NOISE IMPACT STUDY

HOMESTEAD RESIDENCES
3250-3260 HOMESTEAD DRIVE
3-STOREY MULTIPLE DWELLING
RESIDENTIAL BUILDING
MOUNT HOPE, ON
NOW IN THE CITY OF HAMILTON

Prepared for:

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c/o Urban Solutions
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Our File NO: 21-2181

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1.0 INTRODUCTION

dBA Acoustical Consultants has conducted a noise impact study on behalf of 1333664 Ontario Ltd for the proposed Homestead Residences located at "3250-3260 Homestead Drive" Mt. Hope ON now in the City of Hamilton. The purpose of this study is to determine the traffic noise impact from Upper James Street (Hwy 6) and Homestead Drive. Longview Drive and Airport Rd have low volume traffic and distance separation for Airport Road and have no acoustical impact on the proposed development.

This study will detail noise impact relative to the proposed site plan and recommend noise control measurements necessary (if applicable) to meet MOE Publication NPC-300 entitled "Stationary & Transportation Sources-Approval & Planning guidelines while satisfying the planning requirements of the City of Hamilton. Vibration was not considered in this report as there are no CN/CP Rail lines or heavy industry in the immediate area. Aircraft noise was considered in this report however, as the development is located within the 27 NEF 2010 contour (Appendix "A") noise mitigation measures for aircraft are not required. There are no stationary noise sources in the area that are considered an acoustical impact on the proposed site.

2.0 SITE DESCRIPTION

Proposed for the development is a 3 storey Multiple Dwelling Residential Building with 40 units. The proposed development is surrounded by single storey residential dwellings to the west. To the east of the proposed development is Upper James Street (formally Hwy 6), as well as Southern Pines Golf and Country Club. To the east is a residential development currently under construction on Homestead Dr separating Upper James and the proposed development site. To the south is a Fire Hall and single-family dwellings. Homestead Dr is located approximately 15m east of the proposed site and Upper James is located approximately 210m.

3.0 NOISE IMPACT ASSESSMENT

3.1 NOISE CRITERIA

The Ministry of Environment (MOE) specifies limits for road noise relative to new residential developments. MOE Publication-300 entitled "Stationary and Transportation Sources-Approval & Planning, specifies the criteria, summarized as follows:

TABLE1- 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 in the Outdoor Living Area (OLA) and at an upper storey 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 is required:

TABLE 2 –Noise Control Requirements		
Time Period	Noise Level Leq (dBA)	Action Required
07:00 - 23:00 Daytime (OLA)	55 to 60	Barrier or Warning Clause Type "A"
07:00 - 23:00 Daytime (OLA)	> 60	Barrier & Warning Clause Type "B"
07:00 – 23:00 Daytime (POW)	>55	Provision for A/C, Warning Clause "C"
07:00 – 23:00 Daytime (POW)	>60	Central A/C, Warning Clause "D"
07:00 – 23:00 Daytime (POW)	>65	Building Component Specification
23:00 to 07:00 Nighttime (POW)	> 50	Provision for A/C & Warning Clause Type "C"
23:00 to 07:00 Nighttime (POW)	> 55 > 60	Building Component Specification 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 7:00 – 23:00	45
Bedroom 23:00 - 07:00	40

3.2 ROAD NOISE

Predicted road traffic noise levels were calculated two segments for Upper James Street (southbound & northbound) located approximately 210m east and is four-lane roadway a major road noise source in the site area. Predicted road traffic noise levels were calculated for Homestead Drive located approximately 15m east, a two-lane roadway and considered a major road noise source in the site area. Roadway traffic volumes AADT 2019 were sourced from the *City of Hamilton Website,* relative to Upper James Street and Homestead Drive. MOE computer program STAMSON Version 5.04 was used to carry out prediction calculations. Traffic data is summarized in Table 4. See Appendix "A" Stamson Traffic Data.

The daytime/nighttime volume ratio relative for Upper James St and Homestead Rd is calculated using a 90/10 split as required by the MOE. Upper James has a maximum posted speed for all vehicles of 80 km/hr and Homestead Dr is 50km/hr. The percentage of annual growth for Upper James was figured at 2.0% over 12 years. The 2019 AADT (Annual Average Daily Traffic) volumes were used and are reflective of the worst-case scenario.

Upper James truck volumes were factored at 2% medium and 5% heavy of the total vehicle volumes. Table 5 summarizes the "free field" traffic noise prediction results, modeled at two receptor locations representative of the east, north and south building facades of the proposed development (See Figure 3 Receptor Location).

Homestead Drive truck volumes were factored at 1.0% medium and 1.0% heavy of the total vehicle volumes. Airport Road and Homestead Drive prohibits heavy trucks. Table 5 summarizes the "free field" traffic noise prediction results, modeled at 5 receptor locations representative of the east, north and south building facades and the rooftop terrace of the proposed development (See Figure 3 Receptor Location).

TABLE 4 – Future Road Traffic Volumes			
Upper James Street (Southbound)	AADT 13239 Vehicles		
	Cars	Medium Trucks	Heavy Trucks
Day	11200	357	357
Night	1244	40	40
Upper James Street (Northbound)	AADT 13419 Vehicles		
	Cars	Medium Trucks	Heavy Trucks
Day	11353	362	362
Night	1261	40	40
Homestead Drive	AADT 3770 Vehicles		
	Cars	Medium Trucks	Heavy Trucks
Day	3329	34	34
Night	370	4	4

The following Table 5A summarizes the "free field" traffic noise prediction results for Upper James (Southbound), modeled at 5 receptor locations representative of building facades and rooftop terrace. (See Figure 3 Receptor Location).

TABLE 5A – Predicted Future Traffic Noise (dBA)		
Upper James (Southbound)	07:00 – 23:00	23:00 – 07:00
R1- East Façade 1st Floor Residential	45 (1)	38 (1)
R2- East Façade 3rd Floor Residential	47 (2)	39 (2)
R3- North-South Façade 1st Floor Residential	44 (1)	38 (1)
R4- North-South Façade 3rd Floor Residential	47 (2)	40 (2)

(1) 2m receiver height *(2) 8 m receiver height*

The following Table 5B summarizes the "free field" traffic noise prediction results for Upper James (Northbound), modeled at 4 receptor locations representative of building facades and rooftop terrace. (See Figure 3 Receptor Location).

TABLE 5B – Predicted Future Traffic Noise (dBA)		
Upper James (Northbound)	07:00 – 23:00	23:00 – 07:00
R1- East Façade 1st Floor Residential	45 (1)	38 (1)
R2- East Façade 3rd Floor Residential	47 (2)	38 (2)
R3- North-South Façade 1st Floor Residential	44 (1)	38 (1)
R4- North-South Façade 3rd Floor Residential	46 (2)	40 (2)

(1) 2m receiver height *(2) 8 m receiver height*

The following Table 5C summarizes the "free field" traffic noise prediction results for Homestead Drive, modeled at 4 receptor locations representative of building facades. (See Figure 3 Receptor Location).

TABLE 5C – Predicted Future Traffic Noise (dBA)		
Homestead Drive	07:00 – 23:00	23:00 – 07:00
R1- East Façade 1st Floor Residential	56 (1)	51 (1)
R2- East Façade 3rd Floor Residential	57 (2)	50 (2)
R3- North-South Façade 1st Floor Residential	49 (1)	43 (1)
R4- North-South Façade 3rd Floor Residential	50 (1)	43 (1)

(1) 2m receiver height *(2) 8m receiver height*

The following Table 5D summarizes the "free field" combined traffic noise prediction results for both Upper James & Homestead Drive, modeled at 4 receptor locations representative of building facades. (See Figure 3 Receptor Location).

TABLE 5D – Predicted Combined Future Traffic Noise (dBA)		
Upper James/Homestead Drive	07:00 – 23:00	23:00 – 07:00
R1- East Façade 1st Floor Residential	57 (1)	50 (1)
R2- East Façade 3rd Floor Residential	57 (2)	50 (2)
R3- North-South Façade 1st Floor Residential	51 (2)	45 (2)
R4- North-South Façade 3rd Floor Residential	53 (1)	46 (1)

(1) 2m receiver height *(2) 8m receiver height*

TABLE 5E – Predicted Combined Future Traffic Noise (dBA)		
Rooftop Terrace with 1.07m Safety Railing	07:00 – 23:00	23:00 – 07:00
R5- Rooftop Terrace (8m)	42 (2)	N/A

4.0 RECOMMENDATIONS - NOISE CONTROL

4.1 OUTDOOR LIVING AREAS

Calculated road noise levels exceed the 55 dBA daytime criteria outlined in Table 1 for outdoor amenity spaces (Rooftop Terrace). Mitigation measures are proposed for the rooftop terrace with a 1.07m (3ft) safety railing as required by the Ontario Building Code (OBC). The noise levels for the rooftop terrace are below 60dba and therefore do not require noise mitigation measures for this development, however, the City of Hamilton staff require noise mitigation measures be shown to reduce the terrace noise levels to 55dba. See attached Stamson calculations that confirm that the proposed 1.07m safety railing mitigates the rooftop noise level to well below 50dba. Should the basement area show an exterior walkout to the ground floor with a patio area, a safety railing of 1.83m will be required to installed to ensure the traffic noise levels meet the outdoor noise limits of Table 1 for outdoor amenity area no matter how small they are.

In compliance with MOE guidelines, a safety railing barrier must have a minimum surface density of 20kg/m^2 and be designed and constructed without cracks or gaps. Any gaps under the safety railing barrier that are necessary for drainage purposes must be minimized (2") and localized and must not deteriorate acoustical performance. (See Figure 4, Safety Barrier Location)

4.1.1 OUTDOOR LIMIT AIRCRAFT

Table 4.1.1 gives the aircraft noise limit in terms of an NEF/NEP value in any outdoor area, including the OLA. The limit applies to the entire 24-hour period. The distance separation from the airport and, consequently, the location of the noise sensitive land use with respect to the NEF/NEP contours, is the only measure that controls the outdoor noise impact. The outdoor noise limits were calculated by using NEF= L_{eq} (27) - 32 dBA = 30 dBA.

Table 4.1.1 Aircraft Noise Limits	
Time Period	NEF/NEP
24-hour	30

The Noise Level Limit for noted in Table 4.1.1 are below MOE noise criteria and further noise mitigation measures are not required.

