


## MEMORANDUM

To: Grant Webster  
City of Miami Beach

From: Derek J. d'Adesky, P.E.   
Adrian K. Dabkowski, P.E., PTOE 

Date: July 10, 2025

**Subject: Ocean 69  
Miami Beach, Florida  
Traffic Impact Statement**

The purpose of this memorandum is to summarize the traffic impact statement prepared for the proposed redevelopment located at 6979 and 6985 Collins Avenue in Miami Beach, Florida. The property proposed for repurposing is currently occupied by an 84-room hotel and a vacant residential building. The proposed redevelopment consists of a 37-unit high-rise residential and 947 square-foot sundry shop. The sundry shop is intended to serve building residents, offering items such as towels, sunscreen, and other beach-related products. Although this specific use is typically ancillary to the development, the sundry shop will be analyzed as a strip retail plaza due to its larger size and in order to provide a conservative analysis. Additionally, the retail space was conservatively analyzed as 3,000 square feet. The proposed redevelopment is expected to be completed by 2029. A project location map and conceptual site plan are provided in Attachment A. Kimley-Horn and Associates, Inc. has completed this traffic impact statement consistent with the approved City of Miami Beach methodology. The approved methodology detailing the traffic impact statement requirements is included in Attachment B. The following sections summarize the project trip generation calculations, valet operation queuing analysis, garage entry gate operations analysis, transportation demand management (TDM) strategies, and maneuverability analysis.

## TRIP GENERATION

Trip generation calculations for the existing development and proposed redevelopment were performed using Institute of Transportation Engineers' (ITE) *Trip Generation Manual*, 11<sup>th</sup> Edition. Trip generation calculations were prepared for the weekday A.M. and P.M. peak hours. Note that the trip generation calculations may be updated based on revisions to the development program or site plan modifications. The trip generation for the existing development was determined using ITE Land Use Code (LUC) 310 (Hotel). The trip generation for the proposed redevelopment was determined using ITE LUC 222 (Multifamily Housing [High-Rise]) and LUC 822 (Strip Retail Plaza).

A multimodal (public transit, bicycle, and pedestrian) factor based on US Census *Means of Transportation to Work* data was reviewed for the census tract in which the development is located. A multimodal factor of 22.58 percent (22.58%) was determined for the proposed redevelopment. However, consistent with the City of Miami Beach requirements and to provide a conservative analysis, a multimodal factor of 20.0 percent (20.0%) was applied to the trip generation instead. It is expected that a portion of residents and guests will choose to walk, bike, or use public transit to and from the proposed redevelopment.

Pass-by capture trips were also determined based on average rates provided in the ITE *Trip Generation Manual*, 11<sup>th</sup> Edition. The pass-by capture rate for the proposed retail space is 40 percent (40.0%) during the P.M. peak hour.

Internal capture is expected between the complementary land uses within the project. Internal capture trips for the project were determined based upon methodology contained in the ITE's *Trip Generation Handbook*, 3<sup>rd</sup> Edition. Internal capture rates of 13.5% percent and 15.1% percent are expected for the proposed redevelopment for the Daily and P.M. peak hour trip generation.

- Three (3) Miami-Dade County Department of Transportation and Public Works (DTPW) routes and three (3) City of Miami Beach Trolley routes operate in close proximity (within ½ mile) to the site during the A.M. and P.M. peak hours. Detailed transit route information is included in Attachment C.
  - **DTPW Route 79** operates along Collins Avenue in the vicinity of the site with the nearest stop located south of 69<sup>th</sup> Street. This route operates with 15-minute headways in the northbound and southbound directions during the A.M. and P.M. peak hours.
  - **DTPW Route 100** operates along Collins Avenue in the vicinity of the site with the nearest stop located south of 69<sup>th</sup> Street. This route operates with 8 to 10-minute headways in the northbound and southbound directions during the A.M. and P.M. peak hours.
  - **DTPW Route 279** operates along 71<sup>st</sup> Street in the vicinity of the site with the nearest stop located west of Carlyle Avenue. This route operates with 24-minute headways in the eastbound and westbound directions during the A.M. and P.M. peak hours.
  - **City of Miami Beach Collins Express Trolley Route** operates along Collins Avenue in the vicinity of the site with the nearest stop located north of 72<sup>nd</sup> Street. This route operates with 15-minute headways in the eastbound and westbound directions during the A.M. and P.M. peak hours.
  - **City of Miami Beach North Beach Loop Trolley Route** operates along Collins Avenue in the vicinity of the site with the nearest stop located north of 72<sup>nd</sup> Street. This route operates with 15-minute headways in the eastbound and westbound directions during the A.M. and P.M. peak hours.
  - **City of Miami Beach Mount Sinai Link Trolley Route** operates along Collins Avenue in the vicinity of the site with the nearest stop located north of 72<sup>nd</sup> Street. This route operates with 15-minute headways in the eastbound and westbound directions during the A.M. and P.M. peak hours.

As shown in Table 1, the project is expected to result in one (1) net new weekday A.M. peak hour vehicular trips, a reduction in four (-4) net new weekday P.M. peak hour vehicular trips, and 66 net new daily trips. Detailed trip generation information is included in Attachment D.

Table 1: Proposed Net New Trip Generation				
A.M. Peak Hour (P.M. Peak Hour) [Daily]				
Land Use	Scale	Entering Trips	Exiting Trips	Net New External Trips
<i>Existing Development</i>				
Hotel	84 rooms	17 (20) [269]	14 (20) [269]	31 (40) [538]
<i>Proposed Redevelopment</i>				
Multifamily Housing (High-Rise)	37 dwelling units	6 (13) [179]	16 (9) [187]	22 (22) [366]
Strip Retail Plaza	3,000 square feet	6 (8) [124]	4 (6) [114]	10 (14) [238]
<b>Net New Project Trips</b>		<b>-5</b> <b>(1)</b> <b>[34]</b>	<b>6</b> <b>(-5)</b> <b>[32]</b>	<b>1</b> <b>(-4)</b> <b>[66]</b>

### VALET OPERATIONS QUEUEING ANALYSIS

The valet queuing operations analysis was performed for the development based on the methodology outlined in ITE's *Transportation and Land Development*, 1988. The analysis was performed to determine if valet operations could accommodate vehicular queues within the provided drop-off and pick-up areas without exceeding the storage provided during the highest valet demand analysis scenarios.

Valet operations were analyzed for the number of valet attendants needed for the redevelopment's proposed traffic. The redevelopment will be served by one (1) valet drop-off/pick-up area on the ground floor of the site. The drop-off/pick-up area provides storage for approximately two (2) vehicles. All valet vehicles will be parked within the second level of the on-site parking garage. Valet routing figures are included in Attachment E.

Access to the proposed parking garage is restricted to residents and guests. Note that residents are expected to self-park within the parking garage, retail patrons will park using nearby on-street parking, and guests are expected to use the valet service provided. Further note, employees of the proposed retail use for the site are expected to use nearby on-street parking, walk, bike or use public transit. Therefore, residents and retail patrons were excluded from the analysis. It was assumed that 90.0 percent (90.0%) of the residential component of the trip generation calculations are residents and 10.0 percent (10.0%) of the residential component of the trip generation calculations are guests. A valet rate of 10.0 percent (10.0%) was applied to the weekday A.M. and P.M. peak hour trip generation calculations to estimate peak hour valet trips. The project is expected to generate three (3) weekday A.M. peak hour valet trips and two (2) weekday P.M. peak hour valet trips.

The queuing analysis used the multiple-channel waiting line model with Poisson arrivals and exponential service times. The queuing analysis is based on the coefficient of utilization,  $\rho$ , which is the ratio of the average vehicle arrival rate over the average service rate multiplied by the number of valet attendants.

Valet drop-off trip service times were calculated based on the time it would take a valet parking attendant to obtain and park a drop-off vehicle within one of the on-site first floor parking garage spaces and return to the valet drop-off area. Valet pick-up trip service times were calculated based on the time it would take a valet parking attendant to bring a parked vehicle back to a guest at the valet pick-up area.

The service time for valet drop-off operation corresponds to the following:

- Exchange between valet attendant and driver (0.5 minute)
- Entry gate service time (0.1 minute)
- Valet attendant drives vehicle from valet area to valet parking space (0.5 minute)
- Valet attendant walks/runs from valet parking space to valet area (1.1 minutes)
- Total service rate: **2.2 minutes**

The service time for valet pick-up operation corresponds to the following:

- Valet attendant walks/runs from valet area to valet parking space (1.1 minute)
- Valet attendant drives vehicle from valet parking space to valet area (0.4 minutes)
- Entry gate service time (0.1 minute)
- Exchange between valet attendant and driver (0.5 minute)
- Total service rate: **2.1 minutes**

Detailed travel time calculations are included in Attachment E.

If the coefficient of utilization (average service rate/valet attendant service capacity) is greater than one (> 1), the calculation methodology does not yield a finite queue length. This result indicates overcapacity conditions for the valet area. The valet attendant service capacity is the number of total trips a valet attendant can make in a one-hour period multiplied by the number of valet attendants.

The analysis determined the required queue storage,  $M$ , which is exceeded  $P$  percent of the time. This analysis seeks to ensure that the queue length does not exceed the storage provided at a level of confidence of 95 percent (95%).

An iterative approach was used to determine the number of valet attendants required to accommodate the proposed development demand during the analysis hours and ensure that the 95<sup>th</sup> percentile valet queue does not extend beyond the designated valet service area. Detailed valet analysis worksheets are provided in Attachment E.

The results of the valet operations analysis demonstrate that one (1) valet attendant would be required for the drop-off/pick-up area during both the A.M. and P.M. peak hours to ensure valet queues do not exceed the storage provided.

## **GARAGE ENTRY GATE OPERATIONS ANALYSIS**

An entry gate queue analysis for the proposed development using the methodology outlined in ITE's *Transportation and Land Development*, 1988 was performed at the residential parking entry gate. The proposed entry gate is located approximately 175 feet from the public right-of-way and provides one (1) entry lane and one (1) exit lane for residents and visitors utilizing the valet.

Therefore, retail patrons were excluded from the analysis. It was assumed that 90.0 percent (90.0%) of the residential component of the trip generation calculations are residents and 10.0 percent (10.0%) of the residential component of the trip generation calculations are guests utilizing the valet. Since both residents and guests valeting will be utilizing the entry gate, the inbound and outbound trips used in this analysis are the total residential entering and exiting trips in the A.M. and P.M. peak hour.

Based on the trip generation prepared, a total of 6 A.M. peak hour inbound trips and 13 P.M. peak hour inbound trips are expected at the entry gate.

Vehicles entering the upper levels of the parking garage were assumed to gain access via a proximity card (FOB) reader. It was assumed that the average service rate will be approximately 600 vehicles per hour (6.0 seconds per vehicle or 0.1 minutes per vehicle) for residents based on processing times provided in *Parking Structures 3<sup>rd</sup> Edition: Planning, Design, Construction, Maintenance, and Repair*, 2001.

The queuing analysis used the single-channel waiting line model with Poisson arrivals and exponential service times. The queuing analysis is based on the coefficient of utilization,  $\rho$ , which is the ratio of the average vehicle arrival rate over the average service rate multiplied by the number of channels.

If the coefficient of utilization (average service rate/service capacity) is greater than one (>1), the calculation methodology does not yield a finite queue length. This result indicates overcapacity conditions for the entry gate area. The entry gate service capacity is the number of vehicles the entry gate can service in a one-hour period multiplied by the number of entry lanes.

The analysis determined the required queue storage, M, which is exceeded P percent of the time. This analysis seeks to examine if the queue length exceeds the storage provided, at a level of confidence of 95 percent (95%). Approximately 175 feet of storage is provided for the entry lane including the service position, which provides sufficient space to accommodate approximately six (6) vehicles. Table 2 summarizes the entry gate analysis. Detailed entry gate analysis worksheets are included in Attachment F.

<b>Table 2: Peak Hour Entry Gate Queuing Analysis</b>			
<b>A.M. Peak Hour (P.M. Peak Hour)</b>			
<b>Entry Lane</b>	<b>Entering Volumes (vph)</b>	<b>Service Rates (minutes/vehicle)</b>	<b>95<sup>th</sup> Percentile Queue Including Service Position</b>
Shared Resident/Guest Lane	6 (13)	0.100	< 1 vehicle (<1 vehicle)

**TRANSPORTATION DEMAND MANAGEMENT STRATEGIES**

As the proposed repurposing results in 1 net new AM peak hour trip and a reduction in trips during the PM peak hour, transportation demand management (TDM) strategies are not required as the repurposing itself has a nominal impact on the surrounding roadway network during the AM peak hour and reduces the impact of traffic on the surrounding network during the PM peak hour. Nonetheless, Transportation Demand Management (TDM) strategies are proposed to reduce the impacts of the project traffic on the surrounding roadway network. Typical measures promote bicycling and walking,

encourage car/vanpooling, and offer alternatives to the typical workday hours. The applicant will commit to providing the following incentives including:

- Providing 47 bicycle racks
- Designated scooter/motorcycle parking spaces
- Improved, enhanced 11-to-12-foot sidewalks around the site
- Providing a Citibike station or bicycle sharing/rentals
- Providing secure bicycle storage
- Providing bicycle washing stations

## MANEUVERABILITY ANALYSIS

A maneuverability analysis was prepared for the ground floor, parking garage, and site loading areas. The analysis was performed using Transoft's *AutoTurn 11* software design vehicle turning templates and vehicle turning templates consistent with American Association of State Highway and Transportation Officials' (AASHTO) *A Policy on Geometric Design of Highways and Streets*, 2018. The analysis was prepared using passenger car (P) design vehicles for the passenger vehicle circulation areas and loading van design vehicles for the loading vehicle circulation areas.

The analysis determined that passenger vehicles and loading vehicles are expected to be able to ingress, egress, and travel within the vehicle circulation areas on the ground floor and parking garage without conflicting with oncoming traffic. Note, the maneuverability analysis was prepared using delivery vans comparable to P design vehicles for deliveries and loading activities in the loading areas. Maneuverability analysis plots are included in Attachment G.

## PARKING EVALUATION

The parking requirement for the site based on the City of Miami Beach's *Land Development Regulations* and parking calculations prepared by others is 86 parking spaces. As part of the proposed redevelopment, 86 parking spaces will be provided within the proposed parking garage. Please refer to the detailed parking calculations included as part of the site plan contained in Attachment A.

## REFUSE OPERATIONS NARRATIVE

Refuse operations will occur off-site at a designated loading and refuse area, along the north side of 71<sup>st</sup> Street. Trash from the site will be transported across the street to the pick-up location. Refuse and loading vehicles will be able to access the designated loading/refuse area without conflict.

## CONCLUSION

Kimley-Horn and Associates, Inc. has performed a traffic impact statement for the proposed redevelopment located at 6979 and 6985 Collins Avenue in Miami Beach, Florida. The property proposed for repurposing is currently occupied by an 84-room hotel and a vacant residential building. The proposed redevelopment consists of a 37-unit high-rise residential and a 947 square-foot sundry shop. The sundry shop is intended to serve building residents, offering items such as towels, sunscreen, and other beach-related products. Although this specific use is typically ancillary to the development, the sundry shop will be analyzed as a strip retail plaza due to its larger size and in order to provide a conservative analysis. Note, the retail space was conservatively analyzed as 3,000 square feet. The analysis results indicate that the proposed redevelopment is expected to result in one (1) net new weekday A.M. peak hour vehicular trip<sup>1</sup>, a reduction in four (-4) net new weekday P.M. peak hour vehicular trips, and 66 net new daily trips.

Based on the prepared maneuverability analysis, passenger vehicles and loading vehicles are expected to be able to ingress, egress, and travel through the ground level without conflicting with oncoming traffic.

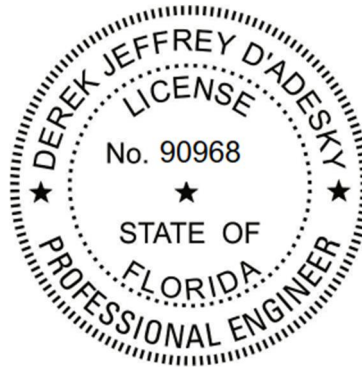
If you have any questions regarding this analysis, please feel free to contact me.

Sincerely,

KIMLEY-HORN AND ASSOCIATES, INC.



Derek J. d'Adesky, P.E.



This item has been digitally signed and sealed by Derek Jeffrey d'Adesky, P.E., on the date adjacent to the seal.

Derek Jeffrey d'Adesky, P.E.  
Florida Registration Number 90968  
Kimley-Horn and Associates, Inc.  
8201 Peters Road, Suite 2200  
Plantation, FL 33324

Signature must be verified on any electronic copies.

