NOISE & VIBRATION IMPACT STUDY

"UPPER JAMES MIXED-USE DEVELOPMENT"

1452 Upper James Street,
Hamilton, ON

Prepared for:
Upper James M.D. Developments Inc.
102-3410 S Service Road,
Burlington, ON
L7N 3T2

Prepared By:

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Reviewed By:

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Qualified Acoustical Consultant

Our File No: 26-1015
January 2026

dBA Acoustical Consultants Inc.
P.O Box 99046
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L8J 2P7

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1.0 INTRODUCTION

dBA Acoustical Consulting Inc. has been retained to provide a noise and vibration impact study on behalf of Upper James M.D. Developments Inc. for the proposed Upper James Mixed-Use Development located at 1452 Upper James Street, Hamilton.

The purpose of the study is to determine the noise and vibration impact from Upper James Street, vehicular traffic and area stationary noise sources that may have an impact on the proposed mixed-use development as required for site plan approval for the City of Hamilton.

This study will detail noise impact relative to the site plan and recommend noise control measures necessary (if applicable) to meet Ministry of Environment Conservation and Parks (MECP) Publication NPC-300 entitled "Stationary & Transportation Sources-Approval & Planning guidelines while satisfying the planning requirements of the City of Hamilton.

Vibration is not considered as there are no heavy industry or railway lines within the required setback distances. Aircraft is not a concern as the development is located outside NEF 25 contour of any area Airports. Site Location attached as Figure 1.

2.0 SITE DESCRIPTION

Proposed for the site is an 8-storey mixed-use building consisting of 252 residential units, 2 retail units and one level of underground parking. There is an outdoor amenity area on the 3rd floor as well as terraces which are greater than 4m on the north facade second floor, west facade fifth and seventh floor. Proposed for the building are standard sized balconies that are less than 4m in depth and therefore not considered as Outdoor Amenity Areas (OLAs).

The proposed residential mixed-use development property is located approximately 20m west from the center line of Upper James Street. Upper James Street is a 4-lane roadway with a center turning lane running north and south and has a posted speed limit of 50 km/hr. To the immediate north, east and south of the proposed site are commercial properties. To the west of the proposed site at approximately 295m is West 5th Street. Separating West 5th Street and the proposed development is a future proposed residential development. West 5th Street is not a traffic noise issue due to the existing shielding of commercial buildings and distance separation.

Located to the north commercial properties with several rooftop HVAC Units (KFC & IOS) that are equipped with acoustical shrouds facing Upper James Street. These HVAC units are discussed later in this noise study. See Figure 2 for Site Plan.

3.0 NOISE IMPACT ASSESSMENT

3.1 NOISE CRITERIA

MECP specifies limits for road noise relative to new residential developments. The MECP Publication NPC-300 entitled "Stationary & Transportation Sources-Approval & Planning, specifies the criteria, summarized as follows:

TABLE 1 - Road Traffic Sound Levels Limits	
Time Period	Leq (dBA)
07:00 – 23:00 (16 hr.)	55 Outdoor Living Area
07:00 – 23:00 (16 hr.)	55 Plane of Window
23:00 – 07:00 (8 hr.)	50 Plane of Bedroom Window

Where noise levels estimated at the Plane of the Window (POW) are equal to or less than the values listed in Table 1, no noise control measures are required. Where noise levels exceed Table 1 values, the following action are required:

TABLE 2 – Noise Control Requirements		
Time Period	Noise Level Leq (dBA)	Action Required
07:00 - 23:00 Daytime (OLA)	56 to 60	Warning Clause Type "A"
	> 60	Barrier & Warning Clause Type "B"
07:00 – 23:00 Daytime (POW)	> 55	Provision for A/C, Warning Clause "C"
	> 65	Central A/C, Warning Clause "D"
	> 65	Building Component Specification
23:00 to 07:00 Nighttime (POW)	> 50	Provision for A/C and Warning Clause Type "C"
	> 60	Building Component Specification
	> 60	Central Air and Warning Clause Type "D"

Where nighttime noise levels exceed 60 dBA, building components must be designed to meet Table 3 indoor sound level limits.

TABLE 3 - Indoor Road Sound Levels Limits	
Indoor Location	Leq (dBA)
	Road
Living/Dining/Bedroom 7:00 - 23:00	45
Living/Dining/Bedroom 23:00 - 07:00	40

3.2 ROAD NOISE

Predicted road traffic noise levels were calculated for Upper James Street the main road noise source in the proposed site area. The 2022 AADT road traffic volumes for Upper James Street were obtained via email from Giancarlo Perez Miller, Database Technologist, Roadway Safety, Transportation Division, Public Works in the City of Hamilton. These are the most up to date AADT road traffic volumes available.

The MECP computer program STAMSON version 5.04 was used to carry out prediction calculations (See Appendix "A"). Traffic data is summarized in Table 4.

The daytime/nighttime volume ratios relative to Upper James Street are typically calculated using a 90/10 split and a 16/8 hr assessment required by the MECP. The percentage of annual growth were figured at 2% over 14 years. The AADT (Annual Average Daily Traffic) volumes used are reflective of the worst-case scenario. Truck volumes were factored at 4% medium and 6% heavy of the total vehicle volumes for the roadway. Upper James Street is considered a heavy truck route.

TABLE 4 – Forecasted Road Traffic Volumes (2036)			
Upper James Street	AADT – 36511 Vehicles		
	Cars	Medium Trucks	Heavy Trucks
Day	29574	1314	1972
Night	3286	146	219

The following Table 5 represents the free field noise levels of road traffic from Upper James Street. Nine (9) Receptor locations were considered for this report with reflective road surface for Upper James. See Figure 3 Receptor Locations.

TABLE 5 – Predicted Future Traffic Noise (dBA) Upper James Street		
Location	07:00 – 23:00	23:00 – 07:00
R1 – East Façade 2nd Floor (6.5m)	71 dBA	64 dBA
R2 – East Façade 8th Floor (25m)	71 dBA	64 dBA
R3 – South Façade 2nd Floor (6.5m)	67 dBA	60 dBA
R4 – South Façade 8th Floor (25m)	67 dBA	60 dBA
R5 – North Façade 2nd Floor (6.5m)	67 dBA	60 dBA
R6 – North Façade 8th Floor (25m)	67 dBA	60 dBA
R7 – North Façade 2nd Floor Terrace (6.5m)	70 dBA	N/A
R7A – North Façade 2nd Floor Terrace Mitigated 1.83m	56 dBA	N/A
R8 – West Façade 5th Floor Terrace (15.5m)	59 dBA	N/A
R8A – West Façade 5th Floor Terrace Mitigated 0.91m	46 dBA	N/A
R9 – West Façade 7th Floor Terrace (22m)	60 dBA	N/A
R9A – West Façade 7th Floor Terrace Mitigated 0.91m	45 dBA	N/A

3.3 VIBRATION

The City of Hamilton Construction Management Plan 2022 will require pre-condition surveys of area commercial buildings within the area of influence to be completed prior to the start of construction activities and may require one week of baseline vibration monitoring prior to the start of any heavy construction activities, as well as vibration monitoring during any heavy construction activities. Further information will be provided prior to the issuance of a building permit or as The City of Hamilton staff require the documents for approval.

4.0 RECOMMENDATIONS - NOISE CONTROL

4.1 OUTDOOR LIVING AREAS

Calculated road noise levels exceed the 55 dBA daytime criteria outlined in Table 1. The draft plan for the proposed development includes standard apartment units with typical apartment style balconies that are not defined by the MECP as an outdoor amenity space as they are less than 4m in depth. The building is proposed to have terraces that are greater than 4m in depth on Floors 2, 5 and 7 and a 3rd floor Outdoor Amenity Space (OLA). R7 (2nd Floor Terraces) will require a minimum 1.83m Safety Guard Railing or Equivalent. Although mitigation has been added to R7, the noise level exceeds the 55 dBA limit by 1 dBA. This exceedance is not audible to the human ear. R8 (5th Floor Terraces & R9 7th Floor Terraces) will require a 0.91m minimum Safety Guard Railing or equivalent. The 3rd floor OLA is shielded on three sides by the upper levels of the building and noise mitigation measures are not required. See Figure 4, Safety Guard Railing Locations.

For reference, the MECP requirements for an acoustical barrier, safety Guard Railings or equivalent are:

- Minimum surface density (Face Weight) of 20 kg/m².
- Structurally sound.
- Appropriately designed to withstand wind and snow load and constructed without cracks or surface gaps.

4.2 INDOOR NOISE LEVELS

Calculated nighttime road noise levels at the Plane of Window (POW) exceed the 50 dBA criteria outlined in Table 1 for indoor space for all residential units for the north, south and east facades throughout the proposed development. Specific building components (walls, windows, doors etc.) are required and confirmed using the STC (Sound Transmission Class) method. Building design specifications were made available and STC calculations (Sound Transmission Class) method are summarized in Table 6 following.

STC calculations are summarized in Table 6 following with minimum window door and wall construction specified for all units throughout the proposed development. The STC values were calculated for each room type, based on typical window to floor ratios of 80% for bedrooms and living room areas. Wall to floor ratio was factored at 100%. A maximum of three building components were factored per room.

As a cost-efficient consideration for the builder, all windows for all floors on the north, south, west, and east facades of the proposed building require same window STC-38 value configurations. Acoustically tested windows must be installed and verified by a letter from the appropriate window company be issued to confirm the STC values have been achieved.

TABLE 6 – Recommended Door, Wall, and Window Construction

LOCATION	Acoustically Tested Window STC	Exterior Wall STC	Patio Door Construction STC
	Example	Example	Example
Bedroom	STC-38	STC-40	STC-38
Living room	STC-38	STC-40	STC-38

5.0 VENTILATION / WARNING CLAUSES

Ventilation and warning clause requirements are required for this project as noted in Table 7 following. The proposed site plans appear to have a top floor mechanical room which will be completely enclosed for the heat and air ventilation systems. If these units are enclosed, no noise shall emanate from the mechanical room. If the HVAC units are located on the roof top other than the mechanical room, then an updated noise study will be required to determine noise impact on any proposed residential developments or existing residential properties.

TABLE 7 - Ventilation and Warning Clause Requirements

LOCATION	VENTILATION	WARNING CLAUSE
All Residential Units	Central Air Conditioning	Type "B" & "D"

It is recommended that the appropriate warning clauses be inserted into all Offers and Agreements of Purchase and Sale or Lease. See the following for specific warning clause wording:

TYPE B: All Residential Units

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

TYPE D: All Residential Units

"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 Municipality's and the MECP's noise criteria."

6.0 NOISE CONTROL REQUIREMENTS CONFIRMATION

The following Table 8 summarizes the highest roadway noise levels (Table 5) for the daytime/nighttime hours and recommends air conditioning, warning clauses, and indoor noise level limits criteria. Table 8 listed below shows the Warning Clauses and STC requirements the development needs to meet the MECP minimum required indoor noise level limits

TABLE 8 - Noise Control Requirements Confirmation

Time Period	Predicted Impact, Leq (dBA)	A/C Req.	Warning Clause	Indoor Limits, Leq (dBA)		Window / Floor Area Ratio (%)	Wall / Floor Area Ratio (%)	STC Requirements			
				Living, Dining, and Den Areas	Sleeping Quarters			Living, Dining, and Den Areas		Sleeping Quarters	
	Road			Road	Road			Window	Wall	Window	Wall
Day	71	Yes	B & D	45	45	80%	100%	38	40	38	40
Night	64	Yes	B & D	45	40	80%	100%	32	34	36	38

7.0 STATIONARY SOURCES

7.1 REGULATORY CONTEXT

The MECP Publication-300, Stationary & Transportation Sources-Approval & Planning guidelines defines a point of reception/receptor as *"any point on the premises of a person where the sound or vibration originating from other than those premises are received."* The point of reception may be located on any of the following, or zoned for future use, premises including but not limited to the following: residential homes, hospitals, church's, noise sensitive areas, etc.

The areas surrounding the proposed place of worship are indicative of a "Class 1 Area" as defined in MECP Publication 300, Stationary & Transportation Sources-Approval & Planning guidelines. The applicable sound limits are the higher of:

- The existing ambient sound level; or
- The minimum values of Table 9.

No restrictions apply to stationary sources if the one-hour equivalent sound exposure (Leq) is lower than the levels in the following Table 9.

The following Table 9 Minimum Sound Level Limits are used to achieve compliance with MECP Publication NPC-300, Stationary & Transportation Sources-Approval & Planning guidelines.

TABLE 9 – Minimum Sound Level Limits (Class 1 Area)	
Time Period	Leq (dBA)
07:00 – 19:00	50
19:00 – 23:00	45
23:00 – 07:00	45

7.2 KENTUCKY FRIED CHICKEN - 1428 UPPER JAMES STREET

Kentucky Fried Chicken (KFC) is located approximately 26m north of the proposed development. The daily operations are open from Monday to Sunday 10:30am to 11:00pm, with a drive-thru located to the west of the restaurant. Typically, the noise level from the speaker box is 65 dBA. However, the speaker box faces the west and is located below the drivers' doors, which provides shielding from the speakers and will not have any acoustical impact on the proposed development. The property separating the proposed development and KFC has a 2.43m wooden noise barrier possibly required for the demolished residential home to the immediate south. KFC restaurant has two (2) 8.5-ton Rooftop HVAC units. See Appendix "B" for rooftop HVAC locations and Sound Propagation Level Calculator.

The calculated sound power level for each HVAC unit has been calculated into (Leq) dBA for one unit and then combined both units operating at the same time. The total (Leq) dBA for both units operating together at once is 52.3 dBA on the 2nd floor north façade and 53 dBA on the 8th floor. The results of the combined overall (Leq) dBA noise levels are confirmed to be slightly above the allowable noise limits without considering the duty cycle for daytime and nighttime hours as per MECP NPC-300 Stationary Noise Guidelines and Table 9 of this noise study. See Appendix "B" for noise propagation level noise chart.

Table 10A – KFC Combined HVAC Units (Daytime)				
Source ID	Source Description	Receptor Locations – Commercial Plazas		
		Distance (m)	Leq Level (dBA) 6.5m	25m
R1 – HVAC RTU-1	(1 Unit)	26	49.9	49.3
R2 – HVAC RTU-2	(1 Unit)	26	49.9	49.3
TOTAL: All Noise Sources Combined		--	**53.0**	**52.3**
Duty Cycle Calculation			**- 6 dBA**	**-6 dBA**
Overall Daytime Levels			**47.3 dBA**	**46.3 dBA**

The above Table 10A shows the combined HVAC units calculation based on one-hour of run time. However, HVAC units typically cycle on for 30 minutes and then off for 30 minutes during daytime hours.

The duty cycle calculation would be 30 minutes ÷ 60 minutes = (Log x 20) = -6 dBA for daytime. The overall noise level from all the HVAC units combined, taking into consideration the cycling time, would – 6 dBA and the totals noted above. Therefore, there is no acoustical impact on the proposed development during the daytime hours.

Table 10B – KFC Combined HVAC Units (Nighttime)				
Source ID	Source Description	Receptor Locations – Commercial Plazas		
		Distance (m)	Leq Level (dBA) 6.5m	25.0m
R1 – HVAC RTU-1	(1 Unit)	26	49.9	49.3
R2 – HVAC RTU-2	(1 Unit)	26	49.9	49.3
TOTAL: All Noise Sources Combined		--	**53.0**	**52.3**
Duty Cycle Calculation			**-12 dBA**	**-12 dBA**
Overall Nighttime Level			**41.3 dBA**	**40.3 dBA**

Whereas there are no restaurant services after 11:00pm the nighttime duty cycle calculation would be 15 minutes ÷ 60 minutes = (Log x 20) = -12 dBA for nighttime. The overall noise level from all the HVAC units combined, taking into consideration the cycling time, would – 12 dBA and the totals shown above calculated to be less than the nighttime noise levels noted in Table 9. Therefore, there is no acoustical impact on the proposed development.

7.3 IOS ESTIATORIO & WINE BAR - 1400 UPPER JAMES STREET

IOS Estiatorio & Wine & Bar (IOS) is located approximately 28m north of the proposed development. The daily operations are open Monday to Thursday from 3pm to 10:00pm, and Friday and Saturday from 12:00 noon to 10:00pm and Sundays 12:00 noon to 8:00pm. IOS restaurant has two (2) 8.5-ton Rooftop HVAC units. See Appendix "B" for rooftop HVAC locations and Sound Propagation Level Calculator. There are a couple of small intake units that do not generate mechanical noise.

The calculated sound power levels for each type of HVAC units have been calculated into (Leq) dBA for one unit and then combined both units operating at the same time. The total (Leq) dBA for both units operating together at once is 40.5 dBA on the 2nd floor north façade and 41.3 dBA on the 25th floor. The results of the combined overall (Leq) dBA noise levels are confirmed to be below the allowable noise limits without considering the duty cycle for daytime and nighttime hours as per MECP NPC-300 Stationary Noise Guidelines and Table 9 of this noise study. See Appendix "B" for noise propagation level noise chart.