4.2 INDOOR NOISE LEVELS

Calculated road noise levels at the Plane of Window (POW) do not exceed the 50 dBA criteria outlined in Table 1 for indoor space for all residential units. Specific building components (walls, windows, doors etc.) are not required and confirmed using the STC (Sound Transmission Class) method. OBC is required and will satisfy the interior noise requirements noted in Table 1.

It is recommended that all residential windows throughout the site development have an STC-30 rating and confirmed in writing from the window company that the STC-30 has been achieved.

TABLE 6 – Recommended Door, Wall, and Window Construction			
LOCATION	STC Estimated	Wall	Door Construction
All Units Bedroom/ Living Rooms	To be Confirmed 30	 OBC	 OBC

First number denotes glass thickness, followed by spacing, and thickness of second pane, OBC denotes minimum requirements of the Ontario Building Code will suffice. Recommendations assume windows are well-fitted, weather-stripped units that can be opened. Casement windows only to be installed.

5.0 VENTILATION / WARNING CLAUSES

Ventilation and Warning Clause requirements specific units are required for this development and noted in the following Table 7. Minimum building component requirements of the Ontario Building Code for all lots will satisfy the MOE criterion for noise control relative to indoor living space. Whereas the noise levels are below MOE noise criteria for Provisions for Central Air Conditioning units, proposed for the development is Central Air for all units due to the proximity of the airport.

TABLE 7 - Ventilation and Warning Clause Requirements		
Location	Ventilation	Warning CLAUSE
All Residential Units	Central Air	Type “A” & “D”

The rooftop mechanical equipment screening will face south and will be set back from the roofline, and adequately screened from street level by the roof geometry. In other words, the rooftop HVAC unit will be shielded by the parapet wall and slope of the roof and a 1.83m (6ft) high screen for the mechanical equipment. See Rooftop Plan Appendix “A”.

Warning Clauses to be combined for all residential units and must be inserted into all Offers and Agreements of Purchase and Sale or Lease:

TYPE A:

> “Purchasers/tenants are advised that sound levels due to increasing road and air traffic may occasionally interfere with some activities of the dwelling occupants as the sound levels exceed the Municipality’s and the Ministry of the Environment’s noise criteria.”

TYPE D:

> “This dwelling unit has been supplied with a central air conditioning system which will allow windows and exterior doors to remain closed, thereby ensuring that the indoor sound levels are within the Municipality’s and the Ministry of the Environment’s noise criteria.” noise impacts both on and in the immediate vicinity of the subject property.)”

6.0 SUMMARY OF RECOMMENDATIONS

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

- Type's "A", & "D" warning clauses are inserted into all Offers and Agreements of Purchase and Sale or Lease for all Units (Table 7),
- Central Air Conditioning for all Units as recommended in Table 7,
- OBC exterior wall configuration is recommended in Section 4 to ensure MOE compliance.
- All Windows (STC-30) and Wall construction (OBC) as recommended in Table 6,
- Required letter from window company confirming proper STC values for acoustically tested windows are supplied.
- Qualified Acoustical Consultant certifies that the required noise control measures have been incorporated into the builder's plans prior to issuance of a building permit and,
- Prior to issuance of an occupancy permit or equivalent, it is recommended the Qualified Acoustical Consultant certify that the approved noise control measures have been professionally installed.
- Safety Railing required for the rooftop terrace as proposed in the rooftop designs.
- Should the basement area show an exterior walkout to the ground floor with a patio area, a safety railing of 1.83m will be required to installed to ensure the traffic noise levels meet the outdoor noise limits of Table 1 for outdoor amenity area no matter how small they are.

7.0 CONCLUSIONS

dBA Acoustical Consultants has conducted a noise impact study on behalf of 1333664 Ontario Ltd for the proposed Homestead Residences located at "3250-3260 Homestead Drive" Mt. Hope ON now in the City of Hamilton. This study has determined the traffic noise impact from Upper James Street (Hwy 6) and Homestead Drive. Longview Drive and Airport Rd have low volume traffic volumes and speed limits and the distance separation for Airport Road. Both roadways have no acoustical impact on the proposed development.

This study detailed noise impact relative to the proposed site plan and recommend no noise control measurements necessary to meet MOE Publication NPC-300 entitled "Stationary & Transportation Sources-Approval & Planning guidelines while satisfying the planning requirements of the City of Hamilton. The required safety railings that are proposed for the rooftop terrace require the safety railings to meet the noise density as previously stated. Aircraft noise was considered in this report however, as the development is located within the 27 NEF 2010 contour (Appendix "A") noise mitigation measures for aircraft are not required. There are no stationary noise sources in the area that are considered an acoustical impact on the proposed site.

Rooftop HVAC units will be shielded by the rooftop parapet and screened with a 1.83m screening and have no acoustical impact on the area residential properties.