# Attachment A

Project Location Map and Conceptual Site Plan





**6985 - COLLINS AVENUE, MIAMI BEACH, FL. 33141**

LVL	ELEVATION	UNIT COUNT	RETAIL	LOBBY	BOH	CORE/CIRCULATION	AMENITIES	STORAGE	CABANA	RESIDENCE UNIT	DECK & BALCONIES	LOADING AND PARKING	TOTAL GSF	TOTAL FAR
<b>ROOF DECK</b>	12.00'				2,698 SF	1,406 SF					4,987 SF		10,703 SF	1,406 SF
<b>17</b>	12.83'	2			118 SF	1,078 SF				8,285 SF	2,560 SF		12,041 SF	9,481 SF
<b>16</b>	11.50'	2			118 SF	1,078 SF				8,285 SF	2,560 SF		12,041 SF	9,481 SF
<b>15</b>	11.50'	3			118 SF	1,078 SF				8,286 SF	2,560 SF		12,042 SF	9,482 SF
<b>14</b>	11.50'	3			118 SF	1,078 SF				8,286 SF	2,560 SF		12,042 SF	9,482 SF
<b>13</b>	11.50'	3			118 SF	1,078 SF				8,286 SF	2,560 SF		12,042 SF	9,482 SF
<b>12</b>	11.50'	3			118 SF	1,078 SF				8,286 SF	2,560 SF		12,042 SF	9,482 SF
<b>11</b>	11.50'	3			118 SF	1,078 SF				8,286 SF	2,560 SF		12,042 SF	9,482 SF
<b>10</b>	11.50'	3			118 SF	1,078 SF				8,286 SF	2,560 SF		12,042 SF	9,482 SF
<b>9</b>	11.50'	3			118 SF	1,078 SF				8,286 SF	2,560 SF		12,042 SF	9,482 SF
<b>8</b>	11.50'	3			118 SF	1,078 SF				8,286 SF	2,560 SF		12,042 SF	9,482 SF
<b>7</b>	11.50'	3			118 SF	1,078 SF				8,286 SF	2,560 SF		12,042 SF	9,482 SF
<b>6</b>	11.50'	3			118 SF	1,078 SF				8,286 SF	2,560 SF		12,042 SF	9,482 SF
<b>5</b>	11.50'	3			118 SF	1,078 SF				8,286 SF	2,560 SF		12,042 SF	9,482 SF
<b>4 AMENITIES</b>	14.16'				77 SF	1,339 SF	6,576 SF				17,530 SF		25,522 SF	7,992 SF
<b>3 PARKING</b>	10.00'				77 SF	1,163 SF		619 SF				21,484 SF	23,343 SF	1,859 SF
<b>2 PARKING</b>	10.00'				77 SF	1,163 SF		619 SF				23,147 SF	25,006 SF	1,859 SF
<b>GROUND</b>	15.00'		947 SF	1,604 SF	1,155 SF	1,126 SF	2,304 SF	284 SF	380 SF			2,638 SF	11,678 SF	7,800 SF
<b>TOTALS</b>	200'.00"	<b>37 SF</b>	<b>947 SF</b>	<b>1,604 SF</b>	<b>5,618 SF</b>	<b>20,211 SF</b>	<b>8,880 SF</b>	<b>1,522 SF</b>	<b>380 SF</b>	<b>107,716 SF</b>	<b>55,797 SF</b>	<b>47,269 SF</b>	<b>252,796 SF</b>	<b>144,180 SF</b>

<b>GRAND TOTAL NSF</b>	<b>123,541 SF</b>
<b>GRAND TOTAL GSF</b>	<b>252,796 SF</b>
<b>GRAND TOTAL FAR</b>	<b>144,180 SF</b>
<b>LOT SF</b>	<b>48,278 SF</b>
<b>PROPOSED FAR</b>	<b>3.00</b>

MAX=144,834

TOTAL UNIT COUNT		37 PS
PROPOSED UNIT PARKING		78 PS
PROPOSED GUEST PARKING		8
<b>TOTAL PARKING</b>		<b>86 PS</b>

<b>GRAND TOTAL FAR</b>	<b>3.00</b>
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Rev.	Date	Rev.	Date

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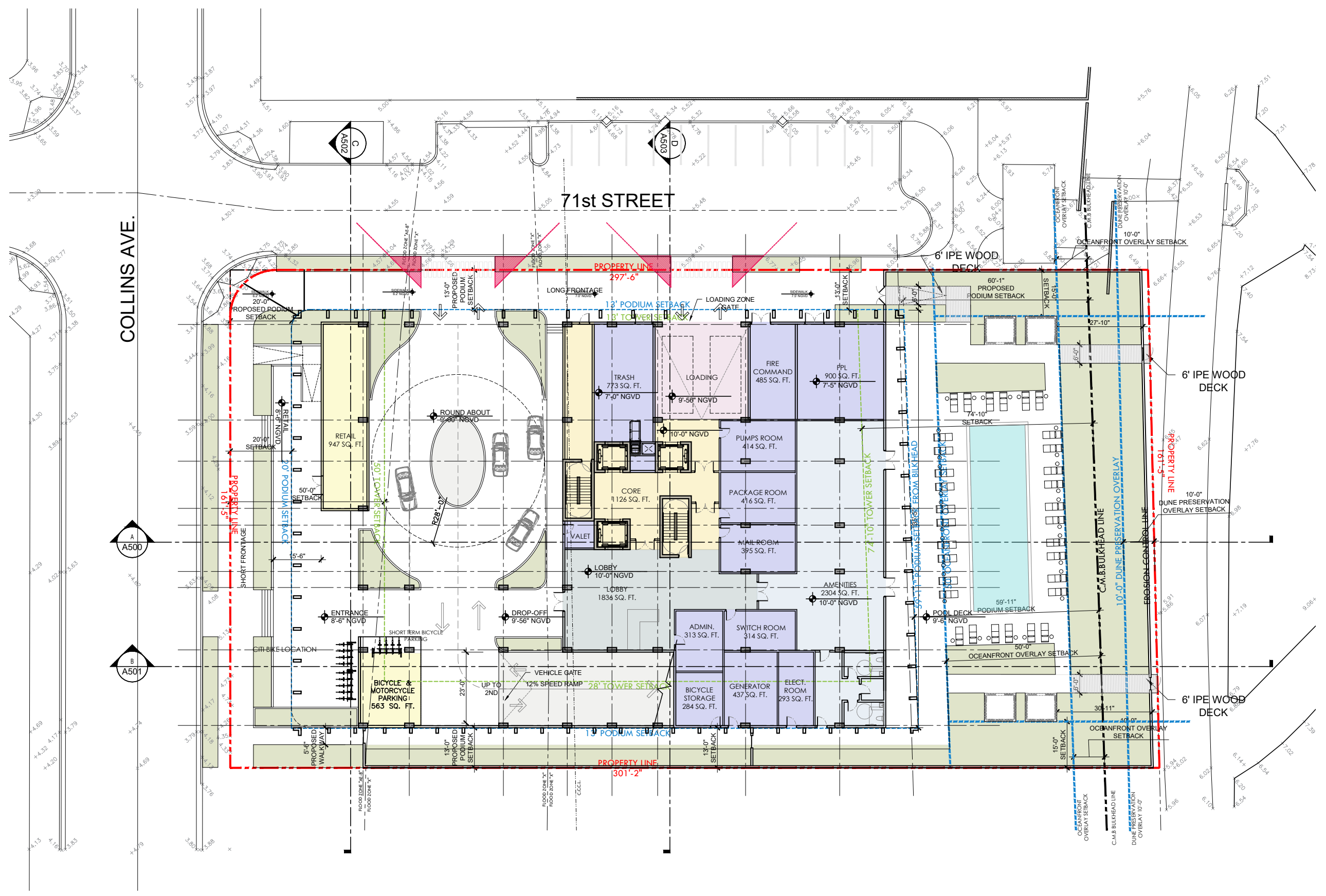
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**DATA - AREA**

Date: 7-10-2025	Sheet No.
Scale	A003
Project	



Rev.	Date	Rev.	Date

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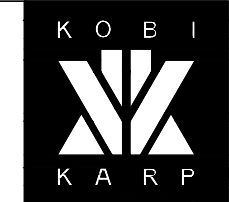
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**Consultant:**  
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**PROGRAM LEGEND**

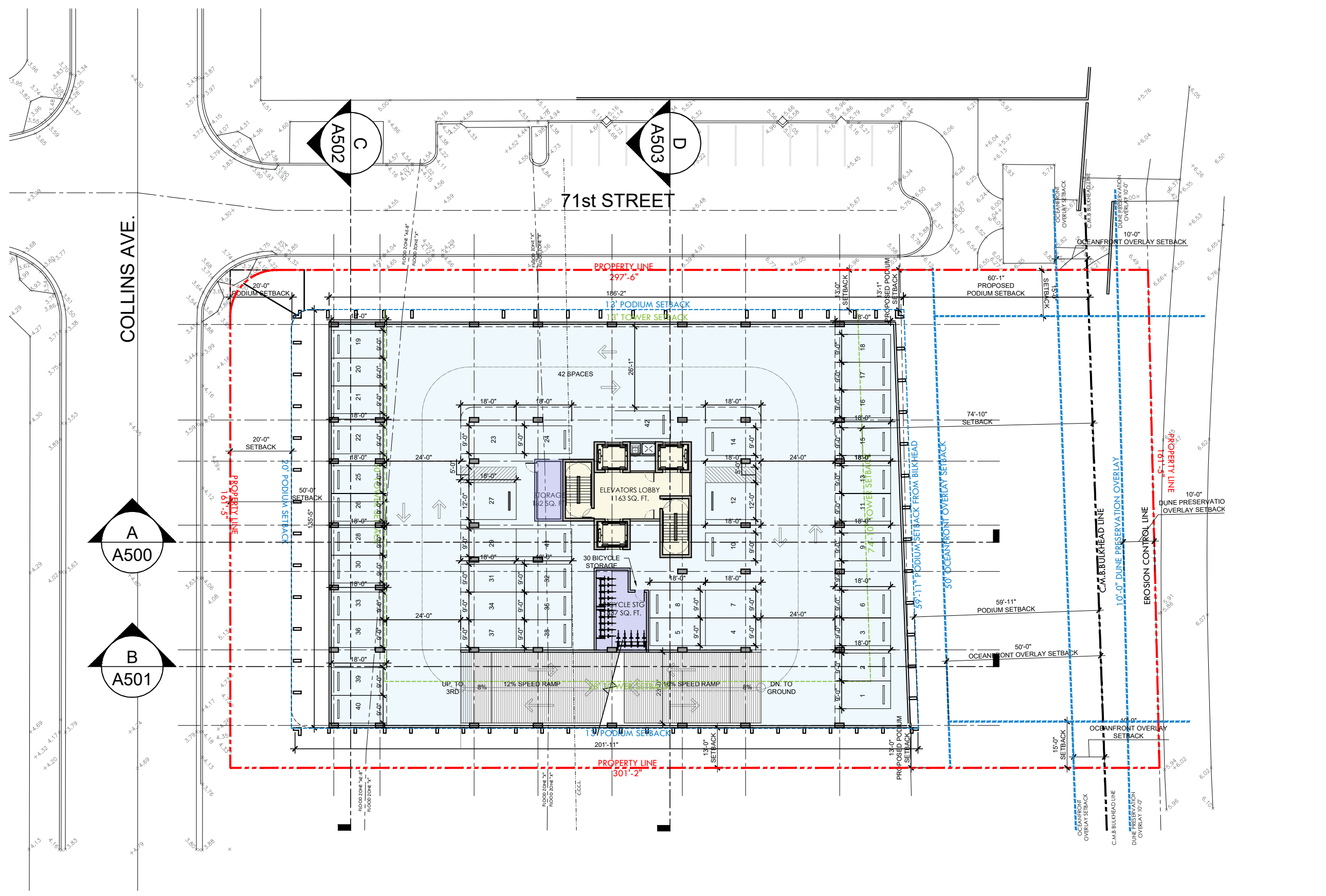
LOBBY	CIRCULATION
LOADING AREA	SERVICE/BOH
PARKING ACCESS RAMP	AMENITIES
RETAIL/COMMERCIAL	

**1** **PROPOSED GROUND FLOOR**  
 SCALE 1" = 32'-0"

**PROPOSED GROUND FLOOR**

Date: 7-10-2025	Sheet No.
Scale: 1" = 32'-0"	A101
Project:	





COLLINS AVE.

71st STREET

A  
A500

B  
A501

C  
A502

D  
A503

**PROGRAM LEGEND**

LOBBY	CIRCULATION
LOADING AREA	SERVICE/BOH
PARKING ACCESS RAMP	AMENITIES
RETAIL/COMMERCIAL	RESIDENTIAL

1 PROPOSED 2ND LEVEL PARKING  
SCALE 1" = 32'-0"

Rev.	Date	Rev.	Date

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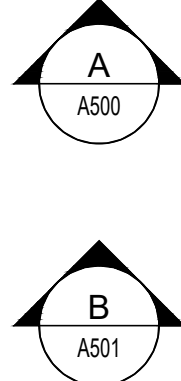
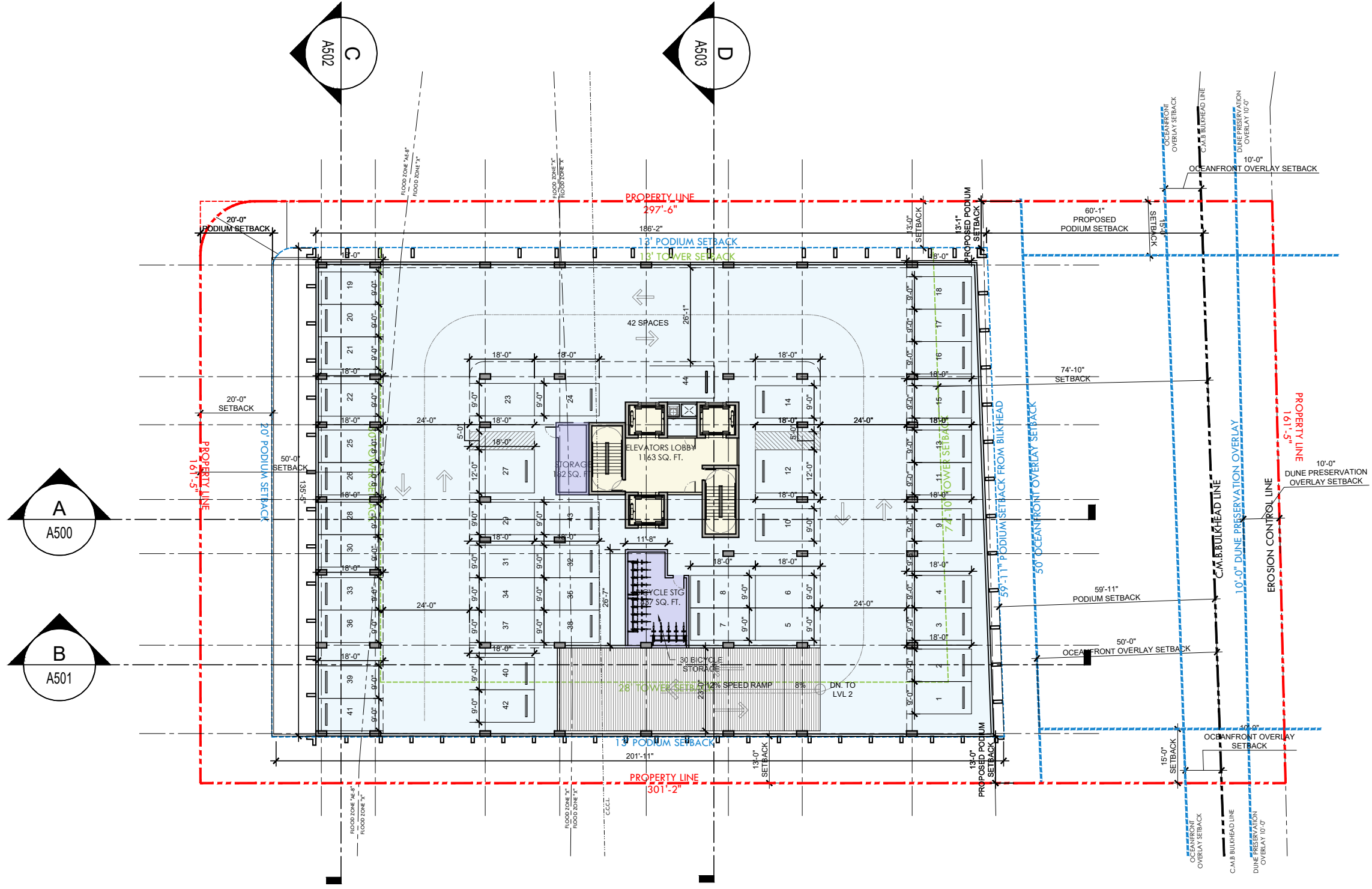
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**Architect:**  
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Fax: +1(305) 573 3766



PROPOSED 2ND LEVEL PARKING

Date: 7-10-2025	Sheet No.
Scale: 1" = 32'-0"	A102
Project	



**PROGRAM LEGEND**

	LOBBY		CIRCULATION
	LOADING AREA		SERVICE/BOH
	PARKING ACCESS RAMP		AMENITIES
	RETAIL/COMMERCIAL		RESIDENTIAL

**1 PROPOSED 3RD LEVEL PARKING**  
SCALE 1" = 32'-0"

Rev.	Date	Rev.	Date

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**PROPOSED 3RD LEVEL PARKING**

Date: 7-10-2025	Sheet No.
Scale: 1" = 32'-0"	A103
Project	

# Attachment B

## Approved Methodology



## MEMORANDUM

To: Grant Webster  
City of Miami Beach

From: Derek J. d'Adesky, P.E. *DD*  
Adrian K. Dabkowski, P.E., PTOE *AK*

Date: April 10, 2025

**Subject: Ocean 69  
Miami Beach, Florida  
Traffic Impact Analysis Methodology**

The purpose of this memorandum is to summarize the traffic impact analysis methodology for the proposed redevelopment located at 6979 and 6985 Collins Avenue in Miami Beach, Florida. Currently, the site is occupied by an 84-room hotel and a vacant residential building. The proposed redevelopment consists of a 38-unit high-rise residential building and 3,605 square-foot sundry shop. The sundry shop is intended to serve building residents, offering items such as towels, sunscreen, and other beach-related products. Although this specific use is typically ancillary to the development, the sundry shop will be analyzed as a strip retail plaza due to its larger size and in order to provide a conservative analysis. The redevelopment is expected to be completed by 2029. A conceptual site plan and location map is included in Attachment A. The following sections summarize our proposed traffic impact analysis methodology.

### TRIP GENERATION

Trip generation calculations for the existing development and proposed redevelopment were performed using Institute of Transportation Engineers' (ITE) *Trip Generation Manual*, 11<sup>th</sup> Edition. Trip generation calculations were prepared for the weekday A.M. and P.M. peak hours. Note that the trip generation calculations may be updated based on revisions to the development program or site plan modifications. The trip generation for the existing development was determined using ITE Land Use Code (LUC) 310 (Hotel). The trip generation for the proposed redevelopment was determined using ITE LUC 222 (Multifamily Housing [High-Rise]) and ITE LUC 822 (Strip Retail Plaza).

A multimodal (public transit, bicycle, and pedestrian) factor based on US Census *Means of Transportation to Work* data was reviewed for the census tract in which the development is located. A multimodal factor of 22.58 percent (22.58%) was determined for the proposed redevelopment. However, consistent with the City of Miami Beach requirements and to provide a conservative analysis, a multimodal factor of 20.0 percent (20.0%) was applied to the trip generation instead. It is expected that a portion of residents and guests will choose to walk, bike, or use public transit to and from the proposed redevelopment.

Pass-by capture trips were also determined based on average rates provided in the ITE *Trip Generation Manual*, 11<sup>th</sup> Edition. The pass-by capture rate for the proposed retail space is 40 percent (40.0%) during the P.M. peak hour.

Internal capture is expected between the complementary land uses within the project. Internal capture trips for the project were determined based upon methodology contained in the ITE's *Trip Generation Handbook*, 3<sup>rd</sup> Edition. Internal capture rates of 14.4% percent and 21.4% percent are expected for the proposed redevelopment for the Daily and P.M. peak hour trip generation.

Three (3) Miami-Dade County Department of Transportation and Public Works (DTPW) routes and three (3) City of Miami Beach Trolley routes operate in close proximity (within ½ mile) to the site during the A.M. and P.M. peak hours. Detailed transit route information is included in Attachment B.

- **DTPW Route 79** operates along Collins Avenue in the vicinity of the site with the nearest stop located south of 69<sup>th</sup> Street. This route operates with 15-minute headways in the northbound and southbound directions during the A.M. and P.M. peak hours.
- **DTPW Route 100** operates along Collins Avenue in the vicinity of the site with the nearest stop located south of 69<sup>th</sup> Street. This route operates with 8 to 10-minute headways in the northbound and southbound directions during the A.M. and P.M. peak hours.
- **DTPW Route 279** operates along 71<sup>st</sup> Street in the vicinity of the site with the nearest stop located west of Carlyle Avenue. This route operates with 24-minute headways in the eastbound and westbound directions during the A.M. and P.M. peak hours.
- **City of Miami Beach Collins Express Trolley Route** operates along Collins Avenue in the vicinity of the site with the nearest stop located north of 72<sup>nd</sup> Street. This route operates with 15-minute headways in the eastbound and westbound directions during the A.M. and P.M. peak hours.
- **City of Miami Beach North Beach Loop Trolley Route** operates along Collins Avenue in the vicinity of the site with the nearest stop located north of 72<sup>nd</sup> Street. This route operates with 15-minute headways in the eastbound and westbound directions during the A.M. and P.M. peak hours.
- **City of Miami Beach Mount Sinai Link Trolley Route** operates along Collins Avenue in the vicinity of the site with the nearest stop located north of 72<sup>nd</sup> Street. This route operates with 15-minute headways in the eastbound and westbound directions during the A.M. and P.M. peak hours.