Table 11A – IOS Combined HVAC Units (Daytime)				
Source ID	Source Description	Receptor Locations – Commercial Plazas		
		Distance (m)	Leq Level (dBA) 6.5m	25m
R1 – HVAC RTU-3	(1 Unit)	33	37.5	38.4
R2 – HVAC RTU-4	(1 Unit)	40	33.3	36.8
TOTAL: All Noise Sources Combined		--	**40.5**	**41.3**
Duty Cycle Calculation			**- 6 dBA**	**-6 dBA**
Overall Daytime Level			**34.5 dBA**	**35.3 dBA**

The above Table 11A shows the combined HVAC units calculation based on one-hour of run time. HVAC units typically cycle on for 30 minutes and then off for 30 minutes during daytime hours.

The calculation would be 30 minutes ÷ 60 minutes = (Log x 20) = -6 dBA for daytime. The overall noise level from all the HVAC units combined, taking into consideration the duty cycling time, would be -6 dBA and the totals are noted above. Therefore, there is no acoustical impact on the proposed development during the daytime hours.

Table 11B–IOS Combined HVAC Units (Nighttime)				
Source ID	Source Description	Receptor Locations – Commercial Plazas		
		Distance (m)	Leq Level (dBA) 6.5m	25m
R1 – HVAC RTU-3	(1 Unit)	33	37.5	38.4
R2 – HVAC RTU-4	(1 Unit)	40	33.3	36.8
TOTAL: All Noise Sources Combined		--	**45.0**	**53.3**
Duty Cycle Calculation			**-12 dBA**	**-12 dBA**
Overall Nighttime Level			**41.3 dBA**	**41.3 dBA**

Whereas there are no restaurant services after 11:00pm the nighttime duty cycle calculation would be 15 minutes ÷ 60 minutes = (Log x 20) = -12 dBA for nighttime. Therefore, the overall noise level from all the HVAC units combined, taking into consideration the cycling time, would – 12 dBA and the totals shown above calculated to be less than the nighttime noise levels noted in Table 9. Therefore, there is no acoustical impact on the proposed development.

7.4 SPRING SUSHI HAMILTON 1508 UPPER JAMES STREET

Spring Sushi Restaurant is located approximately 80m south of the proposed development separated by vacant lands and the driveway into the Spring Sushi plaza. The daily operations are open Monday to Saturday from 11:00am to 10:30pm, and Sundays 12:00 noon to 10:30pm. Spring Sushi restaurant has one (1) 8.5-Ton Rooftop HVAC unit. The rooftop HVAC unit is located approximately 85m from the proposed development. Calculations for the HVAC unit indicate that the noise levels are 29.3 dBA for the second floor and 29.9 dBA for the 8th floor without the calculations for duty cycling. The rooftop HVAC unit will not have an acoustical impact on the proposed site development. See Appendix "B" for rooftop HVAC locations. See Appendix "B" Sound Propagation Chart.

8.0 SUMMARY OF RECOMMENDATIONS

The following noise control measures are required to satisfy the indoor and outdoor noise level criterion:

- Central Air Conditioning for all Residential Units as recommended in Table 7.
- Window, Door, and Wall construction as recommended in Table 6.
- Type "B" & "D" Warning Clause for all residential units are required to be inserted into all Offers and Agreements of Purchase and Sale or Lease (Table 7).
- A letter from the window company be issued to confirm STC values for all proposed windows to be installed and an Acoustical Certificate to be sent to the City of Hamilton confirming that STC values have been achieved.
- The 2nd Floor Terraces require a minimum 1.83m Safety Guard Railing or Equivalent
- The 5th Floor and 7th Floor Terraces require a minimum 0.91m Safety Guard Railing or Equivalent.
- It is recommended that a qualified acoustical consultant certify that the required noise control measures have been incorporated into the builder's plans prior to issuance of a building permit.
- It is recommended that a qualified acoustical consultant certify that the required control measures have been properly installed prior to an occupancy permit.

9.0 CONCLUSIONS

dBA Acoustical Consulting Inc. has provided a noise and vibration impact study on behalf of Upper James M.D. Developments Inc. for the proposed Upper James Mixed-Use Development located at 1452 Upper James Street, Hamilton.

The study determined the noise and vibration impact from Upper James Street, vehicular traffic and area stationary noise sources that impact the proposed mixed-use development as required for site plan approval for the City of Hamilton.

This study detailed noise impact relative to the site plan and recommended noise control measures necessary to meet MECP Publication NPC-300 while satisfying the planning requirements of the City of Hamilton.