FIGURE 1
KEY PLAN

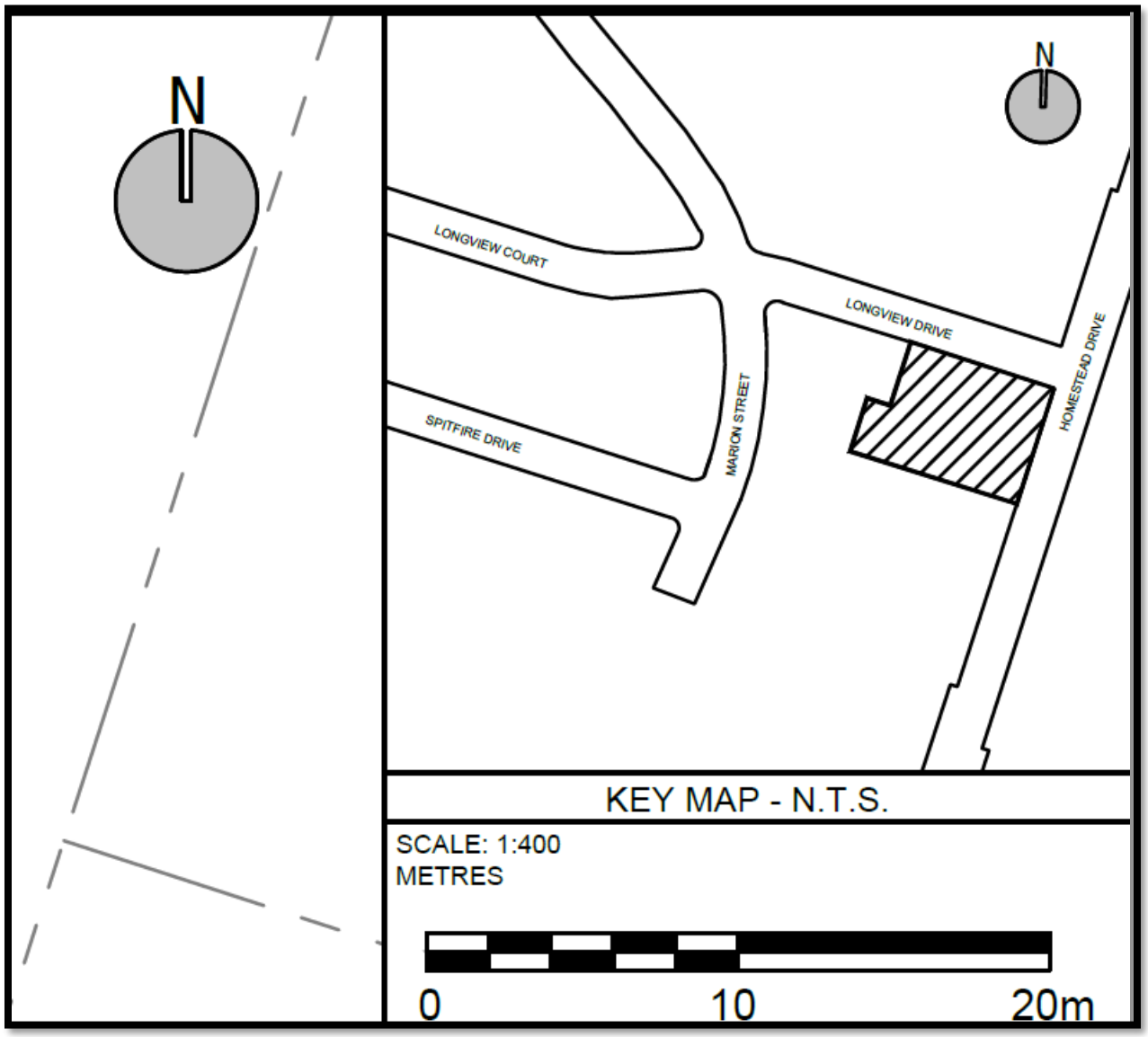


FIGURE 2
SITE PLAN

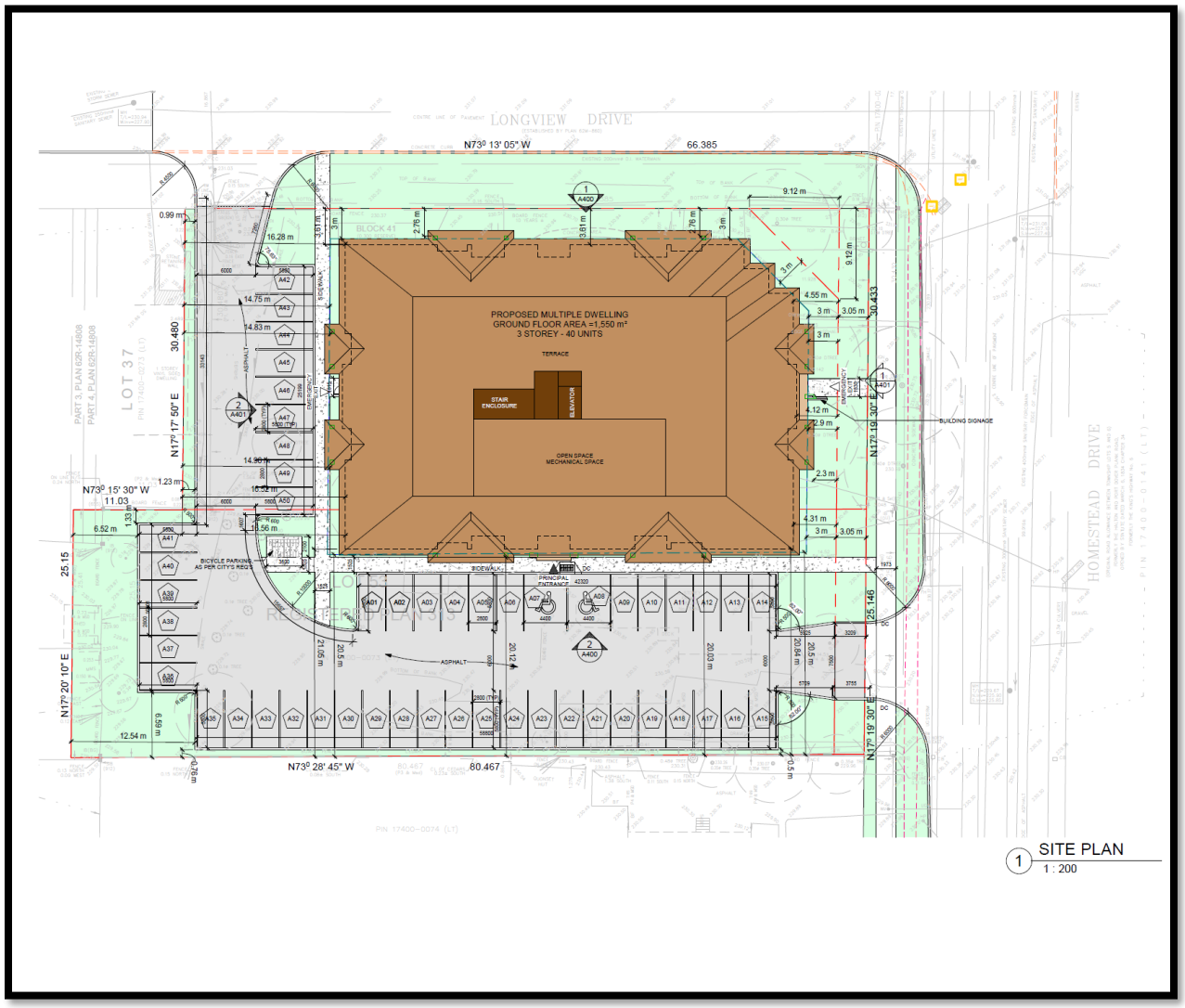
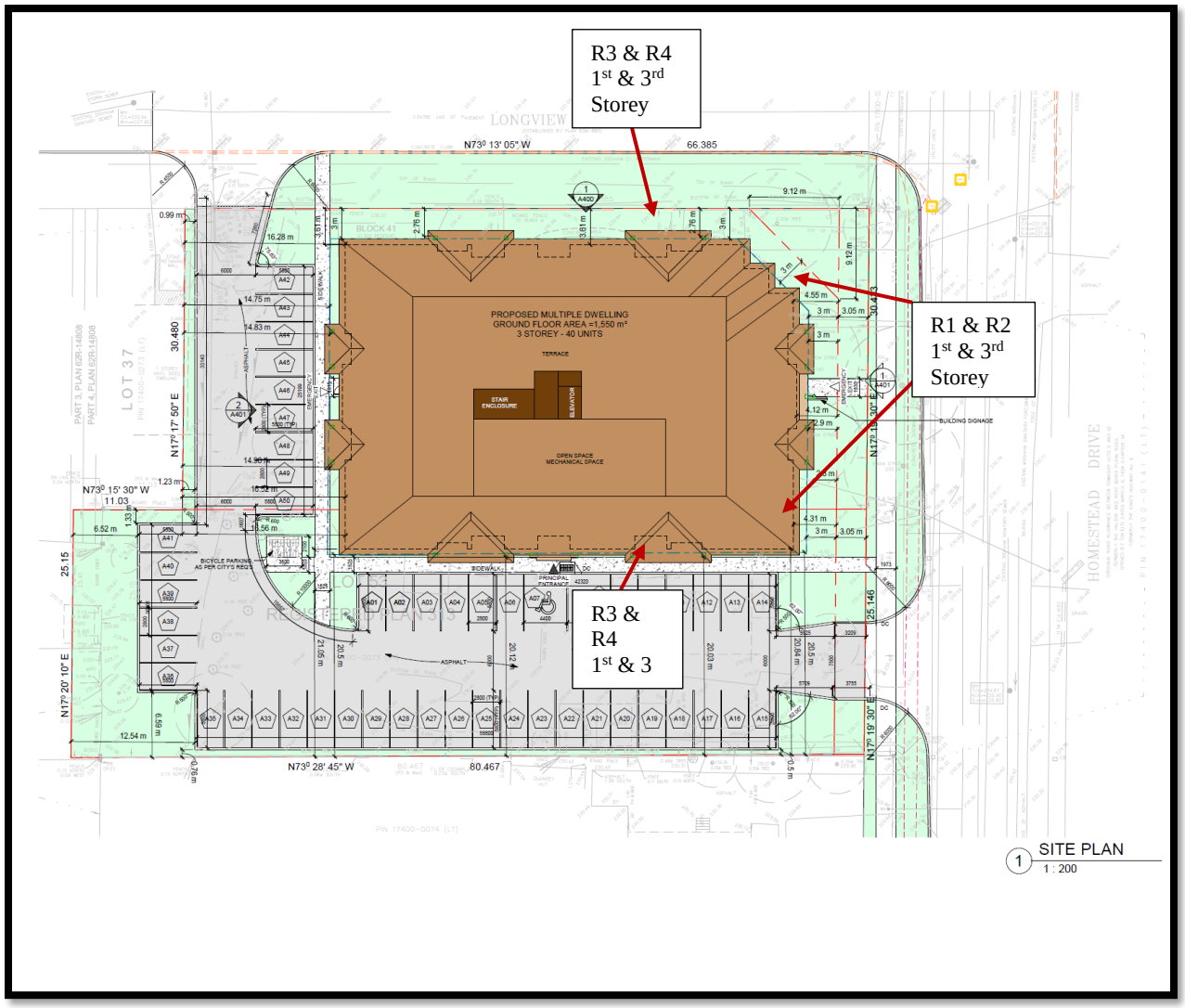
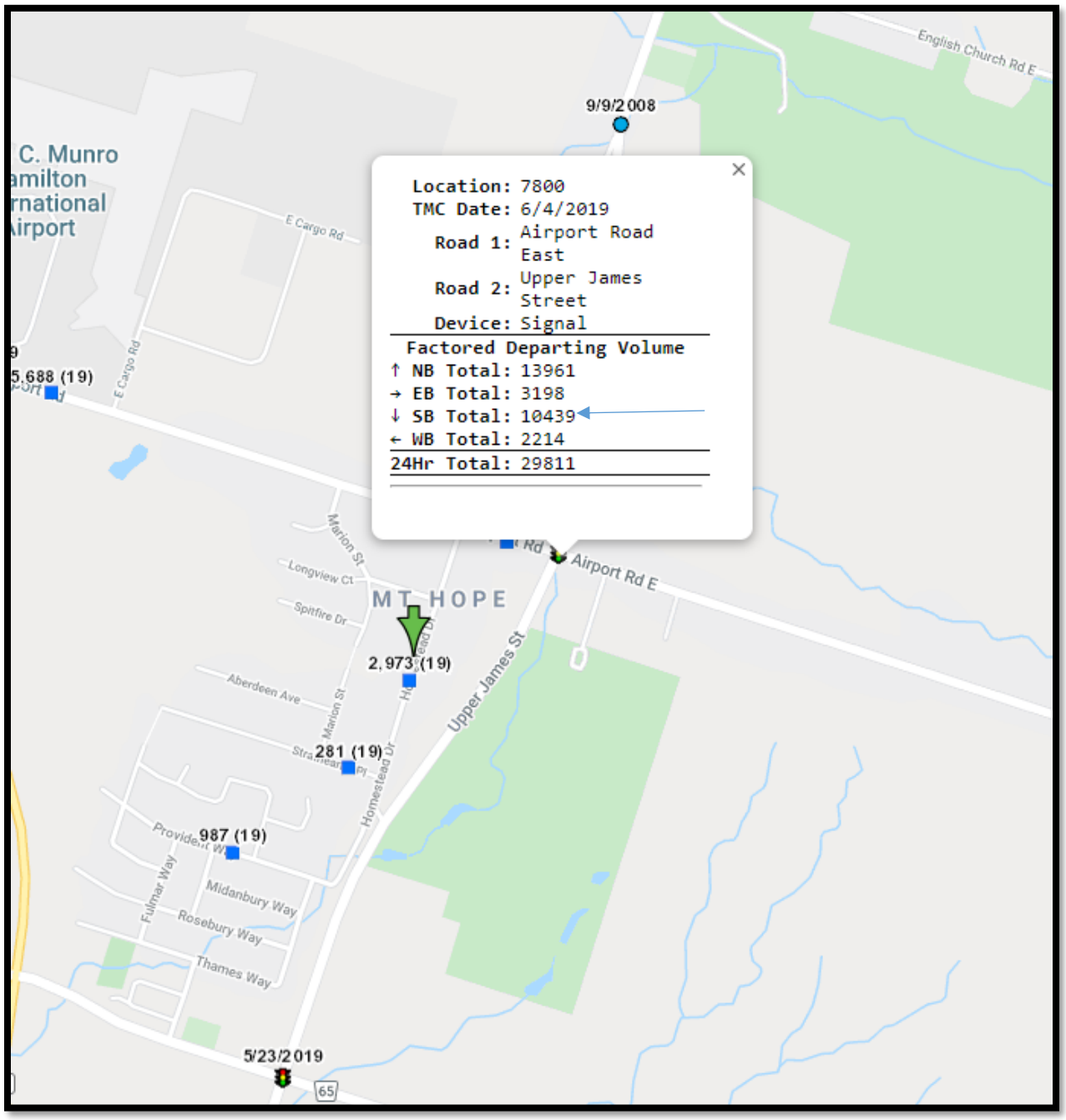