The proposed redevelopment is expected to result in three (3) net new weekday A.M. peak hour vehicular trips, a reduction in six (-6) net new weekday P.M. peak hour vehicular trips, and 80 net new daily trips. Table 1 summarizes the proposed trip generation for the redevelopment. Trip generation calculations may be revised based on revisions to the redevelopment program or site plan modifications. Detailed trip generation calculations are included in Attachment C.

Table 1: Proposed Net New Trip Generation				
A.M. Peak Hour (P.M. Peak Hour) [Daily]				
Land Use	Scale	Entering Trips	Exiting Trips	Net New External Trips
<i>Existing Development</i>				
Hotel	84 rooms	17 (20) [269]	14 (20) [269]	31 (40) [538]
<i>Proposed Redevelopment</i>				
Multifamily Housing (High-Rise)	38 dwelling units	6 (16) [177]	16 (10) [187]	22 (26) [364]
Strip Retail Plaza	3,605 square feet	7 (7) [132]	5 (7) [122]	12 (14) [254]
<b>Net New Project Trips</b>		<b>-4</b> <b>(-1)</b> <b>[40]</b>	<b>7</b> <b>(-5)</b> <b>[40]</b>	<b>3</b> <b>(-6)</b> <b>[80]</b>

### VALET OPERATION QUEUING ANALYSIS

A valet operations queuing analysis will be prepared for the vehicle drop-off/pick-up area to ensure that queues do not spill back into public right-of-way, if valet service is provided.

Weekday A.M. peak hour and P.M. peak hour trip generation calculations will be utilized to determine expected valet demand. The valet operation queuing analysis will be conducted consistent with procedures described in ITE’s *Transportation and Land Development*, 1988. A traffic circulation figure will be prepared to illustrate the valet routes and route lengths between the vehicle drop-off/pick-up area and the on-site parking garage.

Analysis assumptions and results, including the location of the valet garage and the required number of valet attendants to service the facility during the weekday A.M. and P.M. peak hours be documented in the traffic impact analysis.

### GARAGE ENTRY GATE OPERATIONS ANALYSIS

A 95<sup>th</sup> percentile entry gate analysis will be prepared for parking garage entry points, if entry gates are provided. The entry gate queuing analysis will be prepared for the weekday A.M. and P.M. peak hours. Entry gate queuing analysis will be conducted consistent with the procedures outlined in ITE’s *Transportation and Land Development*, 1988. The purpose of this analysis is to determine any future queue storage deficiencies at the entry gates and provide preliminary recommendations for mitigating these deficiencies.

### TRANSPORTATION DEMAND MANAGEMENT STRATEGIES

Transportation Demand Management (TDM) strategies will be developed to reduce the impact of project traffic on the surrounding roadway network and promote trip reduction. Typical measures promote bicycling and walking, encourage car/vanpooling and offer alternatives to the typical workday hours.

## **MANEUVERABILITY ANALYSIS**

A maneuverability analysis for the site access and loading vehicle access will be performed utilizing Transoft Solutions' *AutoTURN* software. Deficiencies related to maneuverability, traffic flow, and vehicular conflicts will be documented in the traffic impact analysis.

## **PARKING EVALUATION**

A summary of the proposed parking supply will be provided and included as part of the traffic assessment and compared to the number of required parking spaces calculated by the architect per City of Miami Beach requirements. Note that the redevelopment program parking requirements will be documented in the traffic assessment.

## **REFUSE OPERATIONS NARRATIVE**

Details regarding site refuse operations will be described in the traffic impact analysis. This narrative will include details regarding loading and refuse vehicle access, location of loading areas, and loading and refuse vehicle circulation within the site.

## **DOCUMENTATION**

The results of the traffic impact analysis will be summarized in a technical memorandum. The memorandum will also include text and graphics necessary to summarize the assumptions and analysis.

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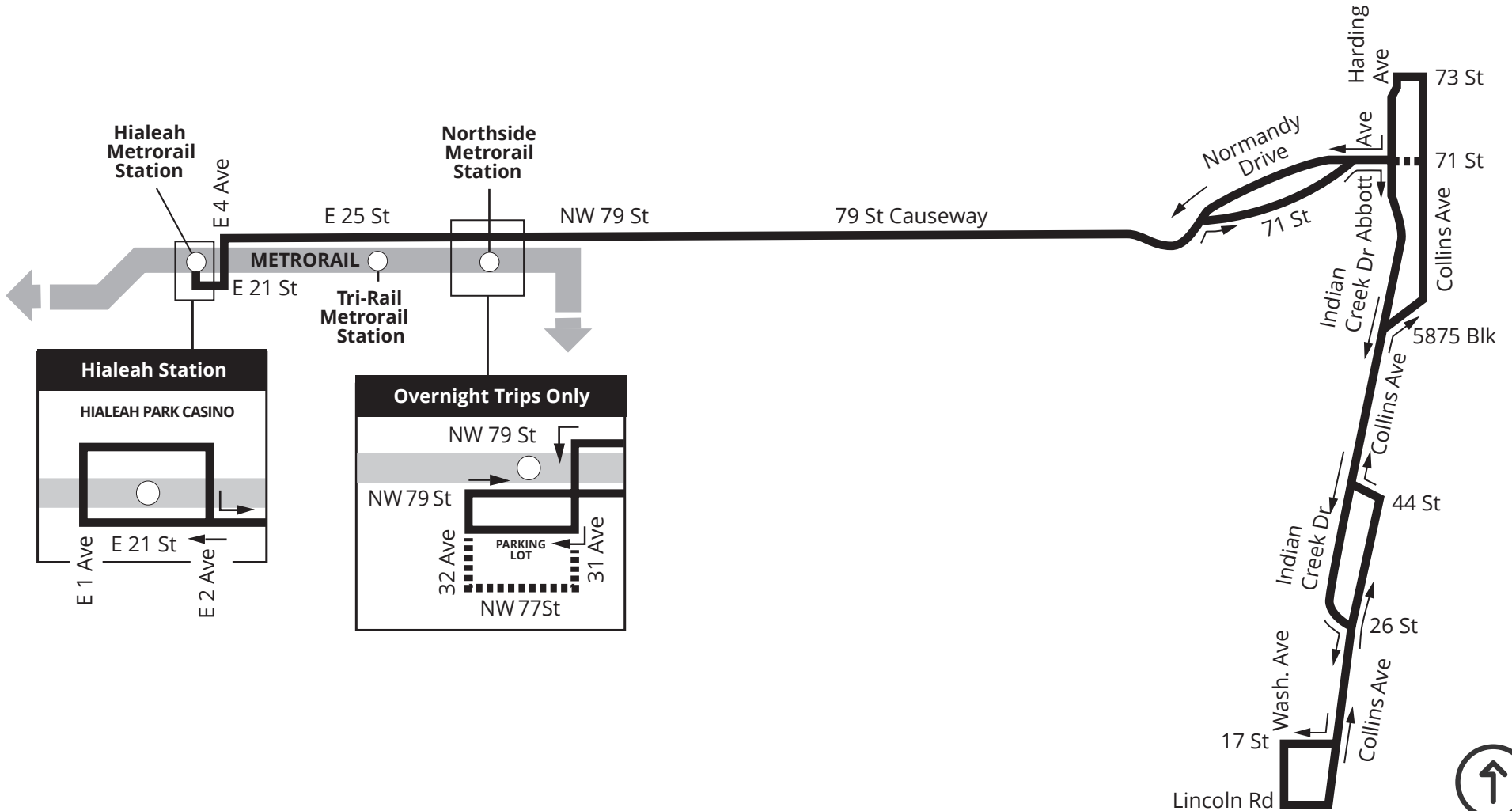
Attachments were removed to avoid duplication.

# Attachment C

## Transit Service Data



# 79



# SERVICE FREQUENCIES

FRECUENCIAS DE SERVICIO / FREKANS SÈVIS YO

	FROM DESDE / DE	TO HASTA / A	EVERY CADA / CHAK
<b>WEEKDAY</b> DIAS LABORABLES LASEMÈN	12:00 a.m.	4:00 a.m.	60 min (Northside-M Beach)
	4:00 a.m.	6:00 a.m.	30 min (Hialeah-M Beach)
	6:00 a.m.	10:00 p.m.	15 min (Hialeah-M Beach)
	10:00 p.m.	12:00a.m.	30 min (Hialeah-M Beach)
<b>SATURDAY</b> SÁBADO SAMDI	12:00 a.m.	5:00 a.m.	60 min (Northside-M Beach)
	5:00 a.m.	7:00 a.m.	30 min (Hialeah-M Beach)
	7:00 a.m.	10:00 p.m.	15 min (Hialeah-M Beach)
	10:00 p.m.	12:00 a.m.	30 min (Hialeah-M Beach)
<b>SUNDAY</b> DOMINGO DIMANCH	12:00 a.m.	5:00 a.m.	60 min (Northside-M Beach)
	5:00 a.m.	8:00 a.m.	30 min (Hialeah-M Beach)
	8:00 a.m.	8:00 p.m.	20 min (Hialeah-M Beach)
	8:00 p.m.	12:00 a.m.	60 min (Hialeah-M Beach)

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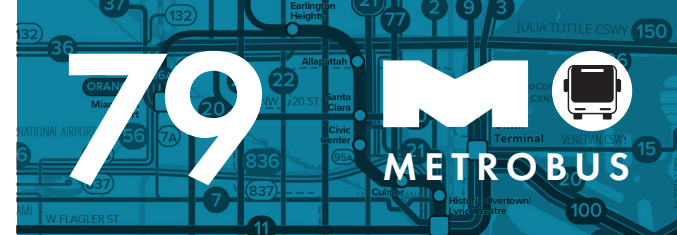
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311 (305.468.5900) TTY/Florida Relay: 711



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GO Miami-Dade Transit



APRIL 2024 ABRIL 2024 | AVRIL 2024

- Local service seven days a week.
- Travels from Hialeah Metrorail Station to South Beach along NW/NE 79 St, the 79th Street Causeway and Collins Ave
- Overnight trips travel from Northside Metrorail Station



- Servicio local los siete días de la semana.
- Va desde la estación de Hialeah del Metrorail hasta South Beach, pasando por NW/NE 79 St, 79th Street Causeway y Collins Ave.
- En el horario nocturno el recorrido comienza en la estación Northside del Metrorail.
- Sèvis lokal sèt jou sou sèt.
- Vwayaje soti nan estasyon Hialeah Metrorail pou rive nan South Beach sou NW/NE 79 St, 79th Street Causeway ak Collins Ave.
- Vwayaj lannwit yo fèt soti nan estasyon Northside Metrorail.



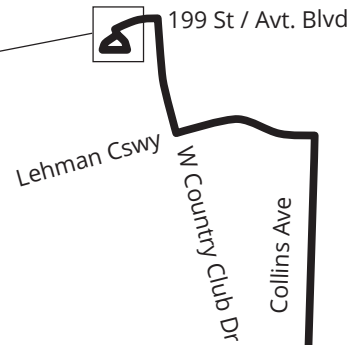
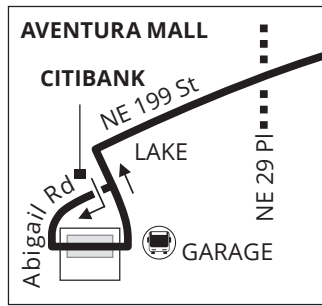
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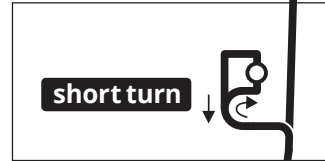
DEPARTMENT OF TRANSPORTATION AND PUBLIC WORKS



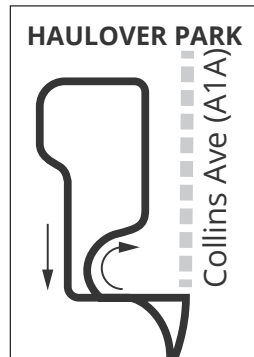
# 100



SUNNY ISLES BEACH



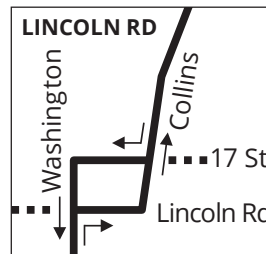
HAULOVER PARK



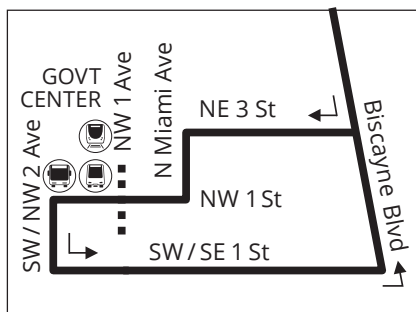
BAL HARBOUR SHOPS  
BAL HARBOUR

SURFSIDE

NORTH BEACH



SOUTH BEACH



DOWNTOWN

**LIMITED STOPS**  
Between 5 St and Lincoln Rd



NORTH  
11/2024

# SERVICE FREQUENCIES

## FRECUENCIAS DE SERVICIO / FREKANS SÈVIS YO

	FROM DESDE / DE	TO HASTA / A	EVERY CADA / CHAK
<b>WEEKDAY</b> DIAS LABORABLES LASEMÈN	12:00 a.m.	4:00 a.m.	60 min (Aventura-Downtown)
	4:00 a.m.	6:30 p.m.	8 min (Haulover-Downtown) 10 min (Aventura-Haulover)
	6:30 p.m.	10:00 p.m.	10 min (Aventura-Downtown)
	10:00 p.m.	12:00 a.m.	20 min (Aventura-Downtown)
<b>SATURDAY</b> SÁBADO SAMDI	12:00 a.m.	5:00 a.m.	60 min (Aventura-Downtown)
	5:00 a.m.	7:00 a.m.	15 min (Haulover-Downtown) 30 min (Aventura-Haulover)
	7:00 a.m.	10:00 p.m.	7.5 min (Haulover-Downtown) 15 min (Aventura-Haulover)
	10:00 p.m.	12:00 a.m.	15 min (Haulover-Downtown) 30 min (Aventura-Haulover)
<b>SUNDAY</b> DOMINGO DIMANCH	12:00 a.m.	5:00 a.m.	60 min (Aventura-Downtown)
	5:00 a.m.	7:00 a.m.	30 min (Aventura-Downtown)
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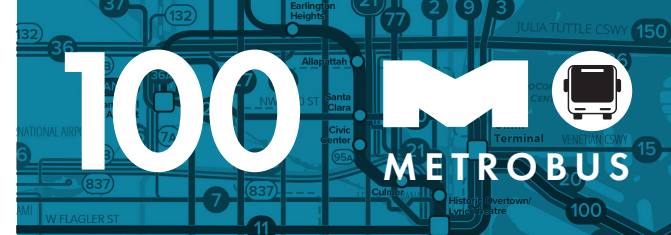
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NOVEMBER 2024 | NOVIEMBRE 2024 | NOVANM 2024

- Local service seven days a week.
- Travels from the Bus Terminal at Aventura Mall to Downtown Miami through Miami Beach.
- Stops include the Government Center Metrorail / Metromover station.



- Servicio local los siete días de la semana.
- Va desde la terminal de autobuses en Aventura Mall hasta el downtown de Miami, pasando por Miami Beach.
- Con parada en la estación Government Center del Metrorail y el Metromover.



- Sèvis lokal sèt jou psou sèt.
- Vwayaje soti nan Tèminal Otobis la nan Aventura Mall pou rive nan Downtown Miami atravè Miami Beach.
- Arè yo gen ladan estasyon Metrorail / Metromover Government Center.



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DEPARTMENT OF TRANSPORTATION AND PUBLIC WORKS



# 279

## 79 STREET MAX



NORTH  
11/2023



**LIMITED STOPS**  
*entire route*

# SERVICE FREQUENCIES

FRECUENCIAS DE SERVICIO / FREKANS SÈVIS YO

	FROM DESDE / DE	TO HASTA / A	EVERY CADA / CHAK
WEEKDAY DIAS LABORABLES LASEMÈN	5:45 a.m.	8:15 a.m.	24 min
	4:00 p.m.	6:00 p.m.	24 min

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**MetroCONNECT**  
YOUR FREE AND DIRECT CONNECTION TO BETTER BUS

SCAN TO DOWNLOAD THE APP OR CALL 786-321-5842

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Konte Miami-Dade bay aksè ak opòtinite egal ego nan anplwa epi li pa fè diskriminasyon baze sou enfi mite nan pwogram li yo ak sèvis li yo. Aparèy ak sèvis komunikasyon pou moun ki pa tande/wè byen yo disponib ak yon preyavi senk jou. Pou jwenn dokiman nan lòt fòma (tep odyo, Bray oswa disk konpit), sèvis yon entèprèt ki pale lang siy oswa lòt akomodasyon, tanpri kontakte: Miami-Dade Transit, Biwo Dwa Civil ak Relasyon Travay, 701 NW 1st Court, Suite 1700, Miami, FL 33136. Atansyon: ADA Coordinator. Telefòn: 786-469-5225, Faks: 786-469-5589. Imel: DTPW-ADA@miamidadegov.

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MARCH 2024 MARZO 2024 | MAS 2024

## 79 STREET MAX



- Limited-stop weekday morning and afternoon service.
- Travels from Northside Metrorail station to 73 St & Collins Ave on Miami Beach along NW/NE 79 St and the 79th Street Causeway.

- Servicio con paradas limitadas en las mañanas y las tardes de los días laborables.
- Va desde la estación Northside del Metrorail hasta 73 St y Collins Ave en Miami Beach, pasando por NW/NE 79 St y 79th Street Causeway.
- Sèvis arè limite nan maten ak apre midi nan lasemèn.
- Vwayaje soti nan estasyon Northside Metrorail pou rive nan 73 St & Collins Ave sou Miami Beach sou NW/NE 79 St ak 79th Street Causeway.



MORE INFORMATION  
MÁS INFORMACIÓN | PLUS ENFÒMASYON

DRIVE LESS. LIVE MORE.™

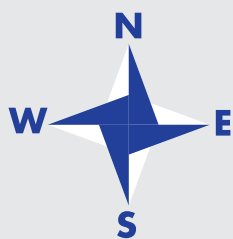


DEPARTMENT OF TRANSPORTATION AND PUBLIC WORKS



# COLLINS EXPRESS

Collins Express operates 7 days a week, 15 hours a day from 8 A.M. - 11 P.M. at service frequency of approximately 15 minutes.