FIGURE 1
SITE LOCATION

FIGURE 2
SITE PLAN

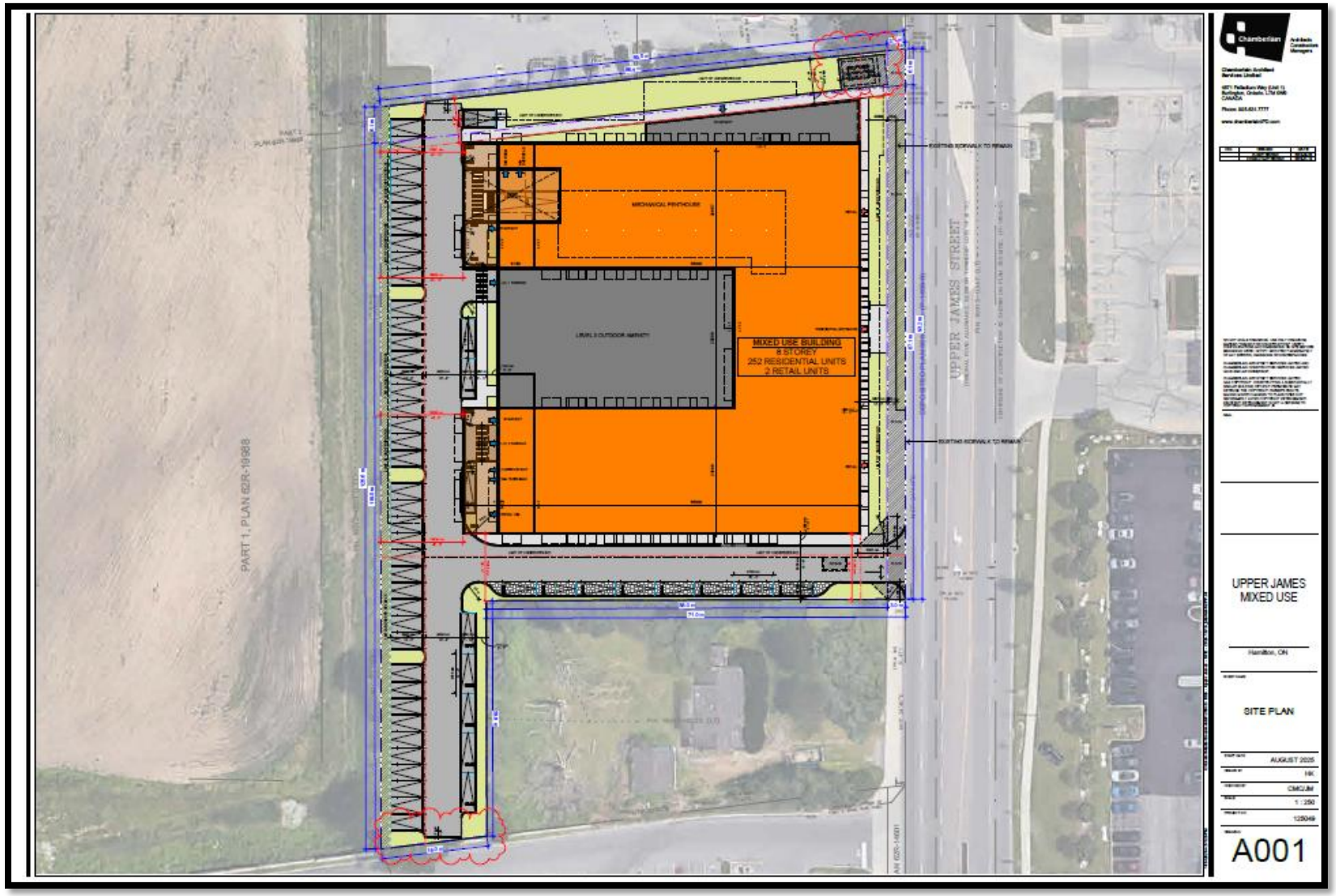


FIGURE 3
RECEPTOR LOCATIONS

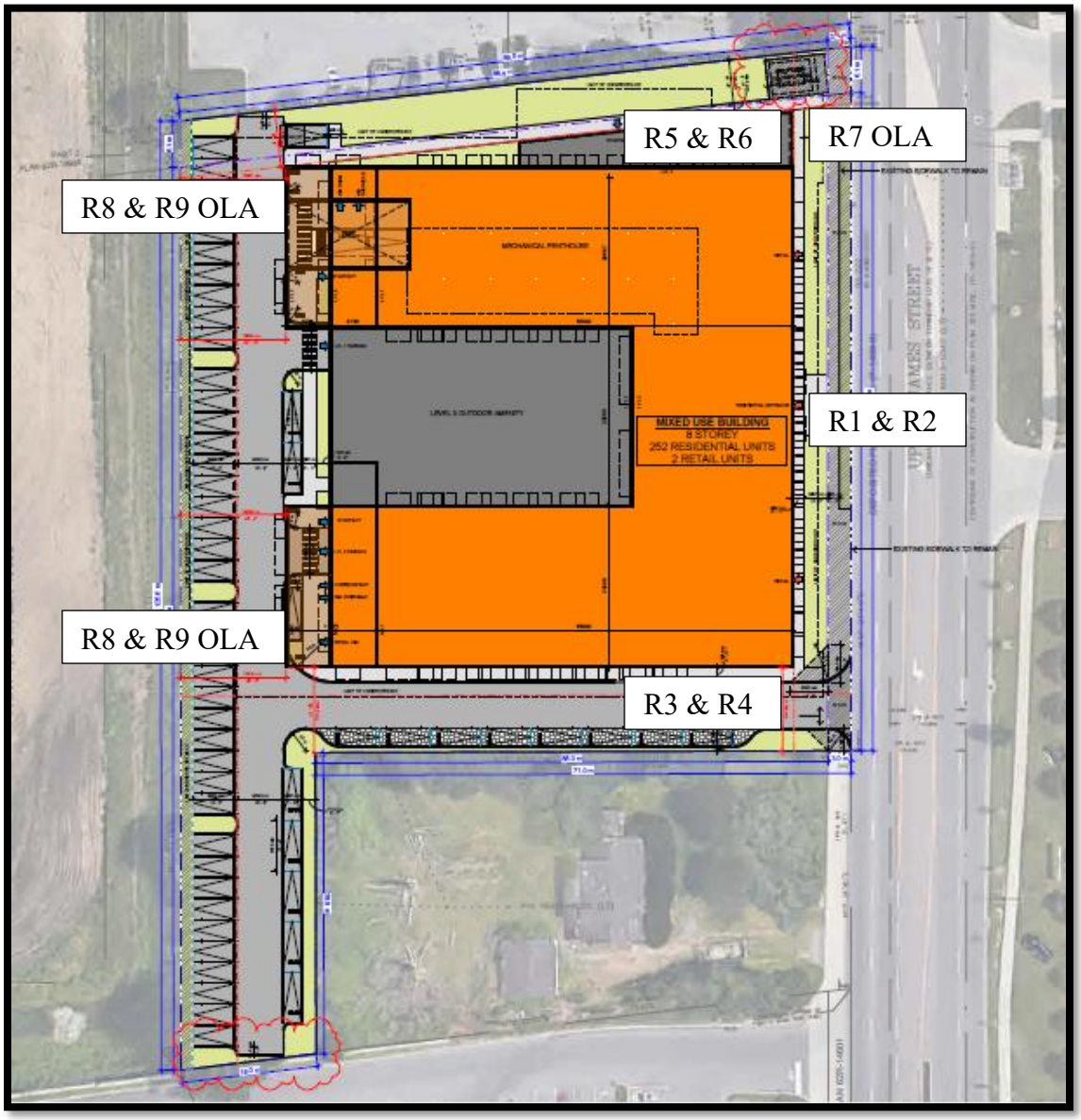


FIGURE 4
1.83m SAFETY GUARD RAILINGS
2nd FLOOR TERRACES

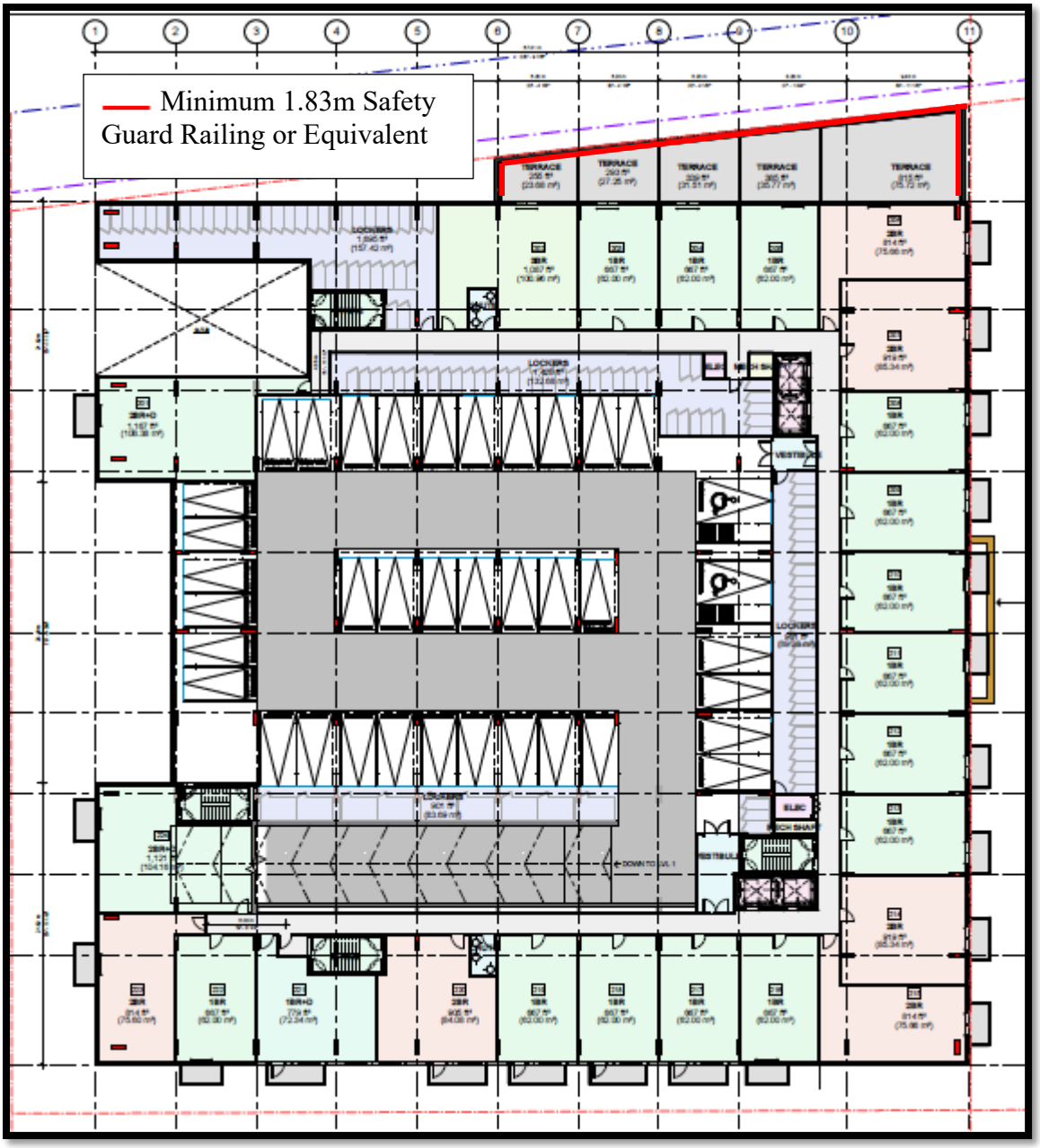


FIGURE 4
0.91m SAFETY GUARD RAILINGS
5th FLOOR TERRACES

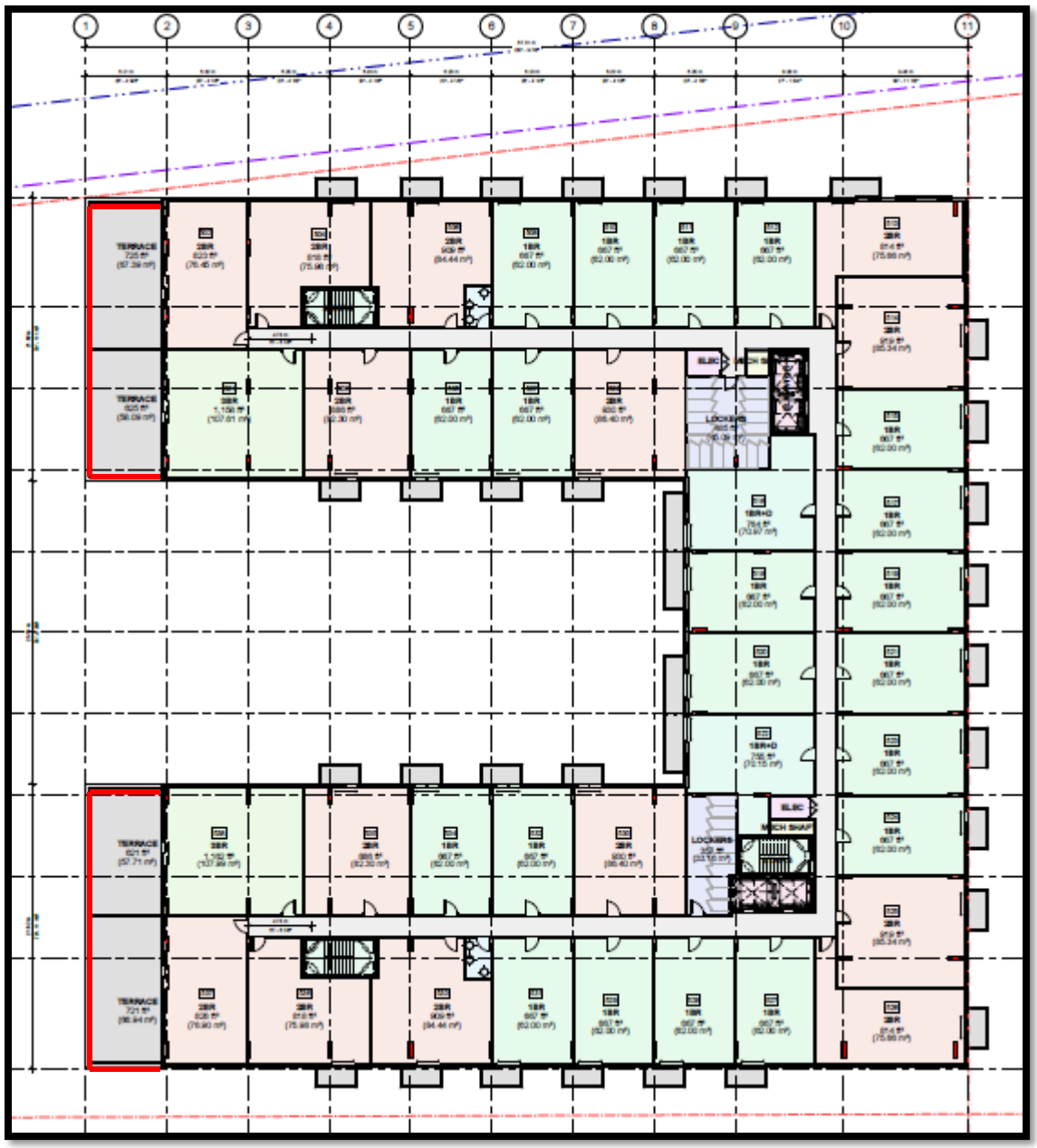
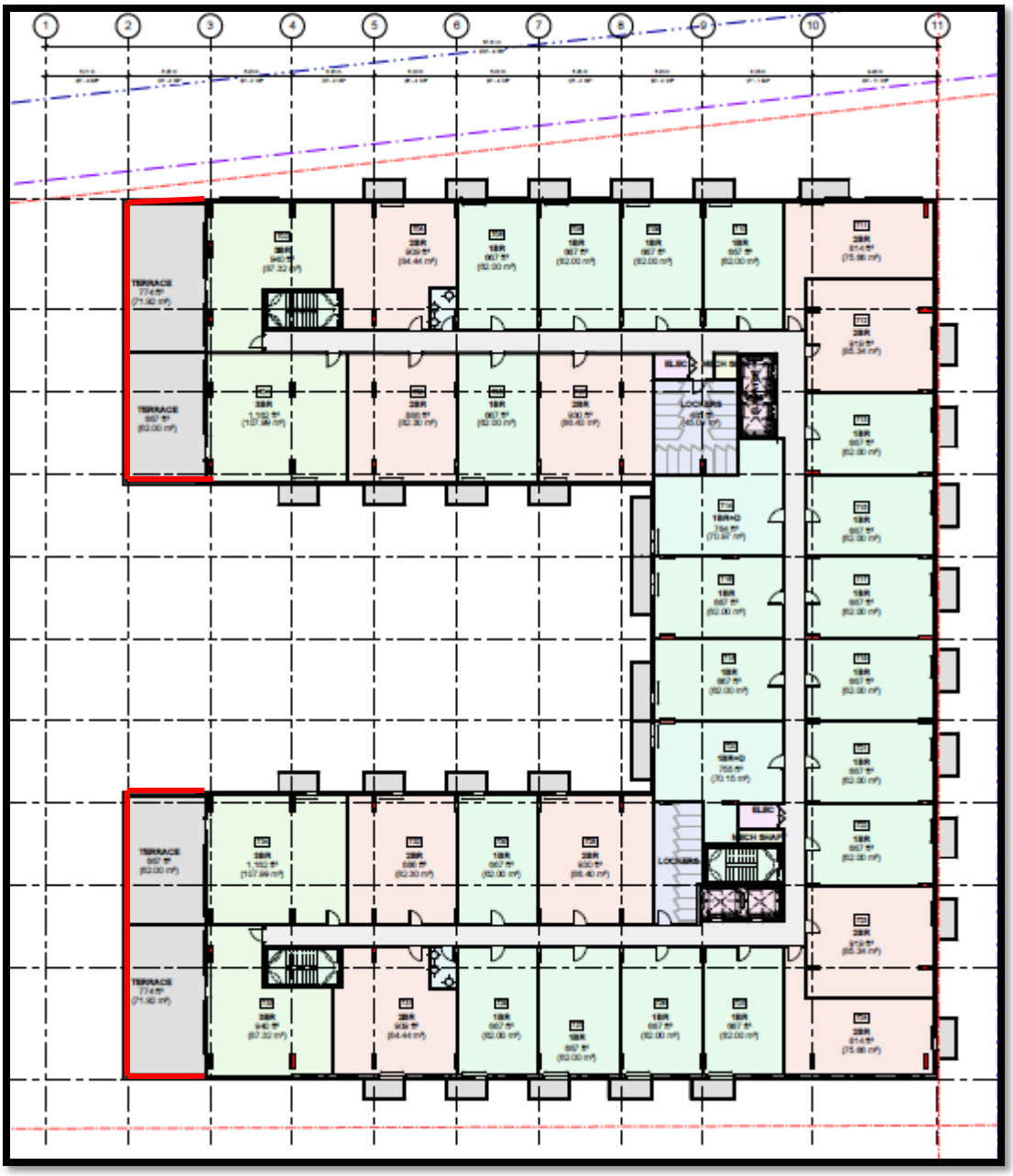


FIGURE 4
0.91m SAFETY GUARD RAILINGS
7th FLOOR TERRACES



APPENDIX “A”

2022 CITY OF HAMILTON AADT TRAFFIC DATA UPPER JAMES STREET

Hi Nicole,

Happy New Year. The following is the AADT for the project site:

- UPPER JAMES ST btwn PRIVATE & REGINA - AADT - 27,671

Regards,

Giancarlo Perez Miller
Database Technologist
Roadway Safety
Transportation Division
Public Works
Hamilton

STAMSON CALCULATIONS

```
STAMSON 5.04        SUMMARY REPORT        Date: 19-01-2026 11:02:16
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: r1upjam.te           Time Period: Day/Night 16/8 hours
Description: R1 East Facade 2nd Floor
                  TOTAL Leq FROM ALL SOURCES              (DAY): 70.96
                                                          (NIGHT): 64.43

Road data, segment # 1: Upper James (day/night)
-----------------------------------------------
Car traffic volume  : 29574/3286  veh/TimePeriod  *
Medium truck volume :  1314/146   veh/TimePeriod  *
Heavy truck volume  :  1972/219   veh/TimePeriod  *
Posted speed limit  :    50 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

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

    24 hr Traffic Volume (AADT or SADT):  27671
    Percentage of Annual Growth        :   2.00
    Number of Years of Growth          :  14.00
    Medium Truck % of Total Volume     :   4.00
    Heavy Truck  % of Total Volume     :   6.00
    Day (16 hrs) % of Total Volume     :  90.00

Data for Segment # 1: Upper James (day/night)
---------------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  21.00 / 21.00  m
Receiver height           :   6.50 / 6.50   m
Topography                :      1       (Flat/gentle slope; no barrier)

Result summary (day)
--------------------
                    !  source  !   Road   !  Total
                    !  height  !   Leq    !   Leq
                    !   (m)    !  (dBA)   !  (dBA)
--------------------+---------+---------+---------
 1.Upper James      !     1.57 !    70.96 !    70.96
--------------------+---------+---------+---------
                      Total                  70.96 dBA

Result summary (night)
----------------------
                    !  source  !   Road   !  Total
                    !  height  !   Leq    !   Leq
                    !   (m)    !  (dBA)   !  (dBA)
--------------------+---------+---------+---------
 1.Upper James      !     1.56 !    64.43 !    64.43
--------------------+---------+---------+---------
                      Total                  64.43 dBA
```

```
STAMSON 5.04        SUMMARY REPORT        Date: 19-01-2026 11:03:30
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: r2upjam.te           Time Period: Day/Night 16/8 hours
Description: R2 East Facade 8th Floor
                  TOTAL Leq FROM ALL SOURCES              (DAY): 70.96
                                                          (NIGHT): 64.43

Road data, segment # 1: Upper James (day/night)
-----------------------------------------------
Car traffic volume  : 29574/3286  veh/TimePeriod  *
Medium truck volume :  1314/146   veh/TimePeriod  *
Heavy truck volume  :  1972/219   veh/TimePeriod  *
Posted speed limit  :    50 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

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

    24 hr Traffic Volume (AADT or SADT):  27671
    Percentage of Annual Growth        :   2.00
    Number of Years of Growth          :  14.00
    Medium Truck % of Total Volume     :   4.00
    Heavy Truck  % of Total Volume     :   6.00
    Day (16 hrs) % of Total Volume     :  90.00

Data for Segment # 1: Upper James (day/night)
---------------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  21.00 / 21.00  m
Receiver height           :  25.00 / 25.00  m
Topography                :      1       (Flat/gentle slope; no barrier)

Result summary (day)
--------------------
                    !  source  !   Road   !  Total
                    !  height  !   Leq    !   Leq
                    !   (m)    !  (dBA)   !  (dBA)
--------------------+---------+---------+---------
 1.Upper James      !     1.57 !    70.96 !    70.96
--------------------+---------+---------+---------
                      Total                  70.96 dBA

Result summary (night)
----------------------
                    !  source  !   Road   !  Total
                    !  height  !   Leq    !   Leq
                    !   (m)    !  (dBA)   !  (dBA)
--------------------+---------+---------+---------
 1.Upper James      !     1.56 !    64.43 !    64.43
--------------------+---------+---------+---------
                      Total                  64.43 dBA
```

```
STAMSON 5.04        SUMMARY REPORT        Date: 19-01-2026 11:06:09
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: r3upjam.te           Time Period: Day/Night 16/8 hours
Description: R3 South Facade 2nd Floor
                  TOTAL Leq FROM ALL SOURCES              (DAY): 66.86
                                                          (NIGHT): 60.33

Road data, segment # 1: Upper James (day/night)
-----------------------------------------------
Car traffic volume  : 29574/3286  veh/TimePeriod  *
Medium truck volume :  1314/146   veh/TimePeriod  *
Heavy truck volume  :  1972/219   veh/TimePeriod  *
Posted speed limit  :    50 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

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

    24 hr Traffic Volume (AADT or SADT):  27671
    Percentage of Annual Growth        :   2.00
    Number of Years of Growth          :  14.00
    Medium Truck % of Total Volume     :   4.00
    Heavy Truck  % of Total Volume     :   6.00
    Day (16 hrs) % of Total Volume     :  90.00

Data for Segment # 1: Upper James (day/night)
---------------------------------------------
Angle1   Angle2           :  -0.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  27.00 / 27.00  m
Receiver height           :   6.50 / 6.50   m
Topography                :      1       (Flat/gentle slope; no barrier)

Result summary (day)
--------------------
                    !  source  !   Road   !  Total
                    !  height  !   Leq    !   Leq
                    !   (m)    !  (dBA)   !  (dBA)
--------------------+---------+---------+---------
 1.Upper James      !     1.57 !    66.86 !    66.86
--------------------+---------+---------+---------
                      Total                  66.86 dBA

Result summary (night)
----------------------
                    !  source  !   Road   !  Total
                    !  height  !   Leq    !   Leq
                    !   (m)    !  (dBA)   !  (dBA)
--------------------+---------+---------+---------
 1.Upper James      !     1.56 !    60.33 !    60.33
--------------------+---------+---------+---------
                      Total                  60.33 dBA
```

```
STAMSON 5.04        SUMMARY REPORT        Date: 19-01-2026 11:10:25
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: r4upjam.te           Time Period: Day/Night 16/8 hours
Description: R4 South Facade 8th Floor
                  TOTAL Leq FROM ALL SOURCES              (DAY): 66.86
                                                          (NIGHT): 60.33

Road data, segment # 1: Upper James (day/night)
-----------------------------------------------
Car traffic volume  : 29574/3286  veh/TimePeriod  *
Medium truck volume :  1314/146   veh/TimePeriod  *
Heavy truck volume  :  1972/219   veh/TimePeriod  *
Posted speed limit  :    50 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

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

    24 hr Traffic Volume (AADT or SADT):  27671
    Percentage of Annual Growth        :   2.00
    Number of Years of Growth          :  14.00
    Medium Truck % of Total Volume     :   4.00
    Heavy Truck  % of Total Volume     :   6.00
    Day (16 hrs) % of Total Volume     :  90.00

Data for Segment # 1: Upper James (day/night)
---------------------------------------------
Angle1   Angle2           :  -0.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  27.00 / 27.00  m
Receiver height           :  25.00 / 25.00  m
Topography                :      1       (Flat/gentle slope; no barrier)

Result summary (day)
--------------------
                    !  source  !   Road   !  Total
                    !  height  !   Leq    !   Leq
                    !   (m)    !  (dBA)   !  (dBA)
--------------------+---------+---------+---------
 1.Upper James      !     1.57 !    66.86 !    66.86
--------------------+---------+---------+---------
                      Total                  66.86 dBA

Result summary (night)
----------------------
                    !  source  !   Road   !  Total
                    !  height  !   Leq    !   Leq
                    !   (m)    !  (dBA)   !  (dBA)
--------------------+---------+---------+---------
 1.Upper James      !     1.56 !    60.33 !    60.33
--------------------+---------+---------+---------
                      Total                  60.33 dBA
```

```
STAMSON 5.04        SUMMARY REPORT        Date: 19-01-2026 11:11:48
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: r5upjam.te           Time Period: Day/Night 16/8 hours
Description: R5 North Facade 2nd Floor
                  TOTAL Leq FROM ALL SOURCES              (DAY): 66.86
                                                          (NIGHT): 60.33

Road data, segment # 1: Upper James (day/night)
-----------------------------------------------
Car traffic volume  : 29574/3286  veh/TimePeriod  *
Medium truck volume :  1314/146   veh/TimePeriod  *
Heavy truck volume  :  1972/219   veh/TimePeriod  *
Posted speed limit  :    50 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

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

    24 hr Traffic Volume (AADT or SADT):  27671
    Percentage of Annual Growth        :   2.00
    Number of Years of Growth          :  14.00
    Medium Truck % of Total Volume     :   4.00
    Heavy Truck  % of Total Volume     :   6.00
    Day (16 hrs) % of Total Volume     :  90.00

Data for Segment # 1: Upper James (day/night)
---------------------------------------------
Angle1   Angle2           :  -0.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  27.00 / 27.00  m
Receiver height           :   6.50 / 6.50   m
Topography                :      1       (Flat/gentle slope; no barrier)

Result summary (day)
--------------------
                    !  source  !   Road   !  Total
                    !  height  !   Leq    !   Leq
                    !   (m)    !  (dBA)   !  (dBA)
--------------------+---------+---------+---------
 1.Upper James      !     1.57 !    66.86 !    66.86
--------------------+---------+---------+---------
                      Total                  66.86 dBA

Result summary (night)
----------------------
                    !  source  !   Road   !  Total
                    !  height  !   Leq    !   Leq
                    !   (m)    !  (dBA)   !  (dBA)
--------------------+---------+---------+---------
 1.Upper James      !     1.56 !    60.33 !    60.33
--------------------+---------+---------+---------
                      Total                  60.33 dBA
```

```
STAMSON 5.04        SUMMARY REPORT        Date: 19-01-2026 11:14:43
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: r6upjam.te           Time Period: Day/Night 16/8 hours
Description: R6 North Facade 8th Floor
                  TOTAL Leq FROM ALL SOURCES              (DAY): 66.86
                                                          (NIGHT): 60.33

Road data, segment # 1: Upper James (day/night)
-----------------------------------------------
Car traffic volume  : 29574/3286  veh/TimePeriod  *
Medium truck volume :  1314/146   veh/TimePeriod  *
Heavy truck volume  :  1972/219   veh/TimePeriod  *
Posted speed limit  :    50 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

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

    24 hr Traffic Volume (AADT or SADT):  27671
    Percentage of Annual Growth        :   2.00
    Number of Years of Growth          :  14.00
    Medium Truck % of Total Volume     :   4.00
    Heavy Truck  % of Total Volume     :   6.00
    Day (16 hrs) % of Total Volume     :  90.00

Data for Segment # 1: Upper James (day/night)
---------------------------------------------
Angle1   Angle2           :  -0.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  27.00 / 27.00  m
Receiver height           :  25.00 / 25.00  m
Topography                :      1       (Flat/gentle slope; no barrier)

Result summary (day)
--------------------
                    !  source  !   Road   !  Total
                    !  height  !   Leq    !   Leq
                    !   (m)    !  (dBA)   !  (dBA)
--------------------+---------+---------+---------
 1.Upper James      !     1.57 !    66.86 !    66.86
--------------------+---------+---------+---------
                      Total                  66.86 dBA

Result summary (night)
----------------------
                    !  source  !   Road   !  Total
                    !  height  !   Leq    !   Leq
                    !   (m)    !  (dBA)   !  (dBA)
--------------------+---------+---------+---------
 1.Upper James      !     1.56 !    60.33 !    60.33
--------------------+---------+---------+---------
                      Total                  60.33 dBA
```

```
STAMSON 5.04        SUMMARY REPORT        Date: 26-01-2026 10:20:59
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: r7upjam.te           Time Period: 16 hours
Description: R7 North Facade 2nd Floor Terrace
                 TOTAL Leq FROM ALL SOURCES:                    70.20

Road data, segment # 1: Upper James
----------------------------------
Car traffic volume  : 29574 veh/TimePeriod  *
Medium truck volume :  1314 veh/TimePeriod  *
Heavy truck volume  :  1972 veh/TimePeriod  *
Posted speed limit  :    50 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

Data for Segment # 1: Upper James
---------------------------------
Angle1   Angle2          : -90.00 deg   90.00 deg
Wood depth               :      0       (No woods.)
No of house rows         :      0
Surface                  :      2       (Reflective ground surface)
Receiver source distance :  25.00 m
Receiver height          :   6.50 m
Topography               :      1       (Flat/gentle slope; no barrier)

Result summary
--------------
                    !  source  !   Road   !  Total
                    !  height  !   Leq    !   Leq
                    !   (m)    !  (dBA)   !  (dBA)
--------------------+---------+---------+---------
 1.Upper James      !     1.57 !    70.20 !    70.20
--------------------+---------+---------+---------
                      Total                  70.20 dBA
```

```
STAMSON 5.04        SUMMARY REPORT        Date: 26-01-2026 10:19:02
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: r7aupjam.te          Time Period: 16 hours
Description: R7a North Facade 2nd Floor Terrace Mitigated
                  TOTAL Leq FROM ALL SOURCES:                    56.46

Road data, segment # 1: Upper James
----------------------------------
Car traffic volume  : 29574 veh/TimePeriod  *
Medium truck volume :  1314 veh/TimePeriod  *
Heavy truck volume  :  1972 veh/TimePeriod  *
Posted speed limit  :    50 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

Data for Segment # 1: Upper James
---------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  25.00 m
Receiver height           :   6.50 m
Topography                :      2       (Flat/gentle slope; with barrier)
Barrier angle1            : -90.00 deg   Angle2 : 90.00 deg
Barrier height            :   1.83 m
Barrier receiver distance :   3.00 m
Source elevation          :   0.00 m
Receiver elevation        :   0.00 m
Barrier elevation         :   6.50 m

Result summary
--------------
                    !  source  !   Road   !  Total
                    !  height  !   Leq    !   Leq
                    !   (m)    !  (dBA)   !  (dBA)
--------------------+---------+---------+---------
 1.Upper James      !     1.57 !    56.46 !    56.46
--------------------+---------+---------+---------
                      Total                  56.46 dBA
```