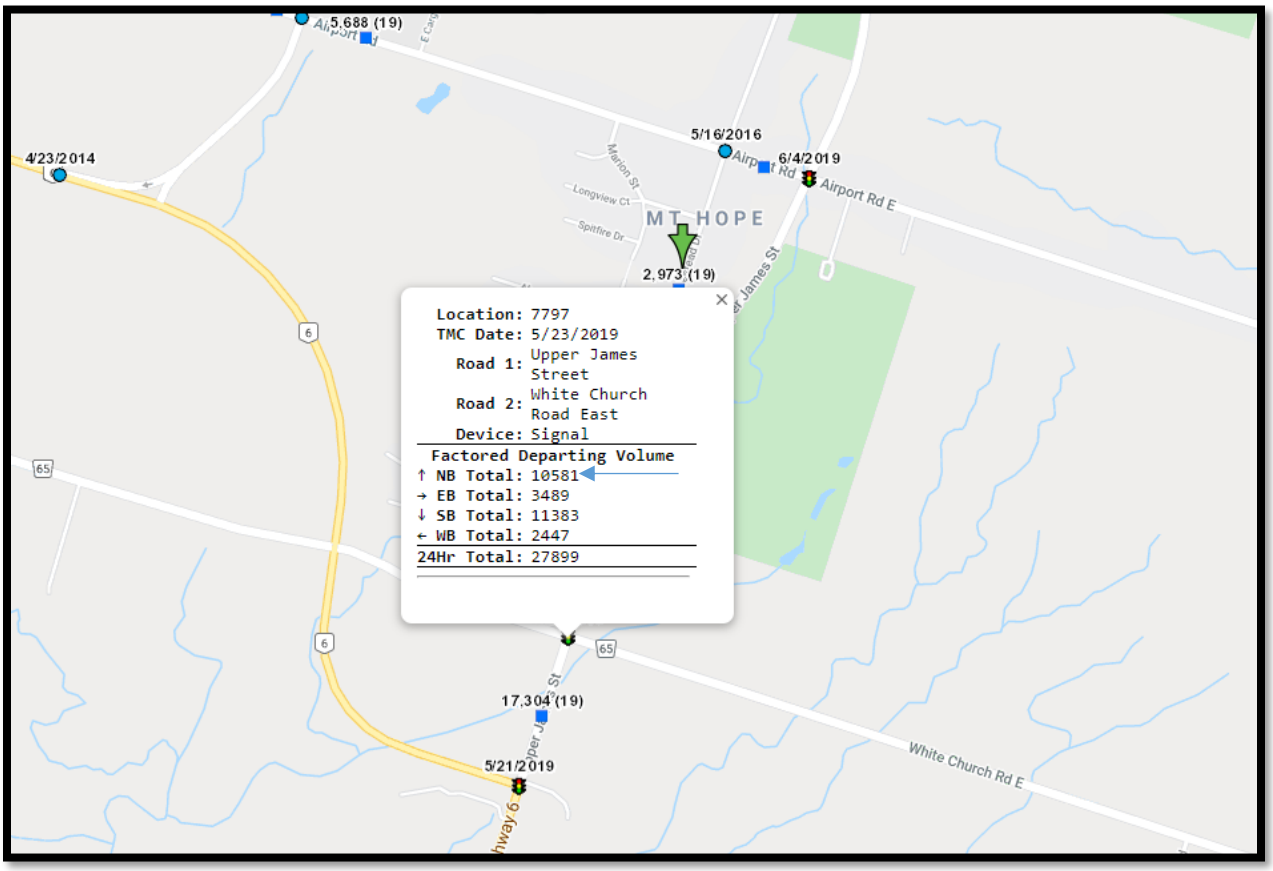
FIGURE 3
RECEPTOR LOCATIONS



APPENDIX "A"

City of Hamilton AADT Traffic
Upper James St
& Homestead Drive

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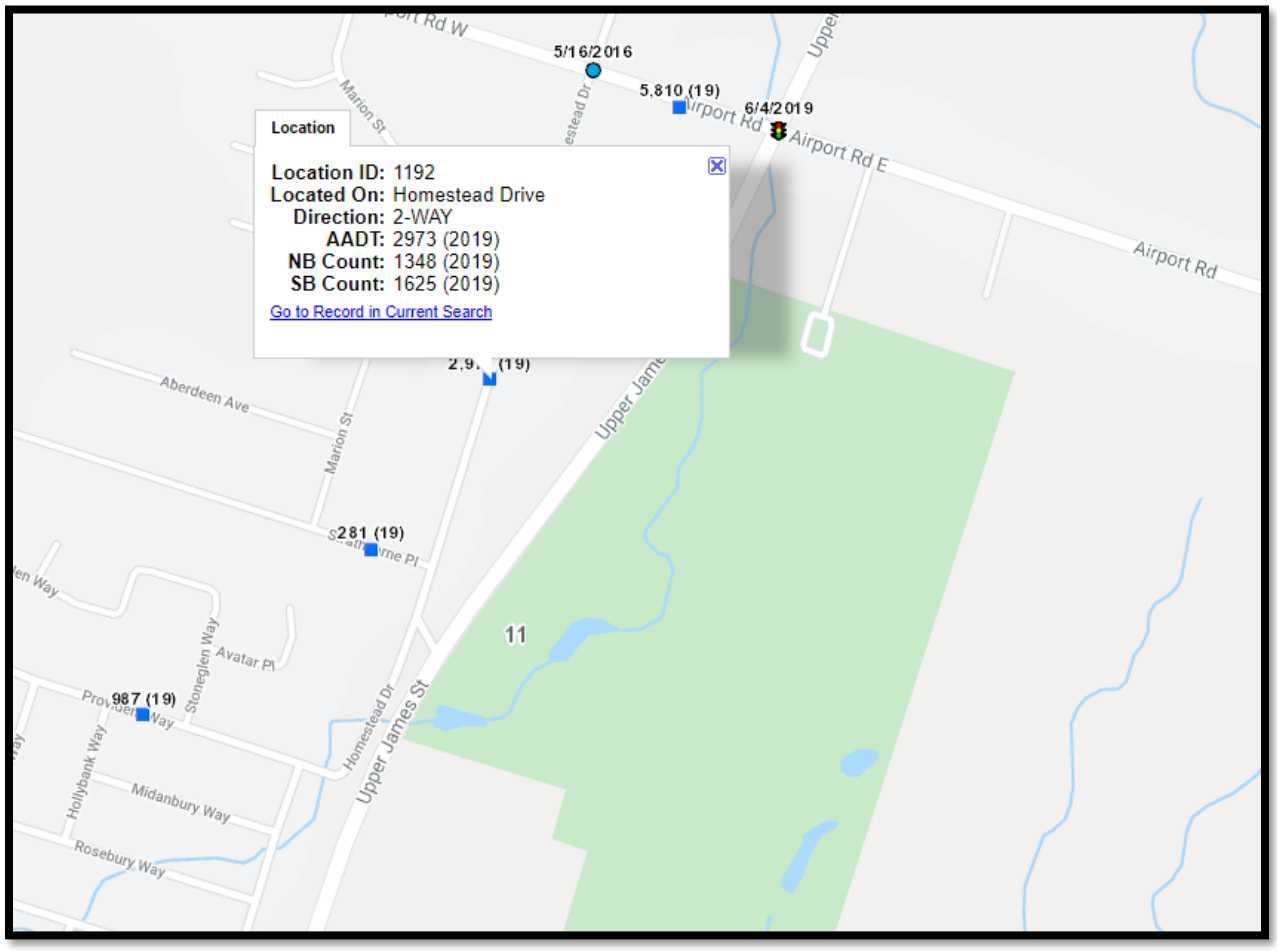
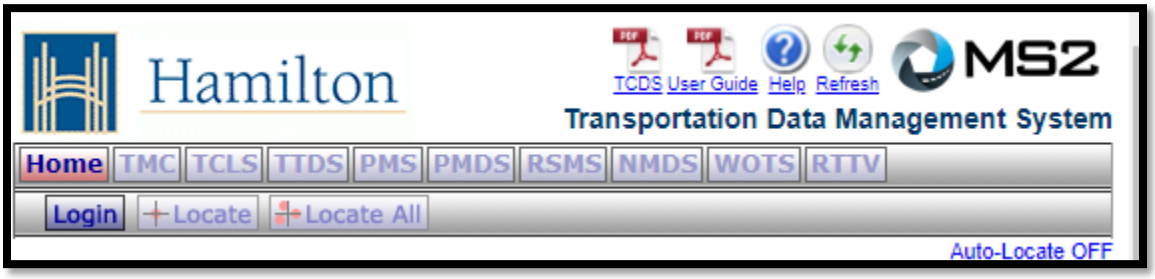
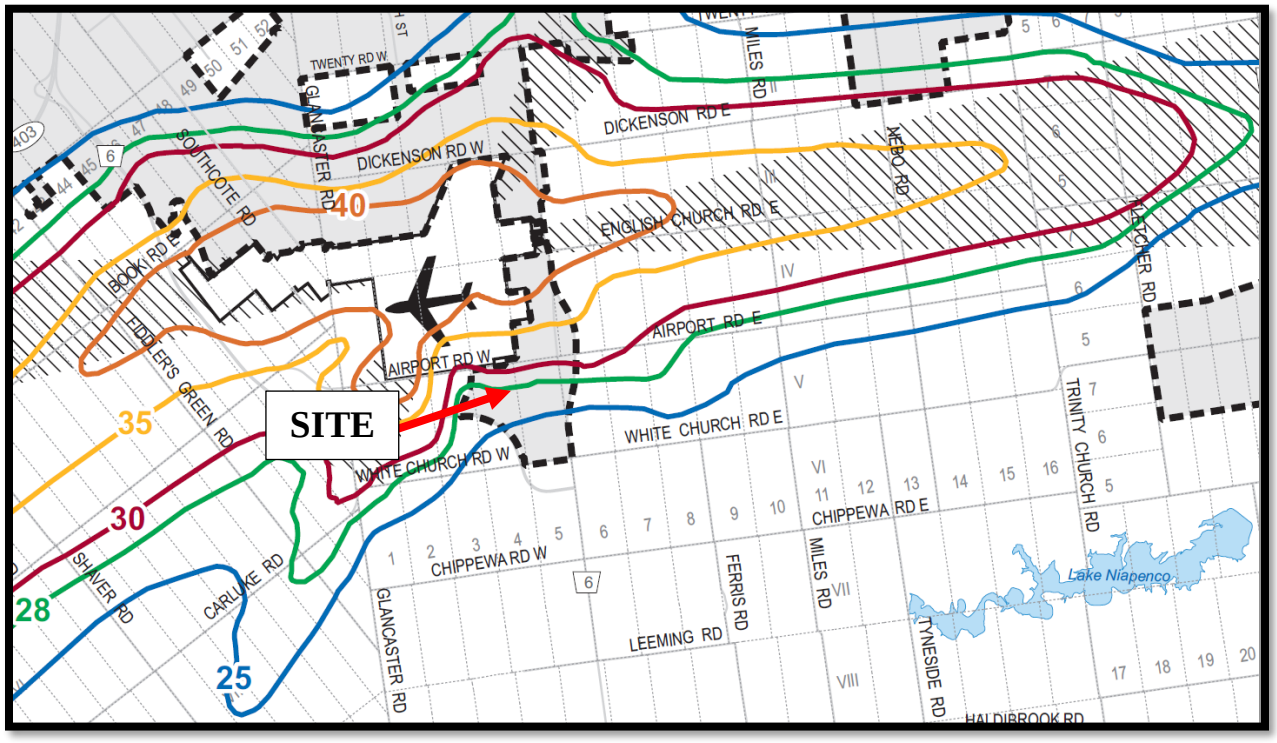
4/23/2014
5/16/2016
6/4/2019
Airport Rd E
MT HOPE
2,973 (19)
Location: 7797
TMC Date: 5/23/2019
Road 1: Upper James Street
Road 2: White Church Road East
Device: Signal
Factored Departing Volume
↑ NB Total: 10581
→ EB Total: 3489
↓ SB Total: 11383
← WB Total: 2447
24Hr Total: 27899
17,304 (19)
5/21/2019
White Church Rd E
6
65