## TROLLEY CONNECTIONS

- NORTH BEACH LOOP** **COLLINS EXPRESS**
- COLLINS EXPRESS** **MIDDLE BEACH LOOP**
- MIDDLE BEACH LOOP** **SOUTH BEACH LOOP**
- COLLINS EXPRESS** **SOUTH BEACH LOOP**

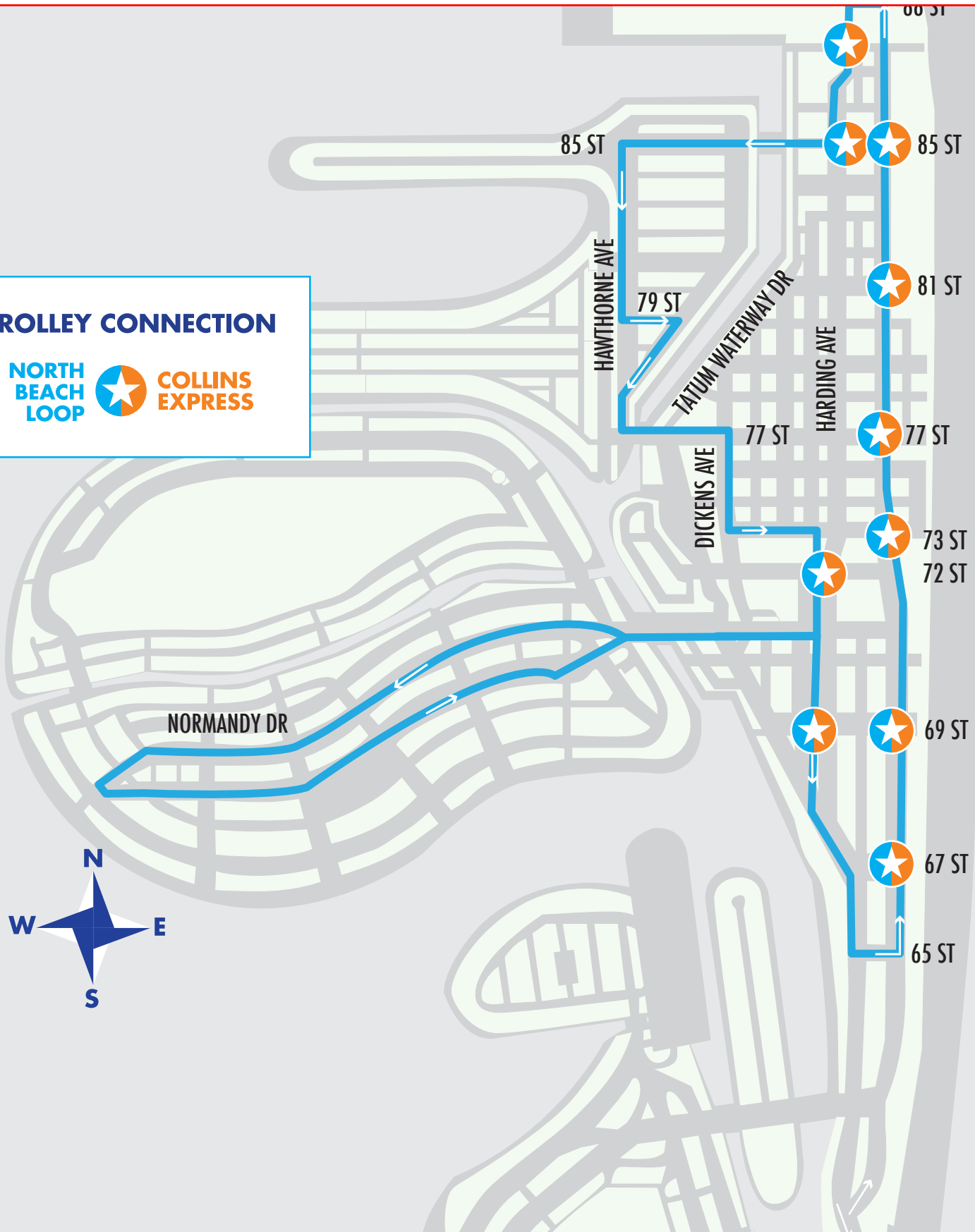




# NORTH BEACH LOOP

North Beach Loop operates 7 days a week, 15 hours a day from 8 A.M. - 11 P.M. at service frequency of approximately 15 minutes.

## TROLLEY CONNECTION



# MOUNT SINAI LINK

HOME > CITY HALL > TRANSPORTATION AND MOBILITY > CITYWIDE FREE TROLLEY > MOUNT SINAI LINK

Mount Sinai Link operates 7 days a week, 13 hours a day from 7 a.m. – 8 p.m. at service frequency of approximately 60-70 minutes.

The Mount Sinai Link was launched in October 2024 and it provides a reliable and consistent connection between North Beach and Mid Beach as well as a direct connection to Mount Sinai Medical Center.

## Mount Sinai Link

**LEGEND**

- NORTH BEACH LOOP
- COLLINS EXPRESS
- MIDDLE BEACH LOOP
- SOUTH BEACH LOOP

**FREE RIDE**  
TRACK THE TROLLEY LIVE

**7 DAYS A WEEK**  
*7 días a la semana*

Hours of operation: 8 a.m. to 11 p.m.  
Horario de atención: 8 a.m. a 11 p.m.

Customer Support: 305.673.7117  
Servicio al cliente: 305.673.7117

Email: [trolley@miamibeachfl.gov](mailto:trolley@miamibeachfl.gov)

The map shows the following streets and landmarks: 88 ST, 85 ST, 81 ST, 77 ST, 74 ST, 73 ST, 72 ST, 69 ST, 67 ST, 65 ST, COLLINS AVE, HAYDOING AVE, TADOM WATERWAY DR, HARTHOPE AVE, 79 ST, 77 ST, DICKENS AVE, ABBOTT AVE, 71 ST, NORMANDY DR, MOUNT SINAI MEDICAL CENTER DR, and COLLINS AVE.

# Attachment D

## Trip Generation Calculations

# DAILY TRIP GENERATION COMPARISON

## EXISTING DAILY TRIP GENERATION

ITE TRIP GENERATION CHARACTERISTICS					DIRECTIONAL DISTRIBUTION		BASELINE TRIPS			MULTIMODAL REDUCTION		GROSS TRIPS			INTERNAL CAPTURE		EXTERNAL VEHICLE TRIPS			PASS-BY CAPTURE		NET NEW EXTERNAL TRIPS		
Land Use	ITE Edition	ITE Code	Scale	ITE Units	Percent		In	Out	Total	Percent	MR Trips	In	Out	Total	Percent	IC Trips	In	Out	Total	Percent	PB Trips	In	Out	Total
					In	Out																		
1 Hotel	11	310	84	room	50%	50%	336	336	672	20.0%	134	269	269	538	0.0%	0	269	269	538	0.0%	0	269	269	538
2																								
3																								
4																								
5																								
6																								
7																								
8																								
9																								
10																								
11																								
12																								
13																								
14																								
15																								
ITE Land Use Code					Rate or Equation		<b>Total:</b>																	
310					Y=7.99(X)		336	336	672		134	269	269	538	0.0%	0	269	269	538	0.0%	0	269	269	538

## PROPOSED DAILY TRIP GENERATION

ITE TRIP GENERATION CHARACTERISTICS					DIRECTIONAL DISTRIBUTION		BASELINE TRIPS			MULTIMODAL REDUCTION		GROSS TRIPS			INTERNAL CAPTURE		EXTERNAL VEHICLE TRIPS			PASS-BY CAPTURE		NET NEW EXTERNAL TRIPS		
Land Use	ITE Edition	ITE Code	Scale	ITE Units	Percent		In	Out	Total	Percent	MR Trips	In	Out	Total	Percent	IC Trips	In	Out	Total	Percent	PB Trips	In	Out	Total
					In	Out																		
1 Multifamily Housing (High-Rise)	11	222	37	du	50%	50%	258	258	516	20.0%	103	207	206	413	11.4%	47	179	187	366	0.0%	0	179	187	366
2 Strip Retail Plaza	11	822	3	ksf	50%	50%	178	178	356	20.0%	71	143	142	285	16.5%	47	124	114	238	0.0%	0	124	114	238
3																								
4																								
5																								
6																								
7																								
8																								
9																								
10																								
11																								
12																								
13																								
14																								
15																								
ITE Land Use Code					Rate or Equation		<b>Total:</b>																	
222					Y=3.76*(X)+377.04		436	436	872	20.0%	174	350	348	698	13.5%	94	303	301	604	0.0%	0	303	301	604
822					Y=42.2*(X)+229.68																			

<b>NET NEW TRIPS</b>	<b>IN</b>	<b>OUT</b>	<b>TOTAL</b>
	34	32	66

# AM PEAK HOUR TRIP GENERATION COMPARISON

## EXISTING WEEKDAY AM PEAK HOUR TRIP GENERATION

	ITE TRIP GENERATION CHARACTERISTICS					DIRECTIONAL DISTRIBUTION		BASELINE TRIPS			MULTIMODAL REDUCTION		GROSS TRIPS			INTERNAL CAPTURE		EXTERNAL VEHICLE TRIPS			PASS-BY CAPTURE		NET NEW EXTERNAL TRIPS					
	Land Use	ITE Edition	ITE Code	Scale	ITE Units	Percent		In	Out	Total	Percent	MR Trips	In	Out	Total	Percent	IC Trips	In	Out	Total	Percent	PB Trips	In	Out	Total			
						In	Out																					
GROUP 1	1	Hotel	11	310	84	room	56%	44%	22	17	39	20.0%	8	17	14	31	0.0%	0	17	14	31	0.0%	0	17	14	31		
	2																											
	3																											
	4																											
	5																											
	6																											
	7																											
	8																											
	9																											
	10																											
	11																											
	12																											
	13																											
	14																											
	15																											
		ITE Land Use Code	Rate or Equation		Total:		22	17	39	20.0%	8	17	14	31	0.0%	0	17	14	31	0.0%	0	17	14	31				
		310	Y=0.46(X)																									

## PROPOSED WEEKDAY AM PEAK HOUR TRIP GENERATION

	ITE TRIP GENERATION CHARACTERISTICS					DIRECTIONAL DISTRIBUTION		BASELINE TRIPS			MULTIMODAL REDUCTION		GROSS TRIPS			INTERNAL CAPTURE		EXTERNAL VEHICLE TRIPS			PASS-BY CAPTURE		NET NEW EXTERNAL TRIPS						
	Land Use	ITE Edition	ITE Code	Scale	ITE Units	Percent		In	Out	Total	Percent	MR Trips	In	Out	Total	Percent	IC Trips	In	Out	Total	Percent	PB Trips	In	Out	Total				
						In	Out																						
GROUP 2	1	Multifamily Housing (High-Rise)	11	222	37	du	26%	74%	7	20	27	20.0%	5	6	16	22	0.0%	0	6	16	22	0.0%	0	6	16	22			
	2	Strip Retail Plaza	11	822	3	ksf	60%	40%	8	5	13	20.0%	3	6	4	10	0.0%	0	6	4	10	0.0%	0	6	4	10			
	3																												
	4																												
	5																												
	6																												
	7																												
	8																												
	9																												
	10																												
	11																												
	12																												
	13																												
	14																												
	15																												
		ITE Land Use Code	Rate or Equation		Total:		15	25	40	20.0%	8	12	20	32	0.0%	0	12	20	32	0.0%	0	12	20	32					
		222	Y=0.22*(X)+18.85																										
		822	LN(Y) = 0.66*LN(X)+1.84																										

<b>NET NEW TRIPS</b>	<b>IN</b>	<b>OUT</b>	<b>TOTAL</b>
	-5	6	1

# PM PEAK HOUR TRIP GENERATION COMPARISON

## EXISTING WEEKDAY PM PEAK HOUR TRIP GENERATION

	ITE TRIP GENERATION CHARACTERISTICS					DIRECTIONAL DISTRIBUTION		BASELINE TRIPS			MULTIMODAL REDUCTION		GROSS TRIPS			INTERNAL CAPTURE		EXTERNAL VEHICLE TRIPS			PASS-BY CAPTURE		NET NEW EXTERNAL TRIPS					
	Land Use	ITE Edition	ITE Code	Scale	ITE Units	Percent		In	Out	Total	Percent	MR Trips	In	Out	Total	Percent	IC Trips	In	Out	Total	Percent	PB Trips	In	Out	Total			
						In	Out																					
GROUP 1	1	Hotel	11	310	84	room	51%	49%	25	25	50	20.0%	10	20	20	40	0.0%	0	20	20	40	0.0%	0	20	20	40		
	2																											
	3																											
	4																											
	5																											
	6																											
	7																											
	8																											
	9																											
	10																											
	11																											
	12																											
	13																											
	14																											
	15																											
		ITE Land Use Code	Rate or Equation		Total:		25	25	50	20.0%	10	20	20	40	0.0%	0	20	20	40	0.0%	0	20	20	40				
		310	Y=0.59(X)																									

## PROPOSED WEEKDAY PM PEAK HOUR TRIP GENERATION

	ITE TRIP GENERATION CHARACTERISTICS					DIRECTIONAL DISTRIBUTION		BASELINE TRIPS			MULTIMODAL REDUCTION		GROSS TRIPS			INTERNAL CAPTURE		EXTERNAL VEHICLE TRIPS			PASS-BY CAPTURE		NET NEW EXTERNAL TRIPS						
	Land Use	ITE Edition	ITE Code	Scale	ITE Units	Percent		In	Out	Total	Percent	MR Trips	In	Out	Total	Percent	IC Trips	In	Out	Total	Percent	PB Trips	In	Out	Total				
						In	Out																						
GROUP 2	1	Multifamily Housing (High-Rise)	11	222	37	du	62%	38%	20	13	33	20.0%	7	16	10	26	15.4%	4	13	9	22	0.0%	0	13	9	22			
	2	Strip Retail Plaza	11	822	3	ksf	50%	50%	17	17	34	20.0%	7	14	13	27	14.8%	4	13	10	23	40.0%	9	8	6	14			
	3																												
	4																												
	5																												
	6																												
	7																												
	8																												
	9																												
	10																												
	11																												
	12																												
	13																												
	14																												
	15																												
		ITE Land Use Code	Rate or Equation		Total:		37	30	67	20.0%	14	30	23	53	15.1%	8	26	19	45	20.0%	9	21	15	36					
		222	Y=0.26*(X)+23.12																										
		822	LN(Y) = 0.71*LN(X)+2.72																										

<b>NET NEW TRIPS</b>	<b>IN</b>	<b>OUT</b>	<b>TOTAL</b>
1	-5	-4	

# Internal Capture Reduction Calculations

Methodology for A.M. Peak Hour and P.M. Peak Hour

based on the *Trip Generation Handbook*, 3rd Edition, published by the Institute of Transportation Engineers

Methodology for Daily

based on the average of the Unconstrained Rates for the A.M. Peak Hour and P.M. Peak Hour

## SUMMARY (PROPOSED)

GROSS TRIP GENERATION							
INPUT	Land Use	Daily		A.M. Peak Hour		P.M. Peak Hour	
		Enter	Exit	Enter	Exit	Enter	Exit
	Office	0	0	0	0	0	0
	Retail	143	142	6	4	14	13
	Restaurant	0	0	0	0	0	0
	Cinema/Entertainment	0	0	0	0	0	0
	Residential	207	206	6	16	16	10
	Hotel	0	0	0	0	0	0
		350	348	12	20	30	23
INTERNAL TRIPS							
OUTPUT	Land Use	Daily		A.M. Peak Hour		P.M. Peak Hour	
		Enter	Exit	Enter	Exit	Enter	Exit
	Office	0	0	0	0	0	0
	Retail	19	28	0	0	1	3
	Restaurant	0	0	0	0	0	0
	Cinema/Entertainment	0	0	0	0	0	0
	Residential	28	19	0	0	3	1
	Hotel	0	0	0	0	0	0
		47	47	0	0	4	4
OUTPUT	<i>Total % Reduction</i>	13.5%		0.0%		15.1%	
	Office						
	Retail	16.5%		0.0%		14.8%	
	Restaurant						
	Cinema/Entertainment						
	Residential	11.4%		0.0%		15.4%	
	Hotel						
EXTERNAL TRIPS							
OUTPUT	Land Use	Daily		A.M. Peak Hour		P.M. Peak Hour	
		Enter	Exit	Enter	Exit	Enter	Exit
	Office	0	0	0	0	0	0
	Retail	124	114	6	4	13	10
	Restaurant	0	0	0	0	0	0
	Cinema/Entertainment	0	0	0	0	0	0
	Residential	179	187	6	16	13	9
	Hotel	0	0	0	0	0	0
		303	301	12	20	26	19

# DAILY

## GROSS TRIP GENERATION

DAILY	Land Use	Daily	
		Enter	Exit
	Office	0	0
Retail	143	142	
Restaurant	0	0	
Cinema/Entertainment	0	0	
Residential	207	206	
Hotel	0	0	
	350	348	

### Estimated Trip Origins within a Mixed-Use Development (Daily) (Average of A.M. Peak Hour and P.M. Peak Hour)

DAILY	Origin Land Use	Destination Land Use					
		Office	Retail	Restaurant	Cinema/Ent.	Residential	Hotel
	Office		24%	34%	0%	2%	0%
	Retail	16%		21%	2%	20%	3%
	Restaurant	17%	28%		4%	11%	5%
	Cinema/Entertainment	1%	11%	16%		4%	1%
	Residential	3%	22%	21%	0%		2%
	Hotel	38%	15%	39%	0%	1%	

### Estimated Trip Destinations within a Mixed-Use Development (Daily) (Average of A.M. Peak Hour and P.M. Peak Hour)

DAILY	Origin Land Use	Destination Land Use					
		Office	Retail	Restaurant	Cinema/Ent.	Residential	Hotel
	Office		20%	13%	1%	2%	0%
	Retail	18%		40%	13%	24%	9%
	Restaurant	22%	29%		16%	11%	38%
	Cinema/Entertainment	3%	2%	2%		2%	1%
	Residential	30%	14%	17%	0%		6%
	Hotel	2%	3%	6%	0%	0%	

\*\*\* BASED ON EXIT \*\*\*

DAILY	(Exit) Land Use	(Enter) Land Use					
		Office	Retail	Restaurant	Cinema/Ent.	Residential	Hotel
	Office		0	0	0	0	0
	Retail	22		30	3	28	4
	Restaurant	0	0		0	0	0
	Cinema/Entertainment	0	0	0		0	0
	Residential	6	44	42	0		3
	Hotel	0	0	0	0	0	

\*\*\* BASED ON ENTER \*\*\*

DAILY

(Exit) Land Use	(Enter) Land Use					
	Office	Retail	Restaurant	Cinema/Ent.	Residential	Hotel
Office		29	0	0	4	0
Retail	0		0	0	50	0
Restaurant	0	41		0	22	0
Cinema/Entertainment	0	3	0		4	0
Residential	0	19	0	0		0
Hotel	0	4	0	0	0	

\*\*\* MINIMUM \*\*\*

DAILY

(Exit) Land Use	(Enter) Land Use					
	Office	Retail	Restaurant	Cinema/Ent.	Residential	Hotel
Office		0	0	0	0	0
Retail	0		0	0	28	0
Restaurant	0	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	0	19	0	0		0
Hotel	0	0	0	0	0	