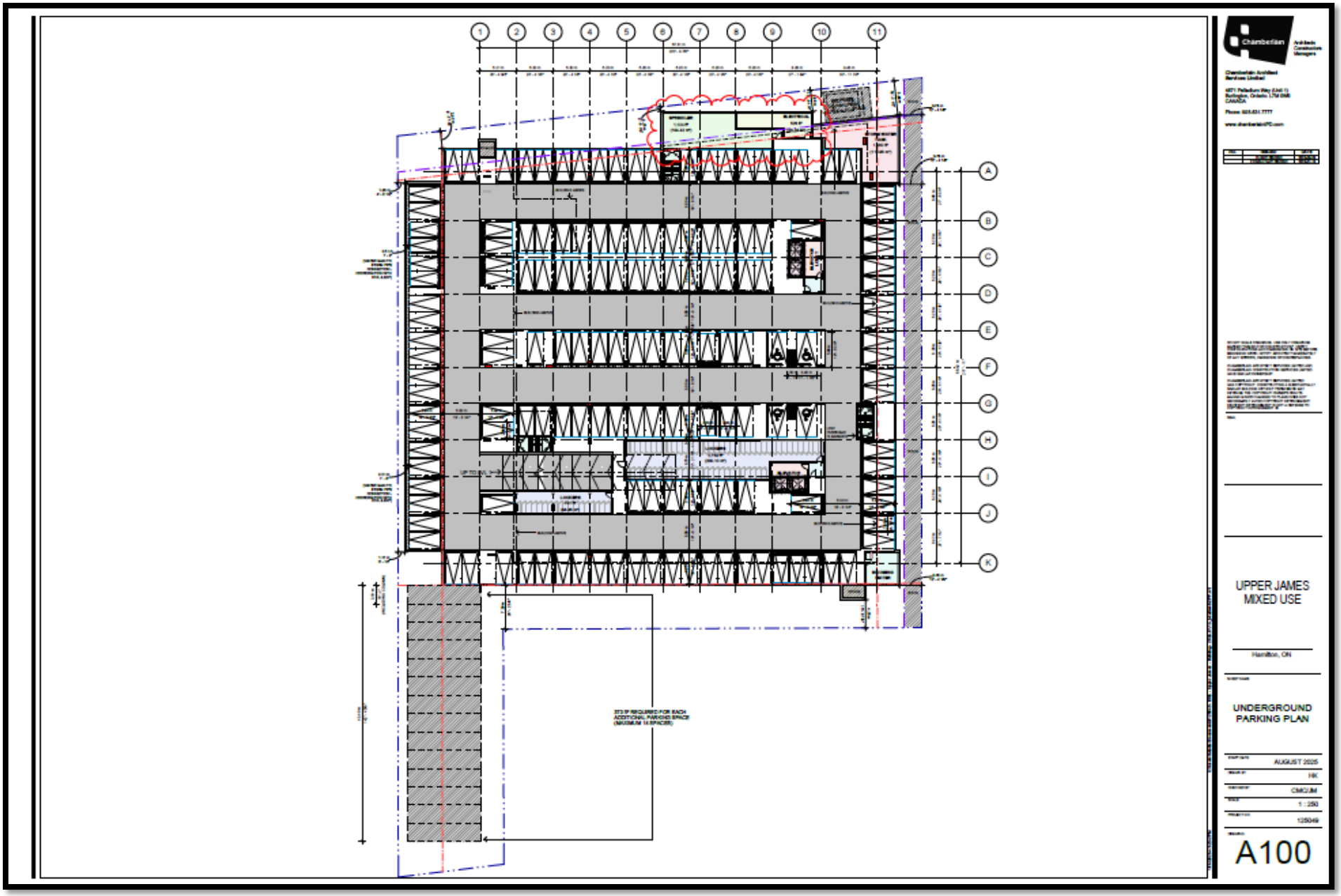
```
STAMSON 5.04        SUMMARY REPORT        Date: 26-01-2026 10:23:57
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: r8upjam.te           Time Period: 16 hours
Description: R8 West Facade 5th Floor Terrace
                 TOTAL Leq FROM ALL SOURCES:                    58.82

Road data, segment # 1: Upper James
----------------------------------
Car traffic volume  : 29574 veh/TimePeriod  *
Medium truck volume :  1314 veh/TimePeriod  *
Heavy truck volume  :  1972 veh/TimePeriod  *
Posted speed limit  :    50 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

Data for Segment # 1: Upper James
---------------------------------
Angle1   Angle2           :  -0.00 deg   45.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  86.00 m
Receiver height           :  15.50 m
Topography                :      1       (Flat/gentle slope; no barrier)

Result summary
--------------
                    !  source  !   Road   !  Total
                    !  height  !   Leq    !   Leq
                    !   (m)    !  (dBA)   !  (dBA)
--------------------+---------+---------+---------
 1.Upper James      !     1.57 !    58.82 !    58.82
--------------------+---------+---------+---------
                      Total                  58.82 dBA
```

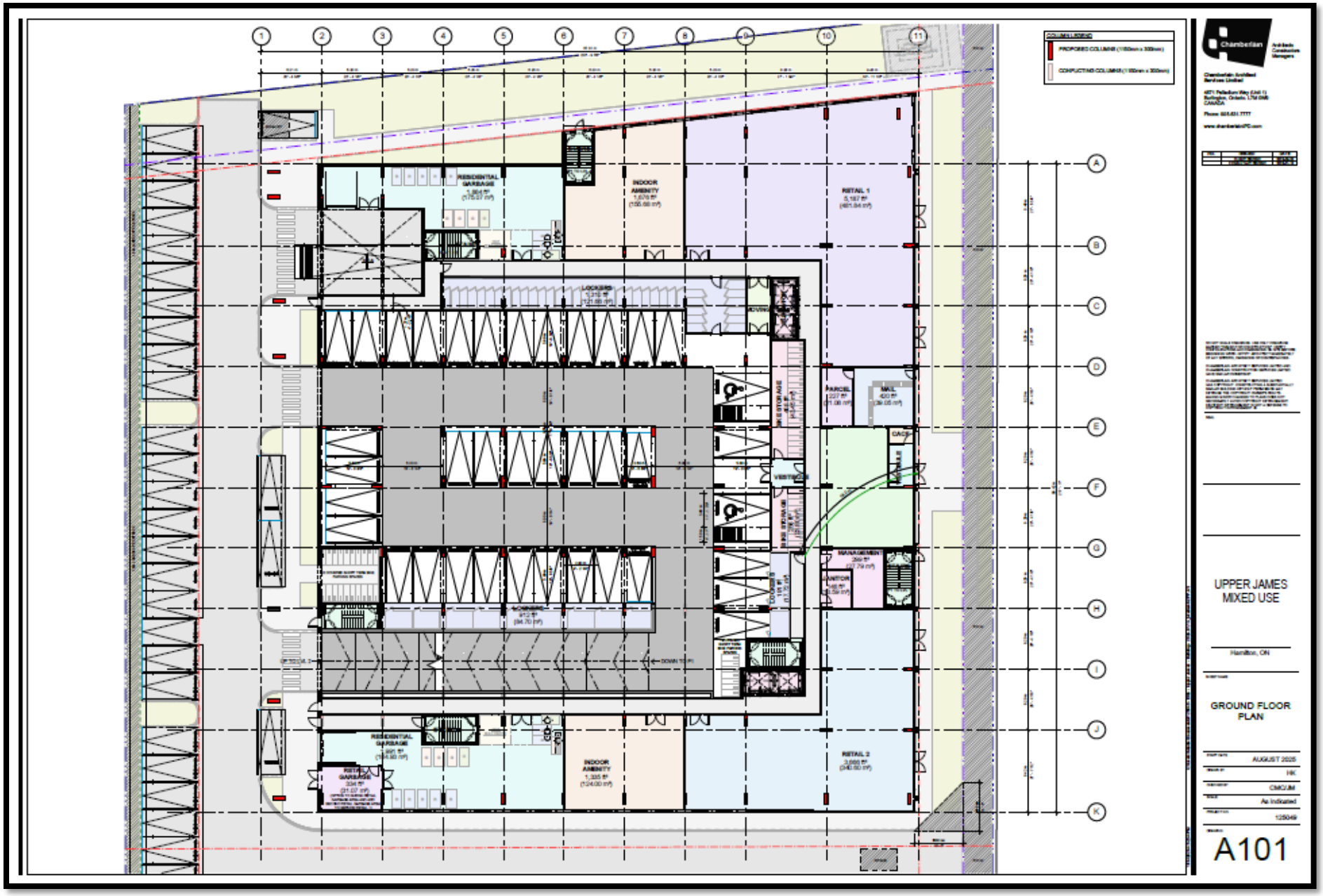
```
STAMSON 5.04        SUMMARY REPORT        Date: 26-01-2026 10:25:55
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: r8aupjam.te          Time Period: 16 hours
Description: R8a West Facade 5th Floor Terrace Mitigated
                  TOTAL Leq FROM ALL SOURCES:                    46.33

Road data, segment # 1: Upper James
----------------------------------
Car traffic volume  : 29574 veh/TimePeriod  *
Medium truck volume :  1314 veh/TimePeriod  *
Heavy truck volume  :  1972 veh/TimePeriod  *
Posted speed limit  :    50 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

Data for Segment # 1: Upper James
---------------------------------
Angle1   Angle2           :  -0.00 deg   45.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  86.00 m
Receiver height           :  15.50 m
Topography                :      2       (Flat/gentle slope; with barrier)
Barrier angle1            :  -0.00 deg   Angle2 : 45.00 deg
Barrier height            :   0.91 m
Barrier receiver distance :   3.00 m
Source elevation          :   0.00 m
Receiver elevation        :   0.00 m
Barrier elevation         :  15.50 m

Result summary
--------------
                    !  source  !   Road   !  Total
                    !  height  !   Leq    !   Leq
                    !   (m)    !  (dBA)   !  (dBA)
--------------------+---------+---------+---------
 1.Upper James      !     1.57 !    46.33 !    46.33
--------------------+---------+---------+---------
                      Total                  46.33 dBA
```

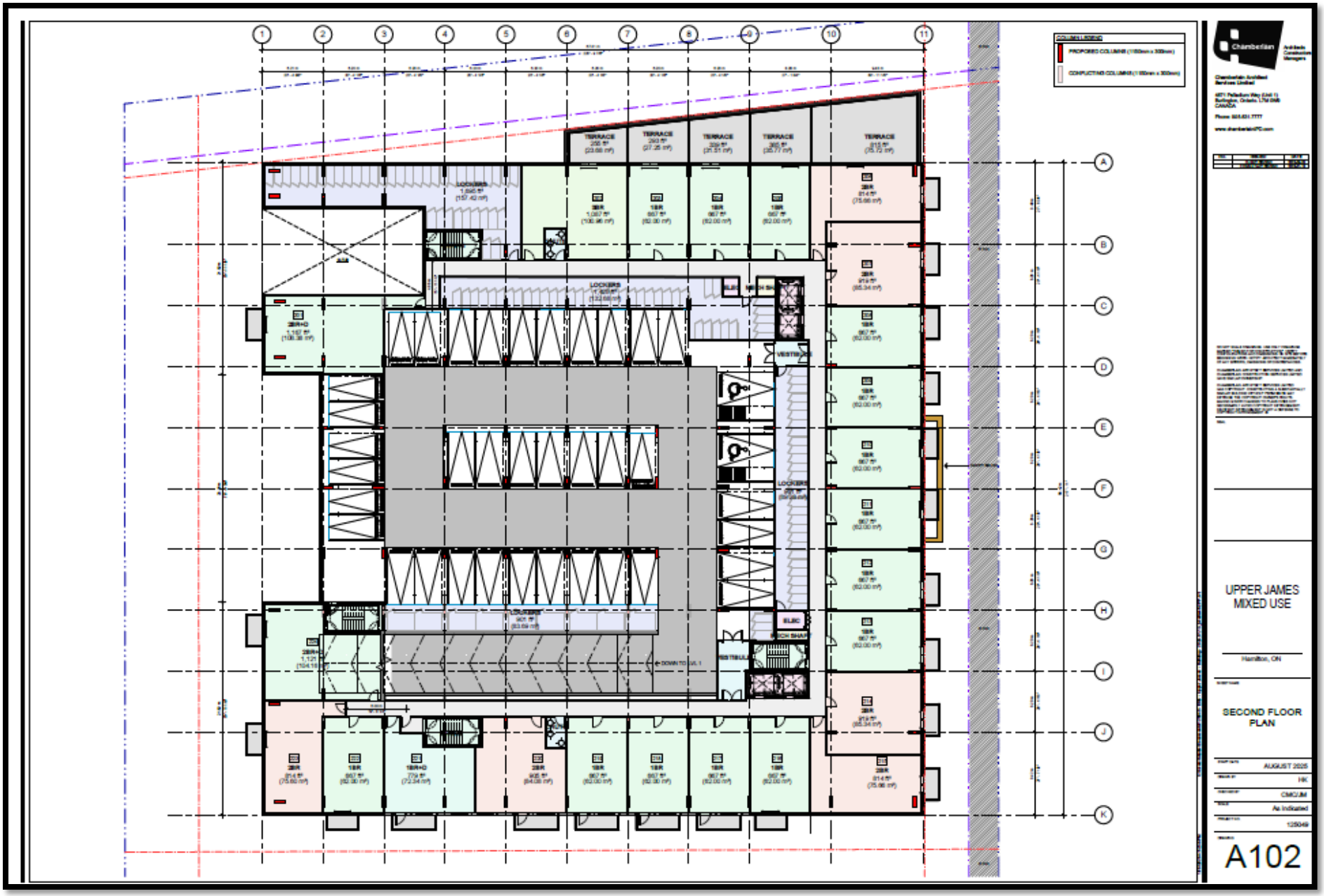
```
STAMSON 5.04        SUMMARY REPORT        Date: 26-01-2026 10:27:32
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: r9upjam.te           Time Period: 16 hours
Description: R9 West Facade 7th Floor Terrace
                 TOTAL Leq FROM ALL SOURCES:                    59.53

Road data, segment # 1: Upper James
----------------------------------
Car traffic volume  : 29574 veh/TimePeriod  *
Medium truck volume :  1314 veh/TimePeriod  *
Heavy truck volume  :  1972 veh/TimePeriod  *
Posted speed limit  :    50 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

Data for Segment # 1: Upper James
---------------------------------
Angle1   Angle2           :  -0.00 deg   45.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  73.00 m
Receiver height           :  22.00 m
Topography                :      1       (Flat/gentle slope; no barrier)

Result summary
--------------
                    !  source  !   Road   !  Total
                    !  height  !   Leq    !   Leq
                    !   (m)    !  (dBA)   !  (dBA)
--------------------+---------+---------+---------
 1.Upper James      !     1.57 !    59.53 !    59.53
--------------------+---------+---------+---------
                      Total                  59.53 dBA
```