5/16/2016
5,810 (19)
6/4/2019
Location
Location ID: 1192
Located On: Homestead Drive
Direction: 2-WAY
AADT: 2973 (2019)
NB Count: 1348 (2019)
SB Count: 1625 (2019)
Go to Record in Current Search
Airport Rd E
Airport Rd
Aberdeen Ave
Marion St
281 (19)
Upper James St
Homestead Dr
Stoneglen Way
Avatar Pl
987 (19)
Hollybank Way
Midanbury Way
Rosebury Way
11


Hamilton
TCDS
User Guide
Help
Refresh
MS2
Transportation Data Management System
Home
TMC
TCLS
TTDS
PMS
PMDS
RSMS
NMDS
WOTS
RTTV
Login
Locate
Locate All
Auto-Locate OFF

JOHN C. MUNRO
2010 CONTOUR MAP
SITE LOCATION



STAMSON CALCULATION SHEETS

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STAMSON 5.04        SUMMARY REPORT        Date: 25-10-2021 14:29:49
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: r1long.te            Time Period: Day/Night 16/8 hours
Description: R1- Upper James Free Field East Facade 1st Floor
                      TOTAL Leq FROM ALL SOURCES                    (DAY): 56.92
                                                                    (NIGHT): 50.49
Road data, segment # 1: Upp Jame S (day/night)
-----------------------------------------------
Car traffic volume  : 11200/1244  veh/TimePeriod  *
Medium truck volume :   357/40    veh/TimePeriod  *
Heavy truck volume  :   357/40    veh/TimePeriod  *
Posted speed limit  :    80 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):  10439
    Percentage of Annual Growth        :   2.00
    Number of Years of Growth          :  12.00
    Medium Truck % of Total Volume     :   3.00
    Heavy Truck  % of Total Volume     :   3.00
    Day (16 hrs) % of Total Volume     :  90.00

Data for Segment # 1: Upp Jame S (day/night)
-----------------------------------------------
Angle1   Angle2           :  -0.00 deg   45.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 210.00 / 210.00 m
Receiver height           :   2.00 / 2.00   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Road data, segment # 2: Upp Jame N (day/night)
-----------------------------------------------
Car traffic volume  : 11353/1261  veh/TimePeriod  *
Medium truck volume :   362/40    veh/TimePeriod  *
Heavy truck volume  :   362/40    veh/TimePeriod  *
Posted speed limit  :    80 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):  10581
    Percentage of Annual Growth        :   2.00
    Number of Years of Growth          :  12.00
    Medium Truck % of Total Volume     :   3.00
    Heavy Truck  % of Total Volume     :   3.00
    Day (16 hrs) % of Total Volume     :  90.00

Data for Segment # 2: Upp Jame N (day/night)
-----------------------------------------------
Angle1   Angle2           :  -0.00 deg   45.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 219.00 / 219.00 m
Receiver height           :   2.00 / 2.00   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00
```

```
Road data, segment # 3: Homestead (day/night)
-----------------------------------------------
Car traffic volume  :  3326/370   veh/TimePeriod  *
Medium truck volume :    34/4     veh/TimePeriod  *
Heavy truck volume  :    34/4     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):   2973
    Percentage of Annual Growth        :   2.00
    Number of Years of Growth          :  12.00
    Medium Truck % of Total Volume     :   1.00
    Heavy Truck  % of Total Volume     :   1.00
    Day (16 hrs) % of Total Volume     :  90.00

Data for Segment # 3: Homestead (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  :  15.00 / 15.00  m
Receiver height           :   2.00 / 2.00   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00


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

                    !  source  !   Road   !  Total
                    !  height  !   Leq    !   Leq
                    !   (m)    !  (dBA)   !  (dBA)
--------------------+---------+---------+---------
 1.Upp Jame S       !     1.32 !    44.93 !    44.93
 2.Upp Jame N       !     1.32 !    44.68 !    44.68
 3.Homestead        !     1.00 !    56.35 !    56.35
--------------------+---------+---------+---------
                      Total                56.92 dBA

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

                    !  source  !   Road   !  Total
                    !  height  !   Leq    !   Leq
                    !   (m)    !  (dBA)   !  (dBA)
--------------------+---------+---------+---------
 1.Upp Jame S       !     1.32 !    38.42 !    38.42
 2.Upp Jame N       !     1.31 !    38.14 !    38.14
 3.Homestead        !     1.01 !    49.93 !    49.93
--------------------+---------+---------+---------
                      Total                50.49 dBA
```

```
STAMSON 5.04        SUMMARY REPORT        Date: 25-10-2021 14:31:15
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: r2long.te            Time Period: Day/Night 16/8 hours
Description: R2- Upper James Free Field East Facade 3rd Floor
                      TOTAL Leq FROM ALL SOURCES           (DAY): 57.51
                                                           (NIGHT): 51.07
Road data, segment # 1: Upp Jame S (day/night)
----------------------------------------------
Car traffic volume  : 11200/1244  veh/TimePeriod  *
Medium truck volume :   357/40    veh/TimePeriod  *
Heavy truck volume  :   357/40    veh/TimePeriod  *
Posted speed limit  :    80 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):  10439
    Percentage of Annual Growth        :   2.00
    Number of Years of Growth          :  12.00
    Medium Truck % of Total Volume     :   3.00
    Heavy Truck  % of Total Volume     :   3.00
    Day (16 hrs) % of Total Volume     :  90.00

Data for Segment # 1: Upp Jame S (day/night)
---------------------------------------------
Angle1   Angle2           :  -0.00 deg   45.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 210.00 / 210.00 m
Receiver height           :   8.00 / 8.00   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00


Road data, segment # 2: Upp Jame N (day/night)
----------------------------------------------
Car traffic volume  : 11353/1261  veh/TimePeriod  *
Medium truck volume :   362/40    veh/TimePeriod  *
Heavy truck volume  :   362/40    veh/TimePeriod  *
Posted speed limit  :    80 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):  10581
    Percentage of Annual Growth        :   2.00
    Number of Years of Growth          :  12.00
    Medium Truck % of Total Volume     :   3.00
    Heavy Truck  % of Total Volume     :   3.00
    Day (16 hrs) % of Total Volume     :  90.00

Data for Segment # 2: Upp Jame N (day/night)
---------------------------------------------
Angle1   Angle2           :  -0.00 deg   45.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 219.00 / 219.00 m
Receiver height           :   8.00 / 8.00   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00
```

```
Road data, segment # 3: Homestead (day/night)
-----------------------------------------------
Car traffic volume  :  3326/370   veh/TimePeriod  *
Medium truck volume :    34/4     veh/TimePeriod  *
Heavy truck volume  :    34/4     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):   2973
    Percentage of Annual Growth        :   2.00
    Number of Years of Growth          :  12.00
    Medium Truck % of Total Volume     :   1.00
    Heavy Truck  % of Total Volume     :   1.00
    Day (16 hrs) % of Total Volume     :  90.00

Data for Segment # 3: Homestead (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  :  15.00 / 15.00  m
Receiver height           :   8.00 / 8.00   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00


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

                    !  source  !   Road   !  Total
                    !  height  !   Leq    !   Leq
                    !   (m)    !  (dBA)   !  (dBA)
--------------------+---------+---------+---------
 1.Upp Jame S       !     1.32 !    47.07 !    47.07
 2.Upp Jame N       !     1.32 !    46.86 !    46.86
 3.Homestead        !     1.00 !    56.67 !    56.67
--------------------+---------+---------+---------
                      Total                 57.51 dBA


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

                    !  source  !   Road   !  Total
                    !  height  !   Leq    !   Leq
                    !   (m)    !  (dBA)   !  (dBA)
--------------------+---------+---------+---------
 1.Upp Jame S       !     1.32 !    40.56 !    40.56
 2.Upp Jame N       !     1.31 !    40.31 !    40.31
 3.Homestead        !     1.01 !    50.25 !    50.25
--------------------+---------+---------+---------
                      Total                 51.07 dBA
```

```
STAMSON 5.04        SUMMARY REPORT        Date: 25-10-2021 14:41:11
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: r3long.te            Time Period: Day/Night 16/8 hours
Description: R3- Upper James Free Field East Facade 1st Floor
                              TOTAL Leq FROM ALL SOURCES                    (DAY): 51.33
                                                                            (NIGHT): 44.87