INTERNAL TRIPS

DAILY

Land Use	Daily	
	Enter	Exit
Office	0	0
Retail	19	28
Restaurant	0	0
Cinema/Entertainment	0	0
Residential	28	19
Hotel	0	0
	47	47

## P.M. PEAK HOUR

### GROSS TRIP GENERATION

P.M. PEAK

Land Use	P.M. Peak Hour	
	Enter	Exit
Office	0	0
Retail	14	13
Restaurant	0	0
Cinema/Entertainment	0	0
Residential	16	10
Hotel	0	0
	30	23

Table 6.1 Unconstrained Internal Person Trip Capture Rates  
for Trip Origins within a Mixed-Use Development (P.M. Peak Hour)

P.M. PEAK

Origin Land Use	Destination Land Use					
	Office	Retail	Restaurant	Cinema/Ent.	Residential	Hotel
Office		20%	4%	0%	2%	0%
Retail	2%		29%	4%	26%	5%
Restaurant	3%	41%		8%	18%	7%
Cinema/Entertainment	2%	21%	31%		8%	2%
Residential	4%	42%	21%	0%		3%
Hotel	0%	16%	68%	0%	2%	

Table 6.2 Unconstrained Internal Person Trip Capture Rates  
for Trip Destinations within a Mixed-Use Development (P.M. Peak Hour)

P.M. PEAK

Origin Land Use	Destination Land Use					
	Office	Retail	Restaurant	Cinema/Ent.	Residential	Hotel
Office		8%	2%	1%	4%	0%
Retail	31%		29%	26%	46%	17%
Restaurant	30%	50%		32%	16%	71%
Cinema/Entertainment	6%	4%	3%		4%	1%
Residential	57%	10%	14%	0%		12%
Hotel	0%	2%	5%	0%	0%	

\*\*\* BASED ON EXIT \*\*\*

P.M. PEAK

(Exit) Land Use	(Enter) Land Use					
	Office	Retail	Restaurant	Cinema/Ent.	Residential	Hotel
Office		0	0	0	0	0
Retail	0		4	1	3	1
Restaurant	0	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	0	4	2	0		0
Hotel	0	0	0	0	0	

\*\*\* BASED ON ENTER \*\*\*

P.M. PEAK

(Exit) Land Use	(Enter) Land Use					
	Office	Retail	Restaurant	Cinema/Ent.	Residential	Hotel
Office		1	0	0	1	0
Retail	0		0	0	7	0
Restaurant	0	7		0	3	0
Cinema/Entertainment	0	1	0		1	0
Residential	0	1	0	0		0
Hotel	0	0	0	0	0	

\*\*\* MINIMUM \*\*\*

P.M. PEAK

(Exit) Land Use	(Enter) Land Use					
	Office	Retail	Restaurant	Cinema/Ent.	Residential	Hotel
Office		0	0	0	0	0
Retail	0		0	0	3	0
Restaurant	0	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	0	1	0	0		0
Hotel	0	0	0	0	0	

INTERNAL TRIPS

P.M. PEAK

Land Use	P.M. Peak Hour	
	Enter	Exit
Office	0	0
Retail	1	3
Restaurant	0	0
Cinema/Entertainment	0	0
Residential	3	1
Hotel	0	0
	4	4

# US Census Data

# Means of Transportation to Work

Note: This is a modified view of the original table produced by the U.S. Census Bureau. This download or printed version may have missing information from the original table.

$$(204+79+51)/(1939-460) = 22.58\%$$

Census Tract 39.14; Miami-Dade County; Florida

Label	Estimate	Margin of Error
▼ Total:	1,939	±397
▼ Car, truck, or van:	1,024	±330
Drove alone	867	±300
▼ Carpooled:	157	±144
In 2-person carpool	157	±144
In 3-person carpool	0	±15
In 4-person carpool	0	±15
In 5- or 6-person carpool	0	±15
In 7-or-more-person carpool	0	±15
▼ Public transportation (excluding taxicab):	204	±187
Bus	204	±187
Subway or elevated rail	0	±15
Long-distance train or commuter rail	0	±15
Light rail, streetcar or trolley (carro público in Puerto Rico)	0	±15
Ferryboat	0	±15
Taxicab	22	±32
Motorcycle	0	±15
Bicycle	79	±77
Walked	51	±53
Other means	99	±92
Worked from home	460	±157

ITE's Trip Generation Handbook Manual 11<sup>th</sup>  
Edition, Land Use PDFs

# Land Use: 310

## Hotel

---

### Description

A hotel is a place of lodging that provides sleeping accommodations and supporting facilities such as a full-service restaurant, cocktail lounge, meeting rooms, banquet room, and convention facilities. A hotel typically provides a swimming pool or another recreational facility such as a fitness room. All suites hotel (Land Use 311), business hotel (Land Use 312), motel (Land Use 320), and resort hotel (Land Use 330) are related uses.

### Additional Data

Twenty-five studies provided information on occupancy rates at the time the studies were conducted. The average occupancy rate for these studies was approximately 82 percent.

Some properties in this land use provide guest transportation services (e.g., airport shuttle, limousine service, golf course shuttle service) which may have an impact on the overall trip generation rates.

The technical appendices provide supporting information on time-of-day distributions for this land use. The appendices can be accessed through either the ITETripGen web app or the trip generation resource page on the ITE website (<https://www.ite.org/technical-resources/topics/trip-and-parking-generation/>).

The sites were surveyed in the 1980s, the 1990s, the 2000s, and the 2010s in California, District of Columbia, Florida, Georgia, Indiana, Minnesota, New York, Ontario (CAN), Pennsylvania, South Dakota, Texas, Vermont, Virginia, and Washington.

***For all lodging uses, it is important to collect data on occupied rooms as well as total rooms in order to accurately predict trip generation characteristics for the site.***

***Trip generation at a hotel may be related to the presence of supporting facilities such as convention facilities, restaurants, meeting/banquet space, and retail facilities. Future data submissions should specify the presence of these amenities. Reporting the level of activity at the supporting facilities such as full, empty, partially active, number of people attending a meeting/banquet during observation may also be useful in further analysis of this land use.***

### Source Numbers

170, 260, 262, 277, 280, 301, 306, 357, 422, 507, 577, 728, 867, 872, 925, 951, 1009, 1021, 1026, 1046

# Hotel (310)

Vehicle Trip Ends vs: Rooms  
On a: Weekday

Setting/Location: General Urban/Suburban

Number of Studies: 7

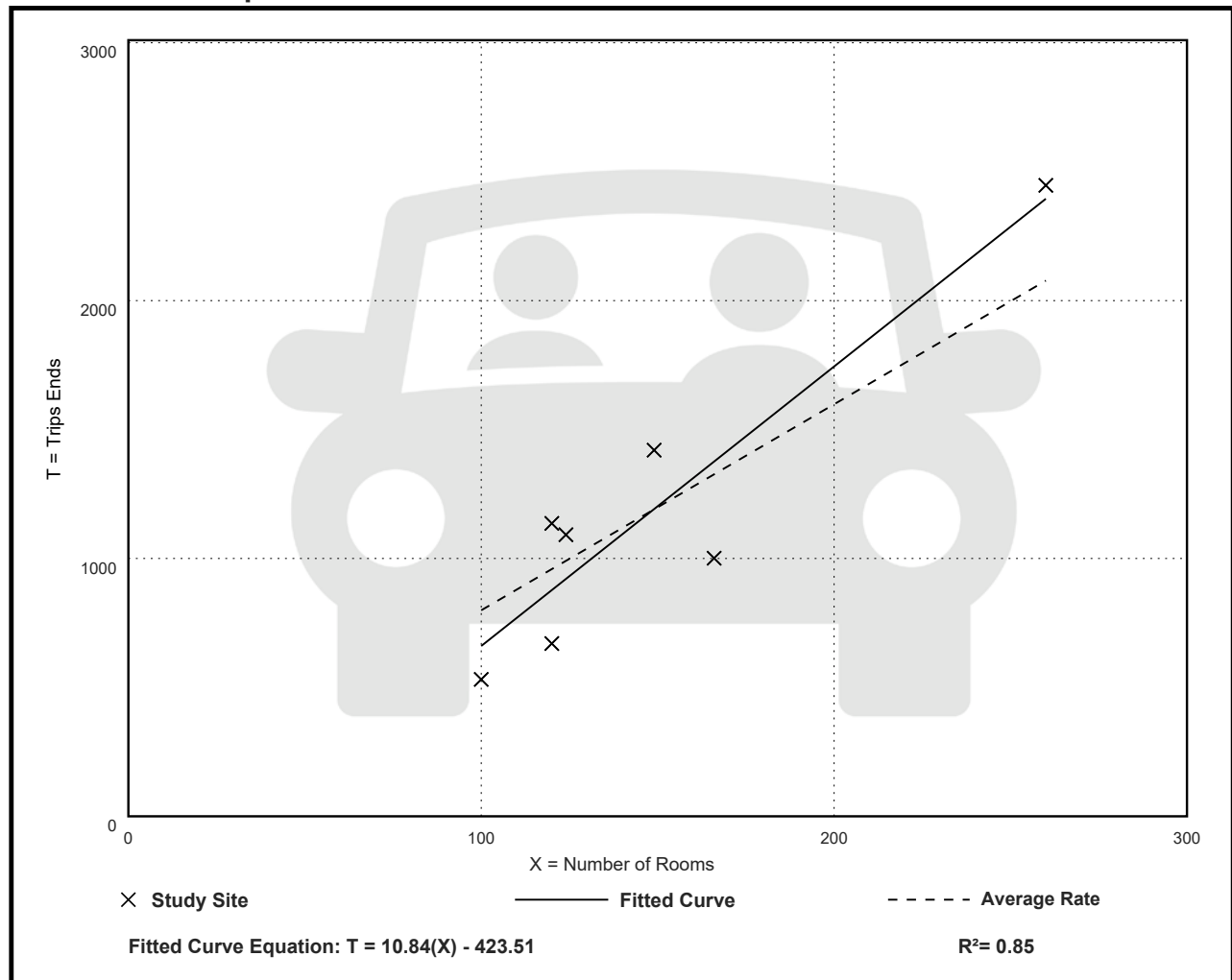
Avg. Num. of Rooms: 148

Directional Distribution: 50% entering, 50% exiting

## Vehicle Trip Generation per Room

Average Rate	Range of Rates	Standard Deviation
7.99	5.31 - 9.53	1.92

## Data Plot and Equation



# Hotel (310)

## Vehicle Trip Ends vs: Rooms

On a: **Weekday,**

**Peak Hour of Adjacent Street Traffic,**

**One Hour Between 7 and 9 a.m.**

**Setting/Location: General Urban/Suburban**

Number of Studies: 28

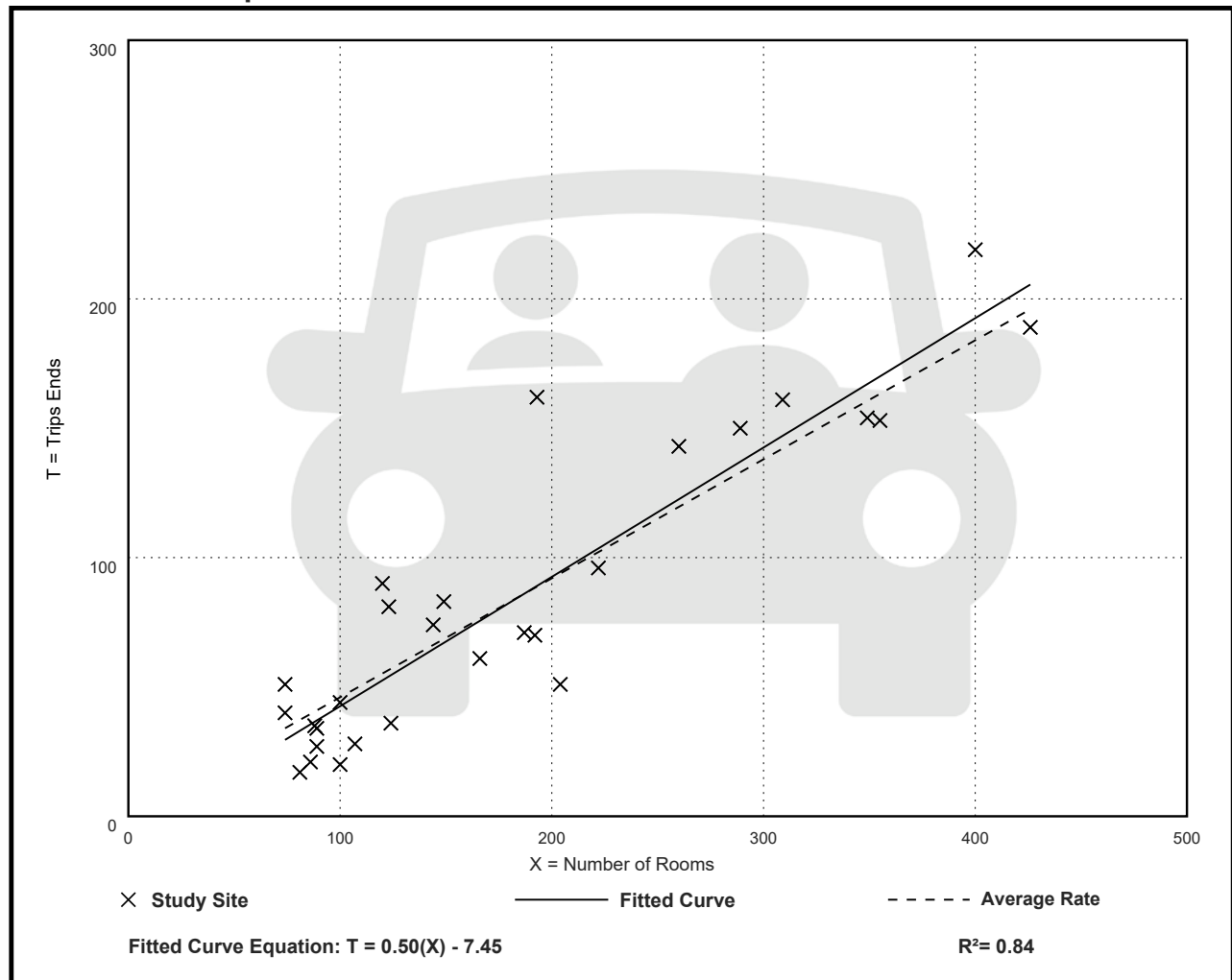
Avg. Num. of Rooms: 182

Directional Distribution: 56% entering, 44% exiting

## Vehicle Trip Generation per Room

Average Rate	Range of Rates	Standard Deviation
0.46	0.20 - 0.84	0.14

## Data Plot and Equation



# Hotel (310)

## Vehicle Trip Ends vs: Rooms

On a: **Weekday,**

**Peak Hour of Adjacent Street Traffic,**

**One Hour Between 4 and 6 p.m.**

**Setting/Location: General Urban/Suburban**

Number of Studies: 31

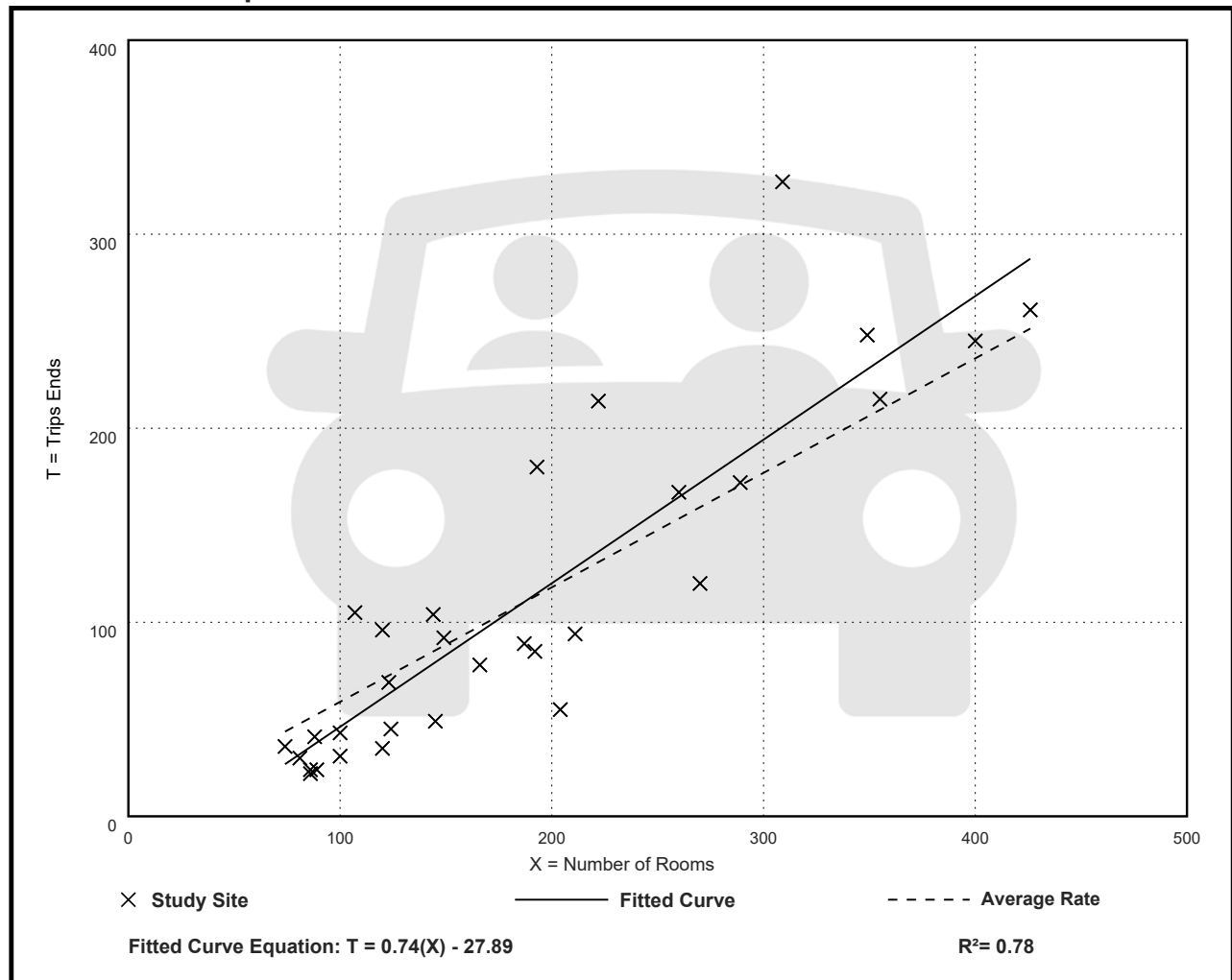
Avg. Num. of Rooms: 186

Directional Distribution: 51% entering, 49% exiting

## Vehicle Trip Generation per Room

Average Rate	Range of Rates	Standard Deviation
0.59	0.26 - 1.06	0.22

## Data Plot and Equation



# Land Use: 222

## Multifamily Housing (High-Rise)

---

### Description

High-rise multifamily housing includes apartments, townhouses, and condominiums. Each building has more than 10 floors of living space. Access to individual dwelling units is through an outside building entrance, a lobby, elevators, and a set of hallways.

