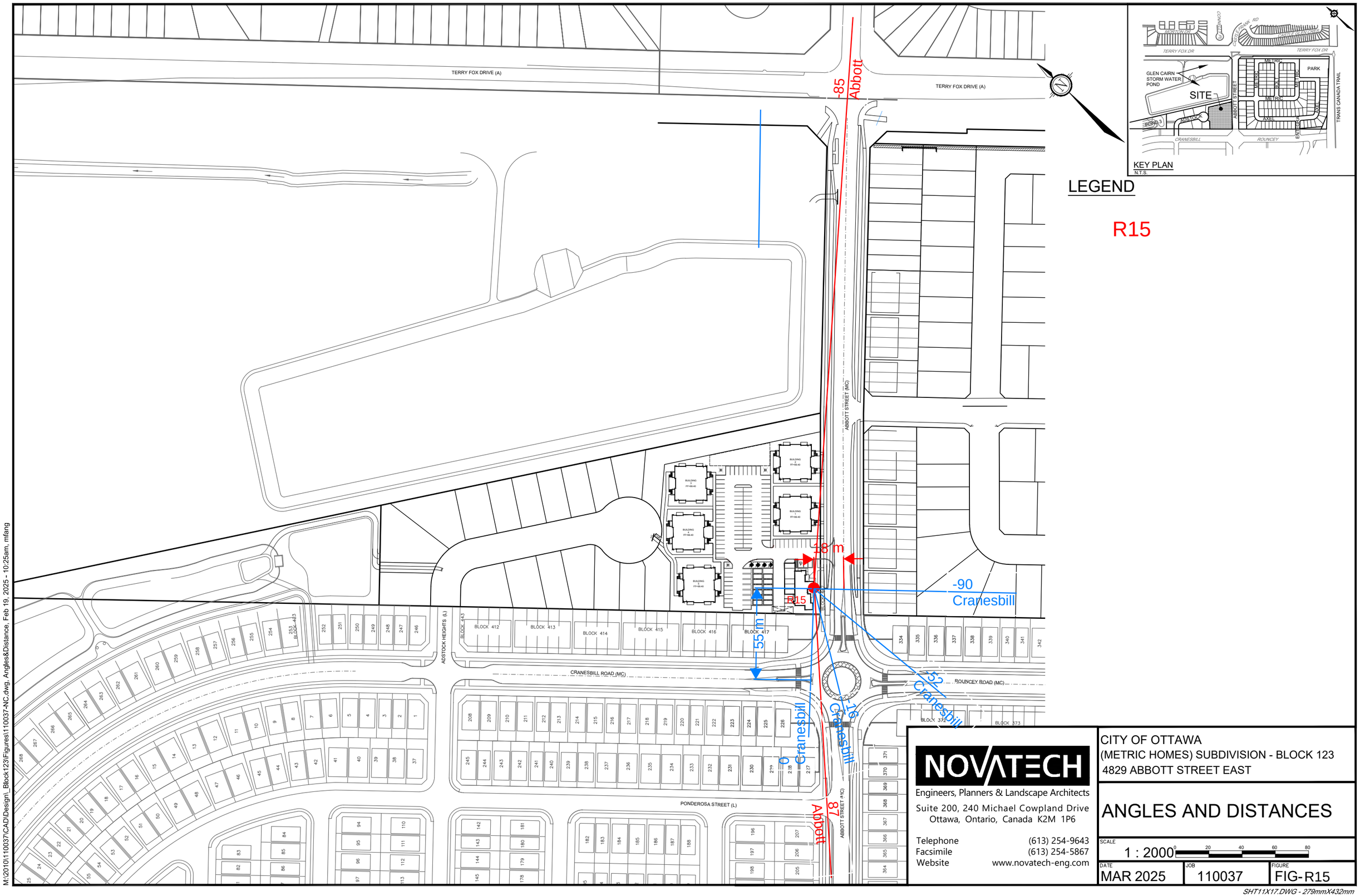
FIGURE FIG-R14

SHT11X17.DWG - 279mmX432mm



KEY PLAN
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LEGEND

R15

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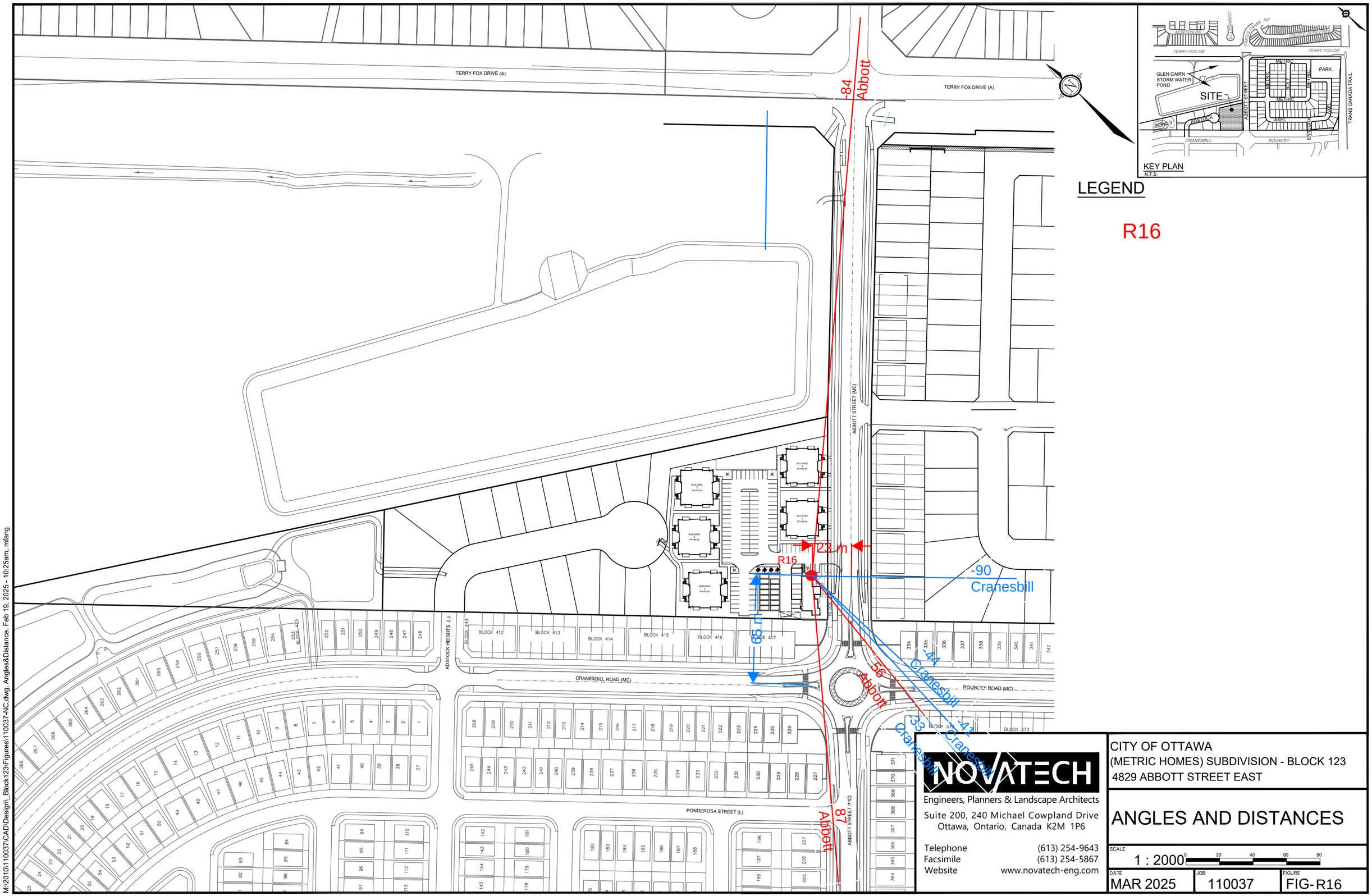
ANGLES AND DISTANCES

SCALE 1 : 2000 (0, 20, 40, 60, 80)
DATE MAR 2025
JOB 110037
FIGURE FIG-R15

SHT11X17.DWG - 279mmX432mm



KEY PLAN
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R16

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ANGLES AND DISTANCES

SCALE 1 : 2000 (0, 20, 40, 60, 80)
DATE MAR 2025
JOB 110037
FIGURE FIG-R16

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SHT11X17.DWG - 279mmX432mm