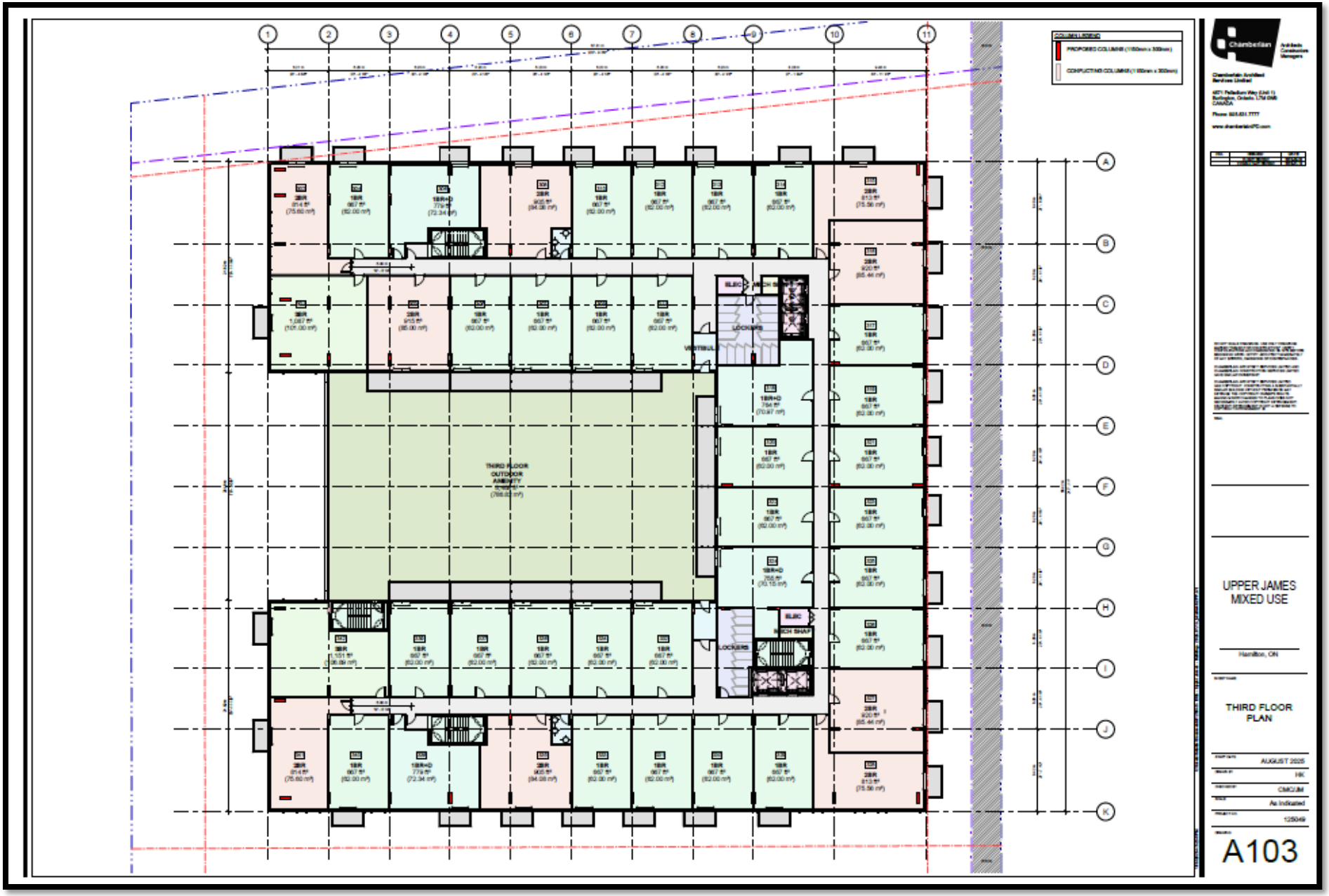
```
STAMSON 5.04        SUMMARY REPORT        Date: 26-01-2026 10:28:30
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: r9aupjam.te          Time Period: 16 hours
Description: R9a West Facade 7th Floor Terrace Mitigated
                  TOTAL Leq FROM ALL SOURCES:                    45.26

Road data, segment # 1: Upper James
----------------------------------
Car traffic volume  : 29574 veh/TimePeriod  *
Medium truck volume :  1314 veh/TimePeriod  *
Heavy truck volume  :  1972 veh/TimePeriod  *
Posted speed limit  :    50 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

Data for Segment # 1: Upper James
---------------------------------
Angle1   Angle2           :  -0.00 deg   45.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  73.00 m
Receiver height           :  22.00 m
Topography                :      2       (Flat/gentle slope; with barrier)
Barrier angle1            :  -0.00 deg   Angle2 : 45.00 deg
Barrier height            :   0.91 m
Barrier receiver distance :   3.00 m
Source elevation          :   0.00 m
Receiver elevation        :   0.00 m
Barrier elevation         :  22.00 m

Result summary
--------------
                    !  source  !   Road   !  Total
                    !  height  !   Leq    !   Leq
                    !   (m)    !  (dBA)   !  (dBA)
--------------------+---------+---------+---------
 1.Upper James      !     1.57 !    45.26 !    45.26
--------------------+---------+---------+---------
                      Total                  45.26 dBA
```

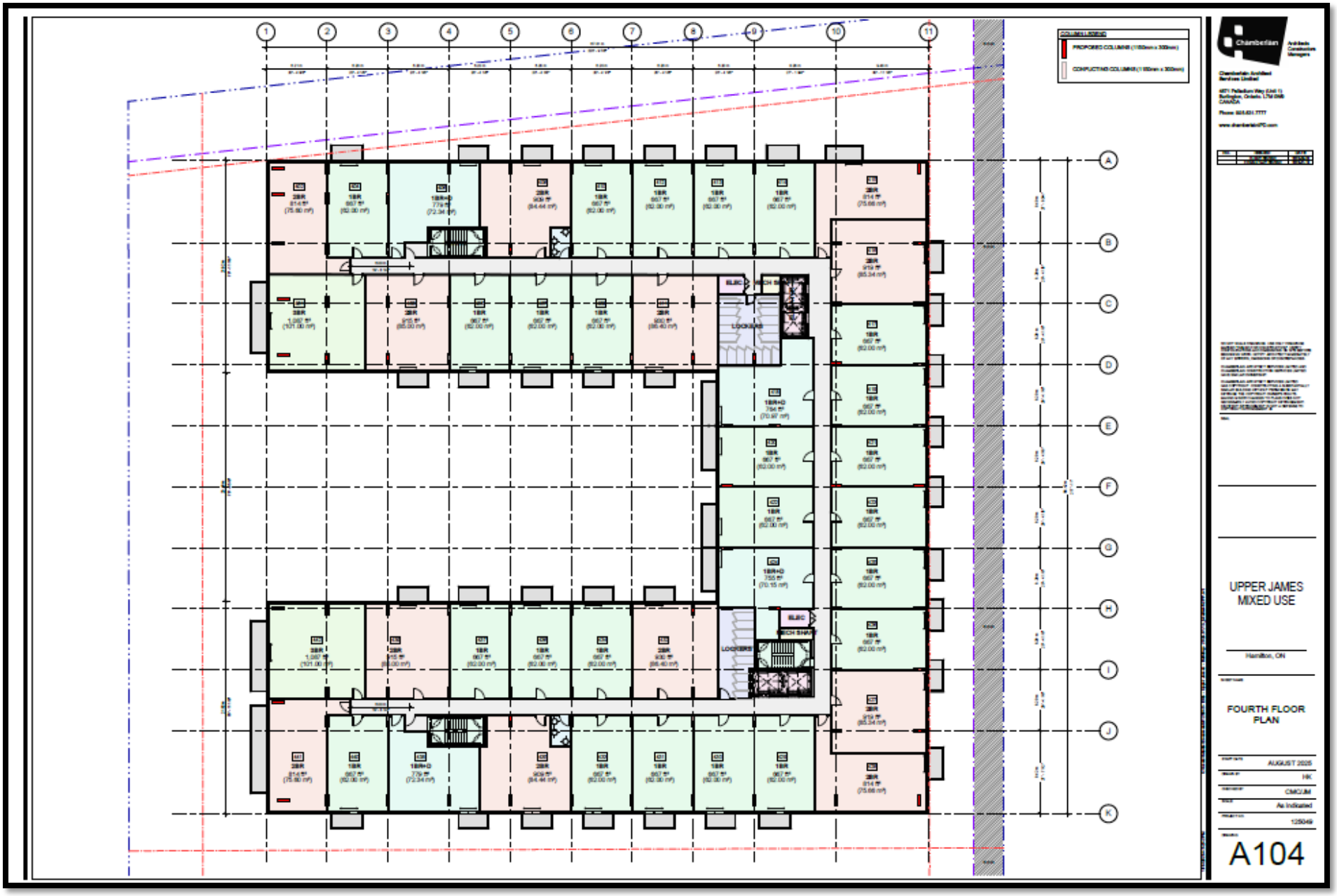
FLOOR PLANS


UPPER JAMES
MIXED USE
Hamilton, ON
UNDERGROUND
PARKING PLAN
AUGUST 2025
HK
CM/JM
1 : 250
125049
A100


UPPER JAMES
MIXED USE
Hamilton, ON
GROUND FLOOR
PLAN
AUGUST 2025
HK
CM/CJM
As Indicated
125049
A101

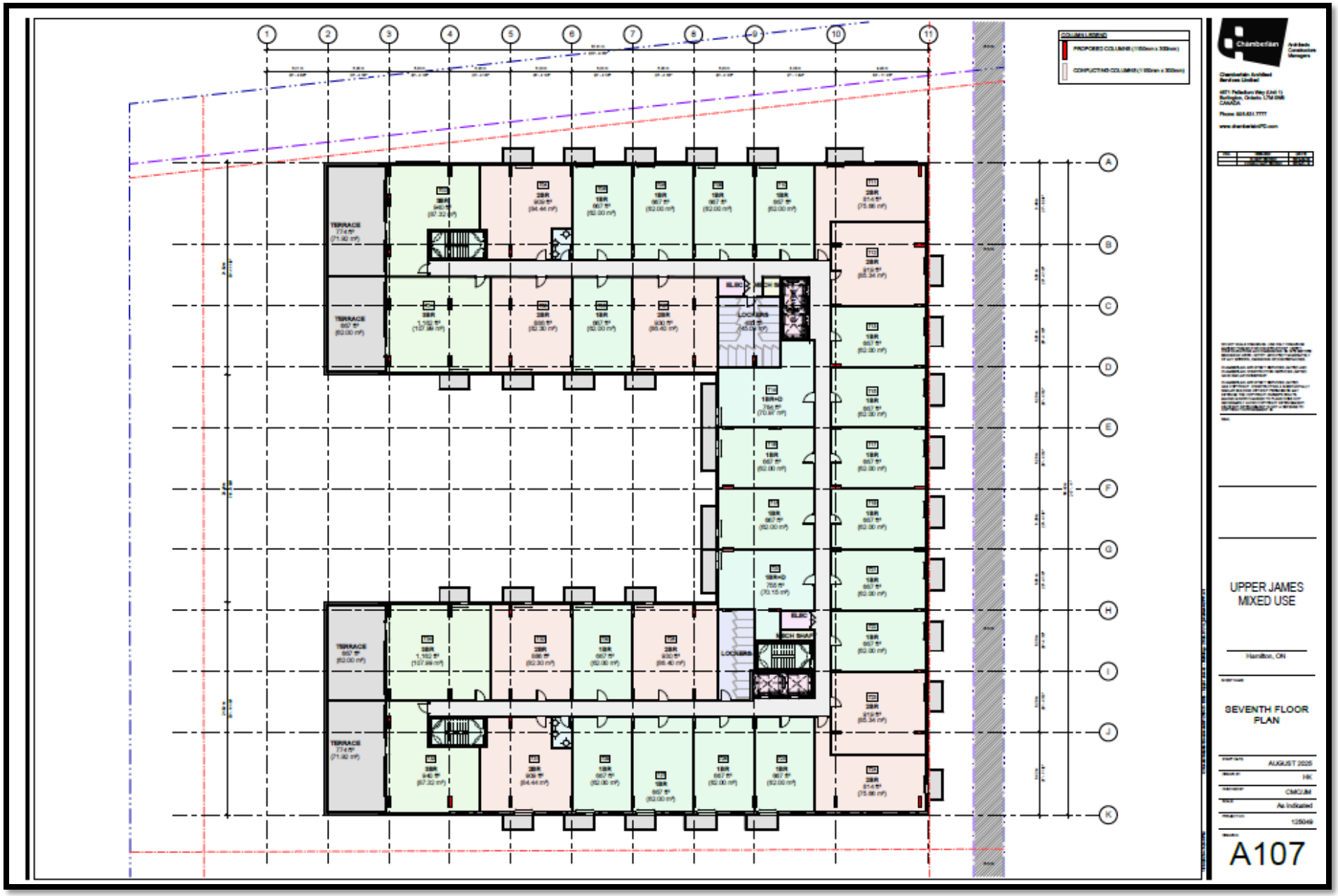

UPPER JAMES
MIXED USE
Hamilton, ON
SECOND FLOOR
PLAN
AUGUST 2025
HK
CMC/JM
As Indicated
12504
A102

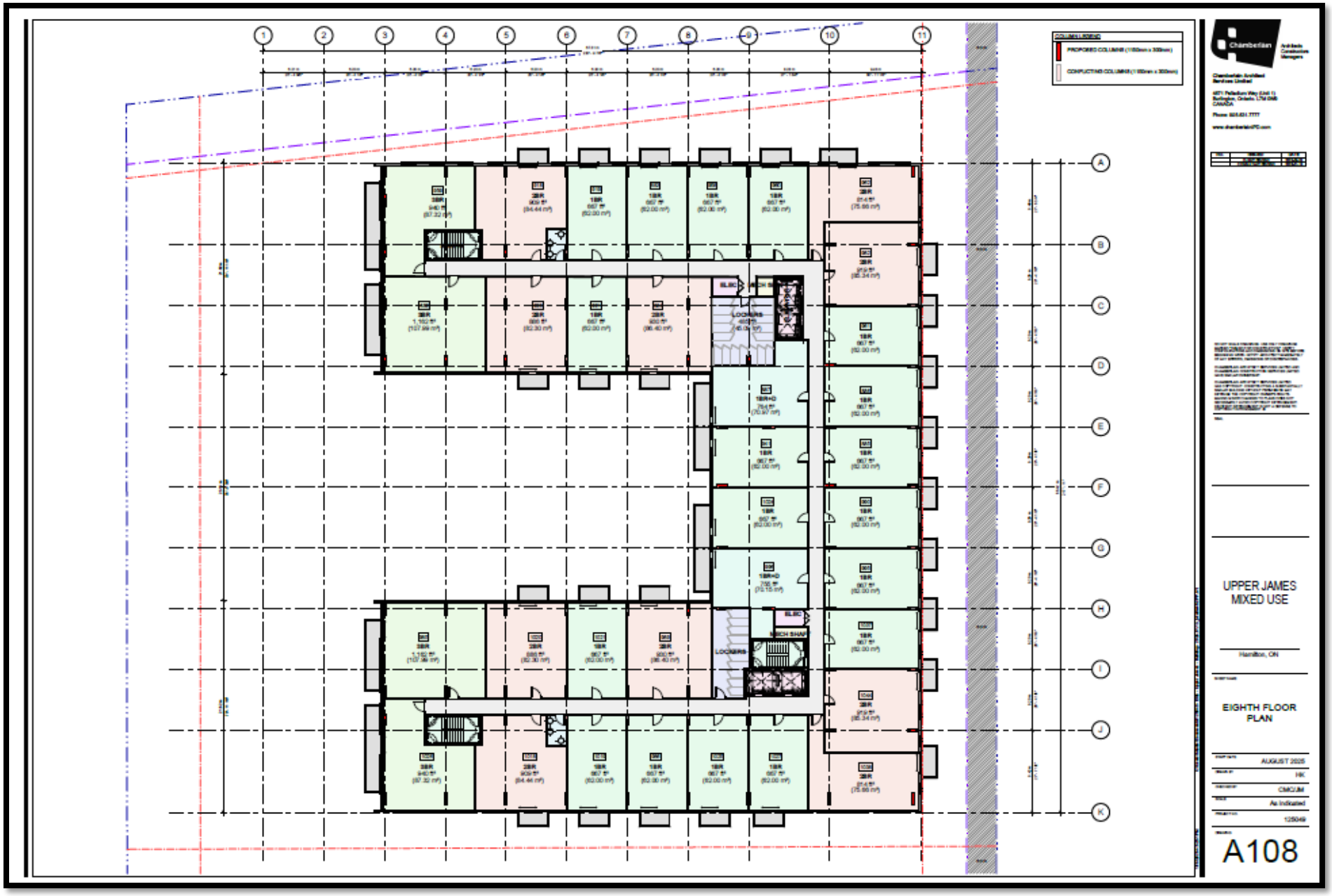

THIRD FLOOR OUTDOOR AMENITY
LOCKERS
ELEC
MECH SHAFT
UPPER JAMES MIXED USE
Hamilton, ON
THIRD FLOOR PLAN
AUGUST 2025
As indicated
A103