Multifamily housing (low-rise) (Land Use 220), multifamily housing (mid-rise) (Land Use 221), off-campus student apartment (high-rise) (Land Use 227), and high-rise residential with ground-floor commercial (Land Use 232) are related land uses.

### Land Use Subcategory

Data are presented for two subcategories for this land use: (1) not close to rail transit and (2) close to rail transit. A site is considered close to rail transit if the walking distance between the residential site entrance and the closest rail transit station entrance is ½ mile or less.

### Additional Data

For the 12 sites for which both the number of residents and the number of occupied dwelling units were available, there were an average of 1.6 residents per occupied dwelling unit.

For the 26 sites for which the numbers of both total dwelling units and occupied dwelling units were available, an average of 98 percent of the total dwelling units were occupied.

The technical appendices provide supporting information on time-of-day distributions for this land use. The appendices can be accessed through either the ITETripGen web app or the trip generation resource page on the ITE website (<https://www.ite.org/technical-resources/topics/trip-and-parking-generation/>).

For the 12 sites for which data were provided for both occupied dwelling units and residents, there was an average of 1.6 residents per occupied dwelling unit.

For the 26 sites for which data were provided for both occupied dwelling units and total dwelling units, an average of 98 percent of the units were occupied.

***It is expected that the number of bedrooms and number of residents are likely correlated to the trips generated by a residential site. To assist in future analysis, trip generation studies of all multifamily housing should attempt to obtain information on occupancy rate and on the mix of residential unit sizes (i.e., number of units by number of bedrooms at the site complex).***

The sites were surveyed in the 1980s, the 2000s, and the 2010s in California, District of Columbia, Maryland, New Jersey, New York, Ontario (CAN), Oregon, Pennsylvania, and Virginia.

### Source Numbers

105, 168, 169, 237, 321, 356, 818, 862, 901, 910, 949, 963, 964, 966, 967, 1056, 1057, 1076, 1077

# Multifamily Housing (High-Rise) Not Close to Rail Transit (222)

Vehicle Trip Ends vs: Dwelling Units  
On a: Weekday

Setting/Location: General Urban/Suburban

Number of Studies: 8

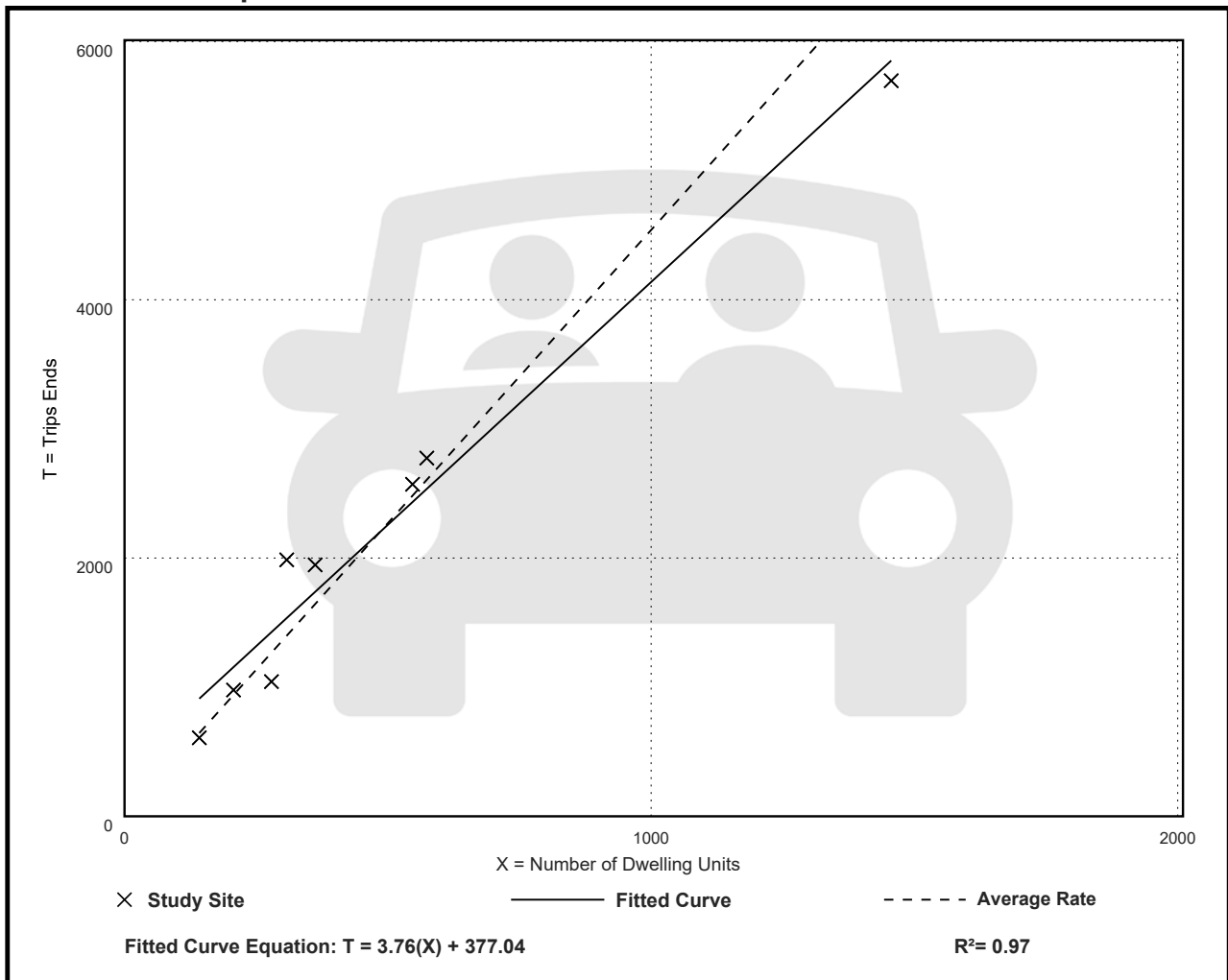
Avg. Num. of Dwelling Units: 484

Directional Distribution: 50% entering, 50% exiting

## Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
4.54	3.74 - 6.45	0.81

## Data Plot and Equation



## Multifamily Housing (High-Rise) Not Close to Rail Transit (222)

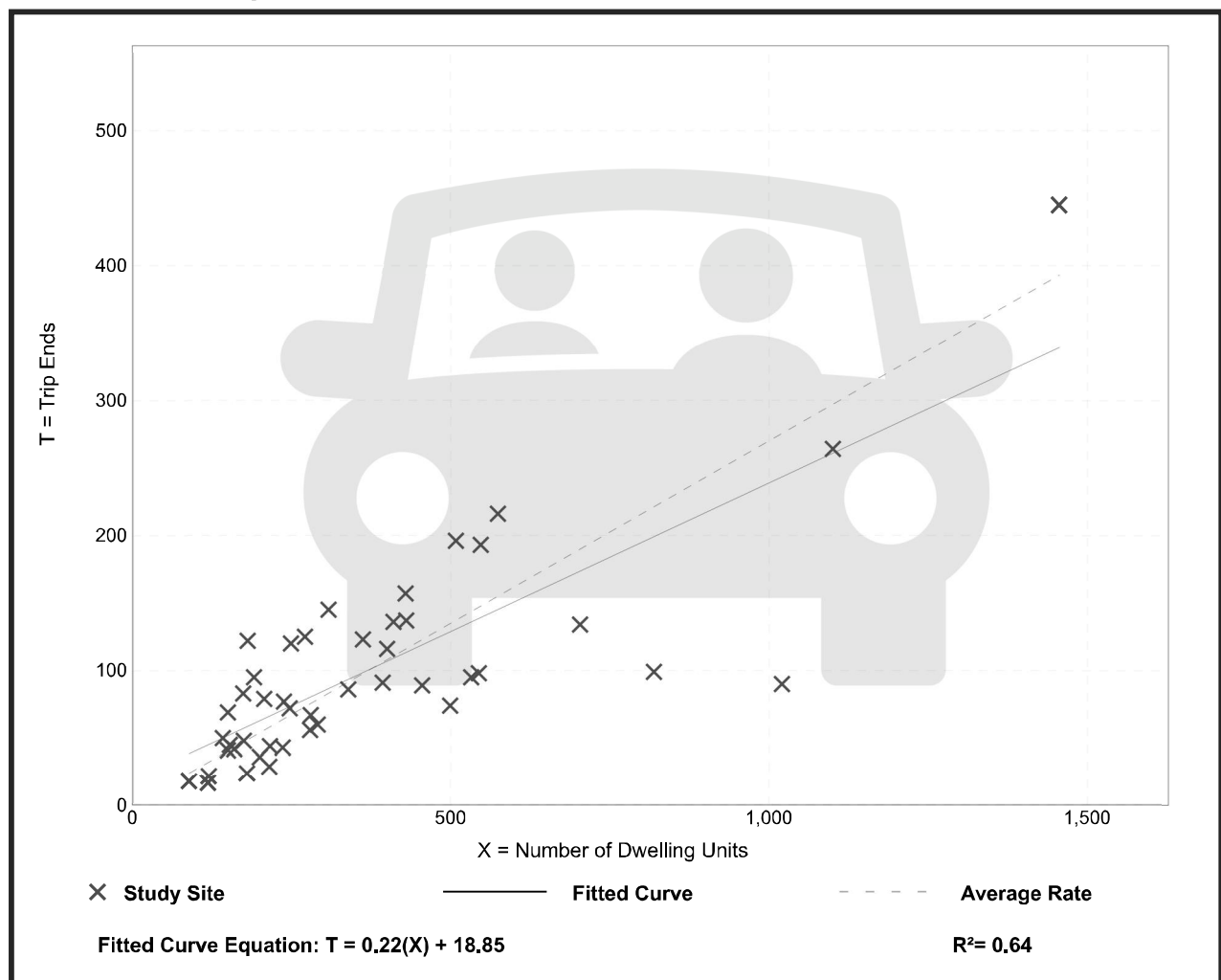
**Vehicle Trip Ends vs: Dwelling Units**  
**On a: Weekday,**  
**Peak Hour of Adjacent Street Traffic,**  
**One Hour Between 7 and 9 a.m.**

**Setting/Location: General Urban/Suburban**  
 Number of Studies: 45  
 Avg. Num. of Dwelling Units: 372  
 Directional Distribution: 26% entering, 74% exiting

### Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.27	0.09 - 0.67	0.11

### Data Plot and Equation



## Multifamily Housing (High-Rise) Not Close to Rail Transit (222)

**Vehicle Trip Ends vs: Dwelling Units**  
**On a: Weekday,**  
**Peak Hour of Adjacent Street Traffic,**  
**One Hour Between 4 and 6 p.m.**

**Setting/Location: General Urban/Suburban**

Number of Studies: 45

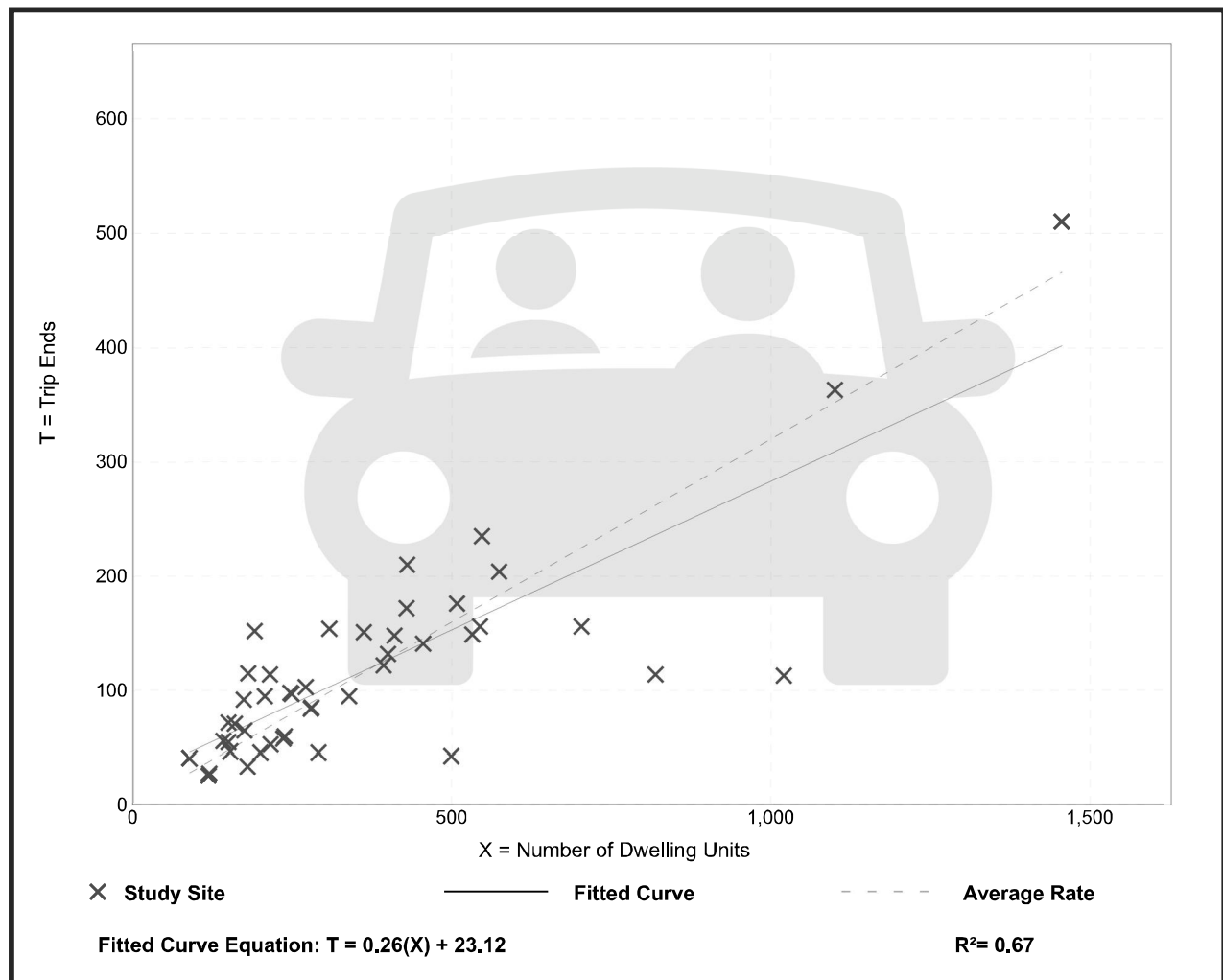
Avg. Num. of Dwelling Units: 372

Directional Distribution: 62% entering, 38% exiting

### Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.32	0.09 - 0.80	0.13

### Data Plot and Equation



# Land Use: 822

## Strip Retail Plaza (<40k)

---

### Description

A strip retail plaza is an integrated group of commercial establishments that is planned, developed, owned, and managed as a unit. Each study site in this land use has less than 40,000 square feet of gross leasable area (GLA). Because a strip retail plaza is open-air, the GLA is the same as the gross floor area of the building.

The 40,000 square feet GFA threshold between strip retail plaza and shopping plaza (Land Use 821) was selected based on an examination of the overall shopping center/plaza database. No shopping plaza with a supermarket as its anchor is smaller than 40,000 square feet GLA.

Shopping center (>150k) (Land use 820), shopping plaza (40-150k) (Land Use 821), and factory outlet center (Land Use 823) are related uses.

### Additional Data

The technical appendices provide supporting information on time-of-day distributions for this land use. The appendices can be accessed through either the ITETripGen web app or the trip generation resource page on the ITE website (<https://www.ite.org/technical-resources/topics/trip-and-parking-generation/>).

The sites were surveyed in the 1980s, the 1990s, the 2000s, and the 2010s in Alberta (CAN), California, Delaware, Florida, New Jersey, Ontario (CAN), South Dakota, Vermont, Washington, and Wisconsin.