Road data, segment # 1: Upp Jame S (day/night)
-----------------------------------------------
Car traffic volume  : 11200/1244  veh/TimePeriod  *
Medium truck volume :   357/40    veh/TimePeriod  *
Heavy truck volume  :   357/40    veh/TimePeriod  *
Posted speed limit  :    80 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):  10439
    Percentage of Annual Growth        :   2.00
    Number of Years of Growth          :  12.00
    Medium Truck % of Total Volume     :   3.00
    Heavy Truck  % of Total Volume     :   3.00
    Day (16 hrs) % of Total Volume     :  90.00

Data for Segment # 1: Upp Jame S (day/night)
---------------------------------------------
Angle1   Angle2           :  -0.00 deg   45.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 224.00 / 224.00 m
Receiver height           :   2.00 / 2.00   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Road data, segment # 2: Upp Jame N (day/night)
-----------------------------------------------
Car traffic volume  : 11353/1261  veh/TimePeriod  *
Medium truck volume :   362/40    veh/TimePeriod  *
Heavy truck volume  :   362/40    veh/TimePeriod  *
Posted speed limit  :    80 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):  10581
    Percentage of Annual Growth        :   2.00
    Number of Years of Growth          :  12.00
    Medium Truck % of Total Volume     :   3.00
    Heavy Truck  % of Total Volume     :   3.00
    Day (16 hrs) % of Total Volume     :  90.00

Data for Segment # 2: Upp Jame N (day/night)
---------------------------------------------
Angle1   Angle2           :  -0.00 deg   45.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 233.00 / 233.00 m
Receiver height           :   2.00 / 2.00   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00
```

```
Road data, segment # 3: Homestead (day/night)
-----------------------------------------------
Car traffic volume  :  3326/370   veh/TimePeriod  *
Medium truck volume :    34/4     veh/TimePeriod  *
Heavy truck volume  :    34/4     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):   2973
    Percentage of Annual Growth        :   2.00
    Number of Years of Growth          :  12.00
    Medium Truck % of Total Volume     :   1.00
    Heavy Truck  % of Total Volume     :   1.00
    Day (16 hrs) % of Total Volume     :  90.00

Data for Segment # 3: Homestead (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           :   2.00 / 2.00   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00


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

                    !  source  !   Road   !  Total
                    !  height  !   Leq    !   Leq
                    !   (m)    !  (dBA)   !  (dBA)
--------------------+---------+---------+---------
 1.Upp Jame S       !     1.32 !    44.46 !    44.46
 2.Upp Jame N       !     1.32 !    44.24 !    44.24
 3.Homestead        !     1.00 !    49.10 !    49.10
--------------------+---------+---------+---------
                      Total                 51.33 dBA


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

                    !  source  !   Road   !  Total
                    !  height  !   Leq    !   Leq
                    !   (m)    !  (dBA)   !  (dBA)
--------------------+---------+---------+---------
 1.Upp Jame S       !     1.32 !    37.95 !    37.95
 2.Upp Jame N       !     1.31 !    37.69 !    37.69
 3.Homestead        !     1.01 !    42.69 !    42.69
--------------------+---------+---------+---------
                      Total                 44.87 dBA
```

```
STAMSON 5.04        SUMMARY REPORT        Date: 25-10-2021 14:42:44
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: r4long.te            Time Period: Day/Night 16/8 hours
Description: R4- Upper James Free Field East Facade 3rd Floor
                     TOTAL Leq FROM ALL SOURCES                    (DAY): 52.74
                                                                   (NIGHT): 46.27


Road data, segment # 1: Upp Jame S (day/night)
-----------------------------------------------
Car traffic volume  : 11200/1244  veh/TimePeriod  *
Medium truck volume :   357/40    veh/TimePeriod  *
Heavy truck volume  :   357/40    veh/TimePeriod  *
Posted speed limit  :    80 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):  10439
    Percentage of Annual Growth        :   2.00
    Number of Years of Growth          :  12.00
    Medium Truck % of Total Volume     :   3.00
    Heavy Truck  % of Total Volume     :   3.00
    Day (16 hrs) % of Total Volume     :  90.00

Data for Segment # 1: Upp Jame S (day/night)
---------------------------------------------
Angle1   Angle2           :  -0.00 deg   45.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 224.00 / 224.00 m
Receiver height           :   8.00 / 8.00   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Road data, segment # 2: Upp Jame N (day/night)
-----------------------------------------------
Car traffic volume  : 11353/1261  veh/TimePeriod  *
Medium truck volume :   362/40    veh/TimePeriod  *
Heavy truck volume  :   362/40    veh/TimePeriod  *
Posted speed limit  :    80 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):  10581
    Percentage of Annual Growth        :   2.00
    Number of Years of Growth          :  12.00
    Medium Truck % of Total Volume     :   3.00
    Heavy Truck  % of Total Volume     :   3.00
    Day (16 hrs) % of Total Volume     :  90.00

Data for Segment # 2: Upp Jame N (day/night)
---------------------------------------------
Angle1   Angle2           :  -0.00 deg   45.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 233.00 / 233.00 m
Receiver height           :   8.00 / 8.00   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00
```

```
Road data, segment # 3: Homestead (day/night)
----------------------------------------------
Car traffic volume  :  3326/370   veh/TimePeriod  *
Medium truck volume :    34/4     veh/TimePeriod  *
Heavy truck volume  :    34/4     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):   2973
    Percentage of Annual Growth        :   2.00
    Number of Years of Growth          :  12.00
    Medium Truck % of Total Volume     :   1.00
    Heavy Truck  % of Total Volume     :   1.00
    Day (16 hrs) % of Total Volume     :  90.00

Data for Segment # 3: Homestead (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           :   8.00 / 8.00   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

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

                    !  source  !   Road   !  Total
                    !  height  !   Leq    !   Leq
                    !   (m)    !  (dBA)   !  (dBA)
--------------------+---------+---------+---------
 1.Upp Jame S       !     1.32 !    46.66 !    46.66
 2.Upp Jame N       !     1.32 !    46.47 !    46.47
 3.Homestead        !     1.00 !    49.88 !    49.88
--------------------+---------+---------+---------
                      Total                 52.74 dBA

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

                    !  source  !   Road   !  Total
                    !  height  !   Leq    !   Leq
                    !   (m)    !  (dBA)   !  (dBA)
--------------------+---------+---------+---------
 1.Upp Jame S       !     1.32 !    40.15 !    40.15
 2.Upp Jame N       !     1.31 !    39.92 !    39.92
 3.Homestead        !     1.01 !    43.47 !    43.47
--------------------+---------+---------+---------
                      Total                 46.27 dBA
```

```
STAMSON 5.04        SUMMARY REPORT        Date: 25-10-2021 14:52:08
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: r5long.te            Time Period: Day/Night 16/8 hours
Description: R5- Rooftop Terrace with 1.07m Safety Railing
                        TOTAL Leq FROM ALL SOURCES (DAY): 41.84

Road data, segment # 1: Upp Jame S (day/night)
-----------------------------------------------
Car traffic volume  : 11200/1244  veh/TimePeriod  *
Medium truck volume :   357/40    veh/TimePeriod  *
Heavy truck volume  :   357/40    veh/TimePeriod  *
Posted speed limit  :    80 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):  10439
    Percentage of Annual Growth        :   2.00
    Number of Years of Growth          :  12.00
    Medium Truck % of Total Volume     :   3.00
    Heavy Truck  % of Total Volume     :   3.00
    Day (16 hrs) % of Total Volume     :  90.00

Data for Segment # 1: Upp Jame S (day/night)
-----------------------------------------------
Angle1   Angle2           :  -0.00 deg   45.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 224.00 / 224.00 m
Receiver height           :   8.00 / 8.00   m
Topography                :      2       (Flat/gentle slope; with barrier)
Barrier angle1            :  -0.00 deg   Angle2 : 45.00 deg
Barrier height            :   1.07 m
Barrier receiver distance :   3.00 / 3.00   m
Source elevation          :   0.00 m
Receiver elevation        :   0.00 m
Barrier elevation         :   8.00 m
Reference angle           :   0.00

Road data, segment # 2: Upp Jame N (day/night)
-----------------------------------------------
Car traffic volume  : 11353/1261  veh/TimePeriod  *
Medium truck volume :   362/40    veh/TimePeriod  *
Heavy truck volume  :   362/40    veh/TimePeriod  *
Posted speed limit  :    80 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):  10581
    Percentage of Annual Growth        :   2.00
    Number of Years of Growth          :  12.00
    Medium Truck % of Total Volume     :   3.00
    Heavy Truck  % of Total Volume     :   3.00
    Day (16 hrs) % of Total Volume     :  90.00
```

```
Data for Segment # 2: Upp Jame N (day/night)
---------------------------------------------
Angle1   Angle2           :  -0.00 deg   45.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 233.00 / 233.00 m
Receiver height           :   8.00 / 8.00   m
Topography                :      2       (Flat/gentle slope; with barrier)
Barrier angle1            :  -0.00 deg   Angle2 : 45.00 deg
Barrier height            :   1.07 m
Barrier receiver distance :   3.00 / 3.00   m
Source elevation          :   0.00 m
Receiver elevation        :   0.00 m
Barrier elevation         :   8.00 m
Reference angle           :   0.00

Road data, segment # 3: Homestead (day/night)
---------------------------------------------
Car traffic volume  :  3326/370   veh/TimePeriod  *
Medium truck volume :    34/4     veh/TimePeriod  *
Heavy truck volume  :    34/4     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):   2973
    Percentage of Annual Growth        :   2.00
    Number of Years of Growth          :  12.00
    Medium Truck % of Total Volume     :   1.00
    Heavy Truck  % of Total Volume     :   1.00
    Day (16 hrs) % of Total Volume     :  90.00