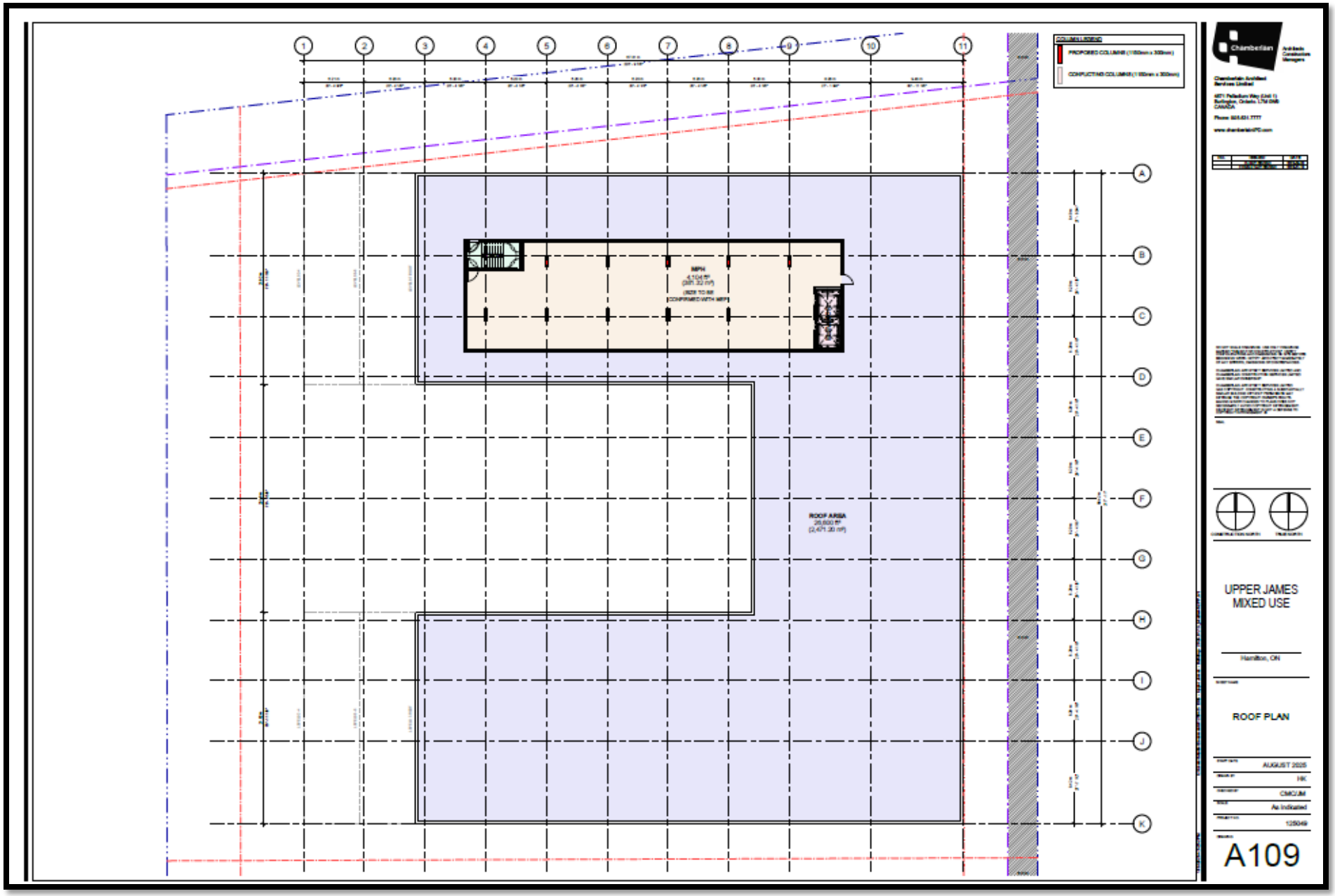

UPPER JAMES
MIXED USE
Hamilton, ON
FOURTH FLOOR
PLAN
AUGUST 2025
HK
CM/CJM
As Indicated
125049
A104


UPPER JAMES
MIXED USE
Hamilton, ON
FIFTH FLOOR
PLAN
AUGUST 2025
CMCUM
As Indicated
A105


UPPER JAMES
MIXED USE
Hamilton, ON
SIXTH FLOOR
PLAN
AUGUST 2025
HK
CMC/JM
As Indicated
A106

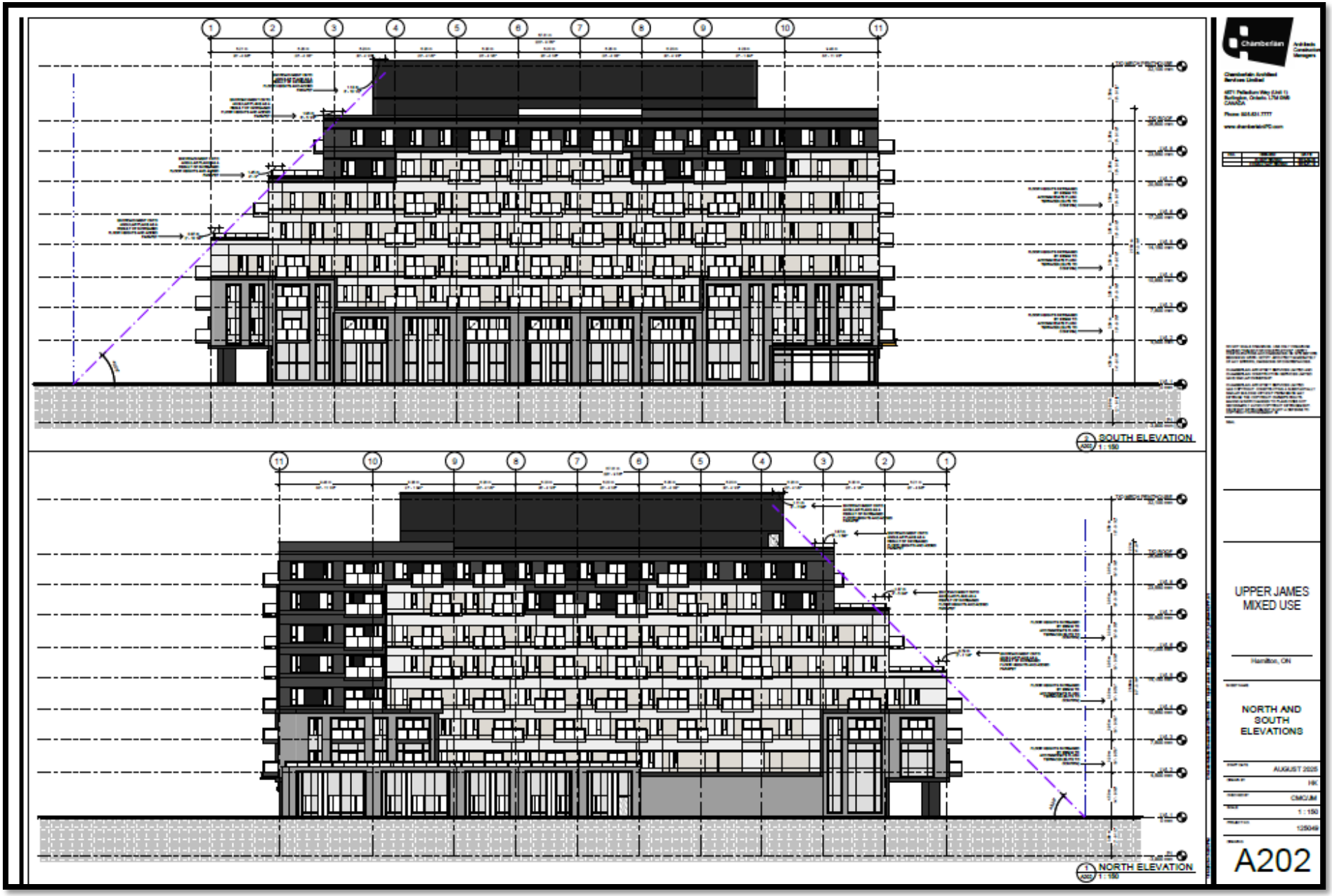

UPPER JAMES
MIXED USE
Hamilton, ON
SEVENTH FLOOR
PLAN
AUGUST 2025
A107


UPPER JAMES
MIXED USE
Hamilton, ON
EIGHTH FLOOR
PLAN
AUGUST 2025
HK
CMCUM
As Indicated
125049
A108


1
2
3
4
5
6
7
8
9
10
11
A
B
C
D
E
F
G
H
I
J
K
COLUMN LEGEND
PROPOSED COLUMNS
EXISTING COLUMNS
MPH
ROOF AREA
Chamberlain
UPPER JAMES
MIXED USE
Hamilton, ON
ROOF PLAN
AUGUST 2025
HK
CM/JM
As Indicated
A109

ELEVATIONS


A B C D E F G H I J K
WEST ELEVATION
1 : 150
K J I H G F E D C B A
EAST ELEVATION
1 : 150
Chamberlain
UPPER JAMES
MIXED USE
Hamilton, ON
EAST AND WEST
ELEVATIONS
AUGUST 2025
HK
CMC/JM
1 : 150
125049
A201


SOUTH ELEVATION
NORTH ELEVATION
UPPER JAMES
MIXED USE
Hamilton, ON
NORTH AND
SOUTH
ELEVATIONS
A202

EXTERIOR WALL STC RATINGS

EXTERIOR WALL STC RATINGS

Wall Configuration	EW1	EW2	EW3	EW4	EW1R	EW2R	EW3R	EW5	EW4R	EW6	EW7 EW5R	EW8
STC Rating	**38**	**40**	**43**	**46**	**47**	**48**	**49**	**54**	**55**	**57**	**58**	**62**

Source: National Research Council, Division of Building Research

NOTES:

1 The common structure of walls EW1 to EW5 is composed of 12.7mm gypsum board, vapour barrier and 38x89 mm studs with 50 mm (or thicker) mineral wool or glass fibre batts in inter-stud cavities.

- EW1 denotes the common structure, plus sheathing, plus wood siding or metal siding and fibre backer board
- EW2 denotes the common structure, plus rigid insulation (25 to 30 mm), and wood siding or metal siding and fibre backer board.
- EW3 denotes simulated mansard with the common structure, plus sheathing, 28 X89 mm framing, sheathing and asphalt roofing material
- EW4 denotes the common structure, plus sheathing and 20 mm stucco.
- EW5 denotes the common structure, plus sheathing, 25 mm air space, 100mm brick veneer.
- EW6 denotes exterior wall composed of 12.7 mm gypsum board, rigid insulation (25 to 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 to 50 mm), 140mm back-up block, 100 mm face brick.
- EW8 denotes exterior wall composed of 12.7 mm gypsum board, rigid insulation (25 to 50 mm), 200 mm concrete.

2 R signifies the mounting of the interior gypsum board on resilient clips.

3 An exterior wall conforming to rainscreen design principles and composed of 12.7 mm gypsum board, 100 mm concrete block, rigid insulation (25 to 50 mm), 25 mm air space, and 100 mm brick veneer has the same STC as EW6.

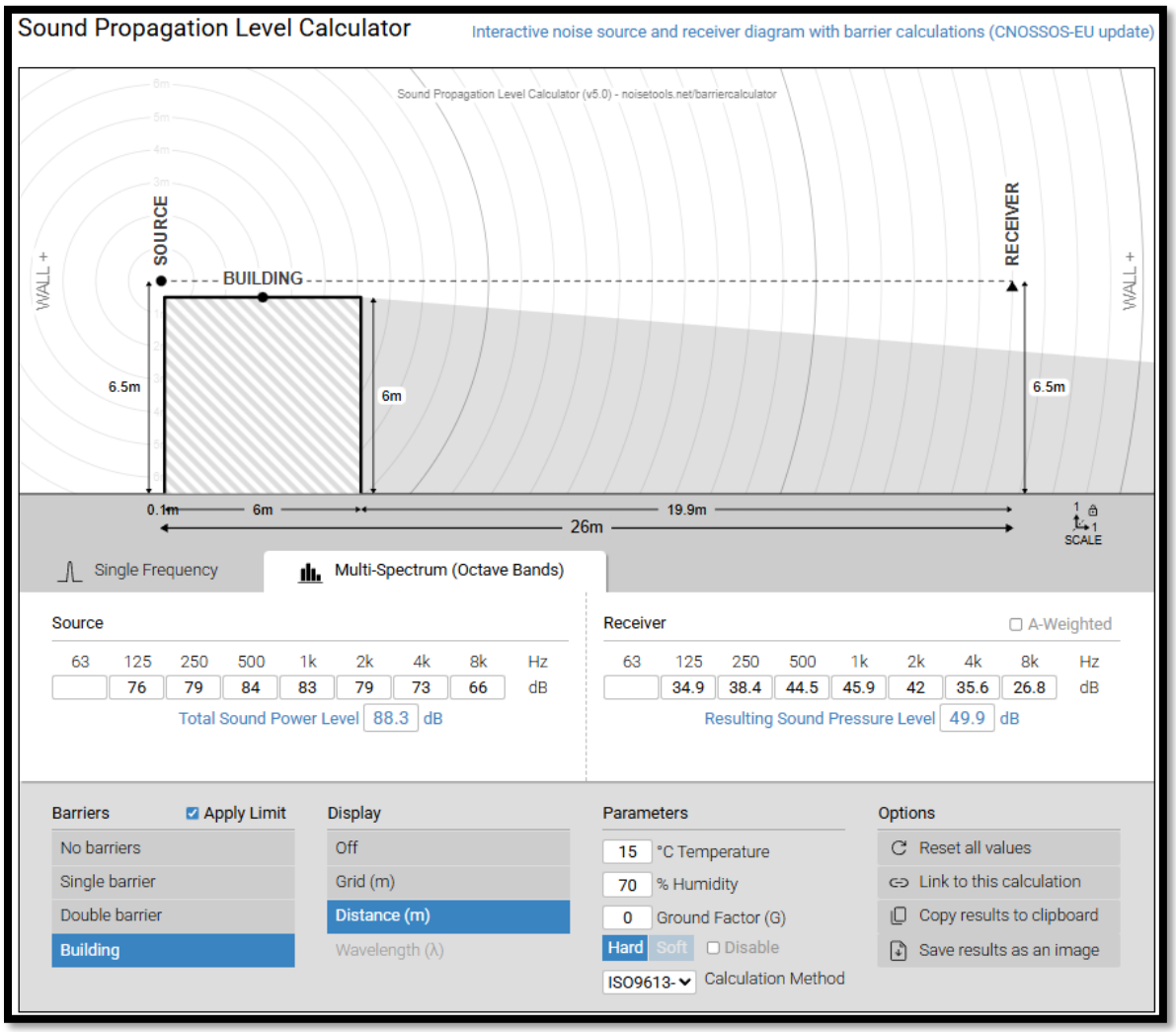
4 An exterior wall described in EW1 with the addition of rigid insulation (25 to 50 mm) between the sheathing and the external finish has the same STC as EW2.

APPENDIX “B”

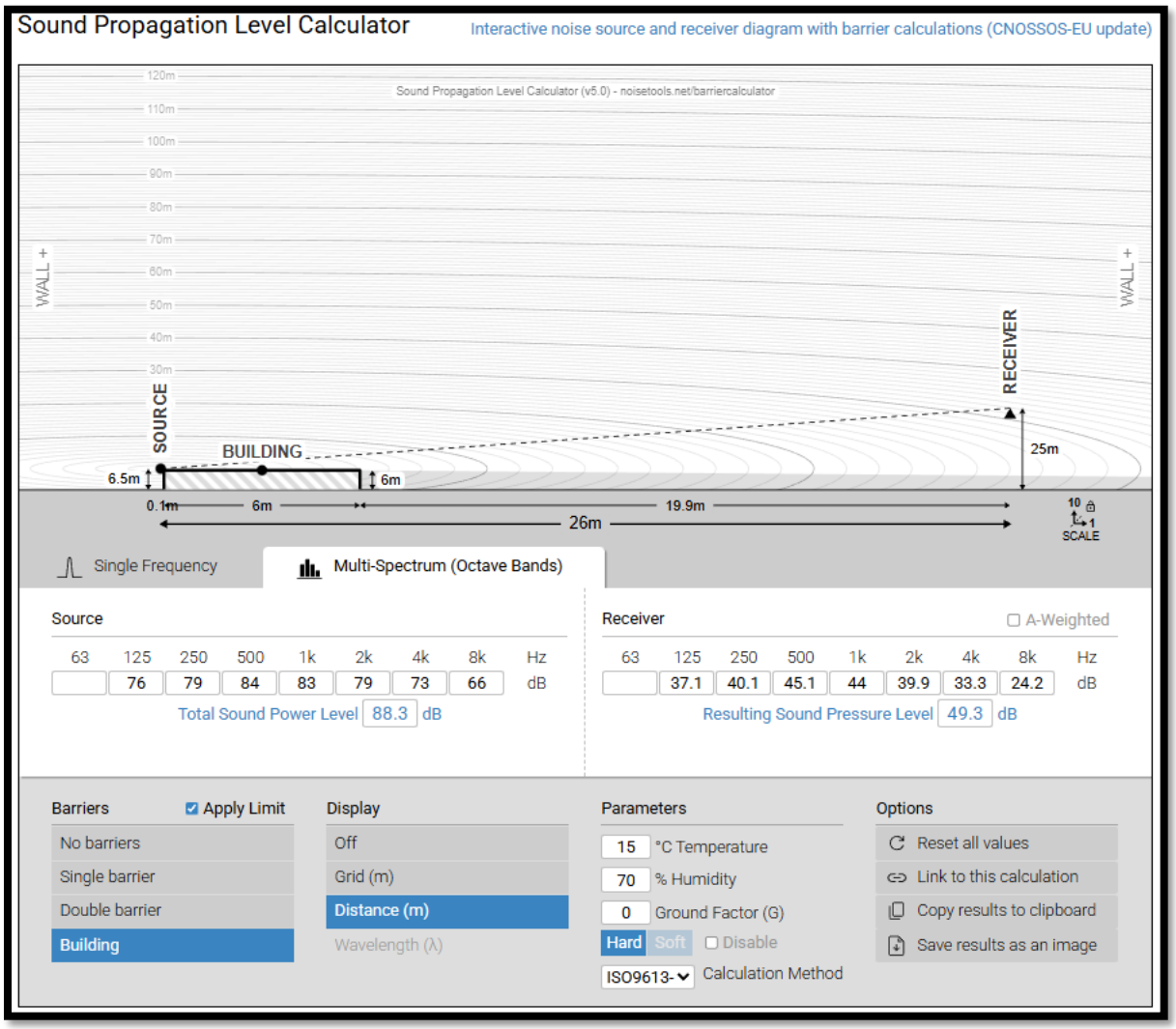
LENNOX
8.5 TON ROOFTOP HVAC

ROOFTOP UNITS												6.5 TO 12.5 TONS
[2] Test Conditions		External Static Pressure in. w.c.	CFM	Octave Band Sound Power Levels dBA, re 10^{-12} Watts Center Frequency - Hz								[1] Sound Rating Number (dBA)
				[3] 63	125	250	500	1000	2000	4000	8000	
LCT/LGT/LDT/LHT												
Outdoor Sound Levels	LCT/LGT092, 102	- - -	- - -	- - -	76	79	84	83	79	73	66	88
	LCT/LGT120,150	- - -	- - -	- - -	70	77	85	84	80	78	76	89
	LDT/LHT078, 092, 102	- - -	- - -	- - -	70	79	84	83	77	72	66	88
	LDT/LHT122, 150	- - -	- - -	- - -	73	74	75	72	66	60	50	85

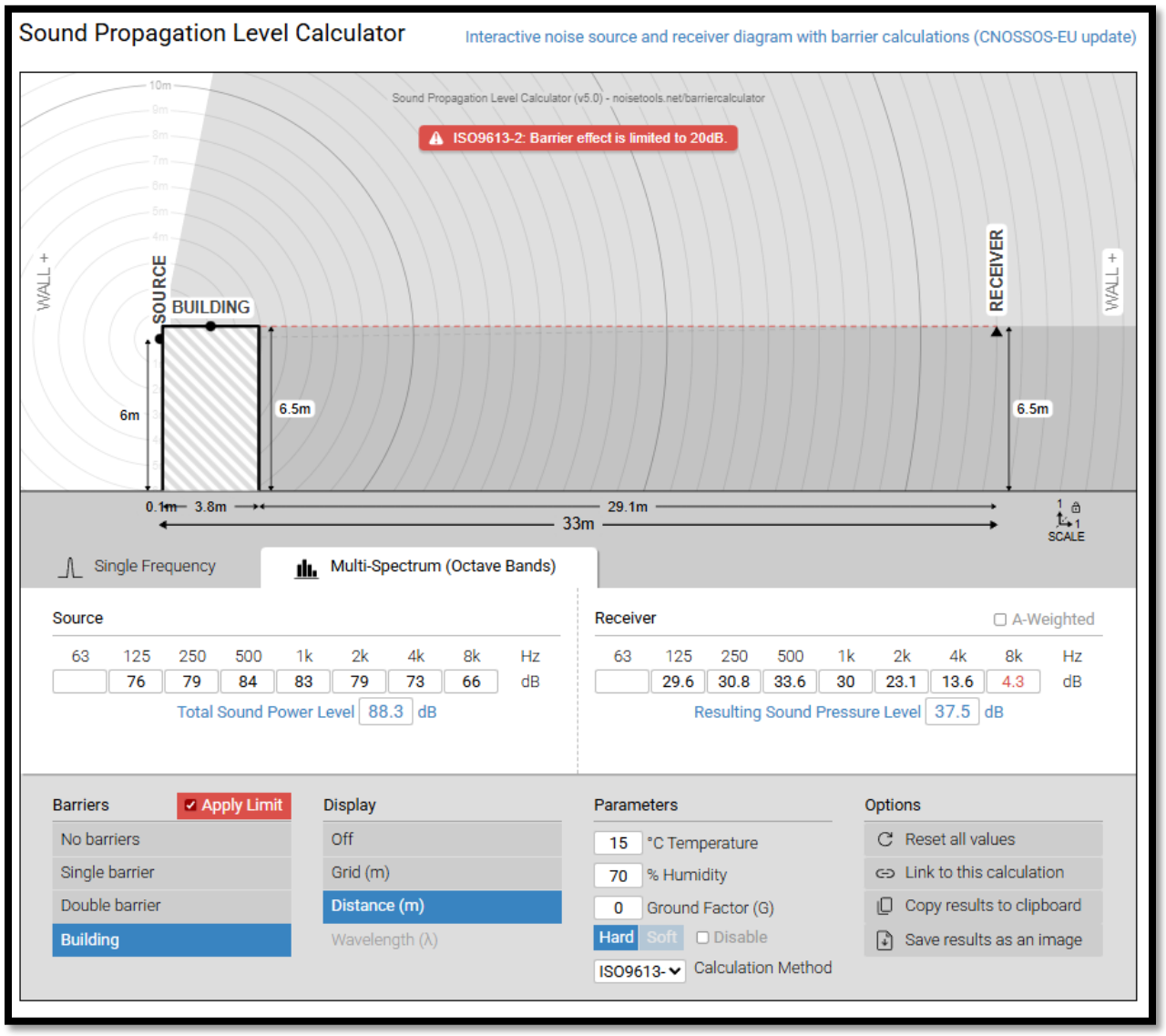
HVAC NO: 1 & 2
KFC NORTH FAÇADE 2ND FLOOR
ONE ROOFTOP 8.5-TON UNIT



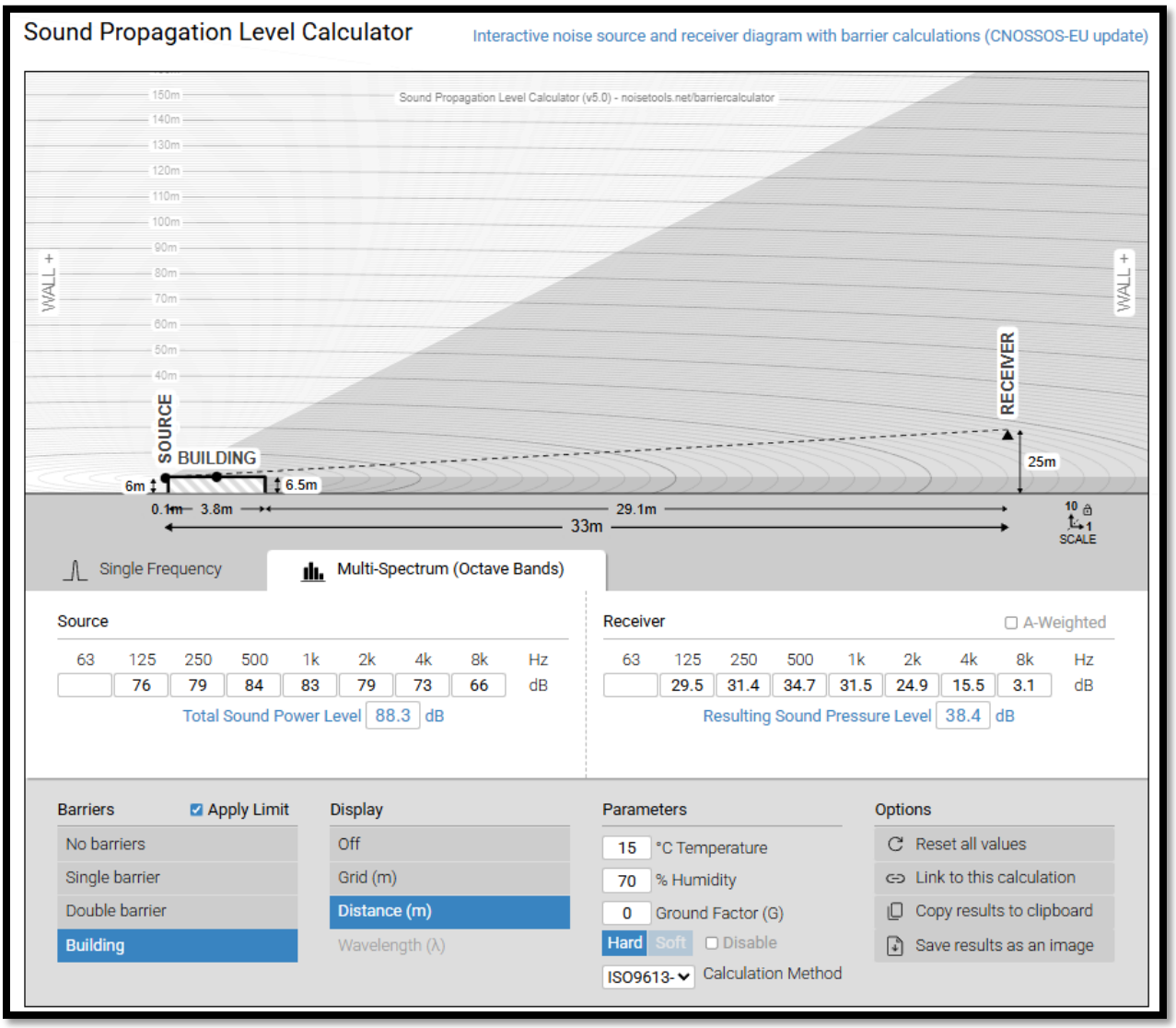
HVAC NO: 1 & 2
KFC NORTH FAÇADE 8TH FLOOR
ONE ROOFTOP 8.5-TON HVAC UNIT



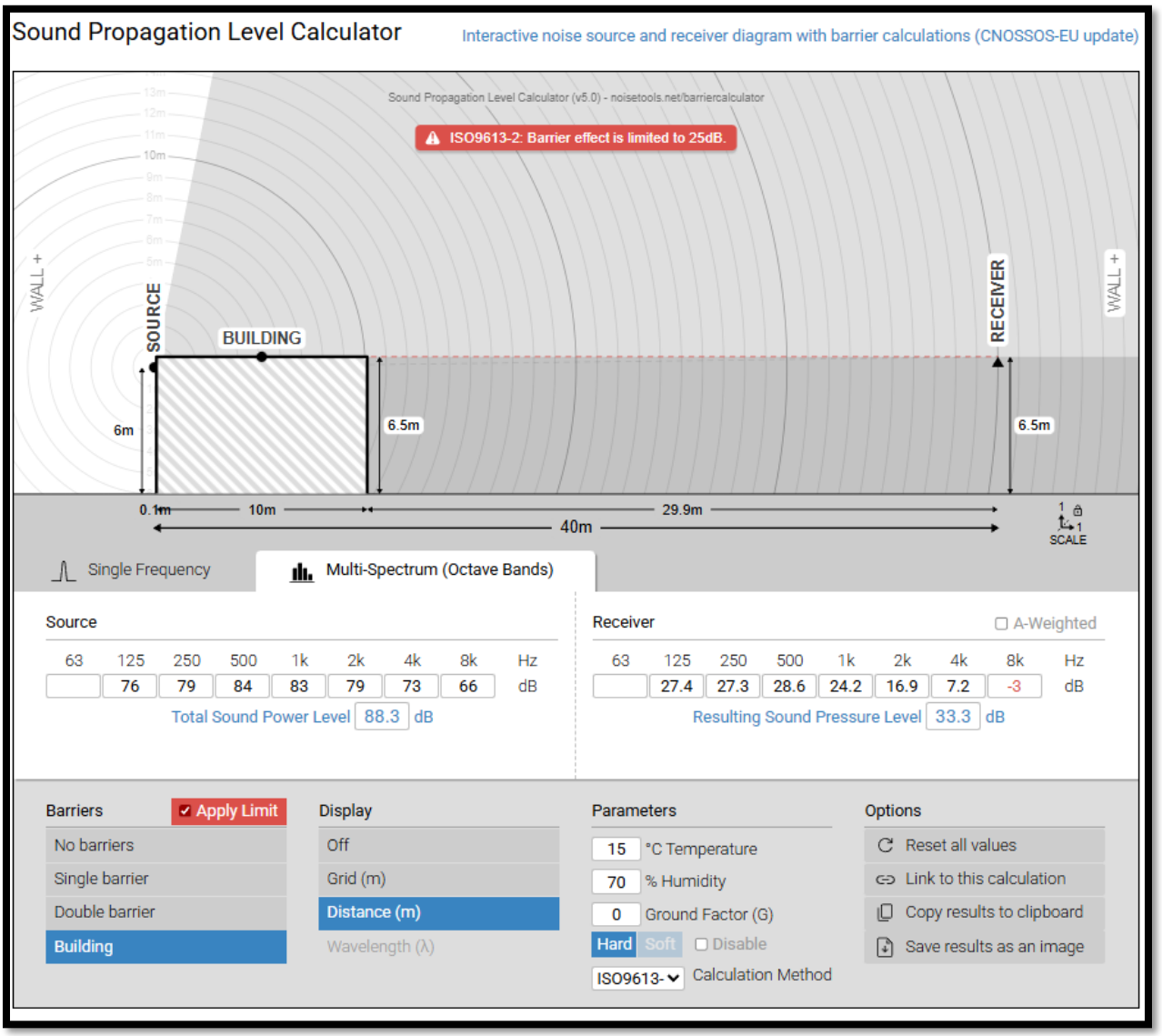
HVAC NO: 3
IOS ESTIATORIO NORTH FAÇADE 2ND FLOOR
ONE ROOFTOP 8.5-TON HVAC UNIT



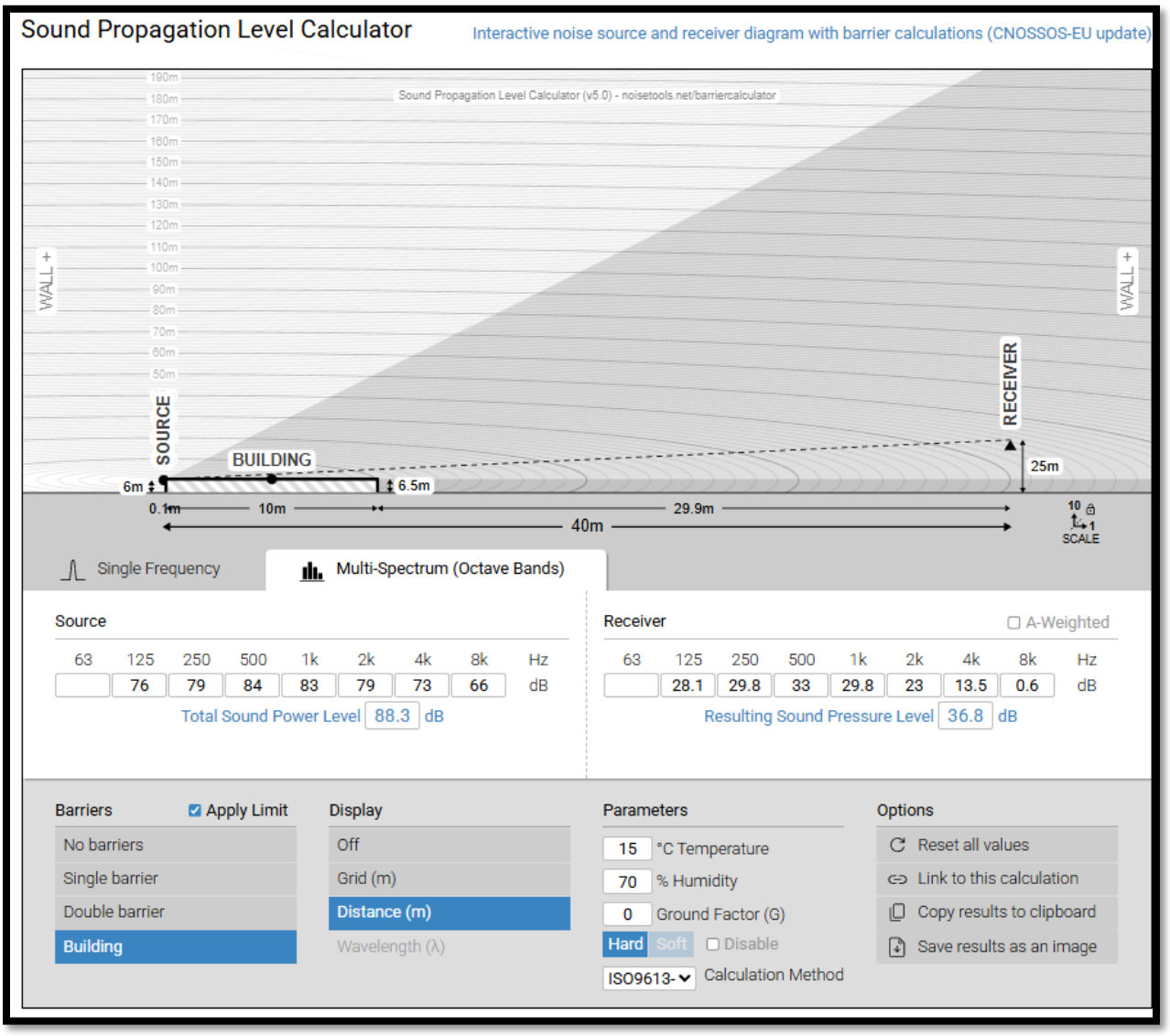
HVAC NO: 3
IOS ESTIATORIO NORTH FAÇADE 8TH FLOOR
ONE ROOFTOP 8.5-TON HVAC UNIT



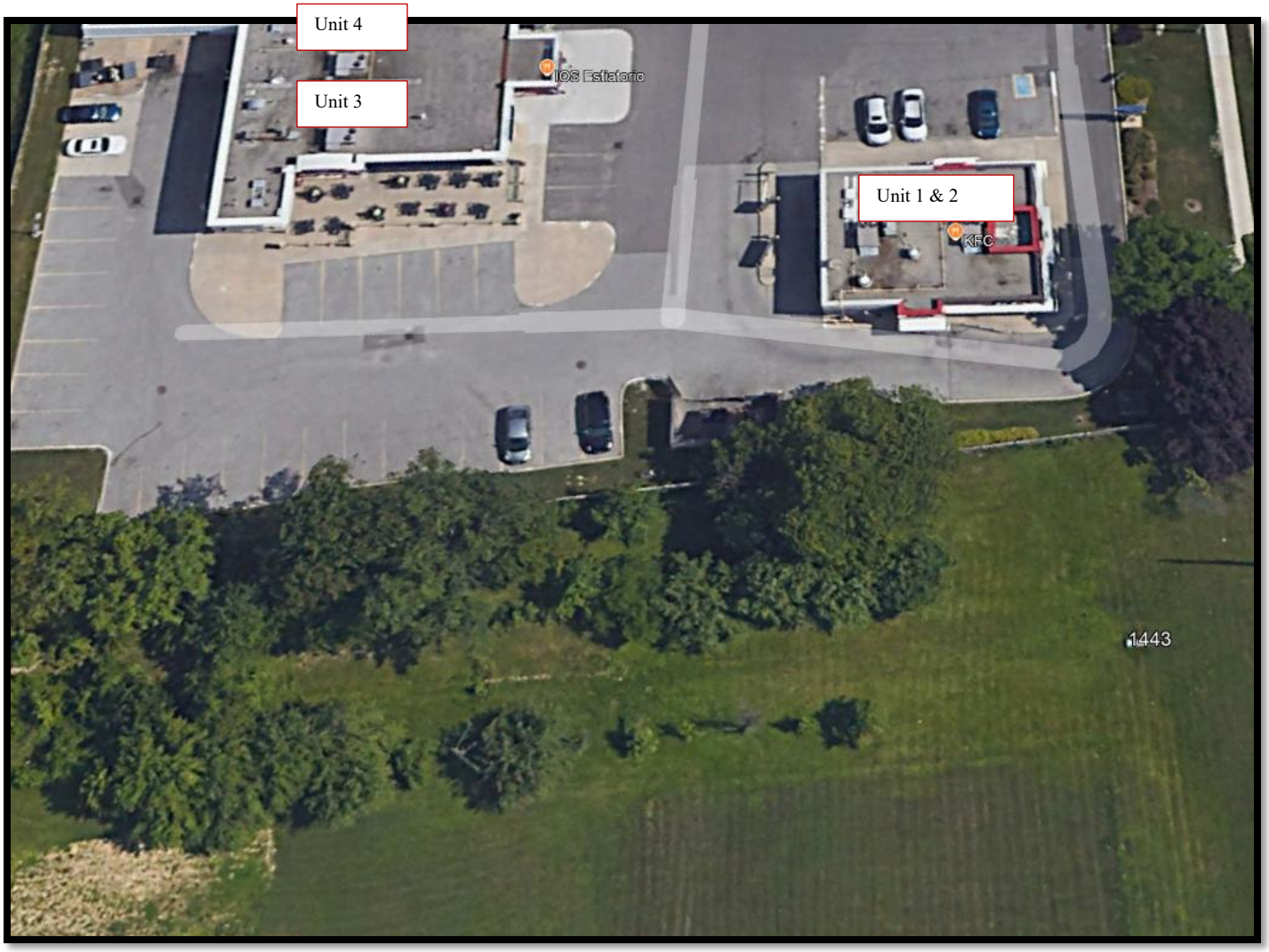
HVAC NO: 4
IOS ESTIATORIO NORTH FAÇADE 2ND FLOOR
ONE ROOFTOP 8.5-TON HVAC UNIT



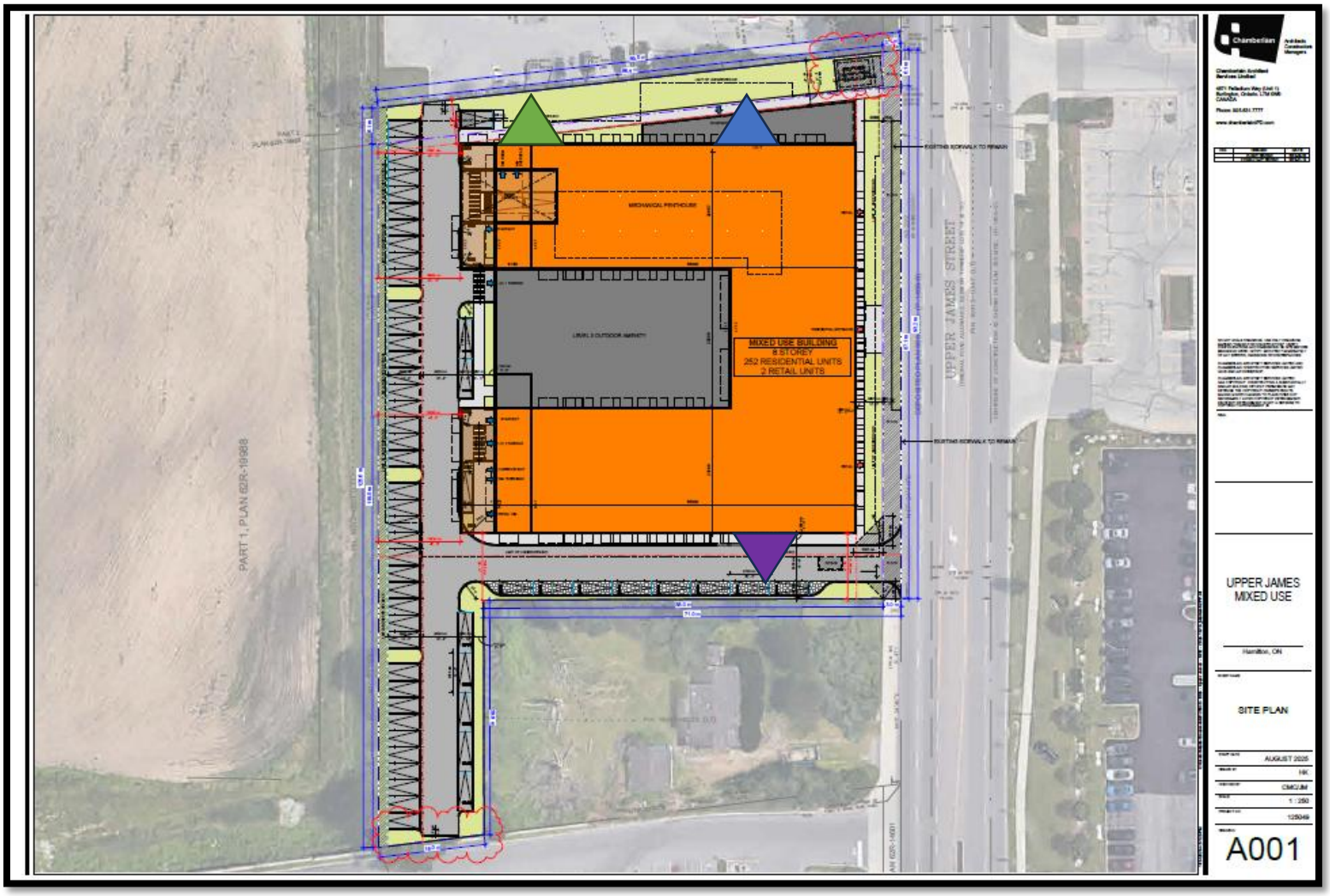
HVAC NO: 4
IOS NORTH FAÇADE 8TH FLOOR
ONE ROOFTOP 8.5-TON HVAC UNIT



KFC & IOS
ROOFTOP HVAC UNIT LOCATIONS



HVAC UNIT RECEPTOR LOCATIONS
UNITS 1 TO 5
KFC, IOS & SPRING SUSHI

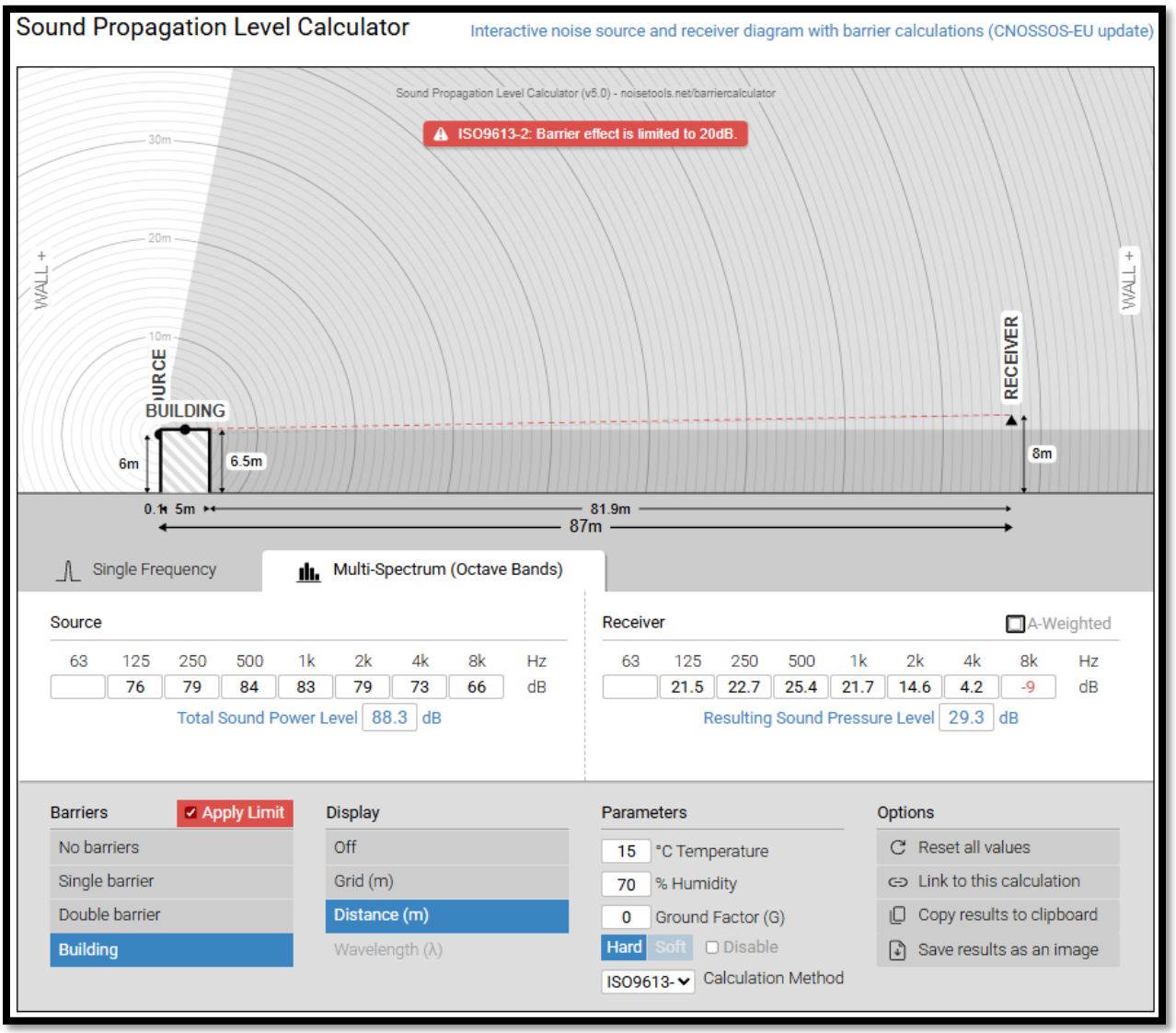


Represents Units 1 & 2 KFC 2nd and 8th Floor Receptors

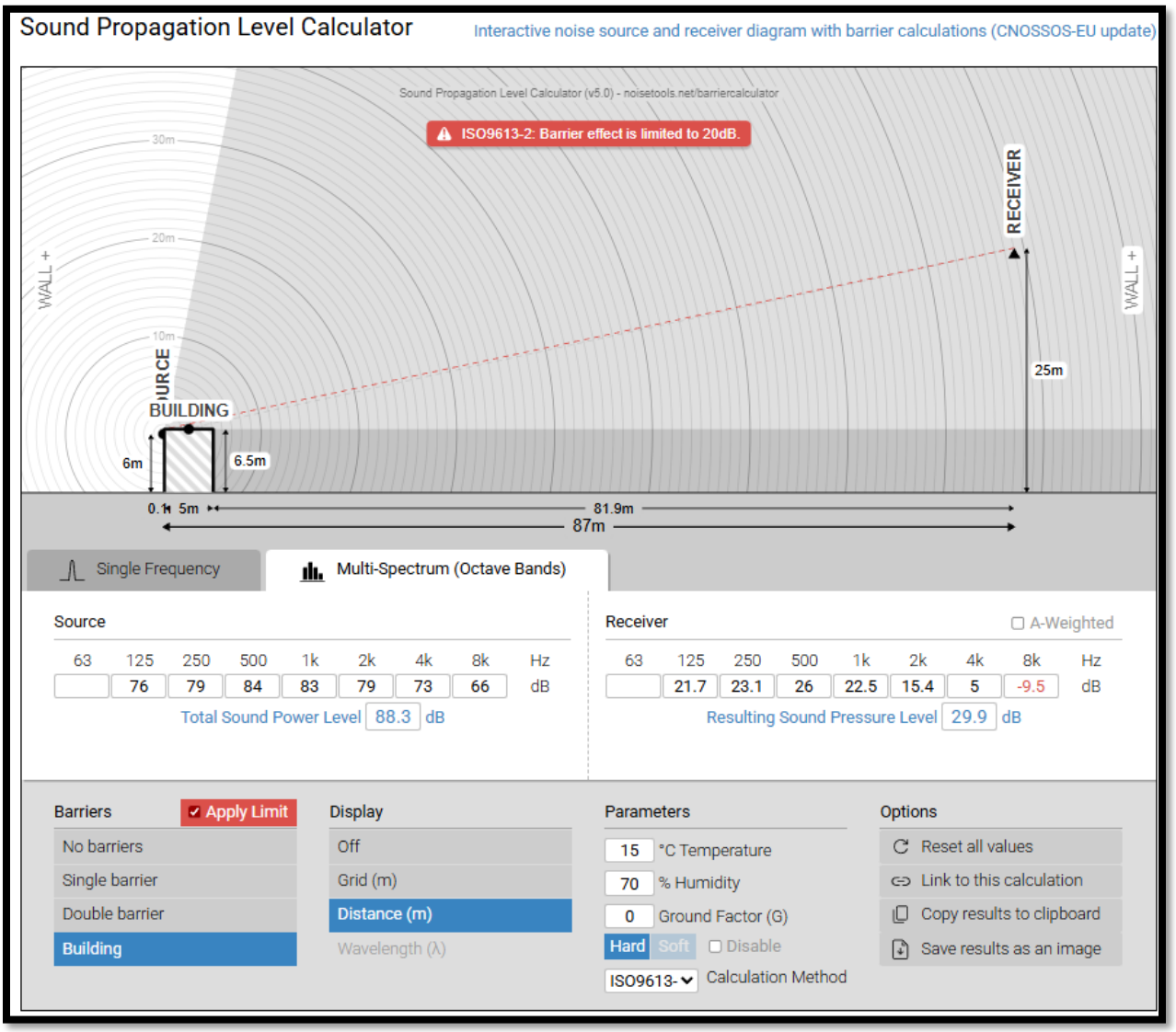
Represents Units 3 & 4 IOS 2nd and 8th Floor Receptors

Represents Unit 5 Spring Sushi 2nd and 8th Floor Receptors

HVAC UNIT NO: 5
SPRING SUSHI RESTAURANT
8.5 TON 2nd FLOOR



HVAC UNIT NO: 5
SPRING SUSHI RESTAURANT
8.5 TON 8TH FLOOR



SPRING SUSHI
ROOFTOP HVAC UNIT LOCATION