### Source Numbers

304, 358, 423, 428, 437, 507, 715, 728, 936, 960, 961, 974, 1009

# Strip Retail Plaza (<40k) (822)

**Vehicle Trip Ends vs: 1000 Sq. Ft. GLA**  
On a: Weekday

**Setting/Location: General Urban/Suburban**

Number of Studies: 4

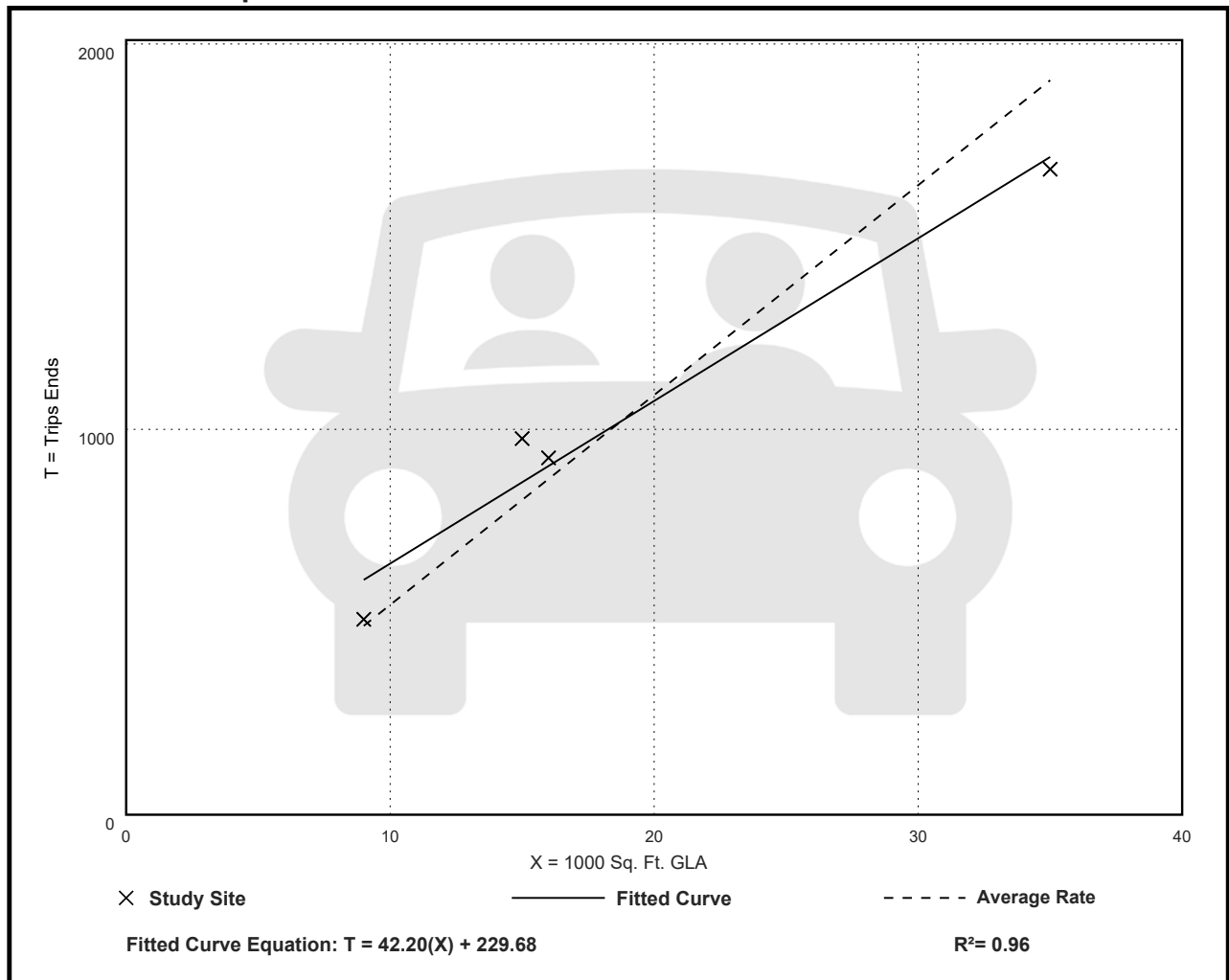
Avg. 1000 Sq. Ft. GLA: 19

Directional Distribution: 50% entering, 50% exiting

## Vehicle Trip Generation per 1000 Sq. Ft. GLA

Average Rate	Range of Rates	Standard Deviation
54.45	47.86 - 65.07	7.81

## Data Plot and Equation



# Strip Retail Plaza (<40k) (822)

**Vehicle Trip Ends vs: 1000 Sq. Ft. GLA**

**On a: Weekday,**

**Peak Hour of Adjacent Street Traffic,**

**One Hour Between 7 and 9 a.m.**

**Setting/Location: General Urban/Suburban**

Number of Studies: 5

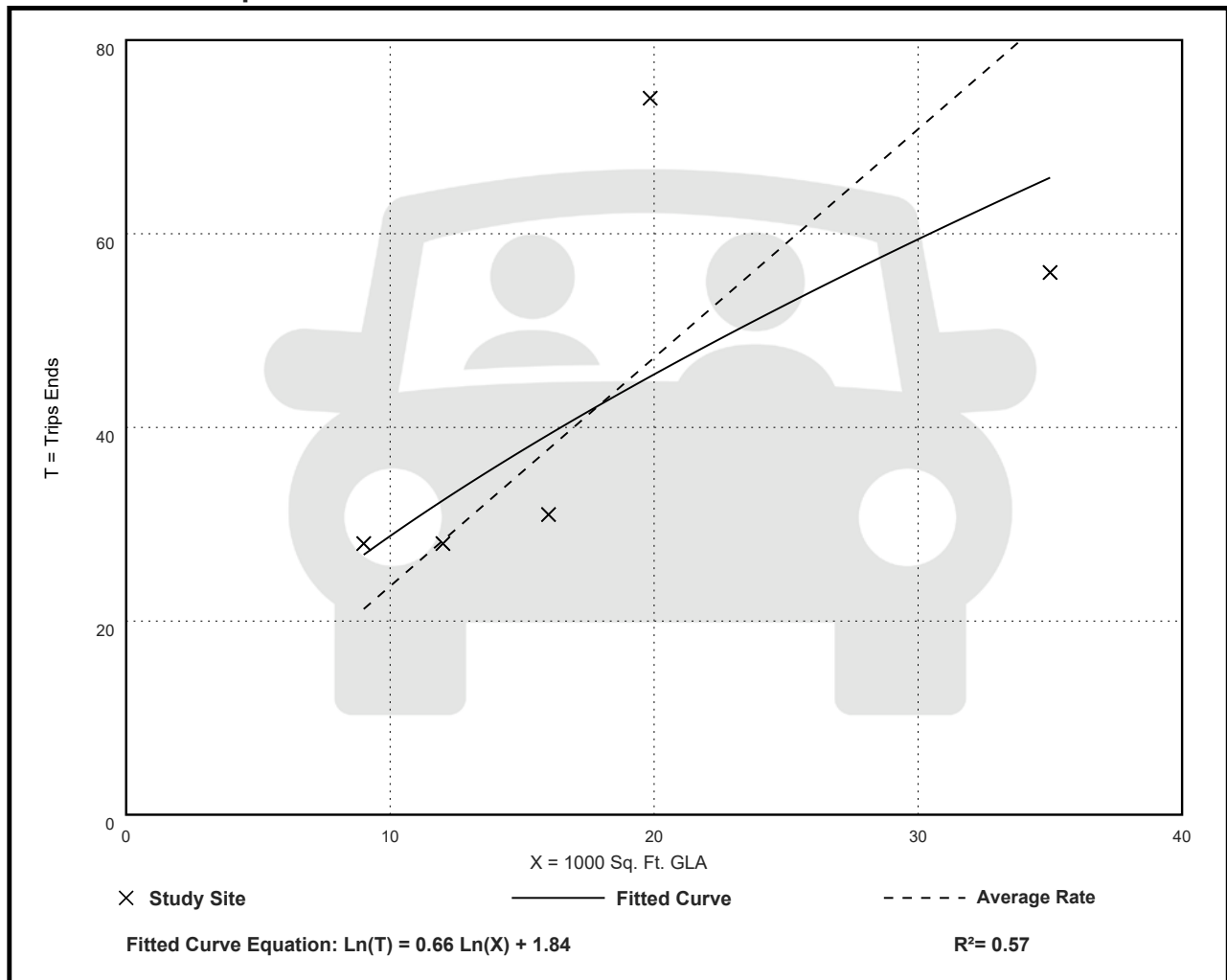
Avg. 1000 Sq. Ft. GLA: 18

Directional Distribution: 60% entering, 40% exiting

## Vehicle Trip Generation per 1000 Sq. Ft. GLA

Average Rate	Range of Rates	Standard Deviation
2.36	1.60 - 3.73	0.94

## Data Plot and Equation



# Strip Retail Plaza (<40k) (822)

**Vehicle Trip Ends vs: 1000 Sq. Ft. GLA**

**On a: Weekday,**

**Peak Hour of Adjacent Street Traffic,**

**One Hour Between 4 and 6 p.m.**

**Setting/Location: General Urban/Suburban**

Number of Studies: 25

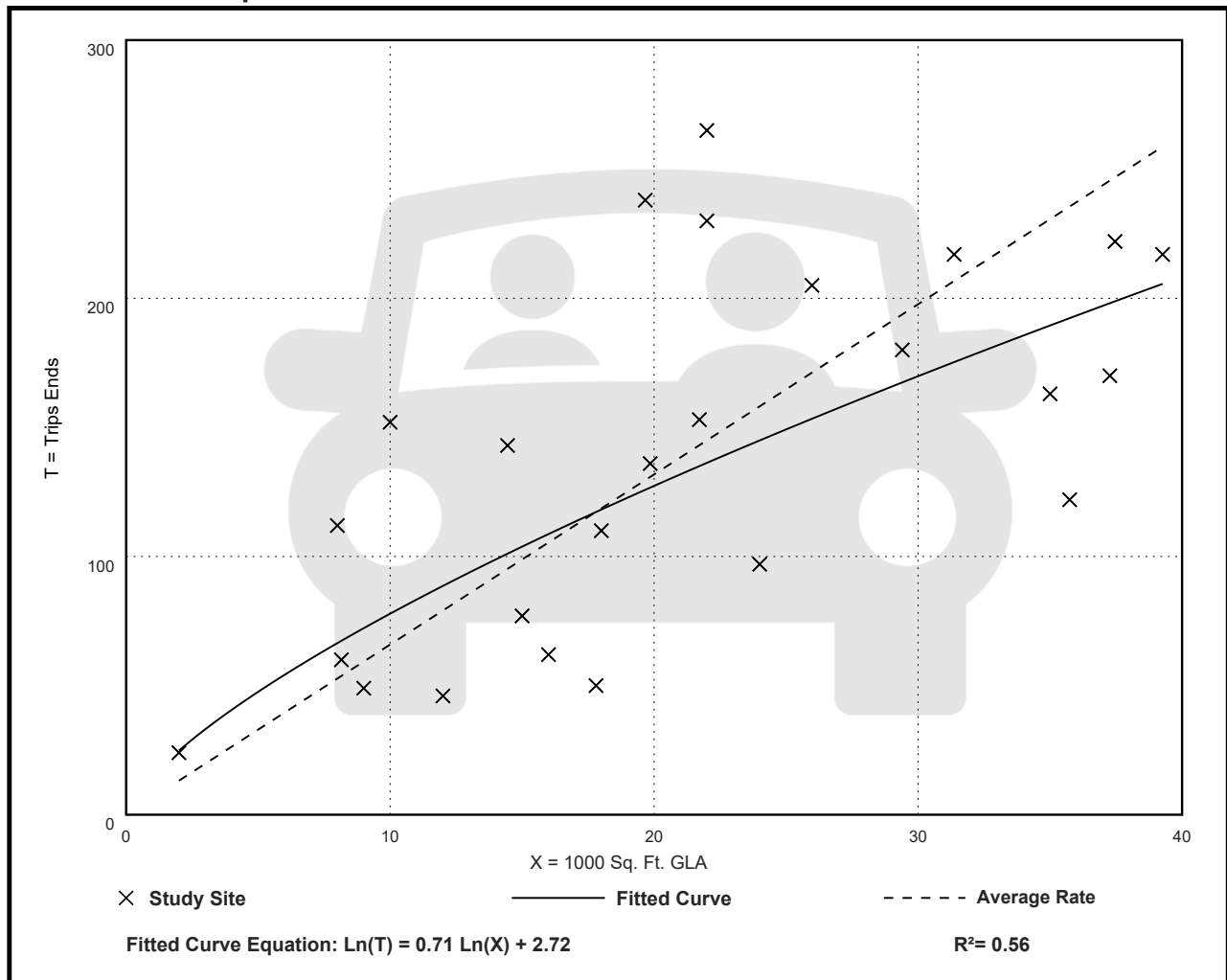
Avg. 1000 Sq. Ft. GLA: 21

Directional Distribution: 50% entering, 50% exiting

## Vehicle Trip Generation per 1000 Sq. Ft. GLA

Average Rate	Range of Rates	Standard Deviation
6.59	2.81 - 15.20	2.94

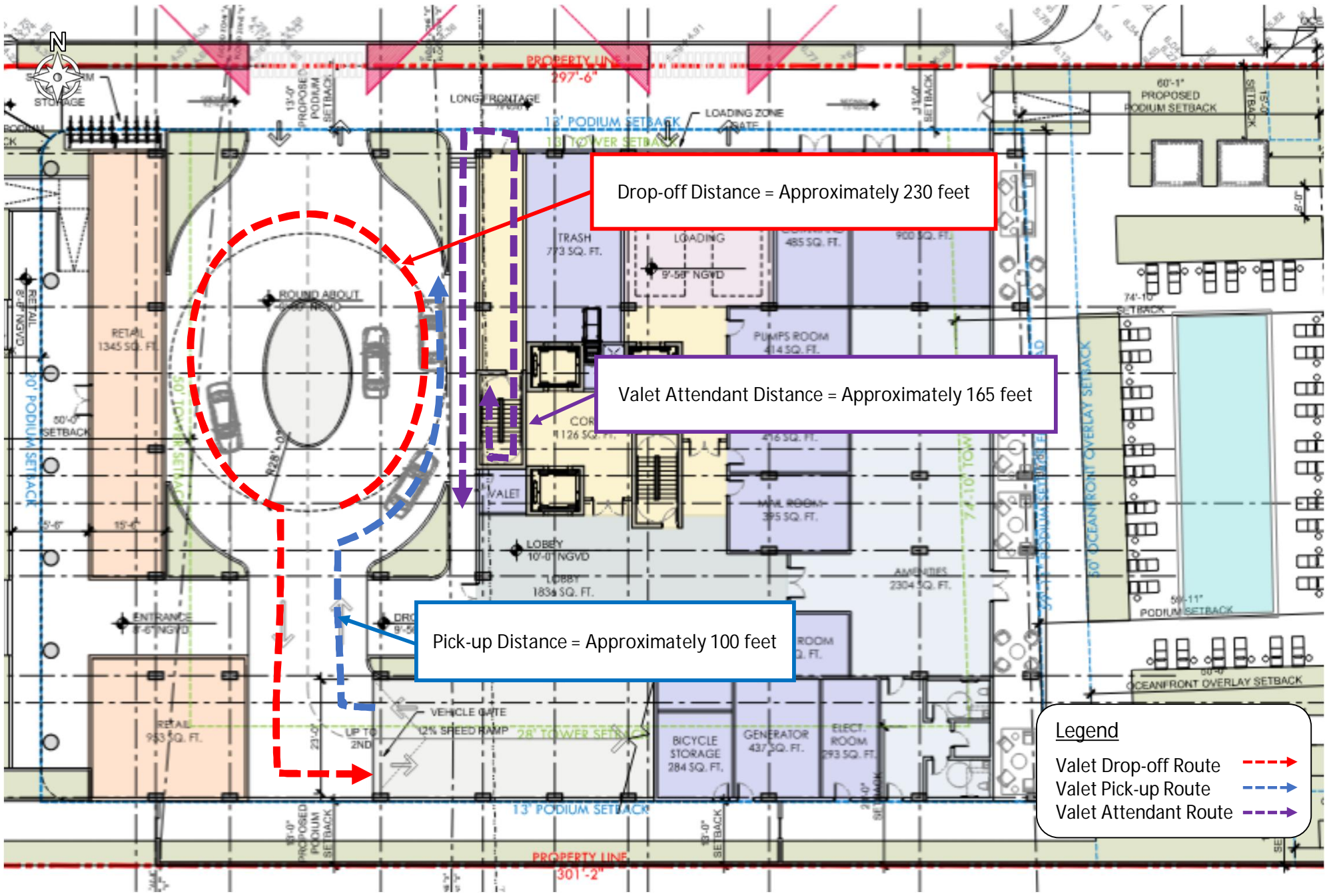
## Data Plot and Equation



# Attachment E

## Valet Analysis

## Valet Routing Figures



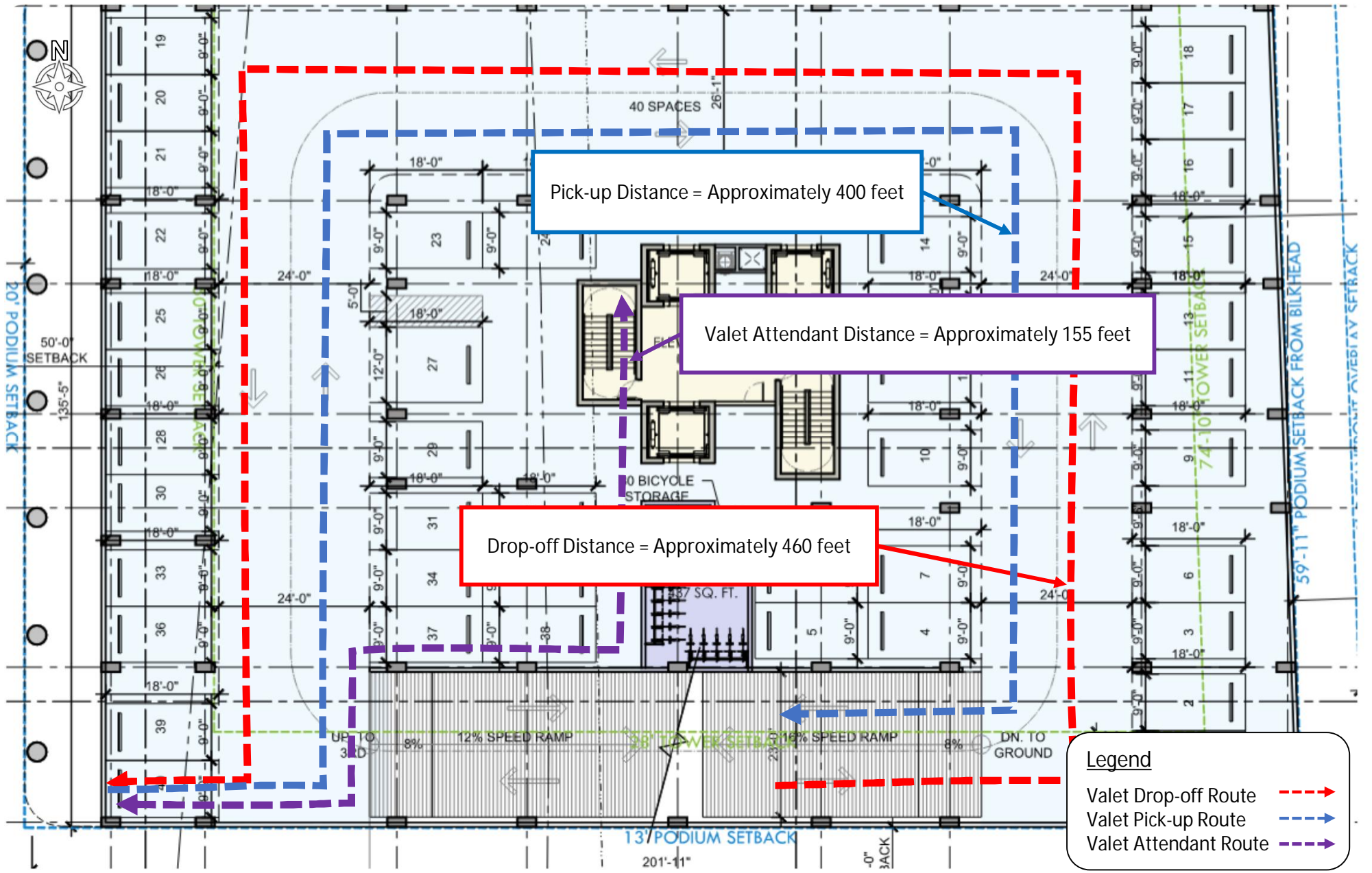
Drop-off Distance = Approximately 230 feet

Valet Attendant Distance = Approximately 165 feet

Pick-up Distance = Approximately 100 feet

**Legend**

- Valet Drop-off Route - - - - - →
- Valet Pick-up Route - - - - - →
- Valet Attendant Route - - - - - →



Pick-up Distance = Approximately 400 feet

Valet Attendant Distance = Approximately 155 feet

Drop-off Distance = Approximately 460 feet

**Legend**

- Valet Drop-off Route - - - - - →
- Valet Pick-up Route - - - - - →
- Valet Attendant Route - - - - - →

## Valet Travel Time Calculations

Valet Drop-off/Pick-Up Calculated Travel Time

Parking Garage Calculated Travel Time

VALET DROP-OFF			
VEHICLE TRAVEL TIME		VALET ATTENDANT TRAVEL TIME	
Travel Times (Assume 15 mph speed)		Travel Times (Assume 5 ft/s speed)	
To Parking Garage (In vehicle) from Valet Area		Return from Parking Garage (Walk/Run) to Valet Area	
Distance	Travel Time	Distance	Travel Time
0.13 miles	0.5 minutes	0.06 miles	1.1 minutes
Valet Attendant Exchange	0.5 Minutes		
Entry Gate Delay	0.1 Minutes		
Total Time	2.2 Minutes		

Parking Garage Calculated Travel Time

VALET PICK-UP			
VALET ATTENDANT TRAVEL TIME		VEHICLE TRAVEL TIME	
Travel Times (Assume 5 ft/s speed)		Travel Times (Assume 15 mph speed)	
To Parking Garage (Walk/Run) from Valet Area		Return from Parking Garage (In Vehicle) to Valet Area	
Distance	Travel Time	Distance	Travel Time
0.06 miles	1.1 minutes	0.09 miles	0.4 Minutes
		Entry Gate Delay	0.1 Minutes
Valet Attendant Exchange	0.5 Minutes		
Total Time	2.1 Minutes		

## Valet Analysis Worksheets

### Valet Analysis (A.M. Peak Hour)

Arrival Rate

IN	OUT
1	2

} veh/hr

Service Rate

IN	OUT
2.20	2.10

} mins/veh

Service Time = 2.13 mins/veh

Number of Valet Attendants (N) = 1  
 Level of Confidence = 0.95  
 Storage Provided On-Site = 2 vehicles  
 Total Entering and Exiting Vehicles(q) = 3 veh/hr  
 Service Capacity per N (60 mins/Service Rate) (Q) = 28.13 veh/hr/pos  
 Average Service Rate (t) = 2.13 mins/veh  
 rho (t/Q) = 0.107

Expected (avg.) number of vehicles in the system	E(m)=	0.01	
Expected (avg.) number of vehicles waiting in queue	E(n)=	0.12	
Mean time in the queue	E(w)=	0.25	mins
Mean time in system	E(t)=	2.39	mins

Proportion of customers who wait (P) (E(w) > 0)=	10.67%
Probability of a queue exceeding a length (M) P(x > M)=	5.00%

Queue length which is exceeded 5.00% of the times is equal to 0.3 vehicles

### Valet Analysis (P.M. Peak Hour)

Arrival Rate

IN	OUT
1	1

 veh/hr

Service Rate

IN	OUT
2.20	2.10

 mins/veh

Service Time = 2.15 mins/veh

Number of Valet Attendants (N) = 1  
 Level of Confidence = 0.95  
 Storage Provided On-Site = 2 vehicles  
 Total Entering and Exiting Vehicles(q) = 2 veh/hr  
 Service Capacity per N (60 mins/Service Rate) (Q) = 27.91 veh/hr/pos  
 Average Service Rate (t) = 2.15 mins/veh  
 rho (t/Q) = 0.072

Expected (avg.) number of vehicles in the system	E(m)=	0.01	
Expected (avg.) number of vehicles waiting in queue	E(n)=	0.08	
Mean time in the queue	E(w)=	0.17	mins
Mean time in system	E(t)=	2.32	mins

Proportion of customers who wait (P) (E(w) > 0)=	7.17%
Probability of a queue exceeding a length (M) P(x > M)=	5.00%

Queue length which is exceeded 5.00% of the times is equal to 0.1 vehicles

# Attachment F

## Entry Gate Analysis

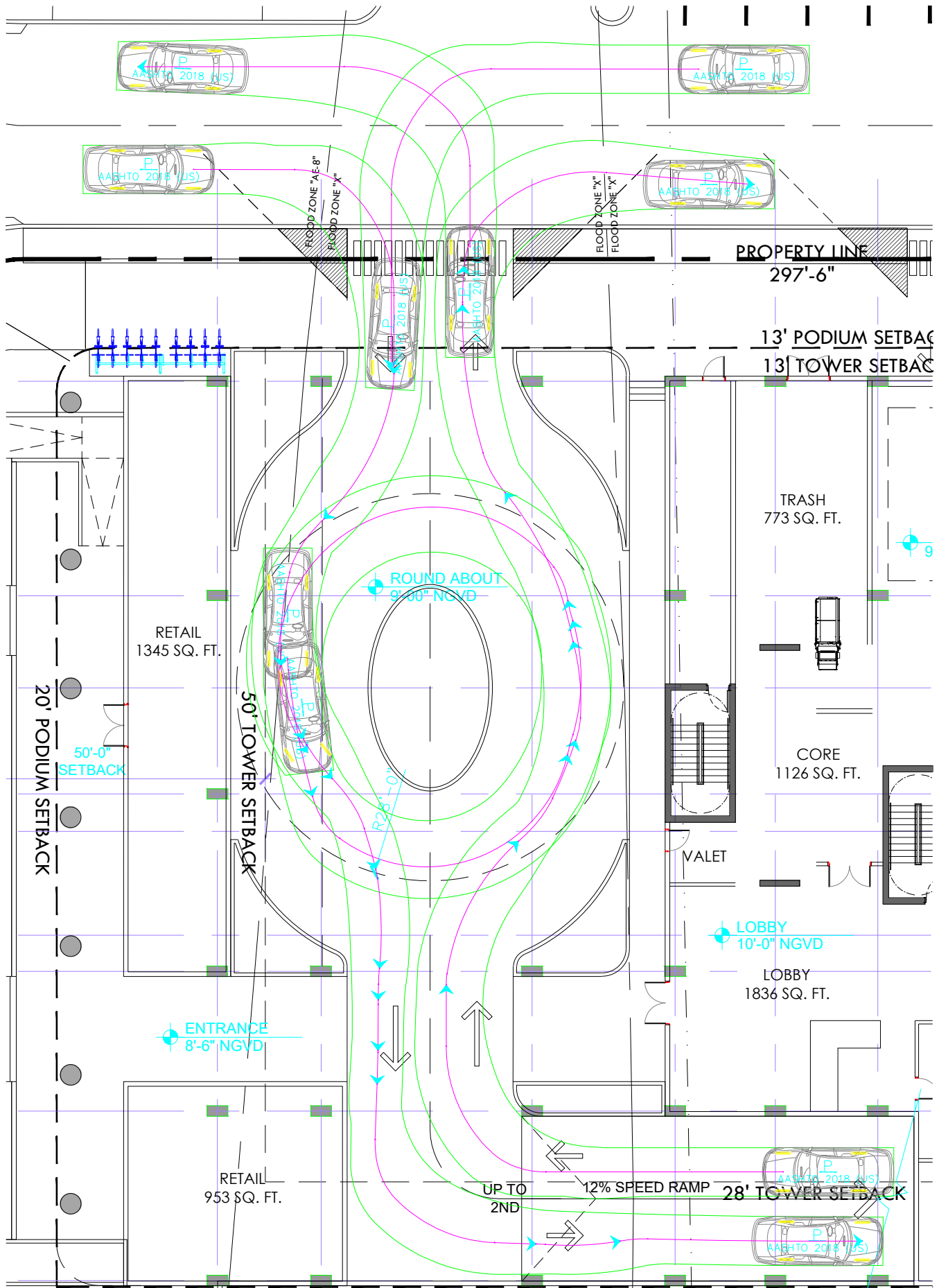




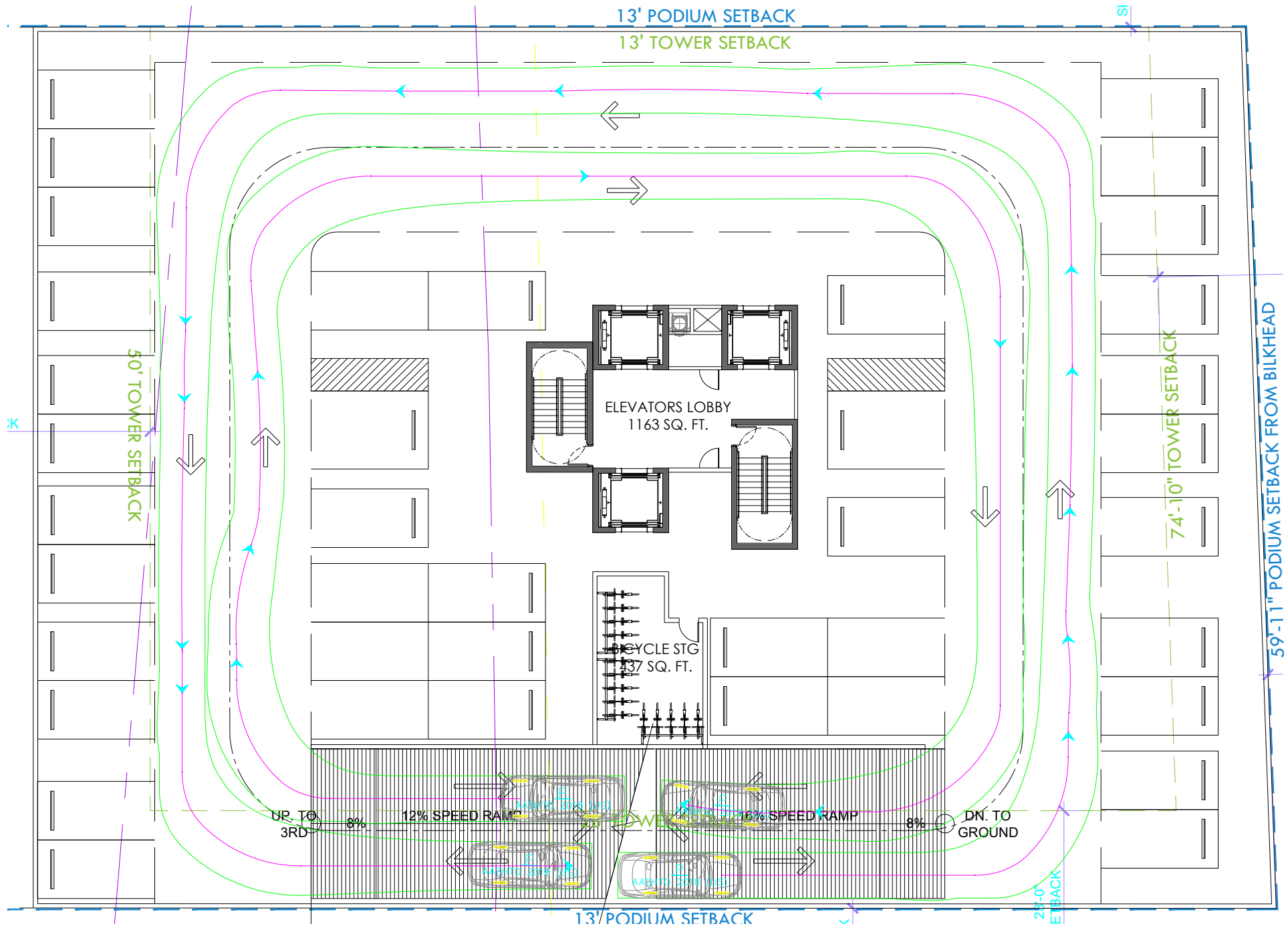
# Attachment G

## Maneuverability Analysis

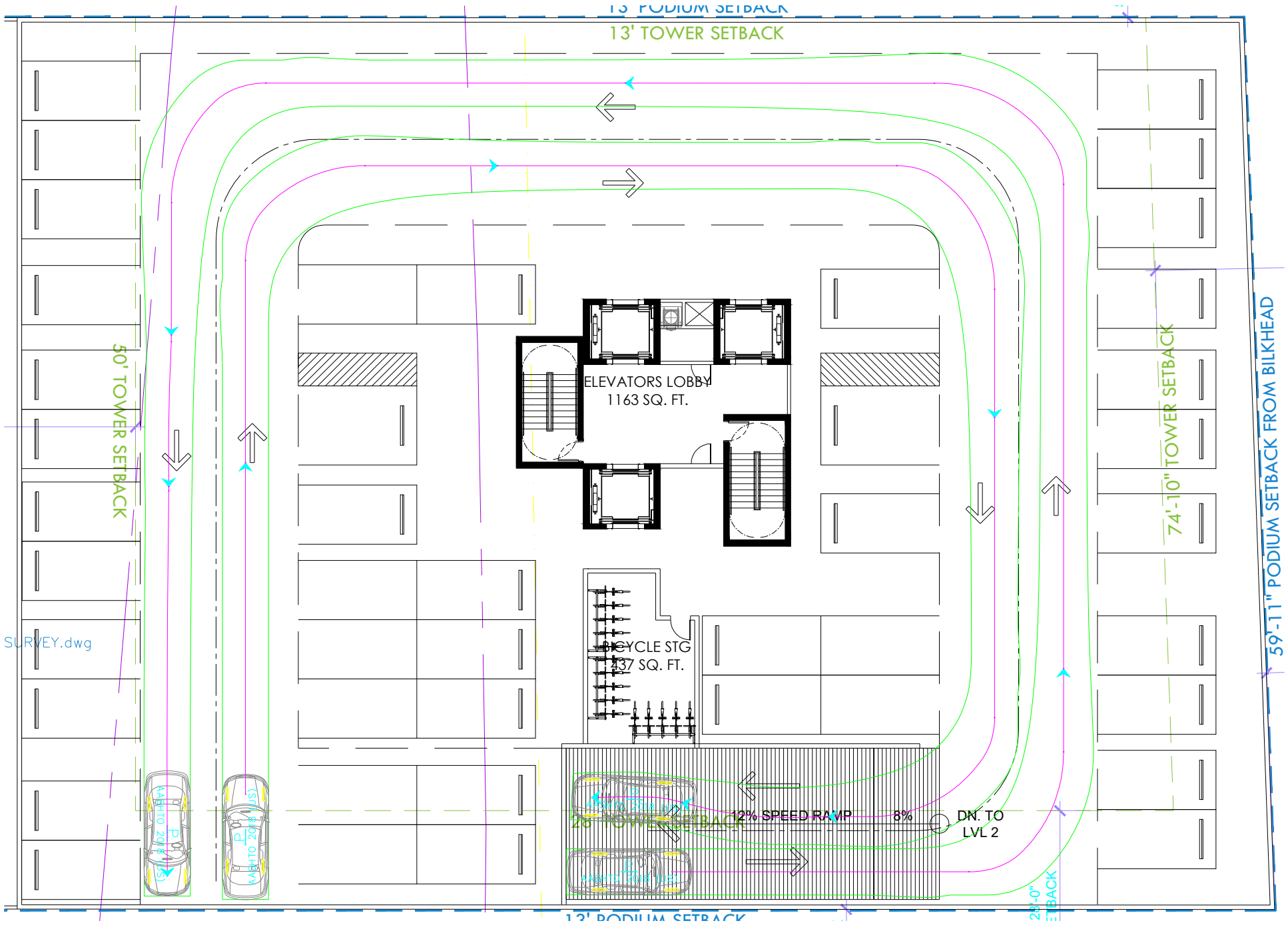
Ground Floor - Passenger Vehicle



Level 2 Parking Garage - Passenger Vehicle



Level 3 Parking Garage - Passenger Vehicle



SURVEY.dwg

13' PODIUM SETBACK  
13' TOWER SETBACK

50' TOWER SETBACK

ELEVATORS LOBBY  
1163 SQ. FT.

BICYCLE STG  
1437 SQ. FT.

74'-10" TOWER SETBACK

59'-11" PODIUM SETBACK FROM BILKHEAD

13' TOWER SETBACK

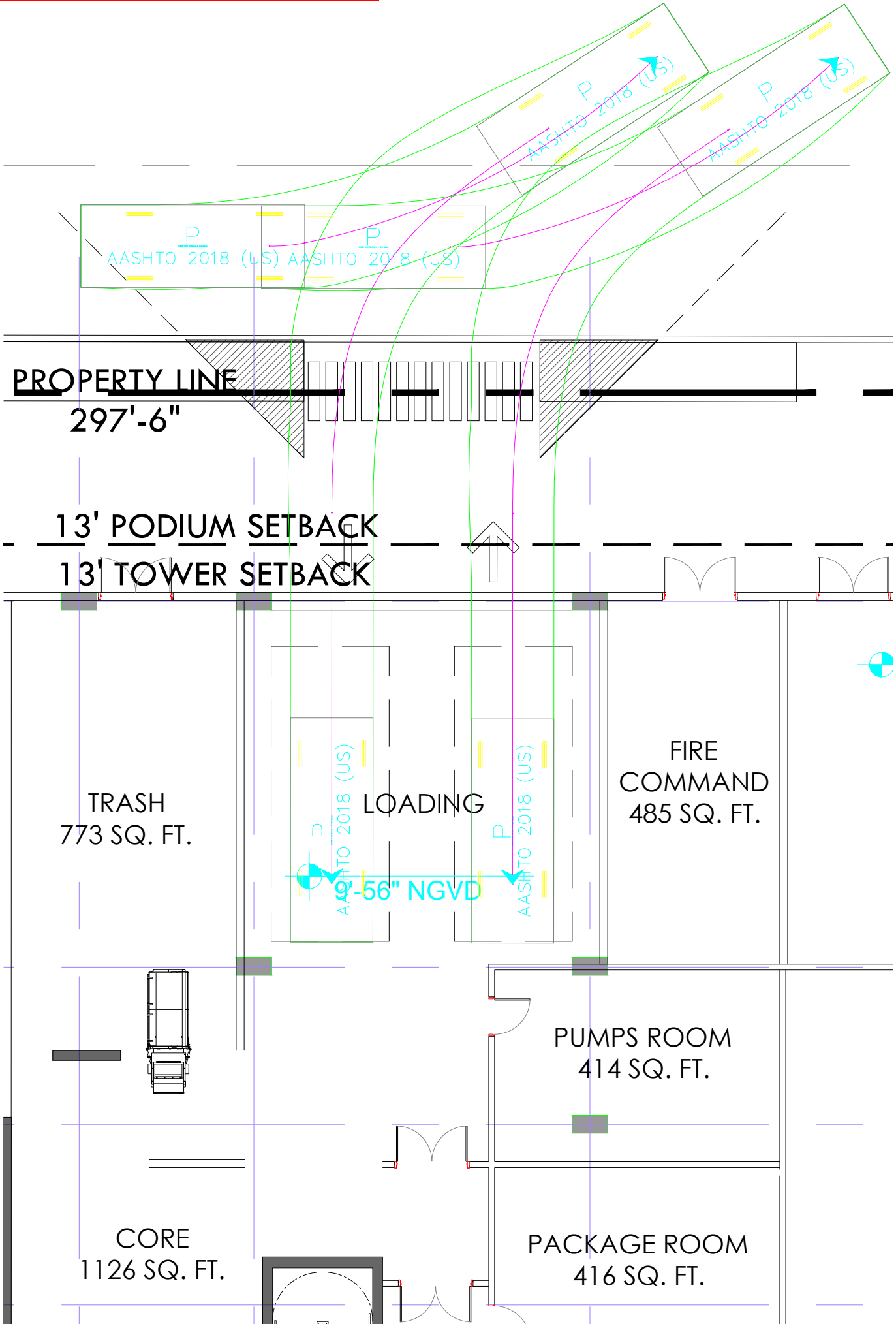
12% SPEED RAMP

8%

DN. TO  
LVL 2

28'-0"  
SETBACK

Ground Floor - Loading Vehicle Ingress



PROPERTY LINE

297'-6"

13' PODIUM SETBACK

13' TOWER SETBACK

TRASH  
773 SQ. FT.

LOADING

FIRE  
COMMAND  
485 SQ. FT.

PUMPS ROOM  
414 SQ. FT.

CORE  
1126 SQ. FT.

PACKAGE ROOM  
416 SQ. FT.

9'-56" NGVD

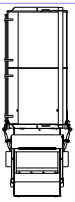
AASHTO 2018 (US) AASHTO 2018 (US)

AASHTO 2018 (US)

AASHTO 2018 (US)

AASHTO 2018 (US)

AASHTO 2018 (US)



Ground Floor - Loading Vehicle Egress