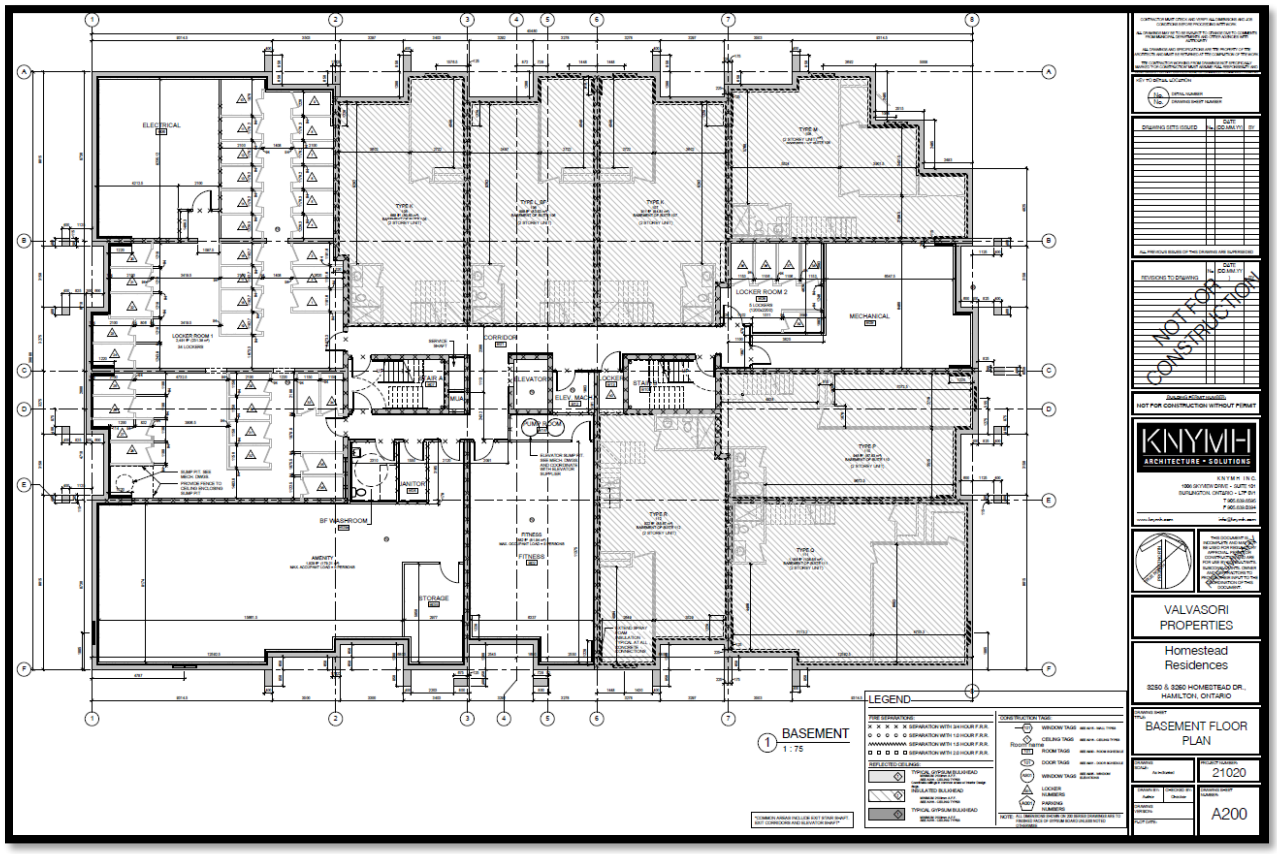
Data for Segment # 3: Homestead (day/night)
---------------------------------------------
Angle1   Angle2           :  -0.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  27.00 / 27.00  m
Receiver height           :   8.00 / 8.00   m
Topography                :      2       (Flat/gentle slope; with barrier)
Barrier angle1            :  -0.00 deg   Angle2 : 90.00 deg
Barrier height            :   1.07 m
Barrier receiver distance :   3.00 / 3.00   m
Source elevation          :   0.00 m
Receiver elevation        :   0.00 m
Barrier elevation         :   8.00 m
Reference angle           :   0.00


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

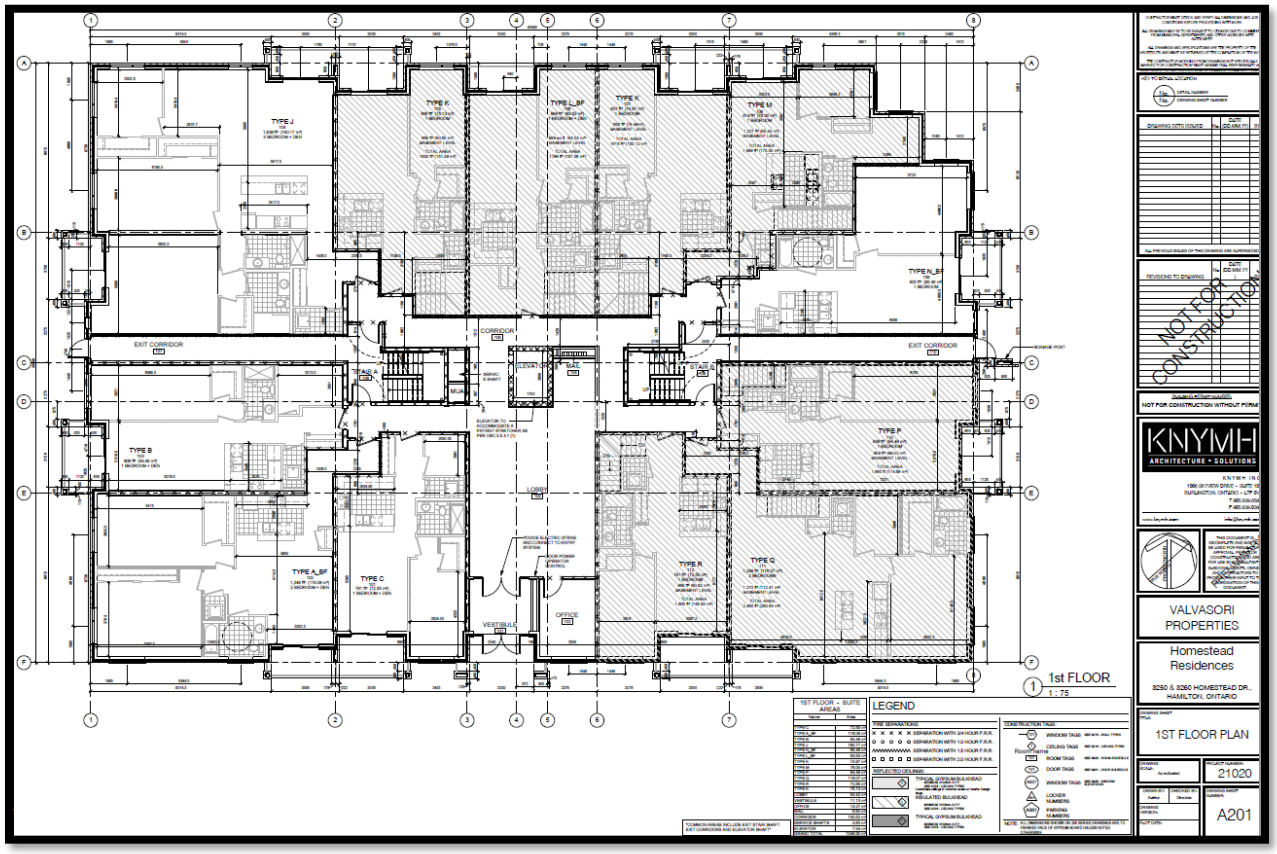
                    !  source  !   Road   !  Total
                    !  height  !   Leq    !   Leq
                    !   (m)    !  (dBA)   !  (dBA)
--------------------+---------+---------+---------
 1.Upp Jame S       !     1.32 !    36.47 !    36.47
 2.Upp Jame N       !     1.32 !    36.31 !    36.31
 3.Homestead        !     1.00 !    38.17 !    38.17
--------------------+---------+---------+---------
                      Total                 41.84 dBA
```

FLOOR PLANS

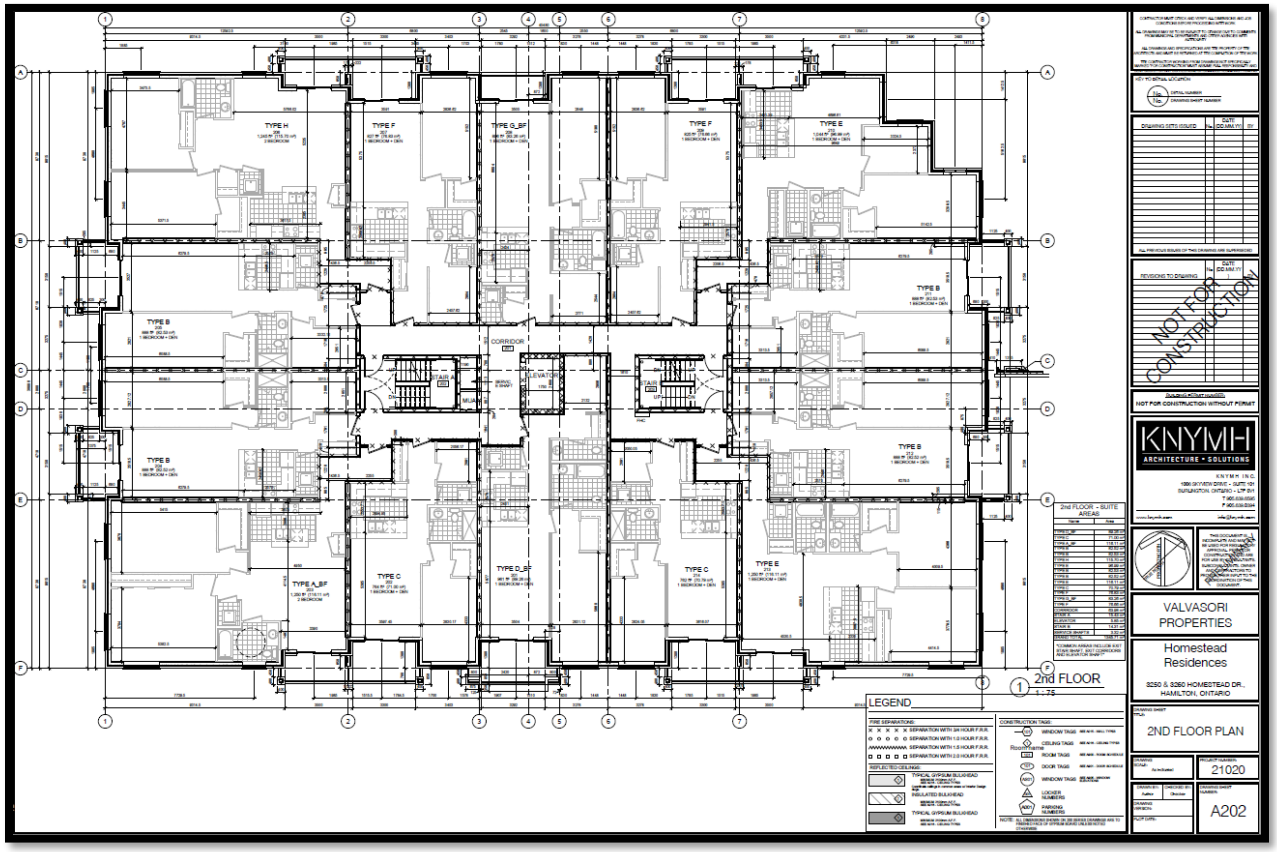
BASEMENT FLOOR



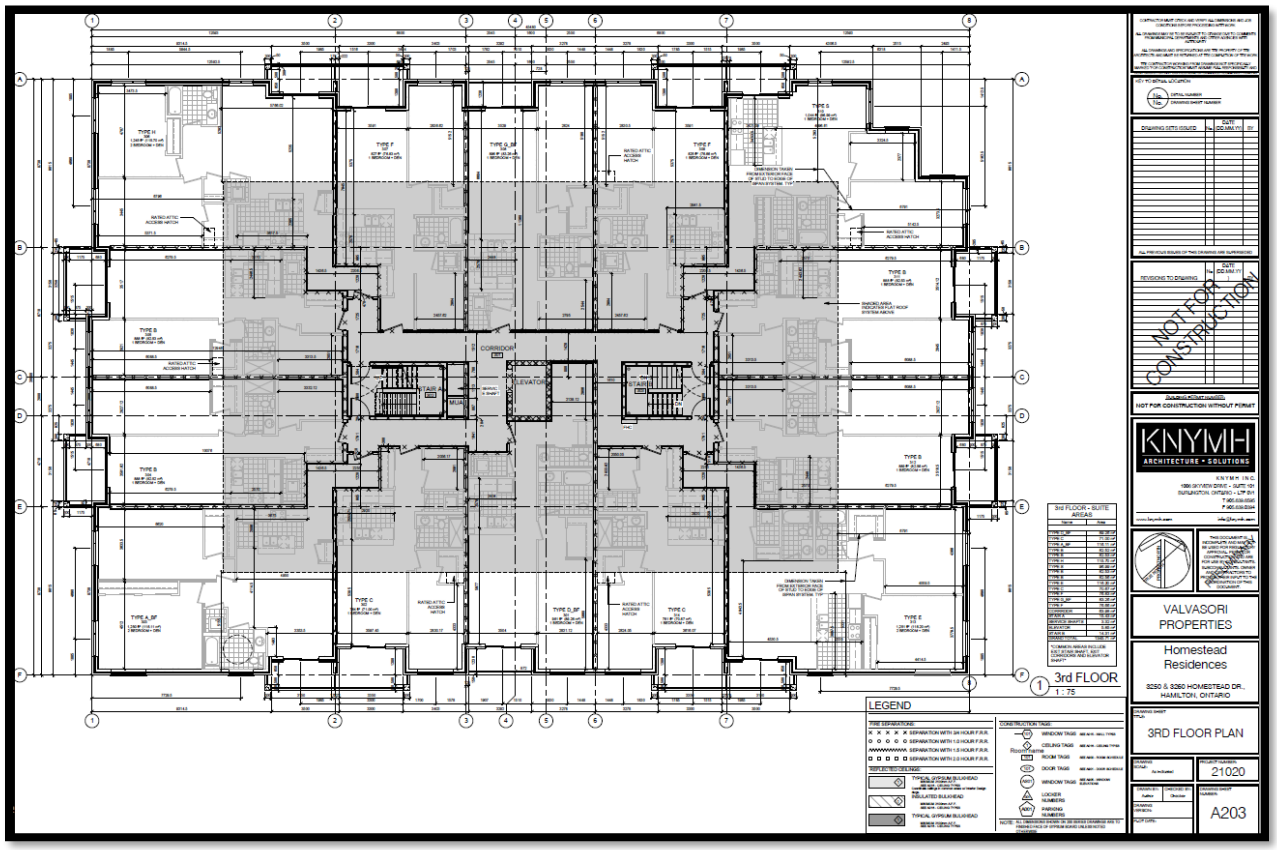
FIRST FLOOR


1st FLOOR
1 : 75
LEGEND
1ST FLOOR - SUITE AREAS
NOT FOR CONSTRUCTION
KNYMH
ARCHITECTURE • SOLUTIONS
VALVASORI PROPERTIES
Homestead Residences
3250 & 3260 HOMESTEAD DR., HAMILTON, ONTARIO
1ST FLOOR PLAN
21020
A201

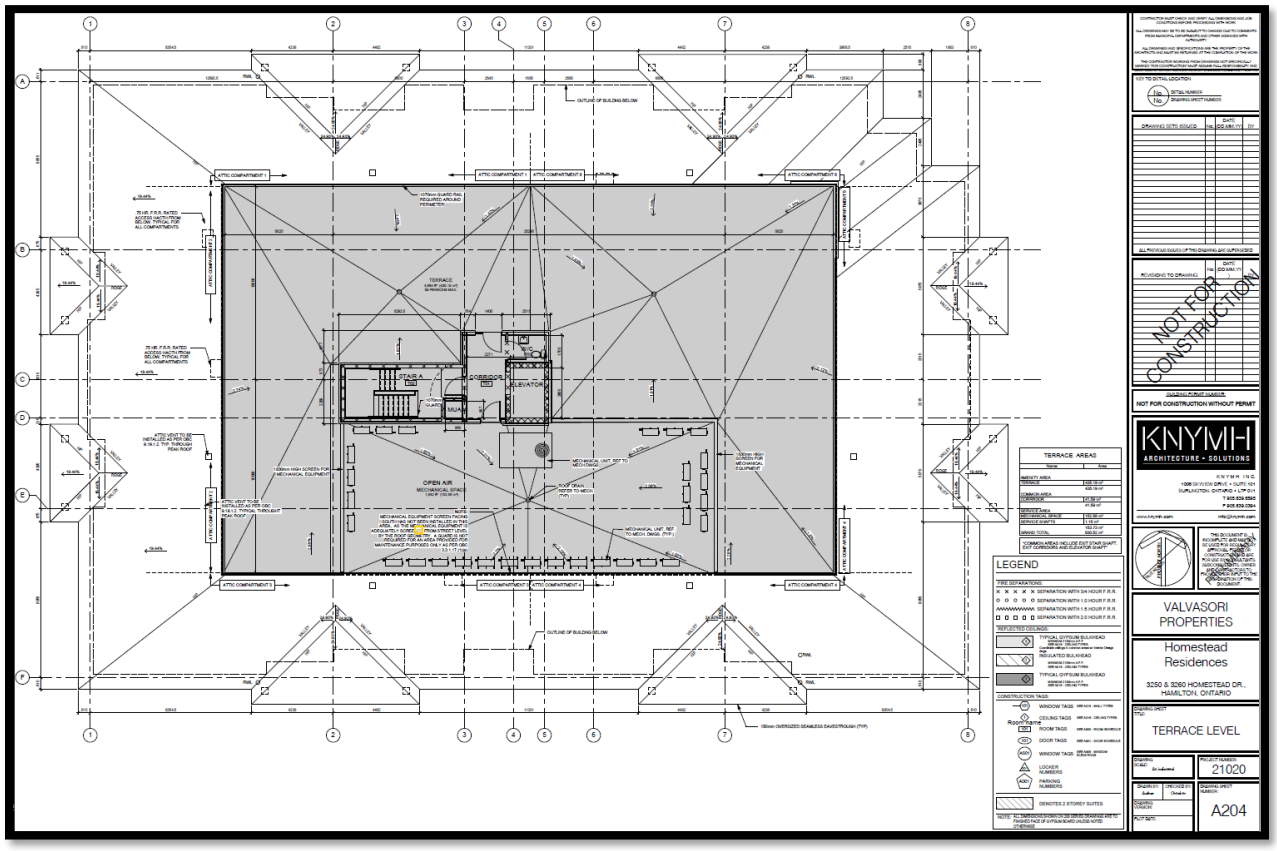
SECOND FLOOR



THIRD FLOOR


3rd FLOOR
1 : 75
LEGEND
NOT FOR CONSTRUCTION
KNYMH
ARCHITECTURE • SOLUTIONS
VALVASORI PROPERTIES
Homestead Residences
3250 & 3260 HOMESTEAD DR., HAMILTON, ONTARIO
3RD FLOOR PLAN
21020
A203

ROOFTOP TERRACE LEVEL



DEVELOPMENT STATISTICS

Development Statistics Zone: C6 (District Commercial) Exc. 344 & 652 H102		
Item	**Required**	**Proposed**
Lot Area before ROW Widening & Daylight Triangle	N/A	4,166.28 m^2
Lot Area after ROW Widening & Daylight Triangle	N/A	3,953.75 m^2
No. of Units	N/A	40 units
Density	75-100 UPH	96.01 UPH
Setback to Street Line	Min. 1.5 m Max. 4.5 m 6.7 m (Exc. 344) 9.0 m (Exc. 652)	3.0 m
Min. Rear Yard	6.0 m 10.07 m (Exc. 652)	14.70 m
Min. Interior Side Yard	1.5 m	20.50 m
Abutting Residential or Institutional	4.5 m	N/A
Flankage yard (Exc. 344)	0.0 m	3.0 m
Max. Height	10.7 m	TBC
Min. Planting Strip	1.5 m 1.8 m (Exc. 344)	1.0 m
Max. Lot Coverage	37% (Ex. 344) 25% (Exc. 652)	39.20%
Parking	TBC	51 spaces (Inc.2 Barrier Free) 1.27 / unit
Typical Parking Dimension	2.8 m x 5.8 m	2.8 m x 5.8 m
Barrier Free Parking Dimension	4.4 m x 5.8 m	4.4 m x 5.8 m
Loading Space	1 space	0 spaces

SITE DESCRIPTION


DHL Express ServicePoint
Airport Rd
Canadian Warplane Heritage Museum
Upper James St
Willow Valley
Homestead Dr
MT HOPE
Airport Rd E
Southern Pines Golf & Country